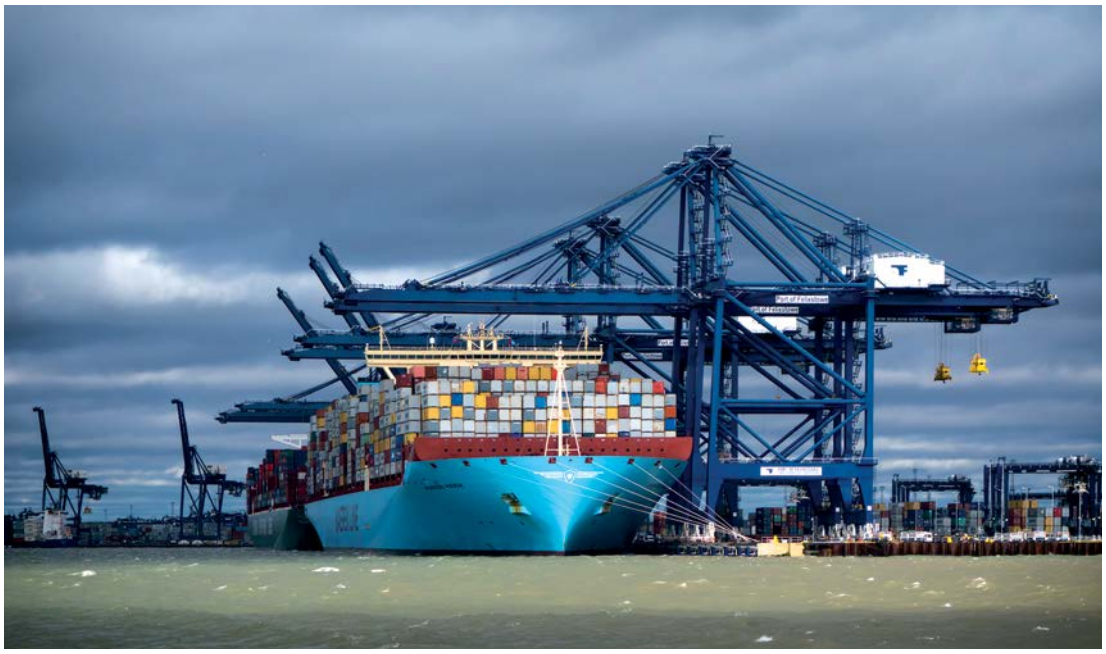
WORKING PAPER



UK trade policy and climate change: Maximising commercial, climate and development outcomes

By Phil Brown, Lit Ping Low and Katharine Booth

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About this Working Paper

Accelerating the shift to climate compatible development is CDKN's business and improving the lives of the most climate-affected people is our mission. A multi-year, GBP 130 million programme funded by the British and Dutch governments and many others, CDKN works to support climate compatible development in Asia, Africa, Latin America and the Caribbean.

Our programme provides technical assistance to governments as well as research-into-action projects that fill gaps in our understanding of climate change impacts and solutions. A further, crucial part of CDKN's programme is knowledge management and policy engagement, an effort to which this Working Paper contributes. We synthesise information on the collective performance of governments, as well as non-state actors, in tackling climate change. We convene online discussions and in-person events to assess how climate actions are serving the most climate-affected people and how climate action could be more ambitious and effective. Find more CDKN thought leadership on www.cdkn.org or follow us on twitter @cdknetwork.

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On a stormy day and in a shaft of sunlight, a container ship is moored quayside at the Port of Felixstowe in Suffolk, eastern England. Felixstowe is the busiest container port in the United Kingdom.

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Key messages

- As the UK prepares to leave the EU, it will need to re-evaluate its trade policy. This coincides with both the submission of Nationally Determined Contributions (NDCs) and the Paris Agreement on climate change, signed by over 190 countries, which will require huge investment in low-carbon goods and services worth £1.0–1.8 trillion a year by 2030. The UK is well placed to service this demand, with world-leading capability across a range of low-carbon, climate-resilient sectors and products, and investments in future low-carbon technologies.
- For many years the UK Government has placed a strong emphasis on 'policy coherence', the systematic promotion of reinforcing policy actions across government departments towards a set of objectives. At the juncture of Brexit (Britain's exit from the EU) and increasing climate action, the UK has the opportunity to design its trade and complementary policies to achieve the optimal commercial, climate and poverty alleviation outcomes for itself and its partners.
- The UK's policy on free trade agreements (FTAs), which is currently being formulated, offers significant scope for supporting climate and development outcomes. In many places win–win outcomes can be achieved. Where there are trade-offs, a policy-coherent approach can help manage any negative impacts or unintended consequences.
- A structured approach to designing FTAs that deliver trade, climate and developmental outcomes requires establishing: (1) policy objectives and potential synergies and trade-offs; (2) UK strengths against potential market opportunities; and (3) an approach to the commercial provisions within FTAs and complementary policies that deliver the optimal outcomes.
- FTAs contain multiple elements that could impact on climate change and development, with eight offering the greatest potential to maximise commercial, climate and developmental outcomes. These can be grouped into three categories.
    - **Triple wins:** scope for FTAs to deliver commercial, climate and developmental outcomes with minimal trade-offs in **tariffs**, **trade in services and establishment**, and **product standards and technical regulations**.
    - **Policy coherence:** a policy-coherent approach to FTA provisions in **intellectual property rights** and **procurement** can help deliver optimal commercial, climate and development outcomes alongside complementary policies and programmes.
    - **Policy cooperation:** where FTA provisions in **sustainable development chapters**, **private product standards**, and **environmental taxes and subsidies** can enhance bilateral and multilateral cooperation between partner countries.
- An **FTA Trade and Climate Checklist** is developed to support trade policy-makers to identify the provisions within FTAs and the complementary measures most likely to deliver the optimal commercial, climate and developmental outcomes.
- Countries that are actively pursuing climate action and improving development outcomes are likely to see benefits of a trade deal which also offers them access to the skills and goods that the UK can offer, supplemented by other forms of cooperation and support provided by the UK. A collective and coherent suite of bilateral cooperation in trade, climate and poverty alleviation is far more likely to achieve the outcomes desired by the negotiating parties. Good deals can be struck – not just for trade, but also for climate and development.

Introduction

On leaving the European Union (EU), the United Kingdom (UK) will regain autonomy over its trade policy, creating an opportunity to design a trade policy that is fully aligned with its economic and wider policy objectives. The UK Government has already signalled its intent: it will continue to be a champion for free trade at the multilateral level; it will negotiate ambitious free trade agreements (FTAs) directly with the world's largest and fastest-growing economies; it will increase UK competitiveness through scaling-up investment in innovation; and it will bring together trade policy and aid to reduce poverty by unlocking barriers to trade and investment.

This coincides with the Paris Agreement on climate change, signed by over 190 countries. These countries have submitted Intended Nationally Determined Contributions (INDCs, now commonly referred to as NDCs) which set out how they will meet their climate change and development targets. They demonstrate the scale of the structural transformation planned, which will require huge investment in low-carbon goods and services – a potential market worth £1.0–1.8 trillion a year by 2030, seven to twelve times more than today.[1]

The UK is well positioned to serve this global demand. As the fifth biggest economy and the ninth largest exporter in the world, the UK has world-leading capability across a range of sectors and products. It is also investing heavily in the low-carbon technologies of the future, such as low-emission vehicles and energy storage. It has global research and development (R&D) programmes supporting low-carbon innovation through collaboration with overseas companies and universities. It also has development programmes, such as the Climate and Development Knowledge Network (CDKN), providing targeted support for the poorest. Overall, the Department for International Development (DFID) spends 0.7% of national income a year on development aid.

For many years the UK Government has placed a strong emphasis on 'policy coherence for development'. Policy coherence is the systematic promotion of reinforcing policy actions across government departments to create synergies towards achieving agreed objectives.[2] This Working Paper explores how these principles can help the UK design its trade and complementary policies to achieve the optimal commercial, climate and development outcomes for itself and its partners. It posits that a policy-coherent approach to FTAs could adopt the following principles.

- FTAs should seek to maximise commercial benefits through trade and investment, wherever this does not harm climate or development outcomes.

- Where there are trade-offs between commercial and climate/development objectives, the FTA should aim to maximise synergies and avoid material harm, and broader complementary policies and programmes should be considered to mitigate any negative impacts.

- FTAs are neither a panacea, nor a quick fix; a cross-government approach and third-country partnerships should be adopted to identify and utilise the best combination of policy instruments to achieve the desired trade, climate and development outcomes.

While the analysis is relevant across place and time, this paper focuses on UK trade policy, and specifically FTA policy, which is currently being formulated and offers the greatest scope for delivering impact in the short to medium term, due to the slow pace of multilateral negotiations. The paper begins with a review of the UK's strengths in goods and services that support low-carbon, climate-resilient development, and the potential global opportunities as suggested by the NDC commitments of 10 countries – Brazil, Russia, India, China and South Africa (the BRICS) plus five other countries that receive significant climate and development support from the UK. It then explores the eight areas of FTAs and complementary policies that offer the greatest potential for achieving commercial, climate and developmental outcomes. Finally, it presents recommendations for policy-makers in the form of an FTA Trade and Climate Checklist.

UK strengths in delivering low-carbon, climate-resilient development

Understanding the UK's strengths in low-carbon goods and services is a prerequisite for designing a well-targeted trade and domestic innovation policy. This has received increased focus through the Government's industrial strategy and its increased investment in science, research and innovation. Various recent assessments have attempted to assess UK strengths, using a combination of quantitative and qualitative analyses. These studies help to construct a fairly rich picture of where the greatest opportunities may lie, although they are subject to a number of limitations, including:

- differences and challenges in defining what constitutes low carbon or climate resilience
- data limitations, including classifying low-carbon goods and the availability of data on services
- uncertainty about new and emerging technologies and their future uptake.

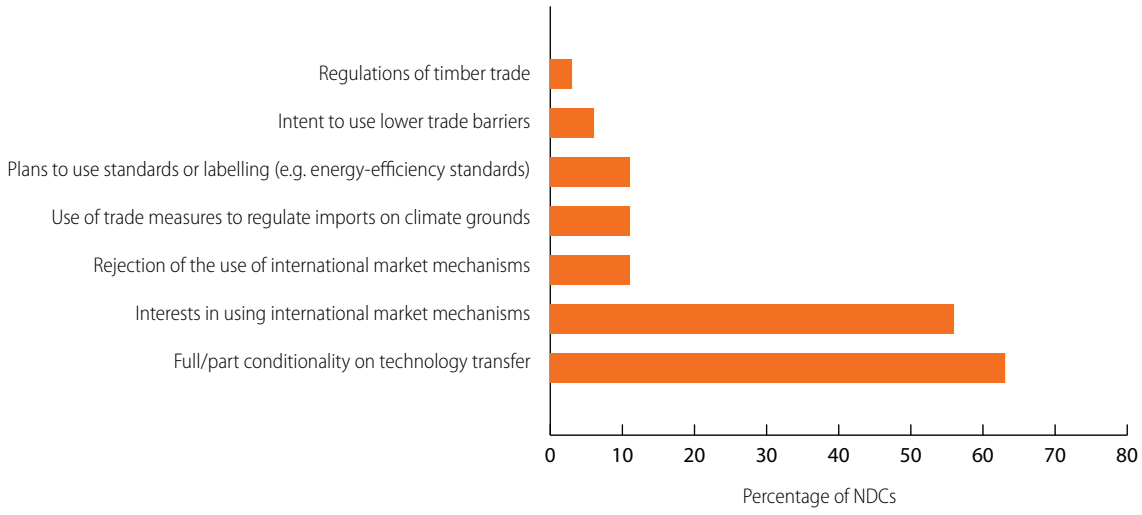
This paper conducted a review of recent studies,[3] summarised in Table 1, which shows that the UK is active in three areas – energy, transport and resilience. However the strengths of the UK vary sub-sector or products.

Global trade opportunities for the UK: NDCs as an indication of demand

The climate actions communicated in NDC documents largely outline how each country intends to work towards the long-term goals of the Paris Agreement. For many countries, implementing NDCs will require significant investments in infrastructure, technologies and services. Yet an analysis of NDCs in both developed and developing countries found that fewer than half (45%) included a direct reference to trade or trade measures, although as Figure 1 shows, different trade-related elements have been included.[4] Particularly noteworthy is that 63% of all NDCs made an explicit reference to their contribution being fully or partly conditional on technology transfer; this is potentially an area of tension between trade and climate policy objectives if there is an impact on intellectual property or investment protection.

Although they vary considerably in quality and detail, the current set of NDCs (and future updates of them) can provide a useful indicator of future country-level demand for low-carbon trade and investment. A review of 10 country NDCs provides an indication of where there is likely to be significant demand for low-carbon, climate-resilient goods and services. These countries are the BRICS economies and five countries (Bangladesh, Colombia, Kenya, Indonesia and Pakistan)[6] where the UK has provided climate and development support through CDKN. The results are illustrated in Figure 2

Figure 1. Trade-related elements featured in NDCs



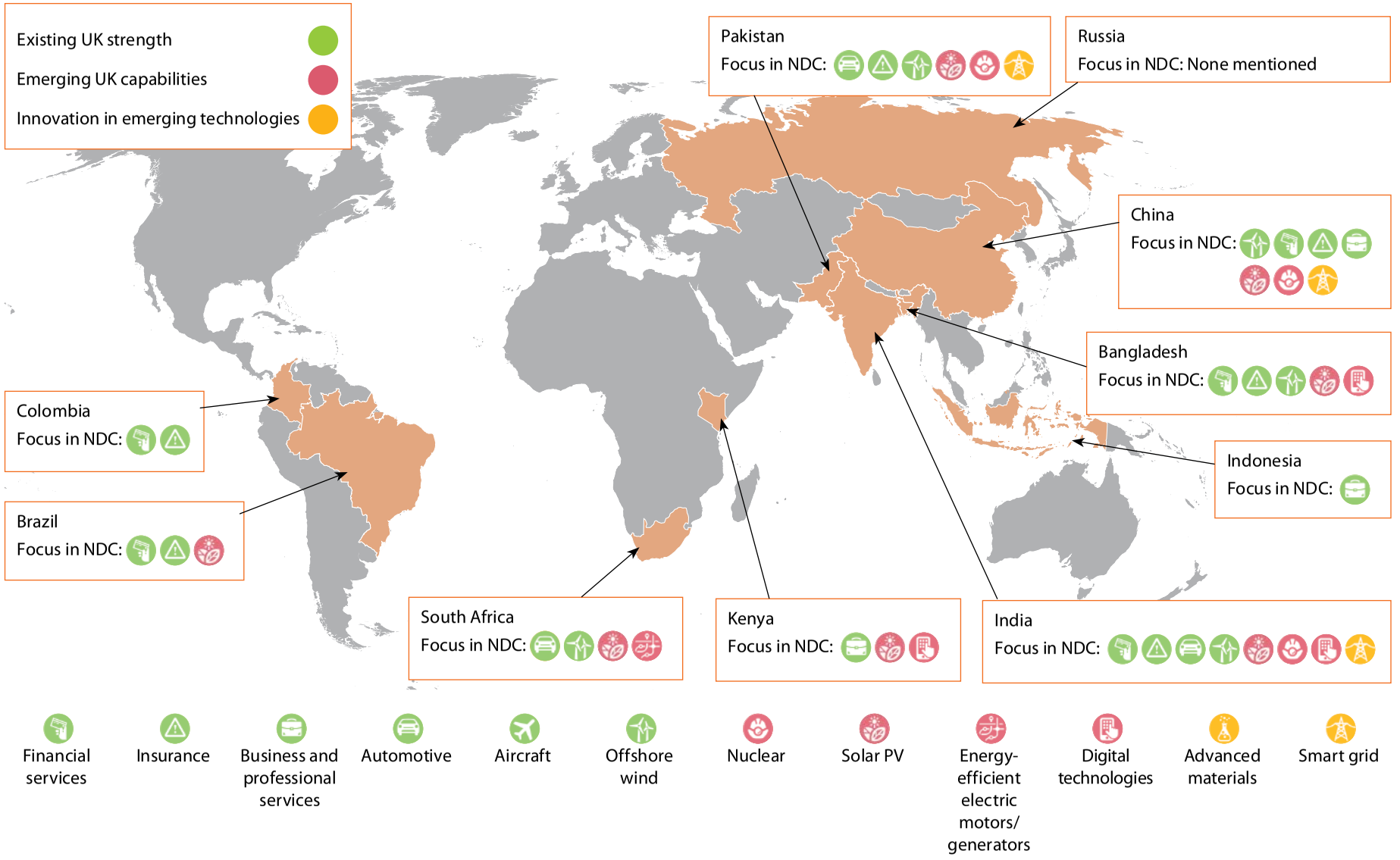
Source: Brandi (2017)[5]

Table 1. UK comparative advantages against low-carbon and climate-resilient action areas

	Energy			Transport		Resilience	
Comparative advantage	**Energy efficiency**	**Renewable energy**	**Other low-carbon energy**	**Public transport**	**Low-carbon vehicles**	**Disaster risk response**	**Resilience infrastructure**
Strong UK comparative advantage Areas or sectors where the UK is already considered world-leading in export markets, as evidenced by a strong revealed comparative advantage*		• Offshore wind	• Gas turbines		• Motor vehicles and parts • Aircraft	• Insurance • Weather and climate modelling	• Engineering and environmental consultancy services
	Services: Insurance, Financial, Business, engineering and environmental consultancy						
Developing UK capabilities Areas or sectors where the UK has made progress in domestic markets or started to capitalise on export opportunities, but has yet to claim strong advantage over other competitors. Typically the UK has an advantage in a particular sub-segment of these sectors, or the UK has a strong services component within the overall manufacturing value chain.	• Smart energy • Electric motors/generators/ transformers • Electricity distribution technologies • Energy storage • Domestic appliances	• Solar photovoltaic (PV) • Onshore wind	• Nuclear	• Low-carbon transport technologies			
Innovation in emerging technologies Areas or sectors where the UK has invested in innovation or R&D programmes in nascent emerging technologies which could lead to transformational impacts in low-carbon, climate-resilient development. These could be speculative sectors as to whether the UK will emerge as a leader relative to other competitors.	• Advanced materials • Smart grid				• Ultra-low-emission vehicles		

* Revealed comparative advantage (RCA) is often used to assess a country's export potential. It measures a product's share in the country's exports in relation to its share in world trade. An RCA ratio >1 indicates the country has a specialism in this area.

Figure 2. Trade opportunities in low-carbon goods and services



Source: Country NDCs

and cross-referenced against areas of UK comparative advantage, demonstrating a significant level of complementarity – particularly in China and India.

The potential gains from future FTAs will depend on a multitude of factors, including existing trade relationships and the complementarity of trade,[7] distance between markets, the size of the economy and its growth potential, demand for UK products and services, the existing barriers to trade, and the specific provisions within the deal itself.

Table 2 details selected trade indicators for the 10 countries reviewed. While providing only a snapshot of trade potential, it provides some food for thought. For example, the two largest trading partners from the developing world, China and India, also have relatively strong trade complementarity with the UK, India more so than China. Indonesia, set to rise in economic status to the top five economies by 2030, trades comparatively less with the UK, but again demonstrates strong complementarity.

Achieving the optimal outcome requires assessing the potential developmental and environmental impacts alongside the commercial gains, including on non-participating low income countries if applicable. The EU's Sustainable Impact Assessments (SIAs) are a good example of this approach, although they currently serve multiple audiences and it may be possible to both simplify them and enhance their impact. Timing is important. To have a meaningful impact on negotiations, wider environmental and developmental impacts need to be understood early on enough to inform the scoping phase; for example, as part of an impact assessment that informs the decision of whether and how to approach FTA negotiations. Typically EU SIAs have only been completed once the full scope of the negotiations has been agreed, leaving little scope for significant changes.[10] Monitoring is also key. It will be important to track the transposition of recommendations into FTAs, which has only partially been the case in EU FTAs,[11] and monitor impacts during implementation, with the involvement of a wide range of governmental and non-governmental stakeholders.

Table 2. Indicators of trade in the 10 focus countries

	Emerging economies					Countries to which UK has provided climate and development support				
	Brazil	Russia	India	China	South Africa	Bangladesh	Colombia	Kenya	Indonesia	Pakistan
Percentage of UK exports (2015)	0.7	0.9	1.3	6.5	0.6	0.05	0.14	0.13	0.16	0.17
Size of economy in 2016 (global ranking of gross domestic product [GDP] purchasing power parity [PPP] in 2016)	7	6	3	1	29	31	30	71	8	24
Size of economy in 2030 (global ranking of GDP PPP in 2030)	8	6	3	1	30	28	31	n/a	5	20
Trade openness (trade as percentage of GDP, 2015)	27	49	42	41	62	42	39	44	42	28
Trade complementarity index with UK (%, 2015)[8]	49	31	65	59	58	15	36	40 (2013)	53	29
Explicit mention of technology transfer in NDC	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

Sources: Imports from UK: OEC website; Size of economy ranking: World Bank and PwC (2017); Trade openness: World Bank; Trade complementarity: WITS World Bank; Technology transfer: ICTSD report[9]

Maximising commercial, climate and developmental outcomes through FTAs

To maximise commercial benefits, the UK will aim to agree deep and comprehensive FTAs. These will contain multiple elements that could impact on climate change and development. FTAs are complex agreements that cover a wide range of topic areas, and this Working Paper focuses on eight provisions within FTAs which offer the greatest potential to maximise commercial, climate and developmental outcomes. These are grouped into three categories as shown in Figure 3.

Triple wins

Three FTA provisions can deliver significant commercial, climate and development outcomes with limited trade-offs.

Tariffs

Eliminating or reducing tariffs on low-carbon goods is perhaps the most clearly understood example of a win–win: it reduces the cost of low-carbon goods, thereby increasing trade in those products. When negotiating with one of 17 other countries involved in the World Trade Organization's (WTO) Environmental Goods Agreement negotiations, including the USA and China (which has recently unilaterally cut tariffs on 27 environmental goods),[18] it may even be possible to agree up front to eliminate all or most of the 300 shortlisted tariffs in the Environmental Goods Agreement as a goodwill measure. In the longer term, this would also help put in place the building blocks needed to conclude the Agreement.

While on the surface straightforward, there are a number of practical challenges in using tariffs to deliver low-carbon objectives, mainly relating to identifying and classifying low-carbon goods.

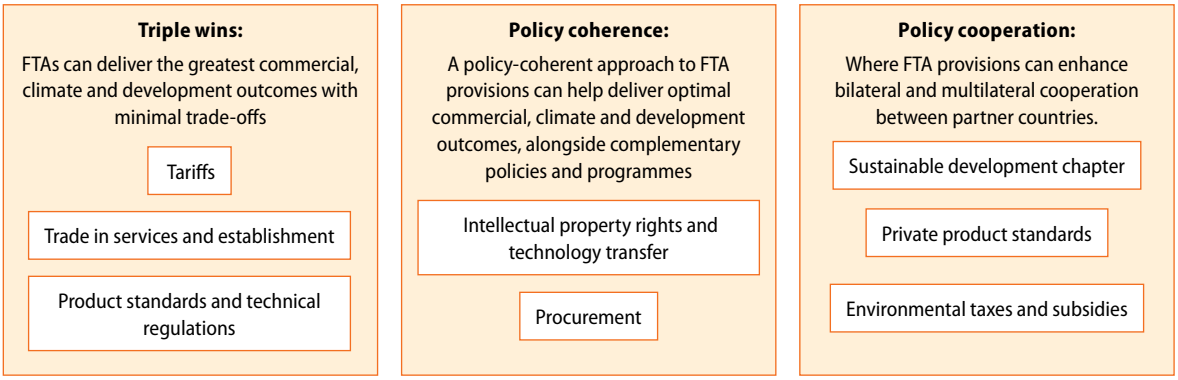
- First, it is often impossible to distinguish energy-efficient goods from non-energy-efficient goods; for example, high-pressure boilers and steam turbines (HS 840681) can be more energy efficient, but they are only classified by output (above/below 40 megawatts).

- Second, many goods may be energy efficient when part of an energy-efficient system or product, but not in their own right; for example, switchboards and electrical controls (HS 853710) could be used in a wide variety of applications such as coal and solar power plants, as well as smart grids.

- Third, even when it is possible to distinguish energy-efficient and non-energy-efficient goods, the tariff nomenclature – Harmonized System (HS) codes – may not provide the level of granularity needed to do this; for example, until recently pure electric and hybrid vehicles were classified together with gasoline vehicles.

Ultimately, the greatest possible commercial benefit will come from eliminating all tariffs. The bar has been set very high: the EU's recent deals with Canada, Singapore and South Korea have eliminated all manufacturing tariffs and most agricultural ones. However, universally reducing trade barriers regardless of their climate impact could further accentuate the current patterns of economic activity that contribute to climate change.[19] This tension is brought into sharp focus in the case of products that are particularly harmful for the environment, can be easily identified, and for which alternatives exist; for example,

Figure 3. Provisions in an FTA with relevance to trade and climate



unsustainable palm oil or soya. A policy-coherent approach could favour a phased approach to tariff reduction combined with either cooperation on mandatory standards or supporting market-based mechanisms, such as internationally recognised private certification schemes. These could potentially achieve environmental impact and green development without compromising trade objectives.

Trade in services and establishment

Securing enhanced access for UK services companies through FTAs would be a major prize. The UK has the highest ratio of services exports to GDP in the G7 (Group of Seven) at 13%, with the services sector accounting for 79% of overall UK GDP.[20] Financial, insurance, engineering and business consultancy services in particular represent a huge commercial opportunity for the UK, and will be instrumental in delivering the investment and know-how needed to deliver the NDCs and developmental outcomes.

But services trade faces protectionist pressures similar to those for goods, and can also be more complicated to reform, often requiring legislative change. Policy-making can spread across multiple departments and regulatory agencies, and regulations usually serve broader public policy objectives such as protecting consumers or reducing macroeconomic risk. Moreover, services are increasingly purchased, produced and sold by manufacturing firms, and cannot be separated easily from merchandise trade. With this so-called 'servicification' becoming integral to manufacturing and its value-added, it will be important to understand the interdependencies to ensure FTAs deliver a package of market opening that works for UK firms. For example, recent advances in 3D printing may lead to a shift from trading final products to trade in 'additive ingredients' and various design and manufacturing services.

At the multilateral level, the General Agreement on Trade in Services (GATS) lays out the overarching principles for global services trade as well as members' individual commitments; approximately 75% of members have made commitments in financial and business services, and 40% in environmental services.[21] The GATS recognises four modes of supplying services:

- Mode 1 – cross-border trade, for example, a consultancy report from an overseas firm
- Mode 2 – consumption abroad, for example, travelling to another country as a tourist
- Mode 3 – commercial presence, for example, establishing an overseas office or company to supply a service
- Mode 4 – the presence of natural persons providing services, for example, an engineer travelling overseas to install a new system.

While not recognised by the WTO, the servicification of manufacturing is sometimes referred to as the fifth mode of supply.

Modern FTAs typically build on countries' existing WTO commitments. But while meaningful services liberalisation is possible within FTAs, these tend to be on a sectoral and granular basis, such as allowing offshore financial services data processing in the EU–South Korea FTA.

Mode 3 (commercial presence) is the dominant form of services trade, accounting for two-thirds of EU-28 total services trade.[22] It is particularly important for financial and insurance services, as these are largely delivered through in-country commercial presence through acquisitions, branches or subsidiaries due to regulatory requirements – including prudential requirements, which have tightened since the financial crisis – and the need to interact with clients.

This makes any restrictions on in-country investment highly problematic, particularly as they also affect other services and non-services sectors where an in-country or regional presence is an important route to market (including automotive manufacturers and environmental services). Barriers typically include restrictions on establishment (including equity limits or discriminatory licensing); restrictions on cross-border transactions; and barriers to competition (including favourable treatment of national companies and product restrictions).

The emphasis on mode 3 does not negate the importance of other modes of supply in areas of UK low-carbon strength. First, mode 3 cannot be separated out neatly from mode 4, as it covers the movement of company staff as well as the supply of other business services in person. Second, mode 1 is an important mode of supply for business and consultancy services, and is set to become increasingly important as digital trade and e-commerce expand, including through the digitisation of financial services provision. This is a new area of trade where FTAs provide an opportunity to embed new disciplines, building on those negotiated in the now seemingly defunct Trans-Pacific Partnership and the ongoing WTO Trade in Services Agreement (TiSA) negotiations.

The mapping against NDCs in Figure 2 suggests that there is particular demand for financial services and insurance services to help meet countries' commitments. Table 4 illustrates the most common barriers to UK business in the 10 focus countries.

UK's leadership in green finance and insurance

One key area requiring policy coherence is on financial and insurance services. Financing the structural shift to a low-carbon economy will require trillions of pounds in investment, most of which will need to be financed by or channelled through the private sector. A 2016 City of London report produced by PwC estimated that by 2030 the global green finance opportunity could range from £66 billion to £280 billion per year, with a compound annual growth rate of 12–15%, based on the UK acting as a global green finance hub.[12] As well as existing strengths, the UK has a deep and broad range of dedicated green finance institutions and a track record of innovation, including green loans, green pensions and green crowdfunding.

Increasing access to insurance is an important component of building climate resilience at the individual, community, company and governmental levels. It can alleviate the impact of catastrophes on economic growth, allow faster recovery than traditional post-disaster fundraising, and finance the reconstruction of more resilient infrastructure. For these reasons, insurance is highlighted as a priority area in DFID's 2017 *Economic development strategy*,[13] and the UK is well placed to capitalise on this. The UK has the fourth largest insurance industry in the world, managing investments of £1.6 trillion, and is a net exporter of around £1.8 billion or over 60% of total UK services exports.[14] Globally, the UK is considered to have strong reputation in underwriting and broker expertise, product innovation and breadth, and security and flexibility of available capital.[15] The London market has a particularly strong record in speciality risks, including the type of unusual and high-severity/low-frequency risks[16] posed by climate change. UK-based insurers have been expanding into developing countries through either establishment of a local branch, or merger and acquisition. Ancillary insurance and professional services are also active. Just looking at the 10 focus countries shows significant market potential, with high economic growth rates but with underinsurance and/or high exposure or vulnerability to disaster risks. Seven of the 10 countries focus on disaster risks in their (I)NDCs – Table 3 looks at their potential insurance markets.

Table 3. Potential for insurance markets in selected developing countries with emphasis on disaster risks in their (I)NDCs

Country	Level of exposure to disaster risks (%)	Level of vulnerability to disaster risks (%)	GDPgrowth (%)	Insurance trade restrictiveness*
Bangladesh	32	60	7	43.3
China	14	44	7	38.3
India	12	56	8	45
Indonesia	19	53	5	26.7
Kenya	11	63	6	26.7
Pakistan	11	61	5	46.7
South Africa	12	46	2	16.7

* Scoring: completely open (0); virtually open but with minor restrictions (25); major restrictions (50); virtually closed with limited opportunities to enter and operate (75); completely closed (100).

Sources: Comes et al. (2016); [GDP source]; World Bank (n.d.)[17]

Table 4. Common forms of restrictiveness for financial services and insurance

Element of restrictiveness	Focus countries with significant restrictions in this area
Foreign ownership and equity restrictions on foreign direct investment	China, India, Indonesia, Kenya, Pakistan
Barriers to the provision of services by foreign professionals	India, Indonesia, Kenya, Russia
Requirement to incorporate locally to deliver services	Brazil, Indonesia, Pakistan, Russia

Source: USTR (2017)[23]

The nature of the barriers, the level of ambition needed by the UK to deliver its commercial interests, and its own sensitivities in mode 4 services will make services negotiations challenging. Complementary interventions and programmes – such as CDKN's disaster risk insurance project in Pakistan (see case study 1) – can deliver climate and development outcomes in their own right, and help prepare the ground for future cooperation and regulatory reform. For financial services in particular, it will also be important to pursue regulatory policy alignment through international fora, including the G20 (Group of Twenty) and the International Monetary Fund.

Product standards and technical regulations

Product standards are the regulations, standards and testing procedures applied to manufactured and agricultural goods. Technical barriers to trade (TBT) apply to manufactured products, including low-carbon goods. They can apply across products or they can be product-specific, and are generally designed for reasons of safety, or to protect consumers or the environment. There is evidence that developing countries regard product standards as an important means of achieving their NDCs; for example, Pakistan intends to promote energy standards and labelling for manufacturers and importers in the energy sector. This was driven in part by challenges that "the country was being a dumping ground" for obsolete local and imported electricity products.[25] While of less consequence for future low-carbon trade, Sanitary and Phytosanitary Standards are the equivalent measures applied to agricultural goods covering food safety, or animal and plant health measures.

The WTO's TBT Agreement prohibits technical requirements designed to restrict trade, but it allows member states to put in place technical requirements for legitimate purposes, such as consumer or environmental protection. While important to protect public interest, significant variations in the technical specifications, testing procedures and modalities of enforcement for energy-efficiency standards across countries reduce trade, and often inflict a greater trade cost than tariffs.

Harmonising standards for low-carbon goods can increase economies of scale and trade between countries, encourage innovation, and reinforce internationally agreed norms for environmental

CDKN case study 1. Disaster risk insurance for vulnerable communities in Pakistan

Historically, the response to natural disasters (increasing floods, earthquakes, cyclones and droughts) by the Government of Pakistan relies on domestic budgets, which leads to diverting resources from other projects, and on extensive financing from international donors.

The Pakistan National Disaster Management Authority charted a plan which included designing a disaster risk insurance scheme to provide low-income households with easily accessible and affordable insurance. CDKN supported the development of a risk-transfer mechanism through a project to design a fund, including the preparation of legal documentation, and developed a national disaster insurance framework.[24] The framework, based on international best practices in disaster risk insurance, proposed an institutional procedure for distributing funds efficiently following a disaster.

This project has resulted in the Government of Pakistan working with international stakeholders for uptake of the work, including signing a memorandum of understanding with the Asian Development Bank to set up the Pakistan National Disaster Management Fund in order to boost the country's emergency response and reconstruction capacity, reducing its vulnerability to natural disasters.

protection and sustainability. Given the UK's comparative advantage in more advanced technologies, a transition towards more stringent international standards for low-carbon goods is likely to be particularly beneficial. Figure 4 illustrates the different levels of standards alignment, which are described below.

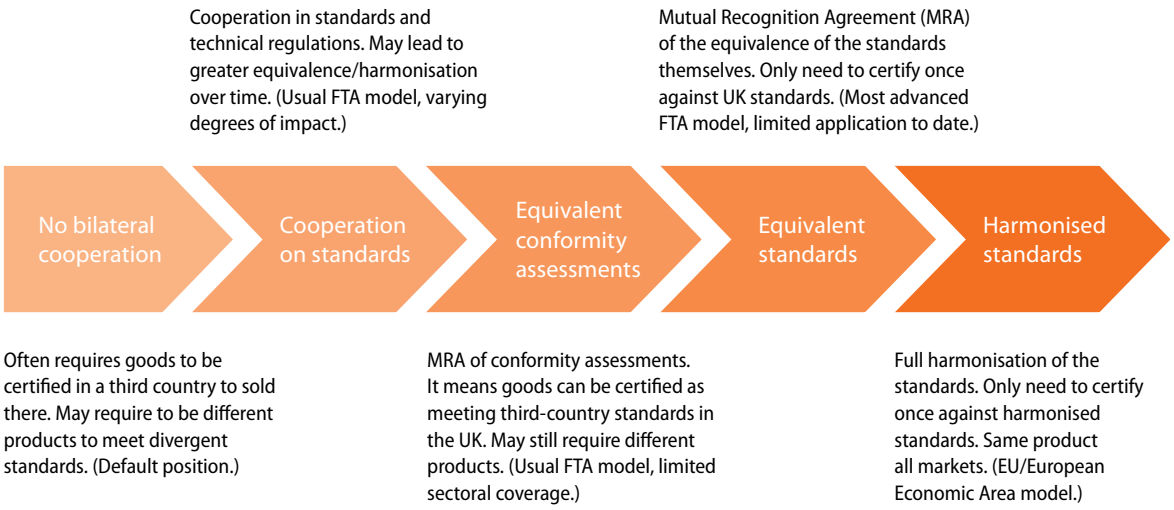
Since full harmonisation of standards requires high levels of economic integration, the highest attainable level of alignment in FTAs is likely to remain the equivalence of standards, achieved through accepting international standards or recognising the equivalence of the respective national standards to the international ones. Many countries and regions, including the EU, seek to align their standards with international ones, the most prominent of which are those of the International Organization for Standardization (ISO). This made it possible for the EU and South Korea to recognise the equivalence of many of each other's electrical goods and vehicle standards to ISO/International Electrotechnical Commission and United Nations Economic Commission for Europe standards, respectively.

While recognising the equivalence of each other's standards based on internationally agreed norms would appear to be another example of a clear win–win, in practice implementation is not so straightforward. First, many countries take quite different approaches to TBT requirements, whether regulated or through private standards bodies. Second, international standard setting can move slowly, and internationally agreed standards do not yet exist for many areas of UK potential comparative advantage. This presents an opportunity to use FTAs to support cooperation on the development of standards.

A more common approach to standards in FTAs is recognising the equivalence of each other's conformity assessment bodies' assessments. Typically this is done on a product-by-product basis in FTAs, although the Trans-Pacific Partnership Agreement[26] (a trade agreement between 12 countries, with an uncertain future following the recent withdrawal of the USA) aspired to do this for all sectors, which could be the UK's aim where a country's conformity assessment bodies are of a sufficient standard. Where this is not the case, there could be a considerable benefit from complementary targeted support to help strengthen conformity assessment bodies, particularly for those energy-efficient products that offer the greatest commercial and environmental potential.

The optimal approach is likely to combine aiming high in aligning standards through enhanced cooperation, with a combination of the options discussed above for reducing the impact of differing standards on a case-by-case basis. But while high standards for environmental products will enhance trade and climate outcomes, they can impact negatively on the poorest, who may be unable to meet the higher standards or less able to bear the brunt of certification and compliance costs. For this reason, it will be important to assess the impact on the poorest and put in place supply-side support and safety nets to help the poorest to meet and benefit from higher standards.

Figure 4. Models for addressing product standards



Policy coherence

Two further provisions require policy trade-offs in order to deliver the optimal commercial, climate and development outcomes, alongside complementary policies and programmes.

Intellectual property rights and technology transfer

Intellectual property protection has been one of the more controversial elements of FTAs and may represent one of the greatest challenges in balancing trade, climate and developmental objectives. Intellectual property is protected in the WTO through the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) which specifies standards for the protection and enforcement of intellectual property. In practice, however, country performance is highly variable.

Modern FTAs can contain strengthened intellectual property provisions and investment chapters that restrict policies requiring technology transfer or investment in green research and development. The economic arguments for strengthening intellectual property through FTAs is strong. Weak intellectual property enforcement enables counterfeiting and piracy, leading to lost profits and sales for UK companies and reduced investment in innovation. Moreover, weak intellectual property policies and enforcement are a major impediment to attracting foreign direct investment. Partner countries with weak intellectual property provisions therefore miss out on the opportunity to attract new technologies and investment, which will be key to meeting their NDCs and wider developmental objectives; for example, job creation, technology spillover and increased tax revenues.

On the other hand, technology transfer and investment in green research and development are stated goals of the Paris Agreement and will be central to countries meeting their NDCs.[27] Indeed, eight out of our 10 focus countries referred to meeting their NDCs being fully or partially contingent on technology transfer: Bangladesh, Brazil, China, Colombia, India, Indonesia, Kenya and Pakistan.

On balance, the mutual benefits from strong intellectual property provisions, enforced through the FTA's dispute mechanism, are likely to outweigh any gains from mandatory technology transfer. Weak intellectual property protection or robust technology transfer policies will limit investment, forfeiting the potential trade, climate and developmental benefits. The optimal approach is likely to contain strong intellectual property provisions, coupled with complementary measures to support technology transfer.

A recent evaluation of FTAs between developed and developing countries found that there are precedents for including provisions on research cooperation, and suggested these are included in UK FTAs.[28] Alongside any such provisions, the UK could also enhance its investment through Research Councils UK (including Innovate UK) in complementary targeted R&D programmes in areas where the UK has a comparative advantage, the partner country has technology needs, and consequently there are significant trade and investment opportunities. There are already many good examples of promoting technology exchanges without restricting intellectual property protection; bilateral cooperations include the ongoing India–UK Collaborative Industrial Research and Development Programme, which includes clean technologies and natural disaster management as focus areas. CDKN has also supported broader facilitative channels such as those by the United Nations Framework Convention on Climate Change (UNFCCC, see CDKN case study 2) to identify different ways to transfer technologies.

CDKN case study 2. Fostering low-carbon technology innovation and transfer

This project looked at ways to broaden and refocus national and international policy agendas to enhance technology development, diffusion and transfer.[29] Through the latest academic insights, understanding of national and international instruments for advancing technology, and technology value chains as case studies, the project offered recommendations to the UNFCCC Technology Mechanism and its Climate Technology Centre and Network. Recommendations for the Technology Mechanism include promotion of south–south R&D programmes, financing of technology and participation of a wide range of institutions. CDKN has also developed a paper (forthcoming) which demonstrates the potential application of Fourth Industrial Revolution (4IR) technologies in developing countries, and highlights the opportunities created by these emerging technologies in facilitating and accelerating a transition to a low-carbon, climate-resilient economy.

Procurement
Increasing access to government procurement contracts can present a large commercial opportunity, with procurement accounting for 13% of GDP in Organisation for Economic Co-operation and Development (OECD) member countries.[30] Yet government procurement is often restricted and tailored to deliver industrial and social objectives, with its role in fostering sustainable development acknowledged in the Sustainable Development Goals (12.7). In the case of low-carbon goods and services, these commonly take the form of: (1) using buy-local schemes to support the integration of domestic firms in low-carbon value chains to create jobs and facilitate the transfer of technologies and know-how; (2) acting as a 'lead buyer' to support the commercialisation of domestic low-carbon innovation; or (3) utilising environmental information and labelling schemes to distinguish low-carbon goods or services. Countries may also wish to retain current or future policy space for a preference for low-carbon goods or services in procurements; there are strong environmental and future-proofing arguments for the UK doing so.

While legitimate public policy objectives, these all present potential market access barriers, although each can potentially be addressed through an FTA. First, an FTA can provide negotiated national treatment to all levels of procurement, including national, local, agencies and public utilities, with carve-outs for only the most sensitive areas. Second, FTAs can mandate cooperation on environmental labelling schemes, utilising as far as possible internationally recognised performance standards, such as the Energy Star standards. Third, FTAs could potentially be used to grant UK companies equal treatment to local firms in 'buy-local' and similar schemes, or even agree time-bound exemptions from such schemes for selective environmental investments. These would represent a significant concession from partners and could be combined, for example, with complementary R&D programmes and business development support to facilitate in-country partnerships, and commitments on increasing the integration of local firms in supply chains over time.

Policy cooperation
A further three FTA provisions can enhance bilateral and multilateral cooperation between partner countries, particularly when reinforced by complementary policies and programmes which may deliver greater impact in their own right.

Sustainable development chapters
Environmental provisions in EU and US FTAs have successfully moved from referencing multilateral clauses that allow countries to introduce trade-restricting measures if they can prove their removal would harm the environment,[31] to stand-alone sustainable development or environmental chapters. These chapters typically refer to environmental exceptions, other multilateral climate commitments (including the UNFCCC) and enforcement mechanisms (the USA adopts an enforcement-based approach and the EU an incentives and cooperation-based one). The EU–Singapore FTA goes further than most by containing specific terms on the liberalisation of environmental services such as waste removal, rules on illegal fishing and logging, and a commitment to support private environmental standards. It also establishes institutional mechanisms for dealing with disputes, and provides for the establishment of a panel of experts to resolve them.

Despite the effort invested, the relatively scarce empirical evidence is inconclusive on whether environmental provisions in either the WTO or FTAs have environmental effects.[32] Moreover, environmental chapters are often controversial with developing countries, some of which fear they will be used by developed countries to limit their competitiveness. So while environmental chapters have value in signalling intent (between the parties and publicly) and can support dialogue and cooperation on climate-relevant issues, the value of an FTA in supporting low-carbon growth will mostly come from the specific provisions contained within the individual chapters.

Private product standards
Private standards are product standards developed by the private sector or non-governmental organisations and their usage is not prescribed by government. They take a wide variety of forms, and those that help consumers and governments differentiate between products can help support climate outcomes. Their impact can be considerable: one study, which surveyed 16 global sustainability standards across 10 major commodities, estimated the global traded value to be US$31.6 billion in 2012.[33] A number

of recently concluded FTAs, including those negotiated by the EU with Singapore and South Korea, contain commitments to support the development of private standards in the respective sustainable development chapters.

But many of the risks associated with standards apply equally to private standards, particularly if they increase duplication and compliance costs, or become de facto mandatory standards.

Policy coherence could be found through including strong cooperation provisions in FTAs, directing efforts towards those that have the largest commercial and climate impact, for example:

- timber, soya and palm oil are agricultural certification standards, such as the Round Table on Responsible Soy certification used by retailers including Asda, Marks and Spencer, Sainsbury's and Tesco
- energy efficiency of consumer and electrical products, such as the Energy Star programme which the USA, EU and others recognise.

Where standards do not currently exist, complementary programmes could be introduced to support their development (see CDKN case study 3). As with voluntary and technical standards, it will be important that programmes also consider explicitly how to ensure small and medium enterprises and poor people are supported to meet standards and mitigate any impact on their livelihoods.

Environmental taxes and subsidies
Subsidies and taxes are used by governments to pursue a wide variety of policy objectives, for example, carbon pricing to discourage high-carbon activities; fossil fuel subsidies to tackle fuel poverty; or feed-in tariffs to support the deployment of renewables. There is limited scope for tackling subsidies directly through bilateral FTAs, since there is currently limited precedence in international cooperation and the benefits conferred cannot be confined to the negotiating partners. However, FTA commitments can ensure that there are no barriers to UK companies established locally benefitting from low-carbon subsidies available to domestic firms.

It may also be possible to use the FTA to establish dialogue mechanisms and cooperation in multilateral fora, including the WTO and G20. This could include enhanced notification of fossil fuel subsidies to the WTO, or cooperation on developing a WTO subsidy regime that allows for strictly defined flexibility for low-carbon subsidies. Complementary programmes could also help facilitate willing partners' transitions. India, for example, has turned its carbon subsidy regime into a carbon taxation scheme, with subsidies cut and taxes increased on fossil fuels (petrol and diesel).[35]

Carbon pricing is widely considered to be an essential element of the national and international policy response to climate change.[36] While multilateral cooperation has been limited to date, in their NDCs 56% of countries expressed an interest in using international mechanisms. This could be through direct linking and cooperation; for example, California and Quebec are linked via the Western Climate Initiative. Or it could be indirect carbon trading through existing mechanisms such as the Clean Development Mechanism and REDD+, or their future evolutions in which developing countries can sell carbon credits. Sectoral mechanisms, such as those on aviation emissions, may have direct and indirect implications for

CDKN case study 3. Developing voluntary standards in the Kenyan cut-flower market

CDKN provided support to strengthen Kenya's competitive position in global markets, including the EU, where Kenya supplies over a third of all cut flowers. The Horticultural Crops Development Authority and the Kenya Flower Council developed a greenhouse gas management tool, the Carbon Reduction, Resources and Opportunities Toolkit (CaRROT),[34] which integrates energy and water trackers with a carbon calculator. The project helped raise awareness among the flower sector of climate change risks and opportunities, and popularised self-regulating, voluntary greenhouse gas management standards. This will help position Kenyan suppliers to meet private greenhouse gas standards that may be imposed by EU supermarkets in the future.

CDKN case study 4. Exploring the opportunity for fuel subsidy reform in Bangladesh

As an oil-importing country with state-controlled fuel prices, Bangladesh has provided significant fuel subsidies to bridge the gap between consumer prices and supply costs. DFID Bangladesh and CDKN worked with the Policy Research Institute in Bangladesh to analyse the fuel subsidy options on oil market deregulation and oil pricing available in the country.[37] This included estimating the expected benefits of oil pricing reforms on the budget and distribution impacts, including for the poor and for environmental management; developing an approach to deregulating the oil market in Bangladesh; and engaging policy-makers to explore options and implications of oil market deregulation and associated subsidy reform.

the UK's aviation and aircraft sectors. This may be another area where the FTA could become a platform for structuring bilateral cooperation and trading.

More challenging for policy coherence are carbon border adjustment mechanisms (BAMS, also known as border tax adjustments), which are levies imposed on imports based on the carbon emitted during the production of those goods and the price of carbon faced by comparable goods in the importing country. They aim to prevent 'carbon leakage' and unfair competition favouring industries in countries with weak climate action. This is a highly contested area, although only Mexico makes reference to border adjustment mechanisms in its NDC. Trade practitioners typically question their legality in the WTO and highlight the challenges of data availability and enforcement, and the risk that they will be used for protectionist purposes. For a country like the UK, which already adopts carbon pricing, promoting collaboration on carbon pricing is likely to be more environmentally effective and less trade limiting than border adjustment mechanisms, and this may be an area where the UK may choose to invest in thought leadership and consensus-building, including through cooperation with like-minded FTA partners.

What's next?

Negotiating new FTAs provides the UK with an important opportunity to develop a bilateral trade policy that maximises commercial, climate and developmental outcomes. Developing country partners that are actively pursuing climate action and improving development outcomes are likely to see benefits from a trade deal that gives them access to the skills, goods and investment that the UK can offer, supplemented by other forms of cooperation and support provided by the UK. A collective and coherent suite of bilateral cooperation in trade, climate and development is far more likely to achieve the outcomes desired by the negotiating parties. These are not contingent on an FTA; indeed, complementary programmes can deliver outcomes in their own right, prepare the ground for FTAs and support their effective implementation.

The trade and climate checklist in Table 5 sets out key FTA provisions and complementary policies for achieving the UK's and partners' objectives. Good deals can be struck – not just for trade, but also for climate and development.

Table 5. FTA trade and climate checklist

Trade element	Recommendations	
	Core FTA	**Complementary measures**
Triple wins		
Tariffs	• Eliminate all tariffs on low-carbon goods, using the WTO Chair's list as a basis. Seek to treat this as 'low-hanging fruit' with willing negotiating partners and incrementally build progress towards the WTO Environmental Goods Agreement. • Use FTA as platform for promoting conclusion of the WTO Environmental Goods Agreement and its subsequent expansion to cover NTBs to trade and services. • For the most harmful climate products, do not liberalise tariffs through FTAs at the outset.	• Support the development of HS codes for classifying energy-efficient products, focusing on where the UK has a comparative advantage. • Support private standards and certification programmes to distinguish between the sustainability of products. • Invest in programmes to support the poor affected by liberalisation (e.g. skills development, access to finance, social safety nets).
Trade in services and establishment	• Prioritise services market access commensurate to its value to the UK economy and its export potential, giving particular attention to financial and insurance services (with mode 3 representing the most important route to market). • Seek to negotiate provisions that are aligned with and build upon those in TiSA negotiations.	• Implement complementary programmes supporting business environment and investment reforms. • Implement complementary in-country technical programmes to support the uptake of climate-related services, especially insurance, focusing on the poorest. Ideally involve UK companies to support potential longer-term commercial opportunities. • Extend policy coherence principles/practice to UK policy in the G20, International Monetary Fund and international fora.
Product standards and technical regulations	• Aim to recognise the equivalence of standards affecting low-carbon goods where there is UK comparative advantage and large market opportunity. • Agree MRAs of conformity assessments where there is greatest potential value opportunity. • Use FTAs as a platform for bilateral and international cooperation on standards. Aim to be a standards leader but avoid divergence when international standards catch up.	• Support countries to improve the quality of standard-making and accreditation, including the adoption of international standards and/or quality-of-conformity assessments. • Implement complementary development programmes (particularly to support the poor) to meet compliance and certification costs.
Policy coherence		
Intellectual property rights and technology transfer	• Aim to secure strong intellectual property provisions in FTAs, enforceable through the FTA dispute mechanism.	• Implement programmes to help strengthen countries' intellectual property systems and develop and implement technology-transfer strategies as part of an effective innovation system. • Implement complementary targeted R&D programmes in areas of future UK comparative advantage.
Procurement	• Aim to maximise access to domestic procurement for UK companies, with carve-outs only for the most sensitive areas. • Mandate cooperation on environmental labelling schemes, as far as possible utilising internationally recognised performance standards. • Explore flexibility on buy-local schemes for UK companies, linked to complementary programmes.	• Implement complementary programmes to support the integration of domestic companies in the supply chain. • Implement targeted R&D schemes to increase access for UK companies and support low-carbon innovation through fostering partnerships with in-country firms.
Policy cooperation		
Sustainable development chapters	• Retain environmental provisions in FTAs to support dialogue and accountability, aiming for ambitious commitments where of mutual interest. • Do not expend significant negotiating capital on sustainable development chapters. Focus instead on securing the best possible outcome on the elements within the core of the FTA.	• Enhance bilateral and multilateral engagement around environment and development, focusing on issues that matter most for the UK and partner countries.
Private product standards	• Use FTAs as a platform for promoting the development and adoption of private standards in areas that have the greatest commercial and/or environmental impact.	• Support private standards and certification for products with a high carbon impact and/or large trade potential that can be realised through higher and more widely adopted private standards. • Implement complementary development programmes to support the poor to meet compliance and certification costs.
Environmental taxes and subsidies	• Use FTA cooperation to provide a platform for subsidy cooperation in multilateral fora, including the WTO and G20. This could include a commitment to report on fossil fuel subsidies in the WTO. • From a commercial perspective, FTAs could be used to ensure UK companies are eligible for any domestic low-carbon subsidies. • Explore bilateral cooperation on carbon markets through the FTA, with the potential to expand this among willing countries.	• Implement complementary programmes to support countries to assess and reform fossil fuel subsidy regimes. • Implement complementary programmes to support poor people affected by fossil fuel subsidy reform. • Build consensus and develop thought leadership on fossil fuel subsidies, carbon pricing and border adjustment measures.

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About CDKN

The Climate and Development Knowledge Network (CDKN) supports decision-makers in developing countries in designing and delivering climate compatible development. It does this by combining research, advisory services and knowledge-sharing in support of locally owned and managed policy processes. CDKN works in partnership with decision-makers in the public, private and non-governmental sectors nationally, regionally and globally.

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