



Financing Climate Justice

Fiscal Measures for Climate Action in a time of crisis

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A report to Stop Climate Chaos Scotland
by Dr Richard Dixon, Environmental Consultant www.rdixon.scot

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Foreword – Financing the Transition

If we are serious about tackling the climate emergency, we need to do more to fund it, and with tightening budgets, the cost of living crisis and the growing urgency of climate impacts, this has to be sooner rather than later. More than a decade of austerity has stripped public bodies (local and national) and wider society of much of its financial capacity. The UK Government borrowed extreme amounts to spend on the Covid-19 response, which also stretched the resilience of much of the private sector. And we are now facing a cost-of-living crisis, one that will severely test those on the lowest incomes. This is clearly a tough time financially. But the climate emergency hasn't gone away and if we don't ensure we increase the funding spent on taking action to address it, we will fail to hit our targets, and face a much more serious and challenging problem in the medium term.

There is no real scientific dispute over climate change and with the increasing incidence of wildfires across the globe, extreme weather – droughts in some continents and floods in others, and ever worsening glacial retreat and coral bleaching events, we surely need no more stark reminders that this is a colossal issue. Worryingly, this problem is only getting worse. Climate change is a multiplier – it will increase the likelihood and impact of short-term problems like the current cost of living crisis, and make them ever more common. A heating world will continue to impact food, water, health and global security – so if we don't fund climate action, we will not be able to keep up with its consequences. It makes no sense to keep bailing out banks and responding to energy crises and food shortages whilst we continue to fund climate damaging activities and investing in high carbon infrastructure. We need to start taking a more thoughtful, strategic approach and see some real leadership. And by tackling climate we will find that many of these other concerns are diminished. If we approach it sensibly.

It is vital therefore that money which is channelled to address immediate priorities like the cost of living crisis, are used wisely and do not undermine efforts to deliver against targets. This should really not be that difficult; after all, many of the measures which we need to tackle the climate emergency have wider benefits – so-called 'win-wins'. For example, if we had heeded any of the many calls for mass insulation of housing stock, we could face the energy crisis with more confidence, and less anxiety. If we had stopped funding and importing fossil fuels sooner, and implemented more local renewables and even community energy schemes, we would be able to ride out the impacts of the Russian invasion of Ukraine, and be more energy secure as a nation. Looking forward, we must learn the lessons. Our agriculture needs to change – both to reduce its own direct impact and sequester more carbon, but also to adapt to the changing climate and grow more local food. Our transport needs to shift – but who wouldn't welcome a public transport system that was fast, safe, affordable and actually functioned properly?

Many of the solutions to climate change are also solutions to inequalities. They will make people's homes warmer, drier and more affordable. They will reduce the fluctuations and vagaries of the global energy markets. They will alleviate food security concerns and make us healthier. They will reduce our over-dependence on expensive transport – and reduce dependency on expensive private cars. They will make us less beholden to oil-rich regimes like Russia's and Saudi Arabia's. And of course they will also help reduce the likelihood of extreme climate events running out of control.

We don't claim to have all of the answers, but this report is an important step towards identifying the money needed to finance the transition, whether that is diverting existing spend or finding new money in fair ways. It also considers what we need to

spend it on to deliver against our domestic emissions reduction targets and to fulfil our international moral obligations. All countries, particularly rich industrialised ones share this challenge. Importantly, there are profound benefits to the climate, our society and every one of us, if we get this right. But there are also profound risks if we continue to operate a business as usual approach, continue to fund damaging activities and don't properly invest. This is not just about investing in reducing our climate emissions, it is about investing in everyone's future, and investing in a new direction of travel – investing in a more thoughtful way of running our society and investing in real hope.

We all know deep down that we need to do more – and quickly. And, to do that, we need to start funding it sufficiently. It's in everyone's interest to get this right.

Mike Robinson
Chair, Stop Climate Chaos Scotland



Contents

Foreword – Financing the Transition	3
Summary	7
Introduction	14
1. Context	17
1.1 The scale of the climate challenge	17
The challenge at home	17
The global challenge	19
1.2 Environmental Principles	21
1.3 What are fiscal measures?	22
1.4 General taxation or environmental taxes?	27
1.5 General taxation vs hypothecation	30
1.6 Trading schemes	30
1.7 Constraints and barriers	31
Public vs private finance	31
UK Internal Market Issues	32
Cross Border Adjustment Mechanism	33
1.8 Environmental fiscal measures from elsewhere	33
2. Cross-Economy Measures	35
2.1 Income Tax	35
2.2 Wealth Taxes	36
2.3 Redirecting tax breaks and subsidies for high-carbon activities	38
2.4 Carbon Tax	39
2.5 Public sector pensions	41
2.6 Procurement	41
2.7 Sustainable Wealth Fund	43
3. Energy	44
3.1 Meaningful windfall taxes	45
3.2 Community low carbon heating	46
4. Buildings	48
4.1 Zero emissions homes	50
4.2 Accelerate heat pump deployment	51
5. Transport	52
5.1 Free public transport	54
5.2 Workplace parking levies	55
6. Business and Industry	56
6.1 Business rates and climate change	57
6.2 UK Emissions trading scheme	58
7. Waste and the Circular Economy	59
7.1 Extended Producer Responsibility schemes	60
7.2 Pay as you throw tax for household waste	61

8. Land use, land use change and forestry (LULUCF)	62
8.1 Carbon Emissions Land Tax	64
8.2 Woodland grants targeting climate emissions	64
9. Agriculture	66
9.1 Reforming agricultural subsidies	67
9.2 A nitrogen levy for agriculture	68
10. Scotland’s contribution to international climate obligations	69
11. Conclusions and Recommendations	71
Appendix A – detail on measures included and their impact	75
1. Cross cutting measures	75
1.1 Options appraisal – income tax	75
1.2 Options appraisal – wealth taxes	77
1.3 Options appraisal – perverse subsidies	80
1.4 Options appraisal – carbon tax	82
1.5 Options appraisal – public sector pensions	84
1.6 Options appraisal – procurement	85
2. Energy	88
2.1 Options appraisal – windfall taxes	88
2.2 Options appraisal – increase investment and support for community low carbon heating	90
3. Buildings	92
3.1 Options appraisal – retrofit grants and loans	92
3.2 Options appraisal – heat pumps	94
4. Transport	96
4.1 Options appraisal – free or cheap public transport	96
4.2 Options appraisal – workplace parking levies	99
5. Business and Industry	101
5.1 Options appraisal – business rates	101
5.2 Options appraisal – emissions trading scheme	103
6. Waste and Circular Economy	105
6.1 Options appraisal – extended producer responsibility	105
6.2 Options appraisal – pay as you throw	107
7. Land use, land-use change and forestry	109
7.1 Options appraisal – Carbon Emissions Land Tax	109
7.2 Options appraisal – woodland grants	111
8. Agriculture	113
8.1 Options appraisal – agricultural subsidies	113
8.2 Options appraisal – nitrogen levy	116
References	118

Summary

We are in the midst of climate and nature emergencies. As this is being written a third of Pakistan is underwater after devastating floods. 33 million people are affected and early estimates put losses at \$43bn. Fifty million people in Eastern Africa face acute food insecurity this year because of a range of crises including climate extremes.

Here in Scotland we are supposed to cut our emissions to 75% of their 1990 levels by 2030. This means roughly halving today's level, requiring year-on-year reductions of nearly 7% every year to 2030, a rate three times faster than the reduction over the past 30 years. Yet the government's official adviser says we are likely to miss every annual target on the way to 2030 and the government themselves admit plans are off track to meet the 2030 milestone itself.

Addressing climate change and the decline in nature means major changes to society and the economy. Done right this will have additional benefits, including for air quality, human health, our efficient use of materials, the quality of urban spaces, the reduction of poverty and inequality, and the creation of fair and sustainable work. These will bring savings in the NHS, congestion costs and the social security system, whilst bolstering the transition to a wellbeing economy which operates within safe environmental limits.

At the same time we are in a cost of living crisis, with rapidly rising inflation, escalating interest rates and spiralling energy bills. It is largely a fossil fuel crisis. It might seem that this is the worst time to talk about the need to spend more money taking action to reduce climate emissions and to contribute more financial support towards those being impacted by the climate crisis overseas. But we cannot afford to slacken our efforts if we are to avert even deeper climate chaos.

A cost of living crisis is *exactly the time* to redirect subsidies and tax breaks, impose windfall taxes on energy companies, and increase revenue from (the top-end of) Income and Corporation Taxes, while looking to better tax wealth, thereby to invest in the solutions – like insulating homes, changing heating systems, building up renewable energy and phasing out fossil fuels – which will help people out of the current crisis *and* avoid similar crises in the future.

The Scottish Government's advisors think we need to spend around £4.5bn a year in future on reducing emissions and adapting to climate change. Separately, Common Weal have a costed plan to decarbonise Scotland which comes in at about £5bn a year. The current Scottish budget lists nearly £2.9bn of spending as contributing to climate change goals. Since we are off track to meet our targets, we clearly need to commit more and we know that this is a bill that gets rapidly bigger the longer we take to act.

This may seem hard but reducing emissions and adapting to a new climate in a rich, industrialised country is easy compared to the life and death climate challenges in low-income countries. As one of the countries which began and fuelled the industrial revolution, Scotland owes a significant debt to the people who did least to cause the problem but are suffering its worst impacts.

Rich countries promised to provide \$100bn a year by 2020 to help the rest of the world but this commitment has not been delivered, and the actual need is likely much larger. Scotland's fair share of this bill is estimated at about £450m a year.

At COP27 this year in Egypt, there will be difficult discussions about funding for Loss and Damage – payments for the things and livelihoods irreversibly destroyed by climate change. One estimate puts Scotland's fair share of this at £1.25–2.5bn a year by 2030.

So, in 2030, the mid-range estimate of Scotland's fair contribution to both the \$100bn commitment and the Loss and Damage funding is that Scotland needs to mobilise about £2.3bn a year of public and private contributions. This represents about 1.4% of Scotland's current GDP. Both of these obligations currently fall on the UK Government.

Governments need to lead in driving the reduction in emissions. This means banning things – like the sale of petrol and diesel cars. It means raising standards – like the energy ratings for domestic appliances. It means setting the conditions and making clear the scale of

change that is coming to make it a 'no-brainer' for businesses to invest in renewables, energy efficiency and other pro-climate measures. And it also means using fiscal measures to bring about change and to raise the money needed to invest in change.

At its most basic, governments try to engineer a transition, and this usually involves making the things we want less of, more expensive, and incentivising the things we want more of, through prices or other means. A fiscal measure is anything where a flow of money is used to change behaviour or raise money to fund priorities, or both. Fiscal measures cover everything from taxes, levies, duties and charges to subsidies, loans, grants and guaranteed prices.

A key conclusion of this report is that the climate crisis is of such a scale and urgency – a global emergency – that measures to address it should be funded directly from general taxation. This should then be complemented by specific environmental taxes primarily aimed at changing societal behaviours.

In Scotland, we are already familiar with environmental grants, loans and subsidies, such as those for insulating people's homes, and levies, duties and charges like the carrier bag charge, and taxes like the landfill tax. What the Scottish Government chooses to fund in the annual £43bn budget represents a set of massive fiscal levers. How the Scottish public sector spends an annual £13bn on purchasing goods and services is another major fiscal lever.

This report looks at a set of fiscal measures, some of which raise money, some of which aim to influence behaviour and some of which aim to do both. Some are in the hands of the UK Government, some the Scottish Government and some local authorities, and often a combination of these.

In selecting the measures to highlight in this report two other principles have also been applied.

The Polluter Pays Principle means that the people responsible for climate emissions should be the ones paying for the cost to society. This is true in the direct case where a motorist pays fuel duty, and more generally, where better off people are targeted to pay more tax because, in general, they have higher-carbon lifestyles.

The second consideration is equity. There is a strong divide on carbon equity – the wealthiest 10% of the UK population has a carbon footprint four times that of the least-wealthy half of the population. At home, equity is about solutions which do not disadvantage those on low-incomes and which they can access. Internationally it is about helping countries deal with the climate change that we played a large historical part in creating. This is also about shifting the burden of taxation off the cost of employing people and on to resources, pollution and waste.

The featured measures are either cross-economy in nature or fit into one of the economic sectors used by the Scottish Government in their Climate Change Plan.

The **cross-economy measures** looked at are national taxes and subsidies, and local authority activities, environmental and general, all through the lens of the Polluter Pays Principle and climate justice. Those covered are income tax, a new tax on wealth, redirecting subsidies that drive climate change, a new carbon tax, divestment of public sector pensions from fossil fuels, the public sector's multi-billion pound procurement spend and the idea of a Sustainable Wealth Fund.

RECOMMENDATION 6 – increase income tax revenue to fund action on climate change. Increases should fall mostly on higher and top-rate taxpayers because they are almost always also high-emitting individuals and also have greater capacity to pay.

Revenue raising, controlled by the Scottish Parliament

An increase in tax rates for the middle and higher paid in Scotland – generally those with the highest carbon footprint – could bring in an additional £500m a year to fund climate priorities, which would represent around a 20% increase on current spending.

RECOMMENDATION 7 – set up a rapid and time-limited, independent commission to look at the options for replacement of the Council Tax and other local taxes with a land, property and/or local wealth tax, with a strong element of climate justice built in, building on the Reform Scotland report and the recommendation of the David Hume Institute.

Revenue raising and behaviour change, controlled by the UK and Scottish Parliaments and/or local authorities

For wealthier people, much of their wealth is locked away in land and property. A local wealth tax could replace and increase the current £2.5bn income from the Council Tax with a fairer system, which would also encourage owners to make more productive use of land and buildings.

RECOMMENDATION 8 – remove tax breaks and subsidies from the fossil fuel industry, including those for decommissioning, and spend this money on activities to support climate justice.

Revenue redirecting and behaviour change, controlled by the UK Parliament

The UK's domestic fossil fuel subsidies are estimated at £13.6 billion a year, most of this as tax breaks. Removing these subsidies that *create* more climate change would free up tens of billions to *tackle* climate change. Unlike for almost any other industry, the UK Government is committed to tax breaks which mean public money will be paying for more than a third – estimated at around £18bn – of the cost of decommissioning oil rigs and pipelines.

RECOMMENDATION 9 – introduce a Carbon Tax with revenues used to reduce taxes on labour.

Revenue raising and strong behaviour change, controlled by the UK Parliament

A carbon tax – making the cost of goods and services more properly reflect their climate impact – represents the strongest possible implementation of the Polluter Pays Principle, but there would need to be protections for lower-income households who tend to spend a higher percentage of their income on heating and transport.

RECOMMENDATION 10 – take public sector pension investments out of fossil fuels and encourage the funds to invest in projects like social housing and renewables in Scotland.

Revenue raising, controlled by local authorities

Most of the public sector, and many third sector organisations, have their pensions with the 11 Scottish Local Authority Pension Funds. These funds currently have a total of around £1.2bn invested in fossil fuel companies which could instead be invested in energy-efficient social housing, funding public transport or creating green infrastructure in Scotland, guaranteeing a good return to the pension funds and simultaneously doing social good in Scotland.

RECOMMENDATION 11 – mobilise public sector procurement expenditure to address the climate emergency.

Behaviour change, controlled by the Scottish Parliament and public bodies

The public sector spends more than £13bn a year on goods and services. A rough estimate shows that spending this money 25% better could save 2MtCO₂e* a year. This measure includes proposals developed by the Climate Emergency Response Group.

RECOMMENDATION 12 – as a first step, the Scottish and/or UK Government should work with the Royal Scottish Geographical Society to further develop their proposal for a Sustainable Wealth Fund.

Revenue raising, controlled by the UK and Scottish Parliaments

Norway used oil income to create the largest state wealth fund in the world, at over \$1.2 trillion. Scotland's tremendous natural assets for renewable energy could be contributing to a wealth fund of our own, with initial contributions from polluting industries.

Alongside the above cross-economy measures, this report also makes a series of recommendations for the different sectors featured within the Scottish Government's Climate Change Plan. Some relate to raising revenue or incentivising behaviour change, with others relating to increasing investment in specific activities.

* 1MtCO₂e is one million tonnes of carbon dioxide equivalent, a measure which relates all greenhouse gases to the impact of carbon dioxide. Scottish direct emissions were 40MtCO₂e in 2020.

The **energy sector** has reduced emissions dramatically over the last 30 years and the measures featured are to increase windfall taxes on the oil and gas industry, and to further boost support for community-driven local heating schemes.

RECOMMENDATION 13 – increase windfall taxes on the fossil fuel industry and remove the perverse tax break for increasing production at the expense of the environment.

Revenue raising and behaviour change, controlled by the UK Parliament

The current Energy Profits Levy aims to gather £5bn over the next five years, a tiny amount compared to oil companies expected extra profits, and it includes a tax discount for those who produce extra fossil fuels. A levy consistent with climate aims would raise much more and *discourage* extra production.

RECOMMENDATION 14 – provide government incentives and support for local authorities and social housing providers to work with communities to develop low carbon heating systems in neighbourhoods.

Behaviour change, controlled by the Scottish Parliament

Transforming how we heat buildings is a vital part of reducing climate emissions and this measure, which is based on a recommendation from the Climate Assembly, aims to make sure that communities can develop and deliver low-carbon heating schemes.

The **buildings sector** is responsible for 15% of Scotland's direct emissions. Properly designed action here can drastically improve people's living conditions and cushion them from the cost of living crisis, helping to eliminate fuel poverty. The two closely-related measures in this section cover energy efficiency retrofits for existing homes and then, more specifically, increasing the deployment rate of heat pumps. They are both based on a very significant acceleration of existing Scottish Government plans and initiatives, and will require government support for supply chains and developing the workforce, and clear commitments about the direction and scale of travel.

RECOMMENDATION 15 – make a grant (or loans for higher earners) available to ALL homeowners in Scotland as soon as possible to bring their homes to zero emissions standards by 2030, starting by prioritising homes in fuel poverty.

Behaviour change, controlled by the Scottish Parliament

Based on a recommendation from the Climate Assembly, this measure would accelerate existing programmes of work to retrofit homes and other building for energy efficiency, reaching the Scottish Government's target for zero carbon homes in 2030 instead of 2045.

RECOMMENDATION 16 – significantly boost the current Scottish Government's heat pump installation programme.

Behaviour change, controlled by the Scottish Parliament

Transforming home heating away from fossil fuels could reduce Scotland's emissions by 15% and this measure would significantly accelerate the Scottish Government's existing plans in this area.

The **transport sector** is the largest sector of emissions, with little decline until the COVID-19 lockdowns. More than 60% of the emissions from road transport come from cars. One measure here directly addresses car use in city centres and the other looks to make public transport an even more attractive alternative to car use.

RECOMMENDATION 17 – public funding for free public transport (bus and train) anywhere in Scotland.

Behaviour change, controlled by the Scottish Parliament

Free public transport for all would reduce congestion, crashes and air pollution, increase access to job opportunities and reduce costs for most households. It could reduce emissions by 0.5MtCO₂e a year and make a big contribution to the Scottish Government's target to reduce car-kilometres driven by 20% by 2030. Also proposed by the Climate Assembly.

RECOMMENDATION 18 – use the powers in the 2019 Transport Act to introduce Workplace Parking Levies (WPL) in Scotland’s larger urban areas, with the revenue raised dedicated to public transport and active travel investment.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

Plans already exist in Edinburgh and Glasgow to introduce Workplace Parking Levies like those which have been so successful over the last decade reducing congestion, and funding active travel and public transport improvements in Nottingham. Similar schemes should be developed for Scotland’s other large urban areas.

The **business and industry** sectors have shown only a very slow reduction in emissions over recent decades. The measures here aim to make all businesses aware of their climate impact, and incentivise them to reduce it, and to use the new UK Emissions Trading Scheme to drive faster emissions reductions for the bigger business covered by the scheme.

RECOMMENDATION 19 – link the level of business rates to a business’ carbon footprint

Behaviour change, controlled by the Scottish Parliament and local authorities

A scheme to help all businesses assess, understand and start to reduce their carbon footprint, with the incentive of lower business rates as they make progress.

RECOMMENDATION 20 – given Scotland’s climate targets are more ambitious than those at UK level, the UK Emissions Trading Scheme needs to put industry in Scotland on track to deliver a fair share of Scotland’s climate targets, which means reducing allowances faster than needed only to meet the UK’s targets and also reducing the amount of free allowances allocated at a faster rate than at the UK level. Free allowances for the oil and gas industry should be scrapped.

If a new scheme is created for fuel use in buildings, as in the EU, an equivalent mechanism to the proposed EU Social Climate Fund is needed to protect low-income households and ensure costs are not passed on to them. Revenue from the scheme should be ring-fenced for carbon-saving activity and international climate finance.

Linking the UK and EU ETs, as has happened for the EU and Switzerland, makes sense to increase efficiency in reducing emissions and to avoid the risk of carbon border taxes being applied to trade with the EU.

Revenue raising and behaviour change, controlled by the UK Parliament

About 100 businesses in Scotland are included in the new UK Emissions Trading Scheme. This measure would incentivise these businesses to deliver a fair share of Scotland’s climate targets and remove £250m-worth of free allocations to the oil and gas industry.

The **waste sector** has shown an impressive fall in emissions since 1990 but this does not include the carbon content of the products we buy from overseas, which has fallen much more slowly. The measures here aim to make manufacturers take much greater responsibility for the materials and energy used in making their products, and to incentivise individual householders to make better use of recycling facilities and make smarter purchasing choices.

RECOMMENDATION 21 – introduce additional Extended Producer Responsibility schemes.

Behaviour change, controlled by the UK and Scottish Parliaments

82% of Scotland’s global total carbon footprint comes from the goods and services we consume. An extended producer responsibility scheme shifts the responsibility of dealing with the environmental impacts of a waste product to the manufacturer and/or retailer. At its most simple, the manufacturer is obliged to fund collection, reprocessing and disposal schemes for their products. Much better is if this measure can drive product redesign, to be lighter and use materials with less environmental impact.

RECOMMENDATION 22 – introduce a pay as you throw tax for household waste, alongside a parallel reduction in existing payments for waste collection made through the Council Tax.
Revenue raising and behaviour change, controlled by the Scottish Parliament

Common around the world this kind of scheme would transfer costs of waste collection from Council Tax bills to instead charge people based on what they throw away, encouraging them to recycle more and even buy less stuff.

The **land use, land use change and forestry sector** hides a big secret. Because some of the land uses in Scotland are absorbing carbon dioxide from the atmosphere the net figures mask the true scale of emissions from other land uses – so what we are doing to the land of Scotland actually results in more emissions than even transport. The measures here aim to incentivise land owners and managers to manage this land for carbon and nature, and to plant the right sorts of trees in the right places in great numbers.

RECOMMENDATION 23 – introduce a Carbon Emissions Land Tax which taxes emissions created through land use and penalises the owners of land currently emitting more carbon than it captures.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

Based on proposals from the Climate Assembly and the John Muir Trust, this local tax would penalise those who fail to act to reduce the climate impact of their land, whether due to a lack of awareness or a lack of effort, and rewards those who move to more climate-friendly practices. It could remove 6MtCO₂e – 15% of current emissions – from the atmosphere and raise £2.5m a year.

RECOMMENDATION 24 – encouraging crofters, farmers and land managers to plant, and investors to invest in, the right sort of trees in the right places including reviewing current planting and management funding schemes to make sure they are delivering as much as possible for nature and the climate, including protecting forest soils.

Behaviour change, controlled by the Scottish Parliament

The right trees, planted in the right places and managed in the right way, are vital for removing carbon dioxide from the atmosphere. We have high tree-planting targets this decade and even higher ones in the next decade. This measure would ensure that the climate and nature benefits are maximised.

In the **agriculture sector** more than 70% of the emissions counted are to do with rearing livestock. The measures proposed are to make the forthcoming reform of the agricultural subsidy system maximise the benefits to climate change action, and nature protection and restoration, and to tackle the specific problem of climate emissions from the use of nitrogen in farming.

RECOMMENDATION 25 – reform agricultural subsidies to deliver maximum benefits for climate and nature, including protecting soil health, while producing healthy food from resilient businesses.

Behaviour change, controlled by the Scottish Parliament

The EU's Common Agricultural Policy system of farming subsidies is to be replaced in Scotland with the new Agriculture Bill. This measure aims to make sure that the £600m of public money spent every year on Scotland's farming system is climate and nature friendly, while helping farmers and crofters through a just transition.

RECOMMENDATION 26 – introduce a nitrogen levy in farming. As a minimum the Scottish Government should honour their commitment in the 2018 Climate Change Plan to develop a target for reducing emissions from nitrogen fertiliser.

Revenue raising and behaviour change, controlled by the Scottish Parliament and/or local authorities

Nitrous oxide emissions, mostly from farming, contribute about 9% of Scotland's direct climate emissions. This measure would help farmers use nitrogen more efficiently and require the Scottish Government to more firmly define the level of reductions in emissions required, potentially saving nearly 2MtCO₂e a year.

Some of these measures could be put in place tomorrow, some quite quickly and some are ideas that need working through with experts and stakeholders – for instance, the UK Government could increase the windfall tax on oil and gas companies almost immediately, but the idea of a Carbon Emissions Land Tax needs more work to refine the design of the scheme.

For some there is an obvious upcoming opportunity for change via the Scottish Parliament – for instance, re-orienting agricultural subsidies through the Agriculture Bill or introducing further producer responsibility schemes through the Circular Economy Bill.

Some, like a Carbon Tax, are a very pure implementation of the Polluter Pays Principle, which would require social safeguards to be built in. Most have equity considerations included, like prioritising the fuel poor for energy efficiency and heating system upgrades.

Certain measures would obviously fit well together – for instance, Workplace Parking Levies could help fund Free Public Transport.

Of the 21 specific sectoral and cross-sectoral measures recommended, four are wholly controlled by the UK Government, five have a large role for local authorities, working with the Scottish Government, and the remaining ten are directly in the hands of the Scottish Government. Three are purely revenue raising, eight are purely about behaviour change and the remaining twelve combine these two elements. Each could be implemented in isolation, but the scale of the challenge we face means they should be considered in parallel.

The **final recommendation** is for the Scottish Government to set up an **independent working group** to look at the ideas and proposals in this report and advise Ministers how to take them forward, including what to include in the next Programme for Government in 2023. Given that every industrialised country is facing similar challenges of reducing emissions and contributing to the required international climate finance, an early commitment by the Scottish Government to look at the use of fiscal measures to drive climate-just action would no doubt be warmly welcomed at COP27 in November 2022 in Egypt.

The measures in this report are described in the Scottish context and would be delivered by the UK or Scottish Governments, or local authorities, but most of them are possible in any similar country.

The need to reduce emissions faster is urgent and the need to help other countries cope with climate change is a debt we owe. We will need to implement many of these measures and more to meet the climate challenge we face, and will need to do so fairly.

Introduction

The Scottish Government has acknowledged twin emergencies of climate change and nature. In the last 15 years we have passed two climate acts, both with tough emissions reduction targets. A fifth climate action plan to deliver the cuts needed is currently being put together. Progress is being made: Scotland's direct emissions have halved since 1990. The Climate Justice Fund has been helping people in Malawi, Rwanda and Zambia to adapt to the changing climate for a decade. The Scottish Government has called this – the 2020s – the 'decade of delivery' on climate change.¹

Yet we are still not doing enough, with climate change continuing to increase around the globe and with a strong likelihood that Scotland will miss most or all of our annual climate targets in the coming decade, having already missed three out of the last four annual targets.*

Scotland needs to fund faster climate emissions reductions at home and make a fair contribution to international climate finance, as well as to compensate those facing irreversible losses and damages. This will need more public funds, from existing sources and new fiscal measures, driven by the principles of making the highest polluters pay the most and protecting the worst off. New measures are needed too to help persuade people to make low-carbon choices in food, transport, energy use and recycling. And we have no time to waste.

Meeting the twin challenges of reducing emissions at home and making a fair contribution to international action on climate requires many actions on many levels – and all at the same time. Using regulation and policy – from banning high-emissions activities to setting tough standards is vital. But action on climate change particularly needs money to flow in different ways.

Among the tools any government has to tackle climate change are a range of fiscal measures. A fiscal measure is anything where a flow of money is used to change behaviour or raise money to fund priorities, or both. Fiscal measures cover everything from taxes, levies, duties and charges to subsidies, loans, grants and guaranteed prices.

In Scotland, we are already familiar with environmental grants, loans and subsidies, such as those for insulating people's homes, and levies, duties and charges like the carrier bag charge, and taxes like the landfill tax. What the Scottish Government chooses to fund in the annual £43bn budget also represents a set of massive fiscal levers. How the Scottish public sector spends an annual £13bn on purchasing goods and services is another major fiscal levers.

The field of using fiscal measures to tackle climate change is quite underdeveloped, here and internationally. In its first report to the UK government in 1995, the British Government Panel on Sustainable Development recommended the use of economic instruments and argued for a radical shift in taxation policy away from labour and capital, and onto pollution and resources. By 2017, revenue from environmental taxes made up about 2.5% of the UK's GDP – about the same as the EU average – but this was almost exclusively energy and fuel taxes with only 0.075% coming from pollution or resource taxes.²

This report looks at current fiscal measures at both the UK and Scottish level and suggests how they might be used to bring about greater change, and at potential new fiscal measures, including those in use or proposed elsewhere in the world.

A long list of 130 potential ideas for fiscal measures to consider was collected from a range of sources, including the Royal Scottish Geographical Society's Climate Emergency Summit on finance,³ the Scottish Parliament Information Centre's (SPICe) briefing on environmental fiscal measures,⁴ the recommendations of Scotland's Climate Assembly⁵ and the work of the Climate Emergency Response Group.⁶ This list was filtered by a Stop Climate Chaos Scotland steering group into the 21 priority ideas discussed in the body of this report and presented in more detail in Appendix A. As ever, selection processes are not neutral. In this case, the selection

* The annual targets during the 2020s will be very difficult to meet, even with the strongest climate policies according to Progress reducing emissions in Scotland – 2021 Report to Parliament, Climate Change Committee, 2021, <https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/>

BOX 1 – The cost of living crisis

We are in a cost of living crisis, with the combination of Brexit impacts, COVID-19 recovery and the war in Ukraine driving rapidly rising inflation, escalating interest rates and spiralling energy bills. It is largely a fossil fuel crisis. At the same time, the new Prime Minister is promising to cut taxes, extract more oil and gas, and scrap EU-inspired legislation.

It might seem that this is the worst time to talk about the need to spend more money taking action to reduce climate emissions and to contribute more financial support towards those being impacted by the climate crisis overseas. But it is exactly the right time to fight this corner, lest, in a throwback to the 1980s, action on climate change is slowed down or put on hold while we 'fix' the economy. We cannot afford to slacken our efforts if we are to avert even deeper climate chaos.

One of the Climate Change Committee's top recommendations in their 2022 UK progress report⁷ was that "action to address the rising cost of living should be aligned with Net Zero." Specifically they support moving green levies off electricity bills and on to general public spending, because this both makes electricity more affordable and makes it more attractive in comparison to fossil fuels. This would encourage people to switch from gas heating to electric, protecting them from future fossil fuel price fluctuations. They also called for a "sustained push for both energy efficiency improvements and electrification" and rapid deployment of onshore wind and solar energy schemes.

Together with the National Infrastructure Commission, the Climate Change Committee wrote to the new Prime Minister on her first day in office, stressing the need to focus on energy efficiency in buildings and low-carbon heating systems.⁸ They also urged her to speed up deployment of onshore wind and solar energy, to reduce our reliance on gas as quickly and cheaply as possible.

The foreword of the Scottish Government's new Programme for Government the First Minister says "Our response to the cost crisis must also deliver for the climate."⁹

A cost of living crisis is exactly the time to redirect subsidies and tax breaks, impose windfall taxes on energy companies, and increase revenue from (the top-end of) Income and Corporation Taxes, while looking to better tax wealth, thereby to invest in the solutions – like insulating homes, changing heating systems, building up renewable energy and phasing out fossil fuels – which will help people out of the current crisis and avoid similar crises in the future.

RECOMMENDATION 1 – measures to address the cost of living crisis need to also reduce emissions so that they help head off future crises, and well-designed climate measures can help achieve social and economic goals.

criteria used included the scale of impact in raising funds or changing behaviour, delivery of the polluter pays principle, speed of implementation, and alignment with the principles of social and climate justice.* Others might of course come up with a different selection and some of the ideas that did not make it into the top 21 are mentioned in the introductions to the relevant chapters.

Engaging people in this discussion is important. The genesis of some of these ideas has been from the Climate Assembly, a group of people from all walks of life convened by the Scottish Government, and CERG, which describes itself as "a collection of like-minded leaders spanning Scotland's private, public and third sectors, delivery organisations and membership bodies." Others come from the Climate Emergency Summit process which involved dozens of experts, and public and private sector leaders. Where appropriate this report also includes details of relevant public opinion polling.

* A clear description of what climate justice means in this SCCS document: Delivering climate justice at COP26 in Glasgow, SCCS, July 2021, <https://www.stopclimatechaos.scot/wp-content/uploads/2021/07/Delivering-climate-justice-at-COP26.pdf>

There are many ideas for consideration in this report. Ideally a few simple, complementary and progressive ones would be all we would need. Also ideally some would raise money, targeting the biggest polluters, and this would pay for the ones which cost money. Of course the landscape is already crowded with fiscal measures, some are even contradictory, so we are stuck with complexity. This cannot be an excuse for inaction. Any transition is expensive and, where we cannot make one measure pay for another, a top priority should be to protect the vulnerable through that transition. Given the urgency of the climate crisis, we must use a broad range of measures, recognising that we will need action across a number of areas, all at the same time, and that the longer we wait, the more money will be needed later.

There is already a lively debate about the future of public funding in a changing world, including the need to address the demographic challenge, adequately fund public services, and tackle the climate and nature emergencies. This debate is raising issues of taxing wealth, of replacing the Council Tax and of environmental taxes. This report is a contribution to this vital public policy debate about how we use fiscal measures to move more quickly on climate change, here and overseas. This is a debate that should be happening in every industrialised country: the contexts and the solutions may differ somewhat, but the need for action – particularly by rich, developed nations – is very urgent.

This report is not just for environment ministers and spokespeople, it is just as much for finance ministers and First and Prime Ministers. Now is the time for Scotland to think boldly in terms of how we transform our use of fiscal measures. Fiddling with a climate line here or there in the budget will not be enough.

1. Context

Some fiscal measures are entirely in the hands of the UK Government, some in the hands of the Scottish Government and some overlap. This report covers all of these types of measure.

Income tax is mostly controlled by the UK Government, but Scotland has limited powers to vary the bands and rate. Corporation Tax is controlled by the UK but Non-Domestic (or Business) Rates are in the hands of Scotland. The Landfill Tax started as a UK tax but is now completely devolved to Scotland. Air Passenger Duty/Air Departure Tax and the Aggregates Levy are due to come under Scottish control soon.

This report takes no view on the merits or otherwise of where the power over specific fiscal measures currently rest or other constitutional changes. On the one hand, if Scotland were to become an independent country, it would then control all the fiscal measures currently either fully or partially controlled by Westminster. It could do what it chose, within international law and any EU obligations which applied. On the other hand, within the existing UK settlement, the positive environmental impacts associated with changes at UK level could be significantly larger, and, where the UK Government is in favour, changes could perhaps be introduced more quickly than if dependent on achieving independence.

Under the current devolved settlement there are a number of ways that Scotland can introduce a new measure (see box on Scotland and Taxes in section 1.3 below), but the Scottish Government can also ask the UK Government to introduce a measure in UK law to deliver something in Scotland, or can ask for the power to enact the measure to be devolved to Scotland.

This rest of this chapter looks at the scale of the climate challenge, both how much more we need to do in Scotland and our international climate obligations; the environmental principles that should govern decisions on the design and use of fiscal measures; the full scope of what is included as a fiscal measure; how climate action should be funded and the constraints and barriers to action.

1.1 The scale of the climate challenge

The challenge at home

In 2018, the Intergovernmental Panel on Climate Change said that the world needed “*rapid, far-reaching and unprecedented action in all sectors of society*” in order to deliver on the 2015 Paris Agreement goals of keeping the global temperature rise well below 2°C and making efforts to stay below 1.5°C.¹⁰ We are currently beyond 1°C of warming and heading for a catastrophic 2.7°C even if every nation delivers on its promises.¹¹

Scotland’s direct climate emissions are now less than half what they were in 1990.¹² Figure 1 shows Scotland’s direct emissions by sector. Most of the reductions since 1990 have been in the energy and waste sectors. Other sectors have seen little change.

However, we also ‘export’ responsibility for emissions by buying goods from the rest of the UK and overseas. Including these emissions gives our total climate footprint, or consumption emissions, which reduced by only about 30% between 1998 and 2018 (the most recent figures).¹³ In 2018, 50% of this global climate impact was from emissions we are responsible for outside the UK; figure 2 shows where in the world these emissions came from.

Scotland's territorial climate emissions 1990-2020

Figure 1: emissions from activity in Scotland by sector plus international aviation and shipping in millions of tonnes of carbon dioxide equivalent (MtCO₂e).¹⁴



The targets in Scotland's 2019 Climate Act – which are focused exclusively on emissions generated in Scotland, that is, our territorial emissions plus our share of international aviation and shipping – mean that there are eight years left to reduce Scotland's direct climate emissions to only 25% of their 1990 levels. This means roughly halving today's level, requiring year-on-year reductions of nearly 7% every year to 2030, a rate three times faster than the reduction over the past 30 years.

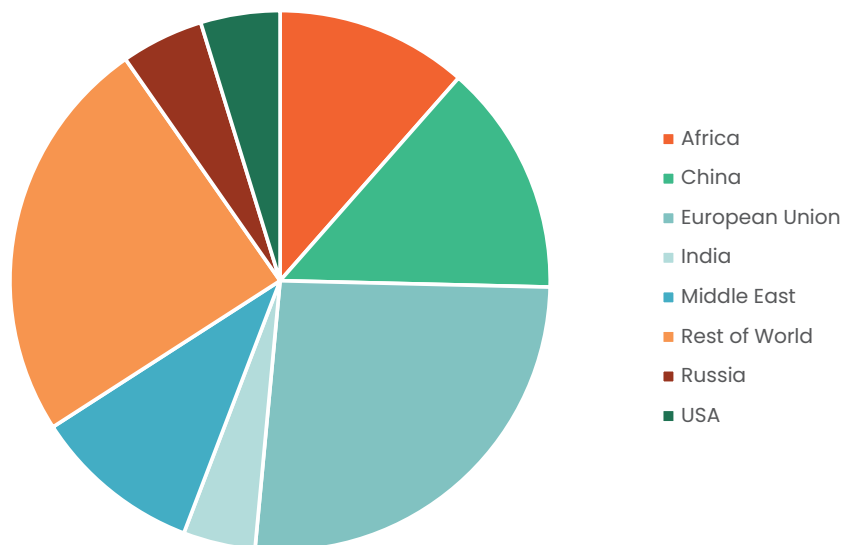
There are annual targets in law and we met our 2020 target because the COVID-19 lockdowns drastically cut transport emissions. But we missed the three targets before that and the Scottish Government's official advisors, the Committee on Climate Change, say we will struggle to meet our annual targets on the way to the 2030 milestone.¹⁵ Similarly, they also pointed out that the UK is not on track to meet its net-zero by 2050 target.¹⁶ The Scottish Government's monitoring of its own Climate Change Plan admits that we are off track to meet our 2030 target, mainly because of the failure of carbon capture projects to gain funding.¹⁷

A 'Fair Share' target looks at how quickly a country should reduce emissions based on their historical responsibility for climate change, their capability to act and their current level of emissions per capita. Not surprisingly, as a rich country which has been a major fossil fuel user for centuries, the UK's Fair Share target is a lot tougher than its actual target. Climate Action Tracker rates countries against a variety of criteria and finds the UK's plans 'insufficient' against a Fair Share target.¹⁸

So, Scotland is falling behind on our own plans, which are in turn not aiming high enough to address the scale of the crisis. We need to do even more to make an equitable contribution to keeping the world below a 1.5°C temperature rise.

Scotland's global climate footprint

Figure 2:
where
emissions
in imports
to Scotland
came from
in 2018
(excluding
the 37%
which comes
from the rest
of the UK).¹⁹



The global challenge

The United Nations has described climate change as “the defining crisis of our time” and states that:

“No corner of the globe is immune from [its] devastating consequences... environmental degradation, natural disasters, weather extremes, food and water insecurity, economic disruption, conflict, and terrorism.”²⁰

Much of the world is heating up more quickly than Scotland, with the North Pole warming three times faster than the global average, and record temperatures in Siberia and Alaska, severe heatwaves in India and Pakistan, and major wildfires in Europe, the US and Australia in the last year. As this is being written a third of Pakistan is underwater after devastating floods. 33 million people are affected and early estimates put losses at \$43bn.²¹

In general, the people most affected by climate change are and will be those who have done the least to cause it. The entire continent of Africa is responsible for less than 4% of total global emissions²² yet the people of Africa are already seeing major impacts of climate change, from floods in the south to drought in the north, with 50 million people facing acute food insecurity in Eastern Africa this year because of a range of crises including climate extremes.²³ The continent faces extreme heat, sea-level rise and major changes in rainfall.

At the Copenhagen climate talks in 2009, the world’s rich nations agreed to come up with \$100bn a year from 2020 to help poorer countries reduce emissions and adapt to climate change. This target has not been met and much of the finance that *is* on offer is in the form of loans. The OECD²⁴ found that the current level of commitments is \$83.3bn and an Oxfam report²⁵ looking at the funding in previous years found much of it to be overstated, concluding that less than 40% of the stated figure was actually usable finance. Beyond the failure to mobilise finance as promised, and an imbalance between projects which reduce emissions and those that help adaptation to climate change, the real needs of low-income countries are well beyond \$100bn a year and this will be discussed again at COP27 in Egypt, with the aim of agreeing a new long-term finance goal by 2024.

A detailed analysis²⁶ in 2021 used a composite of national income, cumulative emissions and population to calculate the UK’s fair contribution to the \$100bn at \$5.9bn a year, of which it was contributing about half at the time. Scotland’s population-based share of this would be about £450m a year.

BOX 2 – Climate action and Scotland’s National Outcomes

Scotland’s National Outcomes,²⁷ based on the UN’s Sustainable Development Goals, are the key aims for Scotland that are supposed to drive progress on core issues. Each one comes with a set of progress indicators.

The Outcomes cover a wide range of issues from children and young people and poverty to culture and human rights.

Progress on all the Outcomes is under threat in a climate-ravaged world. Conversely, more rapid reductions in climate emissions, and the measures we use to deliver it, would contribute to progressing many of the National Outcomes, including safeguarding people’s health by reducing air pollution and increasing levels of active travel, reducing child poverty by lifting homes out of fuel poverty, stimulating the economy with green jobs in renewable energy and building retrofit, and building on our reputation as an international advocate for climate justice. Well-designed measures would also help make Scotland a fairer and more inclusive country by making sure the less well off get the benefits and the better off shoulder more of the costs.

Of course, it is not appropriate to compare this to the current level of the Scottish Government’s Climate Justice Fund since overseas aid is a reserved matter. Thus, the UK Government should be paying its full share of the \$100bn commitment from UK-wide revenues. The Scottish Government’s contribution in the form of the Climate Justice Fund, from devolved revenues, should be seen as additional and a welcome message of commitment to other countries and sub-national bodies.

In addition to money to help countries adapt to the changing climate, there is a difficult discussion about finance to compensate communities for irreparable losses and damages created by it. ‘Loss and Damage’ is strongly concentrated in poorer populations; it is estimated to cost developing countries between \$290bn and \$580bn a year by 2030.²⁸ Based on the fair share analysis above, Scotland’s share of this would be, very approximately, £1.25–2.5bn a year. This is before non-economic losses are even considered.

So, in 2030, Scotland’s fair contribution to the \$100bn commitment and the mid-range estimate of Loss and Damage would be about £2.3bn a year.

There is an interesting current discussion about making those who are failing to reach their domestic climate targets contribute more funding internationally.

As well as tripling the value of the Climate Justice Fund, the Scottish Government announced at COP26 in Glasgow that part of the existing Fund would be dedicated to addressing Loss and Damage, to help communities to *“repair and rebuild from climate-related events, such as flooding and wildfires.”* The First Minister called this *“an act of reparation”* and called on rich countries to *“start to pay their debt to the developing and vulnerable countries across the world”*²⁹

BOX 3 – What is Loss and Damage?³⁰

The ‘losses and damages’ of climate change refer to the irreversible impacts of the climate crisis which cannot or have not been avoided by reducing our emissions or adapting to global temperature increases. They affect humans and the natural environment.

Damage from climate change includes impacts such as loss of life, loss of land, loss of income, loss of traditional knowledge and culture, or loss of personal possessions. These losses may be from floods, droughts, storms, or processes such as desertification, sea-level rises or the spread of tropical diseases.

The devastating floods in Pakistan have affected 33 million people and early estimates put losses at \$43bn. That is \$43bn for one event in one country. More widely, Oxfam estimates that funding requirements for UN humanitarian appeals linked to extreme weather are eight times higher than they were 20 years ago, and over the past five years nearly half of appeal requirements have gone unmet. Funding for emergency humanitarian response is piecemeal and inadequate, as is broader support to address loss and damage such as rebuilding homes and vital infrastructure.³¹

This was a small commitment in terms of money but a very significant message to other countries. Despite this, discussion of financing for Loss and Damage made little progress in Glasgow and will be a major priority theme for many climate-impacted communities at COP27 in Egypt.

The Climate Justice Fund has made a useful contribution and the current commitment to the Fund is £36m over the course of this Parliament. Having called for the Fund to significantly increase, Stop Climate Chaos Scotland continues to ask for this to be funded from newly-raised revenue so that it is not taking away from other projects, here or overseas, and to ensure the Scottish Government's example reflects international civil society calls for the sourcing of new and additional sources of finances for climate finance and addressing loss and damage, rather than the re-labelling of existing Overseas Development Assistance. There is an opportunity for the Scottish Government to build on its Loss and Damage commitment and show further leadership here by identifying new and innovative sources of finance in Scotland.

1.2 Environmental Principles

The UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021³² incorporated five key European Union environmental guiding principles into Scots Law, placing a duty on Scottish Ministers* to have regard to the principles, listed as:

- (a) the principle that protecting the environment should be integrated into the making of policies,
- (b) the precautionary principle as it relates to the environment,
- (c) the principle that preventative action should be taken to avert environmental damage,
- (d) the principle that environmental damage should as a priority be rectified at source,
- (e) the principle that the polluter should pay.

Most relevant here is the Polluter Pays Principle, developed by the OECD in the early 1970s and included in the UN Earth Summit's Rio Declaration in 1992.³³ It is built into the founding treaties of the EU and was followed up in EU legislation with the 2004 Environmental Liability Directive,³⁴ holding operators who damage the environment responsible for paying for its remediation. More generally, the Principle is now understood to apply to the pollution consequences of decisions made by individuals, including from the goods and services they buy. The obvious corollary is that those who reduce their pollution will pay less.

Although the Polluter Pays Principle is an important one, its implementation is somewhat patchy. An analysis³⁵ in 2021 by the European Court of Auditors found it is:

"reflected and applied to varying degrees in the different EU environmental policies and its coverage and application was incomplete. ... The EU budget is sometimes used to fund clean-up actions, that should under the Polluter Pays Principle have been borne by polluters."

The Scottish Government has consulted on guidance on how the principles should apply.³⁶ On the Polluter Pays Principle it says:

"This principle aims to ensure that polluters are responsible for their actions and build in/are held accountable for any remediation required."

One of the polluter pays examples it gives is about charges and duties:

"charges and duties, such as the plastic bag charge, air passenger duty and the landfill tax, ensure that the individual consumer faces the cost of their activity on the environment."

Clearly the Polluter Pays Principle has to be a fundamental consideration for policymakers – whether at UK, Scotland or local level – in developing fiscal measures, and it has been a strong guide in the selection of measures included in this report given that it is inseparable from the wider concept of climate justice.

A further consideration is equity – a strong element of both social justice and climate justice. At home, this is about solutions which do not disadvantage those on low-incomes,

* The original intention was that this duty would apply to UK Ministers when acting in relation to Scotland, although this has subsequently been narrowed.

internationally it is about helping countries deal with the climate change that we played a large historical part in creating.

Between 1990 and 2015, just the richest 1% of the world's population were responsible for 15% of global emissions, which was more than twice that of the poorest half of humanity. The richest 10% accounted for over half of global emissions.³⁷ This correlation between wealth and climate impact has also informed the measures chosen in this report.

The Joseph Rowntree Foundation³⁸ found that environmental taxes are often regressive, impacting on low-income households disproportionately. Any fiscal measures should be designed to be progressive, with protection for the poorest if necessary and access for all, not just the wealthy, to solutions. For instance, most domestic solar power schemes are owned by people with sufficient disposable income to invest in them, and people who rent are unlikely to be able to commit to changing a heating system. There is a good case to require an equity assessment of every fiscal measure and budget, building on the current Equality and Fairer Scotland Budget Statement.³⁹

While equity has informed the analysis in this paper, further assessment of the distributional consequences of each measure, including across the income spectrum as well as by gender, race, age, ability and geographic location, is needed to prevent any unintended consequences.

Equity considerations are also built into the concept of Just Transition,^{*} which aims to protect workers and communities as the economy moves away from dependence on fossil fuels, leaving no-one behind. The Scottish Government says *"a just transition is both the outcome – a fairer, greener future for all – and the process that must be undertaken in partnership with those impacted by the transition to net zero."*⁴⁰

RECOMMENDATION 2 – both the polluter pays principle and considerations of equity should strongly influence the choice and design of fiscal measures, including but not limited to, those which address climate change, to reflect climate justice.

1.3 What are fiscal measures?

At its most basic, taking action to reduce climate emissions is a case of stopping doing the bad things and doing more of the good things. Sometimes governments ban things outright but most often they try to engineer a transition, and this usually involves making the things we want less of more expensive and incentivising the things we want more of, through prices or other means.

A good example where a range of measures combine is in the field of transport, where Scottish Government targets aim to reduce the number of car kilometres driven by 20% by 2030, move half the public bus fleet away from fossil fuels by 2023, and end the sales of petrol and diesel vans and cars, also by 2030. Government money subsidises the creation of a network of charging points for electric vehicles, on-going annual subsidies keep the bus and rail networks running, loans or grants help people and companies switch to electric vehicles, zero-rated Vehicle Excise Duty encourages people to opt for electric cars, fuel duty encourages people to switch away from petrol and diesel, funding for local authorities helps reclaim urban areas for walking and cycling, and people driving the wrong vehicle in one of Scotland's four low-emission zones will be fined.

So, to reduce climate emissions from transport, the government(s) are simultaneously using policy measures, targets, taxes, grants, loans, subsidies, duties and fines to bring about change.

A report on Environmental Fiscal Measures written by Callum Blackburn for the Scottish Parliament Information Centre did an excellent job of summarising the wide array of fiscal measures in the two tables reproduced below, dividing the measures into 'carrots' and 'sticks.'⁴¹

^{*} The concept of Just Transition is now widely used; one of the most widely accepted definitions comes from the International Trades Union Confederation: *"A Just Transition secures the future and livelihoods of workers and their communities in the transition to a low-carbon economy. It is based on social dialogue between workers and their unions, employers, and government, and consultation with communities and civil society."*

Table 1: Types of Environmental Fiscal Measure – Incentive focused (Carrots)

Mechanism	Current or past examples applied in Scotland	Available to Scottish Parliament?	Comment
Grants	New woodland planting. Piloting innovative “Circular” business models	Yes	May have a limited impact if there is a lack of sufficient funding resources to provide scale. May also have a minimal behaviour change impact, as limited to the grant recipients only.
Low cost loans	Domestic insulation and renewable energy installations.	Yes	May have a limited impact due to lack of sufficient funding resources to provide scale. May also have a minimal behaviour change impact, as limited to the loan recipients only.
Subsidies	Farming payments. Renewable Heat Incentive (RHI)	Yes in certain devolved sectors such as agriculture No, RHI is a UK Measure	Capacity to have major impact at scale e.g. via changes to existing agriculture payments due to Scotland’s geography being dominated by agriculture land. Could result in minimal behaviour change impact as a result of market barriers to take up e.g. in the case of the RHI.
Guaranteed prices	Contracts for Difference for renewable electricity. Feed in Tariffs for domestic solar energy	No	Both measures have resulted in significant increases in renewable electricity generation. However, in both these cases the funding comes from energy suppliers which results in rising electricity prices.
Tax & Capital Allowances	Allowances for business buying new zero-emission goods vehicles.	No	These reward beneficial investment in assets/ infrastructure or research (targeted at high earners and companies).
Local tax relief (Business Rates/ Council Tax)	There are Business Rate reliefs’ in place for District Heating, Renewable Energy, Charities and Reverse Vending machines	Yes	Since Business Rates and Council Tax are devolved the Scottish Government can use these to incentivise businesses and householders.
Other fiscal incentives	The Price of Carbon. Ring Fenced budgets.	Some are	A range of technical measures that may be helpful when other options are constrained.

Table 2: Types of Environmental Fiscal Measure – Disincentive focused (Sticks)

Mechanism	Current or past examples applied in Scotland	Available to Scottish Parliament?	Comment
Taxes/Duties	Differential VAT rates, specific taxes such as Landfill Tax	Some are	VAT not available as an option but Landfill Tax and others are. Depending on the specific measure, cross-border effects may limit use in Scotland
Levies	Petrol and Diesel Levies Climate Change Levy (CCL)	Yes but subject to UK Government approval if the levy revenue is accrued by the Scottish Government.	Acts like a Carbon Tax where used in relation to fuels and large industrial energy users. May simply be a tax called a levy e.g. Aggregates Levy.
Minimum Prices	Single use carrier bags.	Yes	When used have demonstrably had a significant behaviour change impact.
Extended Producer Responsibility	Deposit Return Responsibility Producer Responsibility Schemes (such as for Packaging, Waste Electrical and Electronic Equipment (WEEE) and Batteries).	Yes	The Scottish Government often agrees to work on a UK basis for these. Evidence from other countries shows these offer significant behaviour change impact and emissions reduction if designed ambitiously.
Local Taxes and Charges	Waste Collection Services. Tourist taxes.	Yes	Operated by Local authorities and offer a range of opportunities. Dependent on supporting Scottish Government legislation or regulation.
Trading Schemes	UK Emissions Trading Scheme. European Emissions Trading Scheme.	unclear	Complex and their effectiveness may be questionable but in the case of emissions trading they are being used as a form of proxy for a Carbon Tax.

There is a passing mention in the table of VAT. VAT is a regressive tax since it hits lower-income households and working age people harder than the well off. But it can be used as a tool to encourage pro-climate behaviours: many energy efficiency products and services are rated at zero or 5% for VAT in the UK. VAT reductions are in place on heat from renewable sources in France, green electricity in Italy, electric vehicles in Norway and train tickets in Germany.⁴² Germany has also proposed removing the VAT reduction on meat products.⁴³ Without additional measures these VAT incentives are still more accessible for people with higher incomes.

The Scottish Government has made a strong commitment to using tax to deliver on climate objectives. Its 2021 Framework for Tax⁴⁴ says *“tax policy will also play a crucial role in ensuring fiscal sustainability, tackling climate change and reducing inequality”* and aims to align tax policies with the Climate Change Plan over time. It also says: *“we will consider how the tax powers that we have could help change behaviour, supporting the transition to a net zero economy”* and *“whilst the majority of green tax powers are reserved, we will pursue changes at every level to deliver on Scotland’s climate and environmental ambitions.”* The Resource Spending Review⁴⁵ – which sets out the parameters of spending to 2026-7 and high-level spending plans – has the climate and nature crises as one of its five priorities, saying *“the spending review comes at a critical point in the global challenge to address the climate crisis, adapting to the impacts of the irreversible change that is already evident and seeking to mitigate the extent of future change through a just transition.”*

The recent Reform Scotland paper on the future of taxation⁴⁶ made a clear case that overall tax revenues will need to increase to meet the twin challenges of an ageing population and addressing climate change. On continuation of current trends, tax revenues would need to increase just to maintain existing initiatives.

The Office for Budget Responsibility have looked at the changing environmental tax picture out to 2050.⁴⁷ They predicted that the revenues from energy taxes (fuel duties), vehicle excise duties, air passenger duty, and landfill and plastics taxes will decline to zero from a current contribution of about 1.6% of GDP. If a carbon price, of £100/tCO₂e rising to £187/tCO₂e by 2050, was introduced in all sectors of the economy that currently do not pay one, environmental tax revenue would increase overall for a while but then decline again to about 0.5% of GDP in 2050.

The next section of this report argues that funding for action to combat the climate emergency is of such importance that it should be mostly funded from general taxation, but that there is clearly also a role for environment taxation and other fiscal measures in driving behaviour change to reduce emissions, complementing the action funded from general taxation.

The Carrier Bag Charge has brought about a large change in public behaviour, with a decrease of 90% in the number of new plastic bags being sold, and the revenue raised has helped fund charity work. The Landfill Tax has been successful in reducing waste going to landfill disposal by 75%, and it also raises revenue – expected to be £128m in 2022-3 in Scotland. Historic differences in the fuel duty rates significantly influenced whether people bought diesel or petrol cars, as well as raising large amounts of revenue – £27.5bn in 2019-20 at the UK level. Before that, differential duty rates drove leaded petrol out of the market, ahead of an eventual ban.

The Landfill Tax and the Carrier Bag Charge are examples of fiscal measures which will see declining overall revenue as their behaviour change effect changes consumer and business choices. Demand for plastic bags was elastic – when the Carrier Bag Charge made people think about how they carried their shopping home, there were easy alternatives to turn to. Where demand is initially inelastic, alternatives need to be created. For example, an increase in motoring costs may produce little change in an area poorly served by public transport.

BOX 4 – Landfill Tax

An example of a tax which drives behaviour change *and* raises revenue is the Landfill Tax (which also raises revenue for social projects). Introduced across the UK in 1996 at £7 per tonne of waste arriving at a landfill site, it has steadily risen to today's figure of £98.60 a tonne. This tax became a separate Scottish tax in 2015 and it is estimated that the amount of waste sent to landfills in Scotland between 1996 and 2020 dropped by 80%.

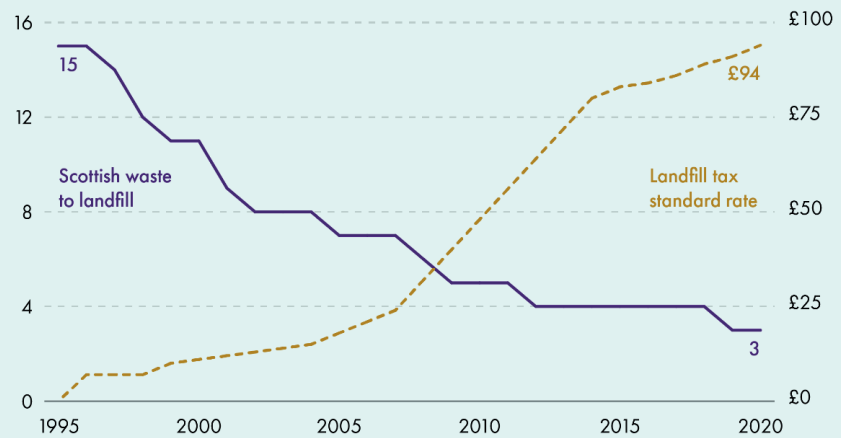


Figure 3: landfill tax rates and quantities of waste landfilled 1995–2020 (SEPA data).⁴⁸

One of the key strengths of the Landfill Tax is that the future cost was known, so the waste industry and waste managers like local authorities could build these costs into their future planning. The tax has also been used to differentiate between types of waste, with inert materials being charged at a much lower rate.

The Landfill Tax has been a big success in terms of reducing use of landfill. The disappointing aspect of the impact of the tax is that other policy failures have meant that the tax has done more to encourage the growth of incineration than the growth of reuse and recycling.⁴⁹

The Reform Scotland report finds that the Scottish Government undertakes only a limited assessment of the consumption-based carbon emissions associated with spending in the Scottish Budget and has “not, as yet, included a more comprehensive assessment or extended this to include the impact of revenue-raising.” It also recommends that fiscal policies should all be assessed for their impact on climate change.

The Scottish Government has undertaken to review how climate considerations influence the budget, with both work they have commissioned from Fraser of Allander Institute⁵⁰ and independent input from the Climate Emergency Response Group⁵¹ informing this thinking. Both of these inputs also look more broadly at how policies, as well as expenditure plans, can be tested against climate change commitments.

In their report on a Green Recovery⁵² the Scottish Parliament’s Environment, Climate Change and Land Reform Committee recommended wider application of ‘conditionality’:

“The Committee recommends any model for future funding support to business and the third sector must consider conditionality and opportunities to include measures which relate to supporting the delivery of social and environmental objectives. Specifically, the Committee recommends that, where appropriate, support should be conditional on action to reduce emissions in alignment with any route-map to net-zero, and a green recovery. Sectors which require urgent action in this regard are fossil fuel extraction and use, transport, agriculture and manufacturing.”

and

“The Committee recommends public funding must be accompanied by a published set of conditions on achieving relevant public objectives (e.g. net-zero, biodiversity, fair work, diversity and inclusion, circular economy). All applications for funds must include an action plan to achieve the conditions, with the detail proportionate to the scale of funding. Action plans should be publicly available, where appropriate.”

The following chapters of this report look at the use of a range of fiscal measures in different sectors of emissions and across the economy.

BOX 5 – Scotland and taxes

Scotland already controls the Land and Buildings Transaction Tax, Landfill Tax, Council Tax and Non-Domestic Rates (Business Rates) and partly controls Income Tax, being able to set bands and rates. Air Departure Tax and Aggregates Levy are also due to come into Scottish control.

Scotland can also create new (local) taxes, or ask for powers for new taxes. The Scotland Act 1998 gave Scotland the power to create local taxes to fund local authority expenditure. This route is suggested later on for the proposed Carbon Emissions Land Tax. The Scottish Government can also apply to the Privy Council to create a new devolved tax through an Order in Council, which involves the UK Government but not generally the Houses of Parliament, or negotiate with the UK Government to create a new tax through a Bill or section 30 order under the Scotland Act 1998 at Westminster.

The Scottish Government has the power to introduce new levies, but needs permission from the UK Government if the levy generates revenue that comes to the Scottish Government.

1.4 General taxation or environmental taxes?

In the 1980s, seemingly-serious politicians would say that we need to grow the economy so we can **then** afford to fix the environment. Work like the 2006 Stern Review⁵³ on the economics of climate change showed that it is the environment that underpins the economy and acting today on climate change is much cheaper than waiting to act when the situation is much worse. The review found that spending 1% of GDP a year could avert the worst of the climate crisis, whereas waiting to act could mean spending 20% of GDP in future to cope with the damage from climate change *and* reduce emissions. 20% of predicted global GDP in 2050 would be over \$20 trillion.⁵⁴ In 2008, Stern recalculated the necessary spend to be 2% of GDP.⁵⁵

For comparison Scotland's GDP in 2019, the last pre-COVID-19 year, was nearly £170bn, so Stern's 2% number would suggest we should be spending £3.4bn a year on tackling climate change. Common Weal's detailed Green New Deal plans in Our Common Home⁵⁶ are costed at £5bn a year.

Climate Spend £bn a year

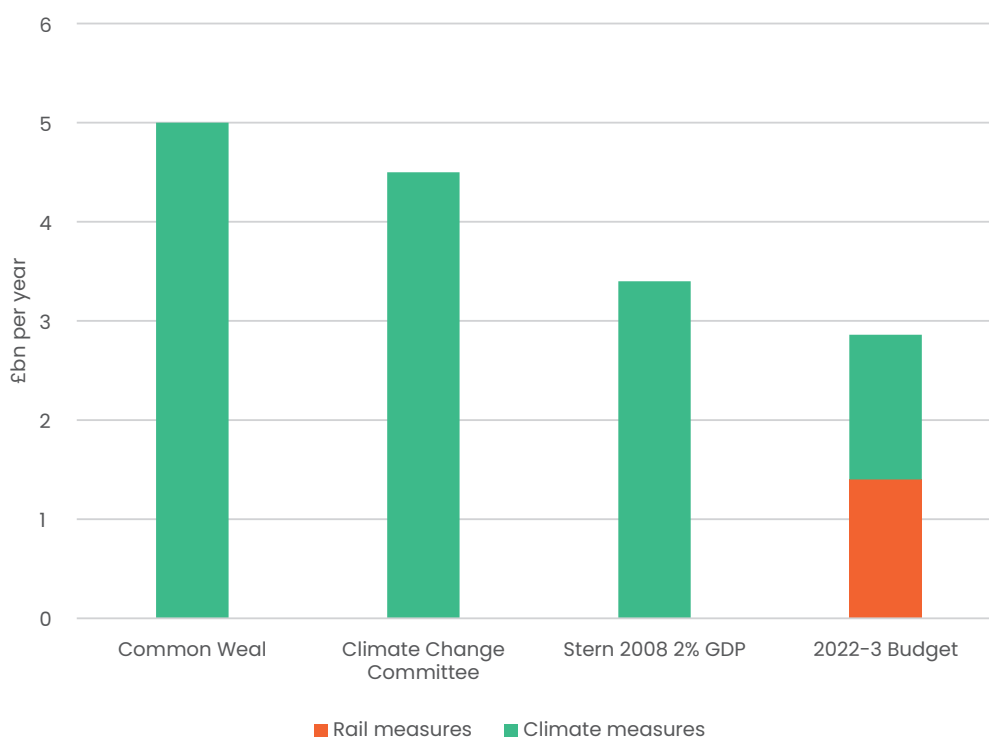


Figure 4: comparison of estimates of how much Scotland should spend on climate change measures compared to current budget plans.

The commitments listed as relating to climate change in the current 2022-3 Scottish Budget total £2.86bn, with half of this being investment in rail network infrastructure and decarbonisation.⁵⁷ This sounds impressive but still falls considerably short of Stern's 2% target level and is demonstrably insufficient since the Climate Change Committee says we are off track to meet our annual targets up to, and probably including, 2030.

In relation to the UK as a whole, the Climate Change Committee estimates that £50bn of public and private finance needs to be invested a year from 2030 to achieve net zero by 2050.⁵⁸ The Office for Budget Responsibility estimates that the UK public funding component of this is £15-24bn a year by 2030 to keep on track for net zero by 2050.⁵⁹ Scotland may need to spend proportionately more because our net zero target aims for 2045, some five years earlier, but this may not be the case because much of the cost is about transforming the power sector, some of which has already happened in Scotland more rapidly than in England.

YouGov polling consistently finds climate change a top three or four concern for the British public, alongside the economy and health – with levels of concern having grown significantly in recent years.⁶⁰ Earlier polling in Scotland, conducted for Stop Climate Chaos Scotland, also by YouGov, showed that 78% of respondents in Scotland said they were either more concerned about climate change or are as concerned as they were twelve months previously and 70% supported Scotland taking greater action in transport, food and homes to tackle climate change.⁶¹

BOX 6 – the Scottish Budget

Scottish Budget Sources

Figure 5: how the Scottish Budget is funded. Based approximately on the projected 2022-23 budget⁶²

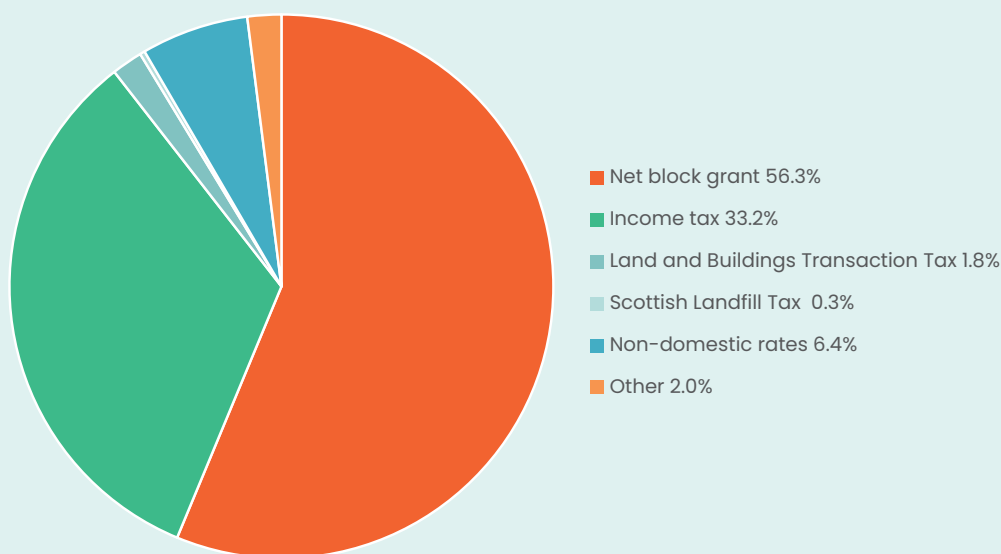


Figure 5 shows how the Scottish Budget is made up, in broad terms, with the majority of funding coming from the block grant from the UK Government and around 35% of the revenue coming from taxes that the Scottish Government fully or partly controls plus non-domestic rates which are paid out to local authorities, who also collect Council Tax. In 2022-3, these two are worth about £2.8bn and £2.7bn respectively.

The total budget in 2022-3 is around £43bn with £17.1bn committed to health and social care, and £4.2bn to social security, leaving £21.3bn for expenditure in all other areas. The Scottish Government also plans £450m of borrowing.

As noted above the 2022-3 Scottish Budget lists £2.86bn-worth of climate related activities, which is about 6.7% of the total budget.

The UK Government also spends money related to Scotland on reserved matters like pensions and defence, with revenues that come from UK taxes like Fuel Duty, Corporation Tax and National Insurance.

The climate threat is so significant that both the Scottish Government and the UK Parliament formally recognised that there is a 'climate emergency' in 2019.⁶³ Dealing with an 'emergency' should be a national priority. It should mean doing lots of things differently. Dealing with the climate emergency is also an enabler in delivering on other national priorities, including reducing the burden on the NHS caused by temperature extremes, making our transport system fairer and driving the Just Transition for oil-dependent communities and workers.

Since it is a national priority, funding for action to reduce emissions and to fund our international climate obligations should mostly come from general taxation – a relatively stable and predictable source of finance. Where specific environmental taxes, levies, charges or other measures are applied, this should be predominantly because they will help bring about the desired behaviour change for an orderly transition, with any revenue generated as a result creating an added benefit.

This is the case for other national priorities. For instance, the NHS is funded almost entirely from general taxation. Where there are health-related fiscal measures, like the duty on cigarettes, the sugar tax or the minimum price for a unit of alcohol, the primary purpose is to change behaviours away from things which are bad for health. The Office for Budget Responsibility estimates tobacco duties will raise nearly £11bn for the government in 2022/23⁶⁴ but none of this is specifically reserved for the NHS, despite smoking imposing a £2.5bn cost on the service. The minimum price for alcohol does not provide an income stream to government, instead it is expected to boost income to the drinks industry. However, this measure is seen as a means of encouraging a reduction in alcohol consumption, thereby boosting public health and reducing the knock-on impact upon the NHS.

So we fund the NHS from general taxation because it is a national priority for us. We have relevant taxes, levies, charges and minimum prices because they help drive behaviour towards better health outcomes. This is also the approach we should take to action on climate change.

RECOMMENDATION 3 – the funding for measures to address the climate emergency should come from progressive forms of general taxation. Complementary specific environmental taxes are useful where they bring about behaviour change which reduces emissions.

BOX 7 – Borrowing

The Scottish Government is allowed to borrow money, within strict limits. Capital borrowing can be up to £450m in any year, up to a total of £3bn; resource borrowing can be up to £600m, up to a total of £1.75bn and only for very specific purposes.⁶⁵

Using the Stern Report's⁶⁶ argument that climate change is a long-term problem which is considerably cheaper to deal with today than in the future, the case could be made that the Scottish Government should be enabled to borrow much more, so it can invest in long-term climate change solutions immediately, alongside the improved use of existing fiscal powers. On the negative side, this passes the cost of investing in climate just action today to future generations, counter to the principle of making polluters pay. However, those future generations would likely inherit a safer, more stable world and therefore be in a better state to pay off the debt we pass them, than if we wait and expect them to deal with larger climate impacts.

1.5 General taxation vs hypothecation

Hypothecation of a tax, charge, duty or levy means that the revenue raised is dedicated to a particular type of spending. A good climate-related example is the Workplace Parking Levy in the City of Nottingham. The scheme has been running since 2011 and raised around £83m in its first decade, all of which has gone back into funding transport improvements in the city, principally the provision of electric buses and the extension of the tram network.⁶⁷ The scheme covers around 40% of the workplace parking spaces in the city, with employers providing more than 10 spaces currently paying £458 for each parking space included in the scheme.⁶⁸

Hypothecation helps 'sell' a measure. To the public and employers in Nottingham it is clear what benefits the levy is funding. Some employees who used to drive will now be taking the new bus or tram funded by the levy. The levy provides a large, steady and predictable income stream to fund Nottingham City Council's transport plans.

A well-designed fiscal measure will bring about behaviour change as well as raising revenue. So an obvious problem for a hypothecated tax or levy targeted at an undesirable activity is that, over time, success at changing behaviour reduces the revenue raised, reducing the resources available to fund the alternatives to the 'bad' that is being taxed.

The UK Health and Social Care Levy is an attempt to temporarily extract extra national insurance contributions from people for something most of them would think worth funding.

The UK Treasury is generally not keen on hypothecation because it reduces budgeting flexibility and increases complexity. It is possible that the case for hypothecation is stronger for local fiscal measures because the local benefits are more visible than for some national schemes.

Hypothecation of revenues would usually be for expenditure in the UK, so this would need to be in parallel to central tax revenues funding international climate finance obligations.

RECOMMENDATION 4 – where an environmental fiscal measure raises revenue, that revenue should generally be hypothecated to be spent on relevant environmental improvement e.g. the Nottingham Workplace Parking Levy funding improvements in public transport.

1.6 Trading schemes

The theory of carbon trading systems is that the people, businesses or countries who are most easily able to reduce emissions do so and those who would find it harder buy enough credits for emissions reductions to cover their own targets. In a perfect world, with a perfect system, the world gets the emissions reductions it needs in the most economically-efficient fashion. In the real world, the experience has been complex and slow to deliver significant emissions reductions.

The first large carbon market was the European Union's Emissions Trading Scheme, set up in 2005. It is a 'cap and trade' scheme – there is an annual cap on the total amount of emissions allowed, which decreases over time, and participants trade to end the year with the right number of permits or face fines.

This scheme covers around 12,000 factories, power stations and large emitters, encompassing 40% of all climate emissions in 31 countries – the EU plus Iceland, Liechtenstein and Norway. It should be a powerful tool to drive down emissions yet during its first decade it made little difference at all, with one study suggesting it reduced emissions by less than 4% between 2008 and 2016.⁶⁹

With huge allocations of free credits given to major polluters, the actual price of buying a carbon credit was so low that no business saw the need to actually change their high-carbon plans. Progress has been better more recently and the European Union has ambitious plans for how the EU scheme will reduce emissions across Europe in the coming decades.

Post-Brexit the UK has set up its own parallel emissions trading scheme. It is not yet clear whether the UK and EU scheme will become linked. See section on the UK Emissions Trading Scheme below.

A system of trading landfill allowances in Scotland created a disincentive to local authorities providing business waste and recycling services, and was scrapped after less than a decade of operation when it became outdated.⁷⁰

EU Carbon Permits

Figure 6:
the price
for a tonne
of carbon
emissions
in the EU
Emissions
Trading
Scheme
2005–2022.⁷¹



source: trading economics.com

Trading schemes are complex and can suffer from loopholes, double counting and plain cheating. The burden of cost in a badly designed scheme can fall disproportionately on those on low incomes. Any suggestion of setting up any new trading schemes related to any form of emissions should be treated with caution, as we do not have the luxury of time to wait for years before any such scheme starts to make a difference in reducing emissions.

RECOMMENDATION 5 – trading schemes can be effective but they can be slow to deliver outcomes and their impact on the poor can be significant, so any proposal for a new trading scheme should be treated with caution.

1.7 Constraints and barriers

Public vs private finance

As stated above, at the UK level, the Climate Change Committee estimate that £50bn needs to be invested a year from 2030 and the Office for Budget Responsibility estimate that the UK public funding component of this is £15–24bn a year by 2030, so between 50% and 70% of the necessary annual funding is expected to come from private finance.

The OECD⁷² estimate that, of the \$83.3bn committed by 2020 to the \$100bn target, only 16% came from private companies. The vast majority of private companies do not exist to tackle climate change. Traditionally most companies have been aiming to maximise shareholder value (a legal duty, with caveats, in the UK). The renewable energy companies installing clean electricity technologies are doing an essential task for reducing emissions, but they are mostly making a handsome profit as well.

In general, companies will spend money on projects, technologies and programmes that reduce climate change emissions only when that is clearly to the companies' advantage. Public opinion exerts some influence but it is governments that:

- set the legal frameworks within which companies operate (including putting a price on carbon)
- use public policy to signal the direction of future markets (phasing out sales of fossil fuel cars or stimulating a huge demand for heat pumps)
- directly set prices (fuel duty or renewable electricity prices) and
- use conditions on the public sector's own purchasing to influence businesses.

It is the job of government to make the conditions right for companies to invest in pro-climate behaviour.

The EU's new Sustainable Finance Taxonomy,⁷³ despite its weaknesses on gas and nuclear power, aims to guide private investment into well-defined, stable areas of investment which help meet climate and nature objectives.

The scale of the funding challenge – for instance the £33bn the Scottish Government estimates is needed to upgrade Scotland's home insulation and heating systems – is so great that private investment will obviously be needed alongside public funding. The Climate Change Plan acknowledges that *"private finance is vital to securing the level of investment required to reach net zero. The transition will in turn create a wealth of opportunities across the Scottish economy."*

In relation to heating systems specifically, a joint government and industry taskforce is looking at how to fund the mass installation of heat pumps and other heat solutions, with a report due in March 2023.⁷⁴

The Resources Spending Review⁷⁵ says *"while there are areas of society that should always remain government funded, the scale and urgency of the climate emergency means private and third sector investment will be critical to shift to a net zero, climate resilient, wellbeing economy. To harness this investment effectively and maximise the impact of collective action to address the climate crisis, activity to move from a "funding to financing" policy model will be scaled up to ensure that future climate change policy leverages private sector investment and action, better amplifying the impact of public investment."*

On pro-climate infrastructure, the Scottish Government's budget paper for 2022-3 says:

*"Building on the platform of COP26, we will work to attract investment into Scotland's Green Investment Portfolio, which will bring together market-ready projects worth £3 billion by 2022, and accelerate work on developing our pipeline of investible projects with credible and robust business cases."*⁷⁶

An example is electric bus funding, where £50m in public funding brought in over £70m from the private sector for 272 buses in 2020.⁷⁷ Another example of a very successful UK public-private partnership was the Kirklees £21m Warm Zone project where Scottish Power contributed around half the funding for 51,000 homes to be retrofitted for energy efficiency, resulting in an estimated net social benefit of nearly £250m.⁷⁸

The Scottish Government's new Programme for Government promises a new 'investors' panel' *"led by the First Minister, to convene investors to discuss how they are investing in the infrastructure that Scotland needs to ensure a just transition to net zero emissions."*⁷⁹

Conditionality applied to funding, regulation, procurement and licensing is a tool to draw out private sector contributions. Clearly, if the private sector proves unwilling to play its part in helping fund the changes needed to meet our climate obligations, a variety of fiscal and other measures could encourage, incentivise or penalise them, as well as simply extracting finance from them directly.

An expanded role for the public sector in direct delivery, as in the Kirklees example above, should also be explored.

UK Internal Market Issues

The UK Internal Market Act 2020⁸⁰ aims to prevent barriers to trade within the UK, mostly to make it easier for the UK to make trade deals around the world in the post-Brexit context. So a new levy, charge or minimum price in Scotland could easily be challenged on the grounds that it makes it harder to sell a product or service in Scotland than is the case in England.

The Scottish Government has already sought an exclusion from the Act for its proposed ban on some single-use plastic items and the new Office for the Internal Market identified environment, energy use, agriculture and food as among the areas of likely future divergence.⁸¹ Potential conflicts will be rapidly accelerated if the UK Government sweeps away a significant fraction of 'EU-inspired' legislation over the next couple of years, especially since the Scottish Government is committed to not only retaining EU law and standards but also trying to keep pace with EU law as it evolves.

Similarly, the UK Subsidy Control Act 2022⁸² regulates the use of public subsidies and replaces the EU's State Aid rules. It may be a barrier to new or expanded subsidies in Scotland since it seeks to minimise *"the impact of subsidies on competition and investment within the United Kingdom."*

The Brexit-related Common Frameworks agreed between the UK Government and the devolved nations on a wide range of topics may also constrain the Scottish Government's ability to act, or at least add an extra layer of complexity, a prime example being in the area of reform of agricultural subsidy arrangements.⁸³

Cross Border Adjustment Mechanism

The EU is planning to introduce a Cross Border Adjustment Mechanism (CBAM),⁸⁴ a scheme to put a carbon levy on a selection of items from outside the EU where the originating country does not have as strong a control on carbon as the EU. This is to help prevent, for instance, steel industry firms re-locating to non-EU countries where costs are lower because climate emissions are not properly valued, a phenomenon known as 'carbon leakage.' When introduced, the CBAM will cover the cement, aluminium, fertilisers, electricity production, and iron and steel sectors.

While the UK has a similar targets' trajectory for emissions from these sectors, and an Emissions Trading Scheme covering them, the CBAM should have little or no impact on UK exports to the EU, other than additional paperwork. If there was a significant divergence in the approach taken by the UK in relation to the EU, CBAM impacts would become significant. If that were the case and Scotland became independent and joined the EU, there would have to be a negotiation about whether CBAM would operate on products imported to Scotland from England and Wales.

Westminster's Environmental Audit Committee recently conducted an inquiry into carbon border taxes and recommended that the UK Government begin work to design a UK CBAM as soon as possible.⁸⁵ In response, the UK Government included border carbon taxes in its consultation on the UK ETS scheme.⁸⁶

1.8 Environmental fiscal measures from elsewhere

Across Europe in 2020 revenue from environmental taxes made up an average of 5.4% of total tax revenues, a decline from 6.6% 20 years ago (figure 7).⁸⁷ There is no exactly comparable figure for the UK but approximate figures show that the UK level is close to the European average.

A recent IEEP study⁸⁸ found that:

"tax systems across the EU are, overall, neither green enough nor fair enough. But Member States with greener tax systems – where polluters pay for a bigger share of the costs of their environmental damage – also tend to have more progressive tax systems and lower inequality."

The study also found Austria, Cyprus, Finland, Spain and Sweden have explicitly included green tax reforms in their COVID-19 recovery plans. The EU set up a €750bn Resilience and Recovery Facility of grants and loans to Member States, with approaching 40% of the spending focused on environment transition measures.⁸⁹

The OECD has a programme of work encouraging countries to act on climate change, saying: *"governments can not only build strong economic growth but also limit future climate damages if they collectively act for a 'decisive transition' towards low-carbon, resilient economies."*⁹⁰ They point out that 70% of energy-related carbon dioxide emissions from advanced and emerging economies are entirely untaxed, taxes on coal are zero or close to zero in most countries and for international flights and shipping, fuel taxes are zero. The top fiscal measures they promote are pricing carbon, tax and incentives to renovate existing buildings, low prices for public transport and sustainable freight, and taxes and subsidies to reduce emissions from farming.⁹¹ They have also done work looking at including climate change in macroeconomic modelling.⁹²

Total environmental tax revenue as a percentage of all tax revenue

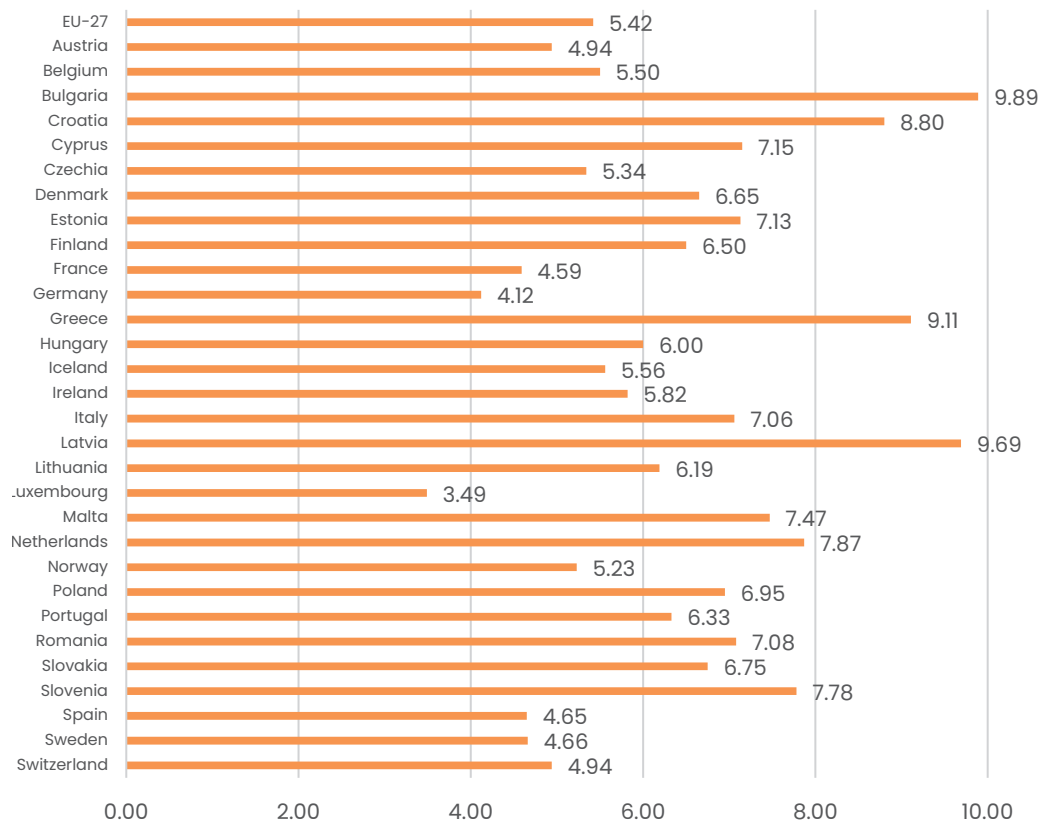


Figure 7: revenue from environmental taxes (including energy, transport and pollution) in the EU in 2020 as a percentage of all tax revenue.⁹³

The EU's 'Fit for 55'⁹⁴ programme of work on climate change aims to put their 55% reduction by 2030 goal into law and tighten the limits on emissions in the Emissions Trading Scheme and emissions limits for car makers. It sets a renewable energy target of 40% by 2030, and introduced the Carbon Border Adjustment Mechanism mentioned above. One of the proposals is to set up a new Emissions Trading Scheme, separate from the current one, to cover emissions from buildings and road transport. Part of the money raised by this scheme would go to a Social Climate Fund, which would help ease the transition to lower emissions, with a particular focus on vulnerable households, small businesses and transport users.⁹⁵

A report from the European Environment Agency⁹⁶ found that the much discussed idea of shifting taxes away from labour and onto resources and pollution has largely not been realised.

The new US Inflation Reduction Act, despite its fossil fuel loopholes, would invest nearly \$375bn over the decade in action to reduce emissions, including investments in renewable energy production and tax breaks for consumers buying electric vehicles.⁹⁷ The biggest source of revenue is a new minimum 15% tax on companies that make more than \$1bn in annual profits – expected to raise more than \$258bn over the decade.

Slight caution must be exercised in any assumptions made about the effectiveness of fiscal measures in delivering behavioural changes. There are a number of positive examples but a recent study found that pro-environment incentives can be effective, in this case in recycling programmes in China, but may actually reduce an individual's intrinsic pro-environmental motivation.⁹⁸ Human behaviour is also influenced by a complex mix of non-financial factors, so any fiscal measure needs to be part of a wider programme.⁹⁹

2. Cross-Economy Measures

The recent Reform Scotland paper on the future of taxation¹⁰⁰ called for radical reform to meet the twin challenges of an ageing population and tackling climate change, and for a shift from taxing employment to taxing wealth:

“in order for Scotland to cope with the future challenges presented by demographics and climate change, the tax system will need to be completely redesigned, rather than simply tinkering with the rates of current taxes.”

Below we start with some important tinkering and move on to some more radical proposals.

2.1 Income Tax

RECOMMENDATION 6 – increase income tax revenue to fund action on climate change. Increases should fall mostly on higher and top-rate taxpayers because they are almost always also high-emitting individuals and also have greater capacity to pay.

Revenue raising, controlled by the Scottish Parliament

Income tax contributes around a third of the Scottish budget at £13.6bn in 2022–3.¹⁰¹ This is predicted to grow to nearly £16.5bn by 2026–7, mainly because of the impact of inflation.¹⁰² Scotland has already made higher earners pay more than in England and Wales but our top rates of tax are still low compared to countries like Denmark and Sweden, and thresholds are set so that they apply to only a small fraction of the population – for example, there are only 20,000 people in Scotland’s highest Income Tax bracket. The current enhancements to the Scottish income tax system generate an additional £500m–£600m a year.

The recent Reform Scotland paper on the future of taxation¹⁰³ called for radical reform to meet the twin challenges of an ageing population and tackling climate change, and for a shift from taxing employment to taxing wealth, but acknowledged that income tax would still be an important source of revenue for public good.

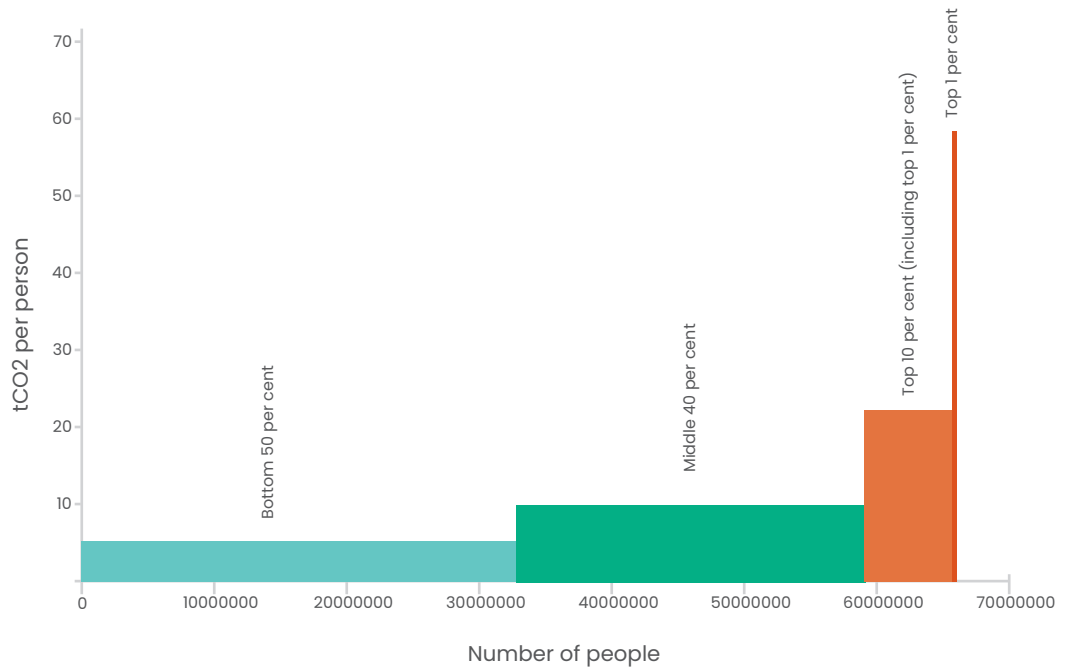
On environmental impact, Oxfam and the Stockholm Environmental Institute calculated that the richest 1% in the UK have a carbon footprint six times that of the national average, and 11 times that of someone in the poorest 50% of the population. Those in the wealthiest 10% (with income after tax of at least £41,000), have a carbon footprint more than double the national average and four times that of someone in the poorest 50%.¹⁰⁴ As such, on average, people with higher incomes also have higher emissions – therefore higher tax rates for higher earners reflects the Polluters Pay principle.

The Scottish Government’s Tax Framework promised that *“tax policy will also play a crucial role in ensuring fiscal sustainability, tackling climate change and reducing inequality.”*¹⁰⁵ Despite the current cost of living crisis, given the right political commitment, increasing income tax for higher earners would be a generally progressive change both because they are likely to be higher emitters and because the higher revenues generated by the higher taxes paid by high earners would be spent on measures like home insulation which prioritise those on lower incomes, helping them lessen the impact of rising energy prices.

All things being equal, and very approximately, Scottish Government figures show that, for example, increasing the Top rate from 46% to 50% would bring in an additional £15m (although this is very uncertain and already allows for the fact that the well-off are good at using the system to minimise tax payments¹⁰⁶); increasing the Higher rate from 41% to 44% would bring in £200m and affect people earning over £43,662; increasing the intermediate band rate from 21% to 23% would raise £300m, which would affect people earning between £25,296 and £43,662.¹⁰⁷ All of these changes together would raise an extra £515m every year, on top of the increases expected because of inflation. While much less desirable, increasing the basic rate from 20% to 21%, would bring in an additional £190m from people earning over £14,733.

Average carbon footprint by income group UK 2015

Figure 8: personal carbon footprint by income group in the UK in 2015 (from Oxfam analysis, note the top 1% also appear in the top 10%)



Changes to Income Tax could be implemented very quickly since it is a variation on a current system and rates and thresholds could be reviewed at every budget. Conflict is already brewing with the UK Government over their existing plans to reduce the basic rate of tax and maybe make further reductions.¹⁰⁸

There is also a case to review the allowances and reliefs which taxpayers benefit from and to look at the use of service companies to avoid earnings being subject to Income Tax for individuals.

While people rarely vote for higher taxes explicitly, the Scottish Government aspires for Scotland to be like a Nordic country but we currently do not collect taxes or spend public money like one, so this is a journey we have already started and on which people might expect the country to continue.

2.2 Wealth Taxes

RECOMMENDATION 7 – set up a rapid and time-limited, independent commission to look at the options for replacement of the Council Tax and other local taxes with a land, property and/or local wealth tax, with a strong element of climate justice built in, building on the Reform Scotland report and the recommendation of the David Hume Institute.

Revenue raising and behaviour change, controlled by the UK and Scottish Parliaments and/or local authorities

Many of the richest households have an abundance of assets and money but not much taxable income, so a wealth tax is a critical tool to redistribute assets in support of climate justice, with the wealthy paying more. It would also be a driver of land reform and narrowing economic inequality.¹⁰⁹

The range of potential taxes on wealth include taxes on total wealth, capital gains, inheritance, gifts, land and property, or other types of assets.

Office for National Statistics data¹¹⁰ show that in the period April 2018–March 2020 in Great Britain median household net wealth was £302,500, a real-terms 20% increase compared with July 2006 to June 2008. The wealth of the richest 1% of households was more than £3.6 million, compared with £15,400 or less for the least wealthy 10%. House prices have been rising more quickly than wages since the turn of the millennium.¹¹¹

At the Scotland level, Scottish Government data from just before the pandemic put typical wealth at £214,000, with the wealthiest 10% of households worth £1.7m and the least wealthy 10% worth £7,600. Overall the wealthiest 2% of households held 18% of all wealth.¹¹²

On average, the wealthy make a hugely disproportionate contribution to climate change emissions, so a wealth tax would address this directly. As noted above, the richest 1% in the UK have a carbon footprint six times that of the national average, and 11 times that of someone in the poorest 50% of the population. Those in the wealthiest 10% have a carbon footprint more than double the national average and four times that of someone in the poorest 50%.¹¹³

There is a wealth gap between high and low earners, between old and young people, and also between white people and people of colour.¹¹⁴ Opinion surveys find good public support for wealth taxation.¹¹⁵

An OECD report¹¹⁶ highlights a strong case for using wealth taxes to tackle wealth inequality and sets out a number of design recommendations including setting thresholds high so that only the very wealthy are taxed and reducing other taxes, such as income tax, to make a wealth tax more acceptable. France, Norway, Spain and Switzerland have wealth taxes and Iceland had a temporary wealth tax in response to the 2008–9 recession.

In the UK, Inheritance Tax and Capital Gains Tax address an element of wealth at key moments when an asset is transferred to another owner, and are both reserved matters. Since much wealth is tied up in property, a proxy wealth tax is Council Tax – which is set by local authorities. The Scottish Land Commission says that only 12% of Scottish public sector revenue across reserved and devolved taxes is raised through taxes fully or partially levied on land and property.¹¹⁷ There has been a long debate about the fairness of Council Tax and what might replace it – but little substantive progress towards an answer.

The recent Reform Scotland paper on the future of taxation¹¹⁸ called for radical reform to meet the twin challenges of an ageing population (fuelling pressures on public services) and tackling climate change. In particular, it advocated a shift from taxing income to taxing wealth, finding that a net wealth tax would be efficient and environmentally just, and could raise significant revenue.

They also found that, even though wealth has grown significantly, the revenue from taxes which address it have remained relatively static, and the taxes on wealth that do exist often charge lower rates to the wealthier. For example, they quote this example on Inheritance Tax: *“reliefs that can be exploited by the very wealthy mean that the average effective rate paid by estates worth over £9 million is significantly lower than that paid by estates worth between £2 million and £9 million.”*

Median Household Wealth by type of wealth, Scotland
2018–2020 (£)

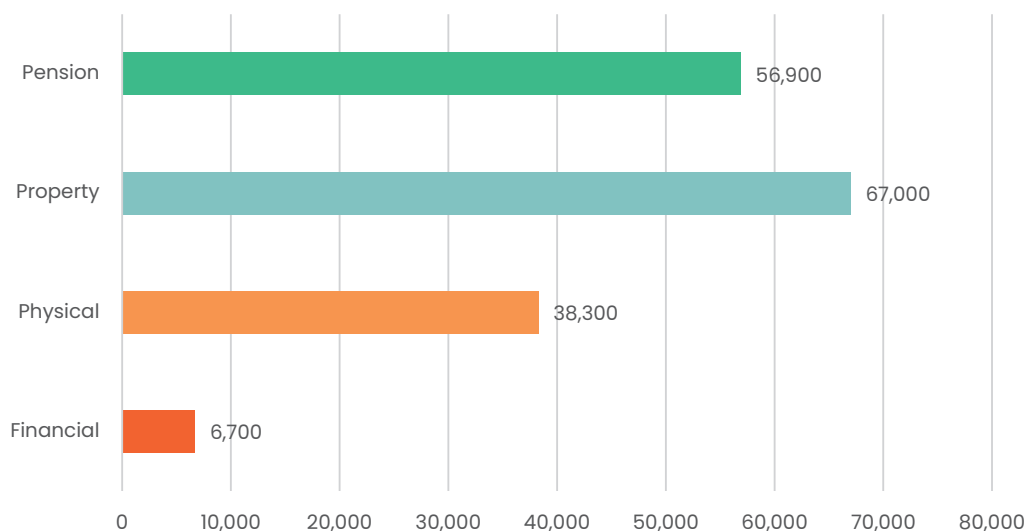


Figure 9:
Wealth by
type of wealth
in Scotland
2018–2020
from Scottish
Government
figures.

They called for a “comprehensive consideration” of wealth taxes at the Scottish level. If a UK Wealth Tax is not likely, a fully-fledged Scottish Wealth Tax would only be possible by a further devolution of powers. However, a locally-administered and spent Wealth Tax on land and/or property would be within the Scottish Government’s current powers – and warrants further consideration.

Under devolved powers, a Land Value Tax used to fund local public projects would address wealth to some extent, as recommended by Reform Scotland in 2015.¹¹⁹ A project of the David Hume Institute recently called for a commission to look at how Council Tax might be replaced by a locally-based land tax.¹²⁰ Another suggestion in this area, from the Tax Justice Network, is for a local inheritance tax.¹²¹

Reform Scotland do not suggest a figure but say that a wealth tax could bring in significant income. Council Tax currently brings in over £2.5bn, so that would need to be the minimum starting point for any new tax(es). The independent UK Wealth Tax Commission¹²² recommended a one-off wealth tax that might raise £260bn, proportionately likely to raise more than £20bn in Scotland. A 2021 study from the University of Greenwich¹²³ found that a wealth tax on the 1% wealthiest people in the UK – those with net wealth over £3.4m – would bring in £70bn–£130bn a year, depending on the level of tax avoidance.

In a recent paper,¹²⁴ the economic justice campaigner Richard Murphy proposes taxing new pensions and ISAs to fund the Green New Deal package of environmental measures. In his formulation this could raise £100bn a year in the UK.

Whatever approach is adopted, to deliver on the principle of climate justice, those with considerable wealth must contribute to the raising of additional finance for climate action.

2.3 Redirecting tax breaks and subsidies for high-carbon activities

RECOMMENDATION 8 – remove tax breaks and subsidies from the fossil fuel industry, including those for decommissioning, and spend this money on activities to support climate justice.

Revenue redirecting and behaviour change, controlled by the UK Parliament

It would seem obvious that the first thing to do in trying to reduce emissions is to stop subsidising the things that increase emissions.

The offshore oil industry pays little tax because they receive very large tax breaks, including to fund the decommissioning of rigs and pipelines, and for further exploration. The UK’s domestic fossil fuel subsidies are estimated at £13.6 billion a year, most of this as tax reductions.¹²⁵ The same analysis ranked the UK 11th out of 11 OECD countries for transparency on fossil fuel funding. The result is that the UK has one of the lowest effective tax rates on offshore oil and gas profits in the world, with the Treasury receiving less than \$2 a barrel in 2019 compared to the nearly \$22 for every barrel in Norway.¹²⁶ This subsidy massively undermines the UK’s stated goals on climate change.

The Observer found that Shell and BP paid no corporation tax or production levies on North Sea oil operations between 2018 and 2020, while claiming tax reliefs of nearly £400m.¹²⁷ BP’s half year profits for 2022 were £11.4bn, the second highest ever.¹²⁸ The equivalent figure for Shell was £9bn.¹²⁹

The UK Government has recently introduced a temporary Energy Profits Levy of 25%, potentially raising £5bn, but this also gives an 80% exemption for companies that invest in further oil and gas production, thus creating *another* tax break which incentivises creating extra climate change emissions.¹³⁰

Removing subsidies for the oil and gas industry would free up tens of billions to use elsewhere. Safeguards would be needed to ensure the loss of subsidies was not simply recouped from higher prices. These changes would no doubt be phased in over time and would need to be firmly linked to the Just Transition for workers and communities dependent on the industry.

BOX 8 – Oil and gas installation decommissioning

The cost of decommissioning the oil industry structures in UK waters is officially estimated to be nearly £50bn.¹³¹ Unlike for almost any other industry the UK Government is committed to paying a large fraction of this cost from the public purse – currently estimated at over £18bn¹³² – by giving up to 70% tax breaks to the industry for decommissioning work. And, for any company that goes bust, the tax payer will pay the whole bill.

The Scottish Government has consulted on guidance on how the Polluter Pays Principle should be applied to make sure clean-up cost do not fall on the tax payer¹³³ and one of the polluter pays examples it gives is about decommissioning of industrial installations:

“Providing for decommissioning liability – the future costs of decommissioning a site can be provided for through a bond or fund, ensuring that the costs are paid for from the money raised by the activity itself and not by future public funds, for example the Nuclear Liabilities Fund.”

Of course, this is not the case for the decommissioning of oil and gas infrastructure. The current scheme was devised in the 1970s to attract the oil industry to UK waters and is the antithesis of the Polluter Pays Principle.

Tax reliefs for decommissioning work should be removed, but safeguards against ‘artificial’ bankruptcies would have to be built in.

Other public money funding high-carbon areas of activity include road building, subsidies/ funding for aviation and exemptions from the Climate Change Levy for energy-intensive industries. Some of the biggest subsidies are for land management and agriculture and these are discussed below. Public money is also funding supposedly low-carbon developments, principally the development of Carbon Capture and Storage, although Stop Climate Chaos Scotland would argue this money would be better deployed in support of known solutions to reliably reduce emissions quickly.

2.4 Carbon Tax

RECOMMENDATION 9 – introduce a Carbon Tax with revenues used to reduce taxes on labour.

Revenue raising and strong behaviour change, controlled by the UK Parliament

A carbon tax is often viewed as the most efficient way to reduce emissions as it applies a fee on activities depending directly on the level of carbon emissions they generate. The International Monetary Fund has said that carbon taxes are *“the most powerful and efficient, because they allow firms and households to find the lowest-cost ways of reducing energy use and shifting toward cleaner alternatives.”*¹³⁴

A carbon tax represents the strongest possible implementation of the Polluter Pays Principle, but there would need to be protections for lower-income households who tend to spend a higher percentage of their income on heating and transport.¹³⁵

The Climate Assembly envisages a broad carbon tax that affects the price of everything that individuals buy, with the money raised returned as a dividend to the individual. More normally a carbon tax increases the cost of high-carbon products or services, such as road and heating fuels, so the ‘dividend’ comes as the saving from using less of these. It is often proposed that the revenue is used to make employing people cheaper or more attractive by reducing employers’ National Insurance rates and/or Income Tax rates.

A study by the Fraser of Allander Institute in 2012¹³⁶ used an economic model to look at the introduction of a more focused carbon tax on the use of some fossil fuels in Scotland. They looked at taxing the use of coal, oil and gas directly, with the rate based on the carbon content of the fossil fuel. Thus goods and services provided in Scotland would become more expensive if they were produced or provided using fossil fuels. They found that using the tax revenue generated by this carbon tax to reduce taxes on labour resulted in a fall in carbon emissions and a rise in both GDP and employment. Specifically, a carbon tax of £50 a tonne of carbon dioxide was modelled to bring in £1.6bn a year and reduce income tax rates in the long run

by 5%, increasing employment by 1.1% and GDP by 0.8%. Not surprisingly, employment in fossil fuel industries fell and it rose in lower-carbon manufacturing, services, utilities and transport, because of the reduction in employment costs and structural changes in the economy, which offset any fuel and raw material cost rises.

There are already a number of measures that look like carbon taxes in operation. The UK Emissions Trading Scheme (ETS) is a carbon trading scheme, which applies to the emissions of large businesses at about 100 sites in Scotland. The current price for an allowance of 1tCO₂e is around £80.¹³⁷ The Climate Change Levy (CCL) applies to the price of energy for industrial users but it is not based on carbon content (see box 10 on p.45). Both the UK ETS and CCL schemes have significant exemptions or reductions built in. Elsewhere, in the power sector, the UK-wide Carbon Price Support tax was introduced in 2013 and raises money from fossil fuels used to generate electricity, raising £1bn in 2017. It has different rates based on the carbon emissions of using that fuel and so is a form of carbon tax.

Fuel Excise Duty is also an energy tax but not a pure carbon tax since the duty is the same for diesel and petrol even though diesel has lower carbon emissions per mile. In the past, the duty on diesel has been lower because of climate concerns and then higher because of changing knowledge about impacts on local air pollution.

Domestic gas and electricity have no tax on their sale other than 5% VAT but there is a levy on electricity prices for schemes which deliver energy efficiency in homes and support renewable energy. If there was a carbon-based tax on domestic fuel, gas would become more expensive relative to lower carbon intensity electricity, as would be the case if the environment and social levies were on gas bills instead of electricity bills.

Nineteen European countries have some form of carbon tax.¹³⁸ Sweden's carbon tax is the highest in Europe at \$137/tCO₂e (£117/tCO₂e) in 2021. It was introduced at the same time as a reduction in income tax and applies only to transport and heating fuels, and is said to have led to an 85% drop in fossil-fuelled heating since 1990. Austria plans to introduce new carbon taxes that will fund tax cuts for low – and middle-income workers.

In the Scottish context, the SPICe report¹³⁹ concluded:

“There appear to be no ‘silver bullets’ available, however moving towards an overarching simplified carbon tax, that could be applied universally across the economy, could be the most efficient, fair and effective tax measure in relation to supporting progress to net zero.”

A Scotland-specific carbon tax would need an exemption from the UK Government under the UK Internal Market Act, as it would impose different taxes on some goods and services in Scotland compared to the rest of the UK.

BOX 9 – The real price of carbon

When you put a meaningful price on climate emissions, people and businesses start to make different decisions. The UK Emissions Trading Scheme uses a market, with a minimum price, to arrive at a price for carbon and, at the time of writing this was about £80 for a tonne of carbon dioxide equivalent. The scheme is effectively capped at £100 a tonne.

There is also a social or shadow cost of carbon, a price which no-one actually pays but which can be used in government policy making to understand the carbon consequences of decisions in monetary terms. It is supposed to reflect the real economic harm from climate impacts. The estimated value has often been too low to make much of a difference or the calculations have not been taken seriously. The 2006 Stern Report¹⁴⁰ put the value at \$85/tCO₂e (£46/tCO₂e in 2006). The US government currently uses \$51 a ton (approximately £38/tonne); the Trump administration used \$3–\$5 a ton. A recent estimate for a price which would help deliver net zero emissions in the US is \$77–125/tCO₂e (£66–107/tCO₂e).¹⁴¹ The UK Treasury recommends a 2022 value of £124–£373/tCO₂e, with a central estimate of £248/tCO₂e, as the necessary value to deliver on the UK's Net Zero target.¹⁴² The central estimate rises to £280/tCO₂e by 2030 and to £326/tCO₂e in 2040.

Note that neither the UK ETS nor any other current fiscal measure, places a real value of anything like £248 on a tonne of carbon emissions, leading to painfully slow progress in reducing real-world emissions.

2.5 Public sector pensions

RECOMMENDATION 10 – take public sector pension investments out of fossil fuels and encourage the funds to invest in projects like social housing and renewables in Scotland.

Revenue raising, controlled by local authorities

The public sector's direct emissions are relatively small at 2.3% of Scotland's emissions in 2020, but it has a strong role in leading by example and controls many of the local levers, such as planning and transport decisions, that shape the carbon-intensity of their citizens' lives.

One area where the public sector could be leading by example is in relation to pensions. Most of the public sector, and many third sector organisations, have their pensions with the 11 Scottish Local Authority Pension Funds, with the Strathclyde fund being the second biggest public sector pension scheme in the UK. These funds currently have a total of around £1.2bn invested in fossil fuel companies around the world.¹⁴³ That £1.2bn could instead be invested in energy-efficient social housing, funding public transport or creating green infrastructure in Scotland, guaranteeing a good return to the pension funds and simultaneously doing social good in Scotland. The Falkirk scheme has invested £30m into social housing locally without explicitly linking it to taking money out of fossil fuels¹⁴⁴ and several English schemes have invested in local renewables instead of fossil fuels. In London, pension organisations are working together in a fund aiming to invest £300m into affordable housing, community regeneration, digital infrastructure and clean energy around the city.¹⁴⁵

Policy changes could be made in a matter of months. Even if the climate change arguments do not prevail, fossil fuel investments look increasingly volatile and risky, so there has been a general movement among investors, first out of coal, then out of all fossil fuels.

Despite passing relatively strong climate emission legislation, the Scottish Parliament's own pension fund also has investments in fossil fuels.¹⁴⁶ In contrast, most Scottish universities and churches, and many NGOs, have already divested from fossil fuels.

2.6 Procurement

RECOMMENDATION 11 – mobilise public sector procurement expenditure to address the climate emergency

Behaviour change, controlled by the Scottish Parliament and public bodies

Public money should produce public good and should incentivise and reward action that helps meet climate and nature targets. Wider public support through grants and access to accreditation schemes should also be aligned to Scotland's climate ambitions.

It is essential for public bodies to take responsibility for the emissions they generate, even indirectly through their purchasing. Positively, East Renfrewshire Council recently included their scope 3 emissions – the wider impact of the Council's activities, particularly from the goods and services purchased¹⁴⁷ – in their annual climate change reporting under the public body duty in the 2009 Climate Act. They found that this tripled the emissions for which they were responsible.¹⁴⁸

Scottish Government monitoring¹⁴⁹ shows that the public sector in Scotland spent £13.3bn in 2019–2020 on goods and services, with the largest spend within Scotland, of £2.3bn, going to construction. 66% of this spend was by local authorities, 18% by central government and 11% by the NHS. 67% of public bodies provided evidence in their annual procurement reports that their regulated procurements have been carried out "with regard to" environmental wellbeing and climate change.

This spend is a big lever which could drive change in society to reduce the level of emissions created by the purchase of everything from buildings to vehicles and from food to medical supplies.

There was a Procurement Reform (Scotland) Act¹⁵⁰ in 2014 which imposed a Sustainable Procurement Duty to use procurement to try to improve the economic, social, and environmental wellbeing in an area, involve Small and Medium-Sized Enterprises (SMEs) and the third sector, and promote innovation. There is also now a Climate and Procurement Forum which aims to "provide leadership and direction to enable traction against the 2019 to 2020 Programme for Government commitment to mobilise procurement spend to support

*the climate emergency response and to identify and commission targeted activities and work streams which will help influence and empower buyer, supplier and key stakeholder communities in taking climate action.*¹⁵¹

There is new guidance for Scottish public bodies on procurement. The Bute House Agreement promises a consultation on rules that suppliers for the largest contracts must themselves be on a carbon reduction track which is consistent with Scotland's national targets. However, progress has been slow. In a survey of all 32 local authorities' reports on their climate emissions, only East Renfrewshire Council had included the impact of their procurement.

As well as specific measurements of environmental impact, procurement procedures could also be rewarding businesses which have a business accreditation related to climate change, such as the voluntary climate component of the Scottish Business Pledge.¹⁵²

The Climate Emergency Response Group (CERG) made specific proposals to better harness the power of public procurement in Scotland in support of emissions reduction:¹⁵³

- Enforce the incorporation of carbon and whole life costing into all public sector investment and spending decisions by 2024.
- Demand and drive early adoption of best practice procurement standards through increasingly ambitious targets and conditions within government funding criteria. Show public sector leadership in decarbonising its buildings and circular procurement.
- Ensure robust public sector net-zero action plans mandate the purchase of low carbon, circular economy products and services.

CERG also suggests that Scotland needs to:

- Mandate the incorporation of carbon and whole life costing into all public sector corporate investment and spending decisions by 2024. This should be supported by detailed corporate guidance, standardised methods, evidence, and case studies published throughout 2022 by the [Scottish Government's] Procurement Directorate and Climate Policy Team.
- Explore the potential of standardised, internal carbon pricing (i.e., a theoretical or assumed cost per ton of carbon emissions) for public sector purchasing, drawing on lessons learned and experiences from the private sector and building on updated 'Green Book'.
- Public and private sector bodies applying for government funds should be required to adhere to minimum conditions on alignment with net-zero targets (using a standardised method), support to local supply chains and Fair Work conditions from 2022. This could involve a government-sponsored accreditation scheme to verify SMEs' net-zero plans. Increasingly ambitious targets and standards should be built into the essential funding criteria and outcomes for publicly funded schemes and contracts.
- Make the Net-zero Public Sector Building Standard mandatory in a phased approach for all public sector new build and refurbishment projects by 2024, with a resourced plan to build capacity across the public sector to meet the standards.
- The forthcoming Circular Economy Bill should set clear targets and milestones for improving circular procurement. This should be accompanied by a circular economy network to build capacity and mandatory training for all public sector leaders and procurement staff.
- Enterprise support targeted at supply chain innovation and to help diversify businesses into providing the circular goods and services that the public sector requires.
- Publish shared guidance on how the public sector should define net-zero, and a clear methodology for determining Scope 3 emissions and rules for offsetting by end 2021. This will inform public sector route maps which should include sufficient levels of detail, milestones, and choice-editing. These will mandate budget holders and procurement staff to purchase low carbon and circular economy products and services.
- Strengthen accountability and feedback mechanisms to assess public sector progress against delivering their net-zero targets and plans, with potential role for Audit Scotland.

Improvements in procurement do not raise money but redirect billions to be better aligned for climate and nature, and potentially increase the proportion spent in Scotland because transport distances become a more significant factor. The public sector is a big spender on products and services in Scotland and has an important role in leading by example on making more pro-climate choices.

If the assessment for East Renfrewshire Council is generally applicable across Scotland, then procurement by public bodies is currently responsible for around 8MtCO₂e a year. Just doing that procurement 25% better could save 2MtCO₂e a year, equivalent to knocking 5% off Scotland's total direct emissions. Efficiencies and economies of scale through maximising collaborative approaches among public sector bodies could also reduce costs and give more collective influence over supply chains. Investment is needed to better equip our public bodies to make sustainable procurement choices, through the provision of training, specialist staff and central advice points.

Even following improvements to procurement approaches, where products or services are still provided from overseas there should be an obligation to assess the supply chain impacts on climate vulnerable communities. Where the UK Government or its public bodies procure goods or services in Scotland, similar considerations should apply.

Local authorities also have licensing powers, for instance for taxi operators, which could be used to drive emissions reductions.

2.7 Sustainable Wealth Fund

The Royal Scottish Geographical Society has suggested the creation of a Sustainable Wealth Fund in Scotland,¹⁵⁴ mirroring the \$1trillion fund in Norway generated from oil revenues. The Society suggests tax revenues from renewables could flow into this Scottish Fund, and then be used to support climate action now and for future generations. It suggests that fossil fuel heavy industries – oil, aviation, cement, etc – could be challenged to “kick-start” the fund with voluntary contributions in the short term. These contributions could also be generated through one-off or on-going fiscal measures, although the latter could tempt the government to resist phasing out fossil fuel industries.

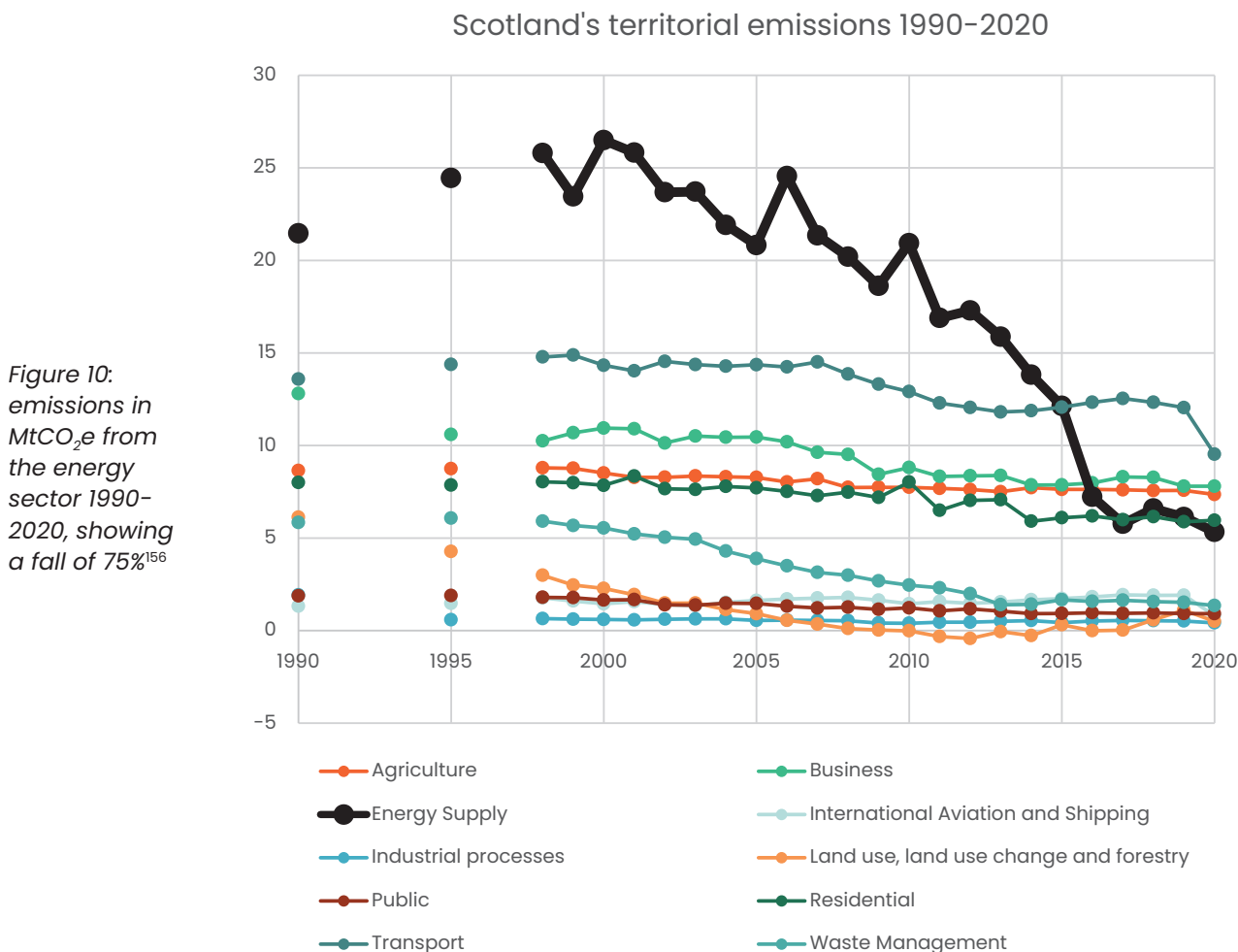
RECOMMENDATION 12 – as a first step, the Scottish and/or UK Government should work with the Royal Scottish Geographical Society to further develop their proposal for a Sustainable Wealth Fund.

Revenue raising, controlled by the UK and Scottish Parliaments

The following chapters look at particular measures in each of the sectors covered by the Climate Change Plan (in their same idiosyncratic order), covering a range of revenue raising and behaviour change measures.

3. Energy

Emissions from the Energy Sector cover emissions from fuel combustion for electricity and other energy production sources, and fugitive emissions from fuels.* Emissions fell 75% between 1990 and 2020.¹⁵⁵



The electricity sector is a big success story in Scotland in reducing emissions, thanks to the growth of renewable energy and the closure of Scotland’s two coal-fired power stations. Electricity now accounts for about a fifth of our energy use, and non-electricity energy use also appears in other sections of this report.

In the midst of an energy cost of living crisis it is galling to realise that Scotland ought to be well placed to avoid the worst of the price rises. Our electricity industry has been through a major transition away from fossil fuels, with renewable energy schemes supplying the equivalent of 97% of our electricity demand in 2020. However, electricity is traded regionally and internationally. Therefore, the price of UK grid electricity is closely related to the rising cost of gas, even though Scotland’s one remaining fossil-fuel power station – the gas-fired station at Peterhead – produces rather little of our electricity. Because electricity prices are

* The emissions from the oil and gas industry that take place offshore are not included in Scotland’s totals. In 2020 this came to an additional 3.6MtCO₂e for venting and flaring from offshore installations and most of another 3.8 MtCO₂e from exploration, production and transport of oil and gas.

artificially high the Treasury predicts that UK gas producers and electricity generators may make £170bn in excess profits over the next two years.¹⁵⁷ Similarly, we have our own oil industry and their costs have not risen significantly, but this has been no buffer to big increases in the price of road fuels and gas for heating because oil and gas are also internationally-traded commodities.

Fiscal measures that already apply in the energy sector include the UK Emissions Trading Scheme (see Business and Industry Chapter below), the Climate Change Levy (see box below) and tax breaks for the oil and gas industry. Domestic energy customers also pay VAT on both gas and electricity, as well as green levies on electricity bills – applied to help provide investment for insulation and other energy efficiency measures, and to support incentives for renewable energy.

BOX 10 – Climate Change Levy

The Climate Change Levy (CCL)¹⁵⁸ was introduced in 2001 and is an energy tax which applies to most industrial, business, agricultural and public service energy users except transport. Originally new renewables were exempt but this provision was removed in 2015. A reduction of around 90% can be negotiated by qualifying industries if they sign a Climate Change Agreement – a voluntary agreement to reduce emissions in a sector. Thus, most energy-intensive industries escape paying most of the levy. Fossil-fuelled power stations pay at a reduced rate, and the steel industry has been completely exempt since 2013.

The levy is about 25% higher for electricity than gas, providing an incentive for businesses to stick with fossil fuels, although the gap between the two is being reduced over time. The CCL is not a carbon tax, it is an energy tax with built-in protection for high emitters, incentives to use fossil fuels and no social protections.

The main barriers to further progress in the energy sector include the proposed new gas-fired power station at Peterhead, which could see both the old and new plants running with neither of them capturing any carbon, the potential rebuild of the Grangemouth oil refinery and the slow speed of renewables deployment. The renewables industry says there is no shortage of investment capital but that central and local government processes can take a long time, pointing to a lack of capacity among local authorities and statutory consultees.

In the EU, a revision of energy taxes¹⁵⁹ aims to make taxes more clearly aligned with the carbon-content of the fuel. This would reverse the current situation where, in general, coal is taxed less than gas and electricity has high taxation. While useful in principle, this will be a difficult discussion with member states who range from those still dependent on coal to those with high use of renewables. There is also a significant danger that the revision will be used to favour gas and nuclear, following the recent EU decision to call these ‘green’ for investment purposes.¹⁶⁰

3.1 Meaningful windfall taxes

RECOMMENDATION 13 – increase windfall taxes on the fossil fuel industry and remove the perverse tax break for increasing production at the expense of the environment.

Revenue raising and behaviour change, controlled by the UK Parliament

Costs have not risen greatly for North Sea operators but the prices they sell their oil and gas for are much higher because of the war in Ukraine. Without a windfall tax, the oil industry in the UK was expected to make an additional £12bn in profit in 2022.¹⁶¹

António Guterres, UN Secretary General, described the record profits of oil and gas companies globally as immoral and talked of the “grotesque greed” of the fossil fuel companies.¹⁶²

The UK Government has introduced an Energy Profits Levy on profits of 25%, potentially raising £5bn over the next year and to be phased out by the end of 2025. But the new Levy allows an 80% exemption for investments in further oil and gas production, creating another tax break which incentivises creating extra climate change emissions. BP has said clearly that the windfall tax would not affect their North Sea investment plans.¹⁶³ The Labour Party has proposed backdating the levy to raise the total revenue to £8bn.¹⁶⁴ The LibDems have called for a windfall tax raising £20bn.¹⁶⁵ Scotland’s Climate Secretary Michael Matheson has

backed extending the UK windfall tax on the oil and gas industry and also applying a tax to other industries.¹⁶⁶

BP's half year profits for 2022 were £11.4bn, the second highest ever.¹⁶⁷ The equivalent figure for Shell was £9bn.¹⁶⁸

The new Prime Minister has ruled out extending the windfall tax, proposing to fund a £150bn cost of living measure from borrowing instead.

The Energy Profits Levy needs to be reviewed against the UK's Net Zero commitments. This should result in it being adjusted to bring in more money and to remove the exemption for new fossil fuel production. In addition, the existing tax breaks for the industry need to be phased out as the UK delivers a Just Transition out of oil and gas production and use.

Likewise the UK's domestic energy supply companies are charging much more for their electricity and gas, and the shifting energy price still allows them to make profit. The big six electricity firms have made profits totalling £7bn in the last five years.¹⁶⁹ The Treasury predicts that UK gas producers and electricity generators may make £170bn in excess profits over the next two years.¹⁷⁰ Meanwhile, those rising prices are driving the cost of living crisis with energy bills already more than doubled – applying deep financial pressures to household budgets.¹⁷¹ Ofgem's price cap methodology includes a 1.9% profit margin for energy companies.¹⁷² This is under review¹⁷³ and it would be easy to argue that, at a time of an unprecedented cost of living crisis, the energy companies should forgo any profit at all.

The European Commission has proposed a cap on energy prices from nuclear and renewable electricity producers, who have not seen costs rise but are selling their electricity at the current high market prices.¹⁷⁴ Together with a windfall tax on fossil fuel producers the measure is expected to raise €140bn (£121bn).

Further windfall taxes on the fossil fuel industry or a new windfall tax on energy company profits could create a double dividend if the revenues generated are dedicated to home energy efficiency and heating system programmes as this would help to lift people permanently out of fuel poverty while also reducing climate emissions. The Committee on Climate Change calculated that UK consumers would have saved £1 billion on their energy bills in 2022 if UK energy efficiency schemes had continued as originally planned rather than being cut back by the UK Government.¹⁷⁵

See also separate measure about ending perverse subsidies.

3.2 Community low carbon heating

RECOMMENDATION 14 – provide government incentives and support for local authorities and social housing providers to work with communities to develop low carbon heating systems in neighbourhoods.

Behaviour change, controlled by the Scottish Parliament

This is a recommendation from the Climate Assembly¹⁷⁶:

“The action should lead to collaborative working opportunities with local authorities, individuals, community and local businesses to develop innovative responses to neighbourhood heating needs. Working together with communities in this way will address the community's needs, and ensure the right solutions are put in place for each neighbourhood ... A wider benefit of this action is that it may create local job opportunities and apprenticeships meaning that the investment stays in the local community.”

District heating schemes use one central heat source to pipe hot water to a network of domestic and/or business heat users. In Denmark, there are 440 large district heating networks, with over 60% of all homes connected to them.

There are already over 1,100 heat networks in Scotland, from a single boiler supplying a number of flats in one building to projects serving hundreds of properties.¹⁷⁷

Together, Scotland's existing heat networks currently supply about 1.5% of our heat demand but there is a target to increase this to 8% by 2030, equivalent to an additional 650,000 homes being connected to heat networks. This target was set in the Heat Networks (Scotland) Act 2021¹⁷⁸ which introduced a new regulatory framework and has spawned a Heat Networks Delivery Plan.¹⁷⁹

There is a £300m Heat Network Fund¹⁸⁰ available over the course of this parliament, which is open to community groups among others. The Scottish Government estimates new heat networks will save 1.1-1.2MtCO₂e by 2030, and more when all those networks are powered by renewable energy.

An assessment carried out for the Scottish Government¹⁸¹ identified 200 potential new heat network zones in Scotland including up to 340,000 homes and 74,000 non-domestic properties.

A study by Climate Exchange¹⁸² looked at 109 feasibility studies or proposals for district heating schemes. The majority aimed to supply heat to homes, and commercial and industrial property. Of the 76 schemes with detailed information, 46 were deemed by their authors to be viable. They also identified a number of main barriers:

- High capital costs and long payback periods of District Heating projects
- High demand risk (payback period being dependent on consumer demand)
- Lack of District Heating technical knowledge and skills in the industry
- Lack of investment interest and lack of investor involvement in the process
- Lack of realistic business cases and delivery/procurement models
- Lack of stakeholder and consumer awareness and lack of stakeholder buy-in

On community engagement, the Scottish Government's Heat Networks Delivery Plan says:

"We will support the development of community engagement and ownership or co-ownership of small heat networks where these are appropriate with a tailored package of support, handholding and advice, through our Community and Renewable Energy Scheme (CARES), delivered by Local Energy Scotland."

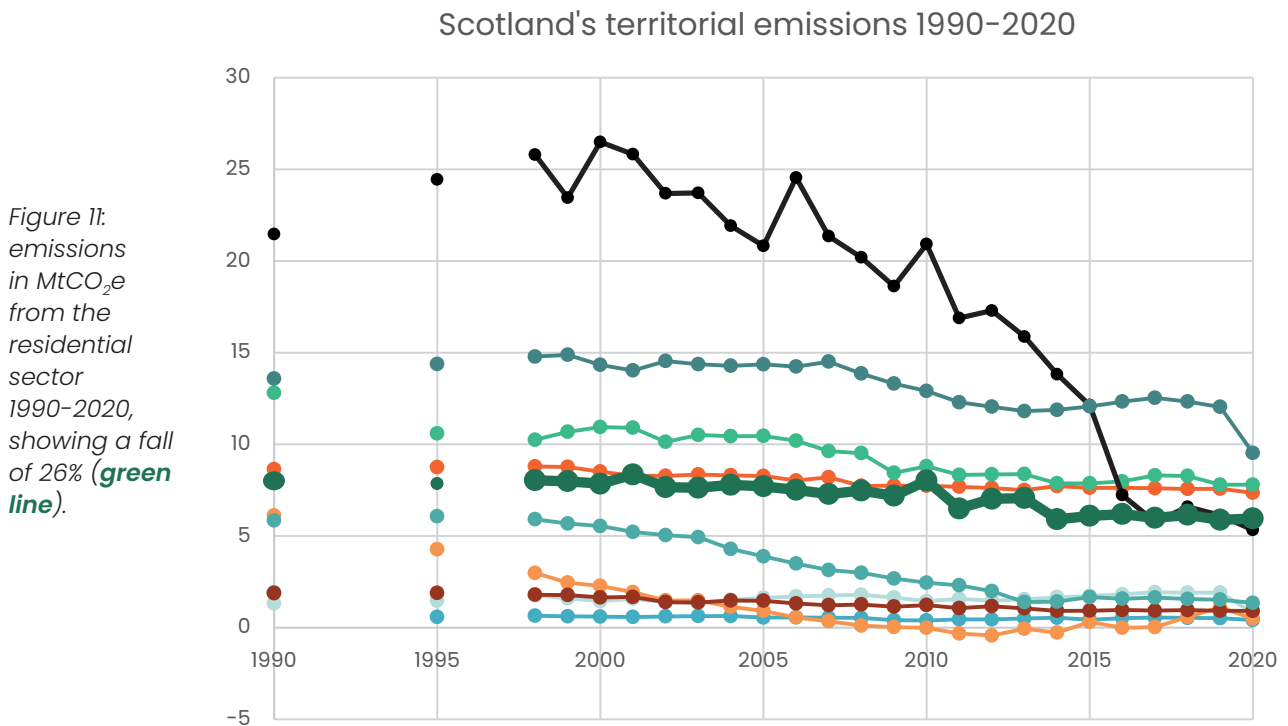
Although specialist support is available to communities through CARES, for anything but the smallest scheme, it is clear that a community group would need to partner with a local authority or other body. This could be facilitated, for instance, by providing specific resources for local authorities to work with community groups in developing proposals and applying for funds together.

Measures will also need to tackle the 'landlord-tenant' problem, where it is a landlord who would have to pay for improvements to a property but they have no incentive to do so because it would be the tenant who gains the savings on bills.

See also the measure on greater support for heat pumps.

4. Buildings

Emissions from the Buildings Sector cover emissions from fuel combustion for heating and cooling and garden machinery, and fluorinated gases released from aerosols and metered dose inhalers. Emissions fell 26% between 1990 and 2020.



The top priority in reducing emissions from buildings is to improve the efficiency of each building, next priority is to change heating systems over to zero-carbon technologies. The Bute House Agreement¹⁸³ between the Scottish Greens and the SNP commits to the majority of homes achieving an energy efficiency of EPC C or better by 2030, and all homes reaching this level by 2033.

The Scottish Government is committed to spend £1.8bn over this Parliament on its current programme of work in the area of energy efficiency improvements to homes and the installation of zero carbon heating systems. The Heat in Buildings Strategy¹⁸⁴ will require over a million homes and the equivalent of 50,000 non-domestic buildings to be using zero-emissions heat by 2030.

The 1 million homes target includes around 312,000 homes which already have low-carbon heating systems. An additional 170,000 homes currently heated by oil, LPG or solid fuel will also need to be converted.

The measures in the current strategy include heat pumps, connection to heat networks, electric storage heaters and hydrogen heating systems. The latter is unlikely to be supported by Stop Climate Chaos Scotland since there are more strategic uses for limited supplies of hydrogen.¹⁸⁵

Energy efficiency retrofit work and replacing heating systems already benefit from a reduced or zero rate of VAT on materials, although this is sometimes not as straightforward as might be hoped. Land and Buildings Transaction Tax has numerous reductions – from those offered to

first time buyers to those relating to lighthouses – but none are related to the energy or carbon efficiency of the property.

In the longer term, the Scottish Government estimates that the total gross cost to deliver zero emissions for all buildings (including heating systems) by 2045 is £33bn, although householders would have spent about £5bn replacing heating systems in this time anyway.¹⁸⁶

There are wider benefits of making this investment. Reducing fuel poverty reduces costs on the NHS, with one estimate suggesting that every £1 spent on reducing fuel poverty saves the NHS 42p.¹⁸⁷ With the April price cap revision Energy Action Scotland estimated that 36% of homes in Scotland were in fuel poverty, an increase of 43% on the 2019 figures, with rates over 40% in many local authority areas.¹⁸⁸ Any measures aiming to reduce emissions from homes must also contribute to reducing levels of fuel poverty. As mentioned above, measures will also need to tackle the ‘landlord-tenant’ problem, where it is a landlord who would have to pay for improvements to a property but they have no incentive to do so because it would be the tenant who gains the savings on bills.

In the UK electricity costs are closely related to gas costs through international market prices, even though, in Scotland, only 10% of our electricity came from gas-fired generation in 2020 and we have our own oil industry. Electricity is about four times more expensive than gas for the same amount of energy content, so gas-fired heating systems seem cheap to run compared to electric systems like heat pumps. The UK government has recently floated the idea of making electricity cheaper in regions where it is produced from renewables.¹⁸⁹

Domestic electricity bills have a levy on electricity prices for schemes which deliver energy efficiency in homes and support renewable energy. If there was a carbon-based tax on domestic fuel, gas would become more relatively expensive relative to electricity, as would be the case if the environment and social levies were on gas bills instead of electricity bills. Either of these measures would strongly encourage heat pumps over gas boilers. This rebalancing of price signals is essential if people and businesses are to be expected to make the pro-climate choice.

The Climate Change Committee calculated that UK consumers would have saved £1 billion on their energy bills in 2022 if rates of home insulation had continued at their 2012 level, and the zero-carbon homes standard* had come into force in 2016 as originally intended.¹⁹⁰ The German government has allocated €177.5bn over the next four years to climate action, much of it on retrofits to the most inefficient housing.¹⁹¹

On new homes, Alex Rowley MSP has proposed a Member’s Bill which would increase the standards in building regulations on new builds to Passivhaus standards.¹⁹² The extra cost to build more efficient homes might be built into Green Mortgages – a growing area of funding and incentives for energy efficiency improvements.¹⁹³ Like energy prices, the operation of mortgages are matters reserved to the UK Government. An important additional element to any new rules on new housing would be to require standards to be high enough that a future resident could not find themselves in fuel poverty in any foreseeable circumstance.

The two closely-related measures in this section cover energy efficiency retrofits for existing homes and then, more specifically, increasing the deployment rate of heat pumps. They are both based on a very significant acceleration of existing Scottish Government plans and initiatives, and will require government support for supply chains and workforce development and clear commitments about the direction and scale of travel.

* The 2007 Building a greener future: policy statement required all new homes to be ‘zero carbon’ by 2016. In July 2015, after nine years of discussions with housebuilders and the gearing up of the supply chain, the policy was dropped by the Treasury six months before its expected implementation in an attempt to speed up housebuilding.

4.1 Zero emissions homes

RECOMMENDATION 15 – make a grant (or loans for higher earners) available to ALL homeowners in Scotland as soon as possible to bring their homes to zero emissions standards by 2030, starting by prioritising homes in fuel poverty

Behaviour change, controlled by the Scottish Parliament

This is a specific recommendation of the Climate Assembly but with the addition of *loans* for higher earners.

The Climate Assembly said:

“We know that 80% of homes that people will be living in by 2050 already exist and do not meet modern and future energy efficiency requirements. This recommendation is important therefore, because an ambitious plan is needed to ensure that all existing housing stock can be retrofitted by 2030.

“We believe the plan must be developed and the implementation overseen by an independent non-profit body that is able to work with all stakeholders to ensure sufficient funding and quality assurance. The implementation of the plan will make a significant impact on reducing Scotland’s carbon emissions (e.g. heating Scotland’s homes accounts for 15% of total emissions).

“This plan must also incorporate adaptations to hazards such as floods and extreme weather which may occur in the future. Doing this will also make a positive contribution to the health & well-being of the population (including cost savings for the NHS), and will provide much needed employment opportunities. It will also be an important contribution to lifting people out of fuel poverty by reducing fuel bills and making homes more economical.”

The current rapidly rising energy prices provide a strong extra impetus to this measure which would be a very large acceleration of existing plans in the Heat in Buildings Strategy,¹⁹⁴ which aims to reduce emissions from buildings (i.e. more than homes) by 68% by 2030, have all homes reach an energy efficiency rating of EPC C by 2033 and phase out fossil fuel boilers, with a further target of zero emissions from homes by 2045.

The current main mechanisms to deliver home energy efficiency and replace heating systems are the Home Energy Scotland loan and cashback scheme, the local authority area-based schemes and the Warmer Homes Scotland grant scheme. The Bute House Agreement¹⁹⁵ between the Scottish Government and the Scottish Green Party Parliamentary Group says that the existing grant scheme will be replaced to “*support energy efficiency and zero emission heat improvements*” in 2022/3. Successful schemes like Kirklees Warm Zone combine grants or loans with advice services, area-based approaches that deal with whole streets at a time and economies of scale to reduce costs.¹⁹⁶ A key element of success in that project was the leadership provided by the local authority.

For those in fuel poverty upgrades of efficiency and heating systems should be free. For those able to pay some element of grants is still likely to be appropriate but the main mechanisms should be loans, repayment through bill savings and green mortgages. A reduction in Land and Buildings Transaction Tax could also be used to incentivise energy efficiency upgrades.

As with current schemes, those on lower incomes would get the most help and the first priority. This scheme would be a very big step on the way to eliminating fuel poverty as well as reducing NHS costs related to home-related ill health. It will also create energy sector jobs as part of the Just Transition. The government’s current programme is predicted to create 16,000 extra jobs by 2030.

4.2 Accelerate heat pump deployment

RECOMMENDATION 16 – significantly boost the current Scottish Government’s heat pump installation programme

Behaviour change, controlled by the Scottish Parliament

While insulating homes should be the top priority, swapping fossil-fuelled systems for zero-carbon heating systems is the second priority in decarbonising homes.

The current Scottish Government programme has a target of over 1 million homes with low or zero emissions heating systems by 2030, plus an additional 170,000 currently heated by oil, LPG or solid fuel, up from a total of 312,000 today.

Installations of zero emissions heating systems, mainly air source heat pumps, have been running at around 3,000 a year and this will need to rise to 200,000 a year by the end of the decade to deliver on the Scottish Government’s target of 1 million homes. There are about 2 million homes that use gas for heating in Scotland. To convert them all by 2030 would require installation rates to increase to 400,000 a year. To convert 1.5 million would require a rate of 300,000 a year. These increased rates would require an increase in the current commitment of £1.8bn of funding over this Parliament.

This kind of acceleration to installation levels would require a very large extra effort on training the necessary workforce, including training grants and attracting people back into the profession, as well as making this a priority just transition route for people leaving the oil and gas industry. It would also need more encouragement for manufacturers but the good news is that Mitsubishi already make 300,000 heat pumps a year in Livingston. And crucially the Scottish Government needs to give the market confidence by showing that its own programmes are going to create a large and consistent demand for heat pumps over the next decade.

The residential sector is one of the largest sources of territorial emissions, at 6MtCO₂e a year for space and water heating. Eliminating this entirely, through a combination of energy efficiency retrofit and switching heating systems to zero-carbon, would remove 15% of Scotland’s current emissions.

One area in which to look for rapid gains is the nearly 600,000 homes in Scotland rented from social landlords – local authorities and housing associations. The Scottish Government is providing £200m in funding for net zero projects over the next five years to this sector.¹⁹⁷ The Zero Emissions Social Housing Taskforce¹⁹⁸ acknowledged the role of heat pumps but asked government to help social landlords have confidence in the technology.

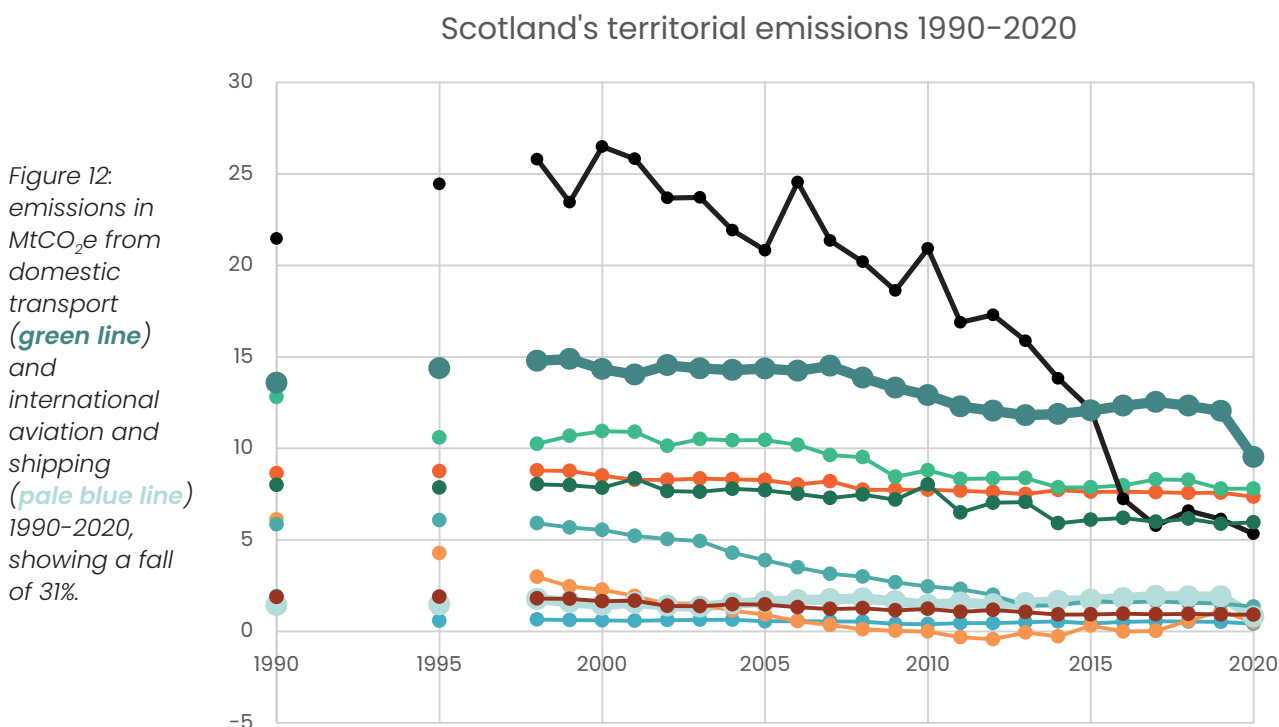
The Scottish Government has established a Green Heat Finance Taskforce to look at how to fund this transition from public and private sources.¹⁹⁹ This is due to publish an interim report in March 2023. They are also working with the industry on a secure supply chain and a Sector Deal is being developed with the heat pump industry.²⁰⁰

In Sweden a carbon tax on heating fuels makes a heat pump much cheaper overall than a gas boiler.

This measure is closely related to the one on grants and loans for home energy efficiency retrofits.

5. Transport

Emissions from the Transport Sector cover emissions from domestic aviation, road transport, railways, domestic navigation, fishing and aircraft support vehicles, and international aviation and shipping. Emissions fell 31% between 1990 and 2020, mostly because of COVID-19 restrictions in 2020.



Our current transport system imposes a range of external costs on society: environmental – climate change, air and noise pollution, damage to wildlife; social – community severance, ill health and road crashes, and economic – congestion, road repair costs and health costs.

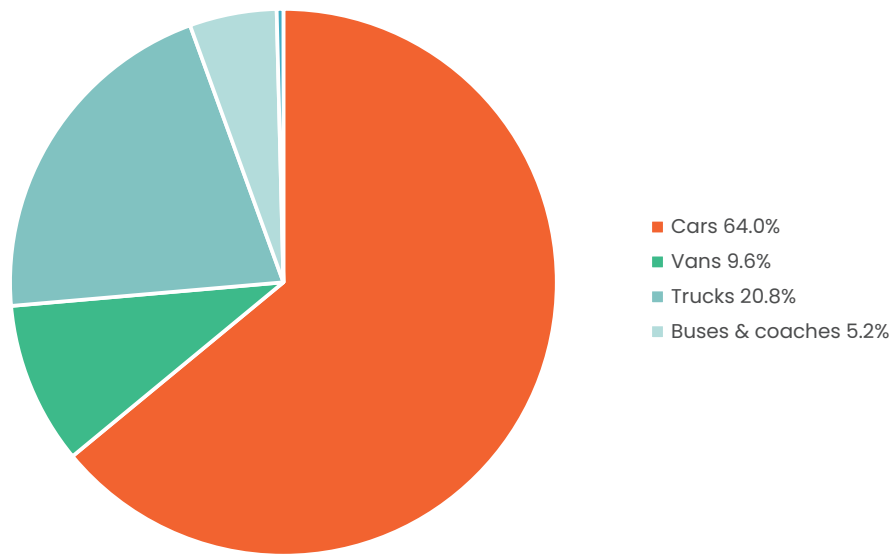
Road transport overtook the energy industry as the largest sector of emissions in 2015 and, until COVID, emissions were showing little sign of reducing. COVID-related changes caused a temporary drop of more than 20% in emissions. In 2019 – the last pre-COVID-19 year – 64% of road transport emissions came from cars.

Electric vehicles are a part of the solution but just replacing all the fossil-fuelled vehicles with electric vehicles would not reduce crashes or congestion, nor prevent planning decisions being based around private car transport, nor even completely solve local air pollution issues.

The Scottish Government has a number of strong policy commitments on transport: a 20% reduction in distance travelled by car by 2030, phasing out of new petrol and diesel cars and vans by 2030 and heavy vehicles by 2035 and the majority of public service buses to be zero emission by 2023.

Road Transport Emissions 2019

Figure 13:
transport
emissions in
MtCO₂e by
vehicle type
in 2019.



In 2019 Fuel Duty raised £27.5bn for the UK Treasury, over £16bn from cars. Together Fuel Duty and Vehicle Excise Duty make up 4% of total tax revenues to the Treasury and both are in decline as the fleet electrifies. An electric vehicle pays neither duty. It is generally expected that some form of road pricing will be introduced to compensate for this lost tax revenue. Currently any form of national road pricing that might be proposed would be a reserved matter, but Scottish local authorities have, as yet unused, powers to introduce local road pricing from the 2001 Transport Act. The Welsh Government's new transport strategy proposing using road pricing to fund public transport improvements.²⁰¹ Measures which reduce car access or increase driving costs need to take account of low-paid workers who currently have to travel by car, for example, hospital shift workers.

Currently public money subsidises public transport, funds loans to buy electric cars, gives grants to buy electric buses and funds local authority delivery on active travel. And people driving the wrong vehicle in one of Scotland's four low-emission zones will be fined.

Scotland is due to control Air Departure Tax (ADT), the Scottish replacement for Air Passenger Duty. There will be bands within the Duty for different distances of flights. The same power could potentially be used to introduce a Frequent Flyer Levy, through or replacing ADT. For domestic flights, 90% are taken by just 2% of the UK population and nine out of ten people never take one.²⁰²

The Climate Assembly said a Frequent Flyer Levy: *"aims to address the unfairness of frequent flyers causing disproportionate emissions. One way we think it could work would be, for example, allowing people one return journey untaxed per year anywhere in the world, and then any additional flights would incur a frequent flyers tax."*²⁰³

While consideration would be needed as to how a Frequent Flyer Levy relates to Scotland's island communities, such a levy would strongly adhere to the Polluter Pays Principle, and so warrants serious consideration. However, below we focus on two additional transport measures.

5.1 Free public transport

RECOMMENDATION 17 – public funding for free public transport (bus and train) anywhere in Scotland.

Behaviour change, controlled by the Scottish Parliament

Under-22s, over-60s and many disabled people already have free bus travel anywhere in Scotland, with 40% of the Scottish population now included. Some island residents have limited free ferry travel and some people buy into concessionary schemes, eg family railcards, although these are a commercial offering from the operators rather than a scheme subsidised by public funds.

The extension of free travel would be intended to reduce car traffic and car ownership in the long term and therefore climate emissions and local air pollution, as well as increase access to job opportunities for the less well-off and create a more gender-just transport system. The new cheap rail pass in Germany appears to have had an immediate impact in reducing congestion in 23 out of 26 cities.²⁰⁴ Behavioural research confirms the effectiveness of free public transport in changing habits.²⁰⁵

Over 100 cities, more than half of them in Europe, have made their public transport free and all public transport has been free in the (small) country of Luxembourg since early 2020. As a response to COVID-19 and cost of living rises, Spain is making all commuter and medium rail journeys free for several months,²⁰⁶ Germany has a temporary €9 monthly rail pass and Austria has introduced a KlimaTicket annual season ticket for all public transport throughout the country for €1095, equivalent to €3 a day.

The Scottish Government already supports the public good that comes from public transport. The Scottish bus and train system were already 45% and 74% subsidised respectively by the public purse before extra support was needed during COVID-19.

Free or very cheap public transport was a proposal of the Climate Assembly and free bus travel was a 2021 election proposal from FoE Scotland. A key principle would be to make sure of a quality service for the user, with the frequency and comprehensive coverage of the system maintained and improved.

In addition to the climate case, there are strong social justice and gender justice cases for this measure. The Poverty Alliance's Everyone Aboard campaign²⁰⁷ states that: "*public transport is key to easing the financial pressures on low-income households.*" They are calling for free bus travel to everyone receiving Universal Credit (and other low-income benefits) and to all young people under 25. Engender has noted that "*women are the majority of public transport users,*" and say they "*tend to make more complex and frequent journeys due to caring responsibilities and working patterns.*" They conclude that: "*Scotland's current transport systems, however, do not reflect the different needs of women.*"²⁰⁸

A key objective of this policy would be to reduce car traffic over time. The policy in Luxembourg is part of a strategy to increase public transport use by 50% and to reduce car use by 15% by 2025. A similar reduction across Scotland's urban and motorway driving would save around 0.5MtCO₂e every year or 1.25% of current annual emissions. A behaviour change of this size would deliver a very significant contribution to the Scottish Government target of reducing car-km by 20% by 2030.

This measure would also reduce the costs to society of congestion (approx £700m in 2019), crashes (~£900m in 2019) and building car-based infrastructure. A 15% reduction in congestion and crashes would save society around £240m a year. Using a Social Cost of Carbon of £248/tonne yields an additional (theoretical) saving of £124m. This would also save people money by eliminating fares, and reducing car operating costs, with most of these savings likely to be spent in the local economy.

In the financial year 2018-19, bus and coach travel received £314m of public funding while ticket revenues brought in £380m. The extension of the free bus travel to under 22s is expected to shift this balance further away from ticket income. The Scottish Government funding for ScotRail and the Caledonian Sleeper in 2019-20 was £989m.²⁰⁹ For ScotRail alone this figure was a subsidy of £526m and ticket revenue of £360m.²¹⁰

In essence Scotland could have the same bus and ScotRail train services as pre-COVID-19 but completely free for everyone at an additional cost of around £750m a year. This would mean doubling the current public funding. Only making the buses free would cost about £350m.

This might be offset by accident and congestion savings of around £240m – some direct savings to the Scottish Government, some savings to the Scottish economy – making the net cost of free buses only a one third increase in the existing bus subsidies.

Revenue raised from Workplace Parking Levies, congestion charging and other measures which make private motoring more expensive would be a good fit to fund free or cheap public transport. There is also scope to use local tourism taxes to help fund public transport, with tourists seeing an immediate benefit from the tax they have paid.

There could be a trial in one large urban area, as suggested by the Just Transition Commission.²¹¹ Lesser options include making only buses and not trains free, applying this only in urban areas or only in rural areas, or adding further concessions to the current list with the aim of free travel for all in the long-term.

5.2 Workplace parking levies

RECOMMENDATION 18 – use the powers in the 2019 Transport Act to introduce Workplace Parking Levies (WPL) in Scotland’s larger urban areas, with the revenue raised dedicated to public transport and active travel investment.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

A scheme of this type in Nottingham has raised £83m in its first decade, all of which has gone back into transport improvements in the city, principally the provision of electric buses and the extension of the tram network.²¹² The scheme covers around 40% of the workplace parking spaces in the city, with employers providing more than 10 spaces currently paying £458 for each parking space included in the scheme.²¹³ Evidence is clear that people on higher incomes are more likely to drive to city-centre work with a dedicated free parking space. However, any workplace parking levy should be carefully designed to prevent employers from unfairly passing on the cost to low-paid workers for whom car use is essential to the delivery of their work.

The aim of the scheme would be to reduce car commuting. Firms might also decide to reduce their number of employee parking spaces so that they reduce costs or fall below the 10 space threshold.

The powers to implement this measure are in the hands of local authorities but so far only Edinburgh and Glasgow are actively considering introducing a WPL. In Edinburgh about 31,000 spaces, eventually charged at a similar rate to the Nottingham scheme would bring in about £14m a year, with Glasgow estimating £30m for a city-wide scheme. The Scottish Government could work with local authorities to help fund the development and delivery of schemes. The Glasgow scheme is estimated to cost £1m–£1.6m to set up.²¹⁴

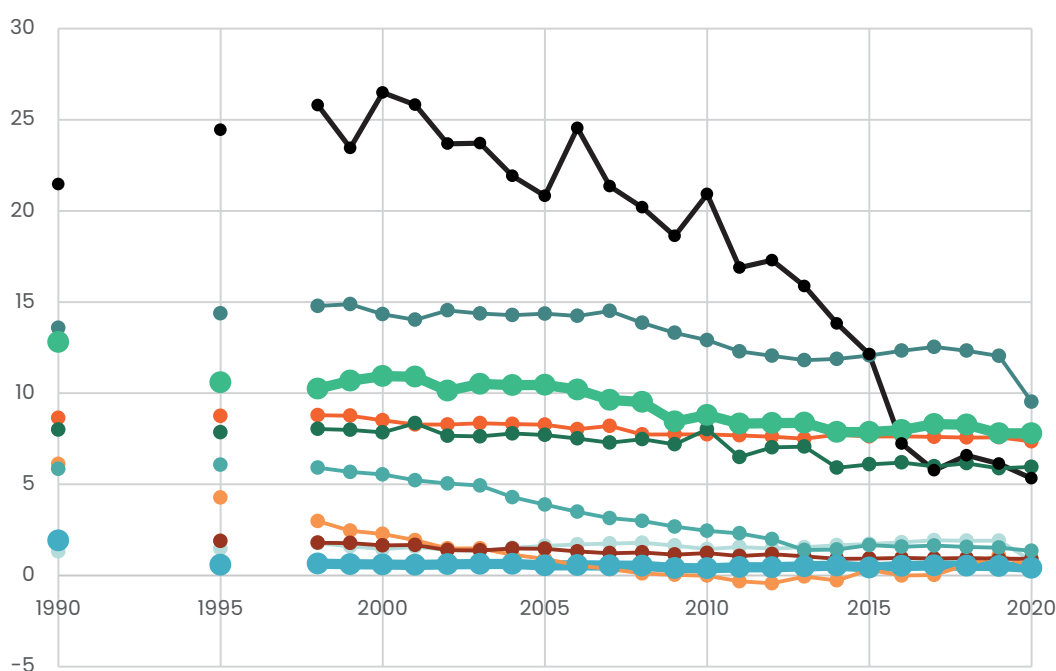
Further measures could introduce a levy on parking at retail/leisure parks, and a review of parking charges more generally could lead to an increase in revenue and a decrease in car trips to urban centres.

6. Business and Industry

Emissions from the Business Sector cover emissions from fuel combustion and product use in industrial and commercial sectors, and F gas emissions from refrigeration and air conditioning in all sectors plus industrial off-road machinery and emissions from the Industrial Processes Sector cover emissions resulting from industrial processes, except for those associated with fuel combustion which are included in the Business sector. Combined emissions from these sectors fell by 44% between 1990 and 2020, most of this because of the closure of much of the steel industry in the early 1990s.

Scotland's territorial emissions 1990-2020

Figure 14: emissions in MtCO₂e from the business and industry sectors 1990-2020, showing a fall of 44%. Business (green line) and Industrial Processes (blue line).



Some larger businesses are part of the UK ETS and others will already be paying the Climate Change Levy (CCL) on their electricity and fuel bills. The UK ETS covers energy intensive industries, the power generation sector and aviation for flights departing from or arriving in the UK. It covers around 100 participants in Scotland, accounting for 28% of Scotland's greenhouse gas emissions.²¹⁵ Fossil-fuelled power stations pay the CCL at a reduced rate, and the steel industry has been completely exempt since 2013.

At the Scottish level, for Non-Domestic Rate (Business Rates) there are specific reductions already available for district heating, renewable energy and hosting reverse vending machines.²¹⁶ At the UK level, Corporation Tax reliefs are available on electric cars, hydrogen refuelling equipment and EV charging points. The Scottish Government, in partnership with Zero Waste Scotland, provides support to small and medium-sized Scottish businesses to reduce energy and resource costs through 'green' SME loans.

Some industries, like steel and cement, are considered hard, or at any rate expensive, to decarbonise. For the steel industry, there is plenty of work coming up in recycling steel from decommissioned offshore oil industry structures, and there is at least one proposal for an electric arc furnace to do this work,²¹⁷ but the economic case is hard to make without government assistance because of high energy prices.²¹⁸

In their tax framework document, the Scottish Government says:²¹⁹

“We will ensure that Scotland continues to offer a competitive Non-Domestic Rates package, which both supports businesses to recover from the pandemic and promotes a green recovery as we strive to meet our net zero emissions target.”

Measures include supporting district and hydropower generators with tax relief until 2032, although the system is failing some small hydro operators.²²⁰

There are around 220,000 non-domestic buildings in Scotland, accounting for 6% of Scotland’s total climate emissions. About twice the proportion are in the lowest energy efficiency bands compared to domestic properties. CERG²²¹ proposed a business rates relief for energy efficiency work when expanding or improving a building, as well as a boiler scrappage scheme.

In mid-2021, 38% of UK businesses reported that they are taking at least one action to reduce their greenhouse gas emissions, while 24% reported that they are intending to act in the next 12 months.²²²

6.1 Business rates and climate change

RECOMMENDATION 19 – link the level of business rates to a business’ carbon footprint

Behaviour change, controlled by the Scottish Parliament and local authorities

Starting with the need for mandatory emissions reporting, this measure could drive improvements in businesses from chip shops to sporting estates. Likely to be designed to be fiscally neutral overall, there would be winners and losers but not a big income stream.

This measure would extend current business rates reliefs to a business’ carbon footprint.

Some businesses will be part of the UK ETS or paying the Climate Change Levy on their electricity and fuel bills. These are both UK schemes, so this additional element of payment or reduction on business rates would be an additional Scottish carbon-valuing measure to further incentivise climate emissions reductions.

There would need to be a graded approach based on business size. The CBI supports the use of business rates to drive energy efficiency and green technology, although their support was only about *lower* business rates.²²³

Some assessment tools and services exist but there would need to be a centralised co-ordination of standards and systems to assess business footprints. Including Scope 3 emissions – those created indirectly within a company’s value chain²²⁴ – in a later phase of implementing the measure would help businesses understand the carbon footprint of their supply chain, although the uncertainties involved in calculating these would mean this would not necessarily be used to influence their level of business rates.

At the UK level this approach could be applied through Corporation Tax. A system just in Scotland would need to deal with any confusion between business landlords and the business itself.

6.2 UK Emissions trading scheme

RECOMMENDATION 20 – given Scotland’s climate targets are more ambitious than those at UK level, the UK Emissions Trading Scheme needs to put industry in Scotland on track to deliver a fair share of Scotland’s climate targets, which means reducing allowances faster than needed only to meet the UK’s targets and also reducing the amount of free allowances allocated at a faster rate than at the UK level. Free allowances for the oil and gas industry should be scrapped.

If a new scheme is created for fuel use in buildings, as in the EU, an equivalent mechanism to the proposed EU Social Climate Fund is needed to protect low-income households and ensure costs are not passed on to them.

Revenue from the scheme should be ring-fenced for carbon-saving activity and international climate finance.

Linking the UK and EU ETSs, as has happened for the EU and Switzerland, makes sense to increase efficiency in reducing emissions and to avoid the risk of carbon border taxes being applied to trade with the EU.

Revenue raising and behaviour change, controlled by the UK Parliament

The UK ETS replaces the EU ETS for UK businesses. It is a ‘cap and trade’ system. So there is an annual cap on the number of allowances in the scheme and participants can trade with each other or participate in auctions to gather sufficient allowances to cover the emissions for which they are responsible. An allowance is worth 1tCO₂e. The amount of allowances in the scheme decreases every year as total allowable emissions decrease. Many industries including fossil fuel extraction and aviation are given free allowances, totalling nearly half of all allowances. It is particularly egregious that in 2022 oil platforms in UK waters are allocated 3.2 million free allowances, amounting to a hidden subsidy to fossil fuel extraction of around £250m a year.²²⁵

The UK ETS covers energy intensive industries, the power generation sector and aviation for flights departing from or arriving in the UK. It covers around 100 participants in Scotland, accounting for 28% of Scotland’s greenhouse gas emissions.²²⁶ A range of industries can claim compensation for the impact of the UK ETS on their production costs.²²⁷

The scheme is administered by the UK ETS Authority, made up of the four nations of the UK.

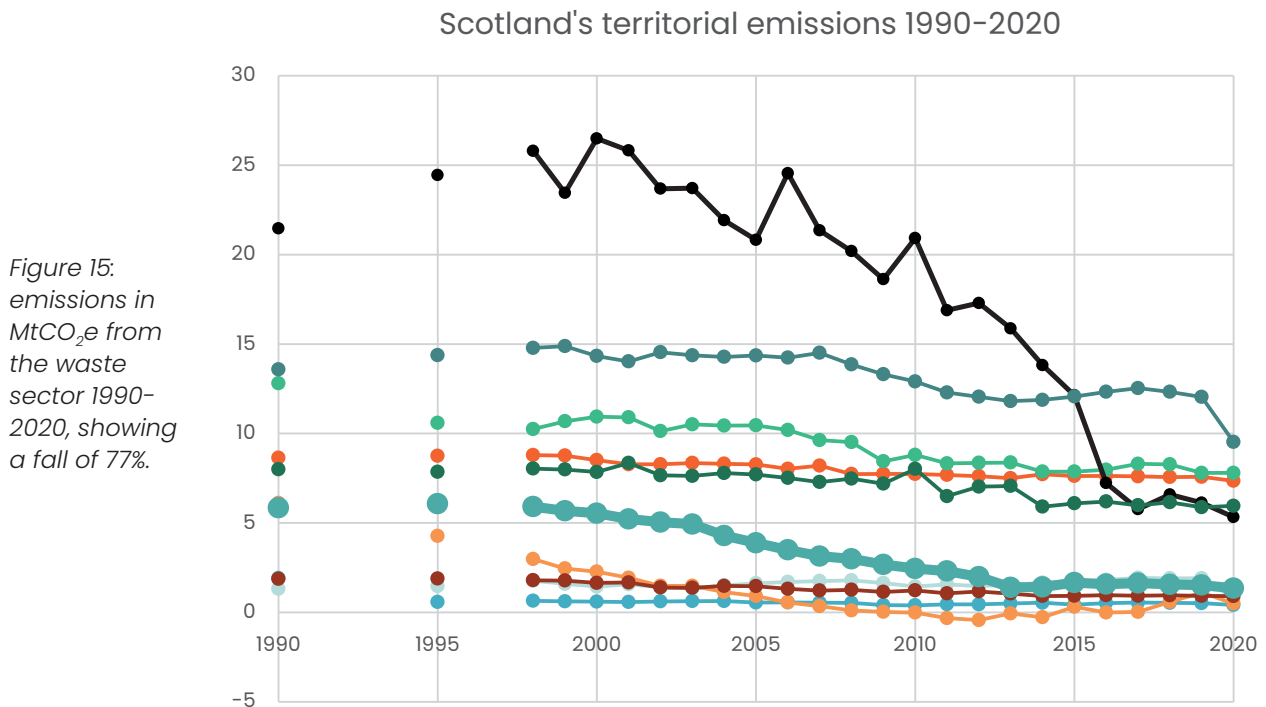
The UK scheme started with a cap on carbon 5% tighter than the EU scheme. When the scheme opened in May 2021 the price of an UK ETS allowance was £47/tCO₂e, a year later it was £78/tCO₂e.²²⁸ The Treasury brought in £1.4bn in revenue from the auctioning of allowances in 2020 in the EU scheme.²²⁹ The revenue from the UK ETS should be ring-fenced for carbon-saving activity within the UK and international climate finance. If it is ring-fenced then it should be fairly apportioned between the devolved nations.

The UK Government has just finished consulting on the future of the scheme,²³⁰ including on reducing the amount of allowances more sharply to align with the UK’s net-zero target, reducing the number of free allowances given out, covering more than just carbon dioxide and introducing a border tax on imports from countries without a similar price on carbon. They also consulted on including maritime transport and waste into the scheme, but not buildings and road transport, as currently proposed in the EU.

It is still unclear whether there will be a formal link between the UK and EU scheme, and whether the UK scheme will definitely implement the accelerated pace of change proposed for the EU scheme. Linking the two schemes should reduce the administrative burden of the EU’s proposed Carbon Border Adjustment Mechanism (see Chapter 1). The EU is also planning to introduce a separate Emissions Trading Scheme for heating and transport fuels from 2026, and Germany introduced such a system last year. There has been concern about rises in energy bills for poorer households from the inclusion of buildings in the ETS,²³¹ which the EU has tried to address through a Social Climate Fund targeting the less well off.

7. Waste and the Circular Economy

Emissions from the Waste Sector cover emissions from waste disposed to landfill sites and the treatment of waste water. Emissions fell by 77% between 1990 and 2020.



The official figures for emissions from the waste sector look impressive with a 77% fall since 1990. This is in large part because methane which used to simply escape from active and closed landfill sites is now captured to make electricity. But the figures are misleading because emissions from incinerating waste are not included, despite much of the emissions coming from fossil-fuel-based plastic.

Including our demand for goods from overseas, our total climate footprint, or consumption emissions, only reduced by about 30% between 1998 and 2018, and this external component makes up 82% of our total carbon footprint.²³² The 2009 Climate Act requires the Scottish Government to periodically measure and report on this global carbon footprint but not to actually do anything to reduce it. Scottish Environment LINK are calling for targets to reduce material consumption, as in the Netherlands, to be included in the Circular Economy Bill, a call supported by a number of Stop Climate Chaos Scotland members.²³³

The Landfill Tax has been both a success and a failure (see box 4 on p.26). It has been a success in that a clear price signal about increasing future cost has driven a large drop in the amount of waste being disposed of in landfill sites. It has been a failure because instead of this waste being diverted to re-use and recycling, or overall waste volumes decreasing, much of the waste that used to go to landfill is now destined to be incinerated, recovering some energy but wasting the actual materials. Recycling rates are plateauing around 45%, despite a target of a 70% rate by 2025. Meanwhile, Wales is achieving a rate of about 65%, on the way towards the same 2025 target. Wales is also banning new incinerators and setting a date to phase out existing ones. The Scottish Government has recently decided to allow no more incinerators after the ones currently in planning and construction.

The Landfill Tax could be extended to become a more general Disposal Tax, paid by businesses directly rather than by the firm which does the eventual disposal at a landfill or incinerator. This would drive increases in waste minimisation and recycling.

The Landfill Tax is a tax on waste. At the other end of the production cycle there are taxes on energy but few taxes on raw materials.

The Scottish Government's 2016 circular economy strategy 'Making things last'²³⁴ was much lauded but has failed to deliver very much of substance. The forthcoming Circular Economy Bill gives an opportunity to introduce new measures from 2023.

7.1 Extended Producer Responsibility schemes

RECOMMENDATION 21 – introduce additional Extended Producer Responsibility schemes

Behaviour change, controlled by the UK and Scottish Parliaments

An extended producer responsibility (EPR) scheme shifts the responsibility of dealing with the environmental impacts of a waste product from the consumer and waste collector to the manufacturer and/or retailer – it delivers the Polluter Pays Principle. At its most simple the manufacturer is obliged to fund collection, reprocessing and disposal schemes for their products. Much better is if it can drive product redesign for easier remanufacture, lighter products and use of materials with less environmental impact. With 82% of Scotland's global carbon footprint caused by the goods and services we consume, EPR is a powerful tool to drive better product design and more re-use and recycling.²³⁵

A modified version of a recommendation from the Climate Assembly is:

"Introduce extended producer responsibility requirements to [improve] product design e.g. materials, production processes, so that the full costs of lifetime product emissions and disposal/repurposing are included in the price – including imported products. Introducing this legislation would ensure that the manufacturer takes responsibility for the TOTAL carbon footprint & emissions of a product. This should lead to manufacturers designing and making products that last longer, are repairable and upgradeable. This should mean that people will need to replace expensive items less frequently. Consumer electronics, in particular mobile phones, should be prioritised. It will also reduce the carbon footprint of products by discouraging the use of non-reusable components."

EPR schemes that operate in European countries cover tyres, waste oil, paper and card, construction and demolition waste, farm plastics, medicines and medical waste, chemicals, newspapers, refrigerants, pesticides and herbicides, and lamps, light bulbs and fittings. Schemes which are required by EU law include waste electronic and electrical equipment, batteries, end-of-life vehicles and packaging.

The 2016 circular economy strategy 'Making things last'²³⁶ announced the Scottish Government's intention to explore proposals for extended producer responsibility schemes for tyres, furniture and bed mattresses. Six years on none of these schemes have been introduced, at least in part because discussions have been bogged down on developing GB or UK schemes. The 2022 consultation on a Circular Economy Bill²³⁷ notes that the Scotland Government is working with the UK administrations to introduce EPR schemes for waste electrical and electronic equipment and for batteries in 2024 (driven by EU law).

An improved EPR for packaging, also driven by EU legislation, will be introduced across the UK in 2024 and will make producers pay for the £2.7bn annual cost of dealing with their packaging when it becomes waste. The scheme is expected to save about 4.5MtCO₂e a year. The forthcoming Scottish Deposit Return Scheme, introducing a 20p deposit for drinks' bottles and cans, is also a form of EPR. The Scottish Government proposes to develop EPR schemes for at least three other products and discussions are underway (again) on mattresses.²³⁸

7.2 Pay as you throw tax for household waste

RECOMMENDATION 22 – introduce a pay-as-you-throw tax for household waste, alongside a parallel reduction in existing payments for waste collection made through the Council Tax.

Revenue raising and behaviour change, controlled by the Scottish Parliament

These schemes are widespread in Europe, the US and Japan, where they are generally popular. They encourage people to recycle properly and may encourage some thought about reducing overall waste. Because the tax depends on how much you throw away it is very firmly linked to the Polluter Pays Principle. A scheme might for instance be set up to have the first bag of waste a week free then the householder would have to pay a tax for any subsequent bags.

Householders are already paying for waste collections through their Council Tax so once a scheme is up and running the overall cost to the average householder should be about the same but people will be paying at a level in proportion to the amount of waste they are producing. As the scheme helps reduce overall residual waste volumes, overall costs will decrease.

In Scotland, the Landfill Tax has driven local authorities to provide more extensive recycling facilities (but also increased rates of incineration). However, even where recycling opportunities are excellent, there is currently no financial incentive for the public to use them, so recycling rates may be plateauing at around 45%. The Scottish Government's Route Map for the Circular Economy Bill highlights research showing that *"householders should be incentivised to minimise residual waste to support recycling rate improvements."*²³⁹ If recycling rates increased from 45% to the Scottish Government's target of 70% there would be a carbon saving of around 0.5MtCO₂e every year.²⁴⁰

Schemes in Belgium, the Netherlands and Luxembourg use a variety of ways of making a charge from the size of a wheelie bin or the frequency of collection to the actual weight of refuse collected or the sale of refuse sacks.²⁴¹

An equitable scheme would require everyone to have good access to recycling opportunities, so that they can divert recyclable waste away from the residual waste. There would no doubt need to be some exemptions from the scheme and the scheme would need to be designed to be fair to low-income and larger households.

There is potential to create the powers to set up a pay-as-you-throw scheme in the forthcoming Circular Economy Bill. In addition or instead of this tax there could be Council Tax reductions for participating in particular schemes, such as food waste collections or textiles recycling. In Wales there is another approach, with enforced limits on the size of household bins or the number of bags of waste that will be collected to encourage households to maximise their levels of recycling.²⁴²

8. Land use, land use change and forestry (LULUCF)

Emissions from the LULUCF Sector cover emissions and removals of greenhouse gases from changes in the carbon stock in forestland, cropland, grassland, wetlands, settlements and harvested wood products, and of other greenhouse gases from drainage and rewetting of soils, nitrogen mineralisation associated with loss and gain of soil organic matter, and fires. Emissions fell by 92% between 1990 and 2020. But see below for the complexity within this story.

Scotland's territorial emissions 1990-2020

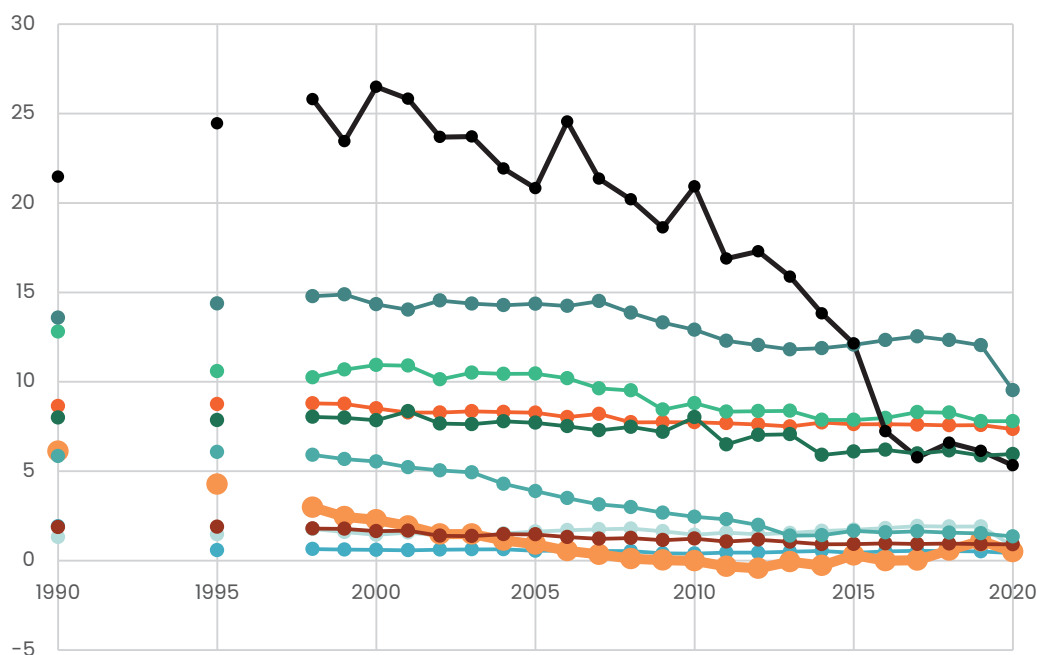


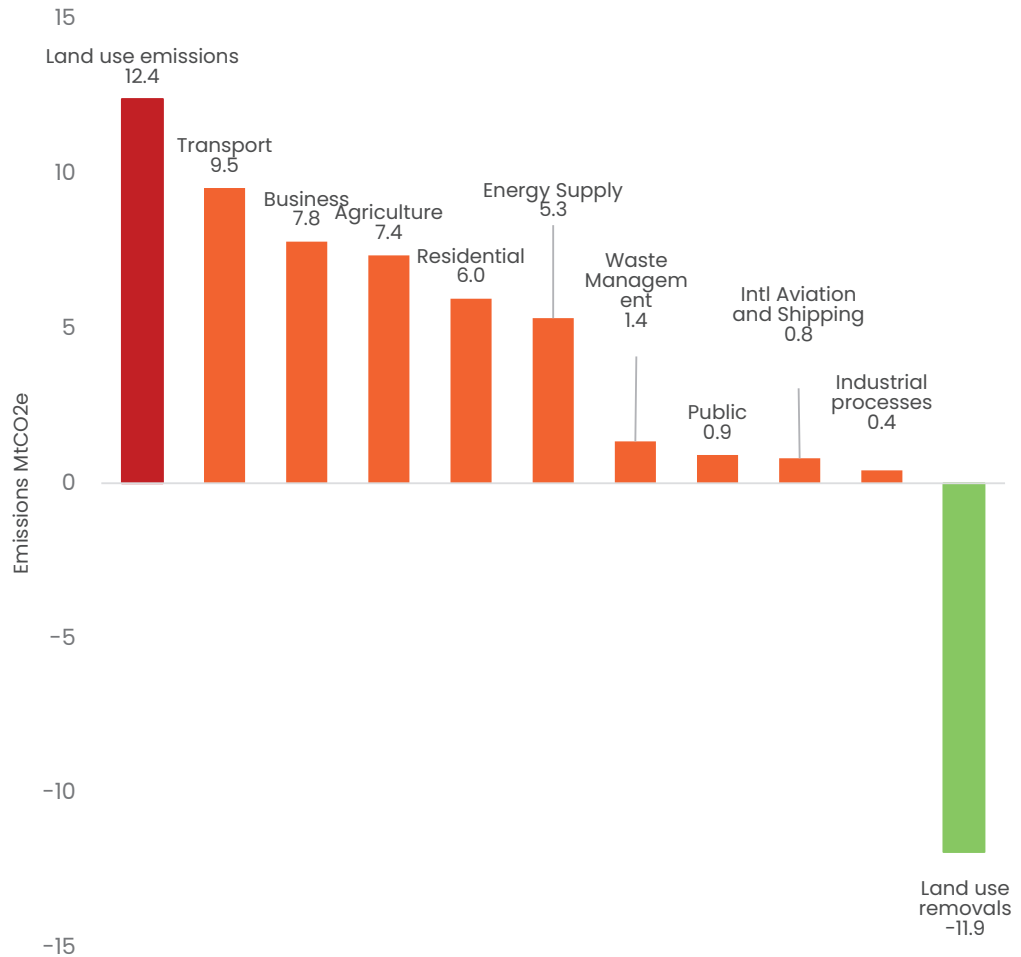
Figure 16: emissions in MtCO₂e from the LULUCF sector 1990-2020, showing a fall of 92%.

Emissions in the LULUCF category are all about what is happening to the land of Scotland. Some of the land of Scotland is absorbing carbon, some of it is releasing it on a grand scale. The net figure of $-0.5\text{MtCO}_2\text{e}$ or 1.25% of our total 2020 emissions is very deceptive. As Figure 17 shows the actual emissions from LULUCF in 2020 were $12.4\text{MtCO}_2\text{e}$, making it the highest emitting sector, with 20% more emissions than domestic transport. At the same time the land and vegetation of Scotland were also absorbing $11.9\text{MtCO}_2\text{e}$. Most of the emissions are due to changes in land use and damaged peatland, most of the removals are growing trees and healthy peatlands absorbing carbon. The science behind these figures is complex and subject to frequent revision, and some emissions and removals are not included in the figures. Nonetheless, what we do to the land of Scotland – positively and negatively – is vitally important in determining a large fraction of our overall emissions.

How we use land can also have a big impact on climate risks – reducing or increasing risks from floods, fire, drought, and plant and animal diseases – and plays a key part in Scotland's overall resilience to what climate change is going to throw at us.²⁴³

We have a lot of peaty soil in Scotland and that peat locks up a very large amount of carbon. There is nearly 25 times as much carbon locked up in Scotland's peaty soils as there is in all the trees and plants in the UK. That carbon represents the equivalent of 140 years' worth of Scotland's current total annual emissions.

Figure 17: climate change emissions and removals by sector, 2020 figures in MtCO₂e, courtesy of Andrew Midgley of RSPB Scotland.



When peatlands are in good condition they form new peat and lock in carbon from the atmosphere. But when they are degraded they release carbon back into the atmosphere. Around 80% of Scotland's peaty soils are degraded in some way, mainly by drainage and overgrazing. So how we manage them and particularly how we try to help them recover is vitally important at a local, national and global scale. The Scottish Government is putting £250m over ten years into peatland restoration work.

Currently public money paying for peatland restoration or tree planting allows landowners to sell carbon credits, keeping the revenue for themselves and potentially seeing the carbon locked up counted twice in national accounts. An alternative would be to have some or all of the revenue placed in a community-controlled local fund.

An example of exactly the wrong type of fiscal measure was the tax relief that led to extensive planting in the carbon-rich Flow Country in the 1980s, to the benefit of high-profile individuals like Terry Wogan but the significant detriment of nature and climate change.

8.1 Carbon Emissions Land Tax

RECOMMENDATION 23 – introduce a Carbon Emissions Land Tax which taxes emissions created through land use and penalises the owners of land currently emitting more carbon than it captures.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

This recommendation from the Climate Assembly was based in part on the John Muir Trust's (JMT) proposal for a Carbon Emissions Land Tax²⁴⁴ which suggests a banded tax on landholdings over 1,000ha, with the money raised funding peatland restoration and woodland creation. In their proposal a starting rate might be £1-£5 per hectare depending on land use and soil carbon content. The tax would be set up under existing Scottish Government powers, with revenue going to local authorities for local projects.

Around 60% of Scotland's land area would be covered by the scheme, with a mix of ownership among private, public and non-governmental organisations (NGOs). As well as reducing carbon emissions and increasing carbon absorption by land, a well-designed measure would also boost biodiversity, reduce flooding risk, improve water quality and increase recreational opportunities. Greater direct land management is likely to create jobs in rural areas. A report from Scottish Wildlife Trust came up with a total of over 7,000 new jobs from large-scale peatland and woodland restoration and expansion, and deer and nature management.²⁴⁵

JMT suggests this measure could be taking 6MtCO₂e out of the atmosphere every year by 2040 and estimate the tax could raise £12.5m a year. If the emissions saved were valued using the UK Treasury's social cost of carbon, the true value of the savings to society would be about £2bn a year by 2040.

JMT suggests phasing the tax in with a pilot for landholdings over 10,000ha. The forthcoming Land Reform Bill, to be introduced before the end of 2023 or the Natural Environment Bill in 2024, could be ideal opportunities to create this tax.

A 'carbon emissions seabed tax' may also be worth considering, where seabed owners, usually the Crown Estate, pay tax for allowing emissions or receive allowances if they protect or restore the seabed. Scotland's marine areas contain about the same amount of carbon as Scotland's land and are thought to lock up about three times as much carbon as tree planting every year.²⁴⁶

8.2 Woodland grants targeting climate emissions

RECOMMENDATION 24 – encouraging crofters, farmers and land managers to plant, and investors to invest in, the right sort of trees in the right places including reviewing current planting and management funding schemes to make sure they are delivering as much as possible for nature and the climate, including protecting forest soils.

Behaviour change, controlled by the Scottish Parliament

In 2021 80% of the trees planted in the UK were in Scotland with 40% of those broadleaved. Planting rates have been high in recent years but the Scottish Government's Climate Change Plan requires a 40% increase in the next few years, rising to 18,000 hectares/year by 2024-5. This is greater than the recommendation from the Climate Change Committee, although their trajectory continues to a rate of 25,000ha/yr after 2035. Increasing extremes of climate mean we will have to adapt what and how we plant in order to maximise tree survival rates.

There is also a commitment to increasing the area of native woodland planted from 3,000ha a year to 4,000ha. In 2020 RSPB Scotland, Scottish Wildlife Trust and WWF Scotland called for 50% of new planting to be native species.

The current grant schemes are grouped together under the Forestry Grant Scheme (FGS) and cover eight categories of new woodland creation and management of existing woodland, including grants for planting trees on agricultural land. The total budget for the Forestry Grant Scheme in 2021-2 was £63.3m and the Scottish Government has committed £100m to increase planting rates to reach the 18,000ha/yr target.

There is also a Scottish Government commitment to help public sector bodies to increase tree cover on land they own and manage, and to ensure the replacement for the Common Agricultural Policy (CAP) agricultural subsidy scheme includes funds for *“tree planting, orchard creation, and woodland regeneration, as well as support for the development of rural businesses linked with forestry.”*

A new report for Scottish Environment LINK²⁴⁷ analysed the effectiveness of the Forestry Grant Scheme and recommended changes to increase the nature value of forests under four themes:

- Diversification – aimed at increasing forest and woodland resilience. This can be done through the FGS supporting a broader range of species, age classes and structure in woodland/forestry expansion.
- Management of existing woodlands – incentives to increase the resilience of existing woods through restocking and enhancement of existing woods.
- Deer Management – implement the Deer Working Group Recommendations
- Natural regeneration and colonisation – increase support for management to facilitate natural regeneration of native species in existing woodlands and natural colonisation in buffer zones around the edges of existing native woods.

A report from the Forest Policy Group and the Pebble Trust, highlights the importance of forest soils but also the gaps in our scientific knowledge about carbon balances and the impact of different tree-cultivation practices. They recommend new guidance on tree planting on peaty soils and more public sector resources for monitoring of forestry activity.

9. Agriculture

Emissions from the Agriculture Sector cover emissions from livestock, agricultural soils (excluding carbon stock changes which are included in the LULUCF sector), stationary combustion sources and off-road machinery. Emissions fell 15% between 1990 and 2020.

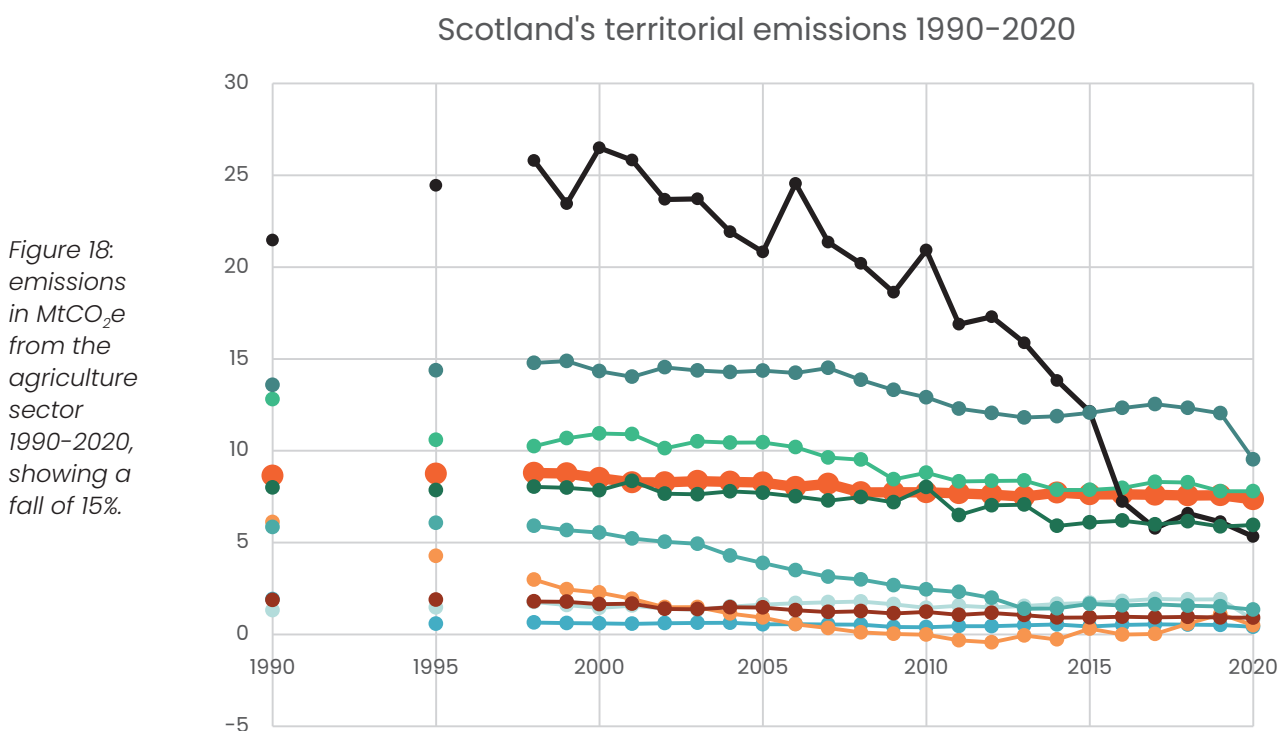


Figure 18: emissions in MtCO₂e from the agriculture sector 1990-2020, showing a fall of 15%.

Agriculture produces almost a fifth of Scotland's greenhouse gas emissions, yet agricultural emissions have only fallen 2% since 2008. More than 70% of the emissions counted under the agriculture category are to do with rearing livestock. See also the previous chapter for the importance of managing the land of Scotland for climate change and nature.

The Climate Change Committee recommends that agricultural emissions across the UK need to reduce by 34% by 2035 (from 2019 levels).²⁴⁸ The proposals for the new Agriculture Bill²⁴⁹ translate this into a 31% reduction by 2032, to match the timescale of the Climate Change Plan and promise proposals for a whole-farm emissions accounting approach in the draft of the next Plan in late 2023.

Current diets, high in meat and dairy produce, are also high carbon. The Climate Change Committee also said that "there should also be a clear plan to move to healthy and low-carbon diets."²⁵⁰ It has previously recommended a 20% reduction in meat and dairy consumption by 2030 and a 35% reduction for meat by 2050.²⁵¹ The debate about diets and livestock is usually characterised as being about reducing overall livestock numbers and concentrating on producing high quality meat and dairy produce.

A package of proposed measures for New Zealand's agricultural sector includes greenhouse gas taxes for farming from 2025.²⁵² It was developed by a partnership seeking an alternative to including farming in the New Zealand Emissions Trading Scheme.

9.1 Reforming agricultural subsidies

RECOMMENDATION 25 – reform agricultural subsidies to deliver maximum benefits for climate and nature, including protecting soil health, while producing healthy food from resilient businesses.

Behaviour change, controlled by the Scottish Parliament

This requires a radical change to the current funding priorities, with the vast majority of funding going to help farmers make and sustain the transition to low-carbon, nature-friendly farming. All public money going to support agriculture must come with environmental conditions, and there needs to be a much bigger proportion of the budget going directly to nature protection and emissions reduction initiatives. This also means a big boost for a reformed advice service, and training and knowledge exchange opportunities.

Around £600 million a year is spent in Scotland on agricultural support, and most farm businesses would not survive without public funding, so public policy has a huge influence over what farming looks like. In 2019 only 23% of this subsidy was allocated through the specific 'Greening' category.

The Climate Change Committee's 2021 progress report to the Scottish Parliament said of replacing the CAP subsidy system that the proposed Agriculture Bill in 2023 *"needs to clarify what funding will be available for land-based mitigation and sequestration."* The reform of the system is a complex balance between food production, climate emissions, biodiversity considerations and creating a Just Transition for farmers and rural communities.

The Scottish Government has said: *"from 2025, the climate and biodiversity performance of businesses will determine the level of agricultural support payments."*²⁵³ and that *"we will transform how we support farming and food production in Scotland to become a global leader in sustainable and regenerative agriculture. Scotland will have a support framework that delivers high quality food production, climate mitigation and adaptation, and nature restoration."*²⁵⁴

The Scottish Government is committed to keeping direct payments to farmers but alternatives include an income support scheme that actually relates to income or making farm businesses pay business rates with reductions for positive action on climate change. The Scottish Government's vision²⁵⁵ for the future of farming proposes that only 50% of direct payments will have climate and nature conditions attached by 2025.

The Farming for 1.5° was an independent inquiry on farming and climate change in Scotland, co-ordinated by NFU Scotland and Nourish Scotland. It involved a panel of farmers, NGOs, scientists and the main report²⁵⁶ in 2021 looked at pathways to 2032 and then to 2045.

They suggested greenhouse-gas-specific targets for the sector:

"For methane we see a reduction of 25% by 2032 through a combination of better animal health, improved genetics, early adoption of feed additives and better management of manures. By 2045 a reduction of 50% on current levels is possible through low methane breeding and widespread adoption of feed additives."

"For nitrous oxide we see a reduction of 25% by 2032 through a combination of more efficient use of bagged nitrogen, manures and slurries, an increase in the use of legumes and the reduction of nitrogen use in the large areas of land being farmed for nature."

"Nutrient budgeting, yield mapping, crop monitoring, controlled release fertilisers and variable rate application all contribute to nitrogen use efficiency. Further uptake of these measures result in a cumulative reduction of 50% in nitrous oxide emissions by 2045. In combination, this means a 55% reduction in emissions by 2045."

The report recommended that public funding should first move to general greening, encouraging practices to reduce emissions and then greenhouse gas reduction contracts for individual farms.

Scottish Environment LINK is running a 'Farm for Scotland's Future' campaign aiming to make sure the reformed subsidy system delivers for climate, nature and people.²⁵⁷ This calls on the Scottish Government to:

- Replace the decades-old farm funding system with one that works for nature, climate and people.
- Ensure at least three quarters of public spending on farming supports methods that restore nature and tackle climate change.
- Support all farmers and crofters in the transition to sustainable farming.

The proposals for the Agriculture Bill²⁵⁸ include payments to farmers, crofters and land managers to support delivery of national climate change emission reduction objectives, to support delivery of national climate change adaptation objectives, and to support integrated land management, such as for peatland and woodland outcomes on agricultural holdings. Some payment will be conditional on outcomes that deliver on climate change.

9.2 A nitrogen levy for agriculture

RECOMMENDATION 26 – introduce a nitrogen levy in farming. As a minimum the Scottish Government should honour their commitment in the 2018 Climate Change Plan to develop a target for reducing emissions from nitrogen fertiliser.

Revenue raising and behaviour change, controlled by the Scottish Parliament and/or local authorities

Nitrous oxide emissions, mainly from fertiliser use, contribute about 9% of Scotland total climate emissions, and about 60% of those come from agriculture. As the 2019 Climate Change Bill was being debated Stop Climate Chaos Scotland called for a nitrogen budget for Scotland, with targets. The Scottish Government has introduced a Scottish Nitrogen Balance Sheet²⁵⁹ – an accounting exercise to track this impact – but there are no targets. The Climate Change Plan included a commitment to look at setting a target but the monitoring report simply refers to the balance sheet and does not mention a target. In 2020 RSPB Scotland, Scottish Wildlife Trust and WWF Scotland called for the introduction of compulsory soil testing and nitrogen balance sheets on all farms.

After a big historical rise, recent nitrogen fertiliser use peaked in the 2010s and has dropped a little since then but the rate of application per hectare has been relatively flat over the last decade. The simplest form of fiscal measure would be a levy on the price of mineral fertiliser, based on its nitrogen content.

The Farming for 1.5° report mentioned above envisaged a reduction of 25% by 2032. Going further and cutting nitrogen emissions from farming by half would reduce Scotland's overall emissions by around 3% or 1.2MtCO₂e a year. There would also be an energy and climate emissions saving from the reduction in production of artificial fertiliser, at over 0.5MtCO₂e a year.

In the Netherlands a levy on nitrogen and phosphorus at levels above a set minimum has been in place since 1998. This minimum level is reduced over time. A court ruling from 2019 is driving nitrogen emissions reductions even faster in the Netherlands with a commitment of over €30bn out to 2035 for work to reduce nitrogen emissions by 50%. The aim is to reduce both greenhouse gas emissions, and local air, land and water pollution.

Experiments in Germany showed that a moderate nitrogen tax was effective at reducing fertiliser use on barley – the most common cereal crop grown in Scotland. Using the lower tax tested by the study in Germany of €0.2 per kg of nitrogen, suggests Scotland's current use of mineral fertiliser would generate about £30m a year.

Powers to introduce a Scottish levy on fertiliser use as a local tax could be included in the forthcoming Agriculture Bill on the new subsidy arrangements in 2023.

10. Scotland's contribution to international climate obligations

Scotland played a central role in the Industrial Revolution. Both in terms of our own emissions from an early date and our invention, development and supply of the machines that drove the increasing use of coal, oil and gas around the world, Scotland has a heavy historical responsibility for the state the planet is currently in. And the longer we take to cut our emissions to zero, the more we are adding to this global debt.

In numbers, between 1850 and 2021 the UK was responsible for 75GtCO₂e of direct climate emissions, making it the eighth largest contributor, responsible for 3% of all the climate changing gases emitted in that period, despite having less than 1% of the world's population.²⁶⁰

Agreements through the United Nations climate process mean that high-income countries are obliged to contribute to low-emissions development and help fund adaptation measures in low-income countries, in part through the £100bn a year pledge from the Copenhagen climate talks in 2009. In addition the same processes are looking at how the same countries should be providing funding for the loss and damage caused by climate change (see box 3 on p.20).

The UK was until recently honouring the UN commitment to spend 0.7% of Gross National Income on Official Development Assistance (ODA). Before the recent cut, this was running at £14.5bn in 2020. So, through the UK, Scotland is already contributing around £1.3bn to standard ODA funding. It is crucial that international climate finance is additional to this existing aid money which is already committed to essential programmes around the world.

Although Official Development Assistance is a reserved matter, the Scottish Government created the Climate Justice Fund (CJF) a decade ago, initially to fund work in four countries in Eastern Africa. The intention was that this would be an additional commitment on top of UK ODA spending but the UK Government uncharitably includes it as part of UK ODA spend. This decision should be reversed.

The current Scottish Government commitment is for the CJF to be worth £36m over the course of this Parliament and £2m of this is specifically earmarked for Loss and Damage funding. This latter commitment, made at COP26, was the first national commitment to Loss and Damage funding and encouraged others to make commitments, including €1m from the government of Wallonia.

As outlined in section 1.1, Scotland's share of the 2009 Copenhagen climate talks commitment of \$100bn a year of climate finance is about £450m a year of public and private money, currently the responsibility of the UK Government. The share of likely Loss and Damage funding is estimated to be an additional amount of about £1.25bn-£2.5bn a year by 2030. This makes the mid-range estimate of Scotland's fair contribution to both the \$100bn commitment and the Loss and Damage funding to mobilise about £2.3bn a year – about 1.4% of Scotland's current GDP. These figures will rise over time as climate impacts intensify. Currently the responsibility of the UK Government, Scotland would need to find this money directly if international climate finance responsibilities were devolved or Scotland became independent.

There are several approaches which could be taken to fund Scotland's international climate obligations – both in relation to climate finance to support low-income countries adapt to the climate crisis and reduce their own emissions, as well as to address losses and damages resulting from climate impacts.

In this report there are a number of measures which could be taken to raise significant additional revenues. Extra Income Tax or a new national Wealth Tax are particularly attractive since it would be, proportionately, the richer people in this country – who on average have the highest emissions – helping low-income people and communities internationally who are already facing the disproportionate consequences of a climate crisis they did little to contribute towards. Measures like the Carbon Emissions Land Tax are proposed to use Scotland's existing powers to create local taxes which fund local activity and so revenue

from that source could not be used to fund international priorities, although it might free up more flexible funding at a national level that could be used internationally. Measures like the Workplace Parking Levy are likely to be accepted only if the revenue raised is invested back into local public transport and active travel investments, and so could not fund international commitments significantly.

Another approach, which does not rely on financing international climate funding from the revenues generated by any particular single tax, would be to apply a levy on all nationally-generated tax income to fund the Climate Justice Fund. For instance, just 1% of current national taxes raised in Scotland would feed £150m a year into the Fund – more than 25 times the existing commitment.

To meet their international climate finance obligations, but avoid simply rebranding existing international development assistance, all industrialised countries need to identify innovative new sources of finance, over and above their existing commitments. The measures in this report are described in the Scottish context and could be delivered by the UK or Scottish governments, but most of them are possible in any similar country. And every industrialised country is facing the same challenges of reducing emissions and contributing to the required international finance. The Scottish or UK Governments could therefore set a powerful, and much needed, international example by leading the way in this area.

11. Conclusions and Recommendations

The debate about how to fund climate action at home and contribute a fair share of international climate finance is one that every industrialised country should be having. This report considers this question in the Scottish context and raises a range of ideas. Some can only be done by Westminster, some can be done by the Scottish Parliament, some by local authorities. Some can be started tomorrow, some need more thinking. Some raise revenue, some help persuade people into lower-carbon behaviour, some even do both.

All of them deserve further study. As a result, this report makes a cross-cutting recommendation:

RECOMMENDATION 27 – the Scottish Government creates – and provides a secretariat for – a short life, independent working group to report to Ministers on the specific ideas and the general principles covered by this report.

While the UK Government and local authorities should give the recommendations in this report serious consideration, the Scottish Government should drive this agenda forward. It should establish this new group and task it with reporting ahead of the Scottish Government's next Programme for Government and with feeding into the process which is creating the next Climate Change Plan. Some obvious participants in this working group would be representatives from the Just Transition Commission, the Poverty and Inequality Commission, the Scottish Government's Global South Panel, the Scottish Youth Parliament and Stop Climate Chaos Scotland.

The Working Group would need to consider the Polluter Pays Principles and issues of equity, including the distributional effect of the measures being examined.

A commitment to such a working group would be an important initiative for the Scottish Government to promote at COP27 in Egypt in November, and would strengthen its position of international leadership on loss and damage finance. Among other channels, this could be promoted through Scotland's position as one of the co-chairs of the Under2 Coalition.

More widely, there would be merit in establishing an expert commission to look at the future of public finances in Scotland, with this also informed by the measures within this report.

The rest of the recommendations in this report are:

RECOMMENDATION 1 – measures to address the cost of living crisis need to also reduce emissions so that they help head off future crises, and well-designed climate measures can help achieve social and economic goals.

Controlled by the UK and Scottish Parliaments

RECOMMENDATION 2 – both the polluter pays principle and considerations of equity should strongly influence the choice and design of fiscal measures, including but not limited to, those which address climate change, to reflect climate justice.

Controlled by the UK and Scottish Parliaments

RECOMMENDATION 3 – the funding for measures to address the climate emergency should come from progressive forms of general taxation. Complementary specific environmental taxes are useful where they bring about behaviour change which reduces emissions.

Controlled by the UK and Scottish Parliaments

RECOMMENDATION 4 – where an environmental fiscal measure raises revenue, that revenue should generally be hypothecated to be spent on relevant environmental improvement e.g. the Nottingham Workplace Parking Levy funding improvements in public transport.

Controlled by the UK and Scottish Parliaments

RECOMMENDATION 5 – trading schemes can be effective but they can be slow to deliver outcomes and their impact on the poor can be significant, so any proposal for a new trading scheme should be treated with caution.

Controlled by the UK and Scottish Parliaments

Cross-Economy Measures

RECOMMENDATION 6 – increase income tax revenue to fund action on climate change. Increases should fall mostly on higher and top-rate taxpayers because they are almost always also high-emitting individuals and also have greater capacity to pay.

Revenue raising, controlled by the Scottish Parliament

RECOMMENDATION 7 – set up a rapid and time-limited, independent commission to look at the options for replacement of the Council Tax and other local taxes with a land, property and/or local wealth tax, with a strong element of climate justice built in, building on the Reform Scotland report and the recommendation of the David Hume Institute.

Revenue raising and behaviour change, controlled by the UK and Scottish Parliaments and/or local authorities

RECOMMENDATION 8 – remove tax breaks and subsidies from the fossil fuel industry, including those for decommissioning, and spend this money on activities to support climate justice.

Revenue redirecting and behaviour change, controlled by the UK Parliament

RECOMMENDATION 9 – introduce a Carbon Tax with revenues used to reduce taxes on labour.

Revenue raising and strong behaviour change, controlled by the UK Parliament

RECOMMENDATION 10 – take public sector pension investments out of fossil fuels and encourage the funds to invest in projects like social housing and renewables in Scotland.

Revenue raising, controlled by local authorities

RECOMMENDATION 11 – mobilise public sector procurement expenditure to address the climate emergency

Behaviour change, controlled by the Scottish Parliament and public bodies

RECOMMENDATION 12 – as a first step, the Scottish and/or UK Government should work with the Royal Scottish Geographical Society to further develop their proposal for a Sustainable Wealth Fund.

Revenue raising, controlled by the UK and Scottish Parliaments

Energy

RECOMMENDATION 13 – increase windfall taxes on the fossil fuel industry and remove the perverse tax break for increasing production at the expense of the environment.

Revenue raising and behaviour change, controlled by the UK Parliament

RECOMMENDATION 14 – provide government incentives and support for local authorities and social housing providers to work with communities to develop low carbon heating systems in neighbourhoods.

Behaviour change, controlled by the Scottish Parliament

Buildings

RECOMMENDATION 15 – make a grant (or loans for higher earners) available to ALL homeowners in Scotland as soon as possible to bring their houses to zero emissions standards by 2030, starting by prioritising houses in fuel poverty

Behaviour change, controlled by the Scottish Parliament

RECOMMENDATION 16 – significantly boost the current Scottish Government's heat pump installation programme

Behaviour change, controlled by the Scottish Parliament

Transport

RECOMMENDATION 17 – public funding for free public transport (bus and train) anywhere in Scotland.

Behaviour change, controlled by the Scottish Parliament

RECOMMENDATION 18 – use the powers in the 2019 Transport Act to introduce Workplace Parking Levies (WPL) in Scotland’s larger urban areas, with the revenue raised dedicated to public transport and active travel investment.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

Business and Industry

RECOMMENDATION 19 – link the level of business rates to a business’ carbon footprint

Behaviour change, controlled by the Scottish Parliament and local authorities

RECOMMENDATION 20 – given Scotland’s climate targets are more ambitious than those at UK level, the UK Emissions Trading Scheme needs to put industry in Scotland on track to deliver a fair share of Scotland’s climate targets, which means reducing allowances faster than needed only to meet the UK’s targets and also reducing the amount of free allowances allocated at a faster rate than at the UK level. Free allowances for the oil and gas industry should be scrapped.

If a new scheme is created for fuel use in buildings, as in the EU, an equivalent mechanism to the proposed EU Social Climate Fund is needed to protect low-income households and ensure costs are not passed on to them. Revenue from the scheme should be ring-fenced for carbon-saving activity and international climate finance.

Linking the UK and EU ETSS, as has happened for the EU and Switzerland, makes sense to increase efficiency in reducing emissions and to avoid the risk of carbon border taxes being applied to trade with the EU.

Revenue raising and behaviour change, controlled by the UK Parliament

Waste and the Circular Economy

RECOMMENDATION 21 – introduce additional Extended Producer Responsibility schemes

Behaviour change, controlled by the UK and Scottish Parliaments

RECOMMENDATION 22 – introduce a pay as you throw tax for household waste , alongside a parallel reduction in existing payments for waste collection made through the Council Tax.

Revenue raising and behaviour change, controlled by the Scottish Parliament

Land use, land use change and forestry (LULUCF)

RECOMMENDATION 23 – introduce a Carbon Emissions Land Tax which taxes emissions created through land use and penalises the owners of land currently emitting more carbon than it captures.

Revenue raising and behaviour change, controlled by the Scottish Parliament and local authorities

RECOMMENDATION 24 – encouraging crofters, farmers and land managers to plant, and investors to invest in, the right sort of trees in the right places including reviewing current planting and management funding schemes to make sure they are delivering as much as possible for nature and the climate, including protecting forest soils.

Behaviour change, controlled by the Scottish Parliament

Agriculture

RECOMMENDATION 25 – reform agricultural subsidies to deliver maximum benefits for climate and nature, including protecting soil health, while producing healthy food from resilient businesses.

Behaviour change, controlled by the Scottish Parliament

RECOMMENDATION 26 – introduce a nitrogen levy in farming. As a minimum the Scottish Government should honour their commitment in the 2018 Climate Change Plan to develop a target for reducing emissions from nitrogen fertiliser.

Revenue raising and behaviour change, controlled by the Scottish Parliament and/or local authorities

Some of these measures could be put in place tomorrow, some quite quickly and some are ideas that need working through with experts and stakeholders – for instance, the UK Government could increase the windfall tax on oil and gas companies almost immediately, but the idea of a Carbon Emissions Land Tax needs more work to refine the design of the scheme.

For some there is an obvious upcoming opportunity for change – for instance, re-orienting agricultural subsidies through the Agriculture Bill or introducing further producer responsibility schemes through the Circular Economy Bill.

Some, like a Carbon Tax, are a very pure implementation of the Polluter Pays Principle, which would require social safeguards to be built in. Most have equity considerations included, like prioritising the fuel poor for energy efficiency and heating system upgrades, though further modelling would help to avoid unintended consequences.

Certain measures would obviously fit well together – for instance, Workplace Parking Levies could help fund Free Public Transport.

Of the 21 specific sectoral or cross-sectoral measures recommended four are wholly controlled by the UK Government, five have a large role for local authorities, working with the Scottish Government, and the remaining ten are directly in the hands of the Scottish Government. Three are purely revenue raising, nine are purely about behaviour change and the remaining nine combine these two elements.

The need to reduce emissions faster is urgent and the need to help other countries cope with climate change is a debt we owe. We will need to implement many of these measures and others to meet the climate challenge we face, and will need to do so fairly.

Appendix A – detail on measures included and their impact

1. Cross cutting measures

1.1 Options appraisal – income tax

Option name: Use Scotland’s Income Tax powers to fund climate action			
<p>Description: increase income tax to fund action on climate change. Increases should fall mostly on higher and top-rate taxpayers because they are almost always also high-emitting individuals.</p> <p>Most other Western European countries have higher average and top tax rates than the UK. The current enhancements to the Scottish income tax system generate £500m–£600m a year. The Scottish Government’s Tax Framework says <i>“tax policy will also play a crucial role in ensuring fiscal sustainability, tackling climate change and reducing inequality.”</i>²⁶¹</p> <p>Income tax contributes around a third of the Scottish budget at £13.6bn in 2022–3.²⁶² This is predicted to grow to nearly £16.5bn by 2026–7, mainly because of the impact of inflation.²⁶³ Scotland has already made higher earners pay more but our top rates of tax are still low compared to countries like Denmark and Sweden, and thresholds are set so that they apply to only a small fraction of the population.</p> <p>The recent Reform Scotland paper on the future of taxation²⁶⁴ called for radical reform to meet the twin challenges of an ageing population and tackling climate change, and for a shift from taxing employment to taxing wealth, but acknowledged that income tax would still be an important source of revenue for public good.</p> <p>On environmental impact, Oxfam and the Stockholm Environmental Institute calculated that the richest 1% in the UK have a carbon footprint six times that of the national average, and 11 times that of someone in the poorest 50% of the population. Those in the wealthiest 10% (with income after tax of at least £41,000), have a carbon footprint more than double the national average and four times that of someone in the poorest 50%.²⁶⁵</p> <p>Increasing income tax for higher earners would be a generally progressive change, but it has the potential to become more progressive depending on how the revenue raised is subsequently spent – for example, if higher taxes paid by high earners is spent on measures like home insulation, which prioritise those on lower incomes.</p> <p>See also proposals on Wealth Tax and Carbon Emissions Land Tax.</p>			
Type			
<input type="checkbox"/> change behaviour		X raise revenue	
X devolved (partially)	<input type="checkbox"/> reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
<p>£: current income tax revenue is £13bn a year. All things being equal and very approximately, increasing the Top rate (those with incomes above £150,000) from 46% to 50% would bring in an additional £15m although this very is uncertain because the well-off are good at using the system to minimise tax payments;²⁶⁶ increasing the Higher rate from 41% to 44% would bring in an additional £200m and affect people earning over £43,662; increasing the intermediate band rate from 21% to 23% would raise £300m, which would affect people earning between £25,296 and £43,662; increasing the Basic rate from 20% to 21% would raise £190m and affect people earning over £14,733.²⁶⁷</p>	<p>C/behaviour: reduced disposable income for higher-rate taxpayers could reduce somewhat their climate consumption footprint. Another, albeit complex, layer of sophistication could be added whereby tax reliefs are given for high-carbon behaviours foregone.</p>
<p>Cost: little cost to the public purse in making these changes</p>	
<p>Time to implement: extra income for climate activities could be generated very quickly and rates could potentially be adjusted with each budget.</p>	
Pros and cons	
<p>political acceptability: while people rarely vote for higher taxes explicitly, Scotland aspires to be like a Nordic country but – while tax rates are marginally higher for those with higher incomes than elsewhere in the UK – it currently doesn't collect taxes like one, so this is a journey people might expect the country to continue. Inevitably there would be a debate over Scottish versus rest-of-the-UK tax rises, although the Scottish Government has built in thinking about how likely someone is to uproot themselves because of a higher tax rate into the determination of the current rates and bands. This debate would be amplified if planned tax cuts are delivered by the UK Government, widening the gap.²⁶⁸ They also have work which demonstrates the top-rate payers' strong ability to use the system to avoid tax rises. Any discussion on Income Tax rises would currently be in the context of the cost of living crisis.</p>	
<p>collection issues: system already in place.</p>	
<p>local possibilities:</p>	
<p>regional impacts:</p>	
<p>relation to nature recovery: only through reduction in climate change emissions</p>	
Principles	
<p>polluter pays: in general higher earners are higher polluters for increasing tax on them reflects the polluter pays principle</p>	
<p>climate & social justice: the raising of extra tax revenue from higher earners/polluters would not only reflect the existing principle that those with higher incomes pay tax at higher rates, but also analysis suggesting that, on average, those with higher incomes generate more carbon emissions than those on lower incomes. In addition, the extra revenues generated could fund climate programmes which disproportionately help those with lower incomes, such as housing energy efficiency schemes and subsidised or free public transport, reflecting climate justice.</p>	
<p>level of certainty: Scotland has the powers to change income tax rates, bands and thresholds, and has already started down this path. This measure could be introduced rapidly</p>	

1.2 Options appraisal – wealth taxes

Option name: Wealth Taxes
<p>Description: many of the richest households have an abundance of assets and money but not much taxable income, so a wealth tax is a critical tool to redistribute assets in support of climate justice, and could also be a driver of land reform, as unproductive land was put to use, including for nature objectives. The range of potential taxes on wealth include taxes on total wealth, capital gains, inheritance, gifts, land and property or other types of assets.</p>
<p>ONS data²⁶⁹ shows that in the period April 2018–March 2020 in Great Britain median household net wealth was £302,500, a real-terms 20% increase compared with July 2006 to June 2008. The wealth of the richest 1% of households was more than £3.6 million, compared with £15,400 or less for the least wealthy 10%, although wealth inequality has remained stable over the last 14 years.</p>
<p>At Scotland level, Scottish Government data from just before the pandemic put typical wealth at £214,000, with the wealthiest 10% of households worth £1.7m and the least wealthy 10% worth £7,600. Overall the wealthiest 2% of households held 18% of all wealth.²⁷⁰</p>
<p>On environmental impact, Oxfam and the Stockholm Environmental Institute calculated that the richest 1% in the UK have a carbon footprint six times that of the national average, and 11 times that of someone in the poorest 50% of the population. Those in the wealthiest 10% (with income after tax of at least £41,000), have a carbon footprint more than double the national average and four times that of someone in the poorest 50%.²⁷¹</p>
<p>The Resolution Foundation found that Scottish wealth grew from five times GDP to more than seven times GDP between 2005 and 2015, reaching £1 trillion in 2015.²⁷² Half of this was in pensions and a further quarter in property. But ONS data show that median household wealth in Scotland peaked in 2016 at £258,000 and fell 17% by 2020 to £214,000. ONS state that this is due to lower home ownership rates and pension participation in Scotland. About half of Britain’s regions also saw a fall over this period.</p>
<p>So there is a wealth gap between high and low earners, between old and young people, and between white people and people of colour.²⁷³</p>
<p>Inheritance Tax and Capital Gains Tax address an element of wealth at key moments when an asset is transferred to another owner, and are both reserved. Since much wealth is tied up in property, a proxy wealth tax is Council Tax – which is set by local authorities. There has been a long debate about the fairness of Council Tax and what might replace it.</p>
<p>An OECD report²⁷⁴ highlights a strong case for using wealth taxes to tackle wealth inequality and sets out a number of design recommendations including setting thresholds high so that only the very wealthy are taxed and reducing other taxes such as income tax to make a wealth tax more acceptable.</p>
<p>The recent Reform Scotland paper on the future of taxation²⁷⁵ called for radical reform to meet the twin challenges of an ageing population (fuelling pressures on public services) and tackling climate change. In particular, it advocated a shift from taxing income to taxing wealth, finding that a net wealth tax would be efficient and environmentally just, and could raise significant revenue. They also found that, even though wealth has grown significantly, the revenue from taxes which address it have remained relatively static, and the taxes on wealth that do exist often charge lower rates to the wealthier than to those with less.</p>
<p>They called for a “<i>comprehensive consideration</i>” of wealth taxes at the Scottish level. If a UK Wealth Tax is not likely a fully-fledged Scottish Wealth Tax would only be possible by a further devolution of powers, but a locally-administered Wealth Tax on land and/or property would be within the Scottish Government’s current powers.</p>
<p>The independent UK-wide Wealth Tax Commission recommended a one-off wealth tax that might raise £260bn.²⁷⁶</p>
<p>Under devolved powers a Land Value Tax used to fund local public projects would address wealth to some extent, as recommended by Reform Scotland in 2015.²⁷⁷ A project of the David Hume Institute recently called for a commission to look at how Council Tax might be replaced by a locally-based land tax.²⁷⁸</p>

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Building on the Reform Scotland report and the recommendation of the David Hume Institute, set up a rapid and time-limited independent commission to look at the options for replacement of Council Tax with a land, property and/or local wealth tax, with a strong element of climate justice to be built in.

See also the proposal for a Carbon Emissions Land Tax, which taxes land based on its carbon emissions or sequestration.

Type			
<input type="checkbox"/> change behaviour		X raise revenue	
X devolved	X reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			
Potential revenue/savings			
<p>£: Reform Scotland do not suggest a figure but say that a wealth tax could bring in significant income. Council Tax currently brings in over £2.5bn a year, so that would be the absolute minimum starting point for any new tax(es). The Wealth Tax Commission's one-off tax should raise more than £20bn in Scotland, as the population share of their £250bn raised over five years.</p>		<p>C/behaviour: reduced ready assets might reduce somewhat the wealthy's climate consumption footprint. Another layer of sophistication could be added whereby tax reliefs are given for assets which are turned over to carbon-beneficial use.</p>	
<p>Cost: Running Based on the analogous two-year Just Transition Commission, the cost of a time-limited commission to consider options for replacement of the Council Tax with a land, property and/or local wealth tax, is estimated to be around £115,000. The cost of implementing and administering the subsequent replacement tax – relative to the existing Council Tax – should be explored by the commission.</p>			
<p>Time to implement: the initial stage of having an independent commission look at the idea could be completed in two years.</p>			
Pros and cons			
<p>political acceptability: surveys find good public support for wealth taxation²⁷⁹ but there is likely to be strong opposition from vested interests. France, Norway, Spain and Switzerland have wealth taxes and Iceland had a temporary wealthy tax in response to the 2008-9 recession. As with income tax, there would be a debate about whether a wealth tax would drive people to sell up and leave Scotland in favour of lower-tax jurisdictions. The UK Wealth Tax Commission looked at some of these 'behavioural responses.'</p>			
<p>collection issues: these could be simple or complex depending on what exactly is taxed. The OECD report mentioned above found that evidence suggests that the wealthy engage in more tax avoidance or evasion rather than up and leave the country.</p>			
<p>local possibilities: a land-based wealth tax could generate revenue for local authorities, indeed it would need to be set up this way if it were to be delivered under existing devolved tax powers.</p>			
<p>regional impacts: there could be some distributional consequences of a land based wealth tax, with different types of land at different rates and potential different tax levels in different local authority areas.</p>			
<p>relation to nature recovery: only through reduction in climate change emissions</p>			

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Principles

polluter pays: on average the wealthy make a hugely disproportionate contribution to climate change emissions, so a wealth tax would address this directly. There might be exemptions or reductions where wealth is being put to use delivering public social or environmental aims, such as an estate which is being use for nature recovery and carbon sequestration.

climate & social justice: shifting the burden of taxation from income and employment to wealth would be a very progressive change.

level of certainty: wealth taxes exist in other countries, devolved powers would let Scotland set up at least a more wealth-focused replacement for Council Tax and the idea is popular with the public.

1.3 Options appraisal – perverse subsidies

Option name: Redirecting perverse tax breaks and subsidies to support climate justice			
<p>Description: remove tax breaks and subsidies from the fossil fuel industry, including those for decommissioning, and spend this money on activities to support climate justice.</p> <p>The offshore oil industry pays little or no tax because they receive massive tax breaks, including to fund the decommissioning of rigs and pipelines, and for further exploration. The UK’s domestic fossil fuel subsidies are estimated at £13.6 billion a year, most of this as tax reductions.²⁸⁰ The same analysis ranked the UK 11th out of 11 OECD countries for transparency on fossil fuel funding. This subsidy massively undermines the UK’s stated goals on climate change. The UK also has the lowest tax rate on offshore oil and gas profits in the world.</p> <p>The UK Government has recently introduced a temporary Energy Profits Levy of 25%, potentially raising £5bn, but this also gives an 80% exemption for companies that invest in further oil and gas production, thus creating another tax break which incentivises creating extra climate change emissions.²⁸¹</p> <p>The Observer found that Shell and BP paid no corporation tax or production levies on North Sea oil operations between 2018 and 2020, and claimed tax reliefs of nearly £400m.²⁸² BP’s half year profits for 2022 were £11.4bn, the second highest ever.²⁸³ The equivalent figure for Shell was £9bn.²⁸⁴</p> <p>The cost of decommissioning the oil industry structures in the North Sea is officially estimated to be nearly £50bn.²⁸⁵ Unlike almost any other industry the UK Government is committed to paying a large fraction of this cost from the public purse – currently estimated at over £18bn²⁸⁶ – by giving up to 70% tax breaks to the industry for decommissioning work. For any company that goes bust the taxpayer will pay the whole bill. The Scottish Government has consulted on guidance on how the polluter pays principles should apply²⁸⁷ and one of the polluter pays examples it gives is about decommissioning of industrial installations:</p> <p>“Providing for decommissioning liability – the future costs of decommissioning a site can be provided for through a bond or fund, ensuring that the costs are paid for from the money raised by the activity itself and not by future public funds, for example the Nuclear Liabilities Fund.”</p> <p>Of course. this is not the case for the decommissioning of oil and gas infrastructure. The current scheme was devised in the 1970s to attract the oil industry to UK waters and is the antithesis of the polluter pays principle.</p> <p>Other public money funding high-carbon areas of activity include road building, subsidies/funding for aviation (Scottish Government) and exemptions from the Climate Change Levy for energy-intensive industries (UK Government). Some of the biggest subsidies are for land management and agriculture and these are dealt with elsewhere in this report. Public money is also funding supposedly low-carbon developments, principally the development of Carbon Capture and Storage, although SCCS would argue this money would be better deployed in support of known-solutions to reliably reduce emissions quickly.</p>			
Type			
X change behaviour		X raise revenue	
X devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
£: many billions a year could be redirected elsewhere, revenue would diminish as the industry contracted	C/behaviour:
Cost: free to change policy, risk of being sued by the industry over supposed breach of licences	
Time to implement: would no doubt be phased in over time and would need to be linked to the Just Transition for workers and communities dependent on the industry	
Pros and cons	
political acceptability: the public might like to see the oil industry lose its favoured treatment but for most politicians any changes would likely need to be made in conjunction with measures designed to ensure a Just Transition e.g. to support workers impacted.	
collection issues: not applicable	
local possibilities:	
regional impacts:	
relation to nature recovery: only through reduction in climate change emissions	
Principles	
polluter pays: would go some way to forcing the oil industry to pay for some of the climate damage they are responsible for. Would remove a massive financial lever that is acting against reducing carbon emissions. Reducing or removing tax breaks for decommissioning would directly implement the polluter pays principle.	
climate & social justice: would need to be strongly linked to the Just Transition for workers and communities that are dependent on the industry	
level of certainty: for the oil industry, some changes would just be changes of fiscal policy but some are bound up in legislation and petroleum licences.	

1.4 Options appraisal – carbon tax

Option name: Introduce a comprehensive Carbon Tax
<p>Description: introduce a Carbon Tax with revenues used to reduce costs of labour.</p> <p>A carbon tax is often viewed as the most efficient way to reduce emissions as they apply a fee on activities depending directly on the level of carbon emissions they generate. The IMF has said that carbon taxes are <i>“the most powerful and efficient, because they allow firms and households to find the lowest-cost ways of reducing energy use and shifting toward cleaner alternatives”</i>.²⁸⁸</p> <p>The Climate Assembly envisages a broad carbon tax that affects the price of everything that individuals buy with the money raised returned as a dividend to the individual. More normally a carbon tax increases the cost of high-carbon products or services, such as road and heating fuels, so the ‘dividend’ comes as the saving from using less of these.</p> <p>A study by the Fraser of Allander Institute in 2012²⁸⁹ used an economic model to look at the introduction of a carbon tax in Scotland. They looked at taxing the use of coal, oil and gas directly, with the rate based on the carbon content of the fossil fuel. Thus goods and services provided in Scotland would become more expensive if they were produced or provided using fossil fuels. They found that using the tax revenue to reduce taxes on labour resulted in a fall in carbon emissions and a rise in both GDP and employment. Specifically, a carbon tax of £50 a tonne was modelled to reduce the income tax rate in the long run by 5%, increasing employment by 1.06% and GDP by 0.83%. Not surprisingly, employment in fossil fuel industries fell and it rose in manufacturing, services, utilities and transport because of the reduction in employment costs.</p> <p>There is also a social or shadow cost of carbon, a price which no-one pays but which can be used in government policy making to understand the carbon consequences of decisions in monetary terms and is supposed to reflect the economic harm from climate impacts. The estimated value has often been too low to make much of a difference. The US government currently uses \$51 a ton (approximately £38/tonne). The UK Treasury recommends £124-£373/tCO₂e, with a central estimate of £248/tCO₂e.²⁹⁰ The central estimate rises to £280/tCO₂e by 2030.</p> <p>There are already a number of things that look like carbon taxes in operation. The UK Emissions Trading Scheme (ETS) is a carbon trading scheme, which applies to the emissions of large businesses at about 100 sites in Scotland. The current price for an allowance of 1tCO₂e is around £80.²⁹¹ The Climate Change Levy (CCL) applies to the price of energy for industrial users but it is not based on carbon content. Both the UK ETS and CCL schemes have significant exemptions or reductions built in. Elsewhere, in the power sector, the UK-wide Carbon Price Support tax was introduced in 2013 and applies to fossil fuels used to generate electricity and raised £1bn in 2017. It has different rates based on the carbon emissions of using that fuel and so is a carbon tax.</p> <p>Fuel Excise Duty is also an energy tax but not a pure carbon tax since the duty is the same for diesel and petrol even though diesel has lower carbon emissions. In the past the duty on diesel has been lower because of climate concerns and then higher because of local air pollution concerns.</p> <p>Domestic gas and electricity have no tax on their sale other than VAT and there is a levy on electricity prices for schemes which deliver energy efficiency in homes and support renewable energy. If there was a carbon-based tax on domestic fuel, gas would become more expensive relative to electricity, as would be the case if the environment and social levies, which support the development of renewables and delivery of energy efficiency schemes, were on gas bills instead of electricity bills.</p> <p>19 European countries have some form of carbon tax.²⁹² Sweden’s carbon tax is the highest in Europe at \$137/tCO₂e in 2021. It was introduced at the same time as a reduction in income tax and applies only to transport and heating fuels. Austria plans to introduce new carbon taxes that will fund tax cuts for low – and middle-income workers.</p> <p>The SPICe report²⁹³ concluded <i>“There appear to be no “silver bullets” available, however moving towards an overarching simplified carbon tax, that could be applied universally across the economy, could be the most efficient, fair and effective tax measure in relation to supporting progress to net zero.”</i></p>

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Type			
X change behaviour		X raise revenue	
<input type="checkbox"/> devolved	X reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
X carrot and stick			
Potential revenue/savings			
<p>£: Fraser of Allander's modelling of a £50/tCO₂e tax rate brought in £1.6bn a year (in year 2000 pounds). In their preferred scenario this was recycled back into reducing income tax.</p>		<p>C/behaviour: a very effective measure – prices of goods and services would start to reflect their climate impact, leading to quite different choices being made by individuals and businesses over time.</p>	
<p>Cost: new systems would need to be developed to track fossil fuel use by industry and to charge them appropriately.</p>			
<p>Time to implement: the interrelation between a general carbon tax on industry input and the UK ETS and existing fuel and energy taxes would need to be thought through, and a carbon tax would be likely to be phased in.</p>			
Pros and cons			
<p>political acceptability: hard to see Scotland doing this if it were not a UK measure, even if the powers existed. A unilateral move in this direction in Scotland would require a difficult discussion of an exemption from the UK Internal Markets Act because it would be seen as a barrier to trade within the UK. A national carbon tax would be possible if Scotland became independent.</p>			
<p>collection issues: government would need to track fossil fuel use in Scotland</p>			
<p>local possibilities:</p>			
<p>regional impacts:</p>			
<p>relation to nature recovery: through reduction in climate change emissions and through the impact of any relevant spending</p>			
Principles			
<p>polluter pays: a carbon tax is about as strong an implementation of the polluter pays principles as possible</p>			
<p>climate & social justice: a carbon tax builds in climate justice, since those on higher incomes are likely to be the higher polluters overall, but there would also need to be protections for lower-income households who tend to spend a higher percentage of their income on heating and transport.</p>			
<p>level of certainty: an effective measure but hard to introduce unless Scotland becomes independent. A significant danger that the rate would be set low and increase too slowly to drive the necessary pace of change.</p>			

1.5 Options appraisal – public sector pensions

Option name: Public sector pension schemes to end investments in fossil fuels to instead invest in something socially and environmentally useful			
Description: take public sector pension investments out of fossil fuels and encourage them to invest in projects like social housing in Scotland.			
<p>Most of the public sector, and many third sector organisations, have their pensions with the 11 Scottish Local Authority Pension Funds, with the Strathclyde fund the second biggest public sector pension scheme in the UK. These funds currently have a total of around £1.2bn invested in fossil fuel companies around the world.²⁹⁴ That £1.2bn could instead be invested in social housing, funding public transport or creating green infrastructure in Scotland, guaranteeing a good return to the pension funds and simultaneously doing social good in Scotland. Some positive signs of change already appear to be happening, but should now be replicated at scale. The Falkirk scheme has invested £30m into social housing locally without explicitly linking it to taking money out of fossil fuels and several English schemes have invested in local renewables instead of fossil fuels. In London, pension organisations are working in a fund aiming to invest £300m into affordable housing, community regeneration, digital infrastructure and clean energy around the city.²⁹⁵</p> <p>Despite passing relatively strong climate emission legislation, the Scottish Parliament pension fund also has investments in fossil fuels.²⁹⁶ In contrast, most Scottish universities and churches have already divested from fossil fuels.</p>			
Type			
<input type="checkbox"/> change behaviour		X raise revenue/investment	
X devolved	<input type="checkbox"/> reserved		<input type="checkbox"/> new
<input type="checkbox"/> extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			
Potential revenue/savings			
£: Potentially £1.2bn to be deployed as investment in green infrastructure in Scotland		C/behaviour: £1.2bn of investment taken out of oil and gas companies.	
Cost: small cost to shift investment, some cost in research alternative investment, but this could be pooled between the 11 Scottish Local Authority Pension funds.			
Time to implement: could be done over a matter of months			
Pros and cons			
political acceptability: even if the climate change arguments in favour of divestment do not prevail, the financial case is also strong with fossil fuel investments looking increasingly volatile and risky. Given this. there is a general movement among investors, first out of coal, then out of fossil fuels in general			
collection issues: none			
local possibilities:			
regional impacts:			
relation to nature recovery: Scottish pensions stop funding destructive extraction projects around the world, green infrastructure projects design nature in.			
Principles			
polluter pays:			
climate & social justice: a source of finance is denied to those under-taking fossil fuel activities and individuals holding pensions from these schemes would also know that their money has been transferred from fossil fuel investments to green investments.			
level of certainty: this is straight forward once the decision is made, as demonstrated by the many institutions and pension funds around the world which are divesting from fossil fuels.			

1.6 Options appraisal – procurement

Option name: Mobilise public sector expenditure to address the climate emergency
<p>Description: ensure that the billions of pounds of annual public procurement expenditure contribute to reducing carbon emissions, rather than working in opposition to Scotland’s climate ambitions.</p> <p>Public money should, wherever possible, incentivise and reward climate action, with wider public support via grants and accreditation schemes also aligned to Scotland’s climate ambitions.</p> <p>To help achieve this, the Climate Emergency Response Group, a <i>“collection of like-minded leaders spanning Scotland’s private, public and third sectors, delivery organisations and membership bodies”</i> has called for:²⁹⁷</p> <ul style="list-style-type: none">• Enforce the incorporation of carbon and whole life costing into all public sector investment and spending decisions by 2024.• Demand and drive early adoption of best practice procurement standards through increasingly ambitious targets and conditions within government funding criteria. Show public sector leadership in decarbonising its buildings and circular procurement.• Ensure robust public sector net-zero action plans mandate the purchase of low carbon, circular economy products and services. <p>Scottish Government monitoring²⁹⁸ shows that the public sector in Scotland spent £13.3bn in 2019–2021 on goods and services, with the largest spend within Scotland, of £2.3bn, going to construction. 66% of this spend was by local authorities, 18% by central government and 11% by the NHS. 67% of public bodies provided evidence in their annual procurement reports that their regulated procurements have been carried out <i>“with regard”</i> to environmental wellbeing and climate change.</p> <p>This spend is a big lever which could drive change in society to reduce the level of emissions created by the purchase of everything from buildings to vehicles and from food to medical supplies.</p> <p>There was a Procurement Reform (Scotland) Act in 2014 which imposed a Sustainable Procurement Duty to use procurement to try to improve the economic, social, and environmental wellbeing in an area, involve Small and Medium-sized Enterprises (SMEs) and the third sector, and promote innovation. There is a Climate and Procurement Forum which aims to <i>“provide leadership and direction to enable traction against the 2019 to 2020 Programme for Government commitment to mobilise procurement spend to support the climate emergency response and to identify and commission targeted activities and work streams which will help influence and empower buyer, supplier and key stakeholder communities in taking climate action.”</i></p> <p>There is new guidance for Scottish public bodies on procurement and a number of case studies.²⁹⁹ There are also targets to phase out petrol or diesel cars and new vans from the public sector fleet by 2025 and a Net-Zero Carbon Buildings Standard for the public sector. However, progress has been slow. In a survey of all 32 local authorities’ reports on their climate emissions, only one council had included the impact of their procurement, which was more than twice all their other emissions.³⁰⁰</p>

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CERG suggests that Scotland needs to :

- Mandate the incorporation of carbon and whole life costing into all public sector corporate investment and spending decisions by 2024. This should be supported by detailed corporate guidance, standardised methods, evidence, and case studies published throughout 2022 by the [Scottish Government's] Procurement Directorate and Climate Policy Team.
- Explore the potential of standardised, internal carbon pricing (i.e., a theoretical or assumed cost per ton of carbon emissions) for public sector purchasing, drawing on lessons learned and experiences from the private sector and building on updated 'Green Book'.
- Public and private sector bodies applying for government funds should be required to adhere to minimum conditions on alignment with net-zero targets (using a standardised method), support to local supply chains and Fair Work conditions from 2022. This could involve a government-sponsored accreditation scheme to verify SMEs' net-zero plans. Increasingly ambitious targets and standards should be built into the essential funding criteria and outcomes for publicly funded schemes and contracts.
- Make the Net-zero Public Sector Building Standard mandatory in a phased approach for all public sector new build and refurbishment projects by 2024, with a resourced plan to build capacity across the public sector to meet the standards.
- The forthcoming Circular Economy Bill should set clear targets and milestones for improving circular procurement. This should be accompanied by a circular economy network to build capacity and mandatory training for all public sector leaders and procurement staff.
- Enterprise support targeted at supply chain innovation and to help diversify businesses into providing the circular goods and services that the public sector requires.
- Publish shared guidance on how the public sector should define net-zero, and a clear methodology for determining Scope 3 emissions and rules for offsetting by end 2021. This will inform public sector route maps which should include sufficient levels of detail, milestones, and choice-editing. These will mandate budget holders and procurement staff to purchase low carbon and circular economy products and services.
- Strengthen accountability and feedback mechanisms to assess public sector progress against delivering their net-zero targets and plans, with potential role for Audit Scotland.

Type

X change behaviour		<input type="checkbox"/> raise revenue	
X devolved	<input type="checkbox"/> reserved		<input type="checkbox"/> new
<input type="checkbox"/> extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

Potential revenue/savings

£: does not raise money but redirects billions to be better climate aligned, and potentially increases the proportion spent in Scotland because transport emissions will be a larger factor in decisions.	C/behaviour: change needed in procurement policies and systems across 129 public bodies. If the assessment for East Renfrewshire Council is generally applicable then procurement by public bodies is currently responsible for around 8MtCO ₂ e. Just doing that 25% better would save 2MtCO ₂ e a year.
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Cost: efficiencies and economies of scale through maximising collaborative approaches among public sector bodies could reduce costs and give more influence over supply chains.

Time to implement: guidance is in place but the issue needs more of a political push, along with more implementation support and more oversight of delivery.

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Pros and cons
political acceptability: better value for money, more collaboration and procurement from local suppliers are all popular ideas and the Scottish Government has made enthusiastic high level statements about using procurement to drive reductions in emissions. On the other hand, not ensuring that billions of public expenditure are tested against climate criteria would be very embarrassing.
collection issues: n/a
local possibilities: Visible climate leadership by the public sector could play a critical role in encouraging businesses and individuals to act.
regional impacts: sustainable procurement can build and strengthen local supply chains and markets
relation to nature recovery: through reduction in climate change emissions and biodiversity criteria built into procurement
Principles
polluter pays: this measure is about reducing the impact of public expenditure.
climate & social justice: sustainable procurement could create local businesses and jobs and promote Fair Work conditions, and where products or services still come from overseas there should be an obligation to assess the supply chain impacts on climate vulnerable communities.
level of certainty: billions are spent but could be spent better. The right intention is in place but more needs to be done to deliver on this intention in practice.

2. Energy

2.1 Options appraisal – windfall taxes

Option name: Meaningful windfall taxes			
<p>Description: increase windfall taxes on the fossil fuel industry and remove the perverse tax break for increasing production at the expense of the environment.</p> <p>Costs have not risen greatly for North Sea operators but the prices they sell their oil and gas for are much higher because of the war in Ukraine. Without a windfall tax the oil industry in the UK was expected to make an additional £12bn in 2022.³⁰¹</p> <p>António Guterres, UN secretary general, described the record profits of oil and gas companies as immoral and talked of the “grotesque greed” of the fossil fuel companies.³⁰²</p> <p>The UK Government has introduced an Energy Profits Levy on profits of 25%, potentially raising £5bn over the next year and to be phased out by the end of 2025. But the new Levy allows an 80% exemption for investments in further oil and gas production, creating another tax break which incentivises creating extra climate change emissions. BP has said the windfall tax would not affect their North Sea investment plans.³⁰³ The Labour Party has proposed backdating the levy to raise £8bn.³⁰⁴</p> <p>BP’s half year profits for 2022 were £11.4bn, the second highest ever.³⁰⁵ The equivalent figure for Shell was £9bn.³⁰⁶</p> <p>It is unlikely to happen, but the Energy Profits Levy needs to be reviewed against the UK’s Net Zero commitments. This would result in it being adjusted to bring in more money and to remove the exemption for new fossil fuel production. In the medium term, tax breaks for the industry need to be phased out as the UK delivers a Just Transition out of oil and gas production and use.</p> <p>Likewise the UK’s energy supply companies are charging much more for their electricity and gas, and the shifting energy price allows them to make profit. The big firms have made profits totalling £7bn in the last five years.³⁰⁷ The Treasury predicts that UK gas producers and electricity generators may make £170bn in excess profits over the next two years.³⁰⁸ Meanwhile those rising prices are driving the cost of living crisis with energy bills expected to rise by 200% or more – applying deep financial pressures to household budgets.</p> <p>Further windfall taxes on the fossil fuel industry or a new windfall tax on energy company profits could create a double dividend if the revenues generated are dedicated to home energy efficiency and heating system programmes as this would help to lift people permanently out of fuel poverty while also reducing climate emissions. The Committee on Climate Change calculated that UK consumers would have saved £1 billion on their energy bills in 2022 if UK energy efficiency schemes had continued as originally planned rather than being cut back by the UK Government.³⁰⁹</p> <p>More generally, the UK Government routinely gives a huge subsidy to the oil industry in the form of tax breaks. See separate measure about stopping perverse subsidies.</p>			
Type			
<input type="checkbox"/> change behaviour		X raise revenue	
<input type="checkbox"/> devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
£: several billions more in additional profits to be extracted from the fossil fuel industry	C/behaviour:
Cost: no real cost to the public purse in introducing windfall taxes	
Time to implement: The Energy Profits Levy was introduced very quickly once the political decision to proceed was made. Since it is in place until 2025 adjustments to the existing Levy could be made quickly.	
Pros and cons	
political acceptability: it is perhaps unlikely that the UK Government will review the Energy Profits Levy and adjust it, although the scale of the Levy is not defined for next year, so this could be increased if windfall profits remain high.	
collection issues: through the normal tax system for companies	
local possibilities:	
regional impacts:	
relation to nature recovery: only through reduction in climate change emissions	
Principles	
polluter pays: very directly making the oil/electricity industry pay for their pollution through reduced profits, although in the electricity sector some companies are greener than others, so a more sophisticated carbon-based profits levy should be considered.	
climate & social justice: a profits levy which funds energy efficiency work targeted at the fuel poor would transfer resources from shareholders – mostly the better off – to the least able to pay.	
level of certainty: the Energy Profits Levy is already in place and could be made tougher.	

2.2 Options appraisal – increase investment and support for community low carbon heating

Option name: Community Low Carbon Heating

Description: the Climate Assembly called on the Scottish Government to:

“provide government incentives and support for local authorities and social housing providers to work with communities to develop low carbon heating systems in neighbourhoods. The action should lead to collaborative working opportunities with local authorities, individuals, community and local businesses to develop innovative responses to neighbourhood heating needs. Working together with communities in this way will address the community’s needs, and ensure the right solutions are put in place for each neighbourhood ... A wider benefit of this action is that it may create local job opportunities and apprenticeships meaning that the investment stays in the local community.”

District heating schemes use one central heat source to pipe hot water to a network of domestic and/or business heat users. In Denmark there are 440 large district heating networks, with over 60% of all homes connected to them.

There are already over 1100 heat networks in Scotland, from a single boiler supplying a number of flats in one building to projects serving hundreds of properties.³¹⁰ For instance, Aberdeen Heat and Power Ltd is an independent not-for-profit company set up in 2002 which runs four district heating schemes in the city, initially set up with the aim of reducing energy costs for residents of the city’s tower blocks.

Together, Scotland’s existing heat networks currently supply about 1.5% of our heat demand but there is a target to increase this to 8% by 2030, equivalent to an additional 650,000 homes being connected to heat networks. This target was set in the Heat Networks (Scotland) Act 2021³¹¹ which introduced a new regulatory framework and has spawned a Heat Networks Delivery Plan.³¹² There is a £300m Heat Network Fund available over the course of this parliament, which is open to community groups among others.³¹³

An assessment carried out for the Scottish Government³¹⁴ identified 200 potential new heat network zones in Scotland including up to 340,000 homes and 74,000 non-domestic properties.

A study by Climate Exchange³¹⁵ found 109 feasibility studies or proposals for district heating schemes. The majority aimed to supply heat to homes, and commercial and industrial property. Of the 76 schemes with detailed information, 46 were deemed by their authors to be viable. They identified a number of main barriers:

- High capital costs and long payback periods of District Heating projects
- High demand risk (payback period being dependent on consumer demand)
- Lack of District Heating technical knowledge and skills in the industry
- Lack of investment interest and lack of investor involvement in the process
- Lack of realistic business cases and delivery/procurement models
- Lack of stakeholder and consumer awareness and lack of stakeholder buy-in
- On community engagement the Delivery Plan says:

“We will support the development of community engagement and ownership or co-ownership of small heat networks where these are appropriate with a tailored package of support, handholding and advice, through our Community and Renewable Energy Scheme (CARES), delivered by Local Energy Scotland.”

Although specialist support is available to communities through CARES, for anything but the smallest scheme, it is clear that a community group would need to partner with a local authority or other body. This could be facilitated, for instance, by providing specific resources for local authorities to work with community groups in developing proposals and applying for funds together.

See also the measure on greater support for heat pumps.

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Type			
X change behaviour		X raise revenue	
X devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			
Potential revenue/savings			
£:		C/behaviour: the Scottish Government estimates all work on heat networks will save 1.1-1.2MtCO ₂ e by 2030, more when all those networks are powered by renewable energy.	
Cost: as part of £1.8bn overall funding during this parliament including £300m specifically for heat networks.			
Time to implement: additions to current programmes should be straightforward			
Pros and cons			
political acceptability: there is already support for community low carbon heating projects, so scaling this up should not be contentious. In addition, projects which are community-led or have a strong element of community engagement are likely to attract political support and are more likely to succeed. There is also interest in heat networks from the UK Government. ³¹⁶			
collection issues:			
local possibilities:			
regional impacts:			
relation to nature recovery: only through reduction in climate change emissions			
Principles			
polluter pays: this measure is about helping people get away from more polluting heating systems. However, the funding for the implementation of this measure could be directly sourced from polluters, for example, via a parallel Windfall Tax on fossil fuel industries.			
level of certainty: major programme underway already, needs a boost to the community element			

3. Buildings

3.1 Options appraisal – retrofit grants and loans

Option name: Grants/Loans to Retrofit Homes – reducing emissions and energy bills			
<p>Description: make a grant (or loans for higher earners) available to ALL homeowners in Scotland as soon as possible to bring their houses to zero emissions standards by 2030, starting by prioritising houses in fuel poverty. (This is based on a specific recommendation of the Climate Assembly with the addition of <i>loans</i> for higher earners)</p> <p>The Climate Assembly said:</p> <p><i>“We know that 80% of homes that people will be living in by 2050 already exist and do not meet modern and future energy efficiency requirements. This recommendation is important therefore, because an ambitious plan is needed to ensure that all existing housing stock can be retrofitted by 2030.</i></p> <p><i>“We believe the plan must be developed and the implementation overseen by an independent non-profit body that is able to work with all stakeholders to ensure sufficient funding and quality assurance. The implementation of the plan will make a significant impact on reducing Scotland’s carbon emissions (e.g. heating Scotland’s homes accounts for 15% of total emissions).</i></p> <p><i>“This plan must also incorporate adaptations to hazards such as floods and extreme weather which may occur in the future. Doing this will also make a positive contribution to the health & well-being of the population (including cost savings for the NHS), and will provide much needed employment opportunities. It will also be an important contribution to lifting people out of fuel poverty by reducing fuel bills and making homes more economical.”</i></p> <p>If implemented, this proposal would be a very large acceleration of existing plans in the Scottish Government’s Heat in Buildings Strategy,³¹⁷ which aims to reduce emissions from buildings (i.e. more than homes) by 68% by 2030, have all homes reach an energy efficiency rating of EPC C by 2033 and phase out fossil fuel boilers, with a further target of zero emissions from homes by 2045.</p> <p>The current main mechanisms to deliver home energy efficiency and replace heating systems are the Home Energy Scotland loan and cashback scheme, the local authority led area-based schemes, and the Warmer Homes Scotland grant scheme. The Bute House Agreement³¹⁸ between the Scottish Government and the Scottish Green Party Parliamentary Group says that the existing grant scheme will be replaced to “support energy efficiency and zero emission heat improvements” in 2022/3.</p> <p>For those in fuel poverty upgrades of efficiency and heating systems should be free. For those able to pay some element of grants is still likely to be appropriate but the main mechanisms should be loans, repayment through bill savings and green mortgages. A reduction in Land and Buildings Transaction Tax could also be used to incentivise energy efficiency upgrades.</p> <p>The Scottish Government is introducing a new National Public Energy Agency,³¹⁹ with this due to come into being in the autumn of 2022 to “provide the leadership and coordination needed to accelerate delivering the decarbonisation of heat across Scotland.” It says that communications and engagement will be a large part of its role.</p>			
Type			
X change behaviour		<input type="checkbox"/> raise revenue	
X devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
£: for those with loans, these could be recovered over time through savings in energy costs. There is some interest in the PACE model from the US where the loan for improvements is tied to the property and paid back through the equivalent of Council Tax. The current rapidly rising energy prices provide a strong extra impetus for this measure.	C/behaviour: the residential sector is one of the largest sources of territorial emissions, at 6MtCO ₂ e a year for space and water heating. Eliminating this entirely, through a combination of energy efficiency retrofit and switching heating systems to zero-carbon, would remove 15% of Scotland's current emissions.
Cost: the Scottish Government is committed to spend £1.8bn over this Parliament on its current programme of work in this area. The Climate Assembly's proposal would require an investment two or three times this. Green Mortgages are a growing area of funding and incentives for energy efficiency improvements. ³²⁰ The Scottish Government estimates that the total gross cost to deliver zero emissions for all buildings (not just homes and including heating systems) by 2045 is £33bn. ³²¹ Improving energy efficiency would reduce the knock-on costs of fuel poverty on the NHS: one estimate says that every £1 spent on reducing fuel poverty saves the NHS 42p. ³²² The German government has allocated €177.5bn over the next four years to climate action, much of it on retrofits to the most inefficient housing. ³²³	
Time to implement: expanding the current programme would require more training of workers to do the retrofit work, which would take time but would also fit closely with the need to find alternative employment for oil and gas workers as part of the Just Transition.	
Pros and cons	
political acceptability: all parties are committed to improving home energy efficiency, this is unquestionably a popular area in which to do more, but the question of affordability would dominate. Investment in this area also has the potential to simultaneously reduce emissions and energy bills.	
collection issues: if loans were to be repaid through savings on bills, agreement would be necessary with the energy companies and Ofgem, complicated by the householders right to change energy company at will.	
local possibilities:	
regional impacts: Changeworks have produced a useful study on the transformation of heating in off-gas-grid areas, looking at four ways this might be rolled out without extensive loans or grants. ³²⁴	
relation to nature recovery: through reduction in climate change emissions, and any related adaptation measures	
Principles	
polluter pays: high earners (who on average have higher emissions) would be offered a repayable loan and would therefore be paying to reduce their pollution, while those offered a grant would have the state or private funding paying to reduce their pollution.	
climate & social justice: as with current schemes, those on lower incomes get the most help and the first priority. This scheme would be a very big step on the way to eliminating fuel poverty as well as reducing NHS costs related to ill health. It will create energy sector jobs as part of the Just Transition. The Scottish Government's current programme is predicted to create 16,000 extra jobs by 2030.	
level of certainty: a variety of schemes are already delivering energy efficiency improvements. The additional step in the Climate Assembly's recommendations is to achieve zero emissions standards at a much faster speed, something the Scottish Government does not aim to achieve until towards 2045.	

3.2 Options appraisal – heat pumps

Option name: Accelerate heat pump deployment
<p>Description: boost the current Scottish Government heat pump installation programme which has a target of over 1m homes with low or zero emissions heating systems by 2030, plus an additional 170,000 currently heated by oil, LPG or solid fuel, up from a total of 312,000 today. This would require even more air source and ground source heat pump installation, requiring an increase in the current commitment of £1.8bn of funding over this Parliament.</p> <p>The current Heat in Buildings strategy includes heat pumps, connection to heat networks, electric storage heaters and hydrogen heating systems. The latter is unlikely to be supported by SCCS since there are more strategic uses for limited supplies of hydrogen.³²⁵</p> <p>Installations of zero emissions heating systems, mainly air source heat pumps, have been running at around 3,000 a year and this will need to rise to 200,000 a year by the end of the decade to deliver on the Scottish Government’s target of 1 million homes. There are about 2 million homes that use gas for heating in Scotland. To convert them all by 2030 would require installation rates to increase to 400,000 a year by the end of the decade. To convert 1.5 million would require a rate of 300,000 a year.</p> <p>This kind of acceleration to installation levels would require a very large extra effort on training the necessary workforce, including training grants and attracting people back into the profession, as well as making this a priority just transition route for people leaving the oil and gas industry. It would also more encouragement for manufacturers but the good news is that Mitsubishi already make 300,000 heat pumps a year in Livingston. And crucially the Scottish Government needs give the market confidence by showing that its own programmes are going to create a large and consistent demand for heat pumps over the next decade.</p> <p>One area to look for rapid gains in is the nearly 600,000 homes in Scotland rented from social landlords – local authorities and housing associations. The Scottish Government is providing £200m in funding for net zero projects over the next 5 years to this sector.³²⁶</p> <p>The Scottish Government estimates that the total gross cost to deliver zero emissions for all buildings (including heating systems) by 2045 is £33bn, although householders would have spent about £5bn replacing heating systems in this time anyway.³²⁷</p> <p>The Scottish Government has established a Green Heat Finance Taskforce to look at how to fund this transition from public and private sources.³²⁸ This is due to publish an interim report in March 2023. They are also working with the industry on a secure supply chain and a Sector Deal is being developed with the heat pump industry.³²⁹</p> <p>In the UK electricity costs are closely related to gas costs through international market prices, even though, in Scotland, only 10% of our electricity came from gas-fired generation in 2020 and we have our own oil industry. Electricity is about four times more expensive than gas for the same amount of energy content, so gas-fired heating systems seem cheap to run compared to electric systems like heat pumps. This means a heat pump would reduce carbon but might actually increase bills if other energy saving measures are not put in place at the same time. In some circumstances a ‘no detriment’ policy would be needed which might mean a fuel bill subsidy might need to be in place for certain households and/or additional measures like solar panels and battery storage. The UK government has recently floated the idea of making electricity cheaper in regions where it is produced from renewables.³³⁰</p> <p>Domestic electricity bills have a levy on electricity prices for schemes which deliver energy efficiency in homes and support renewable energy. If there was a carbon-based tax on domestic fuel, gas would become more expensive relative to electricity, as would be the case if the environment and social levies were on gas bills instead of electricity bills. Either of these measures would strongly encourage heat pumps over gas boilers.</p> <p>This measure is closely related to the one on grants and loans for home energy efficiency retrofits.</p>

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Type			
X change behaviour		<input type="checkbox"/> raise revenue	
X devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			
Potential revenue/savings			
<p>£: where a heat pump reduces heating costs the installation cost could be recovered from the savings on energy bills over time. This would be much easier if the artificially high cost of electricity versus gas was addressed.</p>		<p>C/behaviour: the residential sector is one of the largest sources of territorial emissions, at 6MtCO₂e a year for space and water heating. Eliminating this entirely, through a combination of energy efficiency retrofit and switching heating systems to zero-carbon, would remove 15% of Scotland's current emissions.</p>	
<p>Cost: where a heat pump reduces heating costs the installation cost could be recovered from the savings on energy bills. However, while electricity remains much more expensive than gas, some installations will not deliver significant energy cost savings unless extensive insulation work is done at the same time.</p>			
<p>Time to implement: heat pumps are available and there is plenty of experience in fitting them. It will take time to train up more installers, although these are good energy sector jobs that would be part of the Just Transition for oil workers. Apart from having enough tradespeople the main constraint is the current lack of funding.</p>			
Pros and cons			
<p>political acceptability: making people's homes zero carbon is politically popular and where this would also reduce bills and fuel poverty rates it would be doubly so.</p>			
<p>collection issues: if costs were to be recouped through savings on bills, agreement would be necessary with the energy companies and Ofgem, complicated by the householders right to change energy company at will.</p>			
<p>local possibilities:</p>			
<p>regional impacts:</p>			
<p>relation to nature recovery: only through reduction in climate change emissions</p>			
Principles			
<p>polluter pays: the polluter would be paying to some extent where costs were recovered from savings on bills</p>			
<p>climate & social justice: schemes should be aimed at households in fuel poverty and be accompanied with a guarantee that the improvements made would reduce heating bills. Potential to create thousands of energy sector jobs as part of the Just Transition for the oil industry.</p>			
<p>level of certainty: heat pumps are a proven technology with thousands being installed every year and plans already in place to increase this rate by a factor of 65. A rapid expansion of installer training will be needed.</p>			

4. Transport

4.1 Options appraisal – free or cheap public transport

Option name: Free or cheap public transport for all			
<p>Description: public funding for free public transport (bus and train) anywhere in Scotland. Under-22s, over-60s and many disabled people already have free bus travel anywhere in Scotland, with 40% of the Scottish population now included. Some island residents have limited free ferry travel and some people buy into concessionary schemes, eg family railcards, although these are a commercial offering from the operators rather than a scheme subsidised by public funds.</p> <p>The extension of free travel to all would be intended to reduce car traffic and car ownership in the long term and therefore climate emissions and local air pollution, as well as increase access to job opportunities for the less well-off and create a more gender-just transport system. The cheap rail pass in Germany appears to have had an immediate impact in reducing congestion in 23 out of 26 cities.³³¹ Behavioural research confirms the effectiveness of free public transport in changing habits.³³²</p> <p>Over 100 cities, more than half of them in Europe, have made their public transport free and all public transport has been free in the (small) country of Luxembourg since early 2020. Spain is making all commuter and medium rail journeys free for several months,³³³ Germany has a temporary €9 monthly rail pass and Austria has introduced a KlimaTicket annual season ticket for all public transport throughout the country for €1095, equivalent to €3 a day.</p> <p>The Scottish Government already supports the public good that comes from public transport. The Scottish bus and train system were already 45% and 74% subsidised respectively by the public purse before extra support was needed during COVID-19.</p> <p>Free or very cheap public transport was a proposal of the Climate Assembly and free bus travel was a 2021 election proposal from FoE Scotland. A key principle would be to make sure quality of service for the user with the frequency and comprehensive coverage of the system maintained and improved.</p> <p>There could be a trail in one large urban area, as suggested by the Just Transition Commission.³³⁴ Lesser options include making only buses and not trains free, applying this only in urban areas or adding further concessions to the current list with the aim of free travel for all in the long-term.</p> <p>In addition to the climate case, there are strong social justice and gender justice cases for this measure. The Poverty Alliance's Everyone Aboard campaign³³⁵ states that: "<i>Public transport is key to easing the financial pressures on low-income households.</i>" They are calling for free bus travel to everyone receiving Universal Credit (and other low-income benefits) and to all young people under 25. Engender has noted that "<i>women are the majority of public transport users,</i>" and say they "<i>tend to make more complex and frequent journeys due to caring responsibilities and working patterns.</i>" They conclude that: "<i>Scotland's current transport systems, however, do not reflect the different needs of women.</i>"³³⁶</p>			
Type			
X change behaviour		<input type="checkbox"/> raise revenue	
X devolved	<input type="checkbox"/> reserved		X new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
<p>£: a key objective of this policy would be to reduce car traffic over time. This would reduce costs to society of congestion (approx £700m in 2019), crashes (~£900m in 2019) and car-based infrastructure. A 15% reduction in congestion and crashes would save society around £240m a year. Using a Social Cost of Carbon of £248/tonne yields an additional (theoretical) saving of £124m. This would also save people money by eliminating fares, and reducing car operating costs, most of which would be spent in the local economy.</p>	<p>C/behaviour: the policy in Luxembourg is part of a strategy to increase public transport use by 50% and to reduce car use by 15% by 2025. A similar reduction across Scotland’s urban and motorway driving would save around 0.5MtCO₂e every year or 1.25% of current annual emissions.</p> <p>A behaviour change of this size would deliver a very significant contribution to the Scottish Government target of reducing car-km by 20% by 2030.</p> <p>In the long term, if the policy led to a reduction of 15% in the number of cars owned in Scotland this would result in a further saving of 8MtCO₂e in embodied carbon, reducing Scotland’s consumption footprint.</p>
<p>Cost: in financial year 2018–19 bus and coach travel received £314m of public funding while ticket revenues brought in £380m.³³⁷ The extension of the free bus travel to under 22s is expected to shift this balance further away from ticket income. The Scottish Government funding for ScotRail and the Caledonian Sleeper in 2019–20 was £989m. For ScotRail alone this figure was a subsidy of £526m and ticket revenue was £360m.³³⁸</p> <p>In essence Scotland could have the same bus and ScotRail train service as pre-COVID but completely free for everyone at an additional cost of around £750m a year, nearly doubling the public funding. This amount is about 1.5% of the total Scottish Budget for 2022–3. This is less than the Scottish Government gave to keep the public transport operators going through the COVID-19 pandemic.</p> <p>Only making the buses free would cost about £350m. This might be offset by accident and congestion savings of around £240m – some direct savings to the Scottish Government, some savings to the Scottish economy – making the net cost of free buses only a one third increase in the existing bus subsidies.</p> <p>Revenue raised from Workplace Parking Levies (WPL), congestion charging and other measures which make private motoring more expensive would be a good fit to fund free or cheap public transport. The Welsh Government’s new transport strategy proposes using road pricing to fund public transport improvements.³³⁹ Increasing the attractiveness of public transport helps drivers who might become subject to WPL or congestion charges see that they have other viable options, help them switch and helping ‘sell’ those measures.</p>	
<p>time to implement: extending free bus travel to under 22s has had some teething troubles around ids but is in theory an easy change to an existing system, with the payment scheme to bus operators already in place. However the biggest changes in transport habits would come not from car users switching to public transport but potential car users deciding not to buy or lease a car, and existing owners getting rid of their car, so locking in the carbon savings. These are mostly medium-term changes.</p>	

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Pros and cons
<p>political acceptability: the move to extend free travel has been popular, as was the scheme for people 60 and over when it was introduced. The Scottish Government's response to the Climate Assembly recommendation was to support greater affordability but not to support free public transport for all. They are conducting a Fair Fares Review "to ensure a sustainable and integrated approach to public transport fares as the country recovers from the pandemic" including "the range of discounts and concessionary schemes which are available on all modes including bus, rail and ferry across the whole of Scotland." This will also look at integrated ticketing, something UK and Scottish Governments have been promising since the late 90s...</p>
<p>collection issues: extension of existing system for buses, ScotRail currently in public ownership but negotiations required with cross-border rail operators.</p>
<p>local possibilities: could encourage publicly-owned bus companies to be created</p>
<p>regional impacts:</p>
<p>relation to nature recovery: through reductions in climate and regional air pollution, and less roads needing to be built</p>
Principles
<p>polluter pays: those who were already choosing public transport now get to use that low-carbon mode for free. If the result is less car traffic then local air pollution is also reduced.</p>
<p>climate & social justice: increased access to job and educational opportunities for lower-waged people as it would remove the barrier created by travel costs. The measure could also support a more gender-just transport system than today where men often take priority in using a household's car. Plans would need to reverse the recent trend of declining bus services in rural areas and more generally ensure that rural areas are well served by public transport.</p>
<p>level of certainty: the impact of the policy on car usage depends on a wide variety of factors including the measures the government introduces in its plan to cut car-kms by 20% by 2030. Even though there are 100 cities internationally with some form of free public transport climate impact assessments are rare.</p>

4.2 Options appraisal – workplace parking levies

Option name: Introduce Workplace Parking Levies in Scotland’s cities			
<p>Description: use the powers in the 2019 Transport Act to introduce Workplace Parking Levies (WPL) in Scotland’s larger urban areas, with the revenue raised dedicated to public transport and active travel investment. A scheme of this type in Nottingham has raised £83m in its first decade, all of which has gone back into transport improvements in the city, principally the provision of electric buses and the extension of the tram network.³⁴⁰ The scheme covers around 40% of the workplace parking spaces in the city, with employers providing more than 10 spaces currently paying £458 for each parking space included in the scheme.³⁴¹ Evidence is clear that people on higher incomes are more likely to drive to city-centre work with a dedicated free parking space.</p> <p>The aim of the scheme would be to reduce car commuting. Firms might also decide to reduce their number of employee parking spaces so that they reduce costs or fall below the 10 space threshold.</p> <p>The powers to implement this measure are in the hands of local authorities but so far only Edinburgh and Glasgow are actively considering introducing a WPL. In Edinburgh about 31,000 spaces, eventually charged at a similar rate to the Nottingham scheme would bring in about £14m a year, with Glasgow estimating £30m for a city-wide scheme. The Scottish Government could work with local authorities to help fund the development and delivery of schemes.</p> <p>Further measures could introduce a levy on parking at retail/leisure parks, and a review of parking charges more generally could lead to an increase in revenue and a decrease in car trips to urban centres.</p>			
Type			
X change behaviour		X raise revenue	
X devolved	<input type="checkbox"/> reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
X carrot and stick			
Potential revenue/savings			
<p>£: projected at £14m a year in Edinburgh and £30m in Glasgow. Revenue decreases or charges have to go up if the measure succeeds in reducing car use.</p>		<p>C/behaviour: provides an incentive for businesses to reduce the number of car parking spaces they provide and for commuters to switch to public transport or cycling. A year after opening the Nottingham scheme was reducing congestion by over 1100 days’ worth of time savings.³⁴² If EV charging spaces were exempt from the charge this would be a further incentive to reduce the number of fossil-fuelled cars from urban areas, although there should be a time limit on this exemption.</p>	
<p>Cost: the Glasgow scheme is estimated to cost £1m–£1.6m to set up.³⁴³</p>			
<p>Time to implement: Glasgow estimates that it would take at least three years to set up a scheme in the city.</p>			

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Pros and cons
political acceptability: WPL has been the subject of hot political debate but the powers were agreed by Holyrood and two local authorities are already keen to progress schemes.
collection issues: works straightforwardly in Nottingham
local possibilities: local authorities are free to set their own rates and eligibility criteria. A minimum rate defined by the Scottish Government would help ensure some consistency across Scotland.
regional impacts:
relation to nature recovery: only through reduction in climate change emissions
Principles
polluter pays: most effective where the employer passes on the cost of the levy to employees using a currently-free parking space at work. Applies the polluter pays principle to some extent but translating the levy into a daily charge for the individual rather than a one-off annual charge would be more effective.
climate & social justice: on average good for social justice because it transfers resources from businesses with car parking or employees who drive to people who use public transport or cycle. The legislation requires the businesses to pay the levy on each parking space, it is up to the business whether they pass some or all of this cost on to the employee. Any workplace parking levy should be carefully designed to prevent employers from unfairly passing on the cost to low-paid workers for whom car use is essential to the delivery of their work.
level of certainty: operating successfully in Nottingham for over a decade. Powers to implement are already in Scots law.

5. Business and Industry

5.1 Options appraisal – business rates

Option name: Link business rates to climate emissions			
<p>Description: link the level of business rates to a business' carbon footprint – starting with the need for mandatory emissions reporting this could drive improvements in businesses from chip shops to sporting estates. Likely to be designed to be neutral overall, there would be winners and losers but not a big income stream.</p> <p>There are already specific reductions in business rates for district heating, renewable energy and hosting reverse vending machines. This measure would extend this approach to a business' carbon footprint.</p> <p>Some larger businesses may already be part of the UK Emissions Trading Scheme (ETS), and more will already be paying the Climate Change Levy on their electricity and fuel bills. These are both UK-wide schemes, so this additional element of payment or reduction on business rates would be an additional Scottish partial carbon-valuing measure to further incentivise climate emission reductions.</p> <p>There would need to be a graded approach based on business size. In mid-2021, 38% of UK businesses reported that they are taking at least one action to reduce their greenhouse gas emissions, while 24% reported that they are intending to act in the next 12 months.³⁴⁴ The CBI supports the use of business rates to drive energy efficiency and green technology, although their support was only about <i>lower</i> business rates.³⁴⁵</p> <p>In a related measure, the Climate Emergency Response Group has proposed reductions in business rates for energy efficiency improvements when business buildings are expanded or improved.³⁴⁶ There are around 220,000 non-domestic buildings in Scotland, accounting for 6% of Scotland's total greenhouse gas emissions and about twice the proportion are in the lowest energy efficiency bands as for domestic properties. There is therefore a strong need to increase the energy efficiency of many non-domestic buildings, and business rate relief for businesses which invest in improved energy efficiency could help incentivise this transition.</p> <p>Including Scope 3 emissions – those created indirectly within a company's value chain³⁴⁷ – in a later phase of implementing the measure would help businesses understand the carbon footprint of their supply chain, although the uncertainties involved in calculating these would mean this would not necessarily be used to influence their level of business rates.</p> <p>At the UK level this approach could be applied through Corporation Tax. A system just in Scotland would need to deal with confusion between business landlords and the business itself.</p>			
Type			
X change behaviour		X raise revenue	
X devolved	X reserved		X new
X extending/revising existing measure(s)			
X carrot and stick			
Potential revenue/savings			
£: uncertain but likely to be designed to be fairly neutral over all		C/behaviour: strong incentive to measure and then reduce climate emissions for businesses that have not considered it before.	
Cost: training and advice services would be needed to help businesses assess their climate impact			
Time to implement: business rates are already set and controlled in Scotland. This measure would be likely to be phased in with larger businesses, followed by SMEs.			

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Pros and cons
political acceptability: maximising acceptability by providing sufficient support for business to understand their emissions and what they can do about them and overall cost neutrality
collection issues: the Scottish Enterprise network already offers guidance for businesses to calculate their carbon footprint.
local possibilities:
regional impacts:
relation to nature recovery: only through reduction in climate change emissions
Principles
polluter pays: this measure is directly about the polluter understanding their climate impact and paying for it or being rewarded for reducing it. This is a form of partial carbon tax
climate & social justice: careful system design would be needed over small businesses and particular sectors.
level of certainty: systems exist but much business support will be needed.

5.2 Options appraisal – emissions trading scheme

Option name: UK Emissions Trading Scheme			
<p>Description: the UK ETS replaces the EU ETS for UK businesses. It is a ‘cap and trade’ system. So there is an annual cap on the number of allowances in the scheme and participants can trade with each other or participate in auctions to gather sufficient allowances to cover the emissions for they are responsible. An allowance is worth 1tCO₂e. The amount of allowances in the scheme decreases every year. Many industries including fossil fuel extraction and aviation are given free allowances, these total nearly half of all allowances. It is particularly egregious that in 2022 oil platforms in UK water are allocated 3.2 million free allowances, amounting to a hidden subsidy to fossil fuel extraction of around £250m a year.³⁴⁸</p> <p>The UK ETS covers energy intensive industries, the power generation sector and aviation for flights departing from or arriving in the UK. It covers around 100 participants in Scotland, accounting for 28% of Scotland’s greenhouse gas emissions.³⁴⁹ A range of industries can claim compensation for the impact of the UK ETS on their production costs.³⁵⁰</p> <p>The Scottish Environment Protection Agency is the regulator for the scheme for installations in Scotland, as it was for the EU ETS.</p> <p>The UK scheme started with a cap on carbon 5% tighter than the EU scheme. When the scheme opened in May 2021 the price of an UK ETS allowance was £47/tCO₂e, a year later it was £78/tCO₂e.³⁵¹</p> <p>The UK Government has just finished consulting on the future of the scheme,³⁵² including on reducing the amount of allowances more sharply to align with the UK’s net-zero target, reducing the number of free allowances given out, covering more than just carbon dioxide and introducing a border tax on imports from countries without a similar price on carbon. They also consulted on including maritime transport and waste into the scheme, but not buildings and road transport as current proposed in the EU.</p> <p>It is still unclear whether there will be a formal link between the UK and EU scheme, and whether the UK scheme will implement the accelerated pace of change proposed for the EU scheme. Linking the two schemes should reduce the administrative burden of the EU’s proposed Carbon Border Adjustment Mechanism (see Chapter 1). The EU is also planning to introduce a separate Emissions Trading Scheme for heating and transport fuels from 2026, and Germany introduced such a system last year. There has been considerable concern about rises in energy bills for poorer households from the inclusion of buildings in the ETS,³⁵³ which the EU has tried to address through a Social Climate Fund targeting the less well off.</p> <p>Given Scotland’s climate targets are more ambitious than those at UK level, the UK ETS needs to put industry in Scotland on track to deliver a fair share of Scotland’s climate targets, which means reducing allowances faster than needed only to meet the UK’s targets and also reducing the amount of free allowances allocated at a faster rate than at the UK level. Free allowances for the fossil fuel industry should be scrapped.</p> <p>If a new scheme is created for fuel use in buildings, as in the EU, an equivalent mechanism to the proposed EU Social Climate Fund is needed to protect poorer households.</p> <p>Linking the UK and EU ETSS, as has happened for the EU and Switzerland, makes sense to increase efficiency in reducing emissions and to avoid the risk of carbon border taxes being applied to trade with the EU.</p> <p>The Treasury brought in £1.4bn through the auctioning of allowances in 2020. This revenue should be ring-fenced for carbon-saving activity and apportioned to the devolved nations.</p>			
Type			
X change behaviour		<input type="checkbox"/> raise revenue	
<input type="checkbox"/> devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
X carrot and stick			

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Potential revenue/savings	
£: the Treasury received £1.4bn from auctioning ETS allowances in 2020. This revenue is treated as general funding and none of it is passed back to the devolved nations.	C/behaviour: higher carbon prices in recent years have started to make a big difference to emissions from industries in Europe covered by the EU ETS.
Cost: the Scheme is already up and running, so government costs to change its rules are small. Creating a new ETS for building and transport fuels would have significant cost.	
Time to implement: already running but major changes would have to be phased in. Linking the UK scheme to the EU one could take years of negotiations (linking the Swiss system took 10 years). The EU ETS achieved rather little during its first ten years, with one estimate suggesting it reduced emissions by less than 4% between 2008 and 2016. ³⁵⁴ The EU has ambitious ideas for how the scheme will reduce emissions across Europe in the coming decades, but the lesson for any new ETS is that it may not achieve much for quite a long time.	
Pros and cons	
political acceptability: a robust system is in place with proposals to increase the reductions expected but there will be resistance to pushing it even harder, so it delivers on industry's fair share of the UK and Scotland's targets. More complex would be any discussion about any differences to the operation of the system in Scotland.	
collection issues: trading system is already in place	
local possibilities:	
regional impacts:	
relation to nature recovery: only through reduction in climate change emissions	
Principles	
polluter pays: in theory the UK ETS implements the polluter pays principle for large industrial emitters but this is currently severely undermined by the number of free allowances given out	
climate & social justice: industry needs to make a bigger contribution to reductions but caution is needed to protect those on lower incomes from unintended consequences if energy costs rise.	
level of certainty: the scheme is running and the EU scheme provides a ready comparator	

6. Waste and Circular Economy

6.1 Options appraisal – extended producer responsibility

Option name: Introduce Extended Producer Responsibility schemes			
<p>Description: introduce additional Extended Producer Responsibility schemes.</p> <p>An extended producer responsibility (EPR) scheme shifts the responsibility of dealing with the environmental impacts of a waste product from the consumer and waste collector to the manufacturer and/or retailer. At its most simple the manufacturer is obliged to fund collection, reprocessing and disposal schemes for their products. Much better is if it can drive product redesign to be lighter and use materials with less environmental impact. With 82% of Scotland's carbon footprint caused by the goods and services we consume, EPR is a powerful tool to drive better product design and more re-use and recycling.³⁵⁵</p> <p>A modified version of the Climate Assembly recommendation:</p> <p>Introduce extended producer responsibility requirements to [improve] product design e.g. materials, production processes, so that the full costs of lifetime product emissions and disposal/repurposing are included in the price – including imported products. Introducing this legislation would ensure that the manufacturer takes responsibility for the TOTAL carbon footprint & emissions of a product. This should lead to manufacturers designing and making products that last longer, are repairable and upgradeable. This should mean that people will need to replace expensive items less frequently. Consumer electronics, in particular mobile phones, should be prioritised. It will also reduce the carbon footprint of products by discouraging the use of non-reusable components.</p> <p>EPR schemes that operate in other European countries include tyres, waste oil, paper and card, construction and demolition waste, farm plastics, medicines and medical waste, chemicals, newspapers, refrigerants, pesticides and herbicides, and lamps, light bulbs and fittings. Schemes which are required by EU law include waste electronic and electrical equipment, batteries, end-of-life vehicles and packaging.</p> <p>The 2016 circular economy strategy 'Making things last'³⁵⁶ announced the Scottish Government's intention to explore proposals for extended producer responsibility schemes for tyres, furniture and bed mattresses. Six years on none of these schemes have been introduced, at least in part because discussions have been bogged down on developing GB or UK schemes. The 2022 consultation on a Circular Economy Bill³⁵⁷ notes that the Scotland Government is working with the UK administrations to introduce EPR schemes for waste electrical and electronic equipment and for batteries in 2024 (driven by EU law).</p> <p>An improved EPR for packaging, also driven by EU legislation, will be introduced across the UK in 2024 and will make producers pay for the £2.7bn annual cost of dealing with their packaging when it becomes waste. The forthcoming Scottish Deposit Return Scheme (DRS), introducing a 20p deposit for drinks' bottles and cans. is also a form of EPR. The Scottish Government proposes to develop EPR schemes for at least three other products and discussions are underway (again) on mattresses.³⁵⁸</p>			
Type			
X change behaviour		X raise revenue	
X devolved	X reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
X carrot and stick			

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Potential revenue/savings	
£: producers fund collection and reprocessing activities, usually passing some of the cost on to the consumer. The packaging EPR could see very significant revenue raised to fund local authorities' collection and clean up of waste.	C/behaviour: to reduce the amount they are paying producers may redesign products or packaging to have lower environmental impact. The UK-wide packaging scheme is expected to save about 4.5 MtCO ₂ e per year.
Cost: in theory there is a saving to the taxpayer because the producer has to start paying for services that local authorities are already providing. The packaging scheme is expected to cost UK businesses £1bn a year.	
Time to implement: several schemes are coming into operation in 2024 but they have taken a long time to develop, despite being mandated by EU legislation.	
Pros and cons	
political acceptability: the idea that producers should take responsibility for their products, shifting costs away from the public sector and the consumer, will seem like common sense to most people. These kind of schemes are common in Europe and some have been running for decades. However, producers and retailers are unlikely to be overjoyed.	
collection issues: reasonably straightforward for UK-wide schemes, less so for any Scotland-only schemes as seen with setting up the DRS.	
local possibilities: provides a revenue stream to fund local authority and community waste and recycling collections and re-use, repair and remanufacturing projects.	
regional impacts:	
relation to nature recovery: as well as the reduced carbon emissions, greater recycling means less litter in the countryside, better product design could mean less extraction of raw materials here and overseas.	
Principles	
polluter pays: this is a strong implementation of the polluter pays principle, but need to be careful that revenue raised from collecting material does not discourage efforts to promote reduced consumption.	
climate & social justice: less extraction of materials means less health impact of mining communities and less environmental damage. Consideration needs to be given to any price rises that may occur for essential products, and the potential for this to exacerbate living costs for lower-income households.	
level of certainty: EPR schemes are common in Europe and there is much to learn from these schemes; several are being introduced here soon and the powers exist in Scots law to create more.	

6.2 Options appraisal – pay as you throw

Option name: Pay as you throw tax			
<p>Description: introduce a pay as you throw tax for household waste.</p> <p>These schemes are widespread in Europe, the US and Japan. They encourage people to recycle properly and may encourage some thought about reducing overall waste. Because the tax depends on how much you throw away it is very firmly linked to the Polluter Pays Principle. A scheme might for instance be set up to have the first bag of waste a week free then the householder would have to pay a tax for any subsequent bags.</p> <p>Householders are already paying for waste collections through their Council Tax so once a scheme is up and running the overall cost to the average householder should be about the same but people will be paying at a level in proportion to the amount of waste they are producing. As the scheme helps reduce overall residual waste volumes, overall costs will decrease.</p> <p>In Scotland the Landfill Tax has driven local authorities to provide more extensive recycling facilities (but also increased rates of incineration). However, even where recycling opportunities are excellent, there is currently no financial incentive for the public to use them, so recycling rates may be plateauing at around 45%. The Scottish Government's Route Map for the Circular Economy Bill highlights research showing that <i>"householders should be incentivised to minimise residual waste to support recycling rate improvements."</i>³⁵⁹</p> <p>Schemes in Belgium, the Netherlands and Luxembourg use a variety of ways of making a charge from the size of a wheelie bin or the frequency of collection to the actual weight of refuse collected or the sale of refuse sacks.³⁶⁰</p> <p>There is potential to create the powers to set up a pay as you throw scheme in the forthcoming Circular Economy Bill. In addition or instead of this tax there could be Council Tax reductions for participating in particular schemes, such as food waste collection or textiles recycling. In Wales there is another approach with enforced limits on the size of household bins or bags of waste that will be collected to encourage households to maximise their levels of recycling.³⁶¹</p>			
Type			
X change behaviour		X raise revenue	
X devolved	X reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
X carrot and stick			
Potential revenue/savings			
<p>£: every tonne of waste not sent to landfill, saves a local authority the Landfill Tax of around £100, and more material collected for recycling means more income. Most likely this would be offset by reductions in Council Tax and Business Rates, although some suggest there is potential to raise tens of millions a year for local authorities to invest in circular economy measures. The Benelux schemes aim to raise up to 50% of the cost of the service from charges. Could compensate for some valuable recyclable materials being diverted away from local authority collections by the Deposit Return Scheme.</p>		<p>C/behaviour: schemes in Europe have been successful at reducing waste which goes to landfill or incineration and increasing recycling rates. If rates increased from 45% to the Scottish Government's target of 70% there would be a carbon saving of around 0.5MtCO₂e every year.³⁶²</p>	

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Cost: Investment would be needed in dedicated sacks, new equipment on waste trucks, new wheelie bins or a combination of these. There is already a five-year £70m Recycling Improvement Fund available to local authorities for capital expenditure. The electronically-tagged bag scheme in Seveso in Italy costs about €5/person/per year to run. Extra resources would also need to go into stopping fly tipping and enforcement of the new scheme.

Time to implement: different approaches might be needed in rural, suburban and tenemental areas so the scheme might be phased in over some years. The simpler approaches would be relatively quick and cheap to implement.

Pros and cons

political acceptability: the Benelux schemes are generally liked by householders and any scheme could be designed to be cost neutral to the average householder through tax payments being offset by parallel reductions in Council Tax, and could be phased in over time. It is likely that this scheme would be much more acceptable, politically and publicly, if Council Tax were reduced as it was introduced.

collection issues: there is scope for cheating but there is plenty of experience in European schemes on how to minimise this. There would also need to be more effort addressing littering and fly tipping.

local possibilities:

regional impacts:

relation to nature recovery: only through climate emissions reduction, closure of landfill sites and litter reduction

Principles

polluter pays: this is a classic example of a scheme designed to deliver on the polluter pays principle.

climate & social justice: an equitable scheme would require everyone to have good access to recycling opportunities, so that they can divert recyclable waste away from the general waste, without – for example – requiring to independently transport this to a recycling centre. There would no doubt need to be some exemptions from the scheme and it would need to be designed to be fair to both low income and larger households.

level of certainty: in operation in many places across Europe, often for decades, so there is a great deal of experience to draw upon

7. Land use, land-use change and forestry

7.1 Options appraisal – Carbon Emissions Land Tax

Option name: Carbon Emissions Land Tax			
<p>Description: introduce a Carbon Emissions Land Tax which taxes emissions created through land use and penalises the owners of land currently emitting more carbon than it captures. This recommendation hopes to target land not being used productively. Land owners would be incentivised to change land use, to reduce carbon consumption and increase carbon capture to avoid paying this tax. We believe this would encourage use of the land for the common good and also target unfair or unproductive landownership in Scotland. (Climate Assembly version)</p> <p>This Climate Assembly recommendation was based in part on the John Muir Trust’s (JMT) proposal for a Carbon Emissions Land Tax³⁶³ which suggests a banded tax on landholdings over 1,000ha, with the money raised funding peatland restoration and woodland creation. They have a quite detailed proposal and a starting rate might be £1-£5 per hectare depending on land use and soil carbon content. The revenue would go to local authorities for local carbon reduction projects.</p> <p>Around 60% of Scotland’s land area would be covered by the scheme, with a mix of ownership among private, public and non-government organisations (NGOs). For NGOs there would need to be a discussion about this tax and existing tax reliefs.</p> <p>At a devolved level, the forthcoming Land Reform Bill, to be introduced before the end of 2023 or the Natural Environment Bill in 2024, could be ideal opportunities to create this tax. See also the discussion on Wealth Tax, which could also be land (and property) based.</p>			
Type			
X change behaviour		X raise revenue	
X devolved	<input type="checkbox"/> reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
X carrot and stick			
Potential revenue/savings			
<p>£: JMT suggests the tax could raise £12.5m a year. As a local tax funding local authority activity, this is a devolved matter. If the emissions saved were valued using the UK Treasury’s social cost of carbon, the true value of the savings to society would be about £2bn a year by 2040.</p>		<p>C/behaviour: JMT suggests this measure could take 6MtCO₂e out of the atmosphere every year by 2040.</p>	
<p>Cost: JMT’s proposal is to extend existing rates collection systems, so keeping implementation cost low.</p>			
<p>Time to implement: JMT suggests phasing the tax in with a pilot for landholdings over 10,000ha, the Land Reform Bill in 2023 or the Natural Environment Bill in 2024 would be ideal starting points.</p>			

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Pros and cons

political acceptability: the new tax would be challenging for sporting estates, a group whose political influence is already on the wane, with, for instance, licensing coming soon and more attention being paid to wildlife crime. JMT estimates an average grouse moor that chose to make no changes would pay around £16,500 a year in tax, those that chose to reform would avoid much of this bill. Many would see this tax as usefully progressing the land reform agenda. JMT has already had discussions with a wide range of bodies, including civil servants, Ministers and MSPs, and the Scottish Government formally responded to it through the Climate Assembly process without acknowledging that they could set this up as a local tax.³⁶⁴

collection issues: JMT suggests the tax would be administered at local government level, building upon existing systems for collecting non-domestic rates for sports shooting and other land-based businesses.

local possibilities: revenues of over £10m could flow to local authorities.

regional impacts: as well as reducing carbon emissions and increasing carbon absorption by land, a well-designed measure would also boost biodiversity, reduce flooding risk, improve water quality and increase recreational opportunities

relation to nature recovery: expansion of native woodlands and peatlands with consequent boosts for biodiversity

Principles

polluter pays: the tax aims to make large landowners more accountable for the carbon impact of their land management choices, so this measure is a form of carbon tax.

climate & social justice: moves to greater direct land management likely to create jobs in the rural areas. A report from Scottish Wildlife Trust came up with a total of over 7,000 new jobs from peatland and woodland restoration and expansion, and deer and nature management.³⁶⁵

level of certainty: this is a tax which could be introduced within existing powers, through the Land Reform Bill, and which could deliver large carbon benefits, but which could face strong opposition from vested interests.

7.2 Options appraisal – woodland grants

Option name: New woodland planting and management grants/tax relief
<p>Description: boost fiscal incentives encouraging crofters, farmers and land managers to plant, and investors to invest in, the right sort of trees in the right places including reviewing current planting and management funding schemes to make sure they are delivering as much as possible for nature and the climate, including protecting forest soils.</p> <p>In 2021 80% of the trees planted in the UK were in Scotland and 40% of those were broadleaved. Planting rates have been high in recent years but the Scottish Government’s Climate Change Plan requires a 40% increase in the next few years, rising to 18,000 hectares/year by 2024-5. This is greater than the recommendation from the Climate Change Committee, although their trajectory continues to a rate of 25,000ha/yr after 2035.³⁶⁶ There is also a commitment to increasing the area of native woodland planted from 3,000 a year to 4,000. In 2020 RSPB Scotland, Scottish Wildlife Trust and WWF Scotland called for 50% of new planting to be native species.³⁶⁷</p> <p>The current grant schemes are grouped together under the Forestry Grant Scheme (FGS) and cover eight categories of new woodland creation and management of existing woodland, including grants for planting trees on agricultural land.³⁶⁸</p> <p>There is also a Scottish Government commitment to help public sector bodies to increase tree cover on land they own and manage and to ensure the replacement for the Common Agricultural Policy (CAP) agricultural subsidy scheme includes funds for “tree planting, orchard creation, and woodland regeneration, as well as support for the development of rural businesses linked with forestry.”</p> <p>A new report for Scottish Environment LINK³⁶⁹ analysed the effectiveness of the Forestry Grant Scheme and recommended changes to increase the nature value of forests under four themes:</p> <p>Diversification – aimed at increasing forest and woodland resilience. This can be done through the FGS supporting a broader range of species, age classes and structure in woodland/forestry expansion.</p> <ul style="list-style-type: none"> • Increasing the minimum amount of native species in the woodland creation conifer and diverse conifer options • Reducing the maximum allowed for any single species from 75% • Extending target area premiums to Argyll and South Scotland, and setting supplements for growing broadleaves for timber on areas suitable for growing quality hardwoods <p>Management of existing woodlands – incentives to increase the resilience of existing woods through restocking and enhancement of existing woods.</p> <ul style="list-style-type: none"> • Target area premiums for native woodland afforestation • Partnership opportunities with conservation bodies, agencies and interested landowners to initiate an intensive drive for native woodland afforestation schemes in selected areas on the lines of Cairngorms Connect. • Increase the hectare grant rate for natural regeneration to reflect the scale and public benefits that are to be delivered. • Long term grant payments for deer control (least 10 years) • Set conditions that woodland expansion grant will be awarded subject to plans and commitments to manage existing woodland <p>Deer Management – implement the Deer Working Group Recommendations</p> <ul style="list-style-type: none"> • Pilot a new target area grant package for catchment-scale deer control. Involve NGOs, agencies community groups and sympathetic landowners in promoting the package locally. • Create a new long-term fund for deer control on the lines of the Peatland Action Project and link the funding with support for rhododendron control (where appropriate) and natural regeneration of native woodland. • Through a Challenge Fund, increase the short-term management payments for deer control and fencing for small native woodlands in urgent need of management. Invite NGOs with local knowledge to help in identifying and prioritising such woods and assisting with grant applications.

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Natural regeneration and colonisation – increase support for management to facilitate natural regeneration of native species in existing woodlands and natural colonisation in buffer zones around the edges of existing native woods.

- Increase the hectare grant rate for natural regeneration to reflect the scale and public benefits that are to be delivered.
- Include a greater focus on natural regeneration provision within FGS Long Term Forest Plans and Woodland Plans.
- Where appropriate encourage consideration of natural regeneration first

The Farming for 1.5° report³⁷⁰ recommended “Forestry applications over 20 hectares should be required to specify the net carbon sequestration they will achieve over the next 50/100 years, and demonstrate biodiversity net gain.”

A report³⁷¹ from the Forest Policy Group and the Pebble Trust, highlights the importance of forest soils but also the gaps in our scientific knowledge about carbon balances and the impact of different tree-cultivation practices. They recommend new guidance on tree planting on peaty soils and more public sector resources for monitoring of forestry activity.

An example of exactly the wrong type of scheme was the tax reliefs that led to extensive planting in the carbon-rich Flow Country in the 1980s, to the benefit of high-profile individuals like Terry Wogan.³⁷²

Type	
X change behaviour <input type="checkbox"/> raise revenue	
X devolved	X reserved <input type="checkbox"/> new
X extending/revising existing measure(s)	
<input type="checkbox"/> carrot and stick	
Potential revenue/savings	
£:	C/behaviour: it is important that the 18,000 ha/yr planting rate target and higher ones in later years are met, but this should be done in the way best designed to deliver for nature and the climate.
Cost: the total budget for the Forestry Grant Scheme in 2021-2 was £63.3m and the Scottish Government has committed £100m to increase planting rates to reach the 18,000ha/yr target.	
Time to implement: extension of existing schemes to focus more strongly on climate and nature,	
Pros and cons	
political acceptability: the case for greater forest cover in Scotland has been widely accepted.	
collection issues:	
local possibilities:	
regional impacts: job creation in rural areas	
relation to nature recovery: a vital part of nature recovery in Scotland	
Principles	
polluter pays: this does not deliver on the polluter pays principle since the public purse is paying to absorb carbon from other polluters, however the finance for this investment could be sourced through parallel measures which make polluters pay.	
climate & social justice: grants schemes need to include support for individuals and communities managing or creating woodlands. ³⁷³ Good rural job creation potential.	
level of certainty: the Climate Change Plan monitoring reports rate woodland creation as on track. ³⁷⁴	

8. Agriculture

8.1 Options appraisal – agricultural subsidies

Option name: Incentivise climate and nature friendly farming
<p>Description: reform agricultural subsidies to deliver maximum benefits for climate and nature, including protecting soil health, while producing healthy food from resilient businesses.</p> <p>This requires a radical change to the current funding priorities, with the vast majority of funding going to help farmers make and sustain the transition to low-carbon, nature-friendly farming. All public money going to support agriculture must come with environmental conditions, and there needs to be a much bigger proportion of the budget going to directly to nature reduction and emissions reduction initiatives. This also means a big boost for a reformed advice service, and training and knowledge exchange opportunities.</p> <p>Agriculture produces almost a fifth of Scotland’s greenhouse gas emissions, yet agricultural emissions have only fallen 2% since 2008. More than 70% of the emissions counted under the agriculture category are to do with rearing livestock. See the previous chapter for the importance of managing the land of Scotland for climate change and nature.</p> <p>The Climate Change Committee recommends that agricultural emissions across the UK need to reduce by 34% by 2035 (from 2019 levels).³⁷⁵</p> <p>Around £600 million a year is spent in Scotland on agricultural support, and most farm businesses would not survive without public funding, so public policy has a huge influence over what farming looks like.</p> <p>In 2019 76% of agriculture support was direct payments, related to land area and quality and given regardless of whether the farm business is profitable or not, with the top 1% of claimants getting 10% of the budget. Only 23% of this subsidy was allocated through the specific (but weak) ‘Greening’ category. Figures from the James Hutton Institute³⁷⁶ put the spend in nature restoration at 7% of total spend.</p> <p>The Farming for 1.5° was an independent inquiry on farming and climate change in Scotland, co-ordinated by NFU Scotland and Nourish Scotland. It involved a panel of farmers, NGOs, scientists and the main report³⁷⁷ in 2021 looked at pathways to 2032 and then to 2045. They suggested greenhouse-gas-specific targets for the sector:</p> <p><i>“For methane we see a reduction of 25% by 2032 through a combination of better animal health, improved genetics, early adoption of feed additives and better management of manures. By 2045 a reduction of 50% on current levels is possible through low methane breeding and widespread adoption of feed additives.</i></p> <p><i>“For nitrous oxide we see a reduction of 25% by 2032 through a combination of more efficient use of bagged nitrogen, manures and slurries, an increase in the use of legumes and the reduction of nitrogen use in the large areas of land being farmed for nature.</i></p> <p><i>“Nutrient budgeting, yield mapping, crop monitoring, controlled release fertilisers and variable rate application all contribute to nitrogen use efficiency. Further uptake of these measures result in a cumulative reduction of 50% in nitrous oxide emissions by 2045. In combination, this means a 55% reduction in emissions by 2045.”</i></p> <p>The report recommended that public funding should first move to general greening, encouraging practices to reduce emissions and then greenhouse gas reduction contracts for individual farms.</p> <p>The report contained 15 recommendations, many based around the Scottish Government’s new Agricultural Reform Implementation Oversight Board,³⁷⁸ including</p> <ul style="list-style-type: none">• The Board should institute a scheme for continuing professional development for farmers. The new contract for advisory services should involve a re-focusing of the service on working with farmers to tackle the climate and nature emergencies; and an emphasis on reaching the full diversity of farmers through flexible and inclusive ‘one to few’ approaches. This enhancement of CPD and refocussing of advisory services should be reflected in formal training provision for new entrants too.

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- As part of the Green Recovery priorities under “boosting youth employment opportunities in nature and land-based jobs”, Scottish Government should fund a programme of training and employing young people to undertake soil carbon testing and mapping of on-farm natural capital.
- From 2024, Scottish Government should introduce emissions reduction contracts across all farm types underpinned by a management plan that fits their system and its future development, with a limited number of management interventions.
- Scottish Government, farmers and research institutes should work together to accelerate advances in ruminant livestock selection and breeding; include reducing methane emissions in breeding goals, and encourage uptake of best practice.
- Scottish Government should set a target of 6,000 hectares a year for agroforestry creation, and create a ring-fenced budget for agroforestry with a dedicated 10-year programme to drive it.
- Land use change should as far as possible be planned to optimise economic environmental and social outcomes rather than be purely market-driven.
- The carbon in Scotland’s soils should not be traded until further notice.

The Bute House agreement says the Agriculture Bill to replace the CAP scheme will be introduced in 2023 to deliver:

- a new support framework that will include delivering climate mitigation and adaptation, nature restoration and high quality food production.
- integration of enhanced conditionality against public benefits, with targeted outcomes for biodiversity gain and low emissions production.
- increased equality of opportunity, improving business resilience, efficiency and profitability.

The proposals for the Agriculture Bill³⁷⁹ include payments to farmers, crofters and land managers to support delivery of national climate change emission reduction objectives, to support delivery of national climate change adaptation objectives, and to support integrated land management, such as for peatland and woodland outcomes on agricultural holdings. Some payment will be conditional on outcomes that deliver on climate change. However, the Scottish Government’s vision³⁸⁰ for the future of farming proposes that only 50% of direct payments will have climate and nature conditions attached by 2025.

Scottish Environment LINK is running a ‘Farm for Scotland’s Future’ campaign aiming to make sure the reformed subsidy system delivers for climate, nature and people.³⁸¹ This calls on the Scottish Government to:

- Replace the decades-old farm funding system with one that works for nature, climate and people.
- Ensure at least three quarters of public spending on farming supports methods that restore nature and tackle climate change.
- Support all farmers and crofters in the transition to sustainable farming.

NatureScot has published a set of case studies looking at how current subsidies can be redirected to a version which maximises tackling climate change and enhancing biodiversity.

Type			
X change behaviour		<input type="checkbox"/> raise revenue	
X devolved	<input type="checkbox"/> reserved		<input type="checkbox"/> new
X extending/revising existing measure(s)			
<input type="checkbox"/> carrot and stick			

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Potential revenue/savings	
£: redirecting large public subsidies, no revenue raising potential. The total carbon savings from driving the sector to net-zero could be valued at about £10bn a year at a social carbon price of £248 a tonne.	C/behaviour: redirecting public subsidy would very significantly reduce the 25% of Scotland's emissions that come from agriculture and its associated land use impacts.
Cost: the public purse already pays for much of what happens in agriculture, so reprioritising this spend to reduce carbon has additional transitional costs but the on-going level of support might be similar.	
Time to implement: the previous EU-based system of agricultural support has to be replaced over the next few years so now is the time to build climate change into this system. Large change will result in agriculture, food production and land use so there will need to be a transition phase. The Scottish Government consulted on the replacement of CAP in late 2021.	
Pros and cons	
political acceptability: change in agriculture is often difficult to make, despite the whole shape of the sector being mostly determined by government policy. The replacement of the CAP system is a big opportunity to make a step change in how the sector contributes to climate change.	
collection issues: current rural payments service already in existence	
local possibilities:	
regional impacts:	
relation to nature recovery: protecting and enhancing biodiversity should be written in to the new subsidy system.	
Principles	
polluter pays: currently the public purse pays for farming to have a large climate impact, redirecting this spend would see public money paying for a low-emissions, carbon-removing agricultural sector	
climate & social justice: a transition from the current system will need to be carefully managed. The Just Transition Commission suggested that employment in the sector need not fall through this transition. ³⁸² The Bute House Agreement commits to support for farmers, crofters and land manager, protection for tenant farmers and small holders and more support for women in agriculture and for new and young entrants into farming.	
level of certainty: the current subsidy regime needs to change anyway and some commitments are in place on using this transition to reduce agriculture's contribution to climate change. The Scottish Government has stated an aim to maintain broad alignment the EU CAP system going forward, which may present a barrier to the level of ambition that can be built into reforms here. There is still an argument about whether the UK Government will support agriculture to the same financial extent as under CAP beyond 2024.	

8.2 Options appraisal – nitrogen levy

Option name: Introduce a nitrogen levy in farming			
<p>Description: Introduce a nitrogen levy in farming. As a minimum the Scottish Government should honour their commitment in the 2018 Climate Change Plan to develop a target for reducing emissions from nitrogen fertiliser.</p> <p>Nitrous oxide emissions, mainly from fertiliser use, contribute about 9% of Scotland total emissions, and about 60% of those come from agriculture. As the 2019 Climate Change Bill was being debated SCCS called for a nitrogen budget for Scotland, with targets. The Scottish Government has introduced a Scottish Nitrogen Balance Sheet³⁸³ – an accounting exercise to track this impact. It says this “provides a powerful new source of evidence to track how efficiently nitrogen is used in Scotland and help identify further opportunities to improve this.” There is also a new indicator to measure the nitrogen use efficiency in crop production, but there are no targets. The Climate Change Plan included a commitment to look at setting a target but the monitoring report simply refers to the balance sheet and does not mention a target.³⁸⁴ In 2020 RSPB Scotland, Scottish Wildlife Trust and WWF Scotland called for the introduction of compulsory soil testing and nitrogen balance sheets on all farms.³⁸⁵</p> <p>After a big historical rise, recent nitrogen fertiliser use peaked in the 2010s and has dropped a little since then but the rate of application per hectare has been relatively flat over the last decade.³⁸⁶ The simplest form of fiscal measure would be a levy on the price of mineral fertiliser, based on its nitrogen content.</p> <p>The Farming for 1.5° report³⁸⁷ laid out a pathway to a reduction of 25% by 2032 “through a combination of more efficient use of bagged nitrogen, manures and slurries, an increase in the use of legumes and the reduction of nitrogen use in the large areas of land being farmed for nature. Nutrient budgeting, yield mapping, crop monitoring, controlled release fertilisers and variable rate application all contribute to nitrogen use efficiency. Further uptake of these measures result in a cumulative reduction of 50% in nitrous oxide emissions by 2045. In combination, this means a 55% reduction in emissions by 2045.”</p> <p>In the Netherlands a levy on nitrogen and phosphorus at levels above a set minimum has been in place since 1998.³⁸⁸ This minimum level is reduced over time. A court ruling from 2019 is driving nitrogen emissions reductions even faster in the Netherlands with a commitment of over €30bn out to 2035 for work to reduction nitrogen emissions by 50%³⁸⁹ and there is now even a Minister of Nature and Nitrogen Policy. The aim is to reduce both greenhouse gas emissions, and local air, land and water pollution.</p> <p>Experiments in Germany showed that a moderate nitrogen tax was effective at reducing fertiliser use on barley – the most common cereal crop grown in Scotland³⁹⁰ – but less so for wheat.³⁹¹</p> <p>A Swedish fertiliser tax ran for 25 years but was scrapped in the 2009 recession. A Danish fertiliser tax exempts most farmers because they are covered by strict regulation, but the tax still raises about €3m a year.</p> <p>Powers to introduce a Scottish levy on fertiliser use could be included in the forthcoming Agriculture Bill on the new subsidy arrangements. The levy would be analogous to the Carrier Bag Charge already successfully in place in Scotland, enabling powers for which were in the Climate Change (Scotland) Act 2009.</p>			
Type			
X change behaviour		X raise revenue	
X devolved	X reserved		X new
<input type="checkbox"/> extending/revising existing measure(s)			
X carrot and stick			

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Potential revenue/savings	
£: using the lower tax tested by the study in Germany of €0.2 per kg of nitrogen, suggests Scotland's current use of mineral fertiliser would generate about £30m a year ³⁹²	C/behaviour: cutting nitrogen emissions from farming by half would reduce Scotland's overall emissions by around 3% or 1.2MtCO ₂ e. There would also be an energy and climate emissions saving from the reduction in production of artificial fertiliser, at over 0.5MtCO ₂ e
Cost: introducing a simple levy would require some new systems to track the sales of nitrogen fertiliser.	
Time to implement: a levy would require primary legislation and regulations and would no doubt be phased in over time.	
Pros and cons	
political acceptability: change in agriculture is notoriously difficult to make, despite the whole shape of the sector being mostly determined by government policy. The replacement of the CAP system is a big opportunity to make a step change in how the sector contributes to climate change. Increasing fertiliser costs are already a concern for farmers, with prices doubling in the last year. There is a risk that a levy would be introduced at such a low level that it would not incentivise farmers to reduce their use of mineral fertiliser.	
collection issues: the Dutch system requires knowledge of nitrogen in purchase feed and fertilisers and in manures.	
local possibilities:	
regional impacts:	
relation to nature recovery: as well as the climate impact, reduced nitrogen pollution to the land and water would improve the health of ecosystems.	
Principles	
polluter pays: this measure is clearly about making the polluter pay. Reduced nitrogen input will also help protect groundwater in Scotland's five Nitrate Vulnerable Zones.	
climate & social justice: care would have to be taken to ensure farmers, crofters and land managers were supported through the transition to increase fertiliser costs.	
Level of certainty: there is some European experience with this kind of measure and there is an opportunity through the forthcoming Agriculture Bill.	

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