



**THE
GLOBAL
CITY**

UK Carbon
Markets Forum

The role of the UK in carbon markets: a path to global leadership



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Contents

Foreword	4
Executive summary	5
Introduction	7
1. UK strengths in carbon markets	9
2. UK opportunities for leadership	10
a. Scaling demand for a high integrity carbon market	10
b. Scaling supply and enabling a just transition	13
3. Actions for stakeholder consideration	16
Conclusion	18
Annex A	19
Endnotes	20



Foreword



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The impact of climate change is global, falling disproportionately on the most marginalised communities and poorest nations. Today, there is insufficient finance reaching mitigation projects to achieve Paris Agreement goals,^{1,2} as well as to fund adaptation initiatives; a shortfall highlighted at COP29.³ Carbon markets will be critical in bridging this gap, to provide alternative financing options and catalyse a just transition.

After a few challenging years, we are starting to see green shoots in these markets. COP29's historic agreement on a global carbon market rulebook under Article 6 of the Paris Agreement could accelerate climate finance to support Nationally Determined Contributions (NDCs). Corporate demand is increasing, building on a 102% increase in corporate science-based climate targets in 2023,⁴ and driving a high-integrity market; most retirements are now rated BBB or above by BeZero.⁵ Trove Research (now MSCI) and Sylvera have both found that companies buying carbon credits are typically decarbonising at twice the rate of those that do not,^{6,7} while Ecosystem Marketplace found that voluntary carbon buyers are 3.4 times more likely to set approved science-based targets.⁸ Increasingly, UK corporates are leading the charge; in October

2024, Allied Offsets rated 61 purchasers with the top rating of A+, of which eight buyers were UK-based.⁹ The UK government is also increasingly signalling support for the market, announcing its Principles for Voluntary Carbon and Nature Market Integrity at COP29. We look forward to forthcoming consultations on policy, market architecture, and appropriate use of credits in climate claims.¹⁰ The economic implications of a well-functioning carbon market are material, as it supports the outlook for the broader net zero economy in the UK, which already accounts for nearly 3% of UK employment and has grown three times faster than the overall economy.¹¹ While the overall value of the market has consolidated over the past few years, this is (partially) attributed to a shift to quality and a disinclination to invest in lower-integrity credits.

Nevertheless, several challenges remain. Mandatory emissions trading and other carbon pricing systems often lack comprehensive sectoral coverage and do not always provide the necessary incentives. Voluntary projects that deliver climate impact, often in low- and middle-income countries, may struggle to attract finance. This investment gap limits high-quality credit supply; by 2030, McKinsey analysis suggests that there could be up to a 50MtCO₂ global shortage of durable removals.¹² And many companies are pausing carbon credit purchases due to uncertainty regarding the level of climate mitigation from historical projects, and the lack of coherent guidance on climate claims. A recent survey by the We Mean Business Coalition found that if these barriers were addressed, over twice as

many companies would be encouraged to enter the voluntary carbon markets compared to those already expecting to enter the market irrespective of market reform.¹³

The UK has all the critical components required to be a global high-integrity carbon markets hub. The UK has a history of climate leadership, being the first G20 economy to halve emissions from their peak,¹⁴ the first country to set a legally binding net zero target, and the first to publish a dedicated Industrial Decarbonisation Strategy.¹⁶ It possesses geological and natural capital advantages, is a hub for commodities and sustainable finance, and hosts an existing and ever-improving carbon markets ecosystem – with stakeholders committed to the good governance necessary to scale the market responsibly.¹⁷

Amid a ramping up of net zero commitments¹⁸ and shifting dynamics of global carbon markets, it is an opportune moment for reflection on where the UK's opportunities for leadership lie. There is significant value at stake that will only be realised through ambitious collaboration, bold commitment, and good governance. This report will focus on recommendations to support coherent policies for carbon markets, which can be facilitated by the actions of government, the private sector, and other stakeholders. Drawing upon the UK's existing strengths, the Forum calls for stakeholders to scale demand, cultivating a high-integrity and liquid market at scale and support the scale of supply through a just transition approach.



* Indicates a "moderate" likelihood that a given credit achieves a tonne of CO₂e avoided or removed.

Executive summary

A high-integrity, liquid carbon market is beneficial for both the UK and the world. There is a global consensus that carbon finance will be critical to meet the 1.5 degrees threshold goal under the Paris Agreement. High-integrity and liquid carbon markets are an essential tool for scaling this finance and enabling a just transition globally.

The UK has a legacy of leadership in carbon markets, with over two decades of experience in the space. It has also been influential in the regulatory development, design, and operationalisation of carbon markets around the world. For example, many of the integrity standards that exist in today's market, from the Oxford Net Zero Offsetting Principles to ICVCM's carbon credit integrity principles, have been influenced by the UK (see Appendix 1).

Now is a decisive moment for carbon markets globally and this paper identifies opportunities by which the UK may strengthen its leadership by scaling and supporting well-functioning global markets.

The strengths of the UK on carbon markets

The UK has key carbon market strengths that position it strongly to be a global leader in scaling the market, including:

- The UK's distinct **geological and natural capital advantages** to establish cost-effective and high-integrity carbon removal solutions, unlocking new value pools. Taken together, its stakeholders can ensure the country is a major source of carbon credits for domestic buyers and exports to the world.
- The UK's depth of experience in **sustainable finance and commodity innovation**, from both the private sector and government.
- The UK's **comprehensive carbon market ecosystem**, which facilitate world-leading governance initiatives and make it an attractive locale for investment and innovation.



UK opportunities for leadership

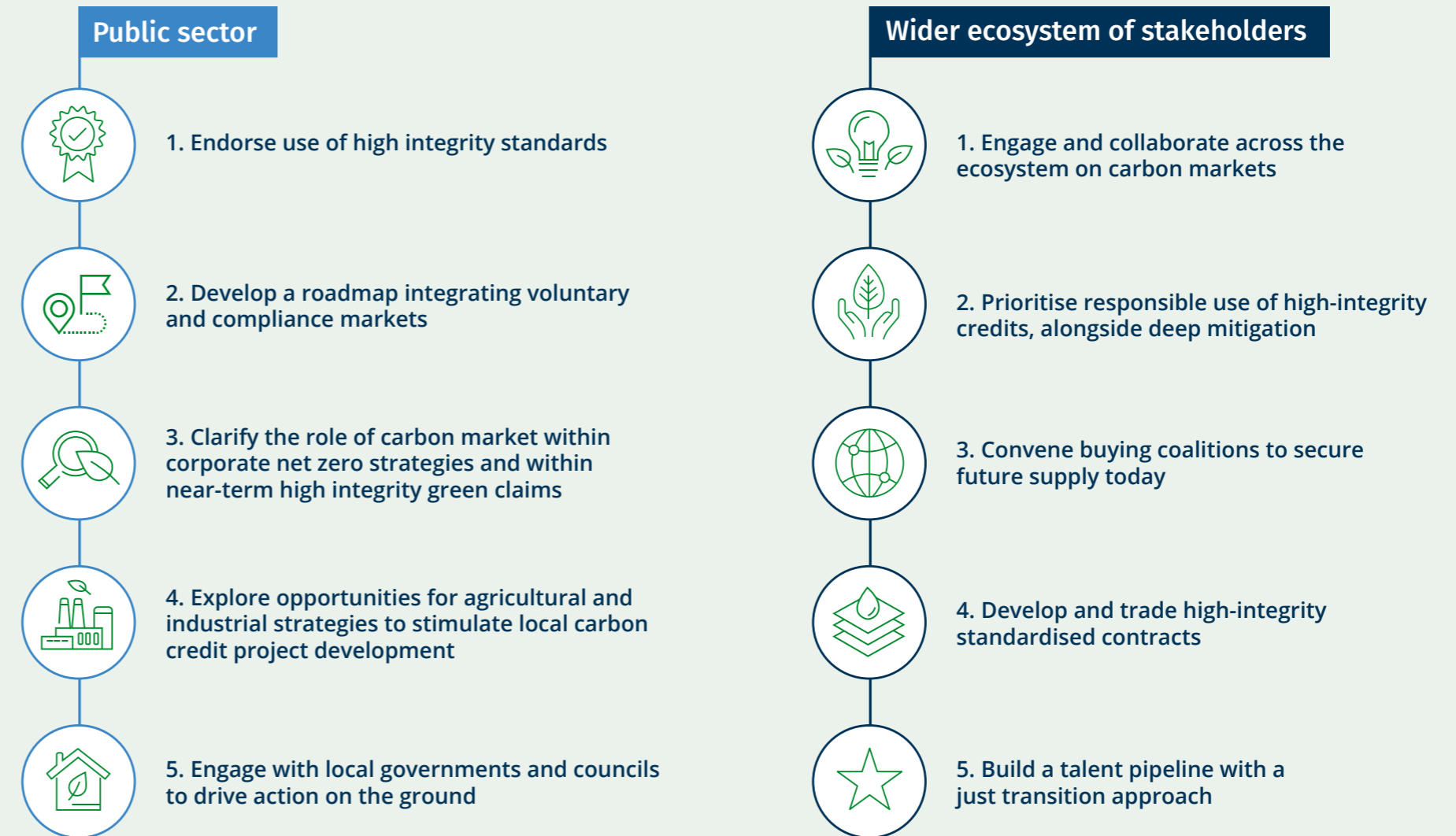
The broad ecosystem of carbon market stakeholders in the UK has many different routes and levers to unlocking growth in the market. These can be categorised into actions to scale demand for high-integrity carbon markets as well as support the development of supply with a just transition approach.

- **Scale demand for high-integrity carbon markets:** Level of demand in the market has continued to be low, which needs to be addressed as markets mature. Action is required both to reduce the barriers to entry and incentivise entry for buyers in the market.

Public sector actors have a key role to play in signalling confidence in the market and encouraging market engagement. Where there has been concern surrounding supply-side integrity, acknowledgement by the government of the progress that has been made to date and potential endorsement of integrity standards, can be impactful signals to buyers. Greater clarity and guidance on when and how carbon credits can be used as part of net zero targets, disclosures and green claims, can also incentivise greater engagement in the market. A more direct approach to scaling demand in voluntary carbon markets could also include the government leveraging the compliance market and policy options like a carbon takeback obligation. The private sector and wider stakeholders also have a key role to play. There is an opportunity to evolve standardised contracts to include more high-integrity thresholds and to collaborate on purchases through buyers' coalitions.

- **Develop supply with a just transition approach:** Capitalising on the UK's geological and ecological advantages, developing domestic projects offers significant value and the potential to establish a major green industry in the country. McKinsey estimates that the durable removal value pool, for example, could potentially be worth up to \$1.2 trillion by 2050 globally under an optimal net zero scenario.¹⁹ To capture this opportunity, there needs to be support for building capacity in the UK. This can be achieved by enabling climate start-ups to access capital in the UK and by investing in skills within organisations and across the country. These investments will help build a workforce capable of seizing this opportunity. Where there are emerging areas of work, blended finance opportunities and public-private partnerships can support in de-risking projects, facilitating knowledge sharing and scaling impact. Given the geographic breadth of the supply opportunity in the UK, it will be important anchor these efforts through engagement with local communities and governments.

Snapshot of actions for stakeholder consideration



Introduction

The UK has over two decades of carbon markets experience. The nation pioneered national emissions trading in 2002 to help the country meet its commitments under the Kyoto Protocol.²⁰ Continued leadership ensured that the UK became a case study on the use of markets for abating greenhouse gas emissions. For example, the UK continually advocated for ambitious emission reductions in the Emissions Trading Scheme (ETS), to move away from free allocations, and broaden sectoral coverage. The original design of the UK ETS further informed the UN Clean Development Mechanism (CDM), an international carbon credit mechanism developed under the Kyoto Protocol.

As the ecosystem expanded beyond compliance markets into CDM carbon projects, the UK began to cultivate leadership in the voluntary carbon markets (VCM) as well, as illustrated in Figure 1 and Table 1. The UK holds

extensive experience from participating in the four archetypes of markets in operation today. It is well positioned to support climate-critical global markets for the world to reach net zero. These markets will also be critical for the UK government – as well as entities across the private, public and third sectors – to achieve their own regulatory obligations and voluntary carbon offsetting commitments.

This is a pivotal moment for carbon markets. COP30 will mark 20 years since the Kyoto Protocol entered into force and 10 years of adoption of the Paris Agreement. The COP30 Presidency is calling in all public and private funds to scale climate finance to at least USD 1.3 trillion per year by 2035.²¹ Carbon markets will have a role to play in mobilising towards this target. This paper identifies opportunities by which the UK may support well-functioning global markets.

The following three sections: (1) highlight why the UK is uniquely positioned to scale high-integrity carbon markets, and (2) explore opportunities for the UK and (3) summarise key recommendations for the public sector and wider stakeholders to activate the opportunities outlined above.

Recommendations presented in this paper build upon a series of interviews with a diverse array of stakeholders in the UK's carbon markets ecosystem conducted in 2024 and 2025. This paper is delivered as joint research by the City of London Corporation and McKinsey & Company for the UK Carbon Markets Forum. The Forum seeks to operationalise a high-integrity carbon market ecosystem in the UK, scaling demand, services, and supply, and to leverage the UK's potential as a global hub for carbon market activities.



The UK holds extensive experience from participating in the three types of VCMs in operation today.

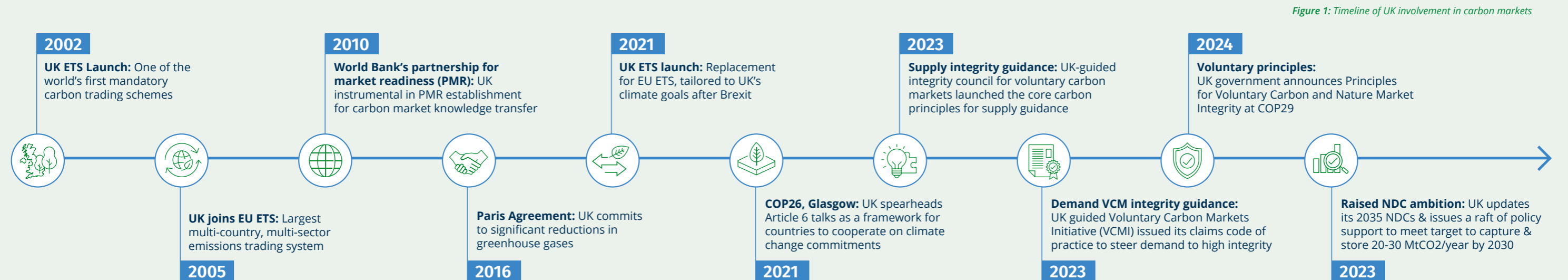


Figure 1: Timeline of UK involvement in carbon markets




Table 1: UK experience in carbon markets

Market type	UK actions
<p>National Compliance Market Led by the UK government with the aim of incentivising climate mitigation in sectors or activities of interest in a country, state, or region</p>	<p>The UK ETS was the first national, multi-sector emissions trading program established, before it merged with the EU ETS.</p> <p>The UK ETS now applies to energy intensive industries, the power generation sector and aviation. While still emerging, the new UK ETS has reached a value of around £75 billion per year in carbon trading. The secondary market of the UK ETS experiences over 500 trades per day, with an average daily value around £30 million.²²</p>
<p>National Voluntary Market Led by the UK government with the aim of incentivising climate mitigation in sectors or activities of interest in a country, state, or region</p>	<p>Jurisdiction-specific crediting standards in the form of the Woodland Carbon Code (WCC) and the Peatland Code, both issuing measurable and verifiable carbon removals.</p> <p>The UK government directly develops and manages the WCC to certify woodland creation projects, whereas the Peatland Code is a UK-government backed standard developed and managed by IUCN UK Peatland Programme for peatland restoration activities. Together, they cover over 110,000 hectares of woodland creation and peatland restoration, with expected annual removal of 17MtCO₂.</p>
<p>International Voluntary Markets A decentralised market where actors can voluntarily buy or sell carbon credits</p>	<p>UK corporates are estimated to have retired 60 MtCO₂ of credits between 2009 and 2021, although the share of global demand has significantly decreased in recent years.¹⁷</p> <p>Many integrity standards have originated in the UK to steer the scaling of voluntary markets globally, from SBTi's net zero claims to ICVCM's carbon credit integrity principles.</p>
<p>UN-backed Markets Frameworks adopted through collective decisions under United Nations bodies</p>	<p>UK-based organisations engaged in more than 2,800 projects that issued over 1GtCO₂ in certified emission reductions under the Clean Development Mechanism.²³</p> <p>The UK spearheaded Article 6 negotiations at COP26 in Glasgow which laid considerable groundwork for the global carbon market rulebook.</p> <p>A unique sector-specific market is the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which was established by a UN agency, the International Civil Aviation Organization (ICAO). The UK played a leading role in the development and agreement of CORSIA by ICAO. It is also supporting and encouraging other countries to participate and seeks to strengthen and improve the scheme over time. In December 2024, the UK published a consultation seeking views on implementing CORSIA in the UK, which followed the first meeting of the Jet Zero Taskforce – a new group charting a clear path toward cleaner aviation.²⁴</p>



1. UK strengths in carbon markets

The UK is well positioned to scale supply and demand while cultivating integrity during this pivotal moment for global markets. Building on its geological and natural capital advantages and its notable strengths as a financial markets, commodities and sustainable finance hub, an ever-improving carbon markets ecosystem has emerged, distinguished by stakeholders committed to good governance.

 Geological and Natural Capital Advantages	 A Hub for Sustainable Finance and Commodities	 Carbon Markets Ecosystem Committed to Good Governance
<p>The UK has distinct geological and natural capital advantages to establish cost-effective and high-integrity credits, unlocking new value pools.</p> <ul style="list-style-type: none"> • 70% of UK land is used for agriculture,²⁵ with highly arable land offering plentiful carbon farming opportunities: the UK has an emerging biochar ecosystem, including Wakefield Biochar, which has delivered the third highest volume of durable removals globally.²⁶ • Similarly, there is opportunity to take advantage of Scotland's alkaline rocks for terrestrial weathering enhancement, as is already being done in field trials with UNDO Carbon. New land use practices offer both removals and avoidance potential, with the Climate Change Committee's latest Carbon Budget assuming a net zero land use budget by 2050.²⁷ • The UK has the potential to geologically store over 70 GtCO₂,²⁸ equivalent to more than 500 years of the UK's annual emissions. • The UK government has already set out a target to capture and store 20-30 MtCO₂ per year by 2030 and over 50 MtCO₂ annually by 2035.²⁹ This offers significant potential to store industrial emissions and develop durable removals. McKinsey estimates that, by volume, up to 20% of durable removal capacity announcements are UK based.³⁰ • The UK's natural advantages have already attracted significant foreign investment, including the \$70M Qatar Carbonates and Carbon Storage Research Centre at Imperial College London.³¹ 	<p>The UK is continuously at the forefront of sustainable finance and commodity innovation, from both the private sector and government.</p> <ul style="list-style-type: none"> • Since 2010, the UK has seen around £200 billion invested into low carbon energy.³² • In 2024, companies and funds on the London Stock Exchange (LSE) with the Green Economy Mark represented £172.8 billion in capital.³³ The LSE was also the first exchange globally to set up a green bond segment. To date, London's Sustainable Bond Market has raised over approximately £260 billion (reported as \$340 billion) through 564 bonds.³⁴ • The UK is home to many world-class financial institutions. For example, London hosts more than 170 foreign banks and banking branches.³⁵ • UK government interventions have supported the evolution of the sustainable finance sector. The National Wealth Fund, a UK government-owned policy bank with £27.8 billion of financial capacity, has cumulatively invested £4.7 billion, unlocking approximately £12.3 billion in private capital, and enabling over 17,000 jobs – predominantly focused on low-carbon infrastructure.³⁶ • The UK's legal legacy and architecture is a strength for carbon markets. See the Deep Dive box on <i>Enabling Legal Environment for Carbon Trading</i> in Section 2 for full details of how trading contracts and settlement procedures have helped shape modern carbon markets. 	<p>The UK boasts a comprehensive carbon market ecosystem, which facilitates world-leading governance initiatives and makes it an attractive locale for investment and innovation.</p> <ul style="list-style-type: none"> • At COP29, the UK government released the 'Principles for Voluntary Carbon and Nature Market Integrity'.¹⁰ This formalises a longer-standing, multi-stakeholder ambition in the voluntary markets. • The UK is home to key institutions such as the Climate Change Committee (CCC), the Chief Scientific Adviser (CSA), and the Government Office for Science (GO-Science) that underpin the development of science-aligned climate policy. • The UK's compliance market is a leader in integrity. Under UK regulations, participants are obliged to follow rigorous monitoring, reporting, and verification (MRV) processes, with 23 UKAS-accredited third-party organisations providing verification.³⁷ • World leading VCM integrity initiatives have been developed in the UK, from VCMI to ICVCM, supported by academic leadership such as the Oxford Offsetting Principles (<i>See Annex A for a summary of key initiatives</i>). • UK credit buyers increasingly focus on integrity, and leadership in removals, with notable examples including active changes in carbon credit procurement policies from the likes of British Airways*, Rio Tinto, and UK corporates joining buyer coalitions.** • The UK houses some of the leading market actors within VCMs globally, with a highly disproportionate concentration of critical players. For example, UK entities comprise ~15% of all those listed on Puro's removals mapping³⁸ – a remarkable number considering that the UK economy is only 2% of global GDP.³⁹ Also, in the newly emerging market, it is notable that both leading rating agencies, BeZero and Sylvera,⁴⁰ are based in the UK. • The UK carbon insurance market was an early mover globally, providing some of the first dedicated carbon insurance products to the market.^{41,42}

* British Airways intends to become the largest carbon removals purchaser in the UK and the largest airline purchaser of carbon removals globally, financing innovative solutions such as enhanced weathering. Rio Tinto are seeking value chain control of projects, investing in nature-based solutions.

** Partnerships between buyers are also allowing knowledge to be consolidated and best practices shared; Unilever, Burberry, and GSK have all been active participants in the LEAF Coalition, which has pioneered improved avoided deforestation methodologies and will play a pivotal role in the largest-ever carbon markets transaction at COP30, estimated to be worth \$180mn to the Brazilian state of Para.⁴³

2. UK opportunities for leadership



The commitment to stay within the global 1.5°C climate threshold and the urgency for scaling climate finance to meet this ambition, makes it a pivotal moment for carbon markets. Notably, the global sustainable finance market is facing significant headwinds. Increased uncertainty from geopolitical tensions, ever evolving global green regulatory regimes and high global interest rates, have all contributed to a tough market environment. Yet there have also been great enablers for the market. The past few years has seen an increasing focus on nature and biodiversity protection, including new nature investment and disclosure guidance from the Taskforce for Nature-related Financial Disclosure. Meanwhile, durable removal technology costs have continued to fall due to innovation and economies of scale, while monitoring, reporting and verification improvements have given greater confidence to the quality of emission reductions. This evolving global landscape creates an opportunity for UK to leverage its strengths and show global leadership both as a leader for sustainable finance and within carbon markets.

The Forum has identified key opportunities for UK leadership in carbon markets, focusing on scaling demand for a high integrity market, and expanding supply, whilst supporting a just transition. The following section provides an overview of each of these areas, alongside tangible opportunities for action.

a. Scaling demand for a high-integrity carbon market

UK voluntary credit retirements in 2021 were estimated at just 0.1% of global demand.¹⁷ If the UK is to realise the market's full potential, it will need to grow its own domestic demand, while channelling international demand through its markets to build liquidity. The Forum outlines five key enablers to do so below.

1 Building market confidence in supply-side integrity

Increased scrutiny and scepticism around the integrity of the carbon market has been a challenge to scaling demand. In response, standard setters like the ICVCM, have made great strides in creating guidelines on what integrity looks like through their Core Carbon Principles. To date, ICVCM has approved six programmes and 20 methodologies,⁴⁴ with many more in the pipeline for review. As work progresses in the voluntary standards space, endorsement by the government of these efforts could be a route to encourage confidence in the supply of high-integrity projects and kick-start demand in the market. Many interview participants noted that the UK's *principles for voluntary carbon and nature market integrity* were a welcome first step, signalling support for the market, endorsing the use of high integrity principles and acknowledging the work of the ICVCM and other global standard setters.

In addition to the adoption of high integrity standards, the UK's strong professional services industry is instrumental to bolstering integrity and confidence in the market. These industries can capture significant value from VCM ancillary services. McKinsey's analysis of carbon removal transactions indicates that 10-40% of overall revenue are generated by such services.¹⁹ Key service offerings include carbon financing, legal expertise, technical project consultancy (including validation and verification), and an emerging insurance market. Even if a supply of low-quality carbon credits remains available in the market, these service providers can help buyers navigating towards high integrity and managing risks of associated with low-integrity credits. Each of these areas presents an opportunity for the UK to use its strengths and enhance trust in the carbon market.

For instance, London's insurance market is the largest in the world, twice the size of its nearest competitor, and contributes £50 billion annually to the UK economy.⁴⁵ Developing new carbon credit insurance could provide certainty to participants by mitigating the risks associated with carbon credit projects. Early insurance

offerings, including from London-based Kita,⁴⁶ have generally focused on buyer protection from project underperformance, but is expanding to include other products, including unanticipated reversal events exceeding buffer pools or protection against changing claims and standards validity. This innovation and de-risking could make carbon projects more attractive for both investors and buyers.



DEEP DIVE: Enabling Legal Environment for Carbon Trading

The UK's work on trading contracts and settlement procedures is among the most important contributions to the development of modern carbon markets, rooted in centuries-old commodities and derivatives trading practices. The UK experience extends to definitions of trading instruments, terms of trade, contractual obligations, and framework documentation that may facilitate a more predictable and transparent trading of carbon units. The UK is also home to around 200 foreign law firms from around 40 jurisdictions, creating a rich ecosystem of legal expertise.⁴⁷ These strong legal foundation in the UK create confidence for participants to enter the market.

The UK first developed forward contracts for commodities trading in the 19th century as way to capture the distant dates between time of contracting, delivery, and payment of goods purchased from overseas. International standards on quality of commodities framed forward contracts by facilitating verifiable specifications on products purchased. Traders organised around commodity-specific market associations (e.g., cotton, metal) developed standard contracts to specify the quality or grades of commodity purchased and established clearing houses to facilitate the settlement of price and quality claims differences, a valuable practice for the growth and efficiency of a market.⁴⁸ The UK also originated arbitration procedures to settle any disputes on forward contracts, which became readily acceptable throughout the world.⁴ Futures contracts were also introduced as a measure to hedge against price changes on the goods purchased.⁴⁹ These practices have informed proposals on the legal implications of voluntary markets, the definitions and fungibility of carbon credits, and their accounting by corporates when trading them or using them for offsetting own emissions.

2 Scaling demand through compliance markets and mechanisms

Integrating voluntary carbon markets (VCM) with compliance markets is a key opportunity to boost VCM demand. It can also reduce ETS costs and enhance abatement efficiency across the economy. One example of where the UK could do this is to look to Singapore's Whitelist, which defines approved voluntary credits for partially meeting carbon tax obligations.⁵⁰ Another option could be to integrate the Woodland Carbon Code (WCC) into the UK ETS. This could unlock an additional 11-26% of total afforestable land in the UK and deliver an additional 7.5-19 MtCO₂ of sequestration – although concerns have been raised about the possibility of fossil emissions being compensated by temporary, nature removals.⁵¹ The UK could also look at integrating such removals as a way to meet a future CBAM requirement, potentially requiring them to “geographically inset” to channel funding towards UK projects.⁵²

Beyond compliance market mechanisms, potential regulatory mandates such as a Carbon Takeback Obligation (CTBO) can help increase demand for carbon dioxide storage to compensate for ongoing and residual emission. of the CTBO is a targeted mandatory obligation requiring fossil fuel extractors and importers to capture and permanently store a fraction of carbon dioxide emissions, increasing over time.⁵³ Adding an offsetting compliance option for residual emissions could help signal demand for high-quality and durable removal credits in both international and domestic VCMs, increasing market liquidity. Emerging best practice guidance suggests that such offsets should likely follow the like-for-like principle, ensuring durable fossil emissions are counter-balanced with similar durable removals. It could also minimise transition risks for UK fossil fuel producers, ensuring they meet net zero targets on or ahead of time while minimising long term costs by investing in and developing much of their own infrastructure.

3 Guiding on the use of carbon credits within net zero strategies and green claims

Guidance on net zero targets and green claims can be used to encourage demand for high integrity carbon credits. The Science Based Targets Initiative (SBTi) is a global standard setter for net zero

targets and holds validated targets for over 7,000 companies.⁵⁴ SBTi is currently reviewing its voluntary Corporate Net Zero Standard and inviting market feedback on incorporating carbon removal into corporate climate strategies, and recognition for using high integrity carbon credits in beyond value chain mitigation activities.⁵⁵ Clarity on whether and how these can be used could unlock demand for a large section of companies with SBTi targets.

Before reaching net zero, further government guidance for intermediate targets and in-year carbon credit accounting would also signal improved confidence in the market. One example could be to provide guidance to account for carbon credits in emissions accounting, as has recently been done in the UAE.⁵⁶ Similarly, asking companies to forecast the removals required for net zero pathways in transition planning reports could further enhance the legitimacy of the voluntary market. Ideally, this would be supported by intermediate removal targets from the likes of SBTi. Similarly, legitimising VCM's intermediate claims may also provide an option to stimulate demand in the more near-term. As the UK government reflects on its principles for voluntary carbon and nature market integrity, it should consider the existing landscape of regulatory and voluntary standards.⁵⁷



Aside from clarity around net zero targets, the right guidance on green claims could also be impactful in building integrity, confidence and demand in the VCM. In recent years, a cloud of scepticism has gathered around carbon neutral claims. This has cast doubt on the legitimacy of using carbon offsets as well as net zero claims linked to carbon removals. Scepticism has increased the perception of risk, which has naturally dampened market demand. UK regulators, including the Advertising Standards Authority (ASA) and the Competition & Markets Authority (CMA) have published guidance for companies navigating risks on green claims.⁵⁸ For example, the ASA's guidance recommends that marketers should look to include accurate information about whether and the degree to which they are basing green claims on offsetting.⁵⁹ The EU has gone further through the Directive on Empowering Consumers for the Green Transition by prohibiting reliance on offsets to make product carbon claims.⁶⁰ The VCM's Claims Code of Practice offers an alternate high watermark for companies looking to mitigate risks making green claims.⁵⁸ Clarity from the UK government on the expectations of companies can help build confidence for companies and incentivise use of high-integrity carbon credits.

Meanwhile, product level claims can often be realised sooner than at the corporate level. There is an emerging opportunity for high-quality credits to compensate for residual emissions at the product level. This is particularly the case in East Asia and the Middle East, where demand for carbon-offset products is rapidly growing, with buyers (both B2B and B2C) willing to pay a premium*. Government intervention could include endorsement of a high-integrity carbon label for projects, potentially in collaboration with the British Standards Institution (BSI). Legitimising a scheme for this could help stimulate confidence and demand from more green-conscious buyers.

4 Scaling secondary market demand and high-integrity standardised contracts

Beyond direct demand to retire credits against emissions (or allowances, in case of ETS integration), a liquid secondary contract market requires globally tradeable products that are

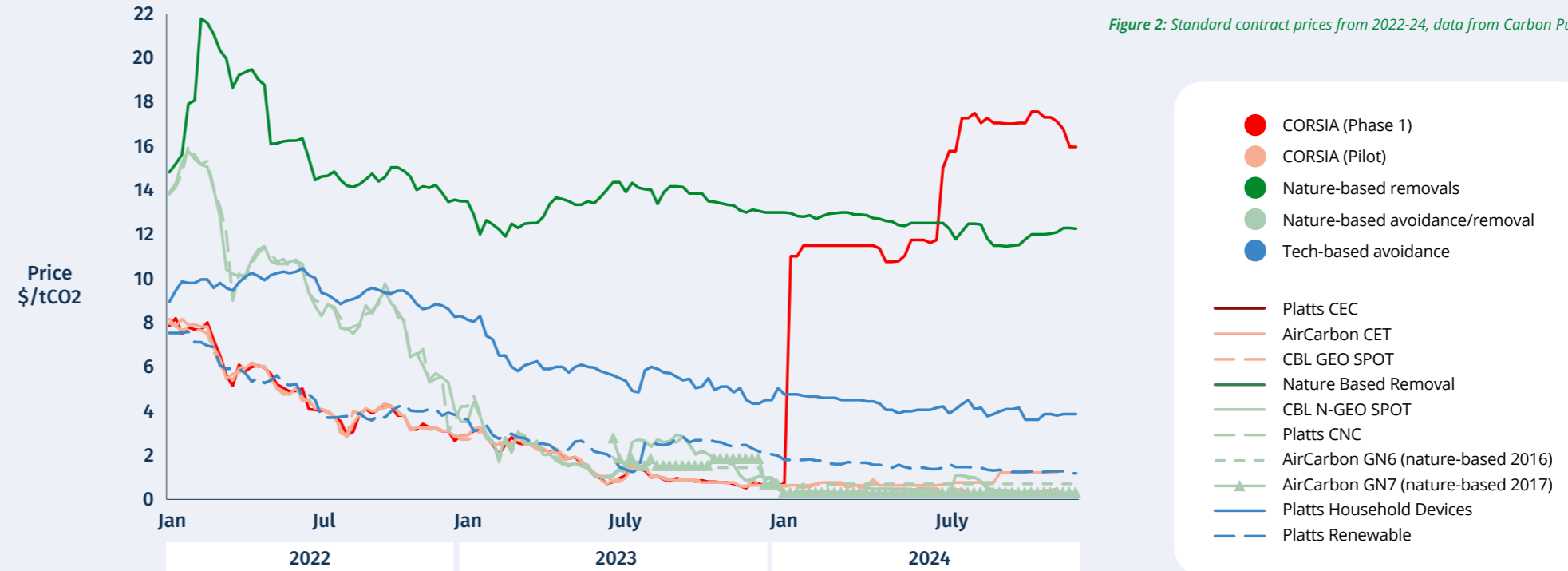


Figure 2: Standard contract prices from 2022-24, data from Carbon Pulse

accessible and attractive to corporates, traders, and retail investors. This is a key step towards commoditisation of carbon markets but currently faces integrity challenges. There is a need for a new wave of contracts that offer minimum integrity and quality guarantees.

Since spiking in 2021, over-the-counter VCM prices have remained mostly stable. However, Figure 2 illustrates that several standard contract products without integrity safeguards have seen prices collapse over the last three years. The problem results from the nature of standard contracts, where demand is met by the cheapest (and therefore, typically, lowest quality) credit that meet certain criteria. In a market that lacks

commoditisation, this presents a major headwind for building the necessary liquidity to scale.

Notably, the few standard contracts that have kept or increased in value are those of higher integrity or quality. This includes Platts CEC, a CORSIA-eligible contract, which has benefitted from a significant tightening of supply as the CORSIA scheme moved from Pilot to Phase 1 in 2024. In contrast, contracts that have not transitioned to the Phase 1 (AirCarbon CET and CBL GEO SPOT) have continued to see prices fall. Nature-based removal contracts, often viewed as "higher quality" than avoidance credits, have also broadly retained their value. This

stands in sharp contrast to general nature indices that allow far cheaper avoidance credits (in light green).⁶¹

New products, with integrity safeguards, will likely be needed for corporates to have sufficient confidence to invest at scale. The market is beginning to move in this direction, with Xpansiv, the world's largest carbon trading exchange, launching a Core Carbon Principles aligned contract last year.⁶²

*Green steel, for example, can often reach a premium of >\$200/t, or equivalent to >\$100/tCO2 – especially when selling to the European market; cost competitive with the cheapest durable removals. Carbon-offset steel could go even further, complementing mitigation with removal of the remaining emissions and providing an ever "greener" product. It could also, if the EU were to introduce removals into its ETS, offer opportunities to minimise the cost of meeting CBAM requirements in sectors that will both be adversely impacted by CBAM (steel, fertilisers, etc.) and typically command significant green premiums.

5 Leveraging buyers' coalitions

The creation of buyers' coalitions can be a high-impact lever to scaling demand in carbon markets. These coalitions can be a cross-ecosystem collaboration, where a group of entities work together to buy credits collectively. There are many benefits to this approach for buyers, namely the opportunity to pool resources for knowledge and due diligence, negotiate better pricing (leveraging economies of scale), and diversify portfolio risk. Such opportunities could begin to move carbon credit budgets away from marketing or sustainability teams and instead to Chief Finance and Investment Offices, which may also be better placed to consider the transition risks of purchasing carbon credits as well as the accounting implications of carbon credits. The demand signals from buyers' coalitions also support suppliers with greater confidence to scale and make informed investment decisions.⁶³

We have already seen buyers' coalitions make a significant contribution to the market and demonstrate replicable models. There is a need for UK corporates to take leadership here, in a space that has historically been dominated by coalitions of US tech and professional services companies in the likes of NextGen and Frontier. However, three UK corporates – Unilever, GSK, and Burberry – have been involved with the LEAF Coalition, which is comprised of 25 corporates, 27 forest governments, four donor governments and a range of civil society groups and non-governmental organisations. The LEAF Coalition has pioneered improved avoided deforestation methodologies and will play a pivotal role in the largest-ever carbon markets transaction at COP30, estimated to be worth \$180mn to the Brazilian state of Para.⁴⁴ This illustrates the value that a cross-ecosystem effort through buyers' coalitions can have in scaling demand.



b. Scaling supply and enabling a just transition

The potential to develop carbon projects offers opportunities to stimulate economic growth and revitalise industrial clusters. Capitalising upon the UK's geological and ecological advantages, there is great value to be realised in developing projects domestically, with the potential to develop a major green industry in the UK. McKinsey estimates that the durable removal value pool, for example, could potentially be worth up to \$1.2 trillion by 2050 globally under an optimal net zero scenario.¹⁹ Collaboration across actors will be required to scale the supply of carbon projects necessary for net zero.

1 Supporting companies to raise finance

While the UK has significant potential, the successful implementation of such projects will necessitate substantial infrastructure development. This presents an opportunity to facilitate a truly just transition, supporting regions of the UK which are often overlooked from an investment perspective. Innovate UK has suggested that plans to decarbonise six industrial clusters across the UK could crowd in £22 billion of investment by 2040 – by which point at least one cluster could be the world's first to achieve net zero operational emissions.⁶⁴ The UK will only achieve supply at scale if companies scale, raise finance, and, in some cases, go public. Today, many of the UK's most exciting carbon technology start-ups are looking abroad – both for capital and for physical space to implement their projects. An important open question for cultivating a high-integrity and liquid carbon markets, as well as the UK economy at large, is how to make UK valuations competitive and how to encourage investment. Both private and public listings trade significantly below their American (and even European) counterparts,⁶⁵ and a wave of high-profile IPOs have seen key businesses leaving the UK in recent years.⁶⁶ Given the existing advantages of the UK carbon market ecosystem, retaining these businesses will become increasingly important as they scale. Moreover, there may be a need to raise finance in non-traditional markets; in particular, moving from equity financing towards more project finance models. Some of this could come through LSE's Sustainable Bond Market, while innovative new carbon indices could offer further opportunities.



2 Investing in skills

Among the most pertinent aspects of this transformation is the transition of the workforce from declining industries to new green jobs. This transition is essential to ensure that the shift to a low-carbon economy is inclusive and equitable, avoiding the mistakes of past transitions, such as the coal-to-gas shift, which left many communities economically disadvantaged. The UK has a significant number of workers in traditional industrial sectors that are facing decline, including oil and gas. By some estimates, around three million workers will need to be retrained.⁶⁷ An opportunity to facilitate a just transition could include investing in retraining and upskilling programmes to support these workers to transition into carbon project development and contribute towards scaling the UK's supply of carbon credits. The Carbon Capture and Storage Association estimates that the UK's North Sea capacity could create around 70,000 new jobs and retain 77,000 existing ones, projecting £40 billion of private investment by 2030.⁶⁸

The UK is well renowned for its rich talent pool, hosting four of the world's top ten universities.⁶⁹ There is continued opportunity for the education sector to offer new courses to equip the next generation of carbon market leaders with critical technical skills. For example, the University of Oxford hosts Global Youth Climate Training Programmes to build capacity for young people on international climate policy, as well as hosting free masterclasses on international carbon markets for public sector and non-profit employees globally.^{70,71} Networks like the Greenhouse Gas Removal (GGR) Future Leaders Network are examples of successful cross-ecosystem collaboration leveraged to shape ideas and build capacity in the carbon space.⁷² The private sector must also play a role in equipping their workforces with the skills needed and capacity building for a green transition. London is widely recognised as having a higher concentration of sustainable finance investors, ancillary services, and professionals, than any other major city.⁷³ To maintain this leadership, investment in human capital is needed. Investment in carbon market skills could look like a dedicated rotational carbon market apprenticeship or internship scheme, partnering with incumbents and startups to broaden the future talent pool.

3 Exploring agricultural and geological carbon frameworks

To scale supply of carbon projects, there is a need for dedicated strategic frameworks that cover both geological and agricultural carbon, including research and development support, transport, storage, funding, and methodological recognition. The current CCUS Cluster Track 2 does not explicitly include carbon dioxide removals (CDR),⁷⁴ and more dedicated support is necessary to scale geological removals in the UK. The EU Carbon Removal Certification Framework is one example offering clarity to investors and project developers, although there would be a balance between defining acceptable frameworks versus specific methodologies. Notably there is also no similar cluster framework for non-geological removals, with agricultural and nature-based removals comparably neglected in government funding plans, despite the apparent natural advantages of the UK. Once again, there is a significant opportunity to work with local farmers to co-create a more sustainable vision for the UK – something that has, to some extent, been successfully done through Woodland Carbon Code (WCC). At the same time, the UK has historically struggled to attract capital investment for these projects amid reduced investor confidence, attributable in part to a combination of high debt costs, limited corporate liquidity, and stringent planning regulations. McKinsey estimates that, to date, the durable removal pipeline in the UK has less than half the funding per tonne announced when compared to the global average.³¹ Engaging with key stakeholders on developing robust frameworks could be the start of a broader conversation to tackle investment barriers in the space.

4 Utilising public-private partnerships

If the UK is to realise its full leadership potential, transferring and commercialising carbon research in the country's academic institutions will be essential. Public-private partnerships (PPPs) can bring together government bodies, academic institutions, and private companies to create an ecosystem that fosters innovation, supports commercialisation, and drives economic growth. While the UK lagged behind many peer nations in this respect, there has been a recent resurgence, often led by UK Research and Innovation (UKRI) dedicated funding.⁷⁵ Tech hubs and corridors such as UCL East and Imperial's West Tech Corridor in London,^{76,77} as well as the Leeds Innovation Arc,⁷⁸ Cambridge's Silicon Fen,⁷⁹ and Manchester's Innovation Clusters,⁸⁰ among others, have been successful in transforming how the UK translates fundamental academic research into large-scale impact. Co-location of new manufacturing hubs, especially in the case of potentially modular technologies such as DAC, as well as financiers and investors, will prove critical. Ideally, all UK projects, funding, and certificates from this cross-actor supply side support would be transparently available in a single place, potentially linking to the Article 6 registry.

5 Engaging local governments and communities

Public awareness of carbon solutions remains low globally. There is a need for local governments to engage communities and build awareness of the role carbon markets play in the present transition to a low-carbon future. Working with devolved governments and local councils will be critical not only for acceptance, but also to activate value creation opportunities on the ground. While community-based development projects are a common model in the Global South, often with benefit sharing requirements to local communities, there is a need to ensure that same equity and community participation at home in the UK. This becomes particularly relevant for geological storage of carbon, where communities may view the exercise as "waste disposal" unless they see value in the proposal.



DEEP DIVE: UK's Carbon Market Leadership Globally

Carbon markets offer an opportunity for climate diplomacy leadership and for the UK to shape global carbon market standards while scaling development finance in low-income countries. The UK already has a strong legacy of international leadership in the space. Starting with the CDM, it was then instrumental in the World Bank's Partnership for Market Readiness (PMR), launched in 2010, which helped to transfer knowledge of these carbon markets to nearly 30 developing, emerging and transition countries.⁸¹

The UK was also instrumental in setting up the rulebook for Article 6 international carbon markets. However, currently the UK is not expected to be a major demand driver in the Article 6 market. The Climate Change Committee's (CCC) Seventh Carbon Budget has noted that the UK's net zero goals can be achieved through domestic action without use of international carbon credits.⁸² However, the CCC has acknowledged there may be potential future circumstances which might warrant their use. The UK government may look to work with the CCC in future to further review the role of carbon credits in NDC-compatible pathways, including the use of Article 6 credits, to raise UK decarbonisation ambition. Potentially, the UK could pool its due diligence expertise with other Article 6 buyers, diversifying its portfolio of credits in a country-level buyers' club.

The UK can also show significant leadership globally through the strength of its ancillary services. As the carbon market grows internationally, this could be a major source of UK exports in the coming years. The UK can bring expertise from both compliance and voluntary markets to the world. For example, IETA estimates the global value pool for Article 6 to be \$100bn by 2030; historically 10-40% of the value pool has gone to ancillary services, potentially creating a \$10bn+ value pool that the UK is well placed to cover.⁸³ Some UK service providers have begun to diversify their products to include Article 6 advisory services and products. For example, the carbon credit insurance provider Kita offers a political risk insurance to protect against those risks associated with host country authorisation changes, under Article 6.⁸⁴ Article 6.8, which covers non-market approaches to assist in the implementation of NDCs, may also be a route by which the UK can showcase ancillary services providing capacity building assistance or technology transfers to developing countries.






3. Actions for stakeholder consideration

The UK can best leverage its strengths through holistic, interdisciplinary, and multi-stakeholder collaboration. There is a collective responsibility, across all concerned actors, to make a difference, and position the UK's demand, services, and supply at the forefront of a carbon market that works for the UK and the world.

The Forum has identified a selection of potential actions for the public sector and the wider ecosystem of carbon market stakeholders to consider. These are intended to spotlight the levers for scaling demand for a high-integrity carbon market and scaling supply and a just transition. Proposals are not intended to be exhaustive but instead aim to facilitate a continued conversation as the UK government and the broader ecosystem reflects on how to build leadership in this emerging market.

Public ^A		
Actions	Description	Impact
1. Endorse high integrity standards	<ul style="list-style-type: none"> Explore how to identify and endorse high integrity standards for carbon credits. This might be possible as part of the government's consultation process on the UK's <i>principles for voluntary carbon and nature market integrity</i>. Raise awareness of ancillary services that support the derisking of VCMs, for example, carbon rating agencies, insurance providers and firms providing risk advisory services. 	<ul style="list-style-type: none"> Create confidence in the overall level of integrity in the carbon market. Raise awareness for risk averse companies on how to manage any outstanding risks. Increase investment in carbon market projects through additional demand and more stable product quality perceptions.
2. Create a roadmap integrating voluntary and compliance markets	<ul style="list-style-type: none"> Consider, in consultation with stakeholders, the benefits of developing a clear roadmap, with timelines, to integrate compliance and voluntary demand through a unified interoperability framework with clear eligibility guidelines and quality standards. Explore the possibility of a North Sea carbon takeback obligation, transitioning over time to full coverage of residual upstream emissions with durable removals. 	<ul style="list-style-type: none"> Raise market efficiency, attract diverse participants and boost demand for carbon credits – particularly removals. Future-proof remaining UK fossil fuel production against transition risks while compensating for climate impacts.
3. Clarify the role of carbon market within corporate net zero strategies and within near-term high-integrity green claims	<ul style="list-style-type: none"> Consider clarifying advertising guidance as to how carbon credits can be used to compensate for residual emissions in a target year, and which credits can be used to support which claims (carbon-neutral, net zero, etc.). Consider the potential value of intermediate target initiatives (e.g., VCMI) as near-term government incentives to offset some, but not all, emissions before a final target year; potentially with updated guidance on how UK companies account for this in sustainability reports. Consider creating, or endorsing, product level carbon offset standards – which require deep mitigation alongside compensation. 	<ul style="list-style-type: none"> Provide certainty on the value of voluntary credits to corporate social responsibility and climate claims. Stimulate near-term demand by offering an “endorsed” stamp of approval. Offer opportunities for green premiums for UK industry.
4. Explore opportunities for agricultural and industrial strategies to stimulate local carbon credit project development	<ul style="list-style-type: none"> Examine the potential to develop a detailed carbon management cluster strategy, complementing existing industrial cluster plans and potentially explicitly including geological CDR within the CCUS Cluster Track 2 initiative. Consider engaging stakeholders on developing a complementary Agricultural Removals Cluster strategy to support biochar, enhanced weathering, and nature-based removal initiatives. 	<ul style="list-style-type: none"> Provide top-down signal of government support for carbon markets as a tool for a just transition. Assist innovative carbon removal methods beyond large-scale geological storage, supporting smaller start-ups with lower capital barriers to scale.
5. Engage with local governments and councils to drive action on the ground	<ul style="list-style-type: none"> Where appropriate, collaborate with devolved governments and councils on incentive plans and awareness campaigns to build capacity beyond traditional service centres. Explore possibility to develop a central UK database for projects, funding, and certificates. 	<ul style="list-style-type: none"> Distribute benefits of new ancillary services value pool beyond London. Bring transparency to market across UK; increase global visibility for investment.

^A Key public sector actors range from central government departments such as the Department for Energy Security and Net Zero to dedicated bodies such as the North Sea Transition Authority, as well as local councils and governing entities.

Wider Stakeholders ^B		
Actions	Description	Impact
 <p>1. Engage and collaborate across the ecosystem on carbon markets</p>	<ul style="list-style-type: none"> Industrial consortiums, trade bodies and professional bodies can support in bringing together stakeholders around carbon market topics. This can facilitate knowledge sharing, capacity building and advocacy for standards and guidance. Research groups may collaborate with governments, multilateral initiatives and the private sector to support in building institutional knowledge and capacity in the UK and transferring knowledge to the Global South. 	<ul style="list-style-type: none"> Diversify UK projects and supply to minimise reliance on technologies/ projects. Ensure the facilitating architecture is in place for the market to scale. Establish the UK as the leading centre of expertise among ancillary services. Further strengthen UK research reputation for global excellence.
 <p>2. Prioritise responsible use of high-integrity credits, alongside deep mitigation</p>	<ul style="list-style-type: none"> Market intermediaries should prioritise integrity in both the voluntary and compliance markets; the UK's right to win in this market is from a shift to high-integrity, and intermediaries will be among the most critical to get this right. Buyers might also consider institutionalising risk management procedures, including but not limited to requiring CCP-adherence and/or minimum credit ratings for procurement. 	<ul style="list-style-type: none"> Build market confidence and avoid another false dawn in carbon markets. Move towards tangible risk management measures and away from individual, subjective interpretations of quality.
 <p>3. Convene buying coalitions to secure future supply today</p>	<ul style="list-style-type: none"> These could be akin to Frontier, Leaf Coalition, and NextGen, ensuring UK corporates match their American and Japanese counterparts. These could also be industry organised or potentially government-mandated, like Switzerland's KliK Foundation. Review where carbon credit budgets are being held within organisational structures and consider the value-add of including Chief Finance and Investment Offices into carbon market decision-making. 	<ul style="list-style-type: none"> Minimise due diligence costs, align buying practices, and diversify risk for credit delivery issues / underperformance. Secure supply in a highly competitive market.
 <p>4. Develop and trade high-integrity standardised contracts</p>	<ul style="list-style-type: none"> Financiers and investors may wish to consider creating standard contracts with minimum standards, such as CCP, durable removals, or minimum ratings. 	<ul style="list-style-type: none"> Drive (high integrity) commoditisation of the market and improve ease of doing business.
 <p>5. Build a talent pipeline with a just transition approach</p>	<ul style="list-style-type: none"> Universities could offer new courses to equip the next generation of carbon market leaders with critical technical skills and offer programmes to translate fundamental research into commercialisation and scaling. Suppliers could explore possibility of industrial placements and/or apprenticeships for carbon markets, potentially fostering partnerships between start-ups and established companies. Investors could look to align investment with key elements of a just transition (including advancing climate and environmental action, improving socio-economic distribution and equity and increased community voice). For example, investors may find it useful to refer to the Impact Investing Institute's Just Transition Criteria. 	<ul style="list-style-type: none"> Build workforce capacity for a just transition. Create new tech corridors connecting academia with industry and boosting the local economy. Support the delivery of a just transition in the UK by embedding just transition into the design of new products, adapting of existing products and through engagement with underlying investments.

^B Wider Stakeholders encompass private sector actors (covering the entire value chain, from buyers to suppliers, as well as intermediaries) as well as other agents of change, including research institutions, advocacy groups, and individuals.

Conclusion

As the role of carbon markets becomes more apparent in the context of net zero, the UK's experience and expertise can prove ever more important. The UK's strengths in carbon markets are multifaceted, building on its historical precedent for science-aligned policy to create a world leading contemporary carbon markets ecosystem today. Yet for the UK to further strengthen its leadership, collective action is needed.

There could be great benefits if the UK were to further enhance its leadership. A high-integrity, liquid market is good for the UK, and good for the world; carbon finance will be a critical tool to enable the world to meet the Paris Agreement and minimise the impacts of climate change. The ancillary value capture opportunities are significant, especially to leverage the country's strengths professional services and bring UK expertise to the world. And the prospect of a truly just transition, catalysing new green jobs and infrastructure, offers opportunities for the UK to reverse industrial decline while building a new market for domestic carbon credit supply. All stakeholders must work together to realise this vision.



For the UK to further strengthen its leadership, collective action is needed.



Annex A

Overview of select UK-domiciled VCM integrity initiatives

Function	Organisation - Name	Description
Demand	VCMI – Claims Code of Practice	Offers guidance on the credible use of carbon credits and how to communicate their use as part of science-aligned net zero decarbonization pathways. There are three levels of claims based on the percentage of a company's emissions offset, after near-term mitigation efforts: silver (10 - <50% of residual emissions), gold (50 - <100%), and platinum (>=100%).
	Oxford Net Zero – Offsetting Principles	Provides guidance to entities, from private sector to local government, on developing net zero aligned offsetting, and transitioning to durable removals over time.
	SBTi Corporate Net Zero Standard	Provides companies with a clearly defined path to reduce emissions in line with the Paris Agreement goals. Carbon credits are an option for companies going beyond their targets, as well as to use durable removals for residual emissions. Widely considered as the leading net zero claim for corporates.
Supply	ICVCM – Core Carbon Principles	Ten fundamental, science-based principles for identifying high-quality carbon credits that create real, verifiable climate impact. Approved methodologies are often used as a global benchmark for high integrity in the voluntary carbon market.
	IEAGHG – Integrated GHG accounting guidelines for CCUS	Widely referenced standard for carbon capture accounting calculations, including cradle-to-grave assessment. Recently supplemented by carbon removal specific report on monitoring, reporting and verification in October 2024. ⁸⁵
Overall	UK Government – Principles for Voluntary Carbon and Nature Market Integrity	High-level integrity principles, building off existing literature, and acting as a thought-starter for further consultations in 2025.
	Taskforce for Scaling Voluntary Carbon Markets (TSVCM)	Launched at COP26 as an initiative by Mark Carney, UN Special Envoy for Climate Action and Finance and former Advisor to UK Prime Minister Johnson. Principles have been operationalised through the UK Carbon Markets Forum and the foundation of ICVCM.

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- Contribute to a flourishing society
- Support a thriving economy
- Shape outstanding environments

By strengthening the connections, capacity and character of the City, London and the UK for the benefit of people who live, work and visit here.

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UK Carbon Markets Forum

About the UK Carbon Market Forum

The UK Carbon Markets Forum was established in April 2021 to support the growth of a high-integrity scaled carbon market in the UK and to support and amplify common international frameworks. The Forum is chaired by Dame Clara Furse, with City of London Corporation providing secretariat support. This research draws on joint research carried out between City of London Corporation and McKinsey & Company.

McKinsey & Company

About McKinsey & Company

McKinsey Sustainability is the firm's client-service platform that aims to help all industry sectors reach net zero carbon emissions and the world reach the goals aligned with the Paris agreement. We aspire to become the largest private sector catalyst for decarbonization, and partner with companies from all parts of the global economy to accelerate decarbonization efforts in the toughest sectors, scale innovative green ventures, and deploy sustainable investments. We do this by leveraging our thought leadership, innovative tools and solutions, leading expertise, and vibrant ecosystem of collaborators to lead a wave of innovation and economic growth that safeguards our planet and advances sustainability.

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