Clean Free Trade

Championing free trade, economic growth and the environment

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Executive summary

Having left the European Union, the United Kingdom has the opportunity to exercise a range of newfound freedoms. The chance to develop an independent and better trading policy is one of the most obvious examples of this, and something which the Government is keen to pursue.

Another clear priority is to restore economic activity in the wake of the coronavirus pandemic. International trade is a critical component of economic success, and one which is especially important to the UK economy. Before the pandemic struck, in 2019, the combined value of imports and exports exceeded £1.4 trillion, equivalent to 64% of total economic output. With international trade comes new jobs, lower prices and better goods and services – all the while driving up living standards and productivity through heightened competition. It is unsurprising, therefore, that the Government has made achieving a better trade policy one of its main objectives.

Meanwhile, 2021 marks a critical year for environmental politics – especially for the UK. In November, the country will host the 26th United Nations Climate Change Conference (COP26). This will be an incredibly significant occasion, as governments, delegates and businesses from across the globe convene to accelerate action on tackling climate change.

Also taking place in 2021 is the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15), in Kunming, China. This conference will examine how humankind can exist more harmoniously with nature.

For the last few years, the Government has ramped up its emphasis on promoting sustainability both at home and abroad. Largely, this has focused on decarbonising the economy to mitigate the UK's ongoing contribution to climate change, but also encompasses other objectives, such as cutting air pollution and tackling threats to biodiversity.

There are many encouraging signs that Britain is successfully blazing a trail when it comes to protecting the environment. Its economy has decarbonised markedly – with emissions of greenhouse gases down 44% since 1990. It also enjoys much better air quality than it once did, thanks largely to the cleaning up of the power sector and certain industrial processes.

Other indicators, however, show where progress has been lacking – most noticeably on biodiversity, with many different species and ecosystems threatened as a consequence of human activity. It also has to be said that while progress on reducing greenhouse gas emissions and improving air quality is admirable, more still needs to be done, including addressing certain sources of pollution which have hitherto proven challenging to combat.

For some – particularly those on the political left – an idea stubbornly persists that our current socio-economic system is intrinsically irreconcilable with the levels of environmental

stewardship needed to halt and reverse climate change and other environmental issues. In particular, they view market economics and international free trade with scepticism, or in many cases naked hostility.

Yet as this report shows, capitalism and international free trade can be perfectly compatible with good environmental outcomes. Moreover, they are exactly what will best provide humanity with the techniques and frameworks needed to overcome environmental issues in such a way which does not unduly infringe on individuals' living standards or cherished freedoms. But that requires governments to look at and remedy instances where markets are not functioning correctly, where property rights are ill enforced, where regulations are backfiring, and where subsidies are actively exacerbating environmental challenges.

As Britain emerges from the worst of the coronavirus pandemic, and looks towards its hosting of COP26, it should redouble its commitment to being a global leader on environmental sustainability, economic growth, and international free trade.

To that end, the most important proposal we can make is that the Government should redouble its commitment to be a champion of free trade, rather than listening to the siren voices of protectionist special interests who inherently equate it with environmental degradation. But more specifically, we also propose the Government should:

I. Unilaterally remove tariffs and non-tariff barriers on environmental goods and services, and encourage other governments to do the same

Impediments to free trade in the form of tariffs and non-tariff barriers (NTBs) vary from being mild inconveniences, to stopping trade right in its tracks. They hurt economies by raising prices and lowering productivity. From an environmental perspective, they increase the costs associated with importing and exporting green solutions. They also limit the ability for countries to exploit their comparative advantages, which is both economically and environmentally injurious.

Since leaving the EU, the UK has made an admirable start in liberalising its trade policy. The new UK Global Tariff cut and simplified tariffs on a vast range of goods, including more than 100 which help to protect the environment.

We recommend that the Government should now take the next step, and commit to unilaterally removing tariffs and NTBs on environmental goods and services, to minimise the costs and challenges to individuals and businesses of adopting green solutions. At the same time, it should also seek to persuade other nations to reciprocate, offering an opportunity for British firms which are developing environmental products and services to more easily sell into overseas markets.

II. Reduce and ultimately abolish preferential tax advantages and subsidies for fossil fuel consumption and production, and encourage other governments to do the same

The extraction, processing and combustion of fossil fuels is the primary driver of global warming. They are also a leading cause of air pollution, and their extraction from the earth is often incredibly ecologically destructive. Phasing out their use in the economy will be critical if Net Zero and other environmental objectives are to be successfully met.

And yet, there are a number of policies in place which actively impede the transition away from fossil fuels and towards clean alternatives. Preferential tax advantages artificially suppress the cost to both produce and consume fossil fuels. These include domestic fuel and power attracting a reduced rate of VAT. Fossil fuel boilers are also subject to a reduced rate of VAT, while most plane tickets are completely zero-rated.

Beyond tax advantages for fossil fuels, other sectors which create environmental threats are also hugely subsidised. Agriculture, for instance, receives billions in taxpayer funding each year – often being allocated in such a way which incentivises poor environmental stewardship.

We recommend that the Government assesses how the current policy framework subsidises or creates biases towards fossil fuel use, and commits to reduce and ultimately abolish state support for sectors and products which are in receipt of such subsidies – while ensuring that consumers do not suffer as a result.

III. Join the Agreement on Climate Change, Trade and Sustainability

In September 2019, New Zealand, Norway, Iceland, Costa Rica and Fiji joined together to announce a new initiative called the Agreement on Climate Change, Trade and Sustainability (ACCTS). It was later joined by Switzerland, and is currently one of the most high-profile environmental trade initiatives.

The ACCTS seeks to resolve three broad issues: i) removing tariffs and liberalising trade on environmental goods and services; ii) eliminating subsidies for fossil fuels; iii) developing voluntary guidelines for eco-labelling programmes and mechanisms.

We recommend that the Government should seek to join the ACCTS. By engaging with the ACCTS early on, the UK can use its own expertise and leverage to ensure that the provisions in the ACCTS are as well designed as possible.

By joining, the UK would swell the ACCTS from being an agreement covering economies totalling $1.6 trillion in terms of GDP, to one covering economies in excess of $4.7 trillion. It would also entail the addition of a G7 economy (and the country with the current presidency of the G7), and the host of COP26. Indeed, there are few countries currently better placed than the UK to boost the profile of the ACCTS, catalyse support for it, and persuade other nations to join themselves.

IV. Lead on global efforts to introduce carbon border adjustment mechanisms

The UK enforces some of the world's most rigorous climate policies. Without doubt, some of the policies the UK has adopted to cut domestic emissions have imposed costs on businesses – for instance raising energy prices, and thus the costs of production, especially in carbon-intensive industries. Concern exists around the idea that some British businesses are rendered relatively less competitive by such policies compared to some foreign businesses, which may not have to abide by – and bear the costs of – similar climate policies in their own countries.

Some worry that this could stymie the adoption of further measures to decarbonise, as even a perceived unfairness could create opposition even among those who broadly support further decarbonisation of the economy.

Carbon border adjustment mechanisms (CBAMs) seek to alleviate these worries. CBAMs level the playing field between nations which enforce strict climate policies and those which do not. If an import had not accounted for its climate costs in its country of origin, it would be expected to pay a fee equal to what the climate costs of producing it would roughly have been in the UK – putting it on a more equal footing.

We recommend that the Government should become a standard bearer for the adoption of CBAMs. Acting as a leader in the global push towards CBAMs would mean that the UK can sculpt their design and implementation, and reduce the likelihood that it will be forced into a system later down the line which it has had no say in creating. Again, a priority here should be to ensure that this process does not simply raise costs for consumers, but creates a genuinely level playing field.

V. Task the Climate Change Committee with scoping a Net Zero consumption target

Currently, the UK has a target of Net Zero greenhouse gas emissions by 2050. Yet this target only applies to emissions produced domestically. As highlighted in previous Centre for Policy Studies work, it ignores emissions embedded in imports, and thus flatters the UK's progress in terms of decarbonisation.

We recommend that the Government instructs the Climate Change Committee to scope a Net Zero consumption target, and track progress towards it in its forthcoming analyses. This would allow the Government to more accurately and honestly communicate British decarbonisation efforts.

I. Introduction

International trade is nothing new. For as long as nation states have existed, individuals have been exchanging goods and services across their borders. Mutual trade of any sort is necessarily welfare enhancing. When carried out on an international scale, the economic benefits are vast – in 2019, the value of goods and services traded across borders was measured at just under $25 trillion.[1,2] International trade has been instrumental in lifting billions from abject poverty.[3] Though economists struggle to agree on many issues, the beneficial consequences of international free trade are generally not one of them.[4,5,6]

Britain has historically played a leading role in advancing the virtues of international trade. Economists such as Adam Smith and David Ricardo have long been revered for their elegant explanations of how trade garners positive-sum results.[7,8] With France, the UK brokered the first modern free trade agreement – the Cobden-Chevalier Treaty – in 1860.[9] In the second half of the 20th century, the UK was instrumental in building and maintaining the modern multilateral trading system, and during its membership of the European Union was one of the main voices pushing for the liberalisation of trade in goods and services.[10]

Today, Britain finds itself grappling with international trade in a way it has not had to for decades. Having left the EU, and with the Brexit transition period over, the UK has the chance to craft a trade policy independent of Brussels for the first time since 1972. The Trade Secretary and President of the Board of Trade, Liz Truss, has stated the Government's intention to 'lead the global fightback for free and fair trade',[11] while the Prime Minister, Boris Johnson, has spoken of his desire for Britain to be a 'catalyst for free trade across the world'.[12]

Shaping and shoring up the UK's new trade agenda is not the only priority for the Government right now. Another policy area which receives considerable attention is that of the environment, and how to better protect and enhance it.

1 World Trade Organization, *World Trade Statistical Review 2020.* Link.

2 Due to the economic turbulence caused by the Covid-19 pandemic, most economic data used in this report are for 2019, which hopefully gives a more accurate representation of the normal state of affairs.

3 Donald Boudreaux and Nita Ghei, *The Benefits of Free Trade: Addressing Key Myths.* Link.

4 Gregory Mankiw, *Economists Actually Agree on This: The Wisdom of Free Trade.* Link.

5 Richard Alston, James Kearl and Michael Vaughan, Is *There a Consensus Among Economists in the 1990's?* Link.

6 William Poole, *Free Trade: Why Are Economists and Noneconomists So Far Apart?* Link.

7 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations.* Link.

8 David Ricardo, *On the Principles of Political Economy and Taxation.* Link.

9 Gene Grossman, *The purpose of trade agreements.* Link.

10 Margaret Thatcher, *Speech opening Single Market Campaign.* Link.

11 Liz Truss, *Chatham House speech: Liz Truss sets out vision for values-driven free trade.* Link.

12 Boris Johnson, *PM speech in Greenwich: 3 February 2020.* Link.

In November, the UK will host COP26. For two weeks, diplomats will discuss, debate and decide how to redouble action on climate change. Alongside the deliberations which will be taking place, there will also be a substantial focus on exactly which policies and technologies countries are adopting to meet the goals and objectives being thrashed out by the negotiators and heads of states. If the UK is not to be embarrassed in its own back garden, it needs to ensure that it is pulling out all of the stops in terms of its platform for climate action.

As well as efforts to address climate change, 2021 will also see China's hosting of COP15. This conference will draw up the 'Post-2020 Global Biodiversity Framework', which outlines what actions need to be taken to deliver on the Convention's vision of 'living in harmony with nature' by 2050.[13] It will also be where a coalition of more than 50 countries will seek to advance their objective of conserving 30% of the world's land and oceans by 2030.[14]

As with COP26, COP15 will be as much about showcasing the successful policies and innovative technologies and sustainable practices which are required to bolster biodiversity as it will be about delivering on the hard politics of the Conference.

Meanwhile, across the globe, the environment is only continuing to gain more and more attention. Most notably of late, the election of President Joe Biden has returned the USA to the table of climate discussions.[15] Elsewhere, in China, Japan, South Korea, the EU and countless other countries, governments are getting to grips with the sustainability agenda.[16,17] The UK has long played an outsized role here, and the current Government has only indicated its ambition to cement that position further.[18]

This report argues that international free trade and environmental stewardship can be – contrary to common assumption – mutually reinforcing objectives. It then makes a series of recommendations which the Government should adopt to help it to hasten decarbonisation, ameliorate air quality, arrest ecosystem degradation and enhance prosperity both at home and abroad.

Importance of international trade to the UK economy

International trade is vital to the success of the UK economy. In 2019, the value of imports into the UK totalled £717 billion, and the value of exports from the UK was £689 billion.[19] Analysis for the recently reconstituted Board of Trade estimates that UK export production supported 6.5 million full-time equivalent (FTE) jobs in the UK in 2016, around 23% of the total.[20] Chart 1, on the following page, shows that trade as a percentage of gross domestic product (GDP) stood at 63.8% in 2019 – up 0.8 percentage points on the previous year, and 11.6 percentage points compared to 2000.[21]

13 Convention on Biological Diversity, *Strategic Plan for Biodiversity 2011-2020.* Link.

14 Patrick Greenfield and Fiona Harvey, *More than 50 countries commit to protection of 30% of Earth's land and oceans.* Link.

15 Oliver Milman, *Dizzying pace of Biden's climate action sounds death knell for era of denialism.* Link.

16 CarbonBrief, *South Korea follows Japan and China in carbon neutral pledge.* Link.

17 European Commission, *2050 long-term strategy.* Link.

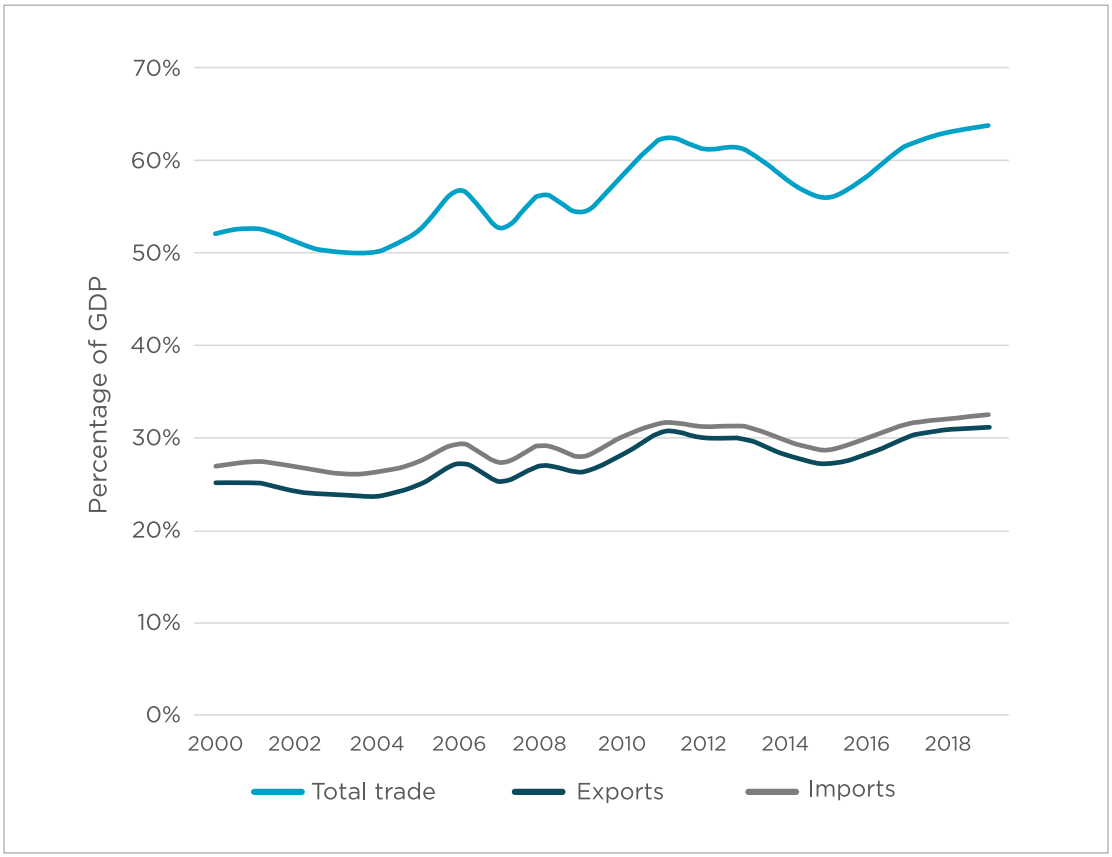
18 HM Government, *The Ten Point Plan for a Green Industrial Revolution: Building back better, supporting green jobs, and accelerating our path to net zero.* Link.

19 Office for National Statistics, *UK trade: goods and services publication tables.* Link.

20 Fraser of Allander Institute at the University of Strathclyde, *Estimating the relationship between exports and the labour market in the UK.* Link.

21 Ibid.

Chart 1. Value of UK trade



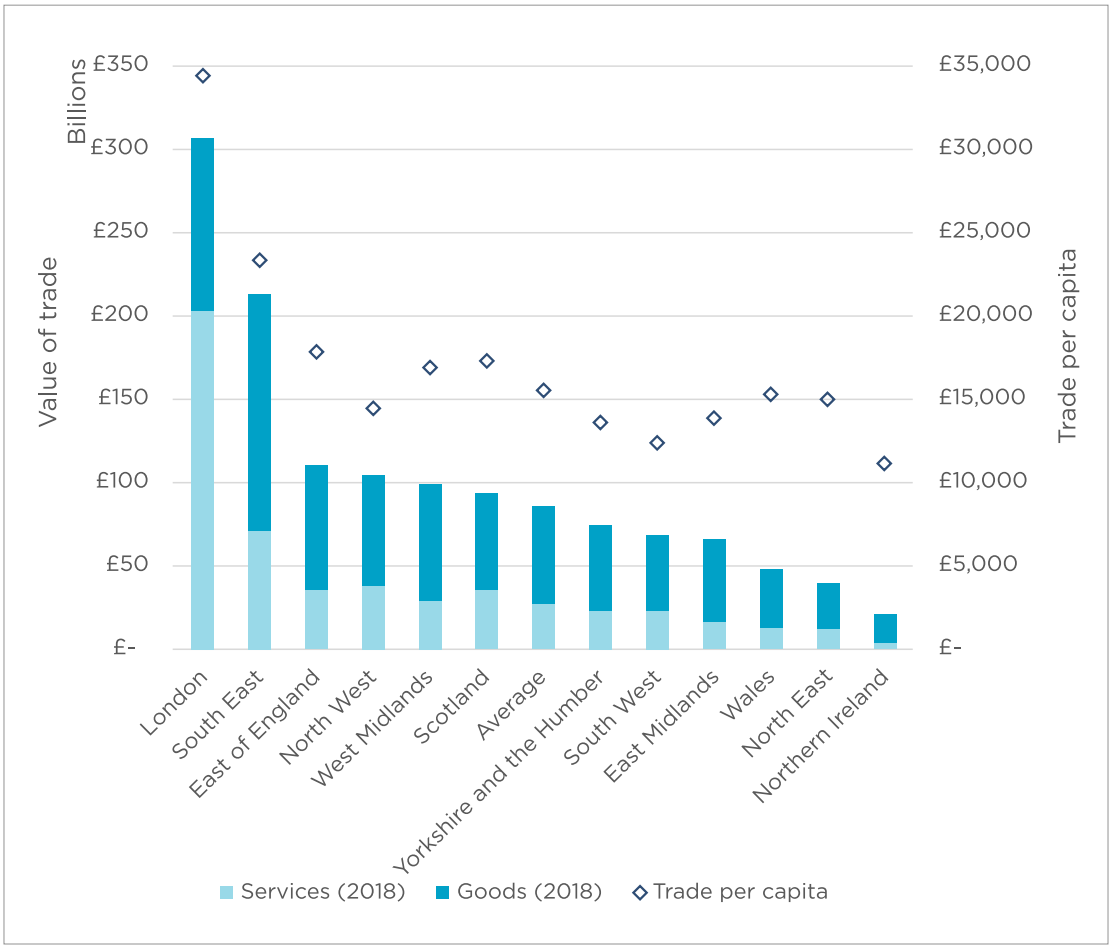
Source: Author's analysis of Office for National Statistics, UK trade: goods and services publication tables. Link; Organisation for Economic Co-operation and Development, Trade in goods and services. Link.

In 2019, the UK's top trading partner was the USA – with which almost £230 billion worth of goods and services were traded.[22] Next came Germany (£133 billion), the Netherlands (£92 billion), and then China (£86 billion).[23] Globally, the UK was the 5th biggest exporter in 2018, and the 4th biggest importer.[24]

Trade takes place all over the UK, too. Chart 2, on the following page, shows the value of trade per region of the UK, and the value per capita based on mid-2018 population estimates. While London quite clearly dominates in absolute and per capita terms, even outside of the capital, the mean value of trade per capita stands at over £15,500.

22 Office for National Statistics, *UK total trade: all countries, non-seasonally adjusted.* Link.
23 Ibid.
24 Department for International Trade, *Trade and Investment Core Statistics Book.* Link.

Chart 2. Value of trade per region



Source: Author's analysis of HM Revenue and Customs, UK regional trade in goods statistics: fourth quarter, 2020. Link; Office for National Statistics, International trade in services by subnational areas of the UK. Link; Office for National Statistics, Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland. Link.[25]

International trade provides jobs for British workers, and lowers prices for British consumers.[26] It brings goods and services to the UK's shores which the country does not – and in many instances cannot – produce for itself. By exposing firms to international competition, it drives up productivity for the betterment of all.[27,28]

25 Excludes £75,316,000,000 of goods imports and exports which were 'unallocated' to a specific region.

26 Board of Trade, *Global Britain, Local Jobs.* Link.

27 Department for Business, Innovation and Skills, *UK trade performance across markets and sectors.* Link.

28 Martin Andersson, Hans Lööf and Sara Johansson, *Productivity and International Trade: Firm Level Evidence from a Small Open Economy.* Link.

Progress to date on environmental stewardship

Over recent years, the amount of attention afforded to the environment has grown markedly – in the media, among politicians, and from the general public.

Tabloid newspapers are doing more than ever to burnish their green credentials.[29,30] The Treasury is publishing reports which warn that global warming is an 'existential threat', and, if left unchecked, will cause 'the climate [to] change catastrophically with almost unimaginable consequences for societies across the world'.[31] Data from opinion polling and exercises such as Climate Assembly UK underline how much support exists for further action on addressing environmental issues.[32,33]

Quite simply, the environment is no longer a niche issue which occupies the fringes of the political debate. It commands considerable recognition in its own right, and cuts across several other key Government objectives – from foreign policy to levelling up.[34,35]

Interest abounds within the business community, too – with investors, entrepreneurs and multinational companies keen to tap into consumers' increasing appetite for green products. According to analysis from BloombergNEF, $11 trillion could be invested in new renewable power capacity by 2050 globally.[36] They also estimate that by 2040, electric vehicles will account for nearly three in five passenger vehicle sales.[37] Demand for green steel, green glass, and green cement will also increase, while sustainable aviation fuels and alternatives to high-carbon foodstuffs will need to be developed as well. Altogether, the opportunity is there for British firms to tap into lucrative emerging markets, and, indeed, it is likely that among the flourishing companies of the future will be those which are successfully facilitating the transition to a greener economy.

> **'The environment commands considerable recognition in its own right, and cuts across several other key Government objectives'**

29 The Sun, *Here We Eco! Join the Sun's Green Team Campaign with small lifestyle changes to save money and the planet.* Link.

30 Daily Mail, *Break the plastic habit! Join the Daily Mail's campaign.* Link.

31 HM Treasury, *Net Zero Review: Interim report.* Link.

32 United Nations Development Programme and the University of Oxford, *People's Climate Vote: Results.* Link.

33 Climate Assembly UK, *The path to net zero.* Link.

34 HM Government, *Global Britain in a competitive age The Integrated Review of Security, Defence, Development and Foreign Policy.* Link.

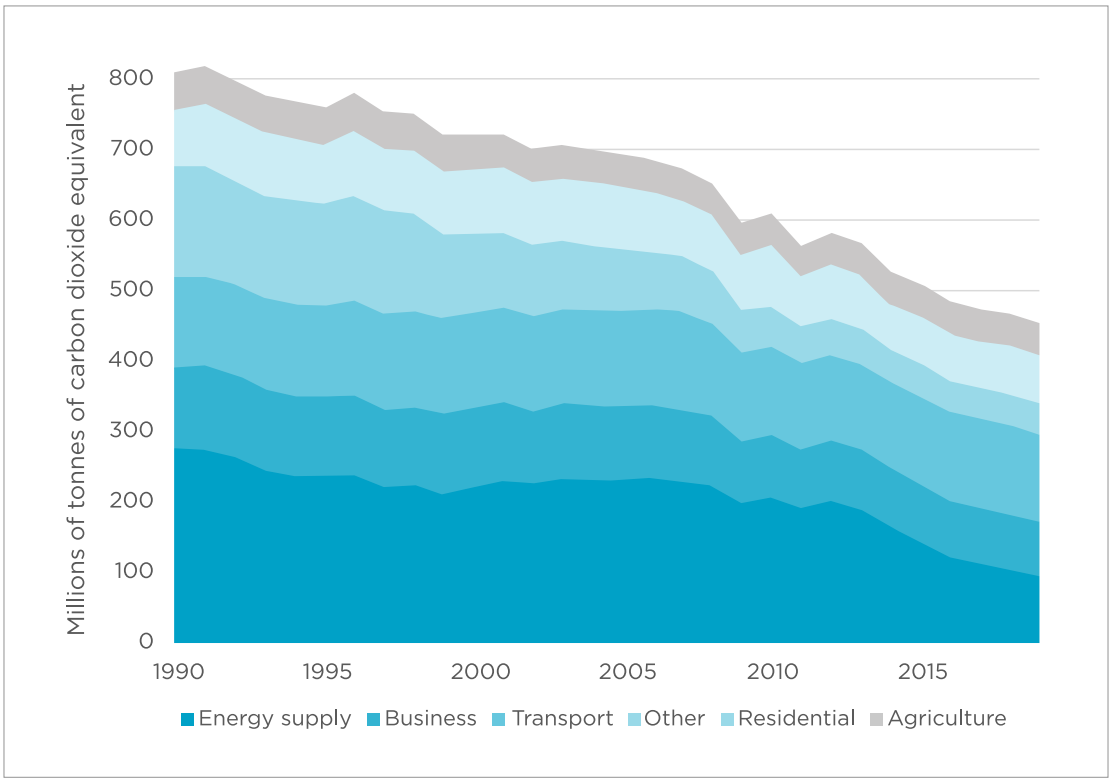
35 HM Treasury, *Build Back Better: Our plan for growth.* Link.

36 BloombergNEF, *New Energy Outlook 2020: Executive Summary.* Link.

37 BloombergNEF, *Electric Vehicle Outlook 2020.* Link.

This uptick in attention mirrors the progress made across various environmental metrics of late. One of the most encouraging trends in the UK has been its recent record on decarbonisation. As illustrated in Chart 3, since 1990, the UK economy has slashed its net emissions of greenhouse gases from 809.1 million tonnes of carbon dioxide equivalent to 454.8 MtCO2e – a reduction of 44%.[38]

Chart 3. UK territorial greenhouse gas emissions



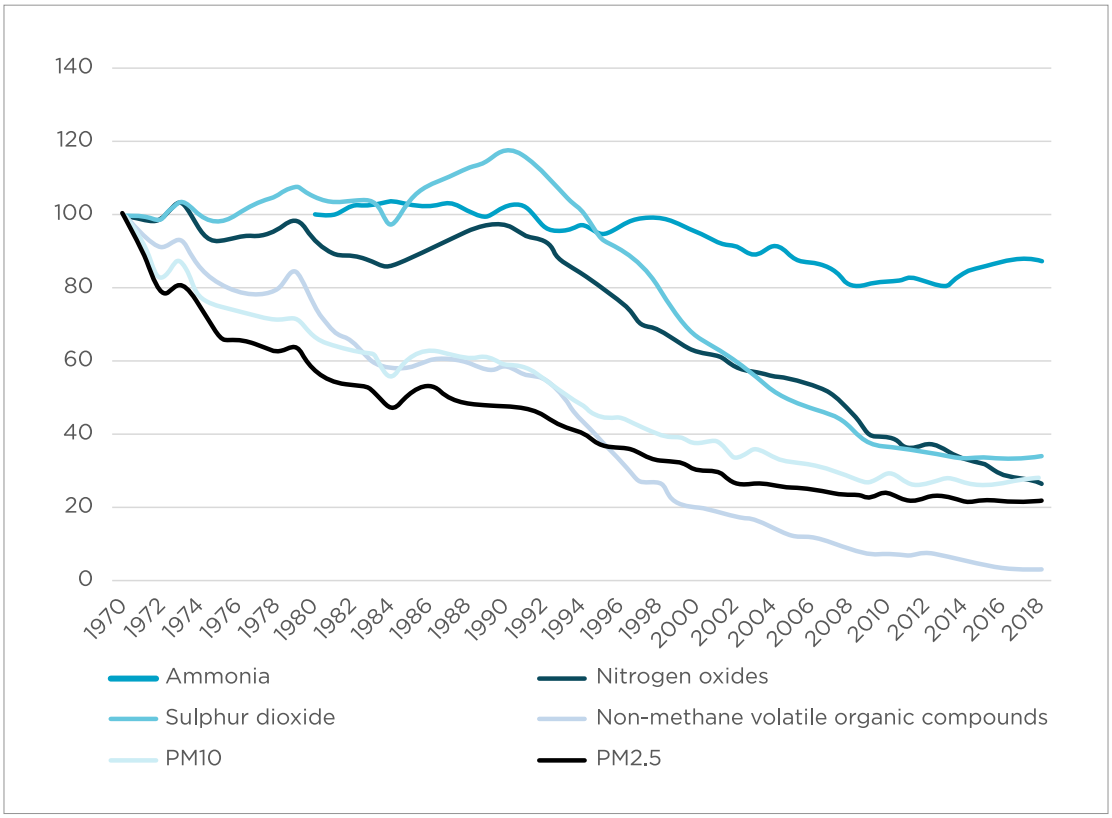
Source: Author's analysis of Department for Business, Energy and Industrial Strategy, Final UK greenhouse gas emissions national statistics: 1990 to 2019. Link.[39]

Similarly, the UK now has distinctly better air quality. Chart 4, on the following page, shows how emissions of five common air pollutants have fallen since 1970. While progress for some has stalled recently – or in fact gone into reverse in places – the UK enjoys far cleaner air today than even just a couple of decades ago.

38 Department for Business, Energy and Industrial Strategy, *Final UK greenhouse gas emissions national statistics: 1990 to 2019.* Link.

39 Other includes emissions from Public, Waste management, Industrial processes and Land use, land use change and forestry.

Chart 4. Emissions of air pollutants in the UK



Source: Author's analysis of Department for Environment, Food and Rural Affairs, Trends in UK sulphur dioxide, nitrogen oxides, non-methane volatile organic compounds, ammonia and particulate matter (PM10, PM2.5) emissions. Link.[40]

Behind these encouraging trends lie countless different factors. But of critical importance has been the role which new and improving technologies have played. The electricity sector provides a good case study. Bigger, more efficient wind turbines and solar panels meant renewables could provide 28% of Britain's electricity in 2020 – and have allowed for coal to be progressively phased off the grid.[41] In terms of air pollution, swapping out fossil fuels for renewables has had an equally positive impact – particularly with regards to pollutants such as sulphur dioxide.[42]

As we shall explore in more detail later on, international trade has underpinned the development and flourishing of many of these technologies. Without being able to exchange ideas and expertise, raw material inputs, and investment to finance production, the green economy would undoubtedly be far smaller and less sophisticated than it is today.

40 Ammonia indexed at 1980 = 100.

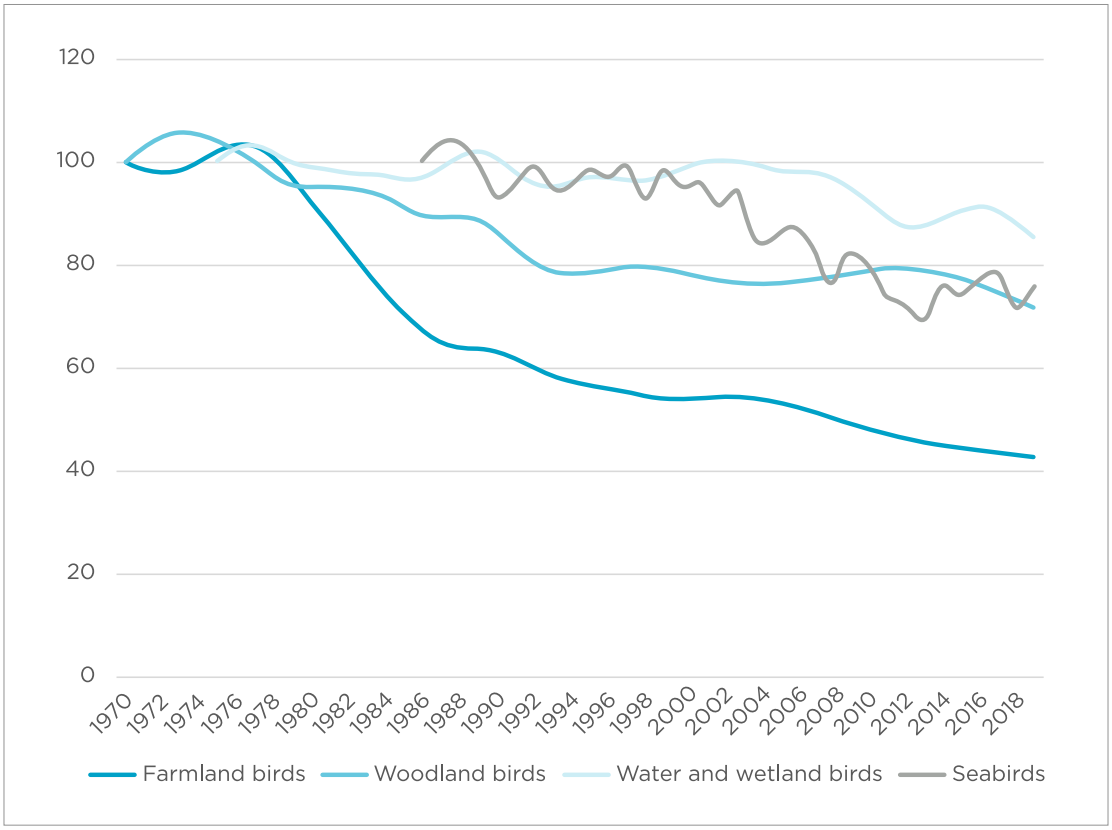
41 Department for Business, Energy and Industrial Strategy, *Fuel used in electricity generation and electricity supplied (ET 5.1 – quarterly).* Link.

42 National Atmospheric Emissions Inventory, *Pollutant Information: Sulphur Dioxide.* Link.

It is true, however, that other aspects of the environment in the UK have not demonstrated the same progress.[43] Biodiversity, for instance, has fallen dramatically, and is perhaps one of the most worrying signs of environmental degradation.

Wild bird populations – a robust indicator of biodiversity and general ecosystem health – have plummeted since 1970.[44] Similar trends can be seen among certain pollinator species, while the average quality of water bodies in England has deteriorated in recent years.[45]

Chart 5. Trends in British wild bird populations



Source: Author's analysis of Department for Environment, Food and Rural Affairs, Populations of wild birds UK, 1970 to 2019. Link.[46]

43 It must also be noted that, despite recent progress made in decarbonising the economy and improving air quality, considerable challenges remain, and further progress – in terms of new policies and innovative technologies – will be required on both metrics.

44 Department for Environment, Food and Rural Affairs, *England biodiversity indicators.* Link.

45 Ibid.

46 Farmland birds and woodland birds indexed at 1970 = 100; Water and wetland birds indexed at 1975 = 100; Seabirds indexed at 1986 = 100.

Globally, other indicators present strong evidence of the current pressures being put on biodiversity. For years, biologists have spoken of the world entering the 'Sixth Mass Extinction' – as evidenced by markedly increased current species extinction rates relative to 'normal' or 'background' rates,[47,48] as well as the number of species with fewer than 1,000 recorded individuals remaining in the wild.[49]

Meanwhile, according to the Food and Agriculture Organization of the United Nation's *Global Forest Resources Assessment 2020*, global forest area declined by about 178 million hectares between 1990 and 2020[50] – with much of this decline witnessed in tropical areas of primary rainforest, which is generally regarded as the most ecologically significant type of forest.[51]

In the world's oceans, too, waters are warming,[52] their chemistry is changing (for instance, in terms of salinity and acidity),[53,54] and over a third of marine fish stocks are being exploited at biologically unsustainable rates.[55]

Addressing these environmental issues will require a mixture of responses. More sustainable ways of production, which allow individuals and companies to tread more lightly on the planet will doubtlessly have a leading role to play. It is therefore vital that the Government is implementing policies which are as conducive as possible for businesses to develop these production methods, and then deploying them as cost effectively as possible.

'While decarbonisation in the UK should be celebrated, the fact remains that global atmospheric greenhouse gas concentrations continue to ratchet up year on year, causing average temperatures to do the same'

It should not be forgotten, too, that some environmental issues are inherently planetary problems – with climate change induced by global warming being a prime example. While decarbonisation in the UK should be celebrated, the fact remains that global atmospheric greenhouse gas concentrations continue to ratchet up year on year, causing average temperatures to do the same.[56] This indicates that policies are needed that help reduce emissions not only domestically, but in almost every country around the world.

47 Anthony Barnosky et al., *Has the Earth's sixth mass extinction already arrived?* Link.

48 Gerardo Ceballos et al., *Accelerate modern human-induced species losses: Entering the sixth mass extinction.* Link.

49 Gerardo Ceballos, Paul Ehrlich and Peter Raven, *Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction.* Link.

50 Food and Agriculture Organization of the United Nations, *Global Forest Resources Assessment 2020.* Link.

51 Hannah Ritchie, *Deforestation and Forest Loss.* Link.

52 National Oceanic and Atmospheric Administration, *Sea Surface Temperature (SST) Contour Charts.* Link.

53 Adrienne Froelich Sponberg, Ocean Acidification: *The Biggest Threat to Our Oceans?* Link.

54 John Antonov, Sydney Levitus and Timothy Boyer, *Steric sea level variations during 1957-1994: Importance of salinity.* Link.

55 Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture.* Link.

56 NASA Goddard Institute for Space Studies, *Land-Ocean Temperature Index (C).* Link.

II. How free trade helps the environment

The relationship between the economic system, international trade, and the environment is a complicated one. We know categorically that human activity is driving climate change, biodiversity loss, and other environmental problems. Markets which fail to internalise environmental externalities will always continue to exacerbate such problems.

To some, this only possible way to remedy the existing situation is to abandon capitalism and international trade in their entirety. Yet this diagnosis, and more so the resulting prescription, is manifestly wrong. Capitalism and international free trade, properly construed, are what will give humanity the best shot tackling environmental issues past, present and future. In this section, we shall consider three key arguments in favour of why we believe this is the case.

Trade means resources are used more efficiently

People engage in voluntary trade because it makes them wealthier. Trade only occurs when two individuals believe they will gain more from participating in exchanges than if they did not.

Trade can make people wealthier in two senses. The first sense is based on the idea of diminishing marginal utility – that when you have more of something, each additional unit brings you less utility than the unit before.[57] Therefore, it might make sense to trade some of what you have in exchange for something else belonging to another person. If I have ten apples and you have ten oranges, both of us might be willing to swap half of what we have, so that we each now have five apples and five oranges. Overall utility would have increased, even though there has been no change in the combined quantity of goods.

The other sense in which trade makes people wealthier is more dynamic – and is based upon the idea of comparative advantage, popularised by British economist David Ricardo in the early-19th century.[58] Comparative advantage states that it makes sense for individuals, companies, and countries to focus on producing that which they are most adept at, relative to the productive abilities of those who they can trade with. Critically, the maxim of comparative advantage holds true even when an individual, company, or country is more productive than another in an *absolute* sense.[59]

Famously, Ricardo used the example of cloth and wine being traded between England and Portugal to prove his theory. Even if, for a given amount of time and resources, Portugal could make both more cloth and wine than England could, it would still make economic sense for Portugal to focus on producing wine rather than cloth – given its comparative advantage in wine-making. This is because for every unit of wine Portugal produces, it can trade a marginal unit of it for cloth made in England, and get more in return than if it had lowered the amount of wine it produced in order to also produce cloth itself.

57 While there are certainly exceptions to the law of diminishing marginal utility, it holds true for the vast majority of ordinary goods and services.

58 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations.* Link.

59 Annex I provides a hypothetical example of how comparative advantage works.

How all of this relates to the environment might not be immediately obvious. But consider how the above centres on the notion of using resources efficiently – of eking out more from less. Process efficiency is a critical concept in environmentalism yet scarcely receives the attention it should do. As much of our economic welfare is based upon goods and services originally extracted from the natural environment (such as food, timber, minerals, and so on), creating them in as efficient a manner as possible is vital if ecosystems are not to be overexploited.

Here, one can look to the insight of another hallowed British economist. Adam Smith, writing decades before Ricardo, was acutely aware of how trade can help in the conservation of resources, by allowing goods to be produced by those who can produce them most efficiently. In his magnum opus, *The Wealth of Nations*, Smith explains how '[b]y means of glasses, hotbeds, and hot walls, very good grapes could be raised in Scotland'.[60] Yet to do so, Smith continues, would be 30 times as costly as simply importing grapes from more hospitable climes.

This example is particularly pertinent to the debate on free trade and the environment. The reason the Scottish grapes Smith cites are so costly is because they require protection from the elements through glasshouses, and heating to mimic the conditions of their natural habitat. At a minimum, this would necessitate the manufacture of glass, concrete and metal to erect the glasshouses (all very carbon-intensive processes), and the provision of artificial heat to warm them (again, a carbon-intensive process, still currently primarily facilitated by the burning of fossil fuels).

Alternatively, in a world of free trade, grapes can be grown outdoors where they are found naturally – France, Spain, Italy, California, and so on – and then traded, coming not only at less of a financial cost, but also at less of an environmental cost, too (even, as we explain later, after accounting for emissions during transport).

'As much of our economic welfare is based upon goods and services originally extracted from the natural environment, creating them in as efficient a manner as possible is vital if ecosystems are not to be overexploited'

Just as Ricardo's comparative advantage advanced our thinking on how trade boosts wealth in a more dynamic sense, Smith offers insights on how free trade promotes efficiency (and thus permits resource conservation). Perhaps the best example is his theory of how the division of labour can beget enormous increases in productivity – chiefly by allowing for specialisation to occur.

Specialisation transpires when an individual becomes particularly proficient at a certain task, due largely to repeatedly undertaking it day in, day out. In terms of how this relates to the environment, the argument runs as follows: a specialist will be able to turn any given stock of resources into more useful products than a novice could, and, in doing so, the stock of resources is better conserved, and the environment is diminished less.

Crucially for our purposes, specialisation is only made possible by trade – as it only makes sense for individuals, companies, and countries to specialise if they are able to exchange the goods and services that they produce for goods and services they are necessarily not producing. If they specialised without being able to trade, it is likely they would deprive themselves of other resources they wish to consume, which, *ipso facto*, they are not producing due to specialisation.

60 David Ricardo, *On the Principles of Political Economy and Taxation.* Link.

Furthermore, Smith understood that the extent to which specialisation can occur is critically dependent upon the size of the economy in question. Small villages, with fewer people, can specialise less than big cities, with more people.[61] International trade, which enlarges the economy to the global scale therefore allows for specialisation to increase hugely, along with the environmental benefits it may bring.

Box 1. How free trade can lower the costs of going green by permitting specialisation

The transition to a more sustainable global economy will require many different technological solutions. It is also essential that the transition is as cheap as possible. Harnessing specialisation, permitted by free trade, can be a critical tool here.

Some countries will have noticeable comparative advantages in providing green solutions to existing environmental problems. Those with lots of land and sunshine could become leaders in solar power, exporting it to places which are not blessed with such conditions via interconnectors. Those with long coastlines and shallow seas could do the same for offshore wind (as the UK already does). These countries could become particularly adept at utilising cheap electricity to decarbonise energy-intensive processes, such as producing green hydrogen or green steel, or powering direct air carbon capture and storage.

Meanwhile, those countries with deposits of rare earth minerals should have advantages in electric vehicle and battery supply chains, and those with underground geological storage or spent oil wells might emerge as winners in the carbon sequestration sector.

Allowing countries to lean into these industries – and maximise the benefits they can reap from their natural climate and geography – is critically dependent on their ability to trade freely with other nations. Beyond that, lowering the costs of trade in sustainable sectors axiomatically lowers the cost of going green, which would be a victory for consumers, businesses, and the environment.

Trade permits the exchange of technologies needed to protect and restore the environment

As noted in the previous chapter, the UK has made significant progress across different environmental metrics. Its economy is greener, and its air cleaner. This has been driven by the adoption of new technologies which have allowed ordinary life to continue much as before, only at less of a cost to the planet.

Indeed, important as targets such as Net Zero are, they do nothing on their own to cut emissions. The actual work is done by the novel technologies and techniques which, practically speaking, allow for decarbonisation and better environmental stewardship to take place without impinging on economic wellbeing.

Britain still has a reliable supply of electricity but it has decarbonised hugely due to ever improving renewables being able to displace coal from the grid.[62] The transport sector ensures people and goods can still move around the country as normal, but more efficient

61 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations.* Link.
62 Eamonn Ives, *Bridging the Gap: The case for new nuclear investment.* Link.

engines – and lately the advent of entirely zero-emission powertrains – mean that vehicles no longer dirty the air with toxic fumes and particulate matter as much as they once did.[63]

Due to the UK's pre-existing engineering and scientific pedigree, the country has been able to research, develop and deploy many of the green innovations it is now benefiting from. Yet it could not have done so in isolation. Even for those technologies one might be able to identify as solely 'British' inventions, their fabrication will have required components and materials to be shipped in from afar. Trade is vital for the production and proliferation of environmental technologies, and many of the iconic environmental innovations – from the solar panel to the lithium-ion battery – are critically dependent on global supply chains.[64]

As environmental expert and adviser to the UK Board of Trade Michael Liebreich notes with regards to solar panels:

> ***'Quartz mined in Mexico is being refined into silicon in the US, which is being used to make solar cells in Japan that might be assembled into modules in Dubai and installed in Morocco — all using funds raised and managed in London'*** [65]

Barriers to international trade are thus barriers to the spread of goods and services which are required to tackle environmental challenges. In the fight against climate change and nature degradation, countries will need to import those green technologies they do not produce themselves, while exporting ones they do produce to other countries.

There are two final points to note here. One – and which is linked to the above discussion of specialisation – is that free trade of environmental technologies allows businesses to focus on even the most niche solutions to all sorts of environmental issues. If a company could only sell to consumers domestically, it might not have enough of a market to warrant researching, developing, and producing a certain green alternative technology to address a specific source of emissions. But if that company can trade internationally, and sell to many more consumers, it might make commercial sense to produce said technology – thanks to the economies of scale it can now exploit.

The second point is that trade enables the exchange not just of goods which are helping to protect the environment, but also those which are made in a more environmentally friendly way. This subtle but important difference will in all likelihood only become more important in years to come.

For instance, consider a country which can inexpensively and reliably capture lots of renewable energy, and use it to decarbonise processes like hydrogen production. Without international free trade, this country would be limited to selling its green hydrogen domestically, cutting off its ability to help decarbonise industrial processes reliant on hydrogen abroad, which might instead continue to utilise hydrogen produced from fossil fuels. Thinking about it another way, the absence of international trade might mean renewable energy resources simply going to waste, if they outstrip domestic demand for products made from them.

63 Eamonn Ives, *Driving Change: How Hydrogen Can Fuel A Transport Revolution.* Link.
64 Sarah Ladislaw et al., *Industrial Policy, Trade, and Clean Energy Supply Chains.* Link.
65 Michael Liebreich, *Net zero targets offer the UK fresh trade opportunities.* Link.

Trade creates wealth and provides the resources needed to protect and restore the environment

Earlier we discussed how trade allows resources to be used more efficiently – via a process of specialisation, facilitated by comparative advantage through international free trade. Efficient use of resources takes less of a toll on the environment as it means we can get the goods and services we want from a smaller given stock of resources. If, for instance, one country can produce a particular good in a less energy-intensive way than another, it might make sense for the former to export to the latter, and this could lower emissions on net.

But it could also help the environment in another sense. The upshot of all the efficiency savings being made by two countries engaging in international trade is an increase in material wealth. Indeed, there is strong evidence that trade actively drives economic growth (as opposed to the two just being correlates of each other), and that efforts to liberalise trade have increased average incomes.[66]

Rising incomes are important from an environmental perspective because many economists regard the notion of improved environmental quality – perhaps in the form of cleaner rivers or more intact forests – as at least a 'normal good',[67] or even a 'superior good'.[68] In lay terms, these are goods which individuals buy more of as their incomes rise, and are contrasted to 'inferior goods' – goods which individuals buy less of as their incomes rise.

Economic growth – and thus things which help create economic growth, such as international free trade – can therefore be good for the environment, if it results in more resources being devoted towards maintaining it. As we will see later, a striking feature of modern services-based economies – and capitalist economies in general – is that they get ever more efficient at using raw materials to create wealth, to the point where consumption of resources and increases in economic wealth are steadily decoupling.

Another key insight here is that of 'Environmental Kuznets Curves' (EKCs). The 'ordinary' Kuznets Curve is named after the American economist, Simon Kuznets. He observed that the relationship between income inequality and economic growth often resembles an inverted U-shape – whereby in poorer countries, economic growth causes income inequality first to increase, before subsequently shrinking.[69] Figure 1, on the following page, illustrates Kuznet's hypothesis. As income per capita increases, so too does inequality – but, after Point X, further increases in income per capita sees inequality fall.

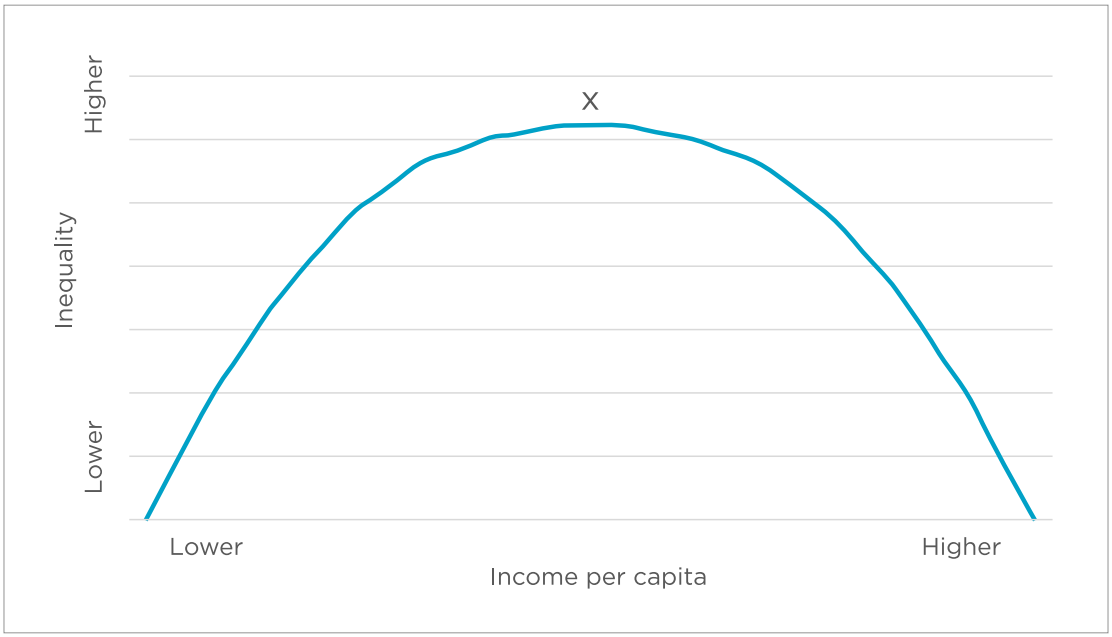
66 Esteban Ortiz-Ospina, *Does trade cause growth?* Link.

67 James Tobey, *Economic development and environmental management in the Third World: Trading-off industrial pollution with the pollution of poverty.* Link.

68 Ingo Walter and Judith Ugelow, *Environmental Policies in Developing Countries.* Link.

69 Simon Kuznets, *Economic Growth and Income Inequality.* Link.

Figure 1. Kuznets Curve



Source: Author's own.

EKCs apply a similar insight, and were popularised in the 1990s by groups such as the World Bank, and economists such as Gene Grossman and Paul Krueger.[70,71] As per capita incomes increase, various environmental indicators can begin to deteriorate. Yet, after a certain point, economic growth begins to be associated with better environmental outcomes.[72]

Considerable debate surrounds the validity of EKCs. There is evidence that the extent to which they hold true differs depending on which environmental stressors or indicators of environmental damage are being considered.[73] Pollutants which have more 'local' or 'tractable' effects on the environment have been found to fit the theory better than pollutants which have more global effects, where the ability to externalise the problem onto others is easier.[74,75]

Even Grossman and Krueger affirm that economic growth may be a necessary but not sufficient condition for improving environmental quality, and note that richer countries tend to also have more stringent environmental standards and stricter enforcement of environmental laws.[76] While these may follow quite naturally from a rise in per capita income in a country – and indeed possibly be paid for through the proceeds of rising incomes – they still need to be deliberately adopted, and it would be wrong to assume that it is the rise in income per se which leads to better environmental outcomes.

70 World Bank, *World Development Report 1992: Development and the Environment.* Link.
71 Gene Grossman and Alan Krueger, *Economic Growth and the Environment.* Link.
72 Grossman and Krueger posited $8,000 per capita in 1985 dollars – slightly over $19,000 in 2020 dollars.
73 Commission for Environmental Cooperation, *Free Trade and the Environment: The Picture Becomes Clearer.* Link.
74 James Van Alstine and Eric Neumayer, *The environmental Kuznets Curve.* Link.
75 Nemat Shafik, Economic Development and Environmental Quality: *An Econometric Analysis.* Link.
76 Gene Grossman and Alan Krueger, *Economic Growth and the Environment.* Link.

Finally, it must be pointed out that many clean technologies are already cost competitive with conventional, dirtier ones. This should only become more and more true as costs fall further. The idea that going green must necessarily come at a greater cost, therefore, is increasingly false – and this could present a challenge to EKCs going forward.

Nevertheless, one might still regard EKCs as a useful heuristic. The balance of academic evidence does point towards their validity, especially for local environmental issues. And to circle back to our original point, the more resources which can be allocated to transitioning the economy from a relatively polluting one to a relatively cleaner one, the better.

In addition, while support for environmentalism among the public is high, this can begin to fracture when individuals are faced with, for instance, the cost of changing their gas boiler or paying new charges to drive around. For example, recent YouGov polling for The Times found strong support for environmental action. But by 56% to 26%, respondents said they would not want their taxes to increase to combat climate change.[77] For domestic heating bills, the figure in favour was just 11%.[78]

> **'The more resources which can be allocated to transitioning the economy from a relatively polluting one to a relatively cleaner one, the better'**

At a more abstract level, climate sceptics have long argued that using resources to decarbonise necessarily means fewer are available for other objectives, such as healthcare, education, or poverty reduction. Rightly or wrongly, there is a danger that this narrative could become more compelling as the UK ratchets up its climate ambition. Adopting policies which help solve these problems while increasing individuals' incomes – such as promoting international free trade – could help to blunt this line of attack.

Too good to be true?

Above, we have explained some of the principal ways in which international free trade can be beneficial to the environment. But there still remains a persistent idea that trade between nations must be necessarily damaging. Here, we shall assess and rebut two of the main arguments that stand out in the literature.

These are that: i) trade increases transport emissions, which pollutes the air and contributes to global warming; and, ii) trade creates pollution havens, which stifle governments' ability to combat pollution. We shall take each hypothesis in turn.

International trade increases transport emissions

International trade is intrinsically linked to transport – the overwhelming majority of which is still powered by fossil fuels.[79] Indeed, it is difficult to think of international trade without simultaneously picturing a hulking container ship, cargo being loaded onto an aeroplane, or a fleet of heavy goods vehicles.

On this basis, it stands to reason that measures to liberalise trade would necessarily increase transport emissions, which would exacerbate climate change, as well as pose problems for air quality at choke points along supply routes. Upon closer inspection, however, this hypothesis is not as robust an argument against freer trade as first imagined.

77 YouGov and The Times, *YouGov / The Times Climate Change Results.* Link.

78 Ibid.

79 International Transport Forum, *The Carbon Footprint of Global Trade: Tackling Emissions from International Freight Transport.* Link.

To begin with, it is easy to forget that not all trade is in merchandise – exports and imports of goods. In 2019, nearly two-fifths of international trade by value in the UK was either the import or export of services.[80]

The link between exports and imports and transport breaks down with trade in services – many of which will be traded digitally as opposed to physically.[81] A consultant providing overseas business expertise, or a lawyer advising a client in another country, still creates valuable economic output without adding to global transport emissions.

Moreover, it is worth considering the likely counterfactual for transport emissions in a world deprived of international trade. It would be highly likely that *intranational* transport simply increases instead. This could lead to higher net emissions, at least in certain countries, because transporting freight via cargo ships is surprisingly carbon-efficient – especially relative to road-based freight.[82,83]

This is before considering the extra resources that would be needed if economies had to produce everything themselves. As we observed above, when economies produce what they are comparatively better at producing, efficiency gains stand to be made. Thus, while international trade could generate more transport emissions, these could be offset by more efficient production – resulting in less environmental damage overall.

This concept is arguably most visible in the debates around the idea of food miles. For years, retailers, environmental groups and farming unions have championed domestically produced food on the basis that it is better for the environment.[84,85,86] Public food procurement guidelines deliberately stack the rules of the game in favour of British agriculture.[87] Yet analysis for at least some foodstuffs shows how misguided food miles can be as a reliable metric for the environmental footprint of produce.[88,89]

One study found that importing lamb and dairy from New Zealand into the UK was four times less carbon-intensive for lamb and half as carbon-intensive for dairy.[90] The key variable to focus on is not the distance food imports have travelled, but the mode of transport – for example whether they were sea or air freighted.[91] A report published by Chatham House noted that storing British apples for 10 months (for consumption long after harvest) creates twice the emissions of transporting apples from South America to the UK by sea in time for them to be eaten.[92]

80 Department for International Trade, *UK Trade in Numbers: February 2020.* Link.

81 Confusingly, the actual transportation of merchandise trade would count as a service – so one cannot say that all services have no direct consequences for emissions whatsoever.

82 Intergovernmental Panel on Climate Change, *Fifth Assessment Report: Climate Change 2014: Transport.* Link.

83 World Trade Organization and the United Nations Environment Programme, *Trade and climate Change.* Link.

84 Sainsbury's, *Backing British lamb.* Link.

85 British Conservation Alliance, *Our policy platform.* Link.

86 National Farmers' Union, *NFU to launch Buy British campaign.* Link.

87 Department for Environment, Food and Rural Affairs, *A Plan for Public Procurement: Enabling a healthy future for our people, farmers and food producers.* Link.

88 Alison Smith et al., *The Validity of Food Miles as an Indicator of Sustainable Development.* Link.

89 David Coley, Mark Howard and Michael Winter, Local food, food miles and carbon emissions: *A comparison of farm shop and mass distribution approaches.* Link.

90 Caroline Saunders, Andrew Barber and Greg Taylor, *Food miles – Comparative Energy/Emissions Performance of New Zealand's Agriculture Industry.* Link.

91 David Coley, Mark Howard and Michael Winter, *Food miles: time for a re-think?* Link.

92 Christophe Bellmann, Bernice Lee and Jonathan Hepburn, *Delivering Sustainable Food and Land Use Systems: The Role of International Trade.* Link.

Lastly, it should be noted that there is nothing inherently worse about emissions created by transport than by other sources. A tonne of CO_2 emitted by a cargo ship contributes exactly the same towards climate change as a tonne from a power station or passenger car. Singling out international trade is, to put it bluntly, absurd.

Of course, emissions from transport do need to be reduced (as do emissions from all sectors). But given the vast economic benefits which international trade brings, it would be wrong to overly fixate on the issue as being particularly damaging, rather than engaging in a broader assessment of decarbonising the entirety of the economy. Furthermore, this is a sector of the economy where solutions, such as cleaner fuels, are readily forthcoming – meaning that it ought to be a time-limited problem.

International trade creates pollution havens

One of the most common justifications for refusing the liberalise international trade policy – and indeed for opposing globalisation itself – is the theory that doing so can create a regulatory race to the bottom between countries. As the existence of free trade makes capital flows more mobile, countries are forced to compete against each other to attract companies to base production in their jurisdictions, and will weaken their environmental regulations (among others) to do so.

This argument is not limited to the environment – competition between nations has long been cited as evidence of the need for low corporation taxation,[93] or against minimum wage laws,[94] or in the countervailing direction for the need for countries to set a joint minimum corporation tax threshold.[95]

But the so-called 'pollution haven' hypothesis does not stack up. A comprehensive literature review from Håkan Nordström and Scott Vaughan found scant evidence that free trade causes environmental regulations to be eroded.[96] There are several reasons for why this is the case.

First, Nordström and Vaughan note that pollution-abatement costs typically account for roughly 1% of production costs for the average industry in developed countries.[97] Other studies also arrive at a similar figure.[98] Of course, one reading of this might be that pollution-abatement costs are too low, and if they were set sufficiently, would account for a higher percentage of total production costs. If this were the case, it could reasonably be argued that carbon leakage does occur due to different environmental standards.

Yet nonetheless, for the average industry, current pollution abatement costs do not seem to be the definitive reason as to why a company decides to set up production in one country rather than another. A paper from Adam Jaffe et al. identifies that differentials in labour costs, raw materials, energy costs and infrastructure provision are more likely be of greater importance than the relative stringency of environmental regulations in determining firms' locational choices.[99] (Although some of these, not least energy costs, may of course be affected by environmental regulation.)

93 James Mirrlees et al., *Tax by Design.* Link.

94 Evert-jan Quak, *The impact of international tax competition on low and middle-income countries.* Link.

95 Aime Williams, James Politi and Mehreen Khan, *US proposes global corporate tax rate of at least 15% in international talks.* Link.

96 Håkan Nordström and Scott Vaughan, *Trade and the Environment.* Link.

97 Ibid.

98 Ronald Shadbegian and Wayne Gray, *Pollution Abatement Expenditures and Plant-Level Productivity: A Production Function Approach.* Link.

99 Adam Jaffe et al., *Environmental Regulation and the Competitiveness of U.S. Manufacturing: What Does the Evidence Tell Us?* Link.

Second, studies have shown that the absence of formal environmental regulation does not preclude the existence of informal regulatory pressures. Sheoli Pargal and David Wheeler have shown that local communities frequently and effectively use other channels to induce pollution abatement in nearby factories, without relying on top-down government regulations.[100] In a similar vein, a paper from Vinish Kathuria shows how the press can often successfully serve as an 'informal regulator' of certain forms of pollution, by covering industrial activities in their reporting.[101]

Third, even in the absence of informal regulation, there are good reasons for why firms do not necessarily locate themselves in countries only to begin polluting the environment with reckless abandon. Now more than ever, firms are acutely aware of the importance of maintaining good reputations as responsible corporate entities – with environmental stewardship and carbon-neutrality being afforded increasing attention. A meta-study of 2,200 studies published in 2015 by Gunnar Friede, Timo Busch and Alexander Bassen found that just 8% showed that environmental, social and governance (ESG) propositions had a negative impact on equity returns, while 63% showed a positive impact.[102] This suggests that the arrival of multinational firms may actually raise the average environmental credentials of production in a country.

Indeed, a 2019 paper by Arlan Brucal, Beata Javorcik and Inessa Love found that Indonesian firms which underwent foreign acquisition reduced their energy-intensity by almost one-third two years after acquisition.[103] One of the reasons why is that multinationals tend to employ the more efficient technologies that are necessary to comply with domestic regulations in more developed countries, and to meet the requirements of environmentally conscious export markets.[104]

In another paper, Karen Palmer, Wallace Oates and Paul Portney describe how, even in countries with weak environmental standards, firms are mindful of the seeming inevitability of tighter environmental regulations in future.[105] This can lead them to voluntarily start from a higher regulatory baseline (for instance, investing in state-of-the-art pollution abatement technologies above and beyond what present regulations would insist), as doing so is generally less expensive than retrofitting production facilities to abide by higher standards later down the line.

In theory, the pollution haven hypothesis presents a formidable challenge to free trade. The problem for those who espouse it is that it seldom holds true in reality.[106]

100 Sheoli Pargal and David Wheeler, *Informal Regulation of Industrial Pollution in Developing Countries: Evidence from Indonesia.* Link.

101 Vinish Kathuria, *Informal regulation of pollution in a developing country: Evidence from India.* Link.

102 Gunnar Friede, Timo Busch and Alexander Bassen, *ESG and financial performance: aggregated evidence from more than 2000 empirical studies.* Link.

103 Arlan Brucal, Beata Javorcik and Inessa Love, *Good for the environment, good for business: Foreign acquisitions and energy intensity.* Link.

104 Ibid.

105 Karen Palmer, Wallace Oates and Paul Portney, *Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm?* Link.

106 Eric Neumayer, *Pollution Havens: An Analysis of Policy Options for Dealing With an Elusive Phenomenon.* Link.

III. Policies to green Britain's trade

We have shown how free trade can be beneficial for the environment, through the way in which it increases production efficiency, spreads new technologies, and equips individuals with the resources needed to address environmental degradation. To that end, the most important policy recommendation we can make for Britain's trade policy is simply that there should be more of it. The central thesis of this paper is that free trade is not in conflict with the environment: instead, the two can be mutually symbiotic.

However, in this chapter, we will explore five specific policy recommendations which can help the UK to deliver a greener trade policy without compromising on the core tenets of economic liberalism. We believe they are credible and practical, and would make a meaningful difference in bolstering the UK's pathway to achieving Net Zero and its other environmental objectives. Importantly, the policies would also spur action in other nations – whether explicitly or implicitly – which will be essential if global environmental challenges are to be overcome.

I. Unilaterally remove tariffs and non-tariff barriers on environmental goods and services, and encourage other governments to do the same

Tariffs are taxes on the imports of goods into an economy. They can be *ad valorem* (levied as a percentage of the value of the good) or specific (levied as a fixed amount per unit or weight of a good).

Tariffs are chiefly protectionist measures, and have a number of detrimental economic and social consequences. In the short run, tariffs raise prices of imported goods for consumers (both as individuals and businesses), and mean there is less money available to be spent on other goods in the economy.[107] Due to the sorts of goods tariffs are typically levied on – for instance food and clothing – they are also often highly regressive.[108,109]

In the long run, tariffs shelter domestic industries from competitive forces and deprive them of novel innovations – which lowers productivity, and with that, growth and wages.[110,111,112] Tariffs being introduced in one country also often leads to tariffs being introduced in another, as governments retaliate against each other.[113]

107 Centre for Policy Studies, *A Budget for No Deal: How to stabilise and stimulate the economy in the wake of a no-deal Brexit.* Link.

108 Erica York, *The Economic and Distributional Impact of the Trump Administration's Tariff Actions.* Link.

109 Jason Furman, Katheryn Russ and Jay Shambaugh, *US tariffs are an arbitrary and regressive tax.* Link.

110 Gene Grossman and Elhanan Helpman, *Trade, knowledge spillovers and growth.* Link.

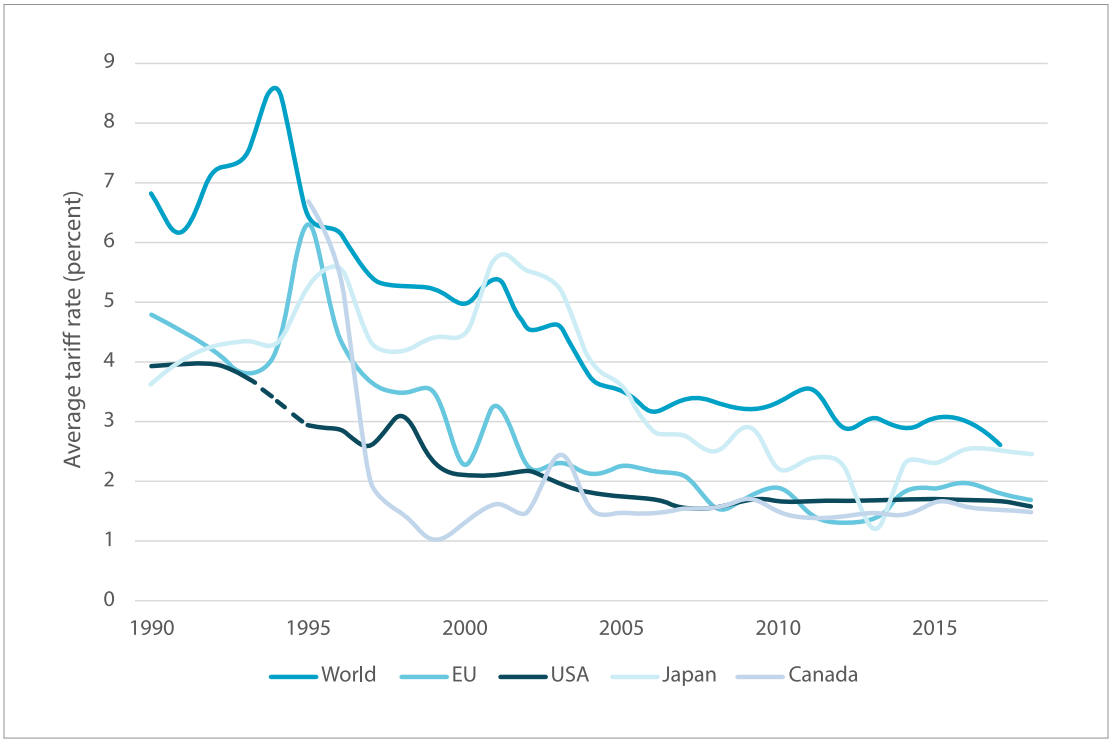
111 Marc Melitz, *The impact of trade on intra-industry reallocations and aggregate industry productivity.* Link.

112 JaeBin Ahn et al., *Reassessing the Productivity Gains from Trade Liberalization.* Link.

113 Erica York, *Tracking the Economic Impacts of U.S. Tariffs and Retaliatory Actions.* Link.

In recent years, the average tariff rate applied globally has been steadily falling – as shown in Chart 6, below. In 2018, the average tariff rate in the EU – and therefore the UK – was 1.69%, down from 6.28% in 1995.

Chart 6. Average tariff rate for G7 countries



Source: Author's analysis of World Bank, Tariff rate, applied, weighted mean, all products (%). Link.[114]

As with tariffs, non-tariff barriers (NTBs) increase the costs of doing international trade. Examples include regulations and quotas, but also other impediments which make trade more challenging, such as bureaucracy and delays at the border. In virtually all cases, these costs will make imports more expensive, but in some, they will prohibit importing entirely.[115]

114 Data for Canada begins in 1995; Data for 1994 for USA not available; France, Germany, Italy and the UK all grouped as EU due to common trading policy for the time series used; Data for 2018 for World not available.

115 There is an argument that some forms of NTBs actually promote trade – for instance, if minimum regulatory standards provide assurance to consumers that the goods they are buying are safe, they may be inclined to go ahead with purchases they otherwise might not have made.

The relative impact of tariffs and NTBs on trade differs depending on the goods in question, but it is generally accepted that, nowadays, NTBs are the more damaging of the two in terms of lowering trade volumes.[116,117,118]

In May 2020, the Government announced the UK Global Tariff (UKGT), which would replace the EU's Common External Tariff after the end of the Brexit transition period.[119] The UKGT – which is now in effect – contained a number of positive changes from a free trade point of view, such as the removal or simplification of tariffs from thousands of tariff lines, the rounding down of tariffs to the nearest integer, and the abolition of all 'nuisance tariffs' (those below 2%).[120] Despite this, it also maintained tariffs on certain goods, such as agricultural products, cars, and ceramics.[121]

'Tariffs and non-tariff barriers are a burden for businesses, reduce consumer welfare, and ultimately limit growth and prosperity'

From an environmental perspective, the UKGT increased the number of green product tariff lines which no longer attract tariffs at all – with the Government boasting of cuts to more than 100 sustainable tariff lines, including for goods such as LED lamps (down from 3.7% to nothing at all) and thermostats (down from 2.1% to nothing at all).[122] That said, tariffs for certain products were notably not lowered – including on hybrid-electric passenger vehicles (which still attract a tariff of 10%) and bicycles (which still attract a tariff of 14%).[123]

In an ideal world, we believe that the Government should go even further in liberalising tariffs and NTBs, and work towards unilaterally abolishing them for the remaining goods which they currently apply to. Per the reasons detailed above, tariffs and NTBs are a burden for businesses, reduce consumer welfare, and ultimately limit growth and prosperity.

Why governments do not unilaterally drop tariffs to zero is a contested question. The most commonly cited excuse is that removing tariffs would, at least in the short-run, harm industries currently protected by them.[124] Academics have long demonstrated how concentrated interest groups – such as farmers, or those in Britain's pottery industry, or automotive sector – can be particularly adept at extorting economic rents from public policymakers, because the gains to themselves are vast while the losses to the rest of the public are, individually, small.[125,126,127]

The 'winners' from tariffs have every reason to lobby politicians to retain them, while the losers might have neither the time, resources, nor knowledge to bother. Meanwhile, the politicians being lobbied have every reason to roll over and avoid a headache from a noisy

116 World Trade Organization, *World Trade Report 2012: Trade and public policies: A closer look at non-tariff measures in the 21st century.* Link.

117 Institute for Government, *Non-tariff barriers.* Link.

118 Board of Trade, *Global Britain, Local Jobs.* Link.

119 Department for International Trade and HM Treasury, *UK Global Tariff backs UK businesses and consumers.* Link.

120 Ibid.

121 Ibid.

122 Ibid.

123 Ronald Steenblik, Dmitry Grozoubinski and George Riddell, *The U.K.'s Global Tariff: A new broom sweeps green?* Link.

124 Robert Lawrence and Robert Litan, *Why Protectionism Doesn't Pay.* Link.

125 Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups.* Link.

126 Anne Krueger, *The Political Economy of the Rent-Seeking Society.* Link.

127 Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft.* Link.

trade association. As a consequence, many tariffs stubbornly persist even though it plainly makes economic sense to remove them.

Another reason why governments may be reluctant to drop tariffs is because they view them as powerful bargaining chips, with which they can use to negotiate lucrative free trade deals with other nations or trading blocs.[128,129] At first glance, this argument might be compelling. But, as we have argued previously:

> ***'The real benefit of trade is in the imports consumers and businesses gain access to. Import tariffs are thus not some asset to be bargained away carefully – they are a direct cost to our own people and economy. To oppose free trade as a negotiating tactic is like saying you won't stop poking yourself in the eye until your neighbour agrees to stop poking himself in the eye as well. It is a self-defeating approach'*** [130]

Moreover, one can point to a number of countries which have managed to negotiate free trade deals without previously having significant import tariffs at their border – in other words, without the proverbial bargaining chip. Hong Kong, for instance, imposes no duties on imports, and enjoys free trade agreements with China, New Zealand, Australia, the European Free Trade Association, Chile, and many others.[131] In Singapore, virtually all goods can enter tariff free, which has not prevented past and present governments from successfully signing trade deals with countries and trading blocs such as Japan, South Korea, the EU, and the US.[132] Indeed, the very fact that NTBs are now more of a problem than tariffs means the removal of tariffs still leaves plenty of scope for negotiation even in a zero-tariff environment.

The Government is unlikely to move to a zero-tariff regime, due both to the political complexities and the fact that the UKGT has only just come into effect. Yet there are areas where we think the politics align in favour of immediate tariff and NTB abolition. Trade in environmental goods and services is exactly one of these areas – which is why we recommend the Government unilaterally removes tariffs and liberalises NTBs on environmental goods and services, and works to encourage other nations to reciprocate and do the same. For instance, insisting on zero-tariffs or measures to liberalise NTBs which apply to environmental goods and services could be something the UK does when negotiating – or renegotiating – free trade agreements in future.

There are many reasons why we make this recommendation. To begin with, the UK already enjoys status as a leading player in the global green economy – particularly in green services, such as sustainable finance and environmental law.[133,134] If the UK liberalises trade in green goods and services, therefore, other countries might be more inclined to do the same. This would give British firms the best shot at capitalising on emerging opportunities, as more of the world embraces Net Zero and other environmental objectives.

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128 Thomas Sampson, *Four principles for the UK's Brexit trade negotiations.* Link.

129 Michael Gasiorek and Julia Magntorn Garrett, *Reflections on the UK Global Tariff: good in principle, but perhaps not for relations with the EU.* Link.

130 Centre for Policy Studies, *A Budget for No Deal: How to stabilise and stimulate the economy in the wake of a no-deal Brexit.* Link.

131 Government of the Hong Kong Special Administrative Region Trade and Industry Department, *Import and Export of Goods.* Link.

132 Singapore Ministry of Trade and Industry and Enterprise Singapore, *All You Need to Know About Singapore's Free Trade Agreements and Digital Economy Agreements.* Link.

133 Mike Wardle et al., *The Global Green Finance Index 2.* Link.

134 Michael Liebreich, *Time to double down to reach net zero.* Link.

Attempting to persuade nations to liberalise tariffs and NTBs without the UK doing so first would be peculiar to say the least. The UK should lead from the front by abolishing tariffs on environmental goods and services, and doing all it can to minimise NTBs too.

Box 2. 'Rules of Origin' requirements as an example of non-tariff barriers to clean, free trade

Rules of Origin requirements are an example of an NTB.[135] These mandate that a product has to demonstrate in which country or countries it was made, with at least a certain proportion coming from a certain place in order to qualify for preferential status under a free trade agreement.[136]

For many goods, adhering to Rules of Origin requirements will be very straightforward – an orange grown in Spain quite clearly originates from Spain. But for other goods the process is more complicated. Some will comprise of perhaps hundreds, if not thousands, of individual component parts – which themselves could have originated from all over the globe. Goods can also 'change nationality', if they have been 'sufficiently worked or processed' – something determined to have happened, if, for instance, the product has become substantially more valuable as a result of being 'worked' on, or if it changes tariff classification as per codes such as those set out by the WTO.[137] As noted above, for some goods in some free trade agreements, they must be able to prove that they do not exceed a 'maximum value of non-originating materials' as a percentage of the good's total value if they are to qualify for preferential status (otherwise known as MaxNOM).

An example of Rules of Origin being an NTB – and one very relevant from an environmental perspective – can be seen in the case of electric vehicles in the UK-EU Trade and Cooperation Agreement. The MaxNOM for fossil fuelled vehicles is set at 45%.[138] As electric vehicles rely on batteries which are currently largely produced outside of Europe, and because batteries constitute a large part of an electric vehicle's total value, a higher MaxNOM was agreed. Until the end of 2023, electric vehicles have a MaxNOM of 60%, and then until the end of 2026, they have a MaxNOM of 55%. From 2027, electric vehicles will have the same MaxNOM – 45% – as fossil fuelled vehicles.[139]

Even despite this preferential carve-out, there are worries that the MaxNOM values could be too onerous for manufacturers to abide by.[140,141] This could harm trade in electric vehicles either directly, by making them ineligible for tariff free access, or indirectly, by lowering the industry's competitiveness if it has to source more parts from within Europe – which it may not be able to do due to capacity constraints.

135 Institute for Government, *Non-tariff barriers.* Link.

136 Ibid.

137 Federation of Small Businesses, *What are rules of origin and how do they affect me?* Link.

138 Prime Minister's Office, 10 Downing Street, *Trade and Cooperation Agreement (including Annexes and Protocols).* Link.

139 Ibid.

140 Bob Hancké and Laurenz Mathei, *Brexit, batteries and the fate of the British car industry.* Link.

141 Sam Lowe, *A tale of batteries, Brexit and EU strategic autonomy.* Link.

After 2027, the Rules of Origin requirements will on paper treat electric and fossil fuelled vehicles equally, but in practice discriminate against the electric vehicles – assuming it is still challenging to source cheap European batteries by then.[142]

Thus, one can see how NTBs – in this case, Rules of Origin requirements – can stifle trade, and, when the trade which is being stifled is of an environmental good, how it can hinder efforts to achieve a greener economy.

Liberalising trade in existing green goods and services would be a highly positive step, but the Government must also be conscious of the fact that novel goods and services which allow individuals and businesses to act more sustainably are constantly being brought to market. Indeed, trade experts have already questioned how the UK can be sure that the UKGT is adequately responsive to green innovation.[143] Others have noted how existing lists of 'environmental goods' drawn up in order to promote green trade may not be based on the best available scientific evidence.[144] This point was identified in an evidence session for the House of Lords inquiry on trade and the environment as being particularly pertinent to trade in green services – which are not covered in existing trade regulations to anywhere near the same extent as green goods are.[145] Meanwhile, the EU's recent attempts to produce its own taxonomy of what counts as 'green' has been controversial to say the least.[146]

The Government should therefore use its presidencies of the G7 and COP26 to promote and coordinate international efforts to formulate a comprehensive, up to date, science-based list of environmental goods and services and the principles that define them. It should also publish a clear methodology for how goods and services qualify as 'environmental', so as to provide maximum clarity to businesses interested in developing green innovations. It should also ensure the list is regularly updated, with new additions incorporated as quickly as possible or, better still, qualifying automatically under the definitions provided.[147] As part of this, the Government should seek to engage with businesses which are developing sustainable alternatives wherever possible, to ensure that no good or service is deprived of benefitting from tariff-free trade for any longer than is strictly necessary.

A final consideration would be to examine how to distinguish between not just goods and services that help to alleviate environmental issues, but also those which are made in environmentally friendly ways – for example, green steel. Ideally, we would like to encourage freer trade in both, and a future trade policy should seek to facilitate this – perhaps through eliminating tariffs for goods which can demonstrate they were manufactured in such a way that they have zero-embedded greenhouse gas emissions.

142 Kira Taylor, *Electric vehicles granted grace period to avoid Brexit tariffs.* Link.

143 Ronald Steenblik, Dmitry Grozoubinski and George Riddell, *The U.K.'s Global Tariff: A new broom sweeps green?* Link.

144 Michael Gasiorek et al., *Recommendations on the UK Government's Global Tariff proposals.* Link.

145 House of Lords Select Committee on the European Union, *EU International Agreements Sub-Committee: Oral evidence: Environment, climate and international trade.* Link.

146 Frédéric Simon, *NGOs walk out on EU green finance group over forestry, bioenergy rules.* Link.

147 While we would not support any good or service going from zero-tariff rated to having a tariff applied, if, for whatever reason, the Government wishes to remove a tariff line from the environmental goods and services list, it should do so slowly so as to allow appeals to be made by businesses which would be directly impacted by such a scenario.

II. Reduce and ultimately abolish preferential tax advantages and subsidies for fossil fuel consumption and production, and encourage other governments to do the same

The extraction, processing, and combustion of fossil fuels is the primary driver of global warming.[148] They are also a leading cause of air pollution,[149] and their extraction from the earth is often incredibly ecologically destructive.[150] Eliminating the use of fossil fuel in sectors such as transport, electricity generation, and heating will be critical if Net Zero and other environmental objectives are to be successfully met.[151]

Already, the UK is beginning to switch away from fossil fuels and towards sustainable alternatives. In the power sector, for example, the share of electricity generated by wind and solar has increased from a quarter of a percent in 1998 to over 28% in 2020.[152] Meanwhile the share coming from coal, fossil gas, and oil shrank from 68.5% to 38.5%.[152] In terms of transport, the number of battery electric cars registered for the first time grew from just 247 in 2010 to nearly 108,000 in 2020 – an increase of 43,575%.[154]

The transition away from fossil fuels will be determined largely by pure economics. In some instances, such as domestic heating or certain vehicle classes, fossil fuelled technologies still remain the cheaper option.[155] While clean alternatives are rapidly falling in cost,[156] often they are still not competitive, and this naturally stifles uptake.

> **'Eliminating the use of fossil fuel in sectors such as transport, electricity generation, and heating will be critical if Net Zero and other environmental objectives are to be successfully met'**

To combat this, successive governments have enacted a host of policies to promote the adoption of greener transport, greener heating systems and greener electricity generation.[157,158,159] Perversely, however, the Government also has policies in place which actively impede the transition. Various subsidies and preferential tax advantages, for example, artificially suppress the cost to both produce and consume fossil fuels.

Domestic fuel and power, for instance, benefit from a reduced rate of VAT – levied at 5% instead of the full 20% rate.[160] In 2019/20, this was estimated to cost the Treasury £5 billion on a static analysis.[161] From an environmental perspective, it also slows decarbonisation – by incentivising people to use more electricity and gas than they otherwise might.

148 Met Office, *Causes of climate change.* Link.

149 Department for Environment, Food and Rural Affairs, *Clean Air Strategy 2019.* Link.

150 Michael Harfoot et al., *Present and future biodiversity risks from fossil fuel exploitation.* Link.

151 Climate Change Committee, *Sixth Carbon Budget.* Link.

152 Department for Business, Energy and Industrial Strategy, *Fuel used in electricity generation and electricity supplied (ET 5.1 – quarterly).* Link.

153 Ibid.

154 Department for Transport, VEH0171: *Ultra low emission vehicles registered for the first time by body type and propulsion or fuel type: United Kingdom.* Link.

155 Department for Business, Energy and Industrial Strategy, *Cost of installing heating measures in domestic properties.* Link.

156 Max Roser, *Why did renewables become so cheap so fast? And what can we do to use this global opportunity for green growth?* Link.

157 House of Commons Library, *Electric vehicles and infrastructure.* Link.

158 House of Commons Library, *The Renewable Heat Incentive.* Link.

159 House of Commons Library, *Support for low carbon power.* Link.

160 Gov.uk, *VAT rates.* Link.

161 HM Revenue and Customs, *Estimated Cost of Tax Reliefs.* Link.

Meanwhile, in the transport sector, a diverse range of activities – from farming, to private watercraft or mobile generators – can make use of 'red diesel', which attracts a rebated rate of fuel duty (paying 11.14 pence per litre instead of 57.95 pence per litre, a reduction of 81%). Encouragingly, the Treasury recently opened a consultation on reforming red diesel,[162] and in his 2020 Budget, the Chancellor, Rishi Sunak, stated the Government's intention to end the entitlement to use red diesel by April 2022, except for agriculture, pisciculture, rail and non-commercial heating.[163] However, the current tax loophole amounts to a tax advantage of £2.4 billion per annum for beneficiaries of red diesel – again, costing the taxpayer money, and slowing down the transition to greener alternatives.[164,165]

Other notable tax advantages for polluting goods and services include most plane tickets being zero-rated, and gas- and oil-fired boilers attracting a reduced rate of VAT.[166]

At the Centre for Policy Studies, we believe that broad tax bases with as few carve outs and exemptions as possible are – in the round – good qualities in a tax system. Such tax regimes are less economically distorting, in that they do not privilege certain types of economic activity over others.[167] This ensures that resources are allocated more efficiently, to places where they are valued most. Thus, on both economic and environmental grounds, we recommend that preferential tax advantages to fossil fuels and polluting activities – such as those detailed above – should be ended as quickly as is politically feasible.

'As the YouGov polling cited earlier showed, voters certainly will not thank the Government for increasing their bills in general, and their fuel bills in particular'

Of course, those last two words are doing a lot of heavy lifting. As the YouGov polling cited earlier showed, voters certainly will not thank the Government for increasing their bills in general, and their fuel bills in particular.[168] Voters already have a dark suspicion, thanks to the extremist approach of Extinction Rebellion and others, that going green will mean higher taxes – which is arguably the thing most likely to turn them against the environmental agenda.

Ending tax advantages such as zero and reduced rates of VAT on certain items would be disruptive – at least in the short run, while individuals and businesses adapt to the new state of affairs. That is why, in a previous Centre for Policy Studies report – *A Framework for the Future* – we argued that a broader-based VAT regime (which is itself a desirable thing from a fiscal point of view) should be accompanied by a VAT 'prebate' of up to £400 to protect incomes and living standards.[169] Broadening the tax base could also generate the funds necessary to cut other, more economically damaging taxes, which in the long run go on to create more economic growth, employment, and higher wages.

Preferential tax advantages are not the only way the Government incentivises fossil fuel use, however. Until very recently, the UK provided public money for fossil fuel projects overseas through both its aid budget and its export credit agency, UK Export Finance

162 HM Treasury, *Reforms to the tax treatment of red diesel and other rebated fuels: consultation.* Link.
163 HM Treasury, *Budget 2020.* Link.
164 Ibid.
165 Eamonn Ives, *The red diesel loophole is slowing the transition to cleaner alternatives.* Link.
166 HM Revenue and Customs, *VAT rates on different goods and services.* Link.
167 Tom Clougherty et al., *A framework for the future: Reforming the UK tax system.* Link.
168 YouGov and The Times, *YouGov / The Times Climate Change Results.* Link.
169 Tom Clougherty et al., *A framework for the future: Reforming the UK tax system.* Link.

(UKEF). According to the House of Commons Environmental Audit Committee, between 2013/14 and 2017/18, UKEF provided £2.5 billion for fossil fuel projects, nearly all of which went to projects in low- and middle-income countries.[170]

In December 2020, the Prime Minister announced that the UK would 'end direct government support for the fossil fuel energy sector overseas'.[171] A follow up consultation, which closed in February 2021, stated that there would be 'a few – tightly bound – exemptions' to the ban which 'form part of wider clean energy transitions, support decommissioning, or are associated with a humanitarian response'.[172] In March 2021, the Government published a document detailing how the policy would work and what exemptions would be allowed.[173]

We commend the Government on the steps it is already taking to end state support for the fossil fuel sector. Stopping funding for fossil fuels was a momentous step forward. We urge the Government to ensure that the exemptions it still permits are as narrow and focused as possible, and that if evidence appears of them being abused as loopholes, ministers should not hesitate to intervene further. Recent reporting, for example, has highlighted the possibility of funding for fossil fuels continuing through CDC Group, a development finance institution owned by the UK Government.[174,175]

In general, proponents of free markets should be firm opponents of the sorts of subsidies and tax advantages noted above. Subsidies must always be paid for somehow, either through higher taxes, higher prices or increased borrowing. They distort markets, and prevent true competition emerging.

We therefore recommend that the Government now takes the next logical step, and assesses how it subsidises fossil fuels – and other polluting activities, such as agriculture – in other regards, and commits to reduce and ultimately abolish state support for sectors and products which in receipt of such subsidies. Doing so would be a win for free markets and limited government, and the planet too.

III. Join the Agreement on Climate Change, Trade and Sustainability

The Agreement on Climate Change, Trade and Sustainability (ACCTS) is an international agreement which seeks to spur action on climate change and sustainability. It was announced in September 2019 by the New Zealand Prime Minister, Jacinda Ardern, with Norway, Iceland, Costa Rica and Fiji signing up.[176] Since then, Switzerland has also joined the ACCTS.[177]

170 House of Commons Environmental Audit Committee, *UK Export Finance.* Link.

171 Prime Minister's Office, 10 Downing Street, *PM announces the UK will end support for fossil fuel sector overseas.* Link.

172 Department for Business, Energy and Industrial Strategy, *Aligning UK international support for the clean energy transition: Consultation.* Link.

173 Department for Business, Energy and Industrial Strategy, *Aligning UK international support for the clean energy transition: Guidance.* Link.

174 Daisy Dunne, *'Unacceptable loopholes' could undermine UK pledge to end overseas fossil fuel funding, campaigners say.* Link.

175 Mohamed Adow, *Slash and burn: how the UK government is cutting aid while propping up fossil fuels.* Link.

176 Jacinda Ardern, *New Zealand leading trade agreement driving action on climate change and the environment.* Link.

177 New Zealand Ministry of Foreign Affairs and Trade, *Trade ministers express support for the Agreement on Climate Change, Trade and Sustainability at the World Economic Forum, Davos 2020.* Link.

The ACCTS currently has three broad issues which it seeks to resolve:

i) *Removal of tariffs on environmental goods and new binding commitments for environmental services;*
ii) *Disciplines to eliminate harmful fossil fuel subsidies;*
iii) *The development of guidelines to inform the development and implementation of voluntary eco-labelling programmes and associated mechanisms to encourage their promotion and application.*[178]

Clearly, the first two aims of the ACCTS are in line with our recommendations set out above – to remove tariffs and NTBs for environmental goods and services coming into the UK, and to remove subsidies for fossil fuel production and consumption. While we are less supportive of the third provision – to develop guidelines for eco-labelling – we are however encouraged that these guidelines are explicitly for voluntary adoption only, which of course we believe any independent company is welcome to do should it wish.[179]

In a recently published report from the reconstituted Board of Trade, a recommendation was made for the Government to consider joining the ACCTS.[180] We agree – and recommend the Government announces its intention to join prior to COP26, where it should encourage other similarly ambitious nations to join too.

With the UK's involvement, the ACCTS would swell from being an agreement covering economies totalling $1.6 trillion in terms of GDP, to one covering economies in excess of $4.7 trillion.[181] It would also entail the addition of a G7 economy (and the country with the current presidency of the G7), and the host of COP26. Indeed, there are few countries currently better placed than the UK to boost the profile of the ACCTS, catalyse support for it, and persuade other nations to join themselves.

The provisions on liberalising trade in environmental services also play to the UK's advantage as an economy which is heavily invested in this sector, and in services more broadly.[182] Given its relative economic heft, the UK could also influence the development of the ACCTS from an earlier stage, with less chance of unhelpful clauses or measures being written in, which it might have to abide by should it wish to join later on.

IV. Lead on global efforts to introduce carbon border adjustment mechanisms

The UK is a global leader in climate action, and enforces some of the world's most rigorous climate policies.[183] It also has a proud heritage of pioneering innovative policies which have helped reduce emissions both domestically and at an international level.[184] British policymakers have managed time and again to turn theoretical ideas into practical, workable solutions.

178 New Zealand Ministry of Foreign Affairs and Trade, Agreement on Climate Change, *Trade and Sustainability (ACCTS) negotiations.* Link.

179 As has been noted already, labelling initiatives such as 'food miles' can be questionable in terms of their environmental efficacy. Other examples might include those for animal welfare standards, or which promote organic foodstuffs. Moreover, as advocates for a free market economy, we tend not support the state mandating ever more requirements for companies to abide by. Labelling initiatives would likely be harder for smaller businesses to negotiate, and thus potentially entrench the market power of incumbent larger firms.

180 Board of Trade, *Global Britain, Local Jobs.* Link.

181 International Monetary Fund, *World Economic Outlook database: April 2021.* Link.

182 Michael Liebreich, *Time to double down to reach net zero.* Link.

183 Organisation for Economic Co-operation and Development, *Environmental Policy Stringency Index.* Link.

184 Sam Hall and Philip Box, Hotting Up: *Strengthening the Climate Change Act ten years on.* Link.

Without doubt, however, some of the policies the UK has adopted to cut domestic emissions have imposed costs on individuals and businesses in Britain – for instance by raising energy prices, and thus the costs of production, especially in energy-intensive industries.[185] Some British businesses are made less competitive by such policies compared to some foreign businesses, which may not have to abide by – and bear the costs of – similar climate policies in their own countries. The Centre for Policy Studies has already highlighted the way in which Britain has offshored some carbon-intensive manufacturing and electricity generation, for instance, which flatters its decarbonisation performance in the process.[186]

'If all countries uniformly made polluters responsible for the emissions they release, there would be no need for CBAMs'

This theory has regularly gained traction among audiences who have long criticised successive British Governments' desires to decarbonise. Some have therefore argued that Britain's green transition has merely served to make the country poorer while making no difference to the wider problem, because other countries can capture British markets while carrying on merrily as before.[187] It is certainly true that industrial energy costs in the UK are now generally higher than they were in the 1990s and 2000s, and that the Climate Change Levy increases the unit price of electricity (currently by 0.775 pence per kilowatt hour) and fossil gas (currently by 0.465 pence per kilowatt hour).[188,189]

That said, as previously discussed, the evidence of businesses offshoring production principally because of environmental regulations is weak. But it is always possible that further increases will have a more dramatic effect on the manufacturing base, or that the reality or even perception of unfairness created by Britain's climate policies could stymie the adoption of further measures.[190,191]

One way to address these challenges which has received considerable attention of late – including from the European Commission,[192] President Joe Biden[193] and even Britain's former Trade Secretary, Liam Fox, in a speech delivered at the CPS – is to introduce a carbon border adjustment mechanism (CBAM). CBAMs can come in many different forms, but the principle behind them all is that they level the playing field between nations based on their climate policies, and what these do in terms of adding to the costs of production.[194]

If all countries uniformly made polluters responsible for the emissions they release, there would be no need for CBAMs. Unfortunately, for various reasons, this does not happen. Therefore, businesses in countries such as the UK – which do have robust climate policies, and price greenhouse gas emissions at least to a certain extent – are left at a relative disadvantage.

185 Committee on Climate Change, *Energy Prices and Bills – impacts of meeting carbon budgets.* Link.

186 Tony Lodge, *The Great Carbon Swindle: How the UK hides its emissions abroad.* Link.

187 Matt Ridley, *Race to go green is killing heavy industries.* Link.

188 Department for Business, *Energy and Industrial Strategy, Industrial energy price indices.* Link.

189 HM Revenue and Customs, *Climate Change Levy rates.* Link.

190 Josh Burke et al., *What does an EU Carbon Border Adjustment Mechanism mean for the UK?* Link.

191 The threat of carbon leakage occurring becomes all the more present if the UK chooses to decarbonise in a market-friendly way, such as through further carbon pricing, as we would hope, instead of via more government-led approaches, such as subsidising green industries through general taxation.

192 European Commission, *EU Green Deal (carbon border adjustment mechanism).* Link.

193 Joe Biden, *The Biden Plan for a Clean Energy Revolution and Environmental Justice.* Link.

194 Sam Lowe, *Should the UK introduce a border carbon adjustment mechanism?* Link.

We therefore recommend that the UK should seek to become the standard bearer for the adoption of CBAMs. Acting as a leader in the global push towards CBAMs would mean that the UK can sculpt their design and implementation, and reduce the likelihood that it will be forced into a system later down the line of which it has had no say in creating – in particular, one which results in higher prices for consumers rather than a global level playing field. Ideally, the UK might wish to pioneer a multilateral CBAM with similarly climate-minded countries, which in theory could be easier to coordinate and administer, as well as by definition covering more of the global economy and ensuring it is aligned with our climate goals.

But how might a CBAM work in practice? In a perfect world, a UK CBAM would first precisely calculate how much CO_2 is embedded in an imported good, and arrive at a cost for what that CO_2 should be by multiplying that amount by whatever the carbon price is currently set at.[195] Then, it would work out how much of that CO_2 has already been accounted for in the country where it was originally produced – through, for instance, carbon taxes or pollution abatement costs. Deducting the latter from the former, the CBAM would finally generate a figure for how much the good needs to pay to enter the UK.

Unfortunately, but for the simplest of carbon-intensive commodities – such as oil or electricity – this approach is currently practically unfeasible for most goods. To overcome this, some suggest that proxies could be used instead.[196] In a previous Centre for Policy Studies Paper – *The Great Carbon Swindle* – Tony Lodge suggested that a simple proxy would be the emissions-intensity of the country of production: in other words, how dirty the energy was that had been used to create them.[197]

Others have suggested that benchmarks could be calculated for specific product categories, which reflect the average carbon-intensity of producing each of them. For example, the UK might estimate that the production of a tonne of steel is associated with the emission of 1.83 tonnes of CO_2,[198] and this would be what the carbon price is multiplied by to calculate the starting value, before determining how much of the emissions in that tonne of steel have already been accounted for. Box 3, below, explains in simple terms how such a CBAM would work.

Box 3. Hypothetically administering a CBAM on imported goods from China to the UK.

- Average climate costs of producing Good A in the UK = £X.
- Average climate costs of producing Good A in China = £Y.
- When Good A is imported into UK from China, £Y is deducted from £X.
- If £Y < £X, the difference between £Y and £X is paid by the importer to HM Treasury.
- If £Y > £X, the difference between £Y and £X can be claimed by the importer from HM Treasury.

195 Michael Mehling et al., *Designing Border Carbon Adjustments for Enhanced Climate Action.* Link.
196 Sam Lowe, *Should the UK introduce a border carbon adjustment mechanism?* Link.
197 Tony Lodge, *The Great Carbon Swindle: How the UK hides its emissions abroad.* Link.
198 World Steel Association, *Our indicators.* Link.

Enacting a CBAM would not be straightforward – and, if done badly, could actually undermine the push for more open trading relationships. Yet all governments face challenges when implementing new schemes and policies, and nor should we allow perfect to become the enemy of the good given just how helpful CBAMs could be in decarbonising the world economy in a fair and cost-effective manner. A key advantage is that they not only level the playing field between firms operating in Britain and overseas, but incentivise other countries to lower the carbon-intensity of their economies too: in other words, they promote decarbonisation both at home and abroad.

The biggest hurdle to the UK adopting a CBAM is probably with regards to determining the average embedded CO_2 emissions within goods. To ensure that businesses believe the CBAM is being administered fairly, the methodology underpinning the CBAM's benchmarking should be as transparent and open as possible. Businesses should be able to challenge the process,[199] and the Government would probably also need to establish a body (or perhaps a unit within an existing body, in all likelihood HM Revenue and Customs) responsible for handling the CBAM and helping businesses navigate it. Fundamentally, the Government would need to proceed in good faith when adopting a CBAM, and work with businesses to ensure it functions properly, rather than try to bend them to its will – especially in its initial years of operation.

'CBAMs not only level the playing field between firms operating in Britian and overseas, but incentivise countries to lower the carbon-intensity of their economies too'

It may well also be prudent for the CBAM to initially apply only to a handful of goods – perhaps those which are particularly carbon-intensive (such as hydrocarbon fuels, steel, and cement), and those which are particularly 'trade exposed'. Starting small and then gradually expanding the scope of the CBAM could help to reduce complexity, build familiarity and confidence among businesses, and give a chance for practical lessons to be learnt by policymakers before rolling it out on a larger scale. It would also lessen any immediate hit to consumers or industries that rely on those imported products, although this could be lessened by ensuring that the some or all of the income from a CBAM went towards compensating those who would otherwise lose out.

Some have also pointed out the potential legal difficulties the UK may run into if it adopts a CBAM.[200] Others have noted how members of the WTO might regard a CBAM as a protectionist measure, designed to increase the costs of exports to the UK.[201] That such assumptions would be wrong does not necessarily make them any less of an issue to consider. To be perfectly frank, there is no precedent for CBAMs under existing WTO law – yet there are reasons to believe that a CBAM might not be shot down by the WTO.[202]

Under Article II.2 (a) of the WTO's General Agreement on Tariffs and Trade (GATT), member states are allowed to levy taxes on imports provided that they are only equivalent to the costs borne by domestic producers due to internal taxes or other measures.[203] This is all that an ideally designed CBAM would do – level the playing field – and so should give encouragement for the legal case for CBAMs.

199 For example, if a business can demonstrate it is producing a good in a carbon-efficient or zero-carbon way, it should be able to avoid the costs of the CBAM either partly or entirely respectively.

200 Financial Times, *EU's carbon border tax plan is risky but needed.* Link.

201 William Young, *When trade and climate combine: British policy options.* Link.

202 Michael Mehling et al., *What a European 'carbon border tax' might look like.* Link.

203 World Trade Organization, *The General Agreement on Tariffs and Trade (GATT 1947).* Link.

Meanwhile, GATT Article XX (paragraphs b and g) also allows environmental exceptions – whereby member states can introduce trade-related environmental measures if they can establish a connection between the measure and a stated environmental policy goal.[204] As the UK is a signatory to the Paris Agreement and already has its Net Zero target firmly on its statute books, this should not be an issue.

A final consideration with regards to CBAMs is whether or not they should apply to developing countries.[205] In theory, the purest conception of a CBAM would say that no distinction should be made – that the CBAM should be 'blind' to where the good is coming from, and consider only its embedded carbon, and the extent to which the social costs of that embedded carbon have already been accounted for. In the gritty reality of politics, however, exempting imports from developing nations may well be worthwhile if it is necessary to getting a CBAM up and running. Again, the perfect should not be allowed to become the enemy of the good. An exemption for developing nations would also guard against the potential worst consequences of a CBAM – trade disruption – from afflicting the countries which require trade, and the economic benefits it brings, the most.

Already, trade regimes – including WTO agreements – allow for developing countries to receive special treatment, just as the UK currently gives unilateral tariff and quota-free access to 46 less developed nations.[206] Moreover, accepting that developed and developing countries have 'common but differentiated responsibility' when it comes to tackling climate change is a well-established principle, and one which underpins the Paris Agreement.

V. Task the Climate Change Committee with scoping a Net Zero consumption target

In 2019, the UK wrote into law its target for Net Zero domestic greenhouse gas emissions by 2050 – becoming the first major economy to do so.[207] This target was informed by analysis from the Intergovernmental Panel on Climate Change which stated that the global economy must reach Net Zero emissions by 2050 in order to have a greater than 50% chance of meeting the Paris Agreement's goal for limiting global warming to 1.5C.[208] It was also consistent with separate analysis from the Climate Change Committee (CCC) on meeting the 1.5C target.[209]

The UK's Net Zero goal is an admirable, science-based target. It has catalysed action in other countries which have gone on to set similar targets of their own.[210] In March 2021, nearly a third of the UK's FTSE100 companies – representing a total market capitalisation of £650 billion – signed up to a campaign to achieve Net Zero by 2050 at the very latest.[211]

204 World Trade Organization, *WTO rules and environmental policies: GATT exceptions.* Link.

205 Sam Lowe, *The EU's carbon border adjustment mechanism: How to make it work for developing countries.* Link.

206 Sam Lowe, *Should the UK introduce a border carbon adjustment mechanism?* Link.

207 Department for Business, Energy and Industrial Strategy, *UK becomes first major economy to pass net zero emissions law.* Link.

208 Intergovernmental Panel on Climate Change, *Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.* Link.

209 Committee on Climate Change, *UK climate action following the Paris Agreement.* Link.

210 Energy and Climate Intelligence Unit, *Net zero: the scorecard.* Link.

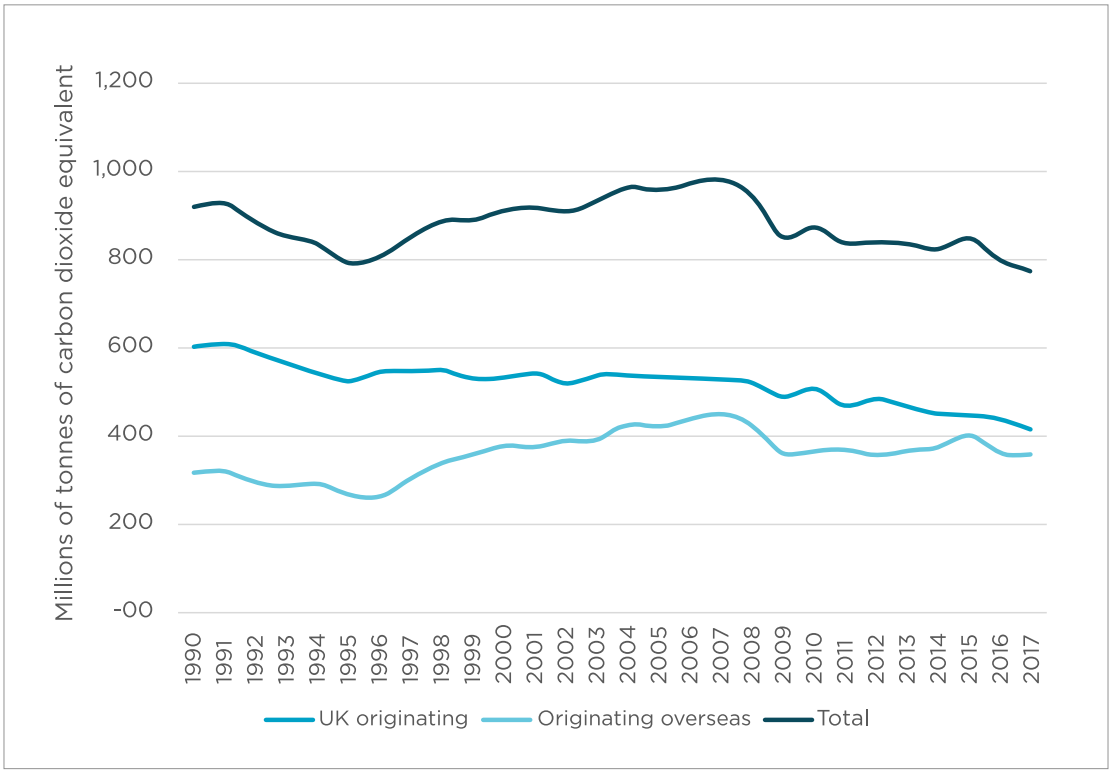
211 Department for Business, Energy and Industrial Strategy, *Third of UK's biggest companies commit to net zero.* Link.

The target provides businesses and consumers with the long-term policy certainty which is necessary for adjusting how they operate and conduct themselves in the most efficient manner.

Even so, the Net Zero target remains solely focused on domestic territorial emissions – that is to say, emissions emanating from within the UK's borders only. Territorial emissions reporting is the standard approach as required under the United Nations Framework Convention on Climate Change, and there are good arguments in favour of maintaining this approach (largely around accuracy of data collection and collation, but also in terms of communicating decarbonisation efforts to the general public).[212]

Nevertheless, as previously mentioned, UK progress on decarbonisation is flattered when one considers consumption emissions – that is to say, the emissions embodied within everything consumed within the UK, including imported goods. When one assesses the UK's decarbonisation record on a consumption emissions basis, it only decarbonised by 16% between 1990 and 2017 – as shown in Chart 7, below.

Chart 7. Total UK greenhouse gas emissions



Source: Author's analysis of Department for Environment, Food and Rural Affairs, UK's carbon footprint. Link.

212 Climate Change Committee, *Sixth Carbon Budget.* Link.

The gap between territorial emissions and consumption emissions should diminish as more and more of the world – principally countries, but also businesses in their own right – adopts Net Zero targets, and transitions to cleaner methods of production. Analysis from the CCC estimates that 76% of the emissions associated with imports into the UK originate from countries which already have targets for Net Zero emissions by around mid-century,[213] and more countries are contemplating adopting Net Zero targets of their own.[214] Other policies recommended in this report – most notably the proposal for a UK CBAM – would expedite progress on closing the gap between territorial emissions and consumption emissions.

'There is still a danger that the UK is 'hiding' or 'offshoring' its emissions. Successfully getting Britain to Net Zero by 2050 would be a laudable feat, but if it does so simply by relocating the dirtiest elements of production, one might reasonably question the efficacy of such a course of action from a climate perspective, and indeed from an economic one'

Despite this, there is still a danger that the UK is 'hiding' or 'offshoring' its emissions. Successfully getting Britain to Net Zero by 2050 would be a laudable feat, but if it does so simply by relocating the dirtiest elements of production, one might reasonably question the efficacy of such a course of action from a climate perspective, and indeed from an economic one. Closing down carbon-intensive jobs in the UK only to replace them with carbon-intensive imports from abroad would certainly be bound to rankle much of the electorate.

In terms of communicating progress to the general public, too, the intellectual honesty of relying on territorial emissions-based accounting is dubious. To claim, for instance, that the UK will stop contributing to climate change in 2050 even if it meets Net Zero is wrong on a number of counts. This point might be of trivial importance, but for some, it could undermine the whole legitimacy of domestic climate action – and give ammunition to those seeking to subvert efforts to decarbonise the economy.

We therefore recommend that the Government instructs the CCC to scope a Net Zero consumption target, and track progress towards it in its forthcoming analyses and Carbon Budgets. Once a target date has been arrived at, the Government should ensure that it gives it due recognition in its own analysis and communications.

213 Ibid.

214 Archana Chaudhary, Akshat Rathi and Rajesh Kumar Singh, *India Considers 2050 Net-Zero target, a Decade Before China.* Link.

IV. Conclusion

Not since 1972 has the UK enjoyed a truly independent trade policy. While going it alone represents considerable risks, so too does it offer new opportunities. One of the areas where this is most apparent is in terms of the steps Britain can take to ensure that its trade policy is not only delivering material prosperity at home and abroad, but also protecting and restoring the environment as well.

Contrary to common assumption, free markets and free trade will be vital to lift yet more of the world out of crushing poverty, while also permitting the responsible stewardship of local and planetary natural resources.

2021 will culminate with the UK's hosting of COP26, and it is imperative that the Government is leading the charge in terms of developing and adopting innovative policies which will hasten decarbonisation and ultimately put an end to anthropogenic global warming. Meanwhile, progress also needs to be made on other environmental issues – such as air pollution, habitat destruction and species loss.

In this report, we have detailed a small handful of proposals which the Government could adopt to make a big difference in terms of the UK's footprint on the planet. We believe them to be credible – in that they would make a meaningful, positive contribution to greening the UK economy – and actionable – in that they are practically workable and could be adopted by a government with the ambition to see them through. The policies we propose should also create positive reverberations in other countries too – which will be essential if the more severe impacts of climate change and other environmental challenges are to be successfully mitigated.

As we tentatively emerge from the worst of the coronavirus pandemic, there has never been a better time to rethink government policies across a whole range of different domains. The environment and trade are no exceptions to that. The scene is set for a radical reimagining of international efforts to accelerate environmental action and to restore international trade to its historic levels.

As the country begins to chart its own course in the world once again, Britain should seek to spearhead both of those critically important and interlinked agendas – just as it has done so successfully so many times before in its past.

Annex I. How comparative advantage can benefit everyone

The matrices below show how comparative advantage works. It assumes two individuals – Person A and Person B – trading two goods – Good X and Good Y. It assumes that all of the goods produced are identical, and that each individual's production possibilities curve is perfectly linear (which is to say, the amount of one good which either individual sacrifices to make another is the same regardless of how much the individual was currently producing).

Every day, Person A can make either ten of Good X or ten of Good Y. Person B is more productive, and can make either 20 of Good X or 30 of Good Y each day.

	Person A	**Person B**
Good X	10	20
Good Y	10	30

Table 1. Showing the maximum amounts of Good X and Good Y which either person can produce in one day (known as 'production possibility frontiers').

Under autarkic conditions, Person A could spend all day making ten of Good X, and none of Good Y. Or they could spend half of their day making five of Good X, and five of Good Y. Person B could similarly spend all day making 20 of Good X, and none of Good Y. Or they too could split their time evenly, and make ten of Good X and 15 of Good Y.

	Person A	**Person B**
Good X	5	10
Good Y	5	15

Table 2. Showing how much of Good X and Good Y each person can produce if they divide their time equally between producing Good X and Good Y.

Alternatively, Person A and Person B could mutually agree to focus on producing that which they are best at, and then engage in trade. Here, Person A might agree to spend all day making ten of Good X, if Person B agrees to spend all day making 30 of Good Y. The amount produced in one day is as shown in Table 3.

	Person A	**Person B**
Good X	10	0
Good Y	0	30

Table 3. Showing how much of Good X and Good Y can be produced if Person A decides to only produce Good X and Person B decides to produce only Good B.

When each individual was splitting their time equally between producing Good X and Good Y, Person A made five of each, and Person B made ten of Good X and 15 of Good Y. From this, we might assume that, as a bare minimum, Person A would want to have five of each of Good X and Good Y. The results of a trade are shown in Table 4.

	Person A	**Person B**
Good X	5	5
Good Y	5	25

Table 4. Showing how trade can increase the overall amount produced in an economy, although leaving Person B worse off in one respect (consumption of Good X), and much better off in another (consumption of Good Y).

On the above, however, while Person A has satisfied their demand for five of Good X and five of Good Y, Person B has a shortfall of five of Good X, and a surplus of ten of Good Y compared to what they produced under autarkic conditions. They may enjoy the surplus, but it would could represent a loss of overall utility due to the law of diminishing marginal utility. In this case, Person B would need to shift some of their production of Good Y towards producing Good X as well. We know from Table 2 that Person B can produce two of Good X for every three of Good Y. Therefore, they might decide to produce nine fewer of Good Y, to gain six of Good X. The results of this are shown in Table 5.

	Person A	**Person B**
Good X	5	11
Good Y	5	16

Table 5. Showing how trade can increase the overall amount produced in an economy, and Person B being better off in all respects.

After adjusting how much time they devote to producing Good Y (by shifting some towards Good X), Person B is now better off in all respects when trading with Person A. Free trade has caused the amount of goods produced in the economy to rise in absolute terms, while the demand schedules of both individuals remain satisfied.

As future iterations of trade go by, we might reasonably expect Person A to get better at producing Good X, and for Person B to get better at producing Good Y. The specialisation begot by dividing labour and engaging in trade would lead to even greater abundances of production. Alternatively, consumption might remain fixed, but the number of resources needed to be used to produce Good X and Good Y might fall due to increased efficiency, less wastage, and so forth. Thus, one can observe how trade can lead to improved conservation of input resources, which – if derived from the natural world, as many consumption goods are – would alleviate pressure on the planet accordingly.

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