



Clean Growth

Trade challenges
and opportunities
post pandemic



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Foreword



Countries around the world must work together to shift to a new economic growth paradigm to avoid the impacts of environmental degradation and climate change. The UK Government is committed to helping lead these efforts by developing and promoting low-carbon solutions domestically and internationally. In 2019, the UK became the first major economy to legislate for a move to net-zero emissions by 2050.

The transition to a low-carbon economy requires a major mobilisation of investment and innovation in support of inclusive and sustainable global growth. The UK Government's 2020 Ten Point Plan aims to mobilise £12bn (US\$16.5bn) to invest in clean growth technologies and initiatives with the aim of supporting 250,000 green jobs by 2030. These include jobs in sectors such as renewable energy, carbon capture, zero-emission transport and green finance.

International trade and investment can facilitate the exchange of goods, services, technologies and know-how that are essential for the global clean growth transition. Export businesses are also key to providing better outcomes for consumers and communities, as exporting drives competitiveness, productivity and innovation. UK companies are among the world leaders in providing solutions in renewable energy, zero-emission vehicle technologies, sustainable consumption, infrastructure and green finance. The UK's low-carbon economy has the potential to deliver up to £170bn (US\$233bn) in export sales of goods and services by 2030, according to projections by Ricardo Energy and Environment.

The UK Government supports businesses on a range of issues, such as market entry, knowledge development and identification of opportunities created by Free Trade Agreements (FTAs). We also facilitate access to new markets and a better take-up of opportunities, particularly through export finance, providing £2.4bn (US\$3.3bn) in funding for clean growth projects around the world in 2020.

International trade and investment remain essential to the task of overcoming the unprecedented economic challenges posed by the pandemic and succeeding in mobilising the clean growth transition on a global level. The UK Government continues to champion free trade in support of clean growth sectors, helping to ensure that businesses are able to seize new international opportunities while creating local growth in jobs and economic activity.

A handwritten signature in black ink that reads "Andrew Mitchell".

Andrew Mitchell
Director General
Exports and UK Trade
Department for International Trade (DIT)

About this report

Trade challenges and opportunities in the post-pandemic world: Clean Growth is an Economist Intelligence Unit (EIU) report, supported by **the UK's Department for International Trade (DIT)**.

Through a range of expert interviews, secondary literature review and a data audit, this report explores the challenges and opportunities for global trade and investment in creative goods and services. The EIU would like to thank all experts for their time and insights.

Barnaby Wharton, Director, Future Electricity Systems, RenewableUK

Ronald Steenblik, Senior Fellow, International Institute for Sustainable Development

Faustine Delasalle, Director, Energy Transitions Commission (ETC)

Mauro Cozzi, Co-founder, Emitwise

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Section 01

Global green goods and services market booms

Global green goods and services market booms






The green goods and services market spans five domains that collectively determine the ability of companies and economies to successfully adopt sustainable practices (see Figure 1).

The overall market is booming as demand for the green transition intensifies among citizens and governments, making environmental performance a critical issue for companies and investors.

Achieving global net zero greenhouse gas (GHG) emissions by 2050 requires investment of US\$1–2trn per year, which equates to roughly 1–1.5% of global GDP

according to the Energy Transitions Commission (ETC) – a funding “faucet” that could drive a green industrial revolution.¹ The global market for low-carbon goods and services has been estimated at US\$4.2trn, spanning everything from recycling and the circular economy to environmental performance analytics and labelling.²

Figure 1: Green goods and services: A taxonomy

| | |
|---|--|
|  | <p>Energy from renewable sources. Electricity, heat, or fuel generated from renewable sources. These energy sources include wind, biomass, geothermal, solar, ocean, hydropower, and potentially landfill gas and municipal solid waste. Increased renewable power can also facilitate the promotion of other green energy innovations, notably hydrogen, which requires electricity.</p> |
|  | <p>Energy efficiency. Products and services that improve energy efficiency. Included in this group are energy-efficient equipment, appliances, buildings, and vehicles, as well as products and services that improve the energy efficiency of buildings and the efficiency of energy storage and distribution, such as Smart Grid technologies.</p> |
|  | <p>Pollution reduction and removal, GHG reduction, and recycling and reuse. These are products and services that: reduce or eliminate the creation or release of pollutants or toxic compounds or remove pollutants or hazardous waste from the climate and environment such as carbon capture, utilisation and storage (CCUS); reduce GHG emissions through methods other than renewable energy generation and energy efficiency, such as electricity generated from nuclear sources and increased electric mobility; reduce or eliminate the creation of waste materials; collect, reuse, remanufacture, recycle, or compost waste materials or wastewater.</p> |
|  | <p>Natural resources conservation. Products and services that conserve natural resources. Included in this group are products and services related to organic agriculture and sustainable forestry; land management; soil, water, or wildlife conservation; and stormwater management.</p> |
|  | <p>Environmental compliance services, education and training, and public awareness. These are products and services that enforce environmental regulations; provide education and training related to green technologies and practices; increase public awareness of environmental issues and facilitate green transition, such as green finance instruments including bonds, sustainable project finance and environmental, social, and governance (ESG) investing.</p> |

Source: US Bureau of Labour Statistics³, Economist Intelligence Unit analysis

Favoured clean energy stocks have risen by as much as **100%** since early 2020, during which time the S&P Global Clean Energy Index has advanced **95%**.

An **8%** decline in emissions and improved air quality offered a small glimpse into a cleaner economy.

After decades of underperformance and “boom–bust” cycles, the clean power sector is thriving. Renewable power capacity grew at its fastest pace this century in 2020.⁴ Favoured clean energy stocks have risen by as much as 100% since early 2020, during which time the S&P Global Clean Energy Index has advanced 95%.⁵ Renewable energy companies broadly performed well despite the economic crisis of 2020, thanks to climate pledges from governments, funding tied to Covid-19 recovery spending, and growing capital inflows from clean energy exchange traded funds, however, sector growth has evened off in recent months.⁶ Research into engagement in Environmental, Social and Governance (ESG) investing indicates that, while often considered a focus for millennials, there is in fact a shift towards sustainable investing across demographic groups and among mainstream investors.^{7,8} A recent study by the EIU also found that institutional investors expect the pandemic to accelerate capital inflows into sustainable investments, as investors increasingly see contributing to Sustainable Development Goals (SDGs) as a key consideration, in addition to financial returns, risk mitigation and diversification.⁹

Private sector innovation is driving down costs and improving the performance of green goods and services through materials and engineering innovations. Wind energy costs in the US, for instance, have fallen from over 55 cents per kilowatt-hour in 1980 to under 3 cents today.¹⁰ Globally, solar photovoltaic costs have fallen 82% over the last decade, according to the International Renewable Energy Agency (IRENA).¹¹ As important as the improvements in renewable power are, breakthroughs in sub-sectors such as carbon capture, sequestration and utilisation (CCUS), synthetic biology, and data analytics, are prompting radical innovations to simultaneously tackle the climate crisis and open new sectors.

Government support, in terms of fiscal help and regulatory tightening, is a critical enabler of the clean growth sector which has withstood both the pandemic and even international trade tensions.

This is evidenced by the participation of the US and China in a recent climate summit, despite significant trade differences between the countries as a whole. “What is encouraging is that even at the peak of trade tensions, including US–China, the dialogue on climate did not stop”, says Faustine Delasalle, director of the ETC. The UK government’s 2020 Ten Point Plan is mobilising £12bn as part of the country’s economic revival, with an aim of supporting 250,000 green jobs by 2030. The plan covers ten domains and includes offshore wind, low carbon hydrogen, nuclear power, zero-emission vehicles, green public transport, ‘jet zero’ and green ships, green buildings, carbon capture, natural environmental protection and green finance.¹²

The “Build Back Better” vision of recovery programmes following the Covid-19 pandemic – in which the fiscal demands of crisis recovery are seen as an opportunity to grapple with longstanding economic and social problems – looks likely to accelerate the clean growth transition. An estimated 17% of all allocations made in pandemic recovery programmes are linked to environmentally positive measures, according to the OECD.¹³ Among members and partner countries, such recovery measures include financial support, in the form of grants/loans and tax subsidies, across environmentally critical domains, especially energy and transport (see Figure 2). These sectors account for a high proportion of GHG emissions in many countries, and are often good candidates for relatively quick roll-outs (e.g. renewable energy and electric vehicle infrastructure). On the other hand, there have been relatively few measures for key sectors like aviation, industry and agriculture that are likely to be environmentally positive.

In the US, which recently re-joined the Paris Agreement, President Biden’s green energy plan includes 30 gigawatts of offshore wind projects to be installed by 2030, leading to the creation of an estimated 77,000 jobs.¹⁴ The pandemic has accelerated the green transition through other mechanisms too; an 8% decline in emissions and improved air quality offered a small glimpse into a cleaner economy, while reduced industrial activity led to an improvement in water quality with reduced pollution.¹⁵

Figure 2: Committing to environmental sustainability: Sectoral measures with clear positive environmental implication

Higher numbers of measures ← → Lower numbers of measures

| | Energy | Aviation | Ground transport | Maritime transport | Heavy Industry | Buildings | Agriculture | Forestry | Waste Management | Other, multiple or economy-wide | Total |
|--|-----------|----------|------------------|--------------------|----------------|-----------|-------------|-----------|------------------|---------------------------------|------------|
| Tax reduction/other subsidy | 16 | 1 | 16 | 0 | 2 | 5 | 2 | 1 | 2 | 18 | 63 |
| Grant/Loan (including interest-free loans) | 37 | 1 | 38 | 3 | 11 | 25 | 9 | 6 | 7 | 39 | 176 |
| R&D subsidies | 10 | 4 | 11 | 1 | 2 | 2 | 0 | 1 | 1 | 8 | 40 |
| Regulatory change | 14 | 0 | 5 | 0 | 2 | 1 | 1 | 0 | 2 | 8 | 33 |
| Skills training | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 10 | 11 |
| Other or not specified | 13 | 1 | 20 | 2 | 1 | 4 | 7 | 6 | 4 | 44 | 102 |
| | 90 | 7 | 90 | 6 | 18 | 37 | 19 | 15 | 16 | 127 | 425 |

Source: OECD¹⁶



UK perspective: Climate diplomacy and clean energy imperative

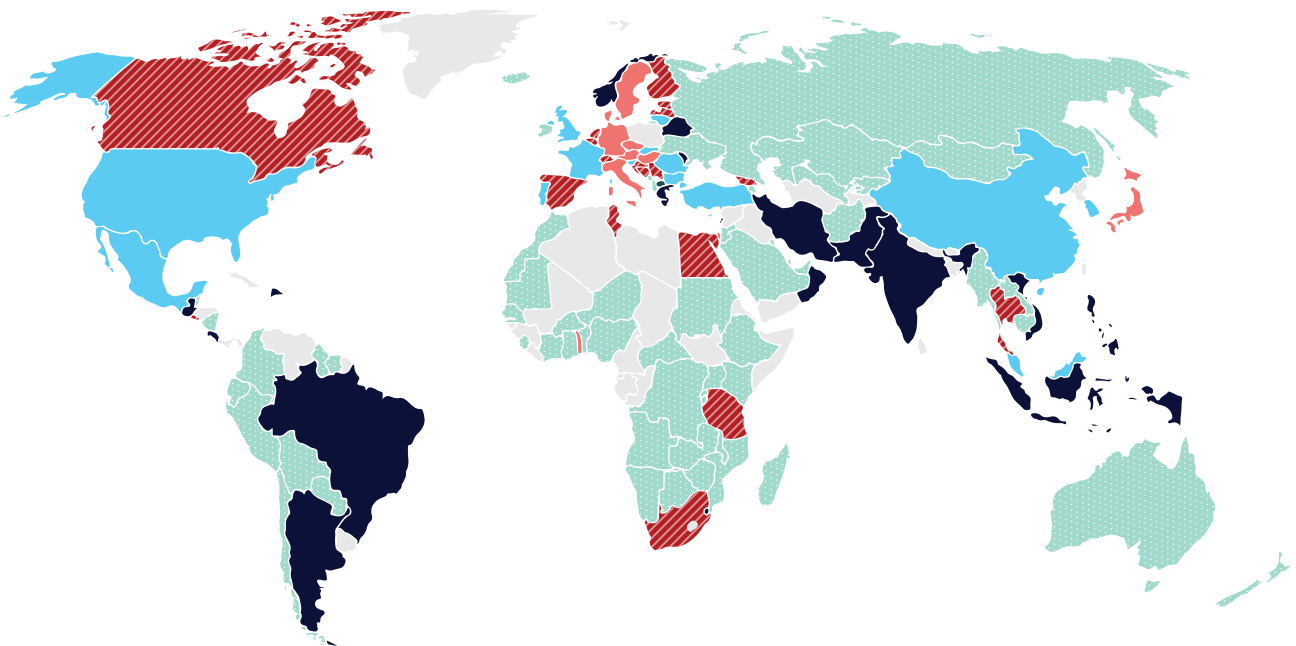
The UK, host of the forthcoming COP-26 climate conference, can lay claim to global leadership in terms of both political support for the green transition and private sector innovation. The Climate Change Act of 2008 committed the UK to reducing GHG emissions by at least 80% by 2050, compared to 1990 levels, to be achieved through a series of carbon budgets. This target was updated to 100% in 2019, making the UK the first major economy to legislate towards net zero emissions.^{17,18} The approach has since been used as a model for action across the world and mirrored in the UN Paris Agreement.¹⁹ The UK has been a leader in climate diplomacy, playing a critical role in “seeding and encouraging efforts outside of UK boundaries,” according to Faustine Delasalle at the ETC.

Currently, the UK Committee on Climate Change estimates that the highest emitting sectors as of 2019 were transport (119.6 million tonnes carbon dioxide equivalent (MtCO₂e)); energy (90.1 MtCO₂e); residential (65.2 MtCO₂e) and business (64.7 MtCO₂e).²⁰ Well-designed and effective policies saw emissions in the power sector fall by 67% between 2008 and 2019.²¹ Commercially, the UK’s low-carbon economy could expand by 11% per year over 2015–2030 – four times faster than the broader economy, and potentially equating to £60–£170bn worth of goods and services exports by 2030.²²

The country ranks sixth globally for low-carbon goods and services,²³ and is in the second-highest tier for comparative advantage in offering environmental goods, according to IMF analysis in 2018 (see Figure 3).

Figure 3: Green export potential:
Comparative advantage in environmental goods

■ 0 - 0.2 ■ 0.2 - 0.5 ■ 0.5 - 1 ■ 1 - 1.2 ■ 1.2 - 2 ■ 2 - 6.2



Source: International Monetary Fund²⁴



Companies now have the confidence to invest because there is a very clear framework of policy regulation and markets set by the government.”

Barnaby Wharton, Director,
Future Electricity Systems, RenewableUK

Wind power is one of the country's main clean growth assets. The UK has the largest installed capacity of offshore wind in the world, with its share of power generation increasing from 0.8% in 2010 to 6.2% by 2017.²⁵ Private sector investment in the sector has been significantly aided by strong regulatory direction, according to Barnaby Wharton at RenewableUK: “Companies now have the confidence to [invest] because there is a very clear framework of policy regulation and markets set by the government.” Wind resources are, in turn, promoting other sectors, notably hydrogen. The country's plentiful offshore wind provides the renewable power necessary to support the hydrogen sector, which offers a climate-friendly power source that nonetheless has significant electricity demand, according to Faustine Delasalle. Barnaby Wharton argues that hydrogen is set to be a significant green energy sector domestically.

The UK is also demonstrating a strong commitment to green mobility including electric and other zero-carbon vehicles and clean batteries. Several funding and investment bodies and schemes have been established to provide financial support for innovation, development and production of greener transport alternatives. These include, among others, the Advanced Propulsion Centre (APC), Automotive Transformation Fund (ATF), UK Battery Industrialisation Centre (UKBIC), and the Faraday Battery Challenge which is powering Britain's battery revolution.^{26,27,28,29} The government has also released new commitments to end the sale of new petrol and diesel cars in the UK by 2030, which would put the UK on course to be the fastest G7 nation to decarbonise cars and vans.³⁰



Section 02

Clean Growth sub-sectors: Deployment, scaling up and innovation

Clean Growth sub-sectors: Deployment, scaling up and innovation

The green goods and services market is diverse, with variations across niches in terms of growth prospects, rates of innovation and commercial opportunity.

Faustine Delasalle of the ETC identifies three core clean growth trends currently of note. One is the deployment of new goods and services that are already zero carbon or approaching zero carbon, such as electric vehicles (EVs). “These are areas where we have technologies that are already cost-competitive, and that will be massive markets not in 2030 or 2040 but in the next decade.” The second growth trend is solutions for segments where emissions have been hard to decrease but where, thanks to innovation and scale-ups, meaningful changes are now possible in enabling, among other technologies, lower-carbon steel and cement. The key challenge for this segment is to “bring them to market and bring them at scale,” claims Delasalle. The third element, which enables the first two, is the provision of clean energy.

Green goods: Highlights and emerging trends

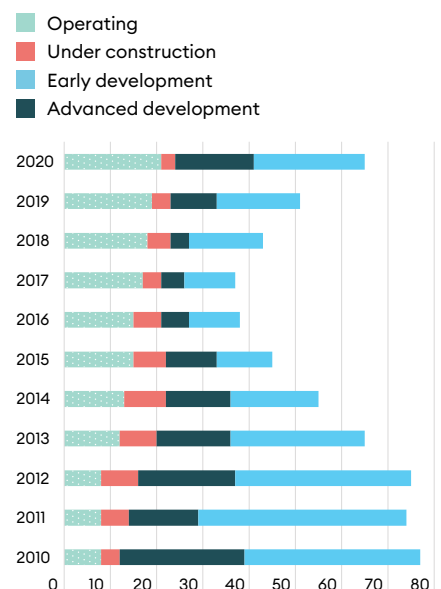
Carbon capture, utilisation and storage (CCUS)

The International Energy Agency (IEA) estimates that industry emissions must fall by 1.2% annually by 2030, which can be achieved through a combination of energy efficiency, uptake of renewable power, and R&D into low-carbon process routes, including carbon capture and storage.³¹

The wider CCUS sector is a fast-growing market. CCUS removes CO₂, either from point sources like power plants or from the atmosphere, and stores or reuses it.

It is a vital part of the emissions-reduction portfolio, allowing sectors like steel and concrete to decrease emissions while continuing to provide essential commodities.³² After years of declining investment, the CCUS sector is booming, with 30 integrated facilities announced since 2017. These could collectively triple global CO₂ capture capacity globally, mostly in the US and Europe, although Australia, China, Korea, the Middle East and New Zealand are also active (see Figure 4).³³

Figure 4: Renewed investment in CCUS: World large-scale CCUS facilities operating and in development, 2010-2020



Source: IEA³⁴

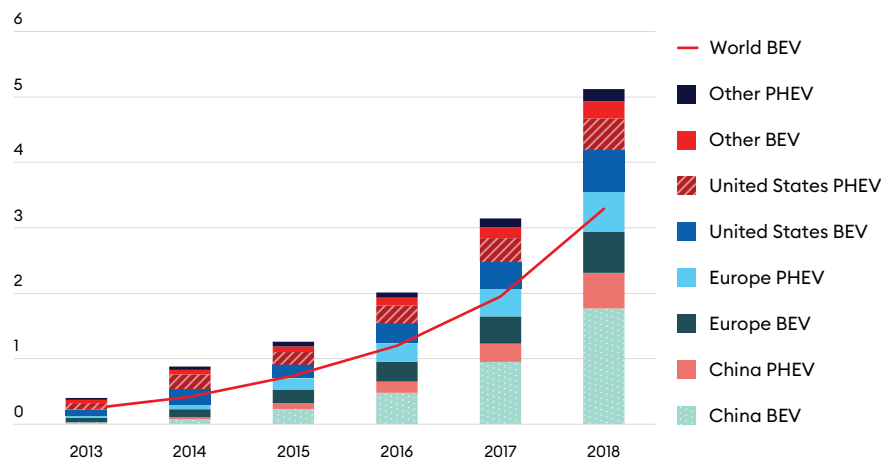
A sub-sector trend is direct air capture (DAC), draws CO₂ out of the atmosphere and stores it underground, including by mineralising it as stone.³⁵ This can help reverse existing impacts on the climate rather than only reducing further harm in the future, although it remains expensive and limited to low-scale demonstration sites.

Green mobility and electric vehicles

Transportation is responsible for a quarter of direct CO₂ emissions. Energy efficiency improvements, electrification and increased use of biofuels have made possible a less than 0.5% increase in emissions since 2019, compared to a 1.9% annual growth rate since 2000.³⁶ Green mobility is one of the fastest-growing segments in the clean growth sector, with the global stock of EV deployment surging since 2013 (see Figure 5), with China the dominant deployment market so far. Key dynamics in the coming years will be advances in battery power to

increase range, a continued reduction in costs to make EVs viable for mass-market consumers, and the build-out of ubiquitous charging facilities. Timelines are in years, rather than decades, experts believe. “Mass EV adoption will happen in the 2020s,” claims Faustine Delasalle at the ETC. “We are close to reaching a tipping point in terms of total cost of ownership and we will, at some point, also reach the tipping point of upfront capital cost of purchasing those vehicles. Then it’s just a question of stock and flow. The flow of EVs will increase very significantly in the next few years but it takes time to renew the stock of vehicles that we have on the market.” Cleaner fuels will also help green the transport sector in the coming years. For instance, Daimler has predicted that hydrogen will overtake diesel between 2027 and 2030, with half of European truck sales in 2030 being battery or hydrogen fuel cell-powered vehicles.³⁷

Figure 5: Electric growth: Electric car stocks in selected countries, 2013-2018



Source: IEA³⁸

Note: BEV = battery electric vehicle. PHEV = plugin hybrid electric vehicle.

Energy storage

Affordable, flexible energy storage is a crucial adjunct to the clean growth transition. Inventions in this area have grown at 14% a year over the past decade, according to the IEA and European Patent Office, with batteries accounting for nearly 90% of all patenting, and with Japan and South Korea leading the charge globally in terms of industrial innovation.³⁹

Many companies are also exploring a range of other mechanisms for energy storage spanning short- and long-duration energy storage technologies with different characteristics to address future needs. The IEA estimates that nearly 10,000 gigawatt-hours of batteries and other forms of energy storage will be required worldwide by 2040 – fifty times the size of the current market.



Quantum technology

Another emerging high-tech domain that will have significant implications for the energy transition includes quantum computing, says Roger McKinlay, Challenge Director of Quantum Technologies, UK Research and Innovation. Quantum computing can simultaneously model vast numbers of scenarios to choose the most efficient or effective options, with implications in areas like supply chains and logistics. Quantum technology is also of growing interest to meteorological offices to improve weather forecasting, which is critical for handling intermittency in the renewable energy space.

Green services: Highlights and emerging trends

While environmental technologies are essential to clean growth, the services sector is also crucial and necessary for the broader adoption of green solutions. This includes financial products like green and blue bonds, which channel capital, sustainability projects, and software and data analytics to help companies and organisations monitor and reduce their emissions, waste recycling and environmental consultation.

Carbon accounting

One sector that is currently thriving is carbon accounting and management. Companies are under growing pressure and regulatory requirements to measure

their emissions – both the direct and indirect emissions involved in their core operations (Scope 1 and 2) and emissions in their supply chain (Scope 3). This has created an opportunity for software and data start-ups to help organisations grapple with their emissions and track progress.

“We started the company in 2019 off the back of two key drivers,” says Mauro Cozzi, founder of Emitwise, a London-based emissions data provider whose backers include former Uber CEO Ryan Graves. “Entire supply chains are mobilising to decarbonise, and entire portfolios and large asset holders are as well. Now you read every day about a new fund decarbonising their portfolio, or companies committing to net zero.” Emitwise built an automated carbon-accounting tool that can save companies the man-hours and inefficiencies of manual, spreadsheet-based approaches. London was an appealing location for Emitwise over Silicon Valley due in part to the regulatory environment that now includes regulations like Streamlined Energy and Carbon Reporting (SECR),⁴⁰ which requires non-listed companies to report their carbon footprint. The UK is also reportedly considering making Scope 3 reporting mandatory, requiring companies to report on supply chain emissions or indirect emissions that arise from sources not owned or controlled by the company, but which occur as a result of the organisation’s actions.⁴¹ A move like this would be “unheard of, and would be incredible” according to Mr Cozzi.



Entire supply chains are mobilising to decarbonise, and entire portfolios and large asset holders are as well.”

Mauro Cozzi, founder of Emitwise

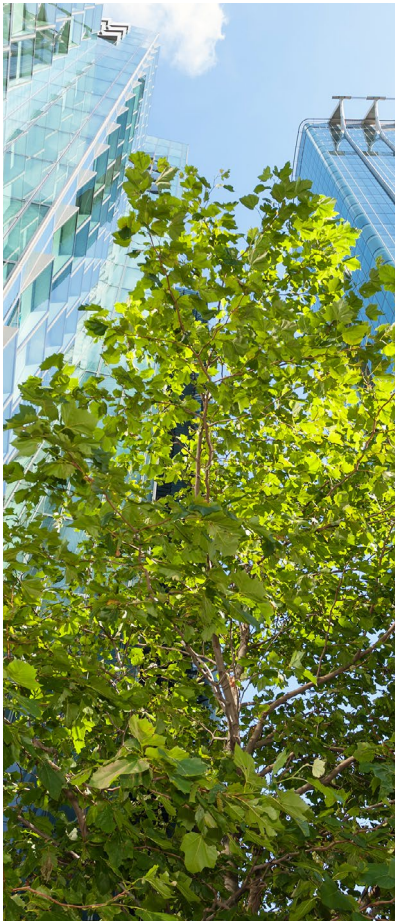
Green finance

The financial sector is critical to the clean growth transition, as a source of funding for innovation, a platform for investors to shape capital allocation, and a means of strengthened corporate governance through stock exchange, accounting and disclosure regulations that push businesses to transition.

Green finance can be understood as any structured financial activity created to provide a beneficial environmental outcome.⁴² Green bonds are proving to be a significant instrument in helping debt markets fund projects that contribute to sustainability objectives.⁴³ The US and China are the dominant issuers, and the global marketplace could reach US\$2.36trn by 2023.⁴⁴ Central banks, stock exchanges and institutional investors are using the financial sector to drive clean growth by tightening the pressure on companies to improve environmental performance and disclosure, and some central banks and

sovereign wealth funds are divesting fossil-fuel-based holdings and reserves.⁴⁵

Financial data platforms have improved the quality of ESG data to support investor decision-making. In April 2019, S&P launched its ESG evaluation tool, providing cross-sector analysis of a company's capacity to operate successfully in the future, grounded in how ESG could affect stakeholders and lead to material financial impact.⁴⁶ Stock exchanges are using their leverage to encourage listed companies to improve environmental disclosure and performance individually and in concert, and the UN-led Sustainable Stock Exchanges Initiative is helping to boost capacity and bring standardisation to the sector.⁴⁷ This is in large part based on the fact that climate exposure is a real and growing risk to companies' assets and operations, and therefore materially relevant to investors. "Capital allocators have woken up to the idea of climate as a risk", says Mr Cozzi at Emitwise.



UK perspective: Green finance - an engine for clean growth

London's status as a central node in the international financial system positions the UK as a critical player in shaping and supporting the green finance industry. Concrete steps to promote green finance as a service segment, and to position London as a leading player, include the establishment of a dedicated green bond segment in the London Stock Exchange (LSE) in 2015. To date, 155 green bonds, 9 social bonds, 7 sustainability bonds and 77 green issuers from 23 countries and regions are listed on the Sustainable Bond Market (SBM), which has raised £51bn.⁴⁸

The country is also a leader in specialised green and ESG funds that manage diversified portfolios of green and sustainable development projects. These funds have become increasingly established over the past 20 years as green investing has moved to the mainstream. Specialised funds invest in long-term renewable energy and energy-efficiency projects (including in the construction phase) and are turning increasingly to green transportation (e.g., EVs, hydrogen, energy-efficient rail) and nature-based projects such as reforestation, which can generate carbon credits. There are more than 180 ESG Indexes and over 150 Green Funds and Exchange-traded Funds (ETFs) on the London Stock Exchange (LSE). There are also more than 90 green equity issuers, which generate at least 50% of revenue from green activities, with combined market capitalisation of over £140bn.⁴⁹

The government actively encourages growth of the green finance sector in the UK. It launched a Green Finance Strategy in 2019 that seeks to consolidate the UK's position as a global hub for sustainable finance.⁵⁰ The UK Government and the City of London Corporation established the Green Finance Institute (GFI) in 2019 as a key forum for public and private sector collaboration in green finance. The aim of the institute is to mobilise, direct, and champion the expansion of global green finance. In November 2020, the government announced its intention to make reporting alignment with the Task Force on Climate-related Financial Disclosures (TCFD) – which aims to ensure that climate-related risks and opportunities are priced into financial decision-making – mandatory across the economy by 2025.⁵¹ Mauro Cozzi argues that such moves are “setting the tone” for the market.

Section 03

Cross-border trade in green goods and services

Cross-border trade in green goods and services

The international trading system is critical to the rapid development and diffusion of green goods and services.

Tariff and non-tariff barriers, carbon border adjustments (CBAs), subsidy reform and local content policies all shape the viability of business models and the rate of technology development and uptake. The global trade system can both worsen environmental damage (e.g. by increasing demand for natural resources plundered in an unsustainable manner from countries with weak environmental protections)⁵² and help tackle the crisis (by allowing innovations in clean technology to spread quickly and giving companies global markets to draw investment and build thriving businesses). This section explores the critical cross-border trade policy issues currently affecting the clean growth sector.

Facilitating cross-border trade

Global trade in environmental goods is estimated at US\$1trn, yet import tariffs applied to key technologies, like wind turbines and solar panels, can be as high as 35%, suggesting significant opportunity to boost growth by reducing trade frictions.

Reducing trade barriers to environmental goods and services has been on the international trade policy agenda since the launch of the Doha Round of negotiations.⁵³ “Drawing up lists of environmental goods and services, and eliminating or phasing out tariffs, is a good idea, because almost all countries apply very low or zero tariffs on fossil fuels, but quite a few apply tariffs of 5%, 10%, even up to 30% on imports of technologies that use renewable energy to provide electricity or heat,” says Ronald Steenblik, Senior Fellow at the International Institute for Sustainable Development (IISD).

However, the politically contentious nature of global trade agreements has meant limited progress so far. The Environmental Goods Agreement (EGA) was launched in 2014 as a plurilateral initiative to facilitate the trade of goods that support the green

transition, including clean energy, resource efficiency, and pollution and waste control.⁵⁴ Only 18 participants, representing 46 WTO members, were engaged in active negotiations, with limited developing-country participation. Negotiations were halted as of December 2016, although there are hopes they will resume in the future, a move which is encouraged by the IISD and Confederation of Business Industry (UK).^{55,56,57} A key sticking point is the conflation of environmental considerations with national economic priorities, with countries pushing for the inclusion of goods in which they have a strong export advantage. China, for instance, pushed for bicycles to be included, prompting worries in the EU about China’s overcapacity potentially flooding the European market.

The fate of the EGA remains unclear. The WTO’s director, Ngozi Okonjo-Iweala, has indicated a clear role for trade policy in unlocking green investment and innovation, but the WTO has struggled to secure relevance and the Doha Round of talks is at an impasse.⁵⁸ However, Covid-19 stimulus packages are an opportunity for governments to finally take aim at distortions such as fossil fuel subsidies, an issue highlighted recently by New Zealand.⁵⁹

In the interim, smaller, regional trade agreements such as the six-nations Agreement on Climate Change, Trade and Sustainability (AACTS) aim to create momentum towards more globally recognised solutions to environmental issues.⁶⁰ Currently comprising New Zealand, Costa Rica, Fiji, Iceland, Norway and Switzerland, the initiative aims to remove trade barriers for environmental goods and services and develop binding regulations on the elimination of fossil fuels.⁶¹ As these are smaller, trade-dependent countries, adoption of AACTS is dependent on climate leadership by example instead of rooted in structural economic power.⁶²

Global trade in environmental goods is estimated at **US\$1trn.**

CBA's are technically complex. Issues include how to set a global price on carbon, and ensuring accurate data, measurement, certification and reporting on embodied carbon.

Governments can also trade finance to facilitate expansion of their domestic players internationally. Export credit agencies play an important role in helping domestic industries to thrive overseas. Independent assessments have shown that UK Export Finance (UKEF) provided £2.4bn of funding for clean growth projects in 2020, double the amount in 2019, including electric monorail in Egypt, offshore wind projects in Taiwan, and two of Spain's largest solar farms.⁶³

Policy makers around the world are also exploring carbon border adjustments (CBAs) – taxes on imported goods based on their carbon footprint – as a tool to ensure environmental externalities are priced into goods. This would shift exporter incentives towards greener production methods. CBAs have been proposed as part of the European Green Deal⁶⁴ and US President Biden is exploring the idea, having supported it during the 2020 presidential campaign.⁶⁵ BCG analysis indicates that a levy on EU imports of US\$30 per metric tonne of CO2 would have far-reaching implications on export dynamics, rewarding more environmentally friendly producers.⁶⁶

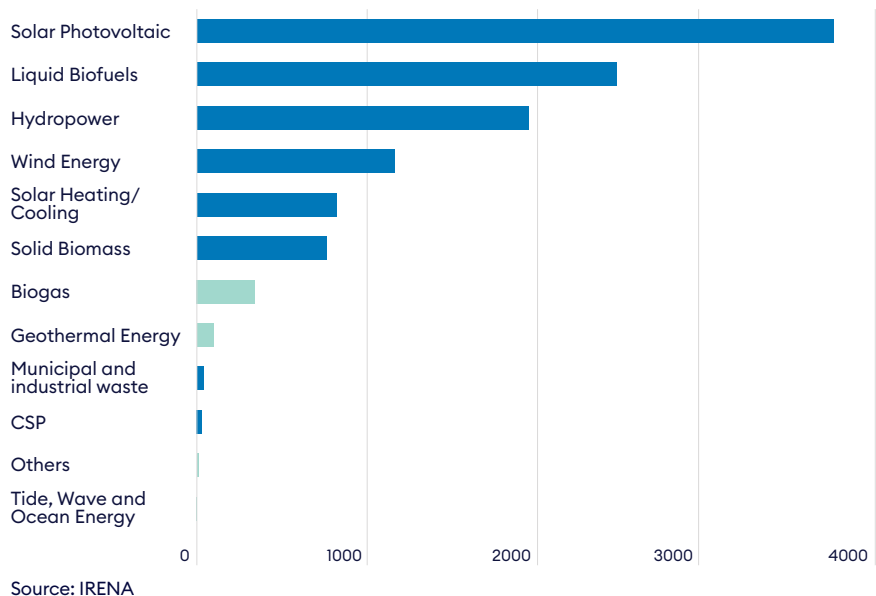
However, CBAs are technically complex. Issues include how to set a global price on carbon, and ensuring accurate data, measurement, certification and reporting on embodied carbon. CBAs also need to factor in developing economies' vulnerabilities, given the industrialised world's disproportionate contribution

to global GHG emissions historically.⁶⁷ Advocates believe unfair negative impacts could be managed through intelligent design, including transition policies, exclusions for very poor countries, and compliance with obligations under WTO rules and other existing trade agreements.

Green industrial policy

The fossil fuel transition puts many workers and industries at risk, leading governments to emphasise the job opportunities that decarbonisation can bring. In their presidential campaign, Joe Biden and running mate Kamala Harris pledged the creation of 10 million clean energy jobs in the US (the industry employs roughly 3 million currently) through measures including R&D, education partnerships and upskilling, and working with union partners.⁶⁸ EVs, carbon capture technology and energy efficiency are among the sources of potential job growth in the US.⁶⁹ Asia is posting very positive job data, with 63% of renewable jobs in 2019 located on the continent.⁷⁰ Emerging data indicates that green energy jobs are more inclusive, with 32% held by women, compared with just 21% in the fossil fuel sector. According to the International Labour Organisation (ILO), the green economy could create 24 million new jobs globally by 2030; a further 1.2 billion jobs depend on a stable and healthy environment, in sectors including tourism, agriculture and fisheries.⁷¹

Figure 6: Global renewable energy employment by technology, 2019





Fundamentally, this energy transition, given how massive a change it represents, will only happen if there is social and political will.”

Faustine Delasalle, director,
Energy Transitions Commission

Governments are understandably keen to emphasise – and support – the domestic job creation implications of the clean growth opportunity. “Fundamentally, this energy transition, given how massive a change it represents, will only happen if there is social and political will,” says Faustine Delasalle of the ETC. “Every government will find different ways of making that transition acceptable and socially beneficial for their population. If governments don’t pay attention to the acceptability of the transition, we risk a massive backlash.” This will require mechanisms like the EU’s €17.5bn Just Transition Fund that aims to alleviate the social and economic costs resulting from the transition by diversifying economic activity and helping people adapt in a changing labour market.⁷²

However, the need to simultaneously foster jobs and quicken the green transition may at times be at cross purposes if countries do not have a comparative advantage in sectors they

are trying to build. Importing best-in-class and affordable technologies from elsewhere can deliver more environmental benefit in some circumstances, says Ronald Steenblik of the IISD. “In solar photovoltaic energy, there are huge economies of scale. There are only a few countries that make polysilicon, and it is highly automated. The jobs are more downstream. Politicians need to be aware that they could have more jobs if they had free trade in cells and modules and accepted the jobs that would come from areas like installation.”

Previous research from the EIU has highlighted the need to differentiate truly environmental state industrial policy from protectionism under the guise of climate transition.⁷³ The research also noted that the lack of agreed methodologies for quantifying embedded carbon could lead exporters of carbon-intensive products to contest trade barriers as veiled protectionism.



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