

**Cabinet Secretary for Energy, Planning and Rural Affairs (EPRA)
Minister for Environment**

Climate Change, Environment and Rural Affairs Committee

Climate Change Scrutiny

1. This paper sets out some of our priorities and recent actions related to tackling Climate Change, ahead of our appearance before the Committee on 22 March.
2. The Environment Act sets out a clear decarbonisation pathway for Wales, within the context of our existing UK and international obligations, with a reduction in emissions of at least 80% by 2050. We are on track in developing our supporting regulations under the Environment Act, including setting our interim targets, our first two carbon budgets and the development of our Low Carbon Delivery Plan, which will be published by March 2019.
3. Over the last year, our focus has been on developing the supporting regulations under the Environment Act and accelerating progress in key sectors such as waste, energy and public sector decarbonisation.

Emission reduction framework and targets for decarbonisation

4. In April 2017, the UK Committee on Climate Change (UKCCC) advised the Welsh Government on our Net Welsh Emissions Account and we are looking to agree the recommendations:
 - To count all emissions in Wales, including those from the largest emitters currently operating under the EU Emission Trading Scheme - as the most transparent and simplest way of counting emissions.
 - To include emissions from international aviation and shipping - although these are not devolved areas, we recognise Wales' global responsibility for accounting for all emissions.
 - To allow for a limited amount of international offsetting - our focus will be on driving forward action in Wales, however, if we are including all emissions, including those over which we have limited powers, we may need a certain amount of flexibility through offsetting to help manage those unforeseen circumstances. We agree with the UKCCC recommendation to follow the approach of the UK and Scotland. Offsetting, although not a substitute for reducing emissions, will be considered as a last resort.
5. Collectively, these decisions represent an important milestone in establishing a framework for a lower carbon Wales. They establish the scope within which we can now set the interim targets and carbon budgets.

6. The UKCCC is the Welsh Government's statutory advisor for climate change. When setting regulations under the Environment Act, the Welsh Government is required to seek advice from the UKCCC as well as a number of other requirements.
7. We have involved stakeholders in the process of setting our accounting framework and our interim targets and carbon budgets. The UKCCC have undertaken two Calls for Evidence in relation to our accounting framework and our interim targets and budgets respectively.
8. This has included stakeholder events, jointly hosted with the Welsh Government, to help engage and inform stakeholder responses to the Calls for Evidence. The UKCCC published its advice on the Accounting Framework in April 2017 and its advice on the Interim Targets and Budgets in December 2017.
9. In its advice on targets and budgets, the UKCCC recommend the following interim targets:
 - a 2020 target for an emissions reduction of 27% on 1990 levels. This equates to a reduction of approximately 15.6 million tonnes between the baseline and 2020¹.
 - a 2030 target for an emissions reduction of 45% on 1990 levels. This equates to a reduction of approximately 26 million tonnes between the baseline and 2030.
 - a 2040 target for an emissions reduction of 67% on 1990 levels. This equates to a reduction of approximately 38.7 million tonnes between the baseline and 2040.
10. In terms of our carbon budgets, the UKCCC recommend:
 - First Carbon Budget (2016 – 2020) – an average of 23% below 1990 emissions.
 - Second Carbon Budget (2021 – 2025) – an average of 33% below 1990 emissions.
11. We are evaluating the advice, along with the wider evidence requirements and will provide a further update in the summer on our policy position prior to laying regulations in December.
12. Our Low Carbon Delivery Plan, which will be published by March 2019, will set out proposals and policies for the first carbon budget, broken down into areas of Ministerial responsibility. Ministers will have collective, long-term responsibility for delivering on climate change. The Plan will provide transparency and accountability to deliver emissions savings and provide certainty to drive

¹ These estimates are based on the 2015 inventory data. The estimates of emissions will vary in future inventory releases due to new evidence and methodological improvements, which is why we will be setting targets as percentage reductions.

investment for a low-carbon economy. We will need to look at the decarbonisation pathway for different sectors taking into account the social, economic and environment impacts and looking at the green growth opportunities.

Monitoring and Reporting Framework

13. Alongside our new legislative framework, we will be developing a monitoring and reporting framework using data from the Welsh part of the Greenhouse Gas Inventory. The inventory contains emissions data for the UK, including those for the Devolved Administrations. The UK Inventory is used to report total UK emissions in accordance with the UK's international reporting requirements.
14. Under the Environment Act, Welsh Ministers must publish a final statement after each budgetary and target period, outlining if they have met the budget or target. This will need to be done within 2 years after the budgetary period or interim target year, reflecting the fact that there is a time lag of 2 years before emissions data is verified and ready for publication. Each statement will be laid before the National Assembly for Wales.

Wellbeing of Future Generations

15. The Ways of Working under the Wellbeing of Future Generations Acts guide our Programme, our thinking about our long term target and how we collaborate and involve stakeholders around how to decarbonise to prevent the further effects of climate change. We have established a Ministerial Task and Finish Group and a robust cross-government governance structure.
16. Our officials are working with the Future Generations Commissioner's Office to embed the ways of working and our wider well-being commitments in our Decarbonisation Programme. The Commissioner has identified climate change as one of her key priorities and we are looking to work together to drive this important agenda including aligning the financial and carbon budget cycles and on how we procure goods and services.
17. As part of our wider approach to involvement this summer, we will consult on how Wales collectively can meet its long-term climate goals for decarbonising to 2030.
18. Decarbonisation is an integral part of Prosperity for All and is at the heart of our Economic Action Plan, which sets a new contract for business support. This will help to send the right signals to ensure Wales positions itself to receive the maximum economic, environmental, social and cultural benefits that Decarbonisation can offer.

Energy Generation

19. Energy is a fast evolving sector and is key to delivering our carbon budgets. We are keen to put Wales forward as a test bed for innovation on energy to capture the benefits from low carbon transition. We have set what we believe to be stretching though achievable renewables targets. Our Smart Living programme is

providing a strong base for future opportunities for Wales from the energy transition.

20. Emissions from the power sector make up 37% of Welsh emissions (2014) so decarbonising the sector is critically important. We need to consider how we reduce emissions from electricity generation using the levers we have at our disposal, such as energy consenting and environmental regulation. We will be issuing a call for evidence this year and engaging on how we develop a pathway to reducing emissions in relation to fossil fuel generation.
21. Clean energy also requires us to move away from fossil fuel extraction. We already have a precautionary planning framework to support this. We have issued two notification directions in respect of unconventional oil and gas extraction. Oil and gas licensing functions will be formally transferred to Welsh Ministers in October this year and we are looking at how these powers can support taking decarbonisation forward. We will also aim to strengthen planning policy in relation to the extraction of fossil fuels through the changes to Planning Policy Wales which are currently out to consultation.
22. We have set what we believe to be stretching though achievable renewables targets. These are:
 - Generating 70 per cent of Wales' electricity consumption from renewables by 2030
 - 1 GW of renewable electricity capacity in Wales to be locally owned by 2030
 - Renewable energy projects to have at least an element of local ownership by 2020
23. We estimate renewable electricity generation in Wales delivered the equivalent of 43% of Wales' electricity consumption in 2016. By the end of 2016 there was 397 MW of locally owned, renewable electricity capacity and 177 MW of locally owned renewable heat capacity. However there is clearly a need for more, to meet the increased demand from decarbonised heat and transport as well as increasing prosperity. Our recent call for evidence seeks to inform our approach to delivering the 1GW local energy target and taking forward local ownership. We held two recent events to discuss the call for evidence which closes at the end of March, after which we will consider the Welsh Government response.
24. Our new grant scheme for hydropower projects with a rateable value of up to £50,000 will provide 100% rate relief to community hydro projects and support to cap the increase in rates for other small-scale developments. We are reviewing the schemes to establish whether a longer term solution is needed.
25. We are convening a group to work with us on solutions to the challenges inherent in developing a grid suitable to support future energy systems. This process will enable us to develop options to address Wales' grid infrastructure issues.
26. We are also exploring the potential for an Energy Atlas for Wales, particularly in supporting new generation matched with smarter local use of renewable energy.

This could play an important role in identifying where the best opportunities will be for locating additional renewable generation to meet the targets.

27. The planning system has a key role to play in encouraging developments which help to reduce emission levels through national planning policy which guides local policies. Planning Policy Wales (PPW) is proactive in encouraging development which seeks to reduce emissions with the over-riding need to tackle climate change and ensure places are resilient to the consequences of climate change. We are consulting on an entirely reworked PPW which places placemaking at the heart of the Welsh planning system and decarbonisation is a thread which runs through it.

Industry

28. The UKCCC recognises the importance in ensuring that climate policies should not lead to carbon leakage - displacement of industrial activity to other countries with less stringent climate policies and that policies do not encourage a reduction in Welsh industrial output.

29. Carbon intensive industrial sectors have significantly progressed actions to reduce energy consumption per unit of product and decarbonise their activities. For example:

- In the last 40 years the steel sector has reduced energy consumption by 40%.per tonne of steel produced.
- Since 1998 cement producing plant have directly reduced CO2 emissions per tonne of Portland cement by 23%.
- Since 1990 UK paper and pulp manufacturers have reduced CO2 emissions per tonne of paper produced from 1.3 tonnes to 0.6 tonnes.

30. The Welsh Government has been working with a number of the carbon intensive sectors to support them with investment in technologies to enable efficiency gains and carbon reduction. This has been achieved in a state aid compliant way through the Welsh Government's EU notified Environmental Protection Scheme.

31. WEFO funding is supporting a number of strategic initiatives that are looking at how industry can further improve efficiency and decarbonise. A key project is Flexis led by Cardiff University, Swansea University and the University of South Wales. The research, which will be applied at a Welsh "place based" demonstrator based at the Tata Steel Works in Port Talbot, will consider how to deliver reliable, low carbon energy in a responsive and flexible way to meet future demand and how to capture and manage carbon generated by industry.

Buildings

32. Tackling the energy efficiency of existing homes offers significant opportunities to reduce emissions, energy bills and levels of fuel poverty. Improving their energy efficiency is the most cost-effective way to meet our commitments to reduce carbon emissions, lower costs for consumers and directly address fuel poverty. The imperative isn't just to take action but to take the right action. There is not a

'one size fits all' solution we can just roll out. Knowing what action to take, based on evidence, is crucial.

33. In 2016, we commissioned the Building Research Establishment (BRE) to survey house conditions and data will start to become available this summer. We have commissioned research with Cardiff University to look at evidence of what works to decarbonise homes in different construction types and situations. Putting this together with the stock condition survey data will allow us to develop, over the next two years, a co-ordinated programme of action with financial, social and behaviour change elements.
34. We are establishing a new Steering Group which will bring together stakeholders, academics, businesses, investors and lenders to understand the challenge and build consensus regarding the decarbonisation of the existing housing stock. Their work will feed into the Ministerial Task & Finish Group around the wider decarbonisation agenda.
35. The financial costs are likely to be significant but so is the cost of doing nothing. Attitudes to energy use and the need for change will require us to work closely with a very wide range of stakeholders, institutions and the public. The UKCCC recognises Welsh Government's position and ability to do this.
36. Our existing housing stock is a huge challenge but we cannot ignore the new homes being built. We do not want to have to keep retro-fitting. Prevention is far better than cure. So sitting alongside action on existing homes we also have an ambition to build 1,000 new types of homes across Wales through our Innovative Housing Programme which started very successfully in 2017-18. This is part of our 20,000 affordable homes target during this term of Government.
37. The Programme seeks to test new models and learn from doing that, so in the future we know how to build quality homes quickly that also underpin our decarbonisation targets and outcomes. For example one of the schemes funded is the Active Homes project in Neath. Led by Pobl housing association 16 new homes are being built, rolling out technologies developed through Solcer house, the SPECIFIC project, developing homes as power stations. It is too soon to say what models will prove to be the most successful but building homes that support our carbon agenda is a given.
38. A scoping study on a review of Part L building regulations is now underway – with a view to the main review starting before the end of the year.
39. This year the EU will consider revisions to the 2010 Recast of the Directive which depending on Brexit transitional arrangements require transposition. It is intended that the Part L review will meet the EPBD 2010 (Recast) requirement to set 'Nearly Zero Energy' (NZE) standards at a cost optimal level or better. We are currently awaiting final analysis of our current standards (Part L 2014) in achieving 'cost optimal levels'.
40. Whilst the upcoming review will be intended to deliver NZE as a minimum, it is anticipated that the requirement to achieve NZE is unlikely to require more than

some fine-tuning to current standards. It is also anticipated that the current standards for new non domestic buildings will meet or be very close to 'Nearly Zero Energy' as defined by the directive.

41. The Part L review was put on hold to consider some of the implications of the Grenfell tragedy. The independent review looks set to generate major changes to building regulations and the building control system which will take a number of years to complete. The way we manage competing priorities is going to be critical to the delivery of, in this case climate change and life safety, improvements to the building regulations.
42. Welsh Government Warm Homes Wales has delivered housing energy retrofit solutions to the economically disadvantaged. Both Nest and Arbed include measures to assess their impact in reducing emissions.
43. Heating constitutes a major part of the decarbonisation challenge. Heat accounts for almost half of UK energy use and a third of UK carbon emissions. This is a major policy challenge. We agree with the UKCCC recommendation on the need for a strategic approach to heat in Wales. This year we will review the wide range of evidence and work with those interested to identify where we should focus our resources. We will then consider whether we need to publish a separate heat policy statement for Wales.
44. The aforementioned Welsh Government's powers on building standards for new-build properties should be used to ensure a high standard of energy efficiency and low-carbon heating systems. This will avoid costly retrofit in future and ensure household energy bills are as low as possible. Wales can lead the UK on this in action to reduce emissions.
45. Elsewhere, the 20% improvement we made to new non domestic buildings puts us ahead of other nations whilst giving real encouragement to the installation of renewables.

Land management

46. We have to think very seriously about how to create more woodland. We need to protect our stores of carbon in existing woodlands, in timber and wood products and also make sure we are creating enough new woodland to maintain and expand these stores.
47. The Welsh Government is currently assessing the challenges of changes to trading conditions for farmers after Brexit (including the end of CAP) and how that will impact on the need to meet international and domestic commitments to reduce emissions from the agriculture sector. We have a working group of farming stakeholders and academics looking at the next steps to reduce carbon, methane and ammonia emissions from agriculture.
48. The Agriculture Industry Climate Change Forum (AICCF) was borne out of the work of Amaeth Cymru and is an industry led forum working closely with Welsh

Government to advise, provide evidence and expert opinion on best options to achieve optimum change.

49. The starting point for the work of the AICCF was the Review of Land Use Climate Change. The 2014 report, delivered by independent consultants supported by academic institutions, essentially constitutes a review of scientific evidence, but also contained 20 recommendations aimed at a range of policy areas. It provided guidance provided on a way forward for the sectors to cut emissions and prepare measures to become more resilient to a changing climate. This is set in the context of a need for land use to provide a wider range of eco-system services (including production of food) and the cross-cutting Welsh Government priority of developing a Green Growth Economy.

50. AICCF are now working in partnership with the Welsh Government to;

- Work with the wider food chain to implement a national approach to Carbon Navigation following a review on Climate Change key indicators to underpin a Welsh sustainable food chain and underpin any future brand “Wales”.
- Develop and agree a national set of high level and sub set of performance indicators within a robust monitoring and evaluation framework to measure progress in the agriculture sector and Welsh food businesses.
- Work with the Industry Bodies and relevant Industry Boards to develop a seamless approach in developing sustainable brand values to and from the primary industry and wider food supply chain.

51. We want to keep farmers on the land. Our new policy should centre on Welsh land delivering public goods for all the people of Wales. This may include actions such as tree planting and peat bog restoration to increase the scale of the carbon sink in land use.

52. We remain committed to creating more new woodland with an aspirational target of 100,000 hectares of new woodlands by 2030. Officials are reviewing the Woodlands for Wales forestry strategy, taking advice from the Woodland Strategy Advisory Panel. Increasing woodland cover and developing a competitive and integrated forestry sector are, and will continue to be, key outcomes of the Strategy, the delivery of which will be guided by the Natural Resources Policy and its area-based implementation.

53. The new planting aspiration is 2,000 hectares a year with the aim of around 1,000 hectares delivered through Glastir. The other half would be achieved through more privately funded planting or other means. Current planting rates are not delivering the target for new woodland. However, Welsh Government views this as a long term aspiration which will need time for a range of measures to make progress rather than a straight line annual progression.

Waste

54. Waste emissions in Wales have fallen by 72% since 1990. Wales has the highest recycling rate in the UK (64% of municipal waste was reused, composted or sent for recycling in 2016/17) and the third best household waste recycling rate in the World according to an independent study.
55. Towards Zero Waste is predicated on reducing carbon emissions associated with waste. It sets Wales on a pathway for <5% landfill by 2025, with the virtual elimination of methane emissions from landfill arising from newly landfilled waste. Plastic is identified as a priority waste for action. The aspiration is that by 2050 all products and packaging will be designed for disassembly and reuse or recycling. WRAP Cymru has been tasked with producing a route map to increase the demand for recycled plastic.
56. Latest data from the Waste and Resources Action Programme shows that Welsh Local Authorities' capture rate of plastic bottles for recycling from households in 2015 was 75%, up from 55% in 2009.
57. We have commissioned consultants to conduct a study to examine the potential for Extended Producer Responsibility schemes which will include an analysis of Deposit Return Schemes.
58. We are exploring extended producer responsibility options for six key types of food and drink packaging, with the aim of reducing waste, increasing recycling and reducing litter.
59. The Cabinet Secretary for Finance has worked collaboratively with HM Treasury on the need to tackle the issue of disposable plastics, including exploring taxation. It is anticipated that the call for the evidence on single-use plastics will be published before Easter – both the Welsh and UK Governments have agreed to work together to inform future decisions on the way forward.
60. We are also developing legislation to introduce the microbeads ban in Wales, on both the manufacture and sale of products, by 30 June 2018.
61. Once the ban is in place, it will be a criminal offence for anyone to manufacture, sell or offer to supply any rinse-off cosmetic or personal care products which contain plastic microbeads in Wales.

Transport

62. We are looking at measures to support the phasing out of petrol and diesel vehicles in an integrated way as part of our decarbonisation commitments, recognising that vehicle manufacturing standards, fuel duty and road tax are not devolved matters.
63. We are liaising with the UK Government on the development of its low carbon road transport strategy, and how its commitment to invest more money in low carbon vehicles will benefit Wales.

64. The number of new electric and hybrid car registrations in Wales rose by 35% in 2017 compared to the previous year and plans are being developed for a network of public charging points along/near our trunk road network, focusing on areas where the market is unlikely to fill the gaps.
65. We have and will continue to advise Local Authorities, other public sector bodies, bus operators, other businesses and the Third Sector on bidding for UK Government funding that extends to Wales, including the Low Emission Bus Fund and Workplace Charging Scheme.
66. We are engaging with a range of organisations including the local authority sector, the UK Office of Low Emissions Vehicles and Transport Scotland. It is clear there are a wide range of potential models for funding, implementing and managing a sustainable Electric Vehicle charging infrastructure, they include: a national model similar to ChargePlace Scotland; a Local Authority delivery model; or a combination of both.
67. Our national policy seeks to reduce the need to travel and the length of journeys, whilst making it easier for people to walk, cycle and use public transport. The planning system can achieve this by influencing the location, scale, density, mix of uses and design of new development and where possible driving a policy of transit-orientated design, locating developments that are connected to key good quality sustainable and multimodal transport interchanges.
68. We are also focussed on ensuring that all providers of public services adopt the same approach to the integration and planning of service provision - an approach that is sustainable, accessible for all, integrated, and focused on the needs of people, communities and business.
69. We allocated additional Capital funding of £8m for Active Travel schemes for 2017-18 which will boost existing schemes and fund additional projects in December, 2017.
70. Funding for 2018-19 has been allocated for the three grants that are used by Local Authorities to put in place active travel improvements: £5m Local Transport Fund plus an additional £5m specifically for pre-works on active travel schemes to develop a pipeline of Active Travel projects.
71. This money has been allocated to all Local Authorities on a formula basis to set a signal that we expect communities across Wales to benefit from good active travel infrastructure.
72. In addition to this funding for local schemes, we will plan active travel improvements as part of our trunk road walking and cycling programme and build these into all our major projects. Additionally £1.9m Road Safety revenue are being made available, the majority of which funds walking and cycling training.

73. It is, however, not all about spending more. The Active Travel Act puts in place the plans that will help us spend our money better and in the places where it can have the biggest impact.
74. Elsewhere, the M4 Project is proposed as the long-term, sustainable solution to the problems associated with this gateway to Wales. Evidence is in front of the ongoing public Inquiry covering all aspects of the project, including the proposed measures for climate change adaptation.
75. Environmental impacts and their mitigation is clearly a diverse subject. A comprehensive Environmental Statement has been published setting out the potential impacts. Proposed mitigation of negative impacts is set out in that reporting, for example new woodland planting of more than double the area taken and natural reed bed rainwater run-off filtration and attenuation ponds. The positive environmental impacts of the Scheme must also be borne in mind, for example significant improvements in air quality and noise, most notably in urban areas adjacent to the existing M4.

Air Quality

76. Improving air quality in Wales is a priority for Government as reflected in our national strategy, Prosperity for All.
77. We intend to publish the Clean Air Plan for consultation later this year. We still face a significant challenge meeting nitrogen dioxide limits in some urban areas. We are taking a cross-Government approach to developing the right solutions in the soonest time possible.
78. It is also our intention to work with the UK Government and the other devolved administrations on the development of the UK Clean Air Strategy. This Strategy will support the delivery of the Welsh Government's commitment to improve air quality in Wales. We expect the Strategy to be underpinned by a consistent evidence base across all sectors and administrations as a basis for coherent action across the UK. The Strategy must also reflect where appropriate specific circumstances in Wales.
79. The UK currently meets the legal limits for almost all pollutants but faces significant challenges in reducing levels of nitrogen dioxide (NO₂). In Wales, we need remedial measures to accelerate the pace of compliance and, in July 2017, we published information in the new UK Air Quality Plan on measures we intend to take to accelerate the pace of compliance.
80. The plan included a commitment to consult on a Clean Air Zone Framework for Wales. We will consult on the Framework as soon as possible and no later than the end of April 2018. Officials are working with officials in Cardiff, which has been identified as a city where a Clean Air Zone would accelerate compliance with EU limit values.

Public Sector Decarbonisation

81. The public sector only accounts for a small amount of Wales' emissions but leadership is needed nationally and locally to achieve the depth of decarbonisation required. The public sector is uniquely placed to ensure efficient buildings and to influence emissions through their service delivery, procurement and influencing action in communities.
82. The public sector must be efficient in terms of their bottom line in this challenging economic climate. We are making efficiencies, reducing costs and seizing the wider economic and social benefits from taking action on emission reduction, along with forward thinking Local Authorities, universities, colleges, health boards and trusts.
83. Figures for 2014 show the public sector has reduced its emissions by 57% since 1990 through more efficient use of fuels and a switch to gas fired heating across Wales for many public sector buildings. Wales is at the forefront of global action on climate change and is doing so in a way which prepares Wales for the future.
84. The ambition is for the Welsh public sector to be carbon neutral by 2030. Responses to our call for evidence last summer outlined areas of difficulty but were overwhelmingly supportive of the ambition and approaches to progressively increase decarbonisation measures.
85. Natural Resource Wales' (NRW) Carbon Positive Project has influenced the Carbon Neutral ambition. The Carbon Positive Project evaluated NRW's net carbon status, including greenhouse gas emissions, carbon sequestration across the NRW estate and operations and mitigation opportunities. The project indicates the importance of a comprehensive approach to estimating an organisation's net carbon status to fully understand the carbon impact. We will continue to support NRW to share the learning from the Carbon Positive Project to disseminate best practice across the Welsh public sector.
86. Other pilots with Local Authorities are in progress and include key drivers such as reduction in plastics use, transport minimisation and supporting the circular economy. For example the National Procurement Service (NPS) and Welsh NHS shared procurement services purchase 100% renewable energy for their member organisations. The NPS supports a collaborative forum of public sector fleet managers exploring the use of electric vehicles and supporting infrastructure. NRW has introduced several electric vehicles and installed some charging points at two visitor centres. Lessons learnt in moving to electronic vehicles will be shared with the wider public sector fleet manager forum.
87. Many of the actions to decarbonise the public sector are revenue generating or saving. Our Green Growth Wales service will, by the end of the current Government term, have invested approximately £70m in public sector energy projects. Finance repayments are reinvested in further public sector energy projects. Our business case for Green Growth Wales identified a £50m fund

gives us the opportunity to make around £650m in cash savings on energy and reduce emissions by 2.5m tonnes of CO₂, over the lifetime of the assets we finance.

88. This year alone we expect to commit approximately £24m in energy projects, with investments dominated by street lighting and building energy efficiency solutions. A number of public sector renewable energy schemes are also in development with investment expected within the next two years. We have the opportunity to create community involvement in these projects. To stimulate this opportunity, a new Welsh Government Energy Service to deliver energy services to the public sector and to groups focussed on local Welsh benefit. The new service will be in place in April 2018.

Procurement

89. The public sector in Wales spends around £6bn per annum on externally procured goods, services and works. There is a real opportunity to understand where action can have the greatest impact to reduce carbon in public sector supply chains.

90. Decarbonisation must be owned by the whole public sector. However, in order to take action, the Welsh public sector needs to understand the carbon footprint of its own procurement activity, and identify areas of procured spend that can have the greatest impact on reducing emissions.

91. Our Joint Ministerial Task and Finish Group met on 15 January and noted a paper from Value Wales, which included several recommendations for progressing this work stream, including:

- An assessment of current levels of awareness and understanding across Procurement departments in the Welsh public sector;
- that Value Wales explores engaging with NRW and other key stakeholders to develop tools and training for public bodies to use, including a reporting mechanism for tracking progress on carbon reduction;
- that tools and training are piloted, to be followed by wider roll out across Welsh public sector.

92. The Joint Ministerial Task and Finish Group is supported by a Decarbonisation Working Group, who will support a review of procurement expenditure data to help inform priority categories of spend, following which a stakeholder engagement and delivery plan will be compiled.

93. Value Wales is now drawing up a project plan and working with NRW and other stakeholders to develop an approach.

Behaviour change

94. While the data and our thinking to date have focussed on sector specific emissions, we recognise the importance of addressing emissions at the personal level. The emissions from the transport sector, for example, are an

aggregate of millions of people's choices. Individuals have an important role in reducing emissions. We are keen to explore how we can work with the public to reduce emissions. We will shortly be commissioning research to help build the evidence base around this agenda.

95. Our Eco-Schools programme has a focus on improving the awareness of climate change and its impacts among children and young people. The international scheme runs in 70 countries around the world. The programme encourages pupils to take action in their school and as part of their community. The Eco-Schools programme instils in students a sense of responsibility and cultivates a sustainable mindset which they can apply on a daily basis.

96. We have launched a video competition for children aged 8 to 11 years old, using the Eco schools network, to ask young people on what they expect Wales to look like in 2050. The video competition will raise awareness and involve young people in looking at solutions. The competition runs until 23 March 2018.

Climate Change Adaptation

97. As well as reducing emissions, we are also looking at building resilience to the impacts of climate change. This work implements our obligations under the Paris Agreement, which recognises adaptation must be undertaken at a national, subnational and regional level and supports UN Sustainable Development Goal 13 on Climate Action.

98. The UKCCC provided evidence on the risks to Wales resulting from the projected physical climate change impacts and we have committed to responding to these risks in a new climate change adaptation plan. We are now working to understand these climate change impacts and to develop and implement policies to ensure an optimal level of adaptation response.

99. We have assessed the UKCCC's evidence and have summarised the key risks to Wales as follows:

a. Risks where more action is needed:

- Risks to infrastructure (from all sources of flooding)
- Risk to public water supplies from drought and low flows
- Risks from some land management practices exacerbating flood risk
- Risks to ecosystems and agriculture businesses from changes in climatic conditions

b. Research priorities:

- Risks to communities from all sources of flooding and sea-level rise
- Risks to infrastructure, business and buildings from high river flows, erosion and extreme weather
- Risks and opportunities from changes to agriculture and forestry productivity

- Risks to people's health and well-being and associated service delivery from high temperatures, flooding and extreme weather

100. We anticipate the Plan will focus on:

- Tackling the key risks identified in the Climate Change Risk Assessment (CCRA) 2017.
- Supporting disadvantaged groups and vulnerable communities to build resilience to climate change impacts.
- Establishing mechanisms and timescales for addressing research priorities.
- Clearly define the actions to be taken at an all Wales level, and those for which local delivery partners are responsible.

101. We recognise that the latest CCRA evidence findings have implications across all sectors of Welsh Government including Health, Communities, Transport, Housing, Economy, Agriculture, Food and Environment. These implications are important considerations for our key decisions and major projects and we will be working to embed climate adaptation into Welsh Government programmes across portfolios.

102. Internally, working groups have been established to consider the risks, provide expert advice, agree priorities and establish potential objectives and actions. We will also be reviewing progress on implementing adaptation measures across portfolios and producing case studies to share best practice.

103. We will shortly be establishing an external reference group to support the development of the plan, including representatives from our delivery partners at a pan-Wales and local level, with the aim of establishing aims, objectives and key actions for public consultation before the end of 2018.

Water Management

104. The impacts of surface water flooding on our people and communities can be devastating and the cost to the Welsh economy significant. Our intention is to ensure the management of surface water from new developments follows good practice using the sustainable drainage approach known as SuDS.

105. At present the uptake of good quality SuDS remains low, mandatory SuDS standards will ensure resilient drainage systems are installed for all new developments in both rural and urban areas, providing multiple benefits for water quality, flood risk reduction, amenity, well being and biodiversity.

106. We are working closely with key stakeholders, including the Welsh Local Government Association and the Local Authorities, to deliver against our commitment to better manage water in our environment. Our consultation last summer found strong support for commencing Schedule 3 of the Flood and Water Management Act 2010 which establishes in local authorities a

SuDS approval and adoption mechanism and introduces mandatory SuDS Standards.

Flood and Coastal Risk Management

107. We acknowledge that climate change will increase the risk of flooding, not only through sea level rise but also from all sources of flooding, particularly due to more frequent and intense storms. Flood and coastal risk management remains a priority for the Welsh Government. In 2017/18, we are investing over £54 million across Wales. The 4 year capital funding allocation for flood risk management will allow us to plan more effectively, providing certainty of funding from one year to the next.
108. We are planning for future coastal risk by working alongside local authorities to develop a programme of capital investment in coastal risk management commencing in 2018/19. The Coastal Risk Management Programme provides the opportunity for local authorities to invest up to £150 million in the coastal infrastructure protecting our coastal communities, adapting to the challenge of climate change and sea level rise and achieving wider benefits.
109. We are currently reviewing our National Strategy for Flood and Coastal Risk Management with an update planned for 2017/18. This provides an opportunity to set out this Government's longer-term objectives and underline our approach to managing risk. In carrying out this review we will be working alongside risk management authorities as well as other government departments.
110. A new Development Advice Map, aligned with the NRW Flood Map was launched in spring 2017 providing a single site for all flood risk mapping advice to public, developers and local authorities alike.
111. The Welsh Government publishes climate change adaption guidance for use by Risk Management Authorities when developing Flood Risk Management Schemes and Strategies. The current guidance note will be refreshed this summer to ensure that it aligns with corresponding Planning guidance and reflects the most up to date assessment of UKCP09 data.

Natural Resources Policy

112. The Natural Resources Policy was published on 21 August 2017. The Natural Resources Policy will drive delivery across all of the Well-being Goals, delivering win-wins for our communities and our economy whilst also improving our environment. Tackling the causes and consequences of climate change is a principle embedded in the Policy and the delivery of nature-based solutions, including those which can mitigate climate change as well as address risks, is one of the three national priorities.

113. Natural Resources Wales will now develop Area Statements to support delivery of the Natural Resources Policy in a local context, for example by providing evidence for Local Development Plans, Well-being Assessments and by encouraging local, collaborative action.

Developing the Evidence Base

114. A well developed and robust knowledge base is one of the fundamental building blocks to aid the development of a comprehensive and coherent adaptation response. We are working with Defra and the other UK administrations, Natural Resources Wales, the Met Office, the UKCCC and academia to ensure the key research priorities are addressed over the next five years.
115. The Welsh Government sits on the Project Board for UK Climate Projections 2018 (UKCP18), which will update the UKCP09 projections over UK land areas and update UKCP09 projections of sea-level rise, giving greater regional detail, further analysis of the risks we face, both nationally and globally, and provide more information on potential extremes and impacts of climate change. This new data, accompanied by key messages and supporting products, will be released in November 2018.

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