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Tackling the Climate Emergency: Proposals for Carbon Pricing

Policy Paper 139A

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Summary

This policy paper puts forward proposals for Liberal Democrat policies on carbon pricing – using policy instruments such as carbon taxes or emissions trading systems to accelerate the decarbonisation of the economy. It is a supplement to, and should be read alongside, the comprehensive programme set out in our policy paper *Tackling the Climate Emergency*, endorsed by conference in 2019.

Increasing the cost of using fossil fuels through carbon taxes, emissions trading schemes or other pricing instruments plays an important part in Liberal Democrat proposals for decarbonising the British economy as fast as possible. But in reality, fossil fuel users' ability to respond to these kind of price signals varies very significantly with the type of use and the type of user. A blunt approach to carbon pricing, raising the price of all fossil fuel use in all sectors, risks outcomes that are both unfair, affecting low-income users, and ineffective, not sufficiently targeting those emitters who can respond, and thus slowing down the pace of decarbonisation. A targeted approach, focusing on the biggest polluters and those activities where emissions can most swiftly be reduced, will both support a faster rate of decarbonisation and will be fair to individuals and businesses.

We will therefore:

- Employ carbon pricing policies to help to deliver a just transition, where the burdens of decarbonisation are shared equitably.
- Accordingly, use carbon pricing policies to target the biggest polluters and those activities where emissions can most swiftly be reduced, in a way that is fair to individuals and businesses.
- Offer support and incentives to smaller emitters such as households to reduce emissions before applying carbon pricing to their energy bills.
- Combine carbon pricing instruments with other approaches, including regulation, information and subsidy, to lead to better and faster outcomes rather than when they are used in isolation.

- Ensure that the UK collaborates closely with the EU, cooperating in carbon pricing policies to maximise impact and minimise problems for business trading across the border.

Our key proposals include the following:

Power and industry

We will accelerate the decarbonisation of power and industry (alongside our existing proposals to support the development of renewable power and zero-carbon industrial processes) by:

- Raising the price of allowances in the UK Emissions Trading System (ETS) by reducing their number and increasing the auction reserve price, thereby strengthening the incentives for large emitters to cut emissions.
- Extending emissions trading to cover suppliers of fossil fuels currently outside the ETS.
- Linking the UK ETS to the EU ETS, creating a larger market for trading allowances and thereby improving its effectiveness.
- Introducing, in collaboration with the EU, a carbon border adjustment mechanism for high-emission products such as metals or chemicals, protecting UK businesses from competition from imports not facing similar costs.
- Simplifying the existing system of energy taxes by abolishing the Carbon Support Price and the Climate Change Levy, which will be no longer needed once the UK ETS is more effective.

Households

We will accelerate the decarbonisation of housing (alongside our existing proposals to provide free home insulation to low-income home-owners, introduce a zero-carbon standard for new buildings and require landlords to raise the energy rating of their properties) by:

- Widening the list of energy and emissions-saving products enjoying the 5 per cent rate of VAT, and extending this lower rate to all household solar PV and battery systems.
- Allowing owners to offset spending on insulation, low-carbon heat sources, EV charging points and climate adaptation measures against their income tax bills.
- Graduating Stamp Duty Land Tax by the energy rating of the property being sold, and offering refunds to house purchasers if they improve the rating within one year of purchase.
- Working with mortgage providers to encourage them to support energy-saving and zero-carbon measures, including requiring them to report their lending for climate-related home investments, and requiring buyers and mortgage providers to be made aware of the extent to which the property falls below the target energy rating.
- Protecting households from sudden price increases by delaying by ten years the extension of emissions trading to suppliers of fossil fuels to homes.
- Keeping electricity bills stable by transferring some levy funding for renewables from electricity to gas bills and to general taxation.

Transport

We will accelerate the decarbonisation of transport (alongside our existing proposals to end the sale of new fossil fuel cars and small vans by 2030, promote cycling and walking, and invest in public transport) by:

- Reinstating the indexation of road fuel duty, graduating VED by fuel efficiency and increasing rates for fossil fuel vehicles overall, reducing company car tax for electric vehicles and increasing it for fossil fuel vehicles.

- Replacing the limited electric vehicle purchase grant with a 5 per cent VAT rate (up to a ceiling), to be phased out as the market expands, and introducing a zero-emission-vehicle mandate for manufacturers.
- Limit the growth in demand for flights by ensuring that no net increase in airport runways across the UK takes place and banning flights where direct rail transport is available for the same journey, up to 2.5 hours, unless planes are alternative-fuelled.
- Limit demand for flying by reforming Air Passenger Duty to target the most frequent flyers, and introducing VAT on first-class and business travel.
- Introducing a charge on airlines for each take-off, and on flights by private jets.
- Collaborating with the EU in extending the UK ETS to non-EEA flights and in placing a specific excise tax on airline fuel.
- Including shipping emissions in the UK ETS.

Agriculture, land use and carbon dioxide removal

We will put in place further measures to:

- Prioritise climate change mitigation in agricultural support systems, including measures to increase soil carbon, tree planting and woodland creation.
- Work with farmers and manufacturers to support the development of zero-emissions technologies for agricultural machinery, after which red diesel can be included in the UK ETS.
- Require a full climate impact assessment of proposed UK free trade agreements to be made public before the agreements are finalised.
- Provide incentives for negative emissions strategies, including technological and nature-based solutions.

1 Introduction

1.0.1 This policy paper puts forward proposals for Liberal Democrat policies on carbon pricing – using policy instruments such as carbon taxes or emissions trading systems to accelerate the decarbonisation of the economy. It forms a critical part of the party's programme for tackling the climate emergency.

1.0.2 Liberal Democrats have long recognised the need for urgent action to reduce emissions of greenhouse gases in order to avoid the worst impacts of climate breakdown. In 2019 party conference endorsed the climate policy paper *Tackling the Climate Emergency*. The paper contained proposals for an emergency ten-year programme of action to reduce greenhouse gas emissions from buildings and power generation – the most cost-effective options for rapid reductions in emissions – to near-zero, reducing UK greenhouse gas emissions by 75 per cent by 2030. A framework for accelerating reductions in other sectors – transport, industry and land use – and for removing carbon dioxide from the atmosphere enabled us to aim to reach net zero emissions by 2045 at the latest, in compliance with the international targets to limit climate change set by the Paris Agreement of 2015.

1.0.3 Two years later, the challenge is even more urgent. In each of the last five years, 2016–20, the average global temperature has reached more than 1°C above pre-industrial levels, and on current trends the world is on track for at least a 3°C rise by the end of this century, well above the Paris Agreement's target of holding the increase in the global average temperature to well below 2°C above pre-industrial levels, and to 1.5°C if possible. Although the lockdowns imposed in many nations during 2020 in an attempt to control the coronavirus pandemic led to a reduction in transport use and industrial activity, the fall in global carbon dioxide emissions was only 7 per cent and the impact on the rate of global warming was negligible.

1.0.4 Here in the UK there are few signs that the government is responding adequately to the climate emergency. Although the commitment to reach net zero greenhouse gas emissions by 2050, passed into legislation in 2019, is welcome, the government is not on track even to meet its old targets (for an 80 per cent reduction by 2050) and has set out no coherent plan to meet the new ones. In recent months a series of decisions – scrapping the Green Homes Grant scheme without putting anything in its place, proceeding with the new Woodhouse Colliery coalmine in Cumbria (now subject to a public enquiry), granting new licences for oil and gas exploration in the North Sea and cutting support for electric vehicles – have demonstrated that there is no cross-government understanding, commitment or leadership to achieving net zero. In June 2021 the independent Committee on Climate Change concluded that: 'This defining year for the UK's climate credentials [because of the UN climate conference in November] has been marred by uncertainty and delay to a host of new climate strategies. Those that have emerged have too often missed the mark. With every month of inaction, it is harder for the UK to get on track.'

1.0.5 Virtually every policy proposal we put forward in *Tackling the Climate Emergency* is still relevant. The paper did not deal in full, however, with the topic of carbon pricing. This paper puts forward detailed proposals in this area, and should be read alongside the earlier policy paper, which it supplements.

2 The Liberal Democrat approach: targeted and fair

2.0.1 Increasing the cost of using fossil fuels through carbon taxes, emissions trading schemes or other pricing instruments plays an important part in Liberal Democrat proposals for decarbonising the British economy as fast as possible. But there are dangers in applying carbon pricing in too blunt a way. We will:

- Employ carbon pricing policies to help to deliver a just transition, where the burdens of decarbonisation are shared equitably.
- Accordingly, use carbon pricing policies to target the biggest polluters and those activities where emissions can most swiftly be reduced, in a way that is fair to individuals and businesses.
- Offer support and incentives to smaller emitters such as households to reduce emissions before applying carbon pricing to their energy bills.
- Combine carbon pricing instruments with other approaches, including regulation, information and subsidy, to lead to better and faster outcomes than when they are used in isolation.
- Ensure that the UK collaborates closely with the EU, cooperating in carbon pricing policies to maximise impact and minimise problems for business trading across the border.

2.1 The uses of carbon pricing

2.1.1 In the absence of carbon pricing, the price of fossil fuels – coal, gas and oil – paid by their end users and used for power, heat and transport will not reflect the environmental impact of their use, in terms of increased greenhouse gas emissions: polluters will not pay for their pollution. Taxes, or other pricing instruments such as emissions trading schemes, can be used to correct this, increasing the price of fossil fuels and thereby encouraging consumers to use less, either by switching to alternative

sources of energy (e.g. renewables) or by reducing demand, for example through increasing end-use efficiency or finding alternative ways of doing things.

2.1.2 In practice, however, fossil fuel users' ability to respond to price signals in these ways varies very significantly with the type of use and the type of user. In the UK, for power generation, various government support schemes have brought down the cost of renewables so that they are now competitive with fossil-fuel-generated electricity; carbon pricing instruments have helped to accelerate this transition. Switching to renewable sources (directly for a major user, like an electricity supplier, or indirectly for small users, like households choosing renewable-only contracts) is therefore a realistic option.

2.1.3 For transport, the choices are more limited: car drivers can either buy an electric vehicle or drive less, by switching to public transport or cycling or walking, or by changing their movement habits (e.g. by working at home more frequently). For low-income households, those living in rural areas without good public transport networks, or those who cannot work from home (e.g. health care staff), the availability of these choices is clearly limited.

2.1.4 For heating, the choices are even more constrained. For most households the best way is usually to insulate their home, reducing their demand, but this can be expensive, particularly for older houses; and tenants rather than home-owners may not have the power to do so. Installing electric heat pumps instead of gas boilers is also currently expensive and may require extensive work in some types of property. Replacing gas with hydrogen is a possible alternative, but cannot be chosen by individual consumers. Raising the price of heating may therefore leave low-income households with no option other than to heat their homes less, worsening fuel poverty.

2.1.5 For the individual user of aviation, there is only one way to reduce emissions: to fly less. Airline companies, however, face the choice – or may,

given technological advances – to buy electric planes (though this technology is not yet commercialised) or use lower-emission fuels.

2.1.6 Therefore a blunt approach to carbon pricing, raising the price of all fossil fuel use in all sectors, risks outcomes that are both unfair, affecting low-income users, and ineffective, not sufficiently targeting those emitters who can respond, and thus slowing down the pace of decarbonisation. A targeted approach, focusing on the biggest polluters and those activities where emissions can most swiftly be reduced, will both support a faster rate of decarbonisation and be fair to individuals and businesses.

2.1.7 In all cases a combination of different approaches – carbon pricing, subsidy and regulation – is likely to lead to better and faster outcomes than relying on pricing instruments alone. For example, while the EU Emissions Trading System has helped encourage power generators to invest in renewable sources, it was government requirements on electricity suppliers, supported by subsidies raised from electricity bill-payers, that had a greater impact in driving the rapid uptake of renewables. Providing free home insulation to low-income households, and placing regulatory requirements on landlords, is likely to prove more effective in improving the energy efficiency of properties than raising heating bills would alone – though raising prices can help to incentive higher-income home-owners to make appropriate investments. And even where pricing instruments can work well, there are different ways in which they can used. For example, steeply graduating the rate of Vehicle Excise Duty by the fuel efficiency of the vehicle is likely to have a greater impact on car purchasers than raising the price of the fuel, since it is a much more visible single annual payment.

2.1.8 On top of this, we are not starting from scratch. The UK already possesses a range of taxes and other instruments that directly or indirectly impact carbon prices; Table 1 summarises the most significant. These are applied at very different levels, meaning that some sectors, such as road transport, already face high implicit carbon prices and others, e.g. domestic heating, or aviation, face very low ones or in some cases are, in effect, subsidised.

Table 1 Principal UK policy instruments relevant to carbon pricing

Instrument	Coverage
UK Emissions Trading Scheme (ETS)	Power generators (and therefore indirectly, all electricity consumers) Large industrial installations Flights to destinations within the European Economic Area
Carbon Support Price	Power generators (and therefore indirectly, all electricity consumers)
Climate Change Levy	Electricity, gas and coal bought by smaller industrial and commercial consumers
Environmental and social obligation levies on electricity bills (for support for renewables, etc.)	All electricity consumers
Road Fuel Duty	Petrol and diesel road fuel
Vehicle Excise Duty	Vehicle owners
Company car tax	Benefit-in-kind tax on private use of company cars
Air Passenger Duty	Air passengers
Reduced VAT (subsidy)	5% rate for household electricity and gas users 0% on air tickets

2.2 The Liberal Democrat approach: targeted and fair

2.2.1 It is against this background that we have developed the proposals set out in this paper. We are clear that carbon pricing instruments have an important role to play in accelerating the transition to net zero, but they will drive greater and faster change if they are targeted on those energy

users which have the capacity to respond. This leads us to conclude that a mix of taxes and emissions trading schemes, specific to each sector, will achieve faster reductions in emissions than a single economy-wide carbon tax, which is sometimes proposed. Our proposals for each of the major energy-using sectors are set out in the chapters that follow. As noted, a combination of carbon pricing with regulation, and sometimes with subsidy, is likely to achieve the optimum outcome, and therefore we repeat the key relevant proposals from our 2019 paper.

2.2.2 As well as being well targeted, our other main principle is that carbon pricing policy should be fair, addressing the needs and circumstances of different types of energy users. This means that some of our proposals incorporate delays to the introduction of carbon pricing where it particularly affects the poorest groups, allowing time for supporting measures – for example the provision of free home insulation to low-income home-owners – to work to reduce the impact of price increases on these people.

2.2.3 Our proposals also aim to ensure that the UK collaborates much more closely with the EU than envisaged by the current Brexit-obsessed government. In particular this includes associating the UK Emissions Trading System with the EU ETS, which will not only increase its effectiveness and minimise problems for business trading across the border but will be an essential step in achieving the long-term Liberal Democrat aim of seeing the UK rejoin the EU.

2.2.4 Some have argued for a different proposal than our targeted approach, scrapping all existing taxes in favour of a single economy-wide carbon tax applying to all fossil fuel use. The revenue collected would be returned to citizens in the form of a flat-rate payment per head. If energy consumption varies with income, this should, in theory, prove a progressive measure, compensating for the higher costs of energy use and redistributing money from rich to poor households.

2.2.5 In reality, the picture is more complex. While spending on transport fuel does tend to vary with income (though also with the location of the

household, for example in urban or rural areas), spending on heating and electricity also varies with the energy efficiency of the property, which in turn varies strongly with the age of the building. And, as mentioned above, of all types of energy use, domestic heating currently faces one of the lowest rates of carbon pricing; it is subject to the lower (5 per cent) rate of VAT and does not bear the cost of the levies added to electricity bills. Replacing existing taxes with a single economy-wide carbon tax would therefore raise the cost of domestic heating very significantly, while probably not affecting road transport costs at all.

2.2.6 Recycling the revenue through flat-rate payments to households could compensate them for the additional costs of the carbon tax, but would have distributional consequences which could be unfair. A low-income pensioner living alone in a large, old and poorly insulated house could be no worse off, if the compensation was generous enough, but a large family living in a small, modern and well-insulated property would receive far more in recycled revenue than they would pay in carbon tax. Whether this is a desirable outcome in social terms is questionable, but it clearly has no climate benefit. The single pensioner still cannot afford to insulate their home, while the large family has no need to; they may even increase their energy use by buying more appliances or equipment with their additional income.

2.2.7 It could not be said that this carbon tax is poorly targeted; it is not targeted at all. It would have the least impact on transport fuel (since this is already so heavily taxed), which is the sector of energy use most strongly related to household income, and the greatest impact on domestic heating. While households would mostly be protected from price rises, businesses would not be. Although it would be possible in theory to target the compensation more precisely, this would require far more information on every household's energy use than government currently possesses (which, in any case, can change frequently, with factors such as health, disability and employment) and significantly complicate the measure. For all these reasons we do not support the idea of a single economy-wide carbon tax.

3 Power and industry

Key proposals – accelerate decarbonisation of power and industry by:

- Raising the price of allowances in the UK Emissions Trading System (ETS) by reducing their number and increasing the auction reserve price, thereby strengthening the incentives for large emitters to cut emissions.
- Extending emissions trading to cover suppliers of fossil fuels currently outside the ETS.
- Linking the UK ETS to the EU ETS, creating a larger market for trading allowances and thereby improving its effectiveness.
- Introducing, in collaboration with the EU, a carbon border adjustment mechanism for high-emission products such as metals or chemicals, protecting UK businesses from competition from imports not facing similar costs.
- Simplifying the existing system of energy taxes by abolishing the Carbon Support Price and the Climate Change Levy, which will be no longer needed once the UK ETS is more effective.

3.1 Targeting large emitters: the UK Emissions Trading System

3.1.1 The UK Emissions Trading System (ETS) – now separate from the EU ETS – limits greenhouse gas emissions from large emitters: about 1,000 power stations and industrial plants and 140 aircraft operators (for flights within the EEA area). (See box below for background.) After a slow start in the EU, the ETS has worked well to reduce emissions, and we would retain it in the UK; the administrative infrastructure is already in place and large emitters understand it. Using it enables the UK to maintain its approach to carbon pricing in line with that of its major trading partner, the EU. But we would also introduce radical reforms, accelerating the pace of decarbonisation and extending emissions trading to all fossil fuels used for

power, heating and industrial processes, to cover an estimated 60 per cent of UK emissions (all sectors other than transport, agriculture and land use).

3.1.2 We would seek to link the UK ETS to the EU ETS. This would create a larger market for trading allowances, and therefore drive greater efficiency in reducing emissions. It would create a level playing field for British industry and their European competitors, so reducing competitiveness concerns. And it is consistent with the Liberal Democrat objective of the UK rejoining the EU, which would require re-entry to the EU ETS in any case. Linking systems in this way is technically feasible – the Swiss ETS is already associated with the EU ETS – and, indeed, the UK–EU Trade and Cooperation Agreement contains a commitment to exploring such a linkage, though the government has so far done nothing to implement this clause.

3.1.3 The parameters of the UK ETS need to be adjusted to accelerate the pace of decarbonisation of these large emitters (and their customers) in line with Liberal Democrat objectives of reaching net zero emissions by 2045. We would:

- Raise the price of allowances in the UK ETS under its current scope by reducing the cap to a level consistent with our net zero target, falling to an estimated 50 million by 2030 (allowing 50 million tonnes of carbon dioxide-equivalent emissions), a reduction from 156 million in the current scheme in 2021 (which is clearly excessive, and higher than projected actual emissions of 126–131 million). This is consistent with the trajectory set out in *Tackling the Climate Emergency*, which assumed that the power sector would be almost completely decarbonised by 2030.
- Reduce volatility in emission allowance price levels by making the Auction Reserve Price (which sets a minimum price at which allowances are sold) a long-term feature of the scheme and increasing it progressively from the current price of £22 per allowance to at least £50 by 2026. This is essential so long at the UK ETS is not linked to the EU ETS.

- Extend emissions trading to suppliers of fossil fuels (coal, gas and oil) to other users of energy for heating and industrial processes (at present, only gas used for power generation and by large industrial installations is covered by the UK ETS). It will be most efficient to implement this upstream, by placing the requirement on the small number of companies supplying fossil fuels (based on the carbon content of the fuel supplied) rather than the very large number of end users. This will raise the price of the fuels supplied, creating incentives to switch to renewable alternatives and improve the efficiency of energy use. We would put in place measures to prevent gas users currently within the ETS paying twice, and phase implementation appropriately. We would consider further whether these suppliers should be included in the existing UK ETS or in a separate system, as the European Commission has proposed for the EU ETS.

3.1.4 This extension of emissions trading to fossil fuel suppliers will include suppliers of gas and oil for household heating. Consistently with our principles for a just transition (see Chapter 2), we would delay this extension of emissions trading to household supplies for ten years, giving time to implement our emergency programme to reduce energy consumption from buildings, particularly through free insulation for low-income owner-occupiers, new requirements on landlords to improve their properties, and tax incentives for better-off households to insulate their properties (see further in Chapter 4).

3.1.5 Once the UK ETS cap has been tightened and emissions trading extended to cover all fossil fuels, the complex mixture of existing energy taxes can be simplified. We would abolish the Carbon Support Price (introduced in 2013 to bolster the ETS price) and the Climate Change Levy (the tax on energy paid by businesses outside the ETS).

Background: the EU and UK Emissions Trading Systems

Established in 2005, the EU Emissions Trading System (ETS) was the world's first international emissions trading system. Extending throughout the

European Economic Area (EEA – the EU plus Iceland, Lichtenstein and Norway), it uses a cap-and-trade system to limit emissions from about 11,000 heavy energy-using installations – power stations and industrial plants – and aircraft operators for flights within those countries; this covers around 38 per cent of total greenhouse gas emissions in its member countries. From January 2021, the UK is operating its own ETS, independently of the EU but retaining the same essential structure, and covering about 1,000 power stations and industrial plants and 140 aircraft operators.

An overall cap is set on the total amount of greenhouse gases that can be emitted by installations covered by the ETS; the cap is reduced over time. Within the cap, companies buy at auction, or are given, emission allowances. After each year each company must surrender enough allowances to cover all its emissions over the year, or face fines (which are more costly than buying the necessary allowances). If a company reduces its emissions below its allocation, it can keep the spare allowances to cover its future needs, or sell them to another company that is short of allowances. The system therefore works both to deliver cuts in emissions where it is most cost-effective to do so, and, since the cap is reduced over time, to increase the cost of emitting greenhouse gases and thus encourage further efforts at reductions.

There are several advantages to using an ETS rather than a carbon tax. The target volume of emissions can be specified precisely, which is not possible with a tax. International experience has shown that carbon taxes are much more likely to be changed by governments for short-term reasons not necessarily related to emissions goals – either increased because the Treasury wants more revenue, or cut because of lobbying or popular protest. An ETS is likely to provide a stronger and more consistent framework over the long run than a carbon tax, helping to underpin the significant volumes of investment necessary for the transition to net zero.

In July 2021 the European Commission published proposals to lower the annual emissions cap in the EU ETS to accelerate the pace of

decarbonisation, to extend it to the maritime sector and to establish a new ETS for road transport and buildings, covering upstream fuel suppliers rather than end users.

3.2 Stopping leakage and protecting UK companies: carbon border adjustments

3.2.1 One problem with applying the ETS (or a carbon tax) to domestic industry is that companies then become vulnerable to competition from overseas competitors which do not face similar costs; energy-intensive products whose price is increased due to the ETS are increasingly imported rather than produced at home. This creates 'carbon leakage' (higher emissions in the country of production) and a loss of sales and jobs for domestic companies. We would avoid these problems by accompanying our reforms of the UK ETS with the introduction of a 'carbon border adjustment' mechanism, which would see a charge or levy proportionate to the carbon content of imported goods applied at the UK's border.

3.2.2 While there are different ways in which such a mechanism could be introduced, the simplest would be to link it to the UK ETS; importers would be required to pay an import duty equivalent to the cost faced by the average UK-based producer when purchasing the necessary ETS allowances to produce a similar product domestically. Rather than attempt to apply it to all imports, which would require a very large effort to calculate levels of embedded carbon in tens of thousands of products, it would focus, at least initially, on the most carbon-intensive, such as metals, cement, ceramics, chemicals, and so on. Imports from countries with similar systems to the UK ETS in place – e.g. the EU – would be exempted, as would imports from the poorest developing countries, recognising their much lower responsibility for climate change. (At the same time we would increase development aid for those countries, helping to accelerate their own pace of decarbonisation and avoiding them becoming a home for carbon-intensive industries.)

3.2.3 There are considerable practical and legal challenges to be met in introducing such a carbon border adjustment, but the international climate is much more favourable now than it was even a few years ago. In July 2021 the European Commission published initial proposals for such a mechanism, aiming to have it fully in place by 2026; consistently with our aim of linking the UK ETS to the EU ETS, the UK should mirror its design and implementation. The US has stated its intention to consider options for such a mechanism, and Canada is planning to start consultations on the design of one.

3.2.4 This is a far better way to protect energy-intensive industries vulnerable to foreign competition than the current system, which is to issue substantial volumes of allowances free. In 2019 UK industry paid £1.6 billion to purchase allowances, but the forgone cost to government of issuing free allowances was £1.05 billion. The government is expected to reduce over time the volume of free allowances, and we would aim to accelerate this, in line with our more ambitious climate targets. In due course, the introduction of the carbon border adjustment mechanism should enable us to phase out the free allocation of allowances completely.

3.3 Accompanying measures

3.3.1 In addition to these proposals, we will continue to use the existing systems of support for renewables (Contracts for Difference for large power generators and the Smart Export Guarantee for micro-generation). However, we will reform the way in which finance is raised to pay for these mechanisms, spreading the levies across those purchasing fossil fuels as well as electricity bill-payers, which currently bear the cost; see further in Chapter 4. All our other proposals to accelerate the decarbonisation of the power sector, set out in *Tackling the Climate Emergency*, are still valid; these include, in particular, supporting the development of smart grids, storage solutions and interconnectors to other countries' electricity grids to guarantee security of supply and to improve the management and balancing of the system, and promoting decentralised and community energy, setting a target of more than half of households and businesses

sharing in the renewable energy revolution by 2030, including requiring all new homes to be fitted with solar panels.

4 Households

Key proposals – accelerate decarbonisation of household energy use by:

- Widening the list of energy and emissions-saving products enjoying the 5 per cent rate of VAT, and extending this lower rate to all household solar PV and battery systems.
- Allowing owners to offset spending on insulation, low-carbon heat sources, EV charging points and climate adaptation measures against their income tax bills.
- Graduating Stamp Duty Land Tax by the energy rating of the property being sold, and offering refunds to house purchasers if they improve the rating within one year of purchase.
- Working with mortgage providers to encourage them to support energy-saving and zero-carbon measures, including requiring them to report their lending for climate-related home investments, and requiring buyers and mortgage providers to be made aware of the extent to which the property falls below the target energy rating.
- Protecting households from sudden price increases by delaying by ten years the extension of emissions trading to suppliers of fossil fuels to homes.
- Keeping electricity bills stable by transferring some levy funding for renewables from electricity to gas bills and to general taxation.

4.0.1 Small users of energy and emitters of carbon dioxide – households and small companies – in general have less ability to respond to increases in energy prices, and carbon pricing instruments need to be applied with care. In decarbonising these sectors, regulatory measures and subsidies are just as important as carbon pricing, and include the following, explained at more length in *Tackling the Climate Emergency*:

- An emergency ten-year programme to reduce energy consumption from buildings, cutting emissions and fuel bills and helping to end fuel

poverty, including providing free retrofits for low-income home-owners and piloting a new subsidised Energy-Saving Homes scheme. The party's 2019 manifesto allocated £15 billion of capital spending to this programme.

- Introducing a zero-carbon standard for all new buildings by 2021, rising to Passivhaus standard by 2025.
- Requiring landlords to raise the energy rating of their properties to EPC Band B, and scrapping the cost cap on the improvements.
- Adopting a zero-carbon heat strategy, including reforming the Renewable Heat Incentive, requiring the phased installation of heat pumps in homes and businesses off the gas grid and taking a decision on the appropriate mix of zero-carbon technologies – electric heat pumps, hydrogen and hybrid solutions – within three years.

4.0.2 Carbon pricing measures have an important role to play in enabling and encouraging the decarbonisation of homes, particularly for middle- and high-income households not eligible for free home insulation under our proposals. At present, for households the average power and heating bill is split relatively evenly between gas and electricity. Gas – the main fuel for residential heating – is not subject to any carbon pricing, and benefits from an effective subsidy through the reduced (5 per cent) rate of VAT (commercial users pay the full rate). Electricity is subject to carbon pricing through the UK ETS, the Carbon Support Price, and levies to raise money to support renewables and other government policies, which are all passed on to consumers by suppliers – though the effect of these charges on households is partly offset by the reduced rate of VAT.

4.0.3 The proposals we set out in Chapter 3 are not likely to increase the price of electricity for these sectors; while the cost of ETS allowances will go up as the total cap is reduced, more and more power will be generated by renewables, which of course requires no ETS allowances, and for new generation are now cheaper than gas-fired power.

4.0.4 The extension of emissions trading to fossil fuel supplies will increase the price of gas and oil for heating. However, as explained in Chapter 3, we would delay the extension of emissions trading to supplies of fossil fuels to households for ten years, giving time to implement our emergency programme to reduce energy consumption from buildings, particularly through free insulation for low-income owner-occupiers and new requirements on landlords to improve their properties.

4.0.5 We will provide additional incentives for other households. The Climate Change Committee has estimated that the average cost of achieving a low-carbon home is about £10,000 per dwelling, but it could be significantly more than this for some. There are several points in the life-cycle of a residential building when refurbishment to reduce energy use is most cost-effective, including sale and purchase, refinance, planned refurbishment works and extensions. We would encourage energy-saving and zero-carbon investments at each of these points by:

- Widening the list of energy and emissions-saving products enjoying the 5 per cent rate of VAT, and extending this lower rate to all household solar PV and battery systems (reversing the change the government introduced in 2019).
- Allowing, for 15 years, the home-owner (including landlords) to offset spending against current and future tax bills at the basic rate of income tax on insulation, the installation of zero-carbon heat sources, electric vehicle charging points (including those in shared properties, such as blocks of flats), and climate adaptation measures (such as shutters and shades to avoid overheating and measures to improve flood resilience). A spend of £20,000 would therefore provide a potential saving of up to £4,000. We would allow all this to be claimed in the year of the refurbishment, and the benefit could be transferred to another taxpayer; for example, a parent could help their child insulate their property.
- Graduating Stamp Duty Land Tax by the energy rating of the property being sold, with proportionate refunds offered to house purchasers if

they improve the rating within one year of purchase (or delaying the payment of stamp duty by a year, with spending on improvements deducted before payment). The refund would be capped to (say) £1,000 per EPC band to limit support to very high-value homes.

- Working with mortgage providers to encourage them to fund energy-saving and zero-carbon investments through extensions to mortgages, at conventional mortgage rates, at key intervention points. This includes requiring mortgage providers to include details of their lending for climate-related home investments as part of the mandatory reporting on their financial exposure to climate change; these should affect related risk ratings for capital requirements. We would also change conveyancing regulations to require buyers and their mortgage providers to be made aware of the extent to which the property for sale falls below the target energy efficiency rating; this would encourage linkages between efficiency and house valuation and negotiations over the selling price bearing in mind the cost refurbishment.
- Supporting these measures sending long-term signals about how the market should expect to evolve through working with surveyors and mortgage providers to help them understand and promote energy-saving and zero-carbon opportunities and the improved affordability of homes with lower running costs. This also includes reforming building regulations covering refurbishment and extension to drive improvements, and supporting the expansion of the necessary training programmes for those carrying out the work.

4.0.6 At present, funding for government support for renewable power and heat, and limited building insulation measures, is raised through levies on electricity bills; currently this adds about £110 to an average consumer electricity bill, and this is forecast to rise to about £150 by 2030 – or even higher, up to £300–400 for those switching from gas to electricity for heating. This has the effect of making electricity, which is increasingly being decarbonised, more expensive than gas, which is not; it creates a disincentive for energy users to shift from gas to electricity for heat, which

is one possible route to decarbonisation. We would therefore not increase the current level of levies on electricity bills, and raise the additional funding necessary from a mixture of general taxation (including receipts from the extended and tighter ETS) and levies on gas and oil bills, being careful of the overall impact on heating costs for low-income households.

5 Transport

Key proposals – accelerate decarbonisation of transport by:

- Reinstating the indexation of road fuel duty, graduating VED by fuel efficiency and increasing rates for fossil fuel vehicles overall, reducing company car tax for electric vehicles and increasing it for fossil fuel vehicles.
- Replacing the limited electric vehicle purchase grant with a 5 per cent VAT rate (up to a ceiling), to be phased out as the market expands, and introducing a zero-emission-vehicle mandate for manufacturers.
- Limit the growth in demand for flights by ensuring that no net increase in airport runways across the UK takes place and banning flights where direct rail transport is available for the same journey, up to 2.5 hours, unless planes are alternative-fuelled.
- Limit demand for flying by reforming Air Passenger Duty to target the most frequent flyers, and introducing VAT on first-class and business travel.
- Introducing a charge on airlines for each take-off, and on flights by private jets.
- Collaborating with the EU in extending the UK ETS to non-EEA flights and in placing a specific excise tax on airline fuel.
- Including shipping emissions in the UK ETS.

5.1 Reducing emissions from road transport

5.1.1 Drivers of petrol and diesel vehicles already pay significantly more in taxes than those of electric vehicles (EVs) because their fuel is subject to road fuel duty, which is applied at a relatively high rate. (It is not purely as a carbon tax, however, as it helps finance other externalities from road

transport such as the costs of poor air quality, traffic accidents, congestion, emergency services and road maintenance.)

5.1.2 We would not, therefore, impose additional carbon pricing on petrol or diesel road fuel. However, successive governments' decisions to freeze road fuel duty in money terms since 2011–12 has made private transport steadily cheaper compared to public transport, lost the Treasury roughly £10 billion in annual revenue (in 2021–22 figures) and contributed to UK carbon dioxide emissions being as much as 5 per cent higher than they would otherwise have been. There is no environmental justification for continuing the freeze, and we would reinstate the indexation of road fuel duty.

5.1.3 In July 2021 the European Commission published proposals to apply emissions trading to suppliers of road fuel from 2026, along with suppliers of fuels for heating buildings, in a separate system from the existing ETS. The case for mirroring this approach in the UK is weaker because of the relatively high levels of taxation which already apply, but emissions trading has benefits over taxation, and if the UK is to rejoin the EU it would need to re-enter the EU emissions trading framework in any event. We would review the case for extending emissions trading to road fuel once the EU's legislative process is complete.

5.1.4 Other existing taxes also affect decisions on vehicle ownership, and we would reform the system to further encourage the purchase of EVs. This includes:

- Replacing the limited electric vehicle purchase grant with a 5 per cent VAT rate (up to a ceiling), to be phased out as the market expands.
- Reinstating the graduation of vehicle excise duty (VED) by fuel efficiency which was scrapped (apart from first-year rates) by the government in 2017, and increasing VED rates for petrol and diesel vehicles (which is important to encourage the purchase of second-hand EVs).

- Reducing company car tax for EVs and increasing it for petrol and diesel vehicles.

5.1.5 The subsidy for the purchase of EVs through the lower rate of VAT should be phased out as EV prices come down, or it will prove too great a drain on government revenue. We would introduce instead a zero-emission-vehicle mandate, similar to the system currently operating in California (which first introduced it in the 1990s) and nine other US states, China and two Canadian provinces. Under this zero-emission-vehicle mandate, manufacturers must sell an increasing number of zero-emission vehicle as a share of their overall sales, or purchase credits from other manufacturers which sell more. This would encourage competition between manufacturers to develop more and cheaper models, growing the EV market more quickly than purchase subsidies.

5.1.6 We would accelerate the installation of EV charging points by making more funding available for publicly accessible points. We would introduce rules to prevent excessive fees being applied to charging from public charging points; in some cases these can be six times as much per unit of electricity as charging at home, which inhibits the uptake of EVs. We would ask Ofgem to conduct an investigation, with the option of introducing a price cap if necessary.

5.1.7 As in the case of domestic heat and power, these proposals should be seen in the context of our wider climate policies, which include ending the sale of new diesel and petrol cars and small vans, including hybrids, by 2030 and banning their use on public roads by 2045; promoting cycling and walking; and reducing the need for car travel by investing in public transport and amending the National Planning Policy Framework to promote sustainable transport and land use.

5.2 Controlling demand for aviation

5.2.1 Aviation has been one of the most difficult sectors to deal with in cutting emissions, with only limited technological options available, and

emissions projected to increase significantly. Aviation contributes to global warming not only through its emissions of carbon dioxide but also through other mechanisms, including emissions of oxides of nitrogen, and the effects of contrails (artificial clouds formed in the upper atmosphere as a result of emissions of soot and water vapour in very cold atmospheric conditions). Emissions from aviation are particularly harmful given that they are released high in the atmosphere; the figures used in international greenhouse gas accounts under-estimate their warming impact by a factor of at least two. While the coronavirus pandemic led to a sharp fall in numbers of flights over 2020–21, the extent to which this will rebound is not yet clear; however, public awareness of the environmental impacts of flying has clearly grown.

5.2.2 The International Civil Aviation Organisation is introducing its own scheme of paying to offset emissions (Carbon Offsetting and Reduction Scheme for International Aviation, or CORSIA), but this only aims to stabilise emissions at 2020 levels (and the industry is now arguing for a different baseline, given the reduction in air travel that took place that year), and it is very hard to be confident in the quality or incrementality of the offsets purchased. Its roll-out is very gradual, and it does not cover all flights. Neither the ETS nor CORSIA takes account of the impacts of aviation on global warming from non-carbon-dioxide emissions.

5.2.3 Technological solutions are still some way off, but offer real opportunities for the UK economy, building on British expertise in zero-carbon engineering. Electric planes are being developed more quickly than was anticipated; we would work with the industry to see them enter into service by the 2030s, for short-haul flights. Biofuels are beginning to be used to replace kerosene, but biofuels sourced from food crops often have negative environmental impacts, and better options are under development. As we proposed in *Tackling the Climate Emergency*, we would accelerate the use of advanced biofuels manufactured from waste and non-food crops and promote research into more advanced technologies such as synthetic electrofuels. For domestic flights in the UK we would introduce a blending requirement for sustainable alternatives to kerosene,

progressively increasing it over time; we would aim to extend this to flights to and from the EU in line with EU proposals on this topic. We would also pursue international cooperation to drive further improvements in aircraft fuel efficiency.

5.2.4 Given the long lifespan of aircraft, however, by themselves these steps will be insufficient to curb the growth in aircraft emissions. We therefore need to limit the growth in demand for flying, an approach which may now be somewhat less challenging after the experience of the coronavirus pandemic. We reaffirm existing Liberal Democrat policy to ensure that no net increase in airport runways across the UK takes place. We would also emulate France in introducing a ban on flights where the same journey could be made directly by train in less than two and a half hours, unless planes are electric or use sustainable aviation fuels; this would encourage the development of these lower-emission technologies.

5.2.5 We would reform the taxation of aviation. While flying is treated extraordinarily leniently under the UK's (and many other countries') taxation system – there is no tax on jet fuel, and plane tickets are zero-rated for VAT – existing international agreements restrict the options available. Aviation is already included in the UK ETS for flights within the EEA, but this represents less than 30 per cent of UK aviation emissions. The EU is scheduled to expand the EU ETS to all flights by aircraft operators based in the EU from 2024, but opposition from other countries can be expected, as happened in 2012 when the proposal was first made. Consistently with our belief that the UK ETS should be linked to the EU ETS, the UK should mirror developments in the EU, and extend the ETS to all flights, not just those within the EEA.

5.2.6 As we proposed in *Tackling the Climate Emergency*, the most effective way to use carbon pricing to reduce emissions from aviation is through reforming Air Passenger Duty (APD) to limit demand. In particular, we would target the 15 per cent of flyers who take over 70 per cent of flights in an average (pre-pandemic) year. The strongest predictors of frequent flyer

status is ownership of a second home abroad and high income; over half the UK population do not fly at all in an average year.

5.2.7 We would reform APD for international flights to target the most frequent flyers. The duty level would be set at zero for the first flight and increase progressively for each subsequent flight in a given year. We would phase in the reform so that APD for the second flight reaches a higher level than it currently is for one flight, and APD levels escalate for subsequent flights. Everyone currently flying would still be able to afford to fly for occasional holidays, or for family reasons, but frequent flyers would pay more; this system is therefore more progressive than simply increasing taxation on all flights, and should also raise significant revenue to support the transition to net zero (our 2019 manifesto assumed an additional £5 billion a year). Various administrative issues would need to be addressed; HMRC would need access to the data currently collected by the Home Office on international passenger movements, and airlines would need to record customers' passport numbers at the point of ticket sale rather than, as now, before boarding.

5.2.8 To reinforce the impact of these reforms, we would:

- Introduce VAT on first and business-class air travel, and apply APD to all such flights (with no exemption for the first flight), raising the cost of occupying more space on aeroplanes.
- Introduce an additional charge to airlines for each take-off to ensure that freight-only and 'ghost' flights (where empty aeroplanes take off and land to maintain access to landing slots) do not completely escape taxation.
- Introduce charges for flights in private jets, currently the fastest growing aviation sector (and the least affected by the pandemic); we would emulate the Swiss system (which charges €360 on short flights and €1,200 on long ones).

- Require all private jet flights under 1,000km to use only electric or alternative-fuelled aircraft by 2030; this should accelerate the development of these lower-emission technologies.

5.2.9 We recognise that our proposals do not link APD directly to carbon emissions, since the tax applies per flight rather than per miles flown. While it would be possible to vary APD by distance flown, this would significantly complicate the system, and we prefer to retain its simplicity. Extension of the UK and EU ETS to all flights would help to fill this gap; if this is not possible, we would aim to place a specific excise tax on airline fuel, recognising that this is likely to need international agreement – though the European Commission's proposal, in July 2021, to extend excise duty to intra-EU flights is extremely helpful (if finally agreed). We would also seek to collaborate with the EU to develop new tax or regulatory instruments to target the non-carbon dioxide impacts of flights, including from nitrogen oxides and contrails, for example by adding a supplement to the ETS to cover these additional impacts.

5.3 Reducing emissions from maritime transport

5.3.1 There are currently no carbon taxes on emissions from shipping, which contributes about a fifth of the UK's share of international transport emissions. In harmony with the EU, we would therefore extend the UK ETS to cover the maritime sector; the European Commission has proposed to phase this in over the period 2023–25. We would also pursue international collaboration in research and innovation on zero-emission technologies, explore the option of requiring minimum emissions standards as a condition of ship insurance and encourage the development of a global system of carbon pricing through the International Maritime Organisation.

6 Agriculture, land use and carbon dioxide removal

Key proposals – put in place further measures to:

- Prioritising climate change mitigation in agricultural support systems, including measures to increase soil carbon, tree planting and woodland creation.
- Working with farmers and manufacturers to support the development of zero-emissions technologies for agricultural machinery, after which red diesel can be included in the UK ETS.
- Requiring a full climate impact assessment of proposed UK free trade agreements to be made public before the agreements are finalised.
- Providing incentives for negative emissions strategies, including technological and nature-based solutions.

6.0.1 Agriculture, food and land use are some of the most difficult sectors to decarbonise. The use of carbon pricing is limited because emissions are hard to measure regularly and reliably, because they can vary substantially with natural events, and because food production is internationally competitive. On top of that, the sector is currently undergoing substantial change as a result of the UK's withdrawal from the EU and its Common Agricultural Policy, and the government's desperate attempts to secure free trade agreements with non-European countries to replace the trade opportunities destroyed by Brexit.

6.0.2 In *Tackling the Climate Emergency* we set out proposals to prioritise climate change mitigation in agricultural support systems, including measures to increase soil carbon, tree planting and woodland creation, and to develop a National Food Strategy to promote the production and consumption of healthy, sustainable and affordable food. These proposals will be further developed in the forthcoming policy paper on natural environment policy.

6.0.3 Diesel fuel used in agricultural vehicles – 'red diesel' – is currently exempt from Road Fuel Duty, and this exemption needs to be retained until there are viable electric or alternative-fuelled alternatives commercially available; currently, for most uses these do not exist. We will work with farmers and manufacturers to support the development of zero-emissions technologies for agricultural machinery, allowing us to set a date – likely to be at least ten years in the future – after which red diesel would be included in the UK ETS.

6.0.4 Although emissions from transport generally represent only a small proportion of the climate impact of growing and processing food, efforts should nevertheless be made to minimise them. We would require a full climate impact assessment of proposed UK free trade agreements – such as the recent proposed UK – Australia agreement – to be made public before the agreements are finalised. Replacing British or European beef with Australian products seems highly likely to have a negative impact on the climate, quite apart from other concerns over environmental and animal welfare standards.

6.0.5 As we recognised in *Tackling the Climate Emergency*, it will be virtually impossible to eliminate greenhouse gas emissions entirely from every sector, particularly from the hard-to-treat sectors such as aviation, industrial processes and agriculture. Ways must therefore be found to remove carbon dioxide from the atmosphere, reducing the UK's net emissions to zero by 2045. Our top priority is natural climate solutions – forestry and peatland restoration – but by themselves these will not be enough, and technological solutions such as direct air capture must also be developed. Pricing instruments such as payments for emissions captured and stored may well have a role to play for technological solutions (though probably not for nature-based solutions, for the reasons set out above) and should be further explored. If carbon dioxide removals are incorporated in the UK ETS, the overall cap should be reduced to ensure that these reductions are additive, and strict controls should be in place to ensure that technological storage is permanent.

Tackling the Climate Emergency: Proposals for carbon pricing

Policy Paper 139a

This paper has been approved for debate by the Federal Conference by the Federal Policy Committee under the terms of Article 7.4 of the Federal Constitution.

Within the policy-making procedure of the Liberal Democrats, the Federal Party determines the policy of the Party in those areas which might reasonably be expected to fall within the remit of the federal institutions in the context of a federal United Kingdom.

The Party in England, the Scottish Liberal Democrats, the Welsh Liberal Democrats and the Northern Ireland Local Party determine the policy of the Party on all other issues, except that any or all of them may confer this power upon the Federal Party in any specified area or areas.

The Party in England has chosen to pass up policy-making to the Federal level. If approved by Conference, this paper will therefore form the policy of the Federal Party on federal issues and the Party in England on English issues. In appropriate policy areas, Scottish, Welsh and Northern Ireland party policy would take precedence.

Working Group on Carbon Pricing

Note: Membership of the working group should not be taken to indicate that every member necessarily agrees with every statement or every proposal in this paper.

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