

CLIMATE EMERGENCY RESPONSE GROUP

Funding the 12 immediate actions for Scotland's Climate Emergency Response

January 2020



1. Introduction

The global climate emergency is at the heart of the Scottish Government's Programme for Government. This programme supports the accelerated climate change targets that are enshrined in the Climate Change Act 2019, starting with 75% emissions reduction by 2030, recognising the imperative of taking early action, and ending Scotland's contribution to global climate emissions by 2045.

To realise these laudable goals, the Scottish Budget must be a climate emergency response budget. To help understand the scale of investment needed, the UK Committee on Climate Change has suggested meeting the targets will require an annual resource cost of 1-2% of GDP of both public and private sector funding.

The public sector contribution will be met through both capital and revenue funding. Where possible, innovative policies, finance mechanisms, regulation and incentives should be used to lever in private investment. The Scottish National Investment Bank will be an important means to support project developments by cities and the public sector. These investments will also position Scotland to attract more funding from the UK Industrial Strategy, for example the Transforming Food Production Challenge Fund and the Transforming Construction Challenge Fund.

Investment now in the low carbon transition is not only the most cost effective way to reach net-zero, it will also place Scotland at the head of the queue to benefit from manufacturing and jobs growth, and tackle inequalities such as fuel poverty, ensuring a just transition.

This briefing focuses on the new funding requirements for the 12 immediate actions put forward by the Climate Emergency Response Group. These actions are designed to:

- Slash our climate emissions
- Be transformational
- Impact globally and in Scotland
- Be achievable now
- Help the people of Scotland to make climate-friendly choices
- Make Scotland wealthier, healthier and greener
- Provide for a just transition.

These actions are a vital start, but do not make up the sum total of action and funding for Scotland's response to the climate emergency. There is an urgent need to scale up existing initiatives that are working to mitigate emissions and explore further new and innovative policies across all sectors.

2. Summary of the 12 immediate actions and estimated funding requirement

2.1 Five immediate policy actions which require Scottish Government multi-year commitment to capital and revenue spend

This section provides budget estimates for five policy proposals which require spending commitments in the Scottish Budget. The estimates are additional to existing spend and refer to both capital and revenue budgets. Where possible, we have sought to identify where the spend accelerates or extends existing programmes, and where it is for new programmes. In some cases, further research is necessary to determine the budget.

We have provided an estimate for the budget requirement in 2020-2021 in the context of a three-year budgetary commitment to the policy. These figures provide an indication of the scale of spending required in the immediate term and a longer commitment of 5-10 years will be needed to have the desired impact on the market, private investment and jobs growth.

Climate Emergency Response Group Policy Proposal	2020/2021 budget proposal	Estimated 3- year commitment
Agricultural Transformation Fund Support for farmers in the transition to climate-friendly farming through bridging the current cost gap to new technologies, data gathering and monitoring, advice and training. NEW funding for land use skills training, net-zero farm tool and business fund to purchase latest low carbon farming technologies. All activities go beyond what is covered by existing payments.	£34m	£100m
4 Green Growth Accelerator projects Innovative co-funding arrangements involving local authorities, Scottish Government and the private sector to finance the essential place-based, multi-stranded infrastructure projects that will enable Scotland's transition to net-zero. NEW funding for planning, design and drawing up business cases; kick-start funding; and revenue payments against agreed outcomes.	£6m	£206m plus revenue payments against outcomes
Zero Emission Cities Signal that Scotland's city centres will be vehicle emission free by 2030 to decarbonise our cities, maximising the use of public transport, walking and cycling, and creating more	£166m	£500m

liveable and healthy cities. This will also support the same transition throughout Scotland.		
EXPAND existing funding for active travel, public transport and electric mobility.		
Building retrofit Increase pace and scale of energy efficiency improvements to buildings, which offer the simplest and most cost-effective way to reduce emissions and reduce demand for heat.	£240m (domestic) (non-domestic not included)	£900m (domestic) (non-domestic not included)
EXPAND EXISTING funding for energy efficiency and fuel poverty programmes – domestic and non-domestic.		
Heat pump sector deal Create a Scottish Heat Pump Sector Deal that provides clear long-term market signals for the accelerated installation of heat pumps in Scotland, creating and sustaining manufacturing and installation businesses.	£61m	£598m
NEW funding to increase scale of market, allowing heat pumps to compete on a level playing field and ultimately driving down costs.		
TOTAL	£507m	£2.3bn

2.2 Seven immediate policy actions which require Scottish Government resource to staff policy development and implementation

While these policy actions do not require capital spend, it is critical that sufficient civil service capacity is deployed to develop and implement these policies. This capacity is crucial to shaping the policies, frameworks and partnerships which can guide business investment decisions, lever in private investment for low carbon infrastructure, and provide quality assurance for individuals.

CERG Policy Proposal

Mobilise the £11bn of annual public procurement to support the product and service innovation the climate emergency response needs

Resources to set out a clear pathway to net-zero carbon purchasing including new procurement guidance, training and capacity building within the public sector, identification of key ‘climate-friendly products and services which will be supported from 2020, and linking public procurement directly to the achievement of high profile targets and deadlines on, for example, electric vehicles, circular economy, renewable energy and energy storage.

Produce public guidance on sustainable, climate-friendly healthy diets

Resources to develop public guidance, in consultation with Food Standards Scotland, in the next 12 months.

Make regional land use plans to optimise the potential of every part of Scotland’s land to contribute to the fight against climate change.

Resources to develop and implement regional online training resources to support capacity within the partnerships and develop land use mapping tool to identify land use priorities.

Establish a public-interest company to invest in and operate CCS infrastructure

Resources to undertake the exploration of models, in partnership with the private sector, to develop CCS infrastructure. This should not rely on the limited resources in SNIB which should be directed to immediate priorities such as heat networks, buildings, transport and land use.

Enhance building standards to deliver zero-carbon homes and buildings

Resources to undertake stakeholder engagement in the development and implementation of the standards, continued support for training, and innovation in techniques such as off-site construction.

Complete plans for how we generate the renewable electricity needed to reach net-zero emissions

Resources to support 1) an updated assessment of the generation capacity (GWp) and electricity production (GWh) required to meet net-zero emissions in Scotland by 2045, setting a new generation ambition for 2030 and setting indicative ambitions for 2045 under different scenarios; and 2) immediate improvements to the planning system to facilitate more timely consent decisions to support delivery of the overall 2030 emissions reduction targets.

Dedicate the Scottish National Investment Bank to delivering on the climate emergency

The Scottish Budget should reflect the Programme for Government’s commitment that the “primary mission of the Scottish National Investment Bank will be to ensure the transition to net zero” and its initial budget of £130m.

3. Background

CERG is a group of civic and business leaders who have come together to use their insights and influence to ensure the Scottish Government puts in place an appropriate response to the climate emergency.

As its first task, the Climate Emergency Response Group produced the report, [12 immediate actions for Scotland's response to the climate emergency](#), in August 2019. The report contains a set of transformative policy proposals aimed at informing the Scottish Government's 2019-20 Programme for Government which was published in September 2019.

The group welcomed the Programme for Government's strong focus on the climate emergency, including the statement that this was the 'first package of additional measures', an embryonic Green New Deal, which should be seen as a "down-payment on our commitment to ensure that Scotland ends its contribution to global climate change by 2045 at the latest." The Programme for Government responded directly to the CERG's 12 immediate actions proposals, using them as a benchmark for the scale and ambition required.

CERG was heartened by the recognition of its work and wishes to work with the government to ensure these commitments are realised with urgency, practical leadership and rapid change on the ground. CERG stands ready to help and support politicians and decisionmakers with the implementation of the climate emergency response and identifying the critical next steps.

As its next task, CERG prepared this briefing to inform the Scottish Budget so that it is a credible and transformational Climate Emergency Budget. We know that the climate emergency will require substantial new funding, repurposing existing funds, and working in partnership with the private sector.

We focused on the 12 immediate actions in this report and acknowledge additional commitments in the Programme for Government. We are aware that these proposals are only a part of the overall package that is required for the Climate Emergency Response and look forward to further opportunities to put forward other proposals through the review of the Infrastructure Investment Plan and the Climate Change Plan.

3.1 CERG membership

Andrew Bissell	Chief Executive, Sunamp Ltd
Teresa Bray	Chief Executive, Changeworks
Kathryn Dapré	Head of Energy and Sustainability, NHS National Services Scotland
Lucy Frankel	Environmental and Communications Director, Vegware
Sam Gardner	Head of Climate Change and Sustainability, Scottish Power
Gina Hanrahan	Head of Policy, WWF Scotland
Andy Kerr	Director, UK and Ireland, Climate-KIC
Sarah-Jane Laing	Chief Executive, Scottish Land and Estates
Claire Mack	Chief Executive, Scottish Renewables
Daisy Narayanan	Director for Urbanism, Sustrans
Claire Rampen	Board Trustee, 2050 Group
David Reay	Chair in Carbon Management, University of Edinburgh
Valerie Robertson	Principal Economist, Jacobs
Hannah Smith	Director, Institution of Civil Engineers Scotland
Sara Thiam	Chief Executive, Scottish Council for Development and Industry
Mike Thornton	Group Director of Operations, Energy Saving Trust
Paul White	Director, Scotland, Confederation of Passenger Transport UK

4. Developing our Scottish Budget funding proposals

The group developed further detail on its 12 immediate actions along with budget estimates. Five of the immediate actions require substantial capital and revenue funding over multiple years to be realised. The remaining seven immediate actions require vital resourcing for staff, research, and planning to accelerate processes, build capacity, and provide data and decision-support tools.

In addition to the group's contributions, information was sought through expert interviews.

5. How the 12 actions should be reflected in the Scottish Budget

5.1 Five immediate policy actions which require Scottish Budget multi-year capital and revenue investment

A £100m Agricultural Transformation Fund

Why Scotland's climate emergency response needs this

Agriculture is one of the first sectors to experience the effects of climate change. Many activities to mitigate, and to adapt to, these effects will also reduce emissions. However, current land management practices, market returns and rural policy do not encourage the change in activity required to reduce emissions. Whilst many of the mitigation measures available will save farmers money in the long term, the upfront costs and perceived risks are often prohibitive. We propose that this fund sits within a wider framework of regulation, incentives and advice designed to help farmers transition to climate-friendly, resilient farming. The fund should provide support for activities which go above the regulatory baseline and standard business practice, but which do not qualify for existing subsidy payments. Importantly, the required agricultural transformation must be a sustainable one, integrating emissions reductions with other major land use benefits in Scotland (e.g. food and drink production, water quality, flood protection, biodiversity and rural livelihoods).

A wide range of activities can reduce emissions while improving efficiency and enhancing productivity. These include improving nitrogen use efficiency, soil management, animal health and genetics, slurry and manure management and farm system changes, supported by data collection such as carbon auditing, soil testing, use of nitrogen balance sheets etc. Optimal maintenance of existing equipment should be supported through advice and knowledge sharing as it is also important in ensuring efficient production, where capital investment is too expensive, or timescales don't fit the current machinery replacement plan. A holistic approach should be adopted, including maintenance, energy efficiency measures for farm machinery or buildings, local electricity generation and demand management alongside support for putting new systems in place or new machinery and equipment. The fund should also pay for a well-structured support service that helps land managers identify suitable capital investments and provides context-relevant training.

The fund should look long-term in the context of net-zero to 2045, identifying ways in which climate change will require changes in order to adapt to changing weather patterns, improve productivity and simultaneously reduce emissions (the 'Climate-Smart' approach). The support should overtly link with the government's commitment to regional land use frameworks, a climate emergency skills action plan, and to its sustainable diet guidance, so as to help guide how Scottish agriculture and its workforce will need to change at sub-national scales and how these changes can provide products consistent with climate-friendly and healthy diets.

Why public investment is needed

Public funding is required to enable farmers to go beyond their current machinery and equipment investment strategies. For the required transformation, additional funding is required for equipment, data gathering and monitoring, training needs and bridging the current cost gap to technologies (e.g. precision fertiliser application and smart field sensors). This transition will deliver significant public goods in the form of increased resource use efficiency; supporting sustainable production, reduced greenhouse gas emissions, land sparing for sequestration and creating powerful synergies with air and water quality goals, biodiversity protection, and the securing of livelihoods in rural areas. Existing support payments are insufficient for many farmers to bridge such cost gaps quickly and so the transformation required for net zero is stymied.

Public funding would allow a nuanced application of support to realise transformations most appropriate at the sub-national scale - the regional pilots in the Borders and Aberdeenshire provide an excellent basis to develop such sub-national approaches across the whole of Scotland. Using a suite of regionally appropriate options this support would also attract private investment into net zero farming technology development and use in Scotland (e.g. private investment in tree planting and peatland restoration for carbon sequestration).

What are the benefits

- Reducing greenhouse gas emissions: Agriculture and related land use is responsible for almost one-quarter of Scotland's emissions¹. There is significant untapped opportunity to reduce greenhouse gas emissions by 35% whilst maintaining current production (Vivid Economics Jan 2019).
- More efficient resource use (e.g. N fertilisers) to reduce inputs, improve productivity and reduce losses to air and water: this is key to ensuring sustainable livelihoods, maintaining current levels of domestic food supply, and creating the additional land area required for enhanced carbon sequestration and net-zero.
- Resilience: this transformation would help to ensure that livelihoods, productivity and environmental protection are all better supported in the context of Brexit, volatile market conditions, and a changing climate.
- Pollution and biodiversity: reduced fertiliser and pesticide use is an inherent benefit of many of the technologies and integrated management practices that would be supported with this transformation (e.g. increased N use efficiency and reduced emissions of ammonia to the atmosphere and nitrate to streams, rivers and groundwaters).
- Cost savings: reducing fertiliser application and diesel use through more precise methods and machinery reduces costs for farmers.
- Growing the home market: training, new machinery and online tools can help Scottish farmers produce food more efficiently for a sustainable and climate-friendly diet
- Export potential: Developing practices and machinery for climate-friendly farming can be a value offering for high quality Scottish food produce at home and abroad and create expertise and equipment that can be used elsewhere.

¹ <https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/2/>

What does the Programme for Government say?

The Programme for Government commits to a “new Agricultural Transformation Programme for farming and food production focused on sustainability, simplicity, profitability, innovation, inclusion and productivity, while also reducing greenhouse gas emissions. Funding of this package of actions will be considered as part of future rural support.”

The PfG does not provide any new funding or timescale for launching the programme. There is some concern that reducing emissions is an add on, rather than the primary focus of the programme.

What CERG says the Scottish Budget should include

The Agricultural Transformation Fund should be funded in the Scottish Budget 2020/21 with a minimum of a three-year spending commitment. The Fund should be allocated as follows:

Net zero Agriculture and Land Use Skills Training

- Development of a suite of Scotland-specific online CPD courses for net zero farming (15 courses @£200k for ‘core’ course and then bespoke regional iterations of this @£50K per ‘region’ (15 regions based on potential LUS regional partnerships made up of neighbouring local authorities with common attributes) - £1m
- Two tiers of training. Tier 1: Advisors/land agents receive specialist training/accreditation to provide tailored advice to land managers on farm-level activities to reduce emissions based on carbon audit results. This training should also enable advisors to maintain oversight of activities which may attract financial support because they are identified as priorities at a regional level through regional land use frameworks. This level of knowledge and oversight should also help them spot opportunities for cooperation between land managers. Tier 2: Free access to the course for stakeholders, assuming total fees of £500 per person per course (so 6,000 users per year, 18,000 over 3 years) to cover course maintenance, delivery and updating. £3m per year

Net zero Farm Tool

- Development of a Scotland-specific 'net zero' farmer decision support tool. Several successful nation-scale platforms already exist and have been assessed for their applicability in Scotland (AgRE Calc, Cool Farm Tool, Solagro (JRC) Carbon Calculator² and international examples are also of note (e.g. [OverseerFM](#) in New Zealand). Each of these have strengths and weaknesses but provide a foundation to build upon – we do not need to develop a new tool from scratch. The decision support tool will provide farm-scale advice and data reporting to support improved fertiliser use, soil management (e.g. pH), C sequestration (e.g. tree planting). This tool would not only provide farm-level advice and support post-CAP land use change for net zero, it would serve as the primary platform by which farm level activities for net zero would be reported and collated centrally. £3m
- Implement the tool on 15,000 farms at zero cost to farmers (likely via FAS) (@£400 per farm based approximate existing carbon audit costs). £6m over 3 years.

² <https://www.climateexchange.org.uk/media/3584/farm-based-carbon-audits-final.pdf>

Net zero Farm Business Transformation Fund

- Direct financial investment/support for capital costs for emission reduction capital outlay items and the uptake of the latest technology to enable changes in systems and practices (e.g. precision application technologies, manure management, livestock housing, software licensing, education, training and skills). £25m in year 1 ramping up to £28m in years 2 and 3 totaling £81m over three years covering up to 50% (Tier 1) or 100% (Tier 2) of capital costs. A useful model for such an approach is the [Farm Business Improvement Scheme in Northern Ireland](#).

TOTAL FUNDING FOR NEW PROGRAMME

£34m in 2020/2021 as part of a:

£100m three-year spending commitment

Initiate minimum of 4 Green Growth Accelerator projects (original CERG proposal called for Green City Region Deals)

Why Scotland's climate emergency response needs this:

Scotland's cities and towns have a key role to play in our response to the climate emergency. They are home to most of the population, and therefore emissions, and provide opportunities for decarbonising transport and heating. While this policy proposal focuses on cities and towns, the model can also be applied to rural areas.

The model involves innovative co-funding arrangements involving local authorities, Scottish Government and the private sector to finance the essential infrastructure projects that will enable Scotland's transition to net-zero. In our view, the Green Growth Accelerator model should:

- Have strict criteria in place to ensure the project delivers significant climate emission reductions as part of wider zero-carbon planning.
- Include provision for Scottish Government capital funding to enable low carbon, attractive infrastructure which will bring in private revenue.
- Include Scottish Government funding and support for project partnership planning, consultation and design.

There should also be a Scottish Government commitment to work with local authorities and the private sector to approve at least 4 Green Growth Accelerator Projects by 2023.

Projects that could be included, according to regional needs and decisions, are:

- City centre transformations, including walking and cycling infrastructure
- District heating networks and energy efficiency projects
- Installation of solar electricity generation to existing rooftops
- Improved demand flexibility through thermal and electric storage
- Freight consolidation hubs that remove HGVs from city streets
- Strategic electric vehicle infrastructure

- Infrastructure (e.g. charging) to enable zero-emission public transport operation
- Bus priority measures and other transformational public transport initiatives.

This infrastructure is necessary to help individuals, communities and businesses adopt climate-friendly behaviours – such as moving to lower carbon public transport, walking and cycling and saving energy used in homes and businesses.

Why public investment is needed

Public investment is necessary because these projects will deliver public goods in terms of climate change but also clean air, health and well-being through active travel, and increased productivity and connectivity.

Some aspects of low carbon city transformations are attractive for financial investment, and every effort should be made to maximise private business interests. The Scottish National Investment Bank should play an important role here in providing some capital and facilitating the partnerships.

What are the benefits

The Green Growth Accelerator city projects will:

- Remove barriers to low carbon behaviours for individuals and businesses
- Increase productivity and connectivity through low carbon transport projects
- Increase attractiveness for inward migration and investment
- Improve health through better air quality and active travel.

What does the Programme for Government say?

The Programme for Government commits to “unlock additional resource for emissions-reducing investment through a Green Growth Accelerator – referred to by the Climate Emergency Response Group (CERG) as a ‘Green City Deal’ – combining public and private investment to transform cities and regions.”

The Green Growth Accelerator model makes the most of local authority borrowing powers for low interest loans from the Public Works Loan Board, with the Scottish Government contributing revenue payments against delivery of agreed outcomes.

What CERG says should be in the Scottish Budget

While each project budget will vary, the scale of the transformational, multi-stranded, place-based projects are likely to be in the order of £250m - £350m. The Edinburgh City Centre Transformation Project is a useful example, with capital costs for the whole strategy estimated to be £320m. This partnership will apply for Scottish Government funds of up to 50% of the costs and has already spent £1.5m of Scottish Government funding for the upfront planning, design and consultation. The remainder of project funding is expected to come from the private sector and local authority capital spend.

Similar projects or proposals are included in the Low Carbon Resilient Cities (Scottish Cities Alliance) report. In some areas there are not enough project proposals that meet requirements of a sound business case, pointing to the need for additional technical and project design skills.

The Scottish Budget should include funding commitments as follows:

- Funding for local partnerships to design, consult and draw up business case(s) (4 x £1.5m = £6m)
- Funding support (capital or recyclable loan facility) to kick start activities: (4 projects, up to £50m each = £200m)
- Revenue payments against agreed project outcomes.

For 2020/21 funding will only be required to support partnerships, however a clear commitment for some capital support (and/or recyclable loan) for the Green Growth Accelerator projects in the near term is also required.

TOTAL FUNDING FOR NEW PROGRAMME

£6m in 2020/21 to support project partnerships as part of:

£206m three-year spending commitment (plus annual revenue payments against agreed project outcomes).

Zero Emission Cities: Signal that every one of Scotland's city centres will be vehicle emission free by 2030 and support wider decarbonisation of transport throughout Scotland

Why Scotland's climate emergency response needs this

Transport emissions make up a quarter of Scotland's climate emissions and are not yet falling. Signalling that Scotland's city centres will be vehicle emission free by 2030 helps achieve the decarbonisation of transport in two ways. Firstly, it helps to directly decarbonise our cities, maximising the use of public transport, walking and cycling, and creating more liveable and healthy cities. Secondly, it provides a powerful market signal for the wider decarbonisation of road transport across the whole of Scotland.

Decarbonisation of Scotland's transport will be delivered through a combination of demand management, electrification (i.e. switching to electric vehicles), increased public transport use, increased walking and cycling, and some green hydrogen vehicles where this is more cost effective. The CCC's analysis shows that the electrification of transport is more cost-effective than allowing fossil fuel vehicles to persist, even before climate costs or air quality benefits are considered. Zero emission city centres will be more liveable, offer international levels of desirability for both residents and tourists, and provide healthy clean air to breathe.

The Scottish Government has set a clear expectation that all Scotland's cities will deliver a low emission zone. This should be extended, with an expectation that local authorities will develop their low emission zones into zero emission zones by 2030. Local strategies can be delivered in locally appropriate ways, whilst maintaining a powerful overall collective market signal.

Why public investment is needed

The existing programme of low-emission zones is being funded by local authorities and Scottish Government. Some of the infrastructure developed through this process, such as automatic number plate recognition cameras, could be repurposed for zero emission zones. There is existing funding also available to bus operators, taxi companies and micro-businesses supporting the upgrading of vehicles to meet low-emission zone levels.

There will be some short-term Scottish Government costs for developing zero emission zones, for example carrying out the consultation that has been committed to in the Programme for Government. However, Scottish Government spending is mainly needed in the first instance to accelerate the development and deployment of alternatives to fossil fuel vehicles across Scotland, which will pave the way for 2030 implementation of zero emission cities as well as support the switch to active travel and EVs in all rural and urban areas. This includes financial support for walking, cycling, electric mobility and public transport. This investment will go alongside the significant infrastructure changes (e.g. walking, cycling and bus infrastructure), which will be addressed in part by the proposals for Green Growth Accelerators in Scotland's cities.

What are the benefits

- Create healthier and more liveable cities
- Support the switch to active travel and EVs in cities and more widely in Scotland
- Increase use of public transport
- Works in tandem with Green Growth Accelerator projects
- Sends powerful market signal for the wider decarbonisation of transport in Scotland.

What does the Programme for Government say?

"We will consult on Scotland's ambition to make the transformative shift to zero or ultra-low emission city centres by 2030 by engaging extensively with key sectors, in particular the bus sector."

In addition, the Programme for Government includes the following funding commitments:

- An additional £17m in loans to top-up the Electric Vehicle Loan fund to £32m in 2019-20 to meet demand, and to allow it to be expanded to second-hand vehicles
- £7.5m for demonstrator projects to support EV charging infrastructure at scale
- £20m to support charging infrastructure by LA's, homes, business
- £2.5m for commercial and private vehicle owners to prepare for LEZs
- £2m to take ideas for zero carbon mobility to full large-scale propositions.

What CERG says should be in the Scottish Budget

To accelerate Scotland's decarbonisation of transport, and to prepare alternatives to fossil fuel vehicles ahead of the implementation of zero emission city centres by 2030, the next Scottish Government budget should invest in:

Walking and Cycling

The active travel budget should be increased by 50% from the current level of £80m to £120m per year. The current budget round was oversubscribed for projects, showing there is ample opportunity to grow this effort. This funding should be distributed amongst local authorities and all delivery bodies to support the ongoing development and maintenance of improved walking and cycling infrastructure across Scotland.

Public transport

The Scottish Ultra Low Emission Bus Scheme, which supports the uptake of ULEV buses and investment in charging infrastructure, should be quadrupled to £12m and the Bus Emissions Abatement Retrofit scheme should be continued in the short term to help meet the requirements of LEZs.

CERG welcomes the Programme for Government commitment to invest £500m over the coming years in improved bus priority infrastructure, and we would expect to see a first tranche of this funding available for scoping work in the budget for 2020/21.

Electric mobility

Key Scottish Government electric mobility schemes should be expanded, including:

- E-bikes: as more businesses and consumers switch on to the benefits of e-bikes, we forecast this stream will continue to grow and help people overcome the barrier of e-bikes being more expensive than a traditional bike. Other European countries such as Germany (over 1m units of e-bikes sold per year), and the Netherlands (more e-bikes sold per year than normal bikes) show the potential for this market to grow. Increase current funding from £1.8m to £2.1m in 2020-21 with a total over £7.4m over the three-year period.
- EV Loan Fund: the provision of zero interest loans has been successful in supporting the increased take-up of EVs in Scotland, and supported consumers who otherwise would not have purchased an EV to do so. Responding to the climate emergency means that the proportion of EVs to internal combustion engine cars (ICEs) on our roads needs to increase rapidly, even as the total number of cars (of all types) on Scotland's roads should fall over the next decade. With EV's falling in price, as well as becoming more desirable, it may be possible to reduce the amount of support available per vehicle in time, enabling the same amount of government loan funding to support the purchase of a larger number of vehicles. CERG also welcomes the expansion of the scheme to second-hand EVs, helping to develop this market. Maintain current loan fund at £32m per year for the three-year period.
- Business EV fleets: The government should continue to support business purchasers to buy fleet vehicles, vans and taxis to purchase zero emission vehicles with free advice and zero interest loans. There is a particular need to support taxi drivers looking to replace their old taxi with a new, clean vehicle to cut emissions.
- Public sector fleets: Continue support for Community Planning Partnership members to replace ICE fleets with EVs.

In the first year, 2020-21, funding required includes:

Active travel - £120m

Bus transport - £12m

EVs and E-bikes - £34.1 (does not include business and public sector support)

Over three years, funding required includes:

Active travel - £360m

Bus transport - £36m

EVs and E-bikes - £103.4m (does not include business and public sector support)

TOTAL FUNDING TO EXPAND EXISTING PROGRAMMES:

£166.1 in 2020-21 as part of:

£499.4m three-year spending commitment

Note on geographical coverage:

These funding schemes are all existing schemes, which we are calling for to be expanded in either funding scale or reach. All of these schemes are Scotland-wide, covering both urban and rural Scotland, and this should continue. We have argued that city centres should play a leading role in the achievement of the 2032 end to fossil fuel vehicle sales target, achieving this target ahead of rural areas. Cities have good public transport, shorter journeys that can be more easily changed to active travel, and clean air issues. The market signal provided by zero emission cities and the increase in these funding programmes will support transport emissions to reduce across all of Scotland, both rural and urban.

Accelerate Scotland's energy efficiency retrofit scheme

Why Scotland's climate emergency response needs this

Heating accounts for almost half of Scotland's climate change emissions. Improving energy efficiency is the simplest, most cost-effective and sustainable way to reduce these emissions. It also reduces the amount of heat generation required for the future.

We need to upgrade more buildings every year, making them highly insulated, well-ventilated, and heated by low carbon technologies. Almost all homes and buildings (where feasible in a climate emergency context) should reach at least EPC band C by 2030 and zero carbon by 2045.

We need increased delivery, investment and ambition if we are to make Scotland's existing buildings warm, climate-friendly and affordable to heat. The government's Energy Efficient Scotland programme provides the building blocks for this transformation but is not improving buildings at the rate needed to deliver zero emission buildings by 2045.

The necessary increase in the rate of improvement can be achieved through a package of increased investment for grants and loans, advice and support to generate demand, plus phased regulation. We also need an independent oversight body for Scottish government energy efficiency programmes to coordinate activities, drive efficiencies and maximise benefits to the supply chain.

This will be a decades long programme, outliving many governments and spending billions of pounds. As such it needs its own governance for continuity and effectiveness.

Why public investment is needed

Many of the measures which have a quick pay back in terms of energy bills like loft insulation have been taken up and we now need to take more of a whole-house approach. This includes the simple measures like loft insulation and draught-proofing alongside more expensive measures such as solid wall insulation and ventilation. We also need to continue the development of appropriate solutions for traditional buildings and other ‘hard to treat’ building types. Individual homeowners are unlikely to install these more complex measures without engagement and support and many will struggle to find the upfront capital to invest in technologies such as heat pumps and solid wall insulation. Social landlords and private landlords are also in need of support and advice.

It makes sense to use public funding to provide in-depth support to households, landlords and communities to do the right thing, and those who have the ability to pay can be expected to make a contribution to this investment in their property. Further development of a place-based approach can generate demand and support local supply chains. For those households requiring financial support public funding can ensure a just transition to warm, low carbon and affordable heat. Public investment is also required to support the supply chain and quality assurance to ensure that the retrofit is done right the first time.

Without the right level of public investment, we will unnecessarily require additional power generation capacity, and larger and more costly heating systems while paying higher energy bills³. The fuel poor would not benefit from the low carbon transition, unable to pay the upfront costs of switching to renewable heat. Scotland could fail to realise the jobs potential of ambitious energy efficiency programmes (research by the University of Strathclyde suggests there is a return of £5 in GDP per £1 of government investment in an energy efficiency programme).

What are the benefits

- Reduced fuel poverty
- New jobs and economic opportunities
- Improved health outcomes
- Incorporation of climate adaptation measures to prevent issues from overheating or flood damage arising in the future.
- Avoided costs of energy generation and reduced costs of heat decarbonisation of buildings.

What does the Programme for Government say?

“This Programme for Government commits us to scale up and accelerate existing work so that we reduce emissions from heating our homes and buildings to near-zero by 2045, in line with advice from the Committee on Climate Change.” The Programme for Government promises “an updated position in our Energy Efficiency Route Map in December 2019 to accelerate the improvements of Energy Performance Certificate (EPC) ratings in our homes.”

³ Heat decarbonisation for the UK could cost up to £6.2bn per year more to 2050 without adequate investment in energy efficiency. Analysis of alternative UK heat decarbonisation pathways, 2018, Imperial College.

The PfG does not comment on funding or respond to CERG proposals concerning a target for most homes to reach EPC band C by 2030, regulation, non-domestic buildings, or an oversight body. Without action in all these areas net zero will be extremely difficult to reach and we therefore look to see funding which take these areas forward in the Scottish budget in line with the PFG commitment above to scale up and accelerate.

What CERG says should be in the Scottish Budget

Fuel poverty and energy efficiency programmes: The budget for fuel poverty and area-based programmes, grants, loans, engagement, support and advice should be at least doubled to £240m with a multi-year commitment rising in line with climate change and fuel poverty targets (the Scottish Government will need to carefully consider how its funding complements UK-wide energy efficiency schemes such as ECO). This breaks down to:

- £48m for Warmer Homes Scotland
- £98m for local authority led area-based schemes
- £19 m for national energy efficiency and fuel poverty advice and £1m for a major engagement campaign with homeowners
- £55m for Home Energy Scotland loans and other financial support
- £4m for to support local authority development of Local Heat and Energy Efficiency Strategies
- £12m for place-based projects generating demand and supporting installations for the self-funding homeowners and £3m for innovation – e.g. deep retrofit and home improvement supply chain.

Additional funding needs not estimated:

- Non-domestic buildings: significantly increase the funds available to support energy efficiency and decarbonisation of heat in non-domestic buildings. There is limited data on the energy performance of non-domestic buildings, which makes the development of a strategy, programme and costings challenging. At a minimum, research should be undertaken to carry out a detailed survey of buildings to establish a baseline and understand the scale of change required. The Resource Efficient Scotland programme of free advice, technical support and loans (with some cashback) for SMEs is working well but is relatively small given the scale of the task and should be expanded significantly, while also creating bespoke programmes for larger businesses.
- Support for the supply chain – advice, training, skills development.
- All publicly owned buildings should be assessed and retrofitted, including all ‘business units’ leased by local authorities and/or their arms-length enterprise partners.
- New assessment protocols should be developed to address deficiencies in the methodology underpinning EPCs so that it addresses net-zero requirements across all building types, including traditional buildings, and put in place robust quality assurance procedures.
- Establishment costs for new oversight body for Energy Efficient Scotland.

TOTAL FUNDING TO EXPAND EXISTING PROGRAMMES

£240m in 2020-2021 for domestic energy efficiency and fuel poverty programmes, as part of:

£900m over three years

Budget support is also needed for heat decarbonisation and this is covered under the Heat Pump Sector Deal.

Create a Scottish Heat Pump Sector Deal that provides clear long-term market signals for the accelerated installation of heat pumps in Scotland

Why Scotland's climate emergency response needs this:

Heat pumps will deliver the majority of heat decarbonisation for buildings in Scotland, with the CCC stating that heat pumps (alongside heat networks) are the leading low carbon option to replace fossil-fuel heat in homes off the gas grid by 2030, and about 10 million homes on the gas grid in the UK should transition to heat pumps and hybrid heat pumps by 2035. Putting these numbers into the

Scottish context, this means moving from current installation rates for heat pumps of about 1,500 per year to an average of 80,000 per year⁴.

This is an order of magnitude expansion which is needed in a very short timescale. Such rapid expansion will require a Sector Deal with the heat pump industry which is based on long-term incentive support and targets from the Scottish Government to help consumers and industry to switch from lower cost fossil fuel alternatives. In return, clarity regarding the scale of the market and activity to be delivered will allow the supply chain to invest in local skills and equipment, ensuring the maximum economic benefit for Scotland. Electricity network impacts will also need to be considered as well as integration with solutions such as smart systems, time of use pricing and electric and heat batteries. A sector deal approach would enable industry and Government to work together to identify issues and develop programmes to address them.

For an initial period of three years, the Sector Deal will need to support activity in three areas: large-scale systems delivering heat via heat networks in city centres; hybrid heat pumps to be fitted in less dense urban areas; and installations in rural, off-gas grid homes and businesses.

Why public investment is needed

Public funding is required to help level the playing field with fossil fuel systems and current funding schemes – the Renewable Heat Incentive (RHI) and the Low Carbon Infrastructure Transition Programme (LCITP) – will be ending soon. This provides an opportunity for more targeted and lower cost forms of support.

⁴Based on an estimate of 200,000 off-gas grid homes and a pro-rata figure of 1 million on-gas homes moving to heat pumps / hybrid heat pumps.

Decarbonising heat will be the largest cost component of reaching net-zero and it is essential to find a way of doing this fairly. At the same time, the benefits to Scotland's economy could be huge with the right support. Supporting the heat transition through public funding is necessary and more progressive than applying levies on energy bills, which disadvantages low income and fuel poor households.

The Scottish Government's proposed Heat Networks Bill is a welcome development which should 'support and facilitate' the creation of more heat networks in Scotland. However, if no public funding is available to heat networks serving existing buildings, the opportunity to make these heat networks low carbon from day one will be missed because they will default to lower cost fossil fuel heat.

What are the benefits:

In addition to enabling Scotland to implement a critical piece of the CCC's least cost pathway to meet net-zero, this Sector Deal will have the following benefits:

- Cost reduction: evidence shows that there is scope for further cost reduction across the heat pump technologies of the order of 20% and in the case of hybrid heat pumps, cost reductions could be as much as 50%. Setting sectoral cost reduction targets has been a useful focus for the offshore wind industry.
- Innovation: Expanding the three markets – large scale, hybrid and rural – would support synergies across domestic and non-domestic buildings, and in new and existing stock - lowering costs and enabling whole building solutions.
- Manufacturing: Scotland already manufactures large-scale air and water source heat pumps in Glasgow, air and ground source heat pumps for individual buildings are manufactured in Livingston and heat batteries are made in East Lothian. It was also the first part of the UK to successfully commercialise the extraction of heat from sewers via heat pumps. The existing supply chain stands ready to double year-on-year production and installation. Faster growth is possible through a sector deal supplying additional support such as direct investment into the supply chain, access to low cost and Government backed finance and commitment to long-term framework style contracts, projects or incentives.

What does the Programme for Government say?

The Programme for Government commits to a Scottish Low Carbon Heat Funding Invitation targeting a minimum of £30 million of support for projects, including heat pumps, that demonstrate innovative and low carbon ways of heating buildings. This is not a new commitment but the final year of an existing programme, funded through the European Low Carbon Infrastructure Transformation Programme which is primarily funded by the EU.

What CERG says should be in the Scottish Budget

As heat pumps are still an emerging industry in the UK, public funding will initially need to be the cornerstone of the Sector Deal, creating the market scale needed to encourage industry growth and

drive down costs. To achieve the decarbonization of buildings needed to reach net-zero on a climate emergency timescale, the heat pump industry in Scotland needs to develop rapidly. We believe the Scottish Government should be using this Budget to target a year on year doubling of the number of heat pump installations in Scotland, until annual installation rates reach those required by the CCC's advice on net-zero.

Public funding enables heat pumps to compete with fossil fuels (in the absence of taxation on the latter) in the short-term. Along with phased regulation of energy performance standards, this will lever in significant private investment from building owners. Therefore, it is essential that the heat transition is taken forward alongside energy efficiency retrofit of buildings to maximise impact and minimise costs. The following public funding is required for an initial period of three years, as part of a longer-term commitment to the sector deal:

Large scale heat pump fund

Funding to support large heat pumps drawing heat from the ground, rivers and sewers delivered via heat networks to buildings in city centres. A budget of £19m in year one to provide funding for the heat pumps, the infrastructure they require (e.g. water abstraction) and to part-fund the heat networks⁵. The RHI can provide some of this support⁶ in the coming year, with additional funding required from Scottish Government to ensure that RHI funding is maximised in Scotland, and to develop a pipeline of further projects. A total budget of £235m would be required to support c.30 projects over three years (doubling year on year), reaching the very ambitious deployment rates required by the climate emergency.⁷

Hybrid heat pump demonstrator programme

Total budget of £93m over three years to provide £6,000 upfront grants, zero interest loans, and engagement programmes for households to install small heat pumps alongside gas boilers to create 'hybrid' systems, as the first step to decarbonising existing homes connected to the gas network. Any fuel poor households in the demonstrator programme would be fully funded. The programme would also include monitoring and evaluation, as it adds to learning elsewhere in the UK and Europe where hybrid systems have been installed with success. This responds to the CCC recommendation for a roll out of 10m hybrid heat pumps in the UK by 2035. This works out as roughly 1 million hybrid heat pumps in Scotland, or about 67,000 per year installed.

£15m in the first year to provide grants to 2,000 homes⁸ alongside demand generation, monitoring and supply chain support, ramping up thereafter to ultimately reach c.£200m and enable 60,000 installations per year. Given expected cost reductions, grants in later years would reduce to c.£2,000 per household. With these volumes, Scotland would play a leading role as part of a UK-wide programme to fit 1.5m systems, the volume required to meet targets while at the same time reducing costs by around 50%.

⁵ This funding can be scaled back once the Scottish Government introduces regulation that de-risks investment in heat networks; see Heat Networks Bill proposed in the Programme for Government

⁶ We assume total public funding of £17m each for four projects (of 3.7MW) in year one; this includes the cost of per unit heat subsidy for 20 years. The RHI (available in 2020/21) would provide £13m with Scottish Government funding of £4m per project – this is an indicative example only, project specifics will vary.

⁷ Piping hot: building heat networks in to tackle the climate emergency, 2019, Scottish Renewables

⁸ Although the RHI is available in 2020/21, it is not designed to enable heat pumps to compete against heat from mains gas and therefore a grant targeted at on-gas homes is required. Homes receiving this new grant would be ineligible to receive the RHI as well.

Rural heat pump fund:

Funding to support rural off-gas grid buildings (both domestic and commercial) to switch to heat pumps. The c.15,000 homes that replace coal, oil, LPG and electric heating each year would receive the RHI in year one, then a new £6,000 (air source heat pumps) - £10,500 (ground source heat pumps) upfront grant would be created to replace the RHI from 2021. Fuel poor households would be fully funded as part of the fuel poverty programme.

Funding is also required to enable the c.23,500 off-gas grid rural public sector and commercial buildings to switch, with upfront grants providing 70% of the cost difference between heat pumps and fossil fuel heating. This would ensure that all rural buildings are decarbonised by 2040. Where appropriate, this investment should be supported by complementary technologies to reduce heat demand and increase its flexibility such as heat batteries.

- Homes: £21m in year one to fund 2,000 installations⁹ in fuel poor households, and £1m for additional consumer engagement to drive uptake in future years, supporting engagement through Home Energy Scotland and LHEES pilots targeted at rural areas. The RHI would cover self-funding households in year one. To support a doubling of installations year on year, funding would then need to increase for years 2-3 to c.£211m¹⁰, including £8m for engagement, advice and support and c. £126m for fuel poor households. Support will be required to generate demand alongside phased regulation and other incentives to drive consumer uptake – at present, it is estimated that only 1,500 heat pumps per year are installed using the RHI in Scotland.
- Non-domestic buildings: £2m in year one for additional engagement to double the c.130 non-domestic installations currently funded through the RHI each year in Scotland. Annual funding will need to increase to c.£50m to £100m to support c.1000 installations per year¹¹ out to 2045.

Supply chain support: £35m over three years to raise awareness, subsidise training and provide low-cost loans.

Budget support is also needed for energy efficiency to reduce heat demand and this covered under the energy efficiency retrofit proposal.

	Estimated 2020-2021	Estimated three-year commitment
Large scale heat pump fund	£19m	£235m
Hybrid heat pump fund	£15m	£93m
Rural heat pump fund	£24m (includes non-domestic)	£235m (does not include non-domestic for years 2-3)
Supply chain support	£3m	£35m
TOTAL	£61m	£598m

⁹ This is roughly a doubling of the oil and LPG boiler installations currently funded through Scottish Government fuel poverty schemes; increasing this funding is the most appropriate way to increase deployment given availability of RHI in 2020/21.

¹⁰ The cost of providing 21,000 homes grants of between £6,000 and £10,500 over two years; if funding is through an extended RHI the annual figure will be different as this provides subsidy spread over seven years.

¹¹ Assuming an average system size of 150 kW and subsidy requirement of £90,000 if given as an upfront grant; range reflects limited data regarding the characteristics of these buildings. If funded through an extended RHI the annual value would be different as per the above.

5.2 Immediate policy actions which require resource commitment to implement

The climate emergency response is a significant change in Scottish Government scale and pace of action, and in some cases will require new skills and knowledge. This will require additional civil service resources right across the board. The recent creation of a global climate emergency response team in the Scottish Government is welcome though its success will be dependent on additional resource in sectoral divisions (e.g. transport, agriculture, housing etc).

This general point made, below we cover those CERG policy proposals which do not require much capital investment but do require significant new civil service resources for development and implementation to make them work in practice.

Mobilise the £11bn of annual public procurement to support the product and service innovation the climate emergency response needs

80% of Scotland's carbon footprint is caused by the goods and materials which we produce, consume and often waste. The public sector must be an exemplar in low carbon consumption and procurement and at the same time stimulate new markets for climate-friendly goods produced in Scotland. This should include products and services such as building materials, zero emission vehicles, zero emission buildings, food and catering, and recycled content in products. It should also include office equipment, IT and furnishings (floor coverings, furniture) making a 'circular office' environment across the public sector as 'standard'.

The Scottish Budget should reference the commitment in the Programme for Government to "mobilise the £11 billion of annual public procurement to support our climate emergency response" and say how this will be done within 12 months. This should set out a clear pathway to net-zero carbon purchasing and include support for developing and implementing new procurement guidance, training and capacity building within the public sector, identification of key 'climate-friendly products and services which will be supported from 2020, and linking public procurement directly to the achievement of high profile targets on electric vehicles, circular economy, and renewable energy.

The pathway should include specific dates to provide certainty to the supply chain and facilitate minimal disruption and cost to the public sector. For example, there should be firm dates from which only buildings with zero carbon heating will be purchased, or only electric vehicles, etc.

Produce public guidance on sustainable, climate-friendly healthy diets

There are a range of diet issues and choices that are responsible for greenhouse gas emissions including food waste, food miles, balancing protein sources and agricultural techniques. There is a growing need and interest from the public to understand the climate impact of their food choices.

The Scottish Budget should acknowledge the commitment in the Programme for Government to “work with business, the public and the third sector to develop guidance so more people are encouraged to eat more locally-produced, sustainable and healthy food that supports our aims on climate change.” This means providing the resources to develop public guidance, in consultation with Food Standards Scotland, in the next 12 months.

Make regional land use frameworks for maximising the potential of every part of Scotland’s land to contribute to the fight against climate change

Scotland’s land has a critical role to play in reducing Scotland’s emissions through planting trees and restoring peatlands, wetlands, grasslands and soils to take carbon out of the atmosphere.

However, the way we use and manage land has a huge impact on its carbon sequestration potential. The Scottish Land Use Strategy was first published in 2011, recognising the important role that land use can play in climate mitigation and adaptation. The high-level document set objectives and principles for land use and should be the mechanism for ‘climate-proofing’ land use decision-making, ensuring that all land use-related policies contribute to climate change mitigation and adaptation. However, land use priorities, opportunities and challenges will vary by region and national level objectives have proved challenging to deliver on the ground. Regional land use frameworks can bridge the gap by identifying regional priorities and opportunities, encouraging stakeholder engagement and providing the evidence base to target public money, including rural support, where it will deliver the greatest climate benefits.

Meeting net zero will require some change in land use and management. For example, Vivid Economics estimates that Scotland will need to double both the area of peatland restored annually to 20,000ha and increase the area of trees planted to 16,000ha per year in order to meet net zero. Achieving this will require land use trade-offs between biodiversity, water quality, housing, food production, energy generation and other demands on land. These are exactly the kinds of trade-offs that could be minimised and delivery facilitated by strategic oversight of regional frameworks and supporting local delivery.

In order to influence change on the ground, rural advisors, mentioned previously under the Agricultural Transformation Fund, with sufficient upskilling and training could use regional land use frameworks to advise individual land managers on the priority actions which will secure rural support in their region, and farm level tools could be used to identify opportunities for delivery at the farm level. Advisors would also be able to identify opportunities for cooperation between land managers at a larger scale to deliver greater benefits.

The Scottish Budget should reflect the Programme for Government’s commitment to enable regional partnerships and task them with “creating a regional land use framework by 2023 that identifies where resource can have the biggest climate impact.” We welcome the announcement that the Scottish Land Commission will be scoping proposals for establishment of regional partnerships. Core to this will be the insights obtained from the regional pilots in Aberdeenshire and the Borders, especially the importance of stakeholder capacity and engagement in facilitating successful implementation.

Development of regional online training resources is therefore required to support capacity within the partnerships (linked to a farm-level tool developed through the Agricultural Transformation Programme). This requires research on existing models and data availability required and establishing both underlying support (e.g. high-resolution integrated assessment model) and front-end costs for development and implementation. Budget will be required for a scoping study and roll out of software programme.

Establish a public-interest company to invest in and operate CCS infrastructure

According to the CCC, Carbon Capture and Storage (CCS) technology is necessary to achieve net zero by 2045, particularly for the industrial sector and for achieving negative emissions through bioenergy and CCS (BECCS). The Scottish Government should support the development of Scotland's CCS infrastructure by identifying an appropriate model and establishing a public-interest company within the coming 12 months.

The Scottish Budget should include resources to undertake the exploration of models, in partnership with the private sector, to develop CCS infrastructure. This should not rely on the limited resources in SNIB which should be directed to immediate priorities such as heat networks, buildings, transport and land use.

Enhance building standards to deliver zero-carbon homes and buildings

Every year we build many new buildings, including around 20,000 new homes, which will require upgrading to net-zero within the next 20 years, when they could be built to net-zero standards today. The technologies and expertise are already available to do this.

The Programme for Government's commitment to "set new standards to reduce energy demand, and associated carbon emissions, within new buildings by 2021. In addition, we will require new homes consented from 2024 to use renewable or low carbon heat. For non-domestic buildings, our ambition is to phase in this approach from this date."

We believe this timescale is too slow and the commitment is lacking in detail. This is a particular concern for the supply chain should the RHI neither be replaced or extended in 2021. The commitment should be more specific: a net-zero building standard, energy performance standards at point of major refurbishment, and specific dates and standards for the non-domestic sector. Without this detail, these commitments are unlikely to drive change, lever in private investment and influence the market.

The Scottish Budget should provide resources to undertake stakeholder engagement in the development of the standards, and continued support for training, and innovation in techniques such as off-site construction.

Complete plans for how we generate the renewable electricity needed to reach net-zero emissions

Scotland's renewable electricity generation deployment levels need to continue to grow in order to complete the transformation of our electricity sector and support the decarbonisation of transport and heat. The Scottish Government must ensure the planning process acts as a tool to facilitate the required growth of renewables. The Programme for Government stated the upcoming Energy Statement "will set out the extent to which renewable and low carbon energy generation will need to combine in order to meet net zero."

The Scottish Budget needs to provide the resources to ensure the ambitions within the updated Energy Statement are achieved. To support this, an updated assessment of the generation capacity (GWp) and electricity production (GWh) required to meet net-zero emissions in Scotland by 2045 is needed, setting a new generation ambition for 2030 and setting indicative ambitions for 2045 under different scenarios.

This work should be accompanied by an assessment of the onshore and offshore planning system's ability to deliver the specified amounts of generation at a competitive cost, identifying barriers and potential solutions to these. The review should include an assessment of:

- The contribution that onshore wind repowering will have in maintaining Scotland's current deployment levels and consideration of how repowering potential can be maximised.
- The potential for additional capacity from the use of taller turbines at new and repowered sites.
- The potential MW contribution from the current and future consented onshore wind pipeline and the associated socio-economic benefits that this could bring to Scotland.
- The potential contribution from sites in the current and future iterations of the Sectoral Marine Plan for Offshore Wind as well as other offshore renewables and how this contribution can be maximised, with an assessment of the socio-economic benefits that this could bring to Scotland.

The budget should ensure that resources are available to make immediate improvements to the planning system to facilitate more timely consent decisions to support delivery of the 2030 emissions reduction targets. This should include provision of additional resources for Local Planning Authorities and key stakeholders such as Scottish Natural Heritage to allow quicker and more efficient decision making for new and repowered renewables projects.

Dedicate the Scottish National Investment Bank to delivering on the climate emergency

The Scottish National Investment Bank has a vital role in directly funding the zero-carbon transition as well as mobilising funds from the private sector to support Scotland's climate objectives.

The Scottish Budget should reflect the Programme for Government's commitment that the "primary mission of the Scottish National Investment Bank will be to ensure the transition to net zero" and its initial budget of £130m.

5. Conclusion

The Scottish Budget must match Scotland's commitment to respond to the global climate emergency. This briefing provides estimates for the additional budget requirements to implement the 12 immediate actions proposed by the Climate Emergency Response Group. These 12 actions can all be taken forward within 12 months if given the right support in funding and resources. They are an important start for the Scottish Government's response to the climate emergency, but much more is needed across all sectors.

Overall, the 2020-2021 Scottish Budget and forward spending plans must be transformational - a climate emergency response budget, meeting the public sector's share of the annual spend of 1-2% of GDP needed according to the Committee on Climate Change. That resource must be used wisely as the public sector cannot shoulder the full expense of Scotland's transition. Public funding is important to kick-start projects, incentivise action, level the playing field, and as patient finance – all for the public good. Government can use its policy frameworks and leadership to signal and drive private investment. Finally, it can use its powers to ensure the transition is just and that the benefits and costs of responding the climate emergency are shared fairly.

This report is the synthesis and conclusions of the Climate Emergency Response Group only. The following organisations are proud to support the group's important work to enable informed net-zero policy development.

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