



GREEN INVESTMENT

THE PRUDENT CHOICE FOR PROSPERITY

**Sam Alvis and
Luke Murphy**
December 2022

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IPPR's Fair Transition Unit (FTU) was established in June 2022 as a new landmark initiative to carry forward the work of IPPR's cross-party Environmental Justice Commission and award-winning work on environmental breakdown.

The FTU's mission is "to accelerate progress in reducing emissions and restoring nature and secure a fairer, more just and thriving society". To realise this mission, the FTU delivers projects, programmes and support to others focussed on securing a fair transition to net zero and the restoration of nature.

The Environmental Justice Commission drew on views and recommendations from citizens from across the country in a way that has genuinely shaped policy thinking and had tangible policy and media impact. Building on this legacy, the FTU puts the public at the heart of its work through extensive public deliberation.

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SUMMARY

The UK drastically needs to reduce carbon emissions and address biodiversity loss. Meanwhile, the public, staring down the barrel of soaring costs and economic headwinds are looking for tangible improvements to their everyday lives and local environments. This is why, last year, IPPR's Environmental Justice Commission proposed a £300 billion 10-year package of investment, rooted in fairness to transform the environment, the economy, and wellbeing.

In the recent autumn statement, the chancellor set out the government's plans to respond to the turmoil from October's mini budget. He outlined significant tax rises, new fiscal rules limiting borrowing, and significant cuts to public services from 2025. Within this changed political and economic context, the politics of the 2010s with a narrow focus on debt is threatening a return.

However, environmental investment remains hugely popular.

- Even as the cost of living increases, public support for environmental action remains strong, with both being joint top concerns for the public (ONS September 2022). The public increasingly say we can't afford *not* to implement policies to address climate change, with 80 per cent seeing investment in renewables as the way out of the current energy crisis (UK100 2022).
- A multibillion climate investment package receives 68 per cent support, with just 21 per cent opposing (+47 net positive). This falls to 59 per cent support when mentioning that investment will come from borrowing (+34 net positive) (Opinium 2022).

Politicians newly attuned to debt markets are wary of once again causing them to take flight. Policymakers making public investment of this kind will need to avoid short-term inflation risk and ensure there is medium-term fiscal headroom. However, there is still room to invest.

- **Fiscal space:** Recent IPPR estimates point to government still having £42 billion of fiscal headroom in 2023, while keeping inflation at bay. Pairing investment with progressive tax rises – such as equalising the rate of tax between capital gains and income tax or on share buybacks and dividends – could further ease inflationary pressures while also creating fiscal headroom in the medium term.
- **Green growth dividend:** Higher growth makes it easier to achieve a falling debt-to-GDP ratio (which both major parties have committed to). Green investments can drive growth by raising the productive capacity of the economy; for example, by reducing the cost of energy (and reliance on expensive energy imports), or increasing transport, energy, and resource efficiency. Creating new high-value industries also contributes. A 0.5 percentage point increase in growth could generate about £12 billion more fiscal space. In this way, investment that raises the growth rate can partly 'pay for itself' through higher future growth.
- **Wider social benefits:** Green investment also has indirect effects which improve economic outcomes, such as better health from reduced air pollution or greater access to green space, lowering the burden on public services. It can also reduce the need to spend public funds in the future responding to climate impacts such as extreme weather events.
- **Green fiscal policy:** Macroeconomic policy should integrate environmental concerns. Current modelling doesn't include the costs of climate inaction or the dynamic growth effects of new green technologies. Better modelling will

inform better policy. Options for reform should include accounting for assets under fiscal rules, or exemptions for infrastructure.

Yet given the worsening macroeconomic environment there is a need to ensure that green investment is effective in maximising economic opportunities with a positive effect on growth and deflation – while also safeguarding against potential waste.

MAXIMISING OPPORTUNITIES

Public investment in the transition should be led by a set of principles that instil both public and market confidence. Government investment should be:

- **fair:** ensuring spending addresses income, regional and other inequalities, and ensures a return for the public purse wherever possible, including through long-term public stakes
- **additional:** providing added value to the private sector, taking on risk with a longer time horizon to drive new low-carbon markets
- **phased:** increasing year on year, rather than expecting to meet infrastructure needs in year one, to avoid supply chain constraints and inflationary risk
- **reforming:** paired with industrial strategy to reform sectors and the economy and improve productive potential
- **efficient:** meeting multiple objectives across social, economic, and environmental goals.

These principles will help ensure that public investment crowds in private capital. This is the most effective strategy to keep government costs down. Ensuring value for money will also support private confidence in the transition. The UK's macroeconomic policy is currently holding back nature and climate investment. Treasury should integrate environmental impacts into its economic modelling to further underpin the case for public investment.

This should be reflected in the UK's approach to infrastructure investment. The level and time horizons of the transition demand consistency that isn't currently delivered by spending reviews.

- **Climate and nature investment should be matched to a longer-term independent needs-based approach**, set by the Climate Change Committee and National Infrastructure Commission.
- This should be **overseen by an Olympic-style net zero and fair transition delivery body to coordinate infrastructure approvals**.
- Government will also need to reform its process to infrastructure financing, particularly if it has an intention to benefit from holding assets into the future, for example **building a cohort of civil service asset managers**.

Scrutiny will also be vital to market confidence. **The Office for Budget Responsibility (OBR) and the Climate Change Committee (CCC) should set a formal target for the level of investment required annually from government and the private sector to meet government's environment goals**, tracked against the government's green taxonomy.¹ Meanwhile, the **Infrastructure Projects Authority should be mandated to report on progress to delivering environmental infrastructure**.

1 The government's framework for defining what can be called environmentally sustainable investments.

HOW TO BETTER SPEND GREEN INVESTMENT

At least in the early years of increasing capital spending government will need to use the current system to deliver better outcomes.

- Some existing channels are working well, such as the social housing decarbonisation fund and nature recovery programmes. These should be the first point of call for increased spending.
- Other institutions need altering. The UK Infrastructure Bank, for example, has a narrow set of key performance indicators prioritising financial returns over market creation. This will need adjusting before it can deliver higher environmental investment.
- Local authorities should be giving much greater capital funding for green investment. According to UKRI, a place-specific net zero investment scenario comes at one-quarter of the cost and delivers twice the wider societal benefits. **Government must identify and then devolve funding for where combined and local authorities are best placed to lead – notably the decarbonisation of homes, the expansion of green space, and the provision of active travel.** This could include energy supply for combined authorities.
- Combined and local authorities must also be permitted to work with the UKIB and borrow to invest in wider green infrastructure that is aligned with the UK's green taxonomy.

1. INTRODUCTION

Investment in climate and nature sits at the centre of three interrelated economic risks:

1. increasing fiscal pressure as interest rates and inflation rise and recent government policy reduces the scope for future borrowing for investment
2. rising economic and social inequalities
3. the urgency of environmental breakdown, and the need to rapidly reduce emissions and restore nature, while also recognising that investment must be well spent to meet that challenge.

These challenges interact to create political risks, that money is being wasted, goals not being met or where they exclude certain groups, or a recurrence of the 2010s when any investment was seen as incredible with a narrow focus on debt.

IPPR has previously called for a £300 billion, 10-year investment programme to address climate change and nature's decline (Environmental Justice Commission 2021). The UK's consistent economic precarity underlines the need for this investment, at pace. However, there must be a twin focus not only on getting money out the door but ensuring it delivers value for money while maximising economic opportunities – seeing off the three challenges above.

This paper sets out how to increase public spending on climate and nature, at speed to maximise economic opportunities and ensure ongoing public support. Chapter 2 begins by returning to the justification for climate investment in the current economic environment, before chapter 3 explores the mechanisms that will help ensure value for money and prioritise broader economic outcomes. Chapter 4 reviews the way we talk about climate investment, before chapter 5 closes with some of the priority projects for additional spending.

METHODOLOGY

This report is a summary of our research, which includes:

- an extensive literature review
- two roundtable events with representatives from academia, NGOs, the private sector, and policymakers as well as a series of 11 qualitative interviews.

2. COMPETITION WITH CLIMATE AND NATURE

The UK economy is in a perilous state. Successive governments have underinvested in infrastructure (Keep 2021) and public services (see, for example, Elliot 2022; Gardner 2021). Meanwhile, recurring shocks such as the financial crash, Brexit, Covid-19, and now soaring gas prices have created increasing demands on spending.

As IPPR's Environmental Justice Commission (EJC) points to however, the transition to a low carbon economy offers the opportunity to improve our resilience (EJC 2021). Clean energy for example creates more jobs than fossil fuel investments (eg Jaegar et al 2021). Actions that reduce the emissions from homes, from food production, or from transport can promote health. This is especially true for those with the worst health outcomes, lowering the burden on public services like the NHS (Munro et al 2020).

As explored below, climate investment can also generate growth – increasing prosperity and raising wages – as well as expanding fiscal space (Curran et al 2022; Alvis & Sissons 2022). Nevertheless, action to deliver net zero and restore nature requires significant upfront public investment and it's right to look again at the justification for it.

CLIMATE AND NATURE INVESTMENT

In the summer of 2019, then chancellor Philip Hammond claimed that a £1 trillion cost of net zero to the exchequer would leave less money for schools and hospitals, and harm UK competitiveness (Pickard 2019). This figure is highly misleading.

There are costs of inaction. The impacts of the climate and nature crises are being felt now. Record temperatures in the UK, sustained drought, and flooding have populated most summers since Hammond's comments. These have real costs to the economy. The OBR projects that public debt will grow to 289 per cent of GDP by 2050 with no further emissions reductions. In an early transition scenario, debt instead reaches "three per cent of GDP below the baseline in 2050/51" (OBR 2021).

The CCC estimates the annual cost of net zero to be in the region of £50 billion across both public and private investment from 2030 to 2050 (CCC 2020). In 2021, IPPR's Environmental Justice Commission recommended that UK government make a minimum additional public investment of £30 billion per year until 2030 to meet the scale of the climate and nature crisis (EJC 2021) and help leverage the private sector to provide the remaining amount. While funded through borrowing, this recommendation acknowledged the ongoing savings from reduced environmental costs, higher employment tax revenues, and lower public service demand.

The CCC puts direct savings from reduced reliance on imported fossil fuels at £35 billion by 2035 and £60 billion by 2050 (CCC 2020). However, this calculation was before the current gas price crisis further exposed the cost of volatile fossil fuel prices to the UK's economic and energy security. It also doesn't include any

indirect savings associated with the co-benefits of climate investment, notably to health or increased productivity, which could amount to £90 billion a year (Vivid Economics 2020).

The UK government traditionally makes sizeable capital interventions through spending reviews, with these multi-year commitments providing a degree of certainty to the market. The last spending review took place four days before COP26 in Glasgow and claimed to provide £30 billion of public spending to net zero (HM Government 2021, table 2.5). The government's methodology for calculating its climate spend is comparable to the CCC. However, the treasury measures gross investment, whereas the CCC measures additional. This is the difference between the total level of spending, and that minus what would already be spent.

This points to another error in the £1 trillion claim: it doesn't account for what would be spent in the status quo. Households, for example, replace boilers every 10 years, which incurs a cost. The 'cost of net zero' is, therefore, not the entire cost of choosing a heat pump, but instead the cost of a heat pump minus the cost of a boiler, minus the ongoing resource savings. Similarly, the Dasgupta review points to the \$4–6 trillion a year currently spend on subsidies that damage nature (Dasgupta 2021).

Comparing £30 billion over five years to the level of required investment already shows a clear shortfall. However, some was backdated, and little was additional. Just £7.8 billion was new money (Green Alliance 2021). Despite the pressure from the then impending international climate summit, the UK was falling short by circa £30 billion annually (EJC 2021).

The 2021 spending review failed to deliver for several reasons. The treasury's preference to make short-term savings over investments that generate long-term returns is well-known (Dibb 2022). There are concerns in the Treasury that key markets in the transition – particularly low-carbon heat – are unable to absorb more money. There is also a belief that consumers should pay for more themselves, particularly in home improvements where they will accrue the benefits. This was reflected in shortfalls for transport, agriculture, and buildings – the most consumer-focussed areas of the transition (Green Alliance 2021).

The current use of cost benefit analysis (CBA) in the Treasury contributes to this short-termism. The review of the Green Book in 2020 points to CBA restricting investment in net zero (HM Treasury 2020). Poor analysis of cost benefit ratios is also affected by poor forecasting of technological advancement – which is not only a problem in the Treasury. For example, previous forecasts estimated the new car market share of electric vehicles to be no more than 10 per cent by 2023. The March 2022 forecast by the OBR was over 20 per cent, but extrapolating from more recent data would mean a market share of closer to 35 per cent (OBR 2022) (see figure 2.1). This is before the potential accelerant of elevated petrol prices.

There is a similar story in renewable energy costs. The department for business projected in 2016 that offshore wind coming online in 2025 would cost around £100/MWh. But, less than a year later, two offshore contracts were awarded at £57.50 per MWh (Evans 2017). The strike price in the most recent Contract for Difference round for offshore wind was £37 for delivery year 2024/25 (HM Government 2022d).

This preference for short-term savings over investment hurts both economic and energy security. Home insulation rates fell by 90 per cent in 2013 as the Coalition government made cuts to energy efficiency programmes (ECIU 2022). When combined with the abandonment of the zero carbon homes standard, Carbon Brief estimates that this, plus the effective block to onshore wind,

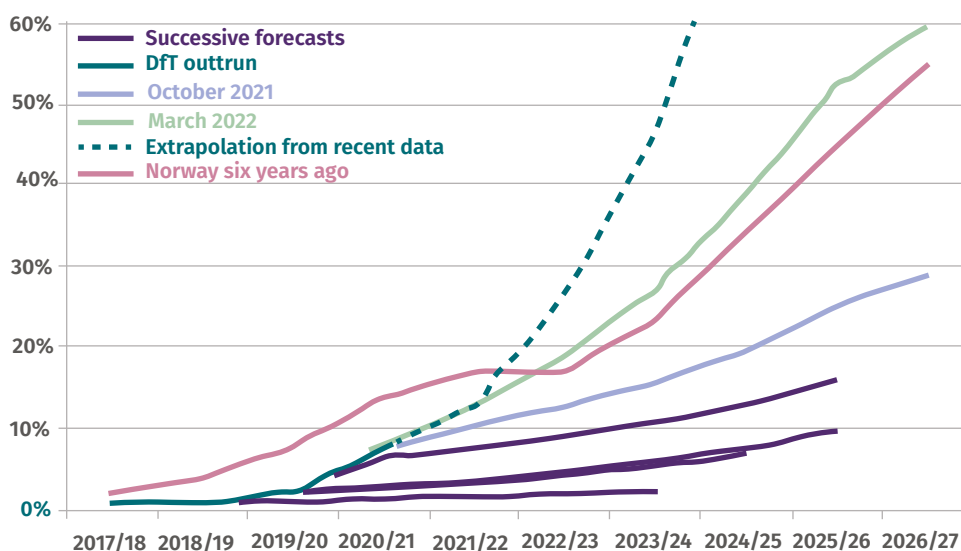
has added £2.5 billion to household energy bills (Evans 2022). Concerns over the price of new nuclear in the 2010s also led to significant delays. While the eventual agreed strike price of £89 per MWh is more than offshore wind, the current market rate for electricity is still significantly higher representing further missed savings (Haves 2021).

Consistently exceeding growth or cost projections is a central reason behind the falling annualised cost of net zero. The fifth carbon budget expected this to be 1 to 2 per cent of GDP, but the sixth expects it to most likely be 0.6 per cent GDP until 2030 before falling further (CCC 2020).

The cost of investment in climate change is both smaller than claimed, and falling – and it is more than justified by its immediate returns in the form of savings.

FIGURE 2.1: THE MARKET SHARE OF ELECTRIC VEHICLES HAS CONSISTENTLY OUTSTRIPPED FORECASTS

Electric vehicle new car market share



Source: OBR 2022

ECONOMIC HEADWINDS

However, since both the sixth carbon budget, and since IPPR published the final report of the Environmental Justice Commission, the economic environment has changed significantly.

UK annual consumer price inflation hit 11.1 per cent in October 2022 (ONS 2022), with the Bank of England expecting it to remain above 10 per cent early next year before falling sharply (Bank of England 2022). In response to this ongoing inflation, the Bank of England has raised interest rates to 3 per cent.

In response to these headwinds, there are two considerations for policymakers seeking to increase investment for climate and nature.

1. In the short term, making investments that avoid contributing to **inflation**.
2. In the medium-term, reducing the **burden** on borrowing through raising revenue and accelerating growth.

FIGURE 2.2: INTEREST RATES HAVE REMAINED LOW THROUGH THE MAJOR PERIOD OF GROWTH OF LOW CARBON TECHNOLOGIES, BUT ARE RISING RAPIDLY

Bank of England base rate



Source: Bank of England (no date)

Inflation

The primary short-term constraint on investment is the need to avoid further inflation (Jung and Roberts 2022). This risk is most pertinent in supply chains that are unable to meet increased demand. The Biden administration has recently had a similar experience of trying to inject capital into the climate transition. Several members of the Democratic Coalition and outside it opposed the original iteration of build back better bill for fears it could increase inflation (see, for example, Crook 2022). This was related to ongoing supply bottlenecks, particularly for electric cars, and fears that increased demand would drive higher prices.

However, its final iteration, the Inflation Reduction Act, was praised by both former Democrat and Republican Treasury secretaries for its prudent impact on inflation (US Department of the Treasury 2022). This was due to both the significant deflationary effect through the provision of cheap energy, but also accompanying the stimulus with progressive taxation to reduce demand elsewhere.

Following this example, increasing UK tax revenue can reduce the inflationary risk of investment, both by taking demand out of the economy, or reducing the level of borrowing. IPPR has pointed to several areas for progressive taxation such as windfall taxes (Jung et al 2022), equalising the rate of capital gains taxation with income taxation (Dibb and Parkes 2022), or share buy backs (Evans et al 2022) that could support such an approach, though these have a lower direct deflationary effect than taxes on income.

High gas prices continue to be a significant direct and indirect driver of inflation (ONS 2022). There are two connections between action on energy and inflation. Helping to absorb the shock of high prices can avoid businesses being forced to increase prices avoiding further inflation (Jung and Roberts 2022), as the government has done with the energy price guarantee. In the medium term, there is an urgent need for fiscal policy to reduce price volatile fossil fuels from the energy mix. Increasing the proportion of clean, cheap energy in the system,

as well as reducing the total energy used through insulation and electrification, could lower gas' contribution to medium-term inflation and the risk of high gas prices in the future.

IPPR estimates still find the government has room for additional spending between £42 billion in 2023 without unduly increasing inflationary risks (ibid). The bulk of borrowing is also likely to come in future years as investment (and supply chains) ramp up. By borrowing more in later years, the immediate inflationary risk is reduced. However, as fiscal rules are time constrained concentrating more spending in fewer years, increases pressure later.

Increased borrowing

Increasing public expenditure in climate and the environment requires increased borrowing. While higher interest rates make borrowing more expensive, a falling pound will also reduce its purchasing power. However, this ignores the costs of inaction and the potential for fiscal policy to stimulate the economy, reducing interest rate pressure.

The Bank of England now expects interest rates to peak at 5.25 per cent, though if inflation falls as expected, the BoE has also said it might not need to raise the base rate beyond the current three per cent (BoE 2022). The CCC's current estimates for the annualised cost of net zero used a conservative estimate of the cost of capital at 3.5 per cent – however, government five-year bond rates rose to over 4 per cent in October (Bloomberg 2022). If interest rates continue to rise, the CCC's cost estimates could become outdated.

There may be a case to reduce the total level of borrowing through raising revenue for capital investment elsewhere. Alongside the deflationary effects of taxes, the revenue can also be used to support productive investments. Taxing super normal profits on oil and gas are one way in which sovereign wealth funds have been capitalised for example (Braunstein et al 2022).

An alternative option is to reduce the total level of borrowing by sourcing some capital revenue from wasteful existing spend, repurposing to more effective environmental investment. Such examples include government's strategic roads programme, which costs £27.2 billion over five years (Department for Transport 2020), or the £17 billion a year the NAO identified in environmentally damaging tax reliefs (NAO 2021).

Finally, the UK financed a large proportion of its initial net zero capital investment through the issuance of two green sovereign gilts, raising £16.1 billion (HM Government 2021b). The first green gilt was priced at a higher yield of 0.87 per cent compared to 0.025 per cent of a conventional one (Oliver 2021). The interest rate of bond issuances needs to be high enough to create appetite, but not too high to waste taxpayer money.

In the early years of expanding investment on climate and nature, government could explore further bond issuances at a potentially lower rate than other bonds. Despite lower rates the green credentials may remain attractive to financial institutions trying to improve their environmental performance. Tracking bond issuance against the UK green taxonomy could provide the required credibility. Issuing further green gilts could represent a marginal saving in the cost of investment.

AN ALTERNATIVE ASSESSMENT

The cost of capital is only one side of the ledger. Borrowing to invest can also be justified by its effect on growth in productivity and wages. Recent government policy – for example, in energy market regulation – has focussed

solely on reducing consumer costs (Hinson and Bolton 2020). UK households are struggling to cope not only because prices have increased, but because flatlining productivity has suppressed wage growth. This has undermined the resilience of household finances. The UK's median real wage was lower in 2021 than in 2008 – an unprecedented slowdown since the 1920s. If the 2008 growth rate had continued, average wages would be £195 a week higher (Alvis and Sissons 2022).

Cambridge Econometrics (on behalf of the CCC) estimate that net zero will boost GDP by 2 per cent by 2030 and 3 per cent by 2050 (Cambridge Econometrics 2020), while the net present value of reaching the sixth carbon budget in 2035 is predicted to be £266 billion. The Treasury recognised this 'growth dividend' in the Net Zero review, showing that economic multipliers for investments in clean energy can be between 2.2 and 2.5 times larger than for fossil fuels (HM Government 2021c).

A recent report by Green Alliance and Nesta charted the multiple potential productivity gains that climate and environmental action offers (Alvis and Sissons 2022), with most front-loaded over the next decade. Those areas with a more challenging effect on productivity are likely to be apparent towards the end of the transition, providing time for innovation.

While the opportunities remain high, the rising costs of capital and uncertainty of inflation still put an even greater premium on ensuring value for money in public investment.

3.

MAXIMISING OPPORTUNITIES FOR INVESTMENT

Green public investment is justified by its effectiveness in avoiding future costs, and its potential positive impacts. What is needed, therefore, is a strategy for climate and nature investment that prioritises positive outcomes, while also mitigating risks.

PRINCIPLES FOR PUBLIC INVESTMENT

There is significant variation in both the level and types of investment required for sectoral transitions. Public spending will need to be flexible in response to variables like technological maturity or potential returns. The tangibility of sectoral investments also makes them easier to communicate.

Despite this, government – as the custodian of public finances – should also take a view across the economy and transition of what public investment is seeking to do. A set of principles behind the large uplift in capital expenditure should do two things.

1. Instil public confidence that taxpayer’s money is being well spent, maintaining support for the state’s role in the transition.
2. Maintain market confidence, clarifying the role of private enterprise and their relationship with government.

Public investment should therefore follow a set of five principles: fair, additional, phased, reforming, and efficient.

Fair

Government’s role should be progressive, ensuring its spending reduces inequalities and ensures the gains from the transition are fairly shared. IPPR’s Environmental Justice Commission argued for a ‘fairness lock’ as part of the transition and we mirror that argument here. Public investment for climate and nature must ensure a fair distribution of any costs and of the direct and co-benefits of the transition. This must include a focus on narrowing inequalities across incomes and regions, as well as gender, race, and disability. Government investment should prioritise fairer pathways to net zero and nature restoration for example promoting a shift to public and active travel over cars. Where government plans require households to change behaviour, investment should increase access to green choices, making them the easiest choice especially for those on low incomes. Ensuring the gains of the transition are distributed fairly will also, in many cases, entail long-term public stakes as part of any state investment ensuring the rewards are recouped for the public good.

Additional

Government can act where the private sector can’t. With a less pressing need to make short-term profit and a broader definition of economic outcomes beyond

financial returns, government can add value where imperfect information or high risk impedes the private sector. Public investment can therefore be market-making, providing government maintains a clear aim to develop early-stage opportunities that can crowd in private money. This must include either an exit strategy or a viable route to ongoing public returns, and recognition that not all investments will succeed.

Phased

It will be challenging to deliver the scale of funding required in year one, as supply chains and skill development take time. In funding for retrofit, for example, while average funding should reach £7 billion per year, this should be delivered in three distinct phases that range from around £3 billion per year in phase one, to £9 billion per year in phase two and down to £7 billion per year in phase three (Emden and Rankin 2021).²

Reforming

Public funding should be part of a package of industrial strategy measures to reform individual sectors and the economy. Market-making, supply side reforms such as regulation must accompany any investment to drive the expectations and outcomes that are tied to public investment.

Efficient

Value for money is central to all public expenditure. Government's primary role is to deliver public goods; however, it also has multiple objectives. All investments must aim for a 'triple win' of environmental gain, economic outcomes, and improved wellbeing.

THE ROLE OF PRIVATE FINANCE

As the CCC has stated, significant net zero finance will come from the private sector. Crowding in private finance will help maximise opportunities of public investment, whilst ensuring value for money, with the Treasury recognising that "public spending can mobilise private investment" (HM Government 2021c).

The balance of public and private investment will vary significantly across sectors and technologies. Currently, private sector funding is concentrated into energy, mobility, and waste. There needs to be a significant shift notably to agriculture, homes, and heavy industry (CCC 2020).

The ratio between public and private depends on how we choose to restore nature or reach net zero, balancing different technologies or levels of behaviour change. A report by Cambridge Econometrics demonstrates this. They find that surface transport will bring in £6 of private finance for every £1 of public. Land use change or residential building decarbonisation only have a ratio of 1:1 (Cambridge Econometrics 2021). But changing the emphasis for example away from car usage to walking and cycling or private transport will change this ratio.

How investment is made is also important. The world economic forum points to different finance mechanisms generating different ratios (WEF 2013). Mission-orientated public investment produces larger effects on GDP and crowds-in more private finance than generic ones (Deleidi and Mazzucato 2021).

The overall impacts to the exchequer will depend on government's ability to make markets through industrial strategy. Investment alone isn't sufficient to establish new markets. As our reform principle suggests, for the private sector to invest it requires consistent industrial strategy that provides stability and certainty. Public

² Phase two would see a higher annual investment than phase three due to a 'fabric first' approach that prioritises substantial delivery of energy efficiency measures.

procurement or taxable allowances, for example, act as a pull for the transition raising incentives for clean investment.

This could include specific market regulation such as the accreditation of carbon removals and offsets. But it will also need to extend to cross-financial sector regulation, reducing the risk of private sector spending going to unproductive investments like fossil fuels.

Government should build on existing financial policy, ensuring that mandatory transition plans nudge businesses to safeguard profitability in a net zero world, but also that regulators are overseeing progress on those transition plans not just their publication.

The forthcoming UK green taxonomy³ will be central to directing private capital to the transition. A robust, science-based taxonomy will ensure market confidence through an independent assessment of the economic activities of the future economy. Public institutions should be a laboratory for the green taxonomy, allowing it to develop in practice and using government as both a leader and innovator on green finance. This should cover budgets and fiscal statements, where ministers should follow a 'comply or explain rule' for investments made outside of the taxonomy.⁴

A different model of public-private partnership

Smart investment should involve a reconsideration of government's relationship with the private sector. Previous government investments have de-risked markets but exited when they are established. As others have argued, this socialises risk but privatises reward (Laplane and Mazzucato 2020). Given the level of public infrastructure finance required, there is a case for **the state to play an ongoing role and receive a return from its investments**.

Public equity will need to be assessed case by case, in line with the potential varying returns across sectors. However, if public investment is de-risking cutting edge technologies that will eventually lower costs for the private sector – for example, in hydrogen power – the state should also benefit from the risk premium it has taken on board.

IPPR has previously called for a UK wealth fund (Roberts and Lawrence 2018), while the Labour party recently announced its own £8 billion National Wealth Fund (Labour Party 2022). An approach like this to public equity or returns in net zero infrastructure could provide ongoing capital for such a fund to be reinvested elsewhere.

OVERSIGHT

Green fiscal policy

There is currently little integration of either the impacts of environmental breakdown or the dynamic effects of the transition into HM Treasury policymaking. Net zero is still seen as a beneficiary of a stable macroeconomic environment, rather than the driver of it.

A better understanding of how clean technologies will affect the UK economy and, in particular, lead to the growth of new businesses can underpin the case for investment. The Net Zero Review (HM Government 2021c) had promised to make better use of dynamic modelling in assessing green investment decisions. However, **the government should also include climate and wider environmental impacts in**

3 A green taxonomy is a classification system that highlights which investment options are sustainable and, by extension, those that aren't.

4 Comply or explain is a regulatory mechanism whereby the actor being regulator either has to comply with a recommendation or if they aren't complying demonstrate reasons for divergence.

its broader economic modelling, in the same way that private financial institutions or central banks such as the Bank of England are beginning to do.

Better modelling should change how the UK plans its fiscal approach. Failure to look at the cost of inaction is preventing a proportionate government response. Flooding alone in winter 2019/20 cost the UK economy £333 million (Environment Agency 2022). There is a need to provide room for preventative investment to avoid economic shocks from more flooding or extreme heat, rather than holding back money for the future to deal with the aftermath.

Some of the market's adverse response to the mini budget was due to its unfunded ongoing resource spend clearly breaching the government's fiscal rules. Borrowing for one off capital investment is unlikely to illicit the same reaction.

There are options under existing debt-to-GDP ratios to improve the integration of climate and nature. Others in the EU have suggested that fiscal rules should include a 'green golden rule'. This would exempt green investment from counting to net debt.(Darvas and Wolff 2021). However, this brings a trade-off between integrating other investments the UK economy requires – such as broadband access – and credibility, distorting incentives to label investments as green.

While a UK green taxonomy could support credibility, existing rules should **allow for investment in infrastructure that improves growth** rather than constrains it, thereby reducing debt. As Jung and Roberts (2022) have shown, investments that increase growth ultimately make it easier to comply with the debt-to-GDP rule which both major parties have committed to. While monitoring debt-to-GDP is important, equally important is the character of that debt. How borrowing is spent affects debt stability. As the OECD has pointed there are strong arguments for borrowing for capital spending to strengthen demand – particularly for those which tackle climate change and improve the environment (OECD 2015). .

Given that the IMF points to green capital as delivering 2.2-2.5 times the returns of traditional infrastructure (Batini et al 2021), such reforms would therefore favour climate investments. Similarly, public equity investments in clean energy or decarbonising industry could become public sector assets. A net zero economy may need **fiscal rules that include the ability to recognise assets**, as well as the income those assets might generate, as others have suggested (Hughes et al 2019). To provide rigour, this could include **tasking the OBR with independently assessing what investments could generate income**.

INFRASTRUCTURE SPENDING

A large proportion of public investment will go to financing new infrastructure.

Infrastructure investment has been too low in the UK for several years (Wilkes 2022). But trying to drive increased spending through the existing system without reform is challenging. However, there are several examples where the state has been able to commit to and then successfully deliver higher levels of capital investment.

- The ministry of defence's annual capital budget is over £14 billion a year and climbing (HM Government 2021a).
- Moonshot programs have successfully coordinated public and private investment to deliver large scale finance in short periods of time. The US apollo programme for example cost \$280 billion in today's money over 13 years (Planetary Society 2022; Mazzucato 2019). It was similarly phased to deliver more in crucial years before tapering.

- The London Olympic Games included a £9.3 billion public sector funding package through the creation of a new body (the Olympic Delivery Authority), which led on infrastructure construction (NAO 2012).

The scale of net zero and environmental infrastructure required demands consistency. Spending review periods, however, are increasingly short-term, with a growing amount of capital spending commitments outside of spending reviews (Atkins et al 2020). To provide greater certainty, as well as limiting the bias of Treasury accounting against investment, **climate and nature investment should sit outside the five-year cycle of spending reviews and be matched to a longer-term independent needs-based approach, set by the CCC and National Infrastructure Commission (NIC).**

The NIC publishes a national infrastructure assessment every five years, while the CCC publishes the cost and infrastructure needs to meet each carbon budget. The CCC already works closely with the NIC, setting out joint positions on infrastructure priorities. Combining these efforts should set out the cost, location, and types of infrastructure for each decade to 2050. Presenting the capital investment envelope over a longer period is likely to instil more market confidence than a rolling annual pledge.

The CCC and NIC will set out a roadmap, but it is for others to deliver. The Environmental Justice Commission recommended **the formation of a net zero and fair transition delivery body (NZFT)** responsible for developing delivery plans, bringing together local stakeholders and unions, and developing fair transition plans. Vital to an effectively managed transition is the inclusion in decision-making of those affected.

Following the example of the Olympic Delivery Authority, the **NZFT should also oversee net zero and nature infrastructure spending within government.** This should begin with an assessment of the feasibility to spending and therefore the level and phasing of increased investment.

There is a lack of a single place within government for infrastructure financing approvals with too many government ministers currently involved. At the very least, using its coordinating function, **the NZFT should house infrastructure approvals with input from a smaller set of ministers.**

Given the scale of financing required – particularly in transport, home heating (Brown and Bailey 2022), and energy – there may need to **be additional in department, specialised delivery functions.** In this case, the NZFT would act as a coordinator.

Large-scale projects such as the Elizabeth Line have been criticised by the NIC due to lengthy delays and cost overruns (NIC 2020). As the national infrastructure strategy acknowledges, there are issues in the speed of ministerial decisions, poor interaction between the national significant infrastructure projects and public bodies, and a need to update working practices (HM Treasury 2020).

Government has traditionally delivered infrastructure spend through private finance contracts. This is how government is currently supporting for example industrial clusters developing carbon capture and storage, giving the financing direct to businesses based on government approved business models. Project managers within the civil service provide oversight of whether private businesses are meeting agreed milestones. This model can be effective where industries have a small number of businesses, but at significantly different stages of decarbonisation – notably steel. However, there is little evidence on their value in cases of direct public spending (NAO 2018).

Generally, the Treasury has preferred private finance contracts as they do not show up on public sector net debt (see, for example, OBR 2011). This gives them the appearance of value over for example direct public financing. Some have called for government to publish comparative financing models ahead of time to allow for greater scrutiny of options (Davies et al 2017).

Treasury will need to **review the green book to avoid the preference for off-balance sheet financing, and compatibility with government's new green fiscal rules**. This should also include extending the definition of infrastructure to include nature restoration – not just nature-based climate solutions and home insulation – in line with the UK Infrastructure Bank (UKIB 2022). Any review must also return to the question of whether a marginal cost-benefit-analysis tool can support transformational economic policy such as the required level of climate and nature investment.

Given the scale of investment required, government will likely finance more infrastructure directly. Following from the fiscal rules above these state investments and new assets will need to be managed by government. Rather than relying on contractors and private financing government should **invest in a cohort of civil service asset managers to oversee both the delivery and ongoing stakes in publicly (co)financed assets**.

Independent scrutiny

A new approach to investment, and macroeconomic policy, that prioritises climate and nature will mean an update in the way policy is scrutinised.

Currently the OBR provides oversight of economic plans, with the National Audit Office reviewing plans post-hoc, while the CCC scrutinises the effectiveness of climate plans. However, in a world of increased economic and environmental integration, there is a rationale for closer coordination or integration of these bodies. This could also include IPPR's recommended Nature Recovery Committee.

The OBR and CCC together should set a formal target for the level of investment required annually from government and the private sector to meet our environmental goals. Both bodies would then report annually on progress against this target, including the relative balance of public/private investment at a sectoral level. The green taxonomy should be the basis of any tracking of financial flows; however, scrutiny would also need to cover the effectiveness of investment, and recommendations for improving it.

Following the NIC and CCC assessment of infrastructure needs, the **Infrastructure Projects Authority should be responsible for reporting on progress to delivery**.

HOW TO BETTER SPEND GREEN INVESTMENT

Additional capital spending can either be delivered through new programmes or through existing mechanisms. In the early years of a capital spending uplift, government will need to see how the current system can be utilised and amended to deliver more investment.

The UK government tracks capital expenditure as the net spending on the acquisition of assets, grant to support acquisition of assets, and loans paid out, less assets sales and loan repayments. At a time of spending constraints, there is a temptation to broaden the definition of assets or infrastructure to include things normally included in day-to-day spending; notably, skills or innovation. Including these aspects may risk the credibility of a pledge if it was perceived to be moving the goalposts – however, without doing so, there is a greater risk of capital spending being wasted on assets that lack for example a skilled workforce

to operate. Including **intangible investment is central to also achieving broader social goals from capital investment**, such as the creation of good jobs.

Where relevant below we also include these objectives, which would require a reassessment of government definitions, notably through the green book.

Existing channels that are working well

Some existing schemes for example on building decarbonisation and nature restoration are already delivering environmental goals. These should be a first point of call for delivering higher levels of spending efficiently and quickly.

Home energy efficiency schemes lack both the scale and the level of public finance required to deliver warm homes. The UK is currently installing only 6 per cent of the heat pumps, 9 per cent of the cavity wall insulations, 3 per cent of the loft insulations, and 2 per cent of the solid wall insulations needed by 2028 to keep pace with net zero (Emden and Rankin 2021).

The social housing decarbonisation fund is responsible for the 4.1 million social housing properties in need of retrofit. £240 million was released in wave 1, with the autumn statement 2021 allocating a further £800 million (HM Government 2022). It has been broadly praised by stakeholders as working well (Emden and Rankin 2021). Similarly, government allocated £450 million to a boiler upgrade scheme to encourage the heat pump market (HM Government 2021d), and £2.5 billion to remove emissions from public buildings (HM Government 2022b). However, each of these schemes remains significantly short of the Conservative 2019 manifesto promise over the course of this parliament. To ensure sustainable growth in supply chains **increasing funding to these programmes should be the first port of call to decarbonise the UK building stock**, while wider delivery schemes particularly for the able to pay market are established.

At COP26, many UK banks made progressive commitments to decarbonise their loan books. However, many don't know how or are unable to act without progress from government, particularly for example on the emissions related to mortgages (because of emissions arising from the housing stock). While policy certainty on retrofit and public investment will help, government may also wish to partner with banks to support actions to reduce emissions by households.

Previous retrofit schemes failed partly due to complex delivery (NAO 2016). To overcome this, the government could **provide zero or low interest loans, as recommended by IPPR through its GreenGO scheme, to be administered by high-street lenders** to allow households to purchase home upgrades.

Nature recovery schemes could also be expanded. Following the pandemic, the government's green recovery project funding was almost 10 times oversubscribed with similar appetite for the Investment Readiness Fund (House of Commons 2020). While funding for nature for climate grew in the Autumn Spending Review it still lags funding for the more expensive tech-based carbon capture.

Improving other channels

The UKIB has an initial capitalisation of £22 billion to achieve a dual mandate of net zero and regional growth. Of this £5 billion is equity, £7 billion debt, and £10 billion guarantees. While a significant increase in the potential capital investment for net zero, by comparison, the German equivalent (the KfW) has €551 billion in assets (KfW 2021). The NAO criticised the Treasury for not providing "detailed analysis in how the business case" for the available capital was set (NAO 2022). Government expects a return of £40 billion on its investment – 1.8 times its capital (HM Government 2022c).

While increasing UKIB's capital will allow it to play a greater role in the transition, it must also return to its intended economic role. The UKIB's initial investments into solar, broadband, and supporting infrastructure to offshore wind (Hutton 2022) imply a low risk tolerance and desire to see quick returns. The bank's investment principles provide space to be risk-taking with a longer horizon, however a narrow set of key performance indicators prioritise short-term financial returns. **The bank needs the space, and recognition of broader metrics related to market creation, to report progress slowly, allowing it to focus on market-making** and preparation which, in some cases, will entail smaller investments.

This should extend to **applying risk at a portfolio level rather than individual projects**. According to comments at the Public Accounts Committee, the UKIB applies key performance indicators (KPIs) to individual investment decisions. This constrains risk appetite and doesn't allow for recognition that some investments will fail as a natural part of innovation.

The UKIB strategy has an exclusion list including coal and other fossil fuel generation. To be a leading financial institution this should extend to abiding fully by a green taxonomy and working alongside Treasury to ensure it is effective.

As the UKIB's role is to deliver economic opportunities, it should not rule out long-term public equity stakes that can contribute to ongoing national wealth while growing its available capital. This would bring the UKIB closer to sovereign wealth funds, rather than the government's current view as purely an accelerator of private investment, and therefore privatisation of benefits (HM Government 2021e). This would be in line with Labour's proposal to turn the UKIB into a national wealth fund built on low-carbon energy investment.

Innovation can focus more on environment

A vibrant UK net zero economy will need a strong innovation focus. The government launched a net zero innovation portfolio (NZIP) as part of its 10-point plan for a green industrial revolution. Its £1.5 billion funding across 10 priority areas is intended to scale up new technologies (HM Government 2021f) and is managed by BEIS though Defra and Transport also administer some funding. This marks a small return to direct departmental research and development (R&D) spend after Defra's R&D budget for example fell 58 per cent between 2010 and 2015 (Jones 2022). This was part of a long run trend in falling public spend on R&D, notably on energy research which reached an almost negligible level in 2001.

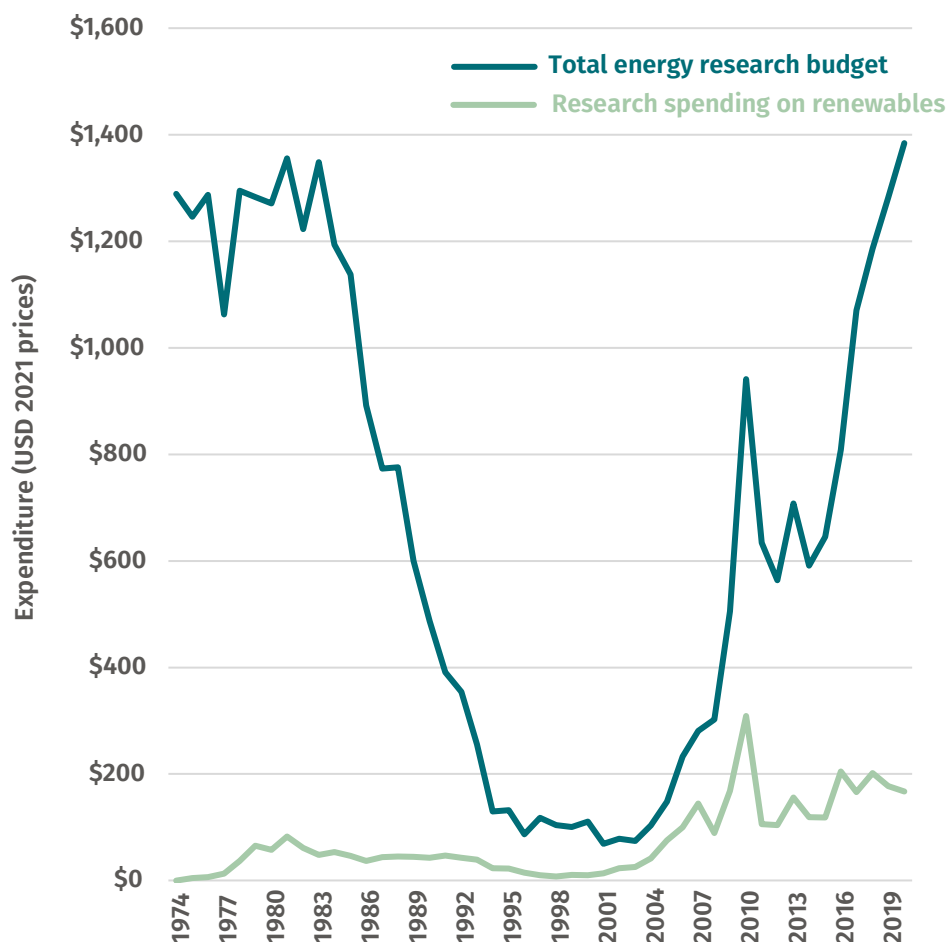
The NZIP's distribution across ten areas means small actual funding. **Transport, Department of Levelling Up, Housing and Communities and Defra should all have their own NZIPs** to expand the role of government investment in vital clean technology challenges – particularly home heating or alternative proteins.

The UK also supports innovation through tax credits and investment allowances. The 'super-deduction' – a 130 per cent allowance for main rate assets launched in March 2021 – is expected to cost the treasury £29 billion until the end of 2024 (HM Government 2021g). According to the OBR, this will increase business investment this year by 10 per cent, albeit temporarily, mostly bringing forward future investment (OBR 2022). By ruling out attaching green conditions to the super deduction (House of Commons 2021), the government risks supporting unproductive, short-lived, 'brown' investments such as in combustion engines, high-carbon heat, or outdated foundry equipment.

Meanwhile, there is concern that R&D tax credits support activity that would've taken place anyway (Jones 2022; Blakeley 2018) or are poorly targeted to environmental goals (Alvis and Avison 2022).

FIGURE 3.1: PUBLIC INVESTMENT ON ENERGY RESEARCH HAS RISEN SLIGHTLY IN RECENT YEARS

Public expenditure on energy research in billions of USD



Source: Authors' own calculations using International Energy Agency (2022)

IPPR's Environmental Justice Commission recommended that the **R&D tax credit and super-deduction are reformed to apply only to investments that meet net zero and nature impact criteria** (EJC 2021), this could extend across allowances that meet certain criteria or again be tied to the green taxonomy. IPPR has previously recommended reducing the value of reliefs including the R&D tax credit in favour of more directed support (Blakeley 2018).

Government should also look at **expanding allowances across green investments, in line with the future UK green taxonomy**. Previously, the UK restricted additional allowances to energy technologies. An expanded list of allowances would be similar to the situation in the Netherlands where the government publishes an annually updated environmental credit list of eligible investments, or the wealth of new tax credits launched under the Inflation Reduction Act (URA) in the US.

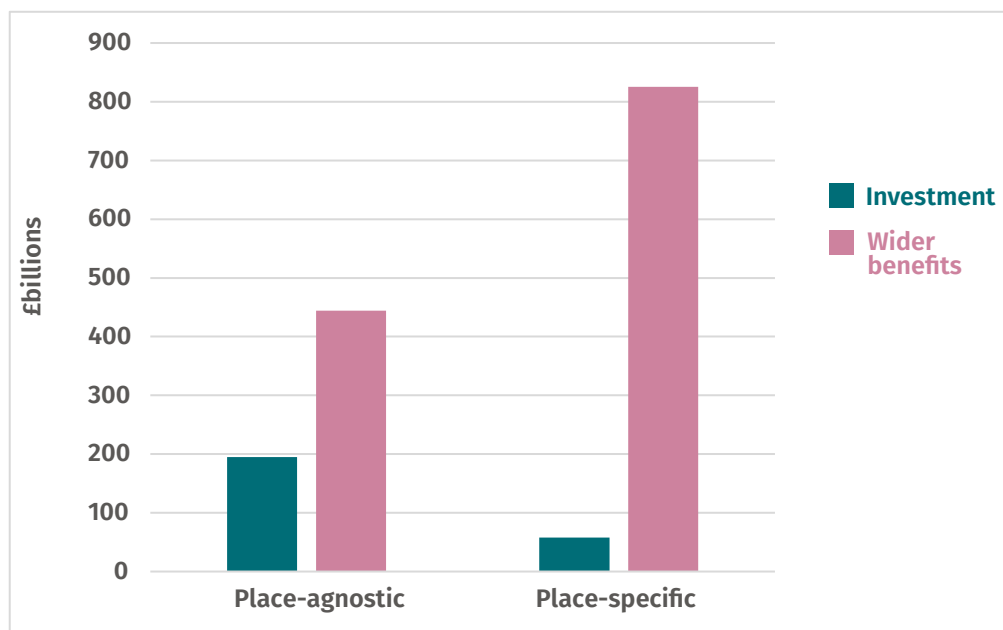
Devolution

UK Research and Innovation modelled the impacts of reaching net zero in a place-based versus place-agnostic scenario. It found that a place-agnostic scenario costs almost four times as much to reach the targets of the sixth carbon budget, with significantly lower co-benefits (UKRI 2022). The solution to reaching national

targets will need to reflect different local circumstances. However, there are tensions between the need for devolution in the delivery of climate and nature commitments, and the significant national-level industrial strategy reforms that must accompany it.

FIGURE 3.2: INVESTING IN A WAY THAT REFLECTS LOCAL SITUATIONS IS MORE COST-EFFECTIVE AND LEADS TO WIDER BENEFITS THAN 'ONE SIZE FITS ALL'

The cost of investment and wider societal benefits to meet the sixth carbon budget



Source: UKRI (2022)

Delivering net zero and environmental objectives locally will require new responsibilities for local government. This raises the question of resource to deliver. As the Environmental Justice Commission stated, all local areas will need the powers and resources to play their part in achieving net zero (EJC 2021).

Currently, where central government seeks to achieve outcomes through local government – such as the levelling up and towns fund – this has come through competitive bids for funding. This is an impractical way to deliver a significant uplift in funding, and a duty required of every local authority. Furthermore, competitive funding costs considerably more to deliver in comparison to open pots administered through transparent funding formulae (Localis 2014).

A more effective method would be for **devolved funding to be provided for decarbonisation and nature recovery in the sectors that combined and local authorities are best place to lead**: home insulation, the expansion of green space, and the provision of active travel. This could also extend to energy supply through larger combined authorities.

For funding outside of these areas but still aligned with climate and nature delivery (for example to the UK green taxonomy), **central government could allow further local government borrowing**, particularly where that borrowing will deliver productive infrastructure.

With any new funding, there should be clear KPIs for local government to meet, especially when related to national legal targets like that for net zero or those

set out in the Environment Act. To reflect the different starting points, this would likely need to be a relative standard; for example, a year-on-year increase in the percentage of homes at Energy Performance Certificate (EPC) level C, or journeys taken by bicycle. Evolving standards, alongside need, would form the level of funding provided by government but also should add up to a national level target.

As with central government and the NZFT local government will also need support, guidance, and coordination to deliver. Ireland has four Climate Action Regional Offices that support local authorities in mitigation, adaptation, citizen engagement, education, and partnership. The UKIB in its technical advisory role may be able to deliver some of these aspects, however **a formal institution rooted in place could provide greater benefits in for example infrastructure delivery**. Where local authorities lack a combined authority, these bodies could also coordinate demand to bring greater economies of scale and bargaining power.

4.

HOW TO TALK ABOUT GREEN INVESTMENT

Climate change is a consistent top-tier issue for the public. Since 2020 it has featured in the top four issues facing the country 89 per cent of the time (Murphy and Massey-Chase 2022), with government surveys showing concern has doubled in a decade (HM Government 2021h).

The public are not just concerned, however – they want to see faster action. A majority across several British Election Studies think that the government have not done enough to act on climate change (Lord and Meyer 2021). There is also pressure to invest. 55 per cent of the public say we can't afford *not* to implement policies to address climate change, a majority in every demographic. Only 24 per cent say the cost to the taxpayer is too much (Opinium 2021).

Even as the cost-of-living increases, public support for environmental action remains strong (ONS September 2022) and increasingly the public see green action as the way out of the current crisis. 80 per cent of the public want to see more spent on renewables to solve the energy crisis for example (UK100 2022).

Talking to the public about climate investment remains a challenge. Climate and nature investment risks falling between two narratives. One option is to present a transformational climate and nature investment programme that will deliver a series of outcomes.⁵ The alternative is to instead work through the challenge and solution and use climate and nature investment as the supportive funding programme. The chosen route will depend on the metric of success that political parties seek, for example raising climate and environmental salience, attracting voters, or countering preconceptions around economic credibility.

OPTION 1: A CLIMATE AND NATURE INVESTMENT PLEDGE CARD

1. Provide quality green space within 15 minutes' walk of all homes.
2. £1,000 on average off every home's energy bill.
3. 5,000km of cycle lanes to double the rate of active travel.
4. Create 1 million new high-skill, good quality jobs across the country.
5. Reduce the burden on the NHS by £2 billion a year with lower pollution and warmer homes.

OPTION 2: INVESTING IN PUBLIC HEALTH PREVENTION THROUGH THE ENVIRONMENT

- Right to access nature.
- Provision of green space.
- Increasing urban tree coverage.
- This will be funded by £1.8 billion per year from the climate investment portfolio.

⁵ These numbers are indicative.

The strongest way to boost support for climate policy is to use framings that raise the salience of action on climate. As IPPR's report, *A rising tide: Strengthening public permission for climate action*, found, the three biggest drivers for action are climate impacts, global leadership, and future generations (Akehurst and Murphy 2022).

But investment differs. Climate action can struggle in the public imagination for a lack of tangibility – the connection between problems the public are facing like rising food prices and a proposed solution, public investment. Particularly in the run up to the next election, political parties may also be looking for different outcome metrics than climate concern, for example party support or economic credibility.

CONNECTING WITH ECONOMIC CREDIBILITY

Support for public spending increased in the lead up to the pandemic, as the public tired of deteriorating services and infrastructure. This support remained high despite much higher levels of spending during Covid-19, with only a limited reaction against. The steady level of support for increased spending while actual spending dramatically increased may be an indication of higher expectations on government (Curtis 2021).

Climate investment support similarly remains high. Polling by Opinium prior to the mini budget (Opinium 2022) shows that a generic call for a multibillion climate investment package receives 68 per cent support, with just 21 per cent opposing (+47 net positive). This falls marginally to 59 per cent support when paired with a statement that investment will come from borrowing (+34 net positive).

However, when the promise is aligned to either specific party, this number decreases, but only marginally.

- For Labour, support reduces to 61 per cent, but remains at +35 net positive. Support reduces to 52 per cent (+22 net) when paired with borrowing. This is mainly driven by reduced levels of support in non-traditional Labour voters such as the over 65s, leave voters and Conservative voters. However, there is also a notable fall of -19 net support amongst women compared to a generic pledge.
- For the Conservatives there is a smaller brand penalty with support at 66 per cent (+45 net) and 55 per cent (+28 net) respectively. However, following the reaction to the mini-budget with 60 per cent saying the actions were unaffordable a future brand hit may be higher (YouGov 2022).

Parties should take three lessons for their communications around climate investment.

1. When a policy is popular, it stays popular

A climate investment pledge paid for from borrowing remains hugely popular among both parties' core voters and non-traditional voters. This implies that climate investment is not only a central policy to retain voters but is also a way to attract new ones.

Parties should be cognisant of their brands and what this means for framing messages on climate investment. However, party brands are not permanent and have seen significant shifts, particularly in recent years – with Labour recently overtaking the Conservative party on economic competence (Skinner et al 2022).

2. Ensure there's a throughline to individual benefits

As the economic situation deteriorates, and the recent mini budget raises public concerns over the management of finances, all political parties should ensure

that policies and messages are supporting responsible investment that delivers tangible outcomes for households.

Political parties have often relied on the prospect of new green jobs to do this. However, while generically popular this has limits when tied to investment. The public have concerns about the tangibility of green jobs, and whether there will be real employment opportunities (Public First 2021). Individual investments should be tied to specific jobs, whether they are electrical engineers, site managers, or bus drivers.

Similarly, more weight needs to be put on the connection from upstream climate and nature action and investment to household finances. Increasingly clean energy and moving away from fossil fuels is tied to lower bills in the public mind, driven by the current crisis (Public First 2022). The same cannot yet be said for example for the connection between wider green space and physical health or investments in trains and air pollution.

A typical messaging flow to do this should open with the broad case for climate action, how climate or the status quo is the underlying cause of a specific challenge such as health inequalities, and close in on how investment will connect those two issues.

3. Include strategies to mitigate downsides

There is support for spending, and the public recognises the through-line from public investment to outcomes. While fiscal prudence does not inspire climate action, it is a necessary corollary to maintain confidence that allows political parties the space to invest.

To limit adverse reactions to concerns over borrowing, especially as recession strikes, policymakers will need narratives of fiscal responsibility. As above, this should include:

- principles for public investment to ensure it is fair, additional, phased, reforming and efficient, maximising investment from the private sector
- independent advice and scrutiny to instil value for money
- recognition of where existing government programs work well but others need improvement.

5.

CONCLUSION AND NEXT STEPS

While the need to reduce carbon emissions and address biodiversity loss is stronger than ever, the challenging economic environment presents challenges for public investment in addressing the climate and nature crises.

However, as set out in this report, these challenges can be overcome, while also maximising economic opportunities and addressing inequalities, provided the government adopts the right principles for investment and successfully applies them in practice.

IPPR's Environmental Justice Commission (2021) set out the policies and proposals for investing the proposed £30 billion a year in climate and nature investment. This included a package of measures for business and industry to help reindustrialise the economy; to expand access to cheap and clean transport; to upgrade the housing stock across the country with energy efficiency measures and clean heat; to help restore and improve access to nature; and to provide the support needed to skill and train a workforce fit for a low carbon and nature-rich economy.

As part of IPPR's environmental and economic work in 2023, we will be re-assessing the priorities for investment in the new economic context, against the principles set out above, with a view to setting out clear priorities for climate and nature investment over the next decade. This will include assessing the comparative advantages of the UK in a future low carbon economy.

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