



GREEN INNOVATION

SUSTAINABLE GROWTH: DRIVING THE UK'S LOW CARBON TECH FUTURE

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ECONOMY
WHERE BUSINESS BELONGS

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FOREWORD



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The UK is home to some of the world's most innovative businesses, which play a pivotal role in developing cutting-edge technologies. This is especially true in the low carbon sector, which it is estimated could be worth over £1 trillion domestically by 2030. Firms across the country are developing, building and exporting new advanced renewable, green and clean tech products. These innovations not only support our transition to net zero, but also represent a significant opportunity for economic growth in a sector that grew by over 10% in the last year.

The UK isn't a newcomer to this issue. Ever since the industrial revolution, our businesses have been at the forefront of innovation, developing technical solutions to tackle high carbon emissions.

Chambers within the British Chambers of Commerce network are playing a leading role in supporting low carbon technology innovation. Our Chambers are facilitating collaboration between businesses to share ideas and solutions, delivering formal support programmes that accelerate the commercialisation of low carbon technology products and raising private sector investment. Our network is leading the way in helping firms seize opportunities that support both UK economic prosperity and global environmental sustainability.

This report examines the funding, policy, and capacity challenges limiting UK businesses in developing and exporting low carbon technology products. Without action to address these barriers, firms risk being unable to fully unlock the economic potential of the low carbon sector. We set out a series of evidence-based recommendations across key areas, including innovation funding, procurement, the circular economy, grid capacity, and skills development.

Positive action by the government in partnership with business will help turbocharge the low carbon transition and bring real economic benefits. Working together, we can fully realise the UK's mission to become a clean energy superpower.

EXECUTIVE SUMMARY

Low carbon technology is a broad term that encompasses a wide range of renewable technologies that provide a significant amount of the UK's energy supply, and will have an increasing role in the coming years. They also include technologies that reduce the country's carbon footprint, supporting the journey to net zero.

This report sets out clear evidence that supporting the development and deployment of these technologies is not only critical for net zero, but also supports job creation, innovation and economic growth.

However, funding and policy barriers risk hindering the UK's ability to be a world leader in low carbon technologies. Businesses do not have the innovation funding support they need to transform their climate technology prototypes,

fully commercialising them to products that can be deployed to a global market. Further policy barriers, ranging from the planning system to procurement, that could drive the uptake of such technologies, are currently hindering progress. In addition, a lack of policy stability creates uncertainty for businesses and risks reducing investment into the UK, allowing other countries to benefit from growth in this field.

This report sets out a series of recommendations for the UK government to unlock the full potential of these technologies. They will require action across multiple government departments to be successfully delivered. This will help the UK accelerate its journey to net zero, as well as support businesses to grow and thrive through the transition to a low carbon future.



LOW CARBON TECHNOLOGIES: OPPORTUNITIES FOR THE UK

The UK is home to a broad range of renewable and low carbon technologies, which combined are playing a key role in supporting the country's net zero ambitions. These technologies already contribute a significant proportion of our energy supply. This is particularly the case with wind power, which contributed to 29.4% to the UK's total electricity generation in 2023¹.

Breadth of Technologies in the UK



Nuclear Power

This includes nuclear fusion and European Pressurised Reactors, as well as Small Modular Reactors and Advanced Nuclear Reactors.



Solar Power

This includes the design and manufacture of solar panels, as well as developing innovative constructions with solar, such as the development of flexible solar panels.



Wind Power

This includes onshore wind, as well as fixed offshore wind, and floating offshore wind.



Hydropower

This includes tidal power, as well as run-of-river hydropower.



Carbon Capture, Utilisation and Storage

This includes both the Track-1 and Track-2 cluster sequencing processes.



Energy Storage

Physical and chemical, this includes long-term battery technology, as well as batteries for Electric Vehicles.



Heating

This includes air source and ground source heat pumps, hydrogen and electric heating, in both domestic and commercial properties.

10.1%

growth of the UK net zero economy since 2024.

£40bn

the estimated yearly investment through the UK's clean energy system.

10.2%

growth in employment over the past year shows how the UK's net zero sector is expanding.

£83.1bn

in Gross Value Added generated by the UK's net zero economy.

£1tr

the potential value of supplying the goods and services to enable the net zero transition for UK businesses by 2030.

In 2024, the government announced that the UK had cut its greenhouse gas emissions by 50% between 1990 and 2022, while growing the economy by 80%. The reductions were driven largely by shifting away from the use of coal to renewables, with renewable energy sources now accounting for more than 40% of the UK's electricity supplyⁱⁱ.

According to the Energy and Climate Intelligence Unit (ECIU) in February 2025, the UK's net zero economy generates £83.1 billion in Gross Value Added and has grown by 10% in the past year. In addition, net zero businesses support the equivalent of 951,000 full-time jobs in the UK, and employment in the sector has grown by 10.2% in the last yearⁱⁱⁱ.

Since coming into office in July 2024, the government has focused on its mission to make the UK a Clean Energy Superpower. It has committed to:

“accelerate to net zero across the economy, seizing one of the economic opportunities of the 21st century – creating hundreds of thousands of good jobs and driving investment into all parts of the UK”.^{iv}

In addition, climate experts have also emphasised the opportunity to achieve economic growth through accelerating towards renewable energy. In January 2025, Emma Pinchbeck, CEO of the Climate Change Committee, said to the Energy Security and Net Zero Committee:

“It is positive to see decarbonisation, the clean energy superpower and net zero as a priority of the Prime Minister, and to hear a Prime Minister and Chancellor talk about those things as essential to economic growth.”

“Green energy jobs, or just energy jobs, in new energy technologies and the clean economy have grown 10% over the past two years. We can see that this is a growth area for the UK. We invested early in things like clean power, so we have market advantages. We should be capitalising on that and having an industrial strategy that makes better use of those strengths. There will be job opportunities for people in this transition, too. [...] We can see that there is a net economic benefit in the long run of doing this.”^v

This report agrees with the view that the energy transition to clean power can lead to job creation and a net economic benefit as a result.

With the increase in low carbon technologies in the UK, there is also an increasing demand for energy storage capabilities, which provides opportunity for investment and development. Battery energy storage systems (BESS) will be essential in enabling renewable-energy generation, as well as providing backup power in the event of outages. It is estimated that the global BESS market will more than double by 2030, reaching a value of between \$120 billion and \$150 billion^{vi}.



BARRIERS

While there are clear environmental and economic growth benefits to the development of low carbon technologies in the UK, our research and engagement with businesses have found that there are significant barriers hindering the UK being able to fully reap the benefits of these technologies.

The government must work to address these barriers as a top priority. There is the potential for the successful development and commercialisation of low carbon technologies to result in an economic return within this parliament, but this needs immediate and clear action from the government to make this a reality.

Innovation to Commercialisation Funding

Businesses involved in developing and manufacturing low carbon technology products often find that there are multiple barriers to tackle, alongside high risk, high capital costs, and long product development timelines. These businesses often face a degree of commercial uncertainty, driven by both fluctuating regulatory challenges as well as areas of the market not being fully convinced of the timeline or the need for the specific technology.

Technology Readiness Levels

As set out by UK Research and Innovation (UKRI), technology readiness levels (TRLs) are a type of measurement system, which assesses how mature a particular technology product is. These range from TRL 1 at the earliest stage of maturity, through to TRL 9, where a technology product has developed and is able to successfully demonstrate its capability, and is ready for deployment to market. This is shown in the image across^{vii}.

As this report will demonstrate, businesses have found challenges bridging the gaps between certain TRLs, and post-TRLs, which hinders them from being able to fully commercialise their technology product.

Fundamentally, while past funding streams have focused on helping technologies to advance along the TRLs, financial support has not been focused enough on arguably the most difficult stage of a product's development: beyond TRL9. This stage is when a product is ready to be commercialised

and is focused on: finding the first customers; being able to manufacture the first full-scale product to demonstrate and achieve first sales; scaling manufacturing capability; achieving commercial viability; and delivering for the UK economy.

Technology Readiness Levels		Commercial Readiness Levels
Concept of technology or research area developed	1	Market needs and problems identified. Solution concept and initial market validation
Research completed proving feasibility of the concept	2	Detailed mapping of industry, and detailed analysis of market size and competition
Applied research with first lab-based test completed	3	Problem / solution validation
Small scale prototype tested in a controlled environment – basic proof of concept	4	Low-fidelity prototype and basic business base validated
Large scale prototype developed and tested in intended environment – proof of concept completed	5	Validate product /market fit assessment and accurate assessment of market potential
Field-tested in the intended environment with consistent and reliable results. Performance measured against expected commercial outcomes	6	Validate money flow and IP strategy, product price points validated across selected market, and validate the costs of product and revenue model.
Demonstrated across range of sites to evaluate performance against competitive products in commercial setting	7	Deploy and validate at scale, high-fidelity minimum viable product tested in the market
First, commercially scale system designed and tested	8	Validate the scaling process and full commercial business base validated
Commercially ready for release	9	Commercial release

Early-stage Public Sector Funding Mechanisms (around TRL 1-4)

Since the UK's withdrawal from the European Union, and the end of funding provided through the European Structural Investment Fund, the availability of early-stage funding is at its lowest level in decades. Large-scale, long-term transformational programmes of funding support had hugely positive results for UK universities which became hotbeds of innovation for decades and saw a significant number of new products produced and patented each year. Much of this funding that used to be available has not been adequately replaced through the UK Shared Prosperity Fund which is often not focused enough on transformational, long-term innovation support and has been inaccessible to some universities.

Early-stage funding focused on the objective of achieving commercialisation, and not just academic research, is essential. University-based early-stage support has often been exclusively focused on the innovation of new technology ideas alone, without the further support needed to progress these technologies towards full commercialisation. Technology innovations need support to progress to demonstration models that are linked to viable customers. This is key to understanding future requirements for component manufacturing and associated costings, as well as developing their supply chain ecosystems.



LiNa Energy



Mid-stage Public Sector Funding Infrastructure (around TRL 5-7)

While there are opportunities for businesses to receive support and innovation funding, such as through UKRI which offers funding across multiple academic disciplines and industrial areas, in practice, this has presented further challenges.

National grant funding schemes, structured as competitions, often result in very low acceptance and funding rates, with significant resources being used by businesses over many months to prepare and submit applications for funding. There are often significant reporting and paperwork requirements for businesses, and it can take a long time for businesses to receive financial support. The application process can be seen as a large drain on businesses' time and operations, and can take focus away from progressing their technology. This slows down the growth of the low carbon technology products which are vital in significantly reducing carbon emissions in high-emission sectors such as manufacturing.

The low carbon technology sector would be better served if innovation funding arrangements moved away from a competition-style approach, where many applicants are left disheartened and feel that their time has been wasted.

According to professional services firm MPA, Innovate UK's Smart Grants has reportedly had a success rate of just 2%. Only 44 projects in a recent Smart Grant round received funding, out of 2,100 applications submitted and 1,700 assessed^{viii}. In January 2025, it was announced that Innovate UK was pausing Smart Grants to develop more tailored support^{ix}. This low success rate from Innovate UK discourages businesses from applying, especially given the time and resources that will be required to submit a bid for funding.

Businesses have also said that they have concerns that the evaluation process to select grants often lacks the expertise needed for complex and technical proposals relating to climate technology. In addition, businesses have expressed concerns that their applications for funding have been simply rejected, with no option to appeal.

Specifically, one business mentioned challenges with Innovate UK, saying:

“While it’s a potentially excellent scheme, it feels like Innovate UK approaches it as if they’re an equity investor. Rather than collaborating to adjust our business plan, they either approve or reject it, with rejection leading to months of delay before reapplying. When SMEs apply for loans, it’s because they need money now—not in several months. The delays stall projects and consume time that SMEs simply don’t have.”

Changing innovation funding so that innovations are supported as they progress, with funding awarded once it is clear and proven that the product is market-viable, would significantly reduce the feeling of disenchantment that many businesses currently feel, and this could potentially see more products progressing to full-commercialisation.



Late-stage Commercialisation-focused Funding (from TRL 8 leading to full-scale manufacture and export)

Bridging the gap between having a prototype and building an initial customer base is essential to supporting businesses through the whole process of designing, manufacturing and ultimately bringing their low carbon technology products to market. Businesses often find that there is a funding gap for businesses who are at the appropriate TRL. As one business said:

“Government funding is excellent for R&D up to Technology Readiness Level (TRL) 6. However, moving from TRL 6 to 9—essential for commercialisation—requires significantly more investment, often five times what was needed to reach TRL 6. The lack of focus on commercialisation (nationally & locally) is frustrating because TRL 6 to 9 is where true innovation happens.”

Where there is a lack of funding to support commercialisation, businesses have been forced to commercialise their innovations without external investment. This, alongside minimal internal resources in a business, slows the process of low carbon technologies being commercially available. Another business said:

“We can’t access funding quickly enough. The process is time-consuming; while our product is ready, we’re constantly chasing investment. Investors are reluctant to fund expensive hardware, especially when supply chains involve long lead times for overseas components. Without financial buffers to stock inventory, production is delayed.”

Anecdotally, BCC has heard of businesses that have experienced difficulties with debt finance. One business, which has operated for 15 years, highlighted that being unable to get debt finance from banks has hindered their growth, resulting in them being unable to capitalise on market opportunities in the construction sector.

Many climate technology innovators engage with the venture capital (VC) market. However, many have faced challenges with the current VC market in the UK, which they say does not adequately support low carbon technology businesses. One such challenge is that VC often does not provide enough of the funding required to scale up a business developing a low carbon technology, and investments in climate technology businesses do not result in a return as quickly as venture capital asks for.

An additional barrier highlighted is that potential investors often lack a robust understanding of early-stage innovative technologies. In the absence of similar technologies and applications to compare it with, they are often unable to assess the validity, risk profile and viability.

Scale-up financial support also remains limited. Certain sectors, such as wind and tidal energy, need long-term capital investment, where it may take a number of years to get a return, compared to other funding models which are more short-term high returns.

There is a long history of cases of businesses that have received funding for the development of their products from overseas, which results in production being lost from the UK, along with the maximum economic benefits possible from the innovation opportunities. Many businesses want to remain in the UK, where their supply chains are located, but are faced with the real challenge of needed funding to support their long-term sustainability and are having to contemplate the merits of moving overseas to get this support. This risks reducing the UK’s competitiveness compared to other countries.

Scaling Investment: Foreign Direct Investment Compared to UK Financial Support

Businesses have reported challenges with low carbon technology products coming from overseas and entering the UK market, offering a better price than UK-based businesses can offer. This has been particularly the case with the commercial heat market, where it typically costs more to produce them in the UK than import them from abroad. This is due to a range of factors, including the fact that manufacturers based overseas have been able to make their products cheaper due to support from government subsidies. UK-based producers have called for additional factors to be taken into account when making decisions around the procurement of heat pumps, such as quality and local sourcing, and wider associated factors, such as the Carbon Border Adjustment Mechanism.

Businesses based in the UK feel that they do not have the financial support they need to accelerate the growth of low carbon technologies. This risks placing them at a disadvantage to international competitors.

An example of this which emerged from the BCC Chamber Network is with a flexible solar panel business, which received funding from a sovereign wealth fund in Norway to support the manufacture of its solar panels. Despite the three largest component suppliers all being based in the same area of the UK, this business's first manufacturing plant for solar has been opened in Norway rather than the UK. In addition, a solid state sodium battery innovator within the BCC Chamber Network was approached and pursued by the USA. This highlights the loss of opportunity for the UK when businesses move overseas as they are unable to get the funding they need to fully support the development of their low carbon technology product.







CASE STUDY

BCC Chamber Network: RedCAT^x

Within the BCC Chamber Network, support is being provided to businesses facing these challenges. RedCAT is an initiative developed by East Lancashire Chamber of Commerce which provides a pathway of technical business consultancy and financial support to accelerate the commercialisation of low carbon technologies. It has the breadth of expertise and experience to provide potential stakeholders with an independent assessment of technical and commercial viability, along with a structured analysis of shortcomings and potential actions. It works in partnership with businesses to accelerate their manufacturing, product adoption, scaling and export to help their commercialisation come to fruition.

Specific support provided by RedCAT includes:

- RedCAT Innovation support provides expert technology viability assessments, market and competitor analysis, and commercialisation support, while also identifying demonstrator opportunities, and early adopter customers.
- RedCAT Ventures also leverages in government finance and supports firms to raise private sector funding.
- RedCAT Scale provides support at the point where innovators have products ready for manufacture but need help to identify key elements such as site and supply chain, with the right power sources, utilities, connectivity, local supply chain cluster, accessible future skills-base, and other key factors needed to bring potential products to full manufacture.

RedCAT's focus is to provide embedded support for businesses all the way through to full commercialisation, including sale, scale, and export. RedCAT brings customers' desires to the solution providers to promote the development of innovations that are needed globally.

RedCAT has levered in £1.5 million of capital grant support for a small number of firms. Within three years, this investment and expert support have resulted in over 300 jobs, 46 new products manufactured, and over £30m in new inward investment and product sales.

This work within the BCC Chamber Network demonstrates how expert support, with a focus on full commercialisation, can create an economic return for the UK.

More information can be found here:
<https://redcatgroup.co.uk/>



Regulatory and Policy Challenges

Policy Stability: Creating a stable business environment

In addition to the significant challenges with innovation funding, there are policy issues that the government must address to support the development of low carbon technologies and drive their uptake to stimulate innovation and ensure they are fully commercialised. One of the most significant policy challenges relates to policy instability caused by frequent changes to government policy, risking uncertainty and reduced confidence among investors.

A clear example of policy instability in recent years relates to multiple changes to government policy around the use of petrol and diesel vehicles, as well as driving the uptake of electric vehicles. In 2020, it was announced that the sale of new fully petrol and diesel cars and vans would be phased out by 2030. In 2023, this phase-out date was changed to 2035^{xi}. In April 2025, it was announced that the sale of new petrol and diesel cards would end in 2030, but with hybrid cards able to be sold until 2035 to give the industry more time to prepare^{xii}. These changes send signals to investors about the reliability of government policy, and cause confusion for businesses who have to change their own operations to meet new requirements brought about by policy changes.

Investors need a stable, predictable, long-term policy landscape in which to invest in low carbon technologies, and in UK businesses. To support this, the government should incorporate a clear roadmap for the future of low carbon technology in the UK, with interim targets through to 2050. Providing clear, long-term targets for the sustained increase in low carbon technologies between now and 2050 will offer significant reassurance to businesses and investors in the UK.

The Climate Change Committee has a fundamental role in advising the UK and devolved governments on how to reduce emissions and adapt to the impact of climate change. Its Seventh Carbon Budget, published in February 2025, sets out its Balanced Pathway and how this sees the increasing presence of low carbon technologies, including wind power, heating decarbonisation, electric vehicles, hydrogen, carbon capture. For example, it sees offshore wind growing from 15 gigawatts of capacity in 2023 to 88 gigawatts by 2040^{xiii}.

In setting out a roadmap and targets in relation to low carbon technologies, the UK government should look, where possible, to align its targets for the long-term increase in low carbon technologies, with the CCC's Seventh Carbon Budget.

Planning

In order to drive the take-up of low carbon technologies and their incorporation into all new builds and retrofitting of residential, commercial and industrial premises, it is vital that local authorities adopt clear sustainable building standards for developments.

For local authorities to adequately assess the environmental impact of a building, BREEAM (Built Research Establishment Environmental Assessment Methodology) is often used. This is a world-leading sustainability assessment method for buildings and is key to helping project owners achieve sustainability goals and reducing emissions^{xiv}.

However, BCC has heard of cases of local authorities being reluctant to require higher environmental standards on industrial or residential buildings through fear that this would result in displacement of developments to other areas. In addition, it is understood that requirements often vary between different nations in the UK.

The UK government should look to establish a baseline for environmental standards for all construction projects in the UK, which would help reduce this displacement, drive technology take-up, as well as reduce the carbon footprint. This positive support to local planners within councils and local authorities would drive progress to reduce climate impacts from buildings in local areas. This would help to drive even and consistent environmental standards that support the UK's journey to net zero. The UK government should aim to ensure that this consistency applies across all four nations of the UK.

Procurement

With a large proportion of the business community supplying into the public sector, making long-term changes to public sector procurement arrangements could lead to a significant take-up of sustainable products within businesses, and can encourage businesses to take steps to improve their sustainability.

The UK government already has a simple standard reporting framework (PPN 06/21) for all suppliers within central procurements over £5 million, and the NHS has adopted the PPN 09/21 Carbon Reduction Plan, which is available through gov.uk, for all levels of suppliers^{xv}. Those suppliers who come under this requirement need to complete a carbon reduction plan and show their commitment to targets relating to sustainability and reducing the business's carbon footprint. This is a good example of consistent reporting requirements for suppliers being provided in the public sector.

This approach should be extended across the whole of the public sector, nationally and locally from the government, as well as championed to leaders in the private sector as an example to follow. Building on the progress made with the NHS and the PPN 09/21 Carbon Reduction Plan, were this to be extended to apply across the whole of the public sector, both at national and local levels, for all suppliers at all levels, this would have a positive impact in driving business engagement on sustainability.

Another challenge in the supply chain is that businesses have faced difficulties with reporting their greenhouse gas emissions. There is currently no single agreed or comparable process for

businesses, particularly SMEs, to report emissions and sustainability impacts of their business operations to customers across industry, finance and government corporate reporting and procurement processes. As such, SMEs are being required to fill out multiple, lengthy emissions forms to different sets of customers and supply chains.

Competing reporting frameworks create complexity which SMEs find hard to resource. If different public authorities or large, international firms develop their own unique climate and emissions standards for businesses, SMEs will be required to complete multiple forms and comply with multiple standards. This risks preventing SMEs from being able to contribute to those supply chains and risks diverting SME investment away from reducing emissions altogether.

To address this issue, BCC calls on the UK government to introduce a single, universal, free of charge data reporting framework. This would be based on lessons learned from PPN 06/21, which is both proportionate and comparable.

Promoting the Circular Economy

Reducing unnecessary waste and considering opportunities to repurpose materials is vital as part of the UK's progress towards net zero. Through coordinating its procurement policy across the whole of government, there is the opportunity for all procurement contracts to require increasing recycled content in their procurement contracts.

The government should also review how existing waste and circular economy policy measures, such as the Landfill Tax and Energy from Waste, could be improved to incentivise businesses towards source segregation of waste, and the adoption of cleaner reprocessing and recycling technologies now readily available. This would reduce waste unnecessarily going to landfill, and would encourage cleaner disposal of waste for businesses and the innovation of further cutting edge waste recycling technologies.



CASE STUDY

Additive Manufacturing Solutions (AMS)

Additive Manufacturing Solutions harnesses cutting-edge computational capabilities to create new materials and processes, developing local capability to recycle metals, including steel. Through working with the Ministry of Defence, AMS has demonstrated success in transforming the UK's retired aircraft, submarines and vehicle systems into valuable, readily accessible feedstock for future use in the UK's defence resilience.

Emissions Trading Scheme (ETS) and Carbon Border Adjustment Mechanism (CBAM)

The BCC welcomed the UK-EU Leaders' Summit in May 2025, and the deal that was agreed with the EU, saying that a permanent deal would help cut costs, reduce waste, and increase sales for businesses. As part of the deal, the UK and EU set out a commitment to work towards linking the UK and EU Emissions Trading Schemes (ETS) as soon as possible through a negotiated agreement over the coming months. It was agreed that this would cover all areas to avoid the risk of carbon leakage of competitive distortions, including electricity generation, industry, and industrial heat generation. The BCC has called for linkage between the UK and EU ETS for over two years, and welcomes the progress in this area.

While the EU's CBAM will come into effect in its definitive form from 1 January 2026; however, ETS linkage with the EU would mean that UK businesses would be exempt upon implementation of any deal from EU CBAM certificate purchase or surrender liabilities, saving UK exporters hundreds of millions of pounds in payments otherwise to be incurred^{xvi}.

Businesses will now be looking to the UK and EU to negotiate and implement ETS linkage at the earliest possible opportunity. Providing stable, long-term conditions for investment and reducing business compliance costs in sectors in scope in the UK and the EU should be at the forefront of decisions taken around these negotiations. Arrangements reached should be mindful of the need for certainty at the earliest opportunity for companies in terms of obligations on certificate purchase arising from the definitive phase of EU CBAM implementation from January 2026 until implementation of any linkage deal reached.

The EU's CBAM will apply to imports of certain goods: cement, iron and steel, aluminium, fertilisers, electricity and hydrogen. However, the scope of the EU's CBAM is set to expand to include organic polymers and plastics^{xvii}. The linkage deal should offer a solid platform for future investment across key sectors from energy to low carbon technology, but provide flexibility where possible. There will be two separate CBAMs in operation from January 2027 in the UK and EU, but co-operation between the UK and EU should significantly improve how they interact, reducing trading costs for companies in both markets, and allowing them to evolve according to the needs of their own economic model. That could mean that some sectors in scope of one CBAM are not in scope of the equivalent scheme in the other market as both CBAMs develop in the future.

In addition, through the CBAM with the EU, the UK government should explore options that could ensure that low carbon technology products manufactured in the UK are not outcompeted by products manufactured overseas in a more carbon intensive environment.



GRID CONNECTIONS

Ensuring that the grid is able to meet both existing and future needs of businesses is essential for both growth and to support the UK's journey to net zero. However, many businesses across the BCC Chamber Network have raised challenges with the grid. Delivering on reforms to the grid is critical for businesses across the UK, and must be delivered as an urgent priority.

Current grid capacity in the UK is not sufficient to meet current business needs. Firms looking to expand their existing operations in the UK are finding that there is insufficient supply to facilitate this. With businesses increasingly dependent on electricity to support the switch to electric vehicles and to decarbonise heating, demand on the grid will only increase.

In addition, many businesses have tried to install onsite renewable energy generation to reduce their own dependency on the grid, but have been given connection dates into the mid-2030s and beyond. This quickly disincentivises businesses who are wanting to do the right thing and support renewable energy, the lengthy connection dates have resulted in them feeling disengaged from the process.

The BCC's Insights Unit has collected research on business views of the grid. In research from 2023, 37% of businesses disagreed that the National Grid was giving them what they needed in terms of energy supply, connectivity, and/or future-proofing. Firms that disagreed made references to the need for a massively expanded grid, as well as the grid's ability to meet future demands, and the lack of connections in certain areas^{xviii}.

This report welcomes the UK government's intention to reform the grid following the announcement in April 2025 that grid connections for businesses that will deliver clean energy will be prioritised, unlocking private investment in clean energy and infrastructure^{xix}. In addition, the government's Industrial Strategy included a commitment to accelerate grid connection timelines for major investment projects, using powers to reduce waiting times to get connected^{xx}.

These reforms are essential to supporting businesses with grid connections both now and in the future, and the government must ensure that there is sufficient investment in the grid to ensure swift connections. With demand on the grid only going to increase as more businesses transition away from fossil fuels to low carbon alternatives, the UK government should set out a roadmap, detailing how it expects demand on the grid to increase, and how it will ensure that this demand will be met. It should also explore opportunities for the UK to have a fully bidirectional grid, to provide the flexibility to allow for electricity to power a property, as well as enable any surplus electricity that is generated to be fed back into the grid, allowing for flexible energy storage.



SKILLS

With the clean energy transition, the UK finds itself facing a range of skills challenges. The first is that there are simply not enough installers of low carbon technologies for domestic and commercial properties. This risks hindering the UK's targets for installation. In addition, there are also skills shortages in foundational skills such as materials science and engineering. To try and address these challenges, one manufacturing business told the BCC that they had set up their own internal training academies. Another said that expanding their business becomes risky if there is not the guarantee of workers with the necessary skills to support their expansion.

CASE STUDY

Skills Challenges

A heat pump business in Chamber membership has highlighted specific skills challenges they have faced. Despite a high level of interest in heat pump training accreditation from installers, they reported that the cost to gain the necessary qualifications for heat pump installations was a significant barrier. This business said:

“The government aims for 600,000 heat pump installations per year by 2028, which would require about 50,000 installers to meet that target. Currently, we only have around 30,000 heat pumps installed per year, serviced by about 7,500 installers. Providing further support for training centres or more incentives for installers would definitely help.”

The second is that many SMEs, from all sectors beyond the low carbon sector, need employees to be upskilled to understand and engage in net zero policy. This includes the ability to calculate and monitor carbon footprints and energy use, support the design and implementation of measures to reduce emissions, and complete carbon emissions reporting forms.

The third challenge is to support those highly skilled workers currently in the oil and gas sector to transition to the low carbon sector. Robert Gordon University has estimated that over 90% of the UK's oil and gas workforce have medium to high skills transferability and are well positioned to work in adjacent energy sectors, including the low carbon sector^{xxi}. Many of these workers are able to transition to the low carbon sector, and must be supported to do so, to ensure that the energy transition happens at the right pace to prevent significant job loss^{xxii}.

The BCC has welcomed the UK government's work on supporting green skills through the Office for Clean Energy Jobs, Skills England, and the upcoming Clean Energy Workforce Strategy. Engagement with industry and businesses is fundamental to understanding existing skills shortages and needs across the UK, as well as the future skills demands.

Specifically in relation to the energy transition from oil and gas to renewable energy in the North Sea, the BCC has called on the UK government to conduct a skills mapping exercise across the UK through developing a plan to understand where, when, how many, and what type of jobs are and will be needed to support the energy transition. In addition, the government should look to harmonise skills standards between the oil and gas sector and the renewable sector, building on existing work through the Energy Skills Passport.

This is critical to recognising the critical role that hundreds of thousands of workers in the UK both now and in the future in delivering a successful energy transition that will continue to support highly-skilled workers and boost economic growth in the UK.

CONCLUSION AND RECOMMENDATIONS

The UK has the potential to be a global leader in the design, development, and deployment of low carbon technologies, both to domestic and global markets. We are home to innovative businesses that are developing new climate technologies. These can drive economic growth and support the global journey to net zero.

However, from our research and engagement with businesses across the Chamber Network, it is clear that there are some significant barriers that hinder the UK's ability to unlock its full potential. These include ensuring that innovation funding can support businesses in developing their products, ensuring that there is clear and consistent policy around planning, procurement and waste, emissions trading scheme linkage, and grid connections, as well as ensuring that businesses have the green skills they need now and in the future.

To unleash the development of low carbon technologies in the UK, and to drive economic growth, this paper sets out the following clear recommendations to the UK government:

Innovation to Commercialisation Funding

These recommendations refer to funding landscape changes, including the need for innovation funding to cover all stages (early-stage innovation, mid-stage evolution, through to late-stage funding), with a focus on achieving commercialisation.

As part of this, the UK government should consider a working party with business and government to evaluate how to accelerate the economic outcomes and commercialisation successes of public sector funding support processes for low carbon technology developments.

RECOMMENDATIONS - FUNDING

- 1. Reinstate early-stage innovation stimulation (“blue sky”) funding to support Higher Education Institutions to work with businesses on emerging innovations.**
- 2. Remove the heavy focus on “funding competitions” in the mid-stage public sector funding programme, introducing support for innovation that can assess and assist low carbon technologies throughout, providing a broader base of funding once they progress towards market readiness.**
- 3. Ensure that late-stage innovation funding is evolved to prioritise a smooth pathway of support to full commercialisation of products. This should create a joined-up approach from the last piece of grant or pre-revenue funding to the first tranche of VC or equity support. This would eliminate the so-called ‘valley of death’ - the persistent gap in funding experienced when trying to secure the final stages of commercialisation and scaling of a product.**
- 4. Ensure UK sovereign wealth funds and equivalent government-backed VC / equity funding is able to effectively compete with overseas Foreign Direct Investments, and is able to meet the low carbon sector’s needs, securing the manufacturing of those technologies, and their maximum economic benefit, for the UK.**

Regulation and Policy Changes to Drive Take-up of Low Carbon Technologies

These recommendations focus on revenue-neutral changes that can drive the take-up of low carbon innovations. As part of this, the UK government should consider a working party with business and government to examine the policy levers that could drive low carbon technology adoption.

RECOMMENDATIONS - POLICY

5. **Ensure a long-term, stable policy environment alongside a clear roadmap for the future of low carbon technology in the UK, with interim targets through to 2050.** This roadmap should align with targets set out in the Climate Change Committee's Balanced Pathway, where possible. This would support private sector investment into the sector and customer purchasing clarity.
6. **Broaden existing procurement requirements for public sector spending (through PPN 06/21 and 09/21) around requirements for existing carbon reduction plans for existing public sector developments over £5 million to all public sector contracts and projects.** This can apply to both national and local levels across the public sector, including education, health, infrastructure, and transport, reflecting what has already been achieved with the NHS.
7. **Look to establish a baseline for environmental standards for all UK residential, commercial, and industrial construction projects, as well as premises being restored or relicensed, setting requirements against a national agreed standard.** This would provide a level playing field nationally around planning guidance, establishing a baseline for low carbon technology deployment.
8. **Introduce a single, universal, free of charge data framework for businesses to report emissions and sustainability impacts to customers and their supply chains, that is both proportionate and comparable.** This would avoid a duplication of effort from businesses having to conform to multiple processes or standards across their many supply chains.
9. **Explore opportunities to require increased recycled content in products across government procurement contracts.** The UK government should also review how existing policy measures can be improved to incentivise businesses towards source segregation of waste, and the adoption of cleaner reprocessing and recycling technologies now readily available.
10. **Through the CBAM with the EU, explore options that could ensure that low carbon technology products manufactured in the UK are not outcompeted by products manufactured overseas in a more carbon intensive environment.**

Grid Connections

RECOMMENDATIONS

11. Ensure that the grid does not constrain businesses' current or future development and is able to reliably provide sufficient power as demand on the grid increases, to service an economy and society increasingly dependent on electricity for heating and transport.
12. Ensure there is sufficient capital investment in the grid to provide swift connection for renewable energy developments within appropriate timeframes to maximise economic benefits, as well as benefits to energy security and supply.
13. The UK government should also explore opportunities to introduce as much flexibility in the grid as possible, including the option to have a fully bidirectional grid in the UK.

Skills

RECOMMENDATIONS

14. Conduct a skills mapping exercise across the UK through developing a plan to understand where, when, how many, and what type of jobs are and will be needed to support the energy transition. The government should also support training focused on low carbon technologies, exploring opportunities to standardise training, with clear, recognisable qualifications understood by the industry.
15. Work to harmonise skills standards between the oil and gas sector and the renewable sector, building on existing work through the Energy Skills Passport.



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