

Future Generations Commissioner for Wales
White Paper: Detailed Report

10 POINT PLAN TO FUND WALES' CLIMATE EMERGENCY

June 2019



Comisiynydd
**Cenedlaethau'r
Dyfodol**
Cymru

**Future
Generations**
Commissioner
for Wales



Introduction

Climate change is the greatest threat facing future generations. On 29th April 2019 Welsh Government declared a climate emergency. This follows the Intergovernmental Panel on Climate Change (IPCC)¹ latest report saying we have 12 years to avoid climate breakdown.

A week later the Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES)² findings highlighted that nature is declining globally at unprecedented rates, the rate of species extinction is accelerating with a million species under threat, with grave impacts on people around the world.

In March Welsh Government published Low Carbon Wales³ and although this contains 100 policies and proposals for decarbonisation it doesn't include any detail on how these will be funded. The UK Committee on Climate change have since suggested that the targets need to be more ambitious with Wales aiming for 95% emission reduction by 2050.

They also conclude that the costs of a net-zero GHG target can be met at an annual resource cost of up to 1-2% of GDP to 2050, the same cost as the previous expectation for an 80% reduction from 1990⁴. On 11th June Lesley Griffiths, the Minister for Environment, Energy and Rural Affairs announced that the Government were declaring their ambition to bring forward a target for Wales to achieve net zero emissions no later than 2050 and that she will bring forward regulations to the Assembly next year to amend the current 80% target.

Future Welsh Government financial budgets need to clearly align with the carbon budgets from 2020 onwards to ensure that the actions needed to achieve our targets are backed up by investment. They should set a long-term financial strategy to fund the actions required to meet new carbon emission targets in order to allow the rest of the public, private and third sector to plan effectively and to maximise the opportunities for job creation and investment which can maximise benefits to communities. However whilst this will require them to undertake further work and analysis Wales cannot and should not wait and miss another budget round before making the necessary investment as all the experts agree that the longer we leave it the more expensive and difficult the transition will be.

1. <https://www.ipcc.ch/sr15/>

2. This is the first global biodiversity assessment report since 2005

3. <https://gweddill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf>

4. <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>



Introduction: (Continued)

The steps the government are taking at the moment do not appear to match the declaration of a climate emergency - last year my assessment of the budget showed that only around 1% of the Welsh Governments Budget was being spent on decarbonisation.

We are lagging considerably behind other countries across the world and indeed the UK in a number of key areas such as investment in public transport, active travel, energy and re-greening our land.

Whilst the Welsh Government should be commended for declaring its commitment and for areas where it is making significant progress such as recycling (although this only accounts for 2.6% of Wales carbon emissions), responding to the climate emergency will require a much greater level of focused attention and investment. There are many things that the Government can do to tackle climate change which do not require a direct financial allocation but some areas will without doubt require significant additional investment. Eight European countries have recently called for 25% of the EU's budget should support action on climate change⁵; should this be the same for Wales?

With input from a range of experts I have identified ten areas for investment where action needs to be prioritised and scaled up to meet the "climate emergency" challenge.

It is difficult to calculate the exact amount of investment needed over this and subsequent Assembly terms (and this should be a priority for treasury officials). The UK Committee on Climate Change estimate that the total cost of following their pathway is around £30 billion over the period to 2050; this cost will not be borne exclusively by the Welsh Government and will be split between UK and Welsh Governments, businesses, public sector and people⁶. Many of the actions need a long-term sustained commitment and investment from Government but it is imperative that the next Assembly budget (2020-21) reflects the increased investment needed to tackle the climate emergency.

This paper presents a starting point for those discussions - for experts, other public bodies, individuals and importantly the Government to set out what sort of investment they think is required.

Immediate work must be undertaken to match the required level of investment this year and more detailed work should be undertaken in parallel to identify a longer-term funding and investment model.

5. <https://www.bbc.co.uk/news/world-europe-48198646>

6. <http://www.assembly.wales/laid%20documents/sub-ld11811-em/sub-ld11811-em-e.pdf>



Transport

= **£240 million in next budget (2020-21)**

- 1 Increase investment for active travel – a minimum of 10% of the transport budget (20% of the capital budget) should be allocated for funding walking and cycling infrastructure - £60 million allocation in the next budget.
- 2 Increase funding for public transport – at least 50% of the Welsh Government's transport capital budget should be allocated to improving public transport across Wales - £150 million allocation in the next budget.
- 3 Encourage uptake of low emission vehicles – approximately £295 million required to 2030 (approximately £30 million per annum) which could be met by a mixture of public and private investment.

Transport sector emissions account for 14% of Wales' total. Low Carbon Wales⁷ has a significant focus on modal shift and increasing the use of public transport, walking and cycling. Over the last 50 years the car has become the dominant mode of transport, with other modes declining, which has come with significant environmental costs.

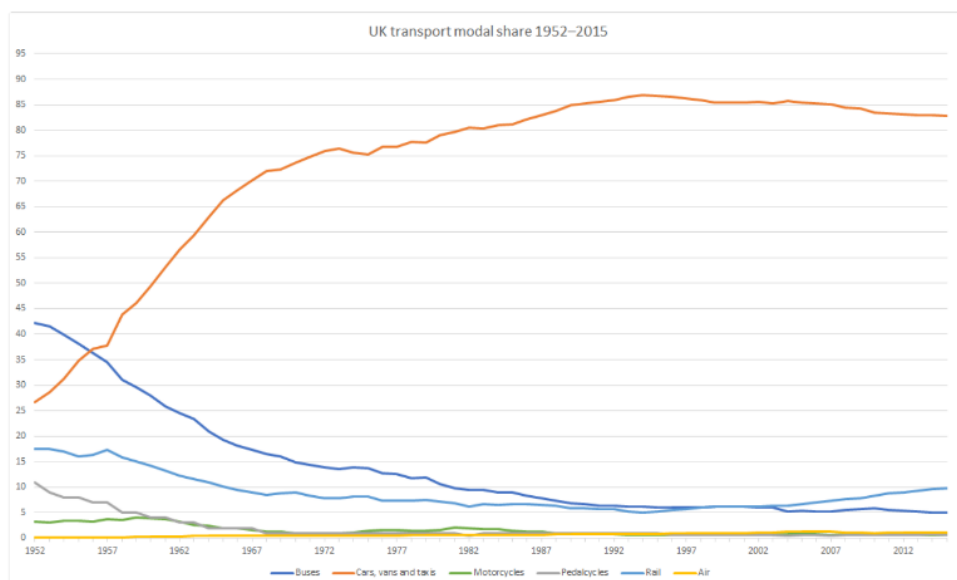


Figure 2 Passenger transport by mode in the UK 1950-2010 (DfT)

7. <https://gweddill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf>



10 Point Plan for Funding Wales' Climate Emergency

Transport

There are no national targets for this 'modal shift' but I would suggest the following would be in line with a climate emergency:⁸

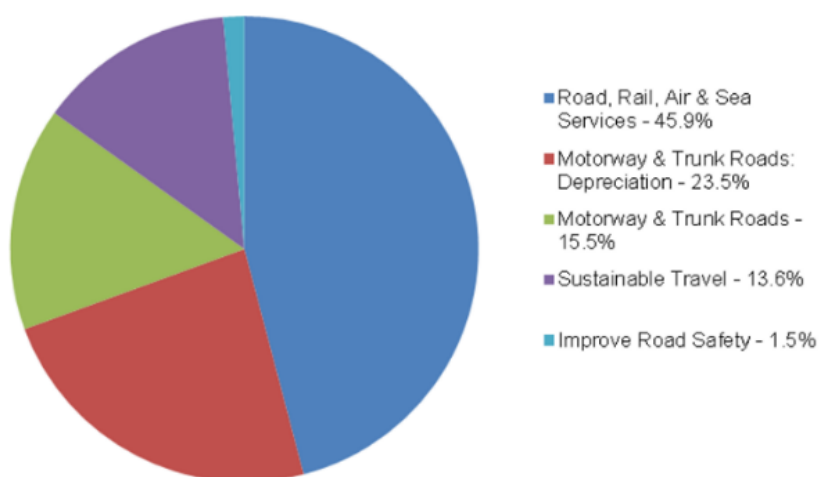
Mode	% in 1952 (UK) ⁹	% in 2017 (Wales) ¹⁰	Proposed target for 2050
Car	27	81	40 (or lower)
Bus	47	4	15-20
Rail	18	4	15-20
Cycling	11	2	10-15
Walking	-	8	10-15

The National Transport Finance Plan (NTFP) outlines that capital and revenue spend for 2018-2020 is £1.5 billion – a significant proportion of this needs to be allocated to increase use of public transport and active travel to support this modal shift.

The draft budget proposals for 2018-19 highlight that 66% of the Economy and Infrastructure MEG of £1.25 billion was spent on transport,¹¹ and only 13.6% or £112 million on sustainable travel as shown by the breakdown below:

- 46% road, rail, air & sea
- 39% motorway & trunk roads
- 13.6% sustainable travel which includes bus services support grant, concessionary bus services support grant, concessionary bus travel scheme, discounted bus travel for young people and active travel.
- 1.5% road safety

Transport 2018-19 Key Expenditure Areas



8. These are suggested targets and further analysis would be needed to explore how these could be achieved in Wales

9. DfT UK data: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/482670/tsgb0101.xls

10. National Assembly for Wales data: <https://seneddresearch.blog/2019/04/30/devolution-20-travel-in-wales-is-there-a-revolution-still-to-come/>

11. <https://gov.wales/sites/default/files/publications/2018-06/draft-budget-2018-2019-detailed-proposals.pdf>



10 Point Plan for Funding Wales' Climate Emergency

Transport

There needs to be a significant shift in spend towards sustainable travel; an allocation of £60 million per annum on improving active travel infrastructure and £150 million per annum for improving public transport would be a good starting point. This equates to around £2.1 billion of investment over the next ten years (2020-2030).

1. Increase investment for active travel

- **From 2020 ensure a minimum of 10% of the total transport budget (20% of the capital budget) should be allocated for funding walking and cycling infrastructure and pedestrianising town and city centres, increasing to 15% of total transport budget by 2025.**

In 2019/20 Welsh Government committed £60 million for funding active travel over the next 3 years (approximate average of £20m per annum). Prior to this, and despite the Active Travel Act, Welsh Government was spending approximately £4-6 per person per year on active travel. The additional funding brings this level up to approximately £10-12 per person per year which is less than 10% of the total transport capital budget.¹²

Funding should be increased to a minimum of £20 per head or £60 million per year from 2020 onwards (which equates to approximately 20% of the capital transport budget); this would be similar to the commitment made by Scottish Government of £80m for active travel (in their 2017 budget). European countries such as Denmark and Netherlands spend £17 and £24 per head¹³ respectively.

This is also in line with Greenpeace's Climate Emergency report which calls for the UK Government to introduce a target to spend at least 10% of transport expenditure on walking and cycling by 2024.¹⁴ This would allocate around £3.1 billion per year across the UK¹⁵ consistent with recommendations from the National Infrastructure Commission¹⁶. Cycling schemes can achieve more for less, with benefit-to-cost ratios in the in the range of 5:1 to 19:1; cycling has a lower capital cost than other forms of infrastructure, it can increase the reach of public transport and increase local economic benefits.¹⁷ Evidence also indicates that a typical "cycling city" could be worth £377 million to the NHS in healthcare cost savings (in 2011 prices) whilst facilities allowing children to cycle to school save on the public cost of school travel amounting to £390 million per annum in the Netherlands (in 1987 prices).

12. Over the last 10 years capital budgets for transport have been around £300 million per annum, with funding for active travel schemes between £12-20 million per annum.

13. Figures from Cycling UK

14. <https://www.sustrans.org.uk/news/government-serious-danger-missing-cycling-and-walking-targets-say-leading-charities>

15. Based on 10% of £31.2 billion spent on transport in 2017/18 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/726871/PESA_2018_Accessible.pdf

16. <https://www.nic.org.uk/our-work/nationalinfrastructure-assessment/>

17. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/509587/value-of-cycling.pdf



10 Point Plan for Funding Wales' Climate Emergency

Transport

Closer to home the benefits to Cardiff from people cycling in the city include saving the NHS £699,000 annually, equivalent to the average salary of 30 nurses, and £28 million total economic benefit to Cardiff from people riding bikes for transport and leisure annually.¹⁸

In addition to the above investment:

- Funding programmes should move to a 5-year basis rather than annual allocations as this is too short to effectively plan high quality active travel schemes;
- The increase should be matched with a corresponding reduction in funding new road build and a focus on improving the current road network where appropriate.

2. Increase funding for public transport

Although commitments to funding the South Wales Metro (£738m for the Core Valleys lines) and the investment in rail through the £5 billion rail franchise are very welcome, Wales has suffered from decades of under-investment. Public transport use has declined significantly in the last fifty years – we need to reverse this decline and go beyond to achieve the significant modal shift that's needed.

Data on public spending on local public transport across the UK by region over a 5-year period¹⁹ (2012/13 – 2016/17) placed Wales at the bottom of the table - £268m compared to £330m for Northern Ireland and £1.38bn for Scotland (5-year total). Spending in Wales has gradually decreased from £74.7 m in 2012/13 to £45.4 m in 2016/17. Further when considering transport spending per capita across the UK, the National Audit figures show again that Wales is one of the lowest at 3.9% compared to 5.2% in England and 6.1% in Scotland.²⁰

In my [Transport Fit for Future Generations](#) report I showed how the £1.4 billion currently ear-marked for the M4 relief road could be spent on an alternative package of integrated transport solutions. We set out 3 case study ideas of public transport schemes to complement the South Wales Metro at a cost of approximately £460m. This could be complemented by additional active travel measures (in the 3 local authorities) at a cost of £118m over the next 10 years. The total cost of our package would be approximately £578m, delivering an integrated system of public transport and active travel infrastructure to complement the planned Metro phases 2 and 3, at a fraction of the proposed £1.4bn investment on the Black Route. In addition to solving congestion, our alternative package would better contribute to the well-being goals, the local well-being objectives and the aspirations of Cardiff Capital Region. It would help the Welsh Government and local Authorities meet their decarbonisation targets, reduce inequalities and transport poverty, improve physical and mental health and help reduce noise and air pollution.

18. https://www.sustrans.org.uk/sites/default/files/file_content_type/bike-life-cardiff-2017-report.pdf

19. <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN04033>

20. <https://www.nao.org.uk/wp-content/uploads/2019/02/Investigation-into-devolved-funding.pdf>



10 Point Plan for Funding Wales' Climate Emergency

Transport

At least 50% of Welsh Government transport (capital) budget or £150m per annum should be allocated to improving public transport across Wales by:

- Increasing capital funding for improving existing rail infrastructure as well as developing new e.g. South east Wales Metro and similar initiatives in South west and north Wales (divert funding for new road building schemes into this if needed);
- A similar (50%) increase in revenue expenditure to match capital funding (from Welsh Government and regional/local authority contribution)
- Increasing funding for bus services and better integration with rail.

Some experts suggest this allocation should increase to as much as 80% of the capital budget; Welsh Government should undertake further analysis with partners to establish the level of expenditure needed to support the required modal shift.

3. Encourage uptake of Low Emission Vehicles

Although the focus of decarbonising transport should be on modal shift and reducing car use, we will need to make the remaining vehicles cleaner and greener. However Wales is behind all other UK nations in terms of EV coverage²¹, with only 617 charging points (3.32% of UK's total), compared with 1863 in the South West²², and only 30 rapid chargers compared to around 3,000 across the British Isles²³. As part of the budget Welsh Government has made a commitment for £2m funding over 2 years (2018-20) in electric vehicle charging points. This compares to almost £37 million invested by Scottish Government in EV infrastructure to date for an additional 1,500 EV charging points and 100 electric buses (announced in September 2018) and funding to help people make the transition to electric vehicles, including £4.8m of grant funding for 500 new ultra-low emission vehicles in the public sector fleet.²⁴

21. A study published by HSBC in 2018 highlighted that Wales has the poorest infrastructure for charging electric vehicles in the UK, with only 31 publicly funded charging points available here, compared with 743 in Scotland, 185 in Northern Ireland and 2,862 in England.

22. <https://www.zap.map.com>

23. <http://www.assembly.wales/Research%20Documents/19-031/19-031-web-eng.pdf>

24. <https://www.holyrood.com/articles/news/%C2%A3167m-scottish-government-funding-electric-vehicle-charging-points-and-green-buses>



10 Point Plan for Funding Wales' Climate Emergency

Transport

To support the need to phase-out petrol and diesel cars and vans sales, before 2040 or sooner, we need greater investment in electric vehicle (EV) infrastructure across Wales. This should happen through:

- A commitment for all public sector vehicles, taxis and public transport to be zero emissions vehicles wherever possible through a major vehicle replacement programme;
- A comprehensive strategy for expanding Wales' EV charging network. This should be accompanied by a significant uplift in current funding available, combined with clear plans for co-investment between Welsh Government and other partners. The Welsh network should be centrally planned and coordinated, with support from organisations such as the Energy Saving Trust.
- Rapid and ultra-rapid chargers near motorways and other strategic routes and public (fast) chargers in towns and cities. The EV charging infrastructure needs to be strategically planned to serve all potential markets (e.g. tourism / visitors, fleet vehicles, private cars with drives and private cars where housing is terrace / on-street
 - Public bodies should invest in fast chargers on their sites - Office for Low Emission Vehicles (OLEV) provide a 75% grant to cover the £500 cost of a fast charging point. The [Healthy Travel Charter](#) which has been signed by 14 public bodies in Cardiff is a good model to deliver this. These would be supplemented by
 - Pairs of rapid charge points every 40-50 miles across the network, at a cost of £35,000 each

These would need to be supported by

- requirements in development plans for new developments to ensure private investment towards this aim, and;
- grid provision to support more EV charging points in the future.

Although there has been some progress in Wales such as adoption of electric fleet by Swansea council and recent announcements about the introduction of electric buses in Caerphilly, Cardiff and Newport, we need an investment programme along the lines of that delivered in Scotland over the last 10 years. A recent report by Rhun ap Iorwerth AM shows how Wales can learn from the Scottish experience: ChargePlace Scotland (CPS) is the national network of public EV charging points in Scotland. There are nearly 1000 publicly available charge points on the CPS network, including over 175 50kW rapid chargers capable of charging an EV to 80% in 25 minutes. Since 2012, the Scottish Government has invested over £15 million in the development of the CPS network. It is planning a further £15m investment plan for FY18/19, in an additional 1,500 new charge points to be placed in homes, at businesses and on local authority land.

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10 Point Plan for Funding Wales' Climate Emergency

Transport

Greenpeace has called for UK Government to ensure the full budget of £530 million (comprising a combination of both public and private funding) is available for the public charging network to 2030.²⁶

The UK Committee on Climate Change estimate that in total, across Wales, 2330 fast chargers (22 kW), 1800 rapid chargers (43 kW), 2090 ultra rapid chargers at 150 kW and 19 ultra rapid chargers at 350 kW are required. This would require an investment of £295m between now and 2030.²⁷ This investment would not necessarily all fall on the government as a large portion of it may come from the private sector.

Case-study: Dundee Council is an excellent example of EV innovation in action. Driven by a need to improve air quality, a number of key individuals have ensured that the local authority has fully engaged with ULEV developments. The council has made a number of successful investments, spending £8.1m since 2011 from a range of sources (grants from EU, OLEV, Scottish Government, EST along with their own funds) and has brought some key partners on board, including the taxi industry. Starting with four EVs and four charge points in 2011, Dundee City Council has strategically built its way up to the point where as of May 2017 it had 83 EVs in its own fleet, that had driven over one million miles and delivered an estimated saving on fuel cost of 70%. Those numbers have increased since then with over 100 EVs now in the council fleet. The taxi companies are reporting a saving for each driver of around £130 a week on fuel.

When considering all of the above evidence we suggest that £240 million of investment should be allocated in next years' transport budget (2020-21)

26. <https://www.theccc.org.uk/wp-content/uploads/2018/01/Plugging-the-gap-Assessmentof-future-demand-for-Britains-EV-publiccharging-network.pdf>

27. Based on Wales-specific runs of the UKCCC's electric vehicles charging infrastructure model with the Net Zero report recommended levels of electric vehicle uptake for 2030.



Housing and Buildings

= **£330 million in next budget (2020-21)**

- 4 All new homes and public buildings built in Wales built should be zero carbon from 2020 – building on learning from the recent £90 million 3-year Innovative Housing Programme, and requires on-going funding of £30 million per annum.
- 5 Support for a national housing retrofit programme – focusing initially on homes living in fuel poverty and those in social ownership could cost up to £1 billion per year, with a suggested £300 million from Welsh Government. IWA estimated an investment of £5 billion is needed over 15 years but would generate an increase in GVA to the Welsh economy of £2.2 billion, and savings of around £350 per household and approximately £67 million in savings to the health service.

Housing currently accounts for 9% of total emissions in Wales, although the 1.4 million Welsh homes are responsible for 27% of all energy consumed and around a quarter all emissions in the UK.²⁸ Reducing energy demand and decarbonising existing homes as well as ensuring all new homes are zero carbon should be a major priority for Welsh Government particularly as this will deliver wider benefits to health, people on low incomes, the environment and the economy.

The UK Committee on Climate Change's UK Housing: Fit for the Future report²⁹ calls for action in five areas: performance and compliance; skills; retrofitting existing homes; building low-carbon, energy and water efficient, and climate resilient new homes; finance and funding. They estimate that the health cost to the NHS of conditions exacerbated by poor housing is currently estimated to be £1.4 – 2.0 billion per year in England alone. I want to see:

28. Data from BEIS and the National Atmospheric Emissions Inventory (2016)

29. <https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/>



10 Point Plan for Funding Wales' Climate Emergency

Housing

4. All new homes and public buildings built in Wales built should be zero carbon from 2020

Funding from Welsh Government should enable social housing to be early adopters with the private sector to follow as Building Regulations are updated to make this a requirement.

The UK's first carbon positive house designed by Cardiff University and the Low Carbon research institute was built in 2015 at a cost £125,00 or £1,200/m² which is well within the acceptable budget for social housing.

The Welsh Government's Innovative Housing programme (IHP) has secured £90 million over 3 years to deliver 1,000 affordable homes. A similar 10-year programme, with investment of around £300 million, needs to be put in place to build and learn from this pilot and ensure all future homes in Wales are zero carbon. The Welsh Government must immediately require any houses or buildings being commissioned and/or funded with public money, such as 21st Century Schools, to be as close to zero carbon as possible and preferably Active Buildings.³⁰

The IWA³¹ has called for the Welsh Government's 2019 review of Part L of the building regulations to set out a clear timetable for increasing the energy efficiency of new homes and delivering 'homes as power stations' (or 'net energy zero'/energy positive) standards by 2022. Homes as power stations are those that produce enough energy to balance the overall annual demand of the household with generation. This would go beyond the current nearly-zero energy homes in operation, meaning that house builders, the supply chain and skills providers can prepare for these changes by 2022. Energy consumption could be cut by more than 60% – saving the average household over £600 a year – if homes were designed to 'homes as power stations' standard so that they generate, store and release their own solar energy.

Existing funding programmes should be evaluated to consider how to maximise funding for energy measures, for example reshaping the Social Housing Grant Programme to build 'homes as power stations' and ensuring that new housing estates build in other measures which reduce energy demand, such as infrastructure for active travel.

30. Active Buildings integrate solar generation and storage technologies for electricity and heat within their construction, enabling them to generate, store and release their own solar energy

31. https://www.iwa.wales/wp-content/uploads/2019/03/IWA_Energy_WP6_Digital-2.pdf



10 Point Plan for Funding Wales' Climate Emergency

Housing

5. Support for a national housing retrofit programme,

to improve energy efficiency of Wales' 155,000 fuel poor homes, as well as homes in social ownership; supported by grants for those in fuel poverty or 0% interest loan schemes.

The Welsh Government Warm Homes programme to tackle fuel poverty has invested £240 million between 2011-18 (approx. £34 million per annum) to improve energy efficiency of over 45,000 homes, and between 2016-18 they have invested a further £50 million from the Energy company obligation. From 2018-2021 they expect to invest a further £106 million (£35 million per annum) to improve a further 20,000 homes which gives a total investment of £396 million (just less than £40 million per annum) between 2011 and 2021.

A climate emergency means this should be scaled up to around £1 billion per annum for the next 10 years, funded by a combination of government and private sector investment.

³²

Analysis by the Centre for Sustainable Energy showed that a total investment across the UK of around £18 billion would be needed to install some 10.4 million measures in 4 million homes to improve energy efficiency of as many UK fuel poor homes as practicable by 2030. Research undertaken for Welsh Government by the Welsh School of Architecture as part of their focus on Decarbonising Homes has indicated that to retrofit 10% of homes in Wales (to EPC A) by 2030 could cost around £1 billion per annum, with an average cost of circa £30,000 per home. Although initially the cost is likely to fall on the public sector, thereafter private sector money will fund the majority of stock that is privately owned.

³³

As part of their Re-energising Wales project, IWA has called for Welsh Government to develop a 'Greener Homes' programme that maximises energy efficiency, increases on-site renewable energy generation and supports energy storage. The Re-energising Wales Swansea Bay City Region (SBCR) study showed we need at least a 20% reduction in heat and electricity demand if the region is to stay on track to meet climate change targets. This would require over 200,000 domestic properties (60% of households in the region) needing to be improved by at least one Energy Performance Certificate band rating.

Scaling this up to Wales, a programme to deliver 20% efficiency savings across the Welsh domestic stock would need to target 870,000 households by 2035, and would cost around £5 billion over the next 15 years. Current targets require to go beyond this. The majority of this £5 billion spend has the potential to be local if Welsh supply chains can be developed in good time.

32. Ref: White, V., Hinton, T., Bridgeman, T., & Preston, I., 2014. Meeting the proposed fuel poverty targets - Modelling the implications of the proposed fuel poverty targets using the National Household Model. Report for the Committee on Climate Change, Centre for Sustainable Energy

33. https://www.iwa.wales/wp-content/uploads/2019/03/IWA_Energy_WP6_Digital-2.pdf



10 Point Plan for Funding Wales' Climate Emergency

Housing

This would result in:

- 10,000 FTE jobs per annum supported across Wales during a notional 15-year implementation period
- the creation of around £2.2bn in Welsh GVA
- savings to householders of at least £350 on their annual combined energy bill
- Wales' energy demand reduced by around 3, 500 GWh
- huge costs savings to the NHS as poor-quality housing costs the NHS in Wales more than £67m a year.

The programme should target homes from the social housing sector, private rented sector and owner-occupied sector. It should also consider homes which are connected or not connected to gas and electricity grids, with consideration of the different levers available to drive action for each tenure and housing type. They suggest that a variety of financial mechanisms linked to each tenure will be required. Existing funding programmes for each sector should be evaluated to consider how to maximise funding for energy measures, for example reshaping existing funding for social housing organisations such as major repair allowance and dowry schemes to meet higher standards which should be set within the Welsh Housing Quality Standard post 2020.

Greenpeace has called on the UK Government to make energy efficiency in existing buildings an infrastructure priority and provide funding of at least £1.7 billion per year for delivery of Government's existing target of EPC band C for all properties by 2035, ideally earlier. This money must focus on fuel poor and social housing in the first instance but then leverage private funds into the able to pay sector. They've also called for funding to support additional innovation projects of around £300 million per year like the rollout of Energiesprong to drive energy efficiency in existing houses and commercial buildings.³⁴

The overall level of investment required to decarbonise homes in Wales is around £1 billion; we anticipate that £300 million should be allocated in the Welsh Government budget with the remainder coming from the private sector.

When considering all of the above evidence we suggest that £330 million of investment should be allocated in next years' budget (2020-21) to support decarbonisation of homes and buildings

34. <http://www.energybillrevolution.org/>



Renewable Energy

= **£200 million in next budget (2020-21)**

- 6 Fund the future through an immediate low carbon economic stimulus for Wales to accelerate investment and action on renewable energy (as well as energy efficiency) – IWA estimate that to develop an energy system that enables Wales to become 100% self-sufficient in renewable electricity by 2035 requires around £30 billion of investment over a 15-year period. This £2 billion per annum will be met from a mixture of public and private investment; our best estimate is that 10% or £200 million will need to come from public funding but the Government must set out urgently how the overall level of investment will be met.

Wales needs to transition to more low carbon and renewable forms of energy in the future. Through their Re-energising Wales project, the IWA worked with industry, academia, government and local communities to create a practical plan for Wales to move to 100% renewable energy by 2035³⁵. Their first recommendation, which I'm also calling for, is to:

35. "A plan for Wales' renewable energy future: Essential actions to re-energise Wales by 2035" report outlines a 10 point plan for a renewable Wales, <https://www.iwa.wales/news/2019/03/re-energising-wales-2/>



10 Point Plan for Funding Wales' Climate Emergency

Renewable Energy

6. Fund the Future:

through an immediate 12 to 18 month low carbon economic stimulus for Wales which accelerates investment and action on renewable energy and energy efficiency. "Energy" does not receive sufficient funding in the current Welsh Government budget with the 'Energy, Planning and Rural Affairs' expenditure group (which provides funding for planning, agriculture, food and marine, environment, climate change and sustainability, and animal health and welfare) only having just over 2% of the Welsh block grant.

Scottish Government, in comparison, is

- establishing the Energy Investment Fund that will invest £20 million in low-carbon energy infrastructure
- supporting the marine energy sector and tidal innovation through the £10 million Saltire Tidal Energy Challenge Fund
- investing £60 million in the Low Carbon Infrastructure Transition Programme (LCITP)

Using an example from the Re-energising Wales Swansea Bay City Region (SBCR) report, investment in 2.7 GW of electricity generation by 2035 would enable the region to produce renewable electricity generation equivalent to 100% of electricity consumption on an annual basis in the region. Translating this to a Wales-wide level, their evidence shows that the development of an energy system that can enable Wales to become 100% self-sufficient in renewable electricity by 2035 requires around £25bn of investment in renewable electricity generation, and £5bn in domestic energy efficiency interventions.

£30 bn of investment, or £2 bn per annum, over a 15-year investment period (2020-2035) from a combination of government, private sector and other sources could support some 20,150 jobs annually across Wales, with around £7.4bn in total Welsh GVA created.

Our best estimate is that 10% or £200 million will need to come from public funding and we expect to see this allocation in next year's budget; the Welsh Government must set out urgently how the overall level of investment (£2 billion) will be met.



10 Point Plan for Funding Wales' Climate Emergency

Renewable Energy

In addition to financial support we should urgently:

- Identify sites for Wales to deliver 100% of its electricity from renewables by 2030 through the National Development Framework.
- Invest in energy storage and grid capacity to ensure that the grid can cope with transition to renewables
- Facilitate community energy and innovative finance mechanisms, e.g. Ynni Teg who are raising funding through community share and bond offers.



Land Use & Nature-based Solutions

= **£221 million in next budget (2020-21)**

- 7 Radically increase tree cover over the next two decades - requiring investment of approximately £16 million per annum over the next 10 years.
- 8 Support adoption of low carbon agricultural practices and re-thinking land-use practice - £300 million per annum is currently provided to support agriculture and rural development. The funding framework post Brexit must support the industry target of being carbon neutral by 2040.
- 9 Promoting nature-based solutions and green infrastructure in all developments; the cost of meeting current environmental land management priorities in Wales is estimated to be £205 million per annum.

Land management has a critical role to play in reducing our emissions as well as adapting to the impacts of climate change. The natural world and biodiversity are under unprecedented threat – we need solutions that will address the climate and nature crisis. The recent Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES) report recognised that land-based climate change mitigation activities can be effective and support conservation goals. A lack of investment in nature-based solutions contributes to the failure to halt biodiversity loss and therefore nature-based solutions to climate change. There has never been a funded strategy to achieve nature recovery in Wales; we need a strategic approach to funding delivery for nature, targeting priorities and identifying innovative private and public sources of finance in addition to traditional sources.

The current overhaul of agricultural support provides an opportunity for us to transform agricultural subsidies to support a food system that is good for the environment and for our health. The overall cost of meeting environmental land management priorities in Wales is estimated to be £205 million per annum³⁶. This is the cost based on existing strategies, objectives and commitments. They do not necessarily reflect the level of ambition needed to improve the environment – and its optimal role in climate regulation - for the next generation.

36. RSPB, the National Trust and The Wildlife Trusts (2017) - Assessing the costs of Environmental Land Management in the UK - Briefing for policy makers – download it [here](#).



Land Use & Nature-based Solutions

Effective land management will also deliver multiple ecosystem services upon which we depend e.g. clean air, clean water, pollination of crops etc. Failure to invest will deplete prosperity and well-being, exacerbate climate breakdown and lead to additional costs for example the total cost of ash dieback to the UK is estimated to be £15 billion because of costs from clearing up dead and dying trees and in lost benefits provided by trees, e.g. water and air purification and carbon sequestration.³⁷

In addition:

- Restoring all our Natura 2000 European protected sites in Wales into favourable condition is estimated to cost £144 million (or £1.3 million per site) initially.³⁸ In Scotland the public benefits of protecting the European network of protected areas (the Natura 2000 network) are estimated to be more than three times greater than costs, including direct management and opportunity costs.⁴⁰
- Christie et al (2011) estimated the value of ecosystem services delivered by the UK Biodiversity Action Plan are estimated at £1.36 billion. It was estimated these benefits would increase by a further £747 million annually if expenditure were increased to allow full delivery of the UKBAP targets, giving total annual benefits amounting to £2.1 billion per annum.⁴¹ This compares to estimated costs for delivery of £837 million per annum.

37. <https://www.woodlandtrust.org.uk/press-centre/2019/05/ash-dieback-predicted-to-cost-15-billion/>

38. Natura 2000 is a network of nature protection areas in the territory of the European Union. It is made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive

39. The figures are based on high, medium and low priority actions. Costs shown above do not include NRW staff time, ongoing maintenance work, or costs for strategic actions in Thematic Action Plans (NRW LIFE Natura 2000 Programme for Wales N2K Wales - Summary Report – https://cdn.naturalresources.wales/media/674546/nrw28788-life-natura-2000-report-december-2016-update_english_spreads.pdf?mode=pad&rnd=130970726370000000

40. Jacobs (2004) An Economic Assessment of the Costs and Benefits of Natura 2000 Sites in Scotland. Final Report <http://www.gov.scot/Resource/Doc/47251/0014580.pdf>

41. Christie M, Hyde T, Cooper R, Fazey I, Dennis P, Warren J, Colombo S and Hanley N (2011) Economic Valuation of the Benefits of Ecosystem Services delivered by the UK Biodiversity Action Plan. Report to Defra: [http://users.aber.ac.uk/mec/Publications/Reports/Value UK BAP FINAL published report v2.pdf](http://users.aber.ac.uk/mec/Publications/Reports/Value%20UK%20BAP%20FINAL%20published%20report%20v2.pdf)



10 Point Plan for Funding Wales' Climate Emergency

Land Use & Nature-based Solutions

7. Radically increasing tree cover

to support the First Minister's commitment to create a National Forest and increase forest cover by 100% in each of the next two decades (Wales forest land cover is about 18% compared to EU average of 37%). Current afforestation targets for 20,000 hectares/year across UK nations are not being delivered, and the UK Committee on Climate Change recommend that 20% of agricultural land should be restored back to nature such as woodlands and peatland restoration. This would sequester carbon, contribute towards flood prevention and create wood building opportunities.

Confor has estimated that to deliver the 2019 woodland creation target of 2000 hectares, a budget of around £8 million per annum is required, whilst the UK Committee on Climate Change has estimated that planting 42,500 hectares over the next decade will cost approximately £164 million. The UK Government has just launched a new £10 million Urban Tree Challenge Fund to support planting 130,000 new trees across England's towns and cities, to help meet the government's target to plant one million urban trees by 2022. Planting new urban forests will not only soak up carbon but will also deliver significant multiple benefits for health and wellbeing, increasing biodiversity, inward investment, tackling urban heat island effect and air pollution.

In their Climate Emergency report Greenpeace are calling on the UK Government to plant at least 700 million trees by 2030 across UK, ensuring species are suitable for local habitats and ecosystems.⁴³

8. Support adoption of low carbon agricultural practices

and re-thinking land-use practice with a focus on local food resilience, maintaining family farms and strengthening the rural community, diversifying agricultural practice, agroforestry and peatland restoration; with One Planet Developments as the default approach to building in the countryside to support creation of new affordable rural businesses with zero carbon housing. The Common Agricultural Policy currently provides around £300m of funding per year or support farming and rural development. A new framework post Brexit provides an opportunity to more closely link financial support to agricultural with emissions reduction and increased carbon sequestration. The agricultural sector has already set an ambition for net-zero emissions across the whole of agriculture by 2040 and investment must support this aim.

In addition, Natural Resources Wales are calling for investment in a large-scale programme of peatland restoration to reduce the significant emissions from peatlands.

42. <https://www.gov.uk/government/news/government-delivers-new-10m-fund-to-plant-over-130000-urban-trees>

43. Based on 70,000 hectares per year from 2023, about 40% higher than CCC, and at a planting rate of around 1400 trees per hectare, which is around the middle of the range recommended by Woodland Trust <https://www.woodlandtrust.org.uk/mediafile/100822384/11510-planting-your-own-wood-leaflet>



Land Use & Nature-based Solutions

9. Promoting nature-based solutions and green infrastructure in all developments

nature-based solutions with safeguards are estimated to provide 37% of climate change mitigation globally until 2030 needed to meet 2°C goals with likely co-benefits for biodiversity. Solutions can include retrofitting green and blue infrastructure, such as creating and maintaining green spaces and biodiversity-friendly areas, urban agriculture and wetlands, rooftop gardens, street trees and expanded, accessible vegetation cover in existing urban areas and new developments. Green infrastructure in urban and their surrounding rural areas can complement large-scale “grey infrastructure” in areas such as flood protection, temperature regulation, cleaning of air and water, treating wastewater and the provision of energy, locally sourced food and the health benefits of interaction with nature.

Green infrastructure delivers a range of benefits to people’s health and well-being, increasing community cohesion and resilience, tourism and recreation; NRW’s i-tree survey of three Welsh catchments (Wrexham, Swansea and Bridgend) calculated that the trees in those areas delivered £3.9m worth of benefits each year.⁴⁴ The UK Natural Environment Assessment found that if the UK’s ecosystems are properly cared for they could add an extra £30bn a year to the UK’s economy but if they are neglected, the economic cost would be more than £20bn a year.

Further health benefits of green spaces are:

- UK green spaces are worth at least £30bn a year in health and welfare benefits
- the NHS could save £2.1bn a year if everyone had access to green spaces
- the health benefits of living with a view of a green space are worth up to £300 per person per year

Green infrastructure can be a cost-effective approach to improve water and air quality and help communities stretch their infrastructure investments further by providing multiple environmental, economic, and community benefits without significant additional investment.

44. http://www.wtwales.org/sites/default/files/green_infrastructure.pdf



10 Point Plan for Funding Wales' Climate Emergency

Other Levers

- 10 Ensure decarbonisation is a key principle and driver for decision making within planning, public sector procurement contracts and pension fund investments supported by a programme to train a Carbon Literate public sector.

Other areas such as procurement, planning, finance and skills provide significant levers to support the achievement of our carbon reduction targets. Prioritised actions should include:

- Decarbonisation as the key principle within the new Planning Policy Wales and National Development Framework, and local planning decisions; investment needs to be made in resourcing and upskilling planning and development control staff in these requirements to ensure local decisions for housing and infrastructure developments reflect the climate and nature emergencies.
- All major public sector contracts should have decarbonisation as the key driver/criteria for evaluation; and public sector procurement should drive emission reduction targets in key areas such as uptake of ultra-low emission vehicles, energy efficiency and low-carbon heat in buildings, low-carbon products.
- Divestment from fossil fuels: The UK leads the European Union in giving subsidies to fossil fuels: €12bn (£10.5bn) a year is spent in support of fossil fuels in the UK, significantly more than the €8.3bn spent on renewable energy. The collective investment of the eight Welsh Local Government pension schemes is approximately £15 billion with over £1bn of this invested in fossil fuels⁴⁵. These pension funds should significantly reduce their exposure to investment in fossil fuels as soon as possible identifying climate change as a key risk.
- A percentage of public sector pension funds should be allocated to sustainable infrastructure projects; £500 million was allocated by the Greater Manchester Pension Fund and the London Pensions Fund Authority partnership to fund infrastructure projects such as transport, housing and renewable energy.
- Roll-out 1-day Carbon Literacy training for all Welsh Government and public sector staff, extending to politicians, key decision-makers and schools over time; a programme for Welsh Government alone is estimated to cost approximately £5,000.

45. <https://www.foe.cymru/news/welsh-councils-invest-over-£600-million-fracking-industry>



10 Point Plan for Funding Wales' Climate Emergency

Annex 1: Low Carbon Wales⁴⁶

Relevant policies and proposals:

- Policy 2 - We will continue to align the carbon and financial budget cycle incrementally
- Proposal 6 - Commission research to gain a better understanding of Welsh public sector investment profiles to stimulate discussion about future investment strategies.

Transport

- Policy 46 - Increasing Active Travel
- Policy 47 - Increasing travel by rail
- Policy 48 - Increasing travel by bus
- Policy 49 - Use planning policy to promote sustainable travel and reduce the need to travel
- Policy 50 - Increasing the proportion of vehicles which are electric and ultra-low emission
- Policy 51 - Plan for and invest in EV charging infrastructure
- Policy 52 - Aiming to reduce the carbon footprint of buses to zero by 2028
- Proposal 1 - Design a public communications campaign to encourage people to use their cars less
- Proposal 12 - Working to achieve a modal shift from car dependency to sustainable forms of transport
- Proposal 13 - Significantly increasing modal share of active travel for short journeys
- Proposal 14 - Piloting activity to promote the use of zero and ultra-low emission road vehicles
- Proposal 15 - Promote the decarbonisation of private sector fleets in Wales

Housing and Buildings

- Policy 23 - Continue to drive low carbon schools through 21st Century Schools
- Policy 37 - Funding and Delivery of our Warm Homes Programme
- Policy 38 - Raising standards through our Welsh Housing Quality Standards
- Policy 39 - Setting higher energy efficiency standards for new builds through reviewing Building Regulations Part L (Conservation of Fuel and Power)
- Policy 40 - Driving innovation through our Innovative Housing Programme
- Policy 41 - Funding more efficient buildings through our Sustainable buildings funding policy
- Policy 45 - Incentivising energy efficiency of homes through our Help to Buy – Wales
- Proposal 8 - Improving our evidence-base around the residential retrofit programme

46. <https://gwedhill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf>



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Low Carbon Wales

Renewable energy

- Policy 31 - Delivery of our Renewable Energy Targets
- Policy 32 - Developing Routes to Market for Renewable Technologies
- Policy 33 - Increasing local ownership of energy generation
- Policy 35 - Energy Innovation
- Proposal 7 - Exploring potential for investment and new approaches to energy

Land use & nature-based solutions

- Policy 62 - Implementing our Natural Resource Policy
- Policy 63 - Woodland Strategy for Wales
- Policy 64 - Felling licences
- Policy 65 - Welsh Government woodland estate
- Proposal 19 - Increase tree planting
- Proposal 20 - Identifying preferred areas for tree planting



Annex 2: Extract from Net Zero report by UK Committee on Climate Change (May 2019):⁴⁷

Implications for devolved administrations

Delivering extensive decarbonisation by 2050 in the UK will require a strong policy framework at both UK and devolved level. Scotland, Wales and Northern Ireland have (fully or partially) devolved powers in a number of areas relevant to emissions reduction. These vary by administration, but key areas include planning, demand-side transport measures, energy efficiency, agriculture, land use and waste. Welsh, Scottish and Northern Irish policies are essential in the areas where powers are largely devolved:

- Demand-side transport measures: Devolved administrations must implement effective policies to provide low-carbon public transport and encourage active travel.
- Buildings energy efficiency: Meeting the earliest possible date for net-zero emissions will require major improvements to the energy efficiency of new and existing buildings delivered through devolved buildings standards and policy.
- Residual positive emissions removals
- Agriculture and land use: Policies need to support low-carbon farming practices, afforestation, agroforestry and peatland restoration as all have a crucial role to play in reducing emissions by 2050 on both private and public land. The framework to follow the Common Agricultural Policy provides an opportunity to more closely link financial support to agricultural emissions reduction and increased carbon sequestration.
- Waste: Devolved administrations are responsible for reducing emissions from waste, with a focus on reducing, reusing and recycling waste, diverting biodegradable waste from landfill, and capturing methane from landfill and wastewater.

47. <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>



Extract from Net Zero report by UK Committee on Climate Change (May 2019):

Implications for devolved administrations

Where powers are reserved to the UK level, the devolved administrations have an important role in ensuring that the emissions reductions take place. In particular, the devolved administrations should focus on the following areas:

- **Planning:** Planning frameworks to ensure infrastructure is well aligned to objectives for emissions reduction (e.g. through encouraging walking, cycling and use of public transport, ensuring readiness for or installation of electric vehicle charging points in new developments, and a favourable planning regime for low-cost onshore wind).
- **Procurement:** The public sector in devolved administrations can use procurement rules positively to help drive emissions reductions in a number of areas (e.g. uptake of ultra-low emission vehicles, energy efficiency and low-carbon heat in buildings, low-carbon products).
- **Convening role:** It is important the devolved administrations maximise their potential to bring stakeholders together, and facilitate dialogue and strengthen relationships, to enable the development of mutually-beneficial projects that contribute to decarbonisation.
- **Working with the UK Government** to ensure that UK-wide policies work for devolved administrations.
- **Access to UK-wide funding.** The devolved administrations should seek to ensure that households and businesses have good access to UK-wide funding opportunities where possible and appropriate.

The costs of a net-zero GHG target can be met at an annual resource cost of up to 1-2% of GDP to 2050, the same cost as the previous expectation for an 80% reduction from 1990.

UKCCC has recommended HM Treasury undertake a review of how the transition will be funded and where the costs will fall. It should develop a strategy to ensure this is, and is perceived to be, fair. A broader strategy will also be needed to ensure a just transition across society, with vulnerable workers and consumers protected.



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