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ei Hôl Troed Carbon
Help Wales reduce
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Llywodraeth Cymru
Welsh Government

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Climate Change Strategy for Wales

First annual progress report



March 2012



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Ministerial foreword



The publication of the Climate Change Strategy in 2010 represented an important milestone in confirming the Welsh Government's commitments to tackle climate change, and I am delighted to present our first annual progress report on its implementation.

Climate change remains the most pressing of global issues. This is why the Welsh Government's Programme for Government reaffirms our commitment to tackle the causes and consequences of climate change by delivering a package of measures to drive down our emissions and by ensuring that Wales is well-placed to manage the consequences of a changing climate in the decades ahead.

Enhancing the long-term wellbeing of people and communities is central to our approach to sustainable development, and addressing climate change is a key part of this. So, in delivering our Climate Change Strategy, I want to ensure that we harness every available resource to deliver our challenging commitments which are some of the most ambitious in the UK and the EU, and I will be working closely with my Cabinet colleagues to identify options for enhancing our intervention package where the opportunity arises.

I am grateful to both the UK Committee on Climate Change and the Climate Change Commission for Wales for their ongoing support and advice. This report responds to their most recent advice which acknowledges the good progress we have made so far, and highlights areas for the Welsh Government to consider in terms of future action.

This report highlights activity across Wales to drive down our emissions, and prepare for a changing climate. We have made solid progress, but this is a challenging agenda. There is no room for complacency if we are to ensure that we deliver our vision for a more sustainable, low carbon Wales. I am committed to maintaining the focus on delivering our cross-sector policies and ensuring that we work with our partners to catalyse wider contributions from individuals, communities and businesses across Wales.

A handwritten signature in blue ink that reads "John Griffiths".

John Griffiths AM

Minister for Environment and Sustainable Development



Executive Summary

The Welsh Government has made a clear commitment to play a lead role in tackling climate change. The Climate Change Strategy and associated Delivery Plans, published in 2010, confirmed our commitments and the areas where we will act, and set out how we will work with our partners, to reduce greenhouse gas emissions and support effective adaptation to a changing climate. These are key actions contained in the Welsh Government's 2011 Programme for Government.


This first progress report reflects progress made in implementing the Emission Reduction and Adaptation Delivery Plans since publication of the Strategy in October 2010. This report does not report on Wales' actual performance for 2011 in relation to the 3% annual emission reduction target, as the relevant UK emission statistics for 2011 will not be available until July 2013, as confirmed in the Climate Change Strategy. Instead, this report provides a qualitative assessment of the progress made in delivering the sector actions, incorporating a number of case studies, as well as presenting a new performance indicators framework for tracking progress in future reports.

This report responds to the recent advice of the UK Committee on Climate Change, the independent expert advisory body to the UK Government and Devolved Administrations. The Committee commended the Welsh Government on the setting of ambitious emission targets and found that Wales is making good progress in the early stages of implementation. At the sectoral level, the Committee's analysis suggested that there is more scope for emission reduction within areas of devolved competence, particularly through expansion of the measures relating to residential, business, agriculture and public sectors.

The Welsh Government also responds in this report to the Climate Change Commission for Wales' first annual review, published in January 2012. In its report, the Commission found that the Welsh Government needs to continue to demonstrate leadership on this agenda by considering carbon impacts in all spending decisions, while highlighting the need for renewed efforts to engage the private and third sectors to better define the wider contributions that are needed to deliver the 3% emission reduction target.

This report sets out the early progress made in delivering across the piece since the Strategy's publication. In the residential sector, for instance, through the award-winning Arbed scheme combined with our home Energy Efficiency Scheme and Boiler Scrappage Scheme, a total of 25,000 Welsh homes were improved and made cheaper to heat during 2010-11. The resulting emission reductions and from these and follow-on initiatives, will contribute directly towards the 3% emission reduction target.

In the transport sector, the Welsh Government has made some good progress, and implementation of the Sustainable Travel Centres scheme will benefit from an additional £5m through the prioritised National Transport Plan to maximise investment in the scheme.



In the business sector, the Welsh Government's nine sector approach to deliver Economic Renewal is providing better focused support for businesses, while advice and support is continuing to be provided on energy efficiency and low carbon opportunities to SMEs and micro-businesses, Anchor Companies and Regionally Important Companies. The creation of sector-led Enterprise Zones also has the potential to create new opportunities to deliver sustainable outcomes, including through the development and use of renewable technologies.

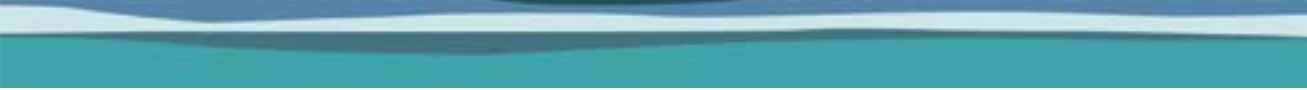
The Welsh Government has made progress in delivering actions relating to the agriculture and land use sector, and future work will focus on ensuring that our programmes, where appropriate, are properly aligned to fulfil their maximum potential in terms of emission savings. With *Glastir* introduced, the Welsh Government is conducting a review during 2012 to explore how the new scheme and the application process can be improved to encourage greater uptake. The Welsh Government is also taking forward a number of recommendations contained in the 2010 Land Use and Climate Change Group report.

In leading action in the public sector, the report highlights some particular areas of success. The Welsh Government achieved Carbon Trust Standard Level 1 in 2011, while successfully reducing emissions from the Welsh Government estate by 11 % as part of the 10:10 campaign. Through the Outcome Agreements agreed in 2010-11, several Local Authorities have committed to emission reduction targets in line with the 3 % target. A new A Low Carbon Strategy for the NHS is to be published shortly also, accompanied by a new carbon diagnostic tool (CarDio) to enable Local Health Boards and Trusts in Wales to report progress on emission reductions each year.

While the waste sector is responsible for a small proportion of direct emissions, resource efficiency is very significant in terms of minimising Wales' ecological footprint. Through the Towards Zero Waste strategy, statutory recycling targets have been placed on local authorities for minimum levels of reuse, recycling and composting of municipal waste. The latest recycling statistics for Wales show the highest quarterly recycling figures ever recorded in the UK.

The Climate Change Strategy confirmed that around a third of the emissions covered by the 3 % emission target will need to be met through 'Wider Sectoral Contributions'. This recognises the extent to which behaviours must change across all sectors including businesses, local government, and the wider public sector, the third sector and communities, in addition to the specific actions being implemented to achieve the emission reduction targets. This is a large scale, long term challenge, which will need time to develop and deliver tangible benefits. The Climate Change Engagement Strategy, published in August 2011, outlines the Welsh Government's approach to encourage action to reduce greenhouse gas emissions and prepare for the impacts of climate change.

The Welsh Government has already delivered a number of key measures set out in the Adaptation Delivery Plan. In 2011, new statutory guidance, *Preparing for a Changing Climate*, and the National Strategy for Flood and Coastal Risk Management were published. A new Adaptation Knowledge Transfer Programme has been launched to provide support and advice to public bodies, communities and businesses. The Welsh Government also co-funded the UK Climate Change Risk Assessment, published earlier this year, the findings of which are helping to shape the Sectoral Adaptation Plans.



Finally, this report provides an indicative timeline for future progress reports to ensure that the next report reflects the performance for the first 3 % emission target year, 2011. Consequently, the next Welsh Government report will be published in the autumn of 2013, with a statement later this year to confirm the 2006-10 average emissions baseline, against which the 3 % target is measured.

Chapter 1 Introduction

- 1.1 This report provides the first annual update on progress against the actions contained in the Climate Change Strategy for Wales, and the associated Delivery Plans for Emission Reduction and Adaptation, published in October 2010. This report meets requirements under the Climate Change Act (2008) for the Welsh Government to provide a report to the National Assembly for Wales on:
- the objectives of the Welsh Government in relation to greenhouse gas emissions and the impact of climate change in Wales;
 - the action that has taken by the Welsh Government and others to deal with emissions and climate change impacts; and
 - the future priorities for the Welsh Government and others for dealing with emissions and climate change impacts.
- 1.2 The first section of this report outlines the Welsh Government's emission reduction targets and wider commitments as reaffirmed in the 2011 Programme for Government. The second section introduces the suite of performance indicators which will be used to monitor the specific mitigation effect of individual measures set out in the Emission Reduction Delivery Plan. Sections five to ten provide a detailed explanation of the progress achieved in implementing the Emission Reduction Delivery Plan, and incorporates the Welsh Government's response to recent advice and recommendations made by the UK Committee on Climate Change and the Climate Change Commission for Wales. These sections include a number of case studies to illustrate the practical actions being delivered across Wales also. These sections also highlight the focus and key challenges ahead in delivering in each of the sectors.
- 1.3 Section twelve reports on the implementation of the Adaptation Delivery Plan and responds to advice from the UK Adaptation Sub-Committee and the Climate Change Commission.
- 1.4 Section thirteen provides a commentary on the delivery of those measures that are the responsibility of the UK Government but that are being taken forward in Wales.
- 1.5 The final section provides a summary of our progress and looks ahead to explain the changes in our reporting cycle as we begin measurement of our targets.
- 1.6 The report is supplemented with a Technical Annex which provides more details on the performance indicators framework and the associated methodology.

Chapter 2 Our targets

Summary

- 2011 Programme for Government reaffirms the commitments to tackle the causes and consequences of climate change.
- Annual reductions in greenhouse gas emissions of 3 % per year in areas of devolved competence, measured against a baseline of average emissions between 2006-2010.
- At least a 40 % reduction in all greenhouse gas emissions in Wales by 2020 against a 1990 baseline.
- Emission reduction target ranges for 2020 established for transport, residential, business, agriculture and land use and waste sectors.
- Commitment to deliver a national, coordinated approach through the Adaptation Framework to ensure that Wales is well-placed to adapt to a changing climate.

2.1 The Climate Change Strategy for Wales confirms the Welsh Government's level of ambition in tackling the causes and consequences of climate change and sets out our commitments, the areas where we will act and how we will work with our partners to reduce greenhouse gas (GHG) emissions.

Programme for Government: reaffirming the Welsh Government's commitments on climate change

2.2 The 2011 Programme for Government contains a number of key actions, reaffirming the Welsh Government's commitments in relation to climate change, including as part of the wider approach to delivering sustainable development objectives and to help facilitate the transition to a low carbon Welsh economy. The central Programme for Government actions are:

Pages 4 and 43:

"Reduce greenhouse gas emissions in areas of devolved competence and support effective adaptation to the impacts of climate change through implementation of the Climate Change Strategy"

Page 4:

"Implement our low carbon agenda "

3% emission reduction target

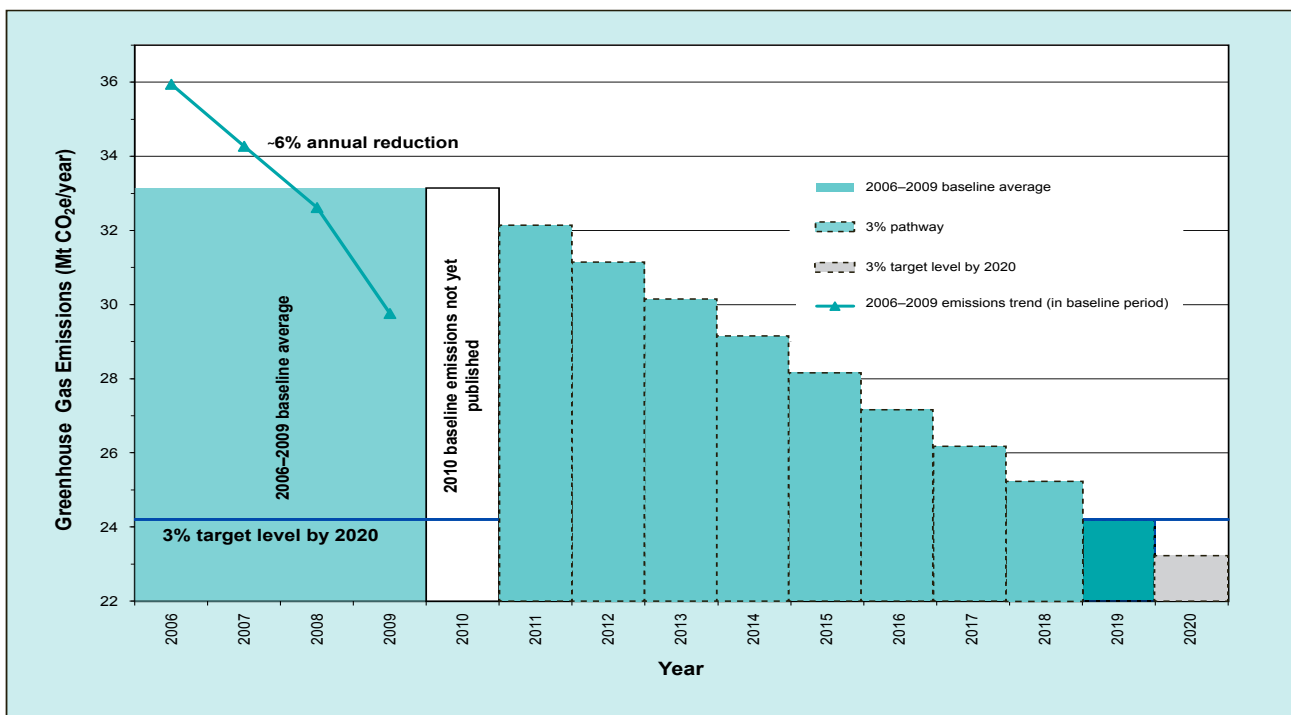
2.3 The Strategy confirms the Welsh Government's principal target to reduce GHG emissions by 3 % per year from 2011 in areas of devolved competence, against a baseline of average emissions between 2006 and 2010.

2.4 The 3% target includes all 'direct' greenhouse gas emissions in Wales except those from heavy industry and power generation as these are covered by the EU Emissions Trading System and are not within devolved competence. However, as we recognise the importance of reducing electricity consumption in order to reduce emissions, we include emissions from large power plants within the 3% target by assigning them to the end-user of the electricity that these facilities generate.

2.5 Progress against measuring the 3% target will be assessed by a comparison between the level of relevant emissions and the baseline (2006-10 average emissions). As the disaggregated UK GHG Inventory figures are released twenty-one months after the end of the year on which the inventory is reporting, the most recent emission figures for Wales are for 2009. Figure 1 shows the annual emission reductions required to meet the 3% target from 2011 to 2020, based on the current emission baseline level, including the actual emissions from 2006-2009. The steep downward trend in emissions between 2006 and 2009 (i.e within the baseline period) is largely a result of the economic downturn in the UK during this period and the subsequent depression of emissions from the business sector. Depending on economic growth, there is significant potential for emissions to 'rebound' in future years.

Figure 1

Baseline emissions to date (from 2006) and projected trend to meet 3% target by 2020



40% emission reduction target by 2020

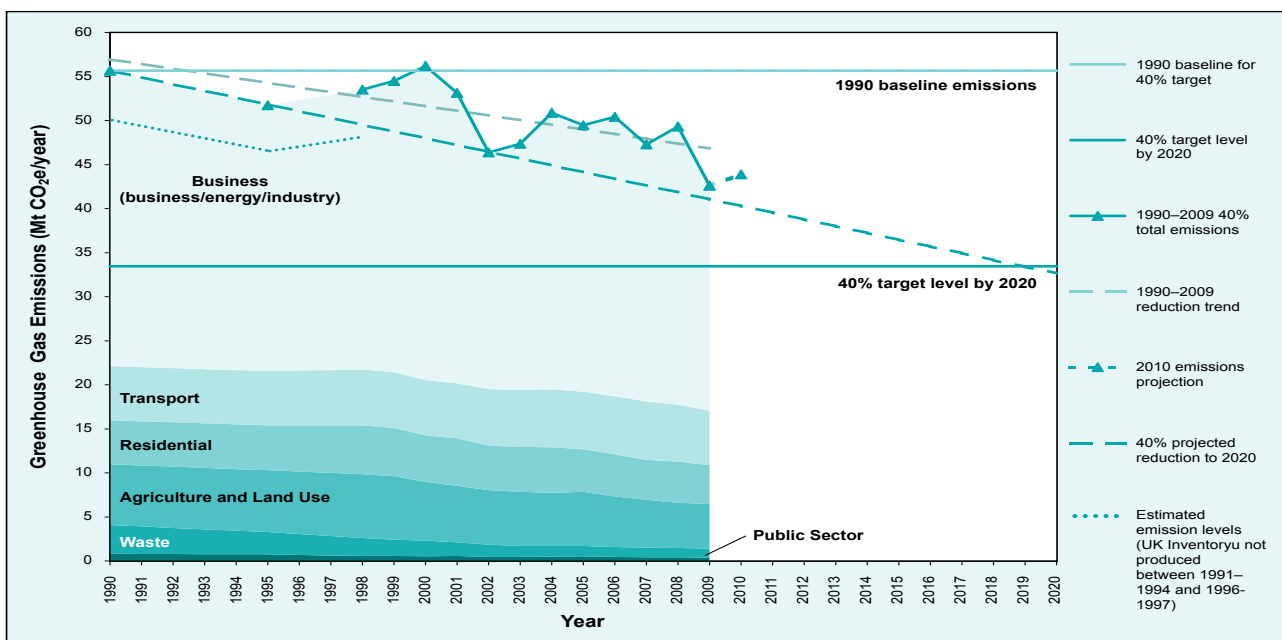
2.6 The Climate Change Strategy confirmed the Welsh Government's commitment to achieving at least a 40% reduction in all greenhouse gas emissions in Wales by 2020 against a 1990 baseline. This target enables us to compare emissions reduction performance with other UK administrations, relevant EU targets and wider global commitments. The 1990 baseline

emission level for this target is 55.7 MtCO₂e (million tonnes of carbon dioxide equivalents). Comparing the most recent inventory figures against the 1990 baseline, emissions in 2009 (42.6 MtCO₂e) were 23.5 % lower than emissions in 1990.

- 2.7 As the 40 % target covers all GHG emissions (including those from areas that do not fall within devolved competence) it is not directly comparable to the 3 % target.
- 2.8 Figure 2 shows relevant emission levels in Wales from 1990 to 2009, with specific sector contributions illustrated. The projected emission level for 2010 has been estimated using the most recently available UK emissions data (available in disaggregated form in July 2012). The figure shows the required emission reduction trajectory from the baseline year to 2020. As in Figure 1, the significant fall in emissions between 2006-9 can be observed, as can the dominant contribution of the combined business, industry and energy generation sectors to overall emission levels in Wales.

Figure 2

Emissions by sector in relation to 40 % emissions target (from 1990) and projected trajectory required to meet this target by 2020



Sector emission targets

2.9 The Climate Change Strategy confirmed sector-specific emission reduction target ranges also for 2020 aligned to the overall 3 % target. These ranges reflect the minimum level of emission reductions we would expect to see from each of the following sectors to contribute towards the 40 % target:

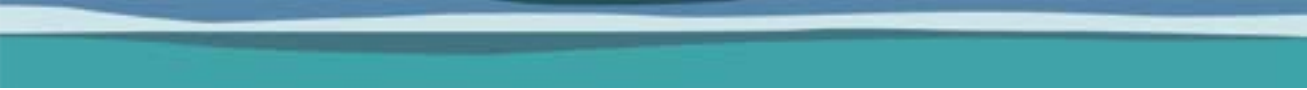
- Transport
- Residential
- Business
- Agriculture and land use

- Public sector
- Waste sector

- 2.10 While these targets align with the 3 % commitment, we do not expect a 3 % reduction in emissions each year from 2011 to 2020 to achieve them. A constant 3 % annual decrease in emissions in each sector is unlikely to be achievable or cost-effective in terms of identifying and implementing policy actions. For instance, analysis to date has indicated that a focus on identifying interventions to improve energy efficiency in the residential sector, or to drive down emissions in the agriculture and land use sector is likely to be more cost-effective in terms of delivering the 3 % target. At the same time, the Welsh Government is committed to ensuring that climate change measures are consistent with wider sustainable development and environmental objectives. Consequently, we will take account of this wider goal in identifying new and enhanced actions.
- 2.11 Sections five to ten provide more detail on these targets, including illustrations of the baseline emissions for each sector, actual emissions during the baseline period (to 2009), and an indicative emissions target zone from 2011 to 2020.

Adapting to climate change

- 2.12 The Welsh Government is committed to developing a robust method to monitor and evaluate the performance of the adaptation framework and its achievements as set out in the Adaptation Delivery Plan. A comprehensive set of indicators for the Emission Reduction Delivery Plan has already been developed in this annual report. However, unlike emission reduction, adaptation does not have a clear unit of measurement and developing an indicator framework is more challenging. .
- 2.13 Adaptation indicators will be developed around the six sector categories identified in the Adaptation Delivery Plan and will focus specifically on measuring progress in relation to the commitments identified by the sector's adaptation plan. Implementing the data collection process required to inform adaptation indicators will remain the responsibility of the sectors implementing policy. However, it is anticipated that adaptation indicators would largely utilise existing data sources, such as the state of the environment report, or emission reduction indicators, and will not require new data collection exercises.
- 2.14 Measuring changes in Wales' resilience to, and preparedness for, future climate change is complex and has a number of different aspects. These wide ranging aspects will not be captured effectively by a single indicator. Therefore, we expect to develop a multi-faceted approach that incorporates three different styles of indicator. These include:
- **Strategic level indicators:** This indicator set will assess climate change preparedness in terms of the level of implementation of adaptation processes within the sector. We anticipate that strategic level indicators will be based around the processes described within the Welsh Government adaptation guidance. For example, an indicator of this style could measure whether a climate change risk assessment has been completed in the sector, or whether a process to evaluate and review the adaptation plan has been implemented across the sector.

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- **Vulnerability Indicators:** This indicator set will provide a measure of Wales' changing vulnerability to climate change. This indicator set will take account of the priority risks identified in the Climate Change Risk Assessment (CCRA) and assess how our vulnerability to these risks is evolving with time by providing a measure of relevant changes in the Welsh environment. For example, an indicator of this style could describe a measure of the level of development in flood risk areas to provide an assessment of the level of flooding vulnerability, or it could describe a measure of the area of urban green-spaces to provide an assessment of the level of heat vulnerability in urban populations.
 - **Action-based indicators:** This indicator set will provide a measure of specific policy related actions such as the uptake of Sustainable Drainage Systems (SUDS) in relation to flood risk, or the proportion of metered properties in relation to water resource risks.

2.15 The Welsh Government will introduce adaptation indicators in a phased approach to complement the progressive implementation of our adaptation programme. Strategic level indicators will be developed alongside the final phases of the Welsh Government adaptation guidance to be published in summer 2012, whereas vulnerability and action based indicators will be developed following the production of all sector actions plans by 2013. Following this timetable, we expect to detail a comprehensive adaptation indicator dataset in the 2013 annual progress report and provide the first full adaptation indicator progress report in the 2014 annual progress report.

Chapter 3 Emission Reduction Performance Indicators

- 3.1 The Climate Change Strategy confirmed that the effects of policy measures aimed at reducing emissions would need to be tracked to enable progress to be monitored and to ensure that the package of measures set out in the Delivery Plan are delivering the anticipated mitigation effects.
- 3.2 The 3% target, sector targets and the monitoring framework that supports them have been developed to provide a robust mechanism for effectively tracking progress. Given the range of external factors, beyond the control of Welsh Government, that influence overall emission levels – such as economic growth, energy price and demand and extreme seasonal weather – the indicators will allow us to assess the individual effect of implementation of the Welsh Government’s measures.
- 3.3 The performance indicator framework contains three tiers, with each tier representing the links between emission levels and policy delivery:
- **Tier 1** – measure of absolute change in CO₂e emissions, consistent with the 3% target definition, within in each sector.
 - **Tier 2** – ‘bridging’ indicators that link Tier 3 to Tier 1, for instance, when considering the impacts of energy efficiency measures, a Tier 2 indicator would assess how much the demand for different forms of energy had changed as a result of the implemented measures, such as the fitting of solid wall insulation to a given number of homes across Wales.
 - **Tier 3** – measures of the scale of activity the Welsh Government has delivered or is aiming to deliver to reduce emissions. Using the example above, this would be the number of homes fitted with solid wall insulation.
- 3.4 Table 1 summarises the indicators completed to date. Work is continuing to develop indicators for a number of activities. The Annex presents the indicator framework in more detail and, where possible, shows the relevant the data that we intend to use monitor progress.
- 3.5 In some cases, the nature of the Welsh Government’s interventions means that it is more complicated to assess direct impacts. For instance, it is more straightforward to assess the effects of policy measures in the transport or residential sectors than for those actions aiming to deliver emission reduction across the business sector. The Annex confirms those indicators that are under development, including those areas where there is no current data or evidence available.
- 3.6 This report does not assess progress against these indicators for the 2011 target year, as the disaggregate UK emission inventory figures for 2011 will not be available until June 2013. Instead, this report and the Technical Annex sets out the performance indicator framework and the data (where available) required to compile it.

Table 1

Summary of Tier 3 performance indicators to track specific emission reduction measures in each sector

Indicator	Emission Reduction Delivery Plan measure reference
TRANSPORT	
Local Bus service passenger numbers	WT1, WT2, WT3 and WT8
Bus travel satisfaction	WT1, WT2, WT3 and WT8
Rail passenger journeys to, from or within Wales	WT1, WT2, WT3 and WT7
Train user satisfaction	WT1, WT2, WT3 and WT7
Percentage of people travelling to work whose main mode of travel is cycling or walking	WT1, WT2, WT3 and WT6
Percentage of children and young people cycling to school	WT6
Average loading of buses in Wales	WT8
Traffic volumes of HGV's versus freight lifted in Wales	WT10
Indicators under development	WT5, WT9, WT11
BUSINESS	
Indicators under development	WB1-6
RESIDENTIAL	
Number of Households receiving energy efficiency measures	WR4
Number of energy efficiency measures	WR1 and WR2
Total installed renewable heat capacity and installed renewable electricity capacity	WR3
Average energy efficiency (SAP) rating of new homes in Wales	WR6
Indicators under development	WR5

AGRICULTURE AND LAND USE	
Annual Planting rate – new planting and restocking	WA1
Annual Planting rate – restocking	WA1
Indicators under development	WA2-5

WASTE	
Indicators under development	WW1-2

PUBLIC	
NHS GHG emissions	WPS2
Welsh Government CRC emissions	WPS3
Education sector CRC emissions	WPS4
LA CRC emissions	WPS5
Indicators under development	WSS1,6,7

Chapter 4 Advice from the UK Committee on Climate Change and the Climate Change Commission for Wales

UK Committee on Climate Change and Adaptation Sub Committee

- 4.1 The UK Committee on Climate Change published its first assessment of the Welsh Government's progress in delivering the Climate Change Strategy in October 2011¹. The Committee commended the Welsh Government for its ambitious emission reduction targets, which are more challenging than those of the UK Government. It also concluded that the targets are appropriate given long term objectives, and that the 3% target represents a rational way of focusing on areas under the Welsh Government's control.
- 4.2 The Welsh Government welcomes the advice of the Committee, and future actions addressing the Committee's findings are set out in the following sections.

Climate Change Commission for Wales: first annual report

- 4.3 The Climate Change Commission for Wales published its first annual report in January 2012². The report assessed the progress the Welsh Government is making on implementing measures contained in the Climate Change Strategy for Wales and made thirty-seven recommendations including four strategic recommendations in relation to:
- Ensuring that carbon impact is considered in all Welsh Government spending decisions, and that low carbon and resilience actions are supported nationally.
 - Reviewing climate change targets.
 - Welsh Government work with the private and third sectors during 2012-13 to define the wider contributions.
 - The establishment of a process for monitoring progress on the Adaptation Delivery Plan, and the wider sectoral contributions for emission reduction.
- 4.4 The Welsh Government welcomes the Commission's 2012 report and is committed to continuing to work with the Commission in delivering the Climate Change Strategy. Responses to the Commission's recommendations are included in the following sections.

¹ <http://www.theccc.org.uk/news/press-releases/1092-ccc-highlights-progress-made-by-the-welsh-government-towards-reducing-emissions-and-preparing-for-climate-change-181011>

² <http://wales.gov.uk/topics/environmentcountryside/climatechange/commission/reports/commissionfirstannual/?lang=en>

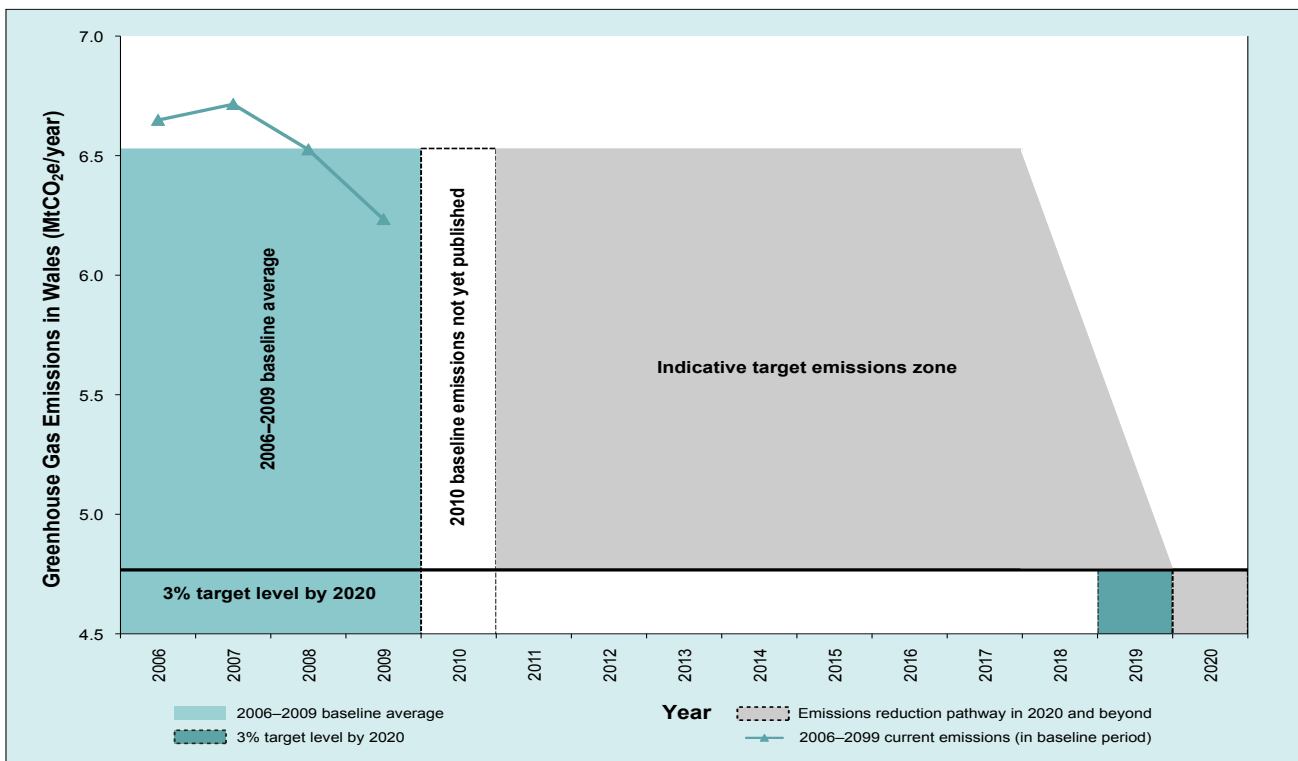
Chapter 5 Emission Reduction in the Transport sector

5.1 The transport sector is responsible for approximately a fifth of the emissions covered by the 3% target. The Welsh Government recognises that there is no single solution for reducing emissions in the transport sector and the approach outlined in the Strategy reflects this. The Emission Reduction Delivery Plan includes a range of measures to reduce the carbon intensity of transport in Wales and to secure behaviour change across communities. An update on each of the transport measures is given below.

5.2 Figure 3 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 3

Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 transport sector target



Prioritisation of the National Transport Plan

5.3 In December 2011, the Minister for Local Government and Communities announced the outcome of an exercise undertaken to prioritise the interventions in the National Transport Plan (NTP). The Welsh Government committed to prioritise the NTP to bring forward interventions that contribute to the Programme for Government. The interventions were assessed in terms of their relevance to the five following statements, which will support delivery climate change and sustainable development objectives:

- Address the mobility issues faced by people living in poverty in deprived communities, by improving access to employment, services and facilities.
- Ensure the transport network in Wales operates more efficiently and effectively.

- Tackle urban congestion to unlock sustainable growth.
- Improve access to key sites and settlements, particularly in rural areas, with emphasis on improving the quality and provision of healthy and more sustainable travel choices.
- Improve the capacity and reliability of the main east-west strategic Trans European corridors in Wales.

Delivery of specific measures in the transport sector

WT1 – Sustainable Travel Centres

- 5.4 Launched in 2009, the Sustainable Travel Centres initiative focused on measures to promote greater use of sustainable transport. This includes a focus on greater integration of transport interchanges between bus services and railway stations in Wales, and linkages to park-and-ride and park-and-share schemes. During 2011-12 this initiative has been rolled-out in Cardiff, Aberystwyth, Carmarthen, Haverfordwest and Mon a Menai.
- 5.5 Cardiff was the first Sustainable Travel Centre in Wales, and figures for 2010 show that:
- Cycling movements in the city centre increased by 16 %
 - The modal share of walking and cycling for commuting was 19 % and 17 % respectively
 - Commuting by car reduced from 65 % to 58 % in 2010
 - Traffic flow in the city centre reduced by 5 %
 - Bus journey times on services into the city centre improved by around one and a half minutes per journey.
- 5.6 Following the prioritisation of the National Transport Plan, these pilots will continue during 2012.


WT3 – Travel planning and provision of personalised travel information

- 5.7 A four-year, £4million Wales-wide Personalised Travel Planning project was launched in September 2011. The project is being funded by the Welsh Government and led by Sustrans Cymru and will see 63,000 households across Cardiff contacted over the next 12 months to help householders make more sustainable daily travel choices. The project will then extend to Pontypridd, Barry and Caerphilly, with future roll-out to other Sustainable Transport Centres in Wales, beginning with Mon a Menai later in 2012.

WT2 – Smarter Choices; and

WT4 – Developing a series of strategic modal interchanges

- 5.8 The Welsh Government continues to promote Smarter Choices, supporting the Regional Transport Consortia and Local Authorities to develop solutions to promote healthy and sustainable travel. We are continuing to work to influence behavioural change through the provision of better and more accessible information about sustainable transport services and facilities.

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- 5.9 We are also developing plans to roll out a transport 'Smart Card' which will enable e-money payment through a number of centres and the internet, allowing passengers to travel 'cash free' or with a travel credit card facility. The travel card will ultimately provide an integrated transport solution for public transport users and will be used by both bus operators and rail networks in Wales.

WT5 – Promotion of eco-driving


- 5.10 The Welsh Government provides funding for the Energy Saving Trust's (EST) Consumer Transport Advice Programme which encourages eco-driving. The programme aims to reduce carbon emissions from private motorists by encouraging them to purchase cleaner cars, drive them more economically and, where possible, use them less. The advice is provided directly over the phone and through outreach events to relevant people, working in partnership with local authorities and large employers.
- 5.11 Advice is focused on reducing emissions from private motorists as there is a general lack of advice available to customers about more efficient driving. EST works closely with other organisations also providing advice and support on sustainable transport, signposting to organisations and services such as Traveline Cymru, local car-sharing organisations and Sustrans. The work programme for 2011-12 aims to make contact with 5000 individuals and is currently on target to achieve this.

WT6 – Promotion and support for walking and cycling

- 5.12 We continue to provide funding to local authorities through the Safe Routes in Communities Scheme, which amounted to £5 million in 2011-12. We have also provided £4.5 million in 2011-12 for walking and cycling schemes through the Regional Transport Plans. Additional funding of £1.4 million is also being allocated in 2011-12 to various walking and cycling schemes across Wales.
- 5.13 The Highways and Transport Bill is a key action in the Programme for Government and is included in the Welsh Government's legislative programme. The Bill is intended to make walking and cycling a more practical, safe and enjoyable option for people travelling to and from work and school, accessing services as well as for leisure purposes. The aim will be to increase safe walking and cycling routes to ensure greater use of these more sustainable and healthy modes of travel. Work is currently underway on the development of the Bill and it is intended that the proposals will be formally consulted on in the spring of 2012.

WT7 – Investment in rail services

- 5.14 A wide range of improvements to rail services are being taken forward, which will be central to greater levels of modal transfer. The Welsh Government remains committed to the National Station Improvement Programme and has developed, in partnership with Network Rail, Arriva Trains Wales and the Regional Transport Consortia, the Wales Station Improvement Programme (NSIP+). The programme has a total budget of £39million and has been part-funded by the European Regional Development Fund. NSIP+ will deliver a significant range of strategic station improvements, including improvements for disabled and vulnerable users, across the Convergence area in Wales.

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- 5.15 Electrification of the First Great Western and the Valleys lines is a key priority for the Welsh Government and we will work closely with the UK Government to make this a reality.

WT8 – Investment in bus services

- 5.16 In 2011-12, the Welsh Government provided over £100 million of funding to support the bus industry through a number of mechanisms including concessionary fares, Bus Service Operators Grant, Local Transport Services Grant, TrawsCymru, Community Transport and Bus Quality Partnerships. This funding helps to ensure a wide variety of services are available in rural and urban settings.
- 5.17 In 2012, we will be reviewing our support to the bus industry to ensure that we use financial levers to achieve the best outcome for the people of Wales.

View of the Climate Change Commission for Wales

- 5.18 The Climate Change Commission for Wales recommended in its annual review that the Welsh Government set in place a clear investment strategy to increase the certainty and scale of funds available for promoting sustainable travel and behaviour change.

Welsh Government response:

- 5.19 The Welsh Government, Local Authorities and other public sector organisations invest considerable funding in providing more sustainable travel options, from public transport through to walking and cycling. This funding supports infrastructure investment as well as funding for promotion. This funding comes from a wide variety of sources and is targeted at different groups for a wide range of issues, such as the health benefits of walking through to the community cohesion benefits of public transport, all of which have climate change benefits. Many interventions across Government and the public sector will ultimately support climate change objectives, but often this is an indirect consequential benefit.

WT9 – Improving traffic management of the strategic road network

- 5.20 A range of measures are in place to improve the management of our road infrastructure to help improve traffic flows and reduce carbon emissions; an example of this is the variable speed limit which operates on the busiest part of the M4 at Newport. The Variable Speed limit system uses state of the art technology to detect traffic build-up that can cause congestion and automatically adjusts the speed limit on overhead electronic signs to keep traffic flowing. The Variable Speed Limit will help to reduce emissions by reducing congestion, make driving conditions safer and lead to more reliable journey times along Wales' busiest stretch of road.



WT10 – Supporting the freight industry to reduce emissions

The Freight Facilities Grant Scheme has supported the transfer of freight from road to rail which may well have environmental benefits such as reduced carbon emissions.

- 5.21 The prioritised National Transport Plan will benefit freight transport in many ways. The Freight Facilities Grant has been prioritised and remains open in Wales (and Scotland) despite a moratorium in England this year. The Welsh Government is in discussions with a number of operators.
- 5.22 The Welsh Government is in dialogue with the industry to achieve renewed efforts by all partners in the further delivery of the Wales Freight Strategy.

WT11 – Alternative fuels infrastructure

- 5.23 This measure focussed on our support for research and development and the deployment of infrastructure to enable to use of hydrogen bio-methane and electricity as fuel.
- 5.24 Additional hydrogen refuelling infrastructure is now in place at the University of Glamorgan's Glyn Taff campus. The University of Glamorgan's Renewable Hydrogen Research and Demonstration Centre in Baglan now has a compressed natural gas refueller and a new advanced electrolysis unit is being installed to produce further renewable hydrogen. The University of Glamorgan's 'tribrid' bus is also being upgraded.
- 5.25 A number of companies have plans to start converting vehicles to run on low carbon fuels. At least one of these companies is expected to start vehicle conversions in the next 12 months.

The view of the UK Committee on Climate Change

- 5.26 The Committee recommended that the Welsh Government should consider supporting electric vehicle infrastructure through available funding.

Welsh Government response:

- 5.27 At this point, we do not believe that there is a sufficiently robust case to warrant financial intervention to increase the number of charge posts in Wales, particularly given that there are a number of private sector initiatives to install infrastructure free of charge.
- 5.28 For instance, Chargemaster Plc launched their POLAR project in September 2011 which aims to install 4,000 charge posts across the UK – including Cardiff and Swansea – at no cost to the party hosting the charge post. In addition to this, Nissan has announced plans to install sixty-five charge posts in the UK, which will be strategically located at selected service stations on the motorway network, creating a 'pathway' along major UK routes. The Welsh Government is liaising with Nissan on the location of these charging posts.




Behaviour Change in Transport

- 5.29 The Climate Change Commission recommended that the Welsh Government should monitor and evaluate programmes aimed at affecting behaviour change in the transport sector and take on board any lessons learned and disseminate learning further to develop a behaviour change programme.
- 5.30 The Sustainable Travel Centres (STCs) initiative has already set in place a robust monitoring and evaluation mechanism to ensure that the impact in both the short and longer term is effectively reviewed. Specifically we are establishing and evaluating baseline data and monitoring on an ongoing basis in Cardiff as it is recognised that the experience gained by the Cardiff teams since the launch in 2009 will be invaluable to other STC areas in Wales. The lessons learnt from the Cardiff project will be used to inform the Sustainable Travel Centre Steering Group in taking forward monitoring and evaluation across the other STCs.
- 5.31 Delivery of measures under the Welsh Government's Sustainable Travel Centre initiative thus far has concentrated to a large part on infrastructure improvements and walking and cycling linkages. This approach complements the Personalised Travel Planning project which commenced in the Cardiff STC during 2011 and builds on the experience of sustainable travel towns work in England which highlighted the importance of having infrastructure in place for sustainable modes of travel as a key incentive to influencing behavioural change.

European Commission Transport White Paper

- 5.32 The Climate Change Commission recommended that the Welsh Government takes note of the recommendations in the European Commission White Paper on transport and aligns strategy accordingly.
- 5.33 Many parts of the EU White Paper align with Welsh Transport priorities, such as sustainability, carbon reduction, promoting safer travel, encouraging greater innovation, improved connectivity and economic development. In these cases, we would support the EU Commission in delivering these proposals. However, there are some areas that are potentially of concern, depending on how they are implemented.
- 5.34 The White Paper omits transport as an enabler for alleviating poverty and promoting greater social inclusion. For Wales, this is a significant gap in the strategy. Some of the proposals in the White Paper could make transportation more expensive for users, which could marginalise disadvantaged communities even further. It is also likely to harm rural and isolated communities, that have no choice but to use motorised transport as part of their daily lives. Welsh Government welcomes proposals to make transportation more cost-effective and more efficient in its operation, but this should not result in a situation where travel becomes a luxury.



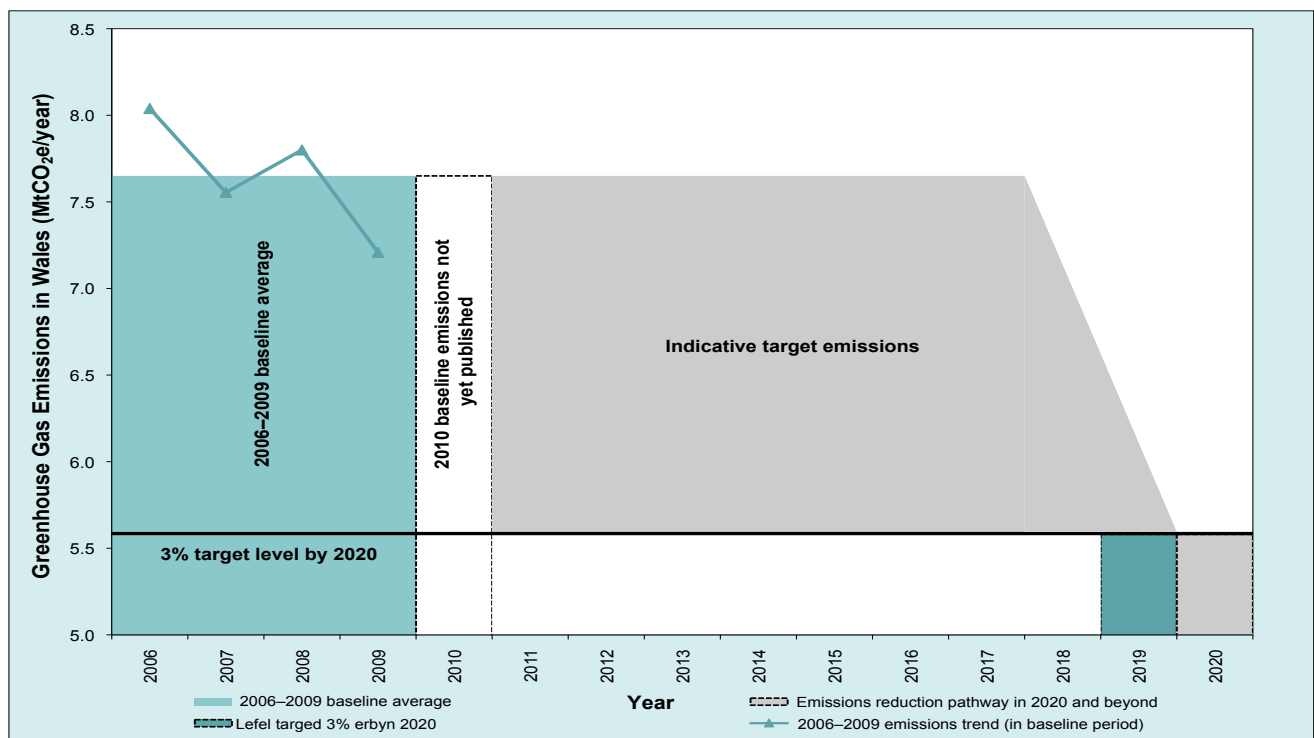
5.35 The strategy has been designed with international transportation in mind, but transport is a local issue too. Pan-European approaches to activities such as rail franchise tendering, road charging, promotion of electric vehicles would all restrict member states' abilities to respond to local needs and opportunities. The infrastructure proposals particularly do not take into account the varying level of investment that would be needed across different countries, and the individual member states' ability to fund infrastructure investments in the current climate.

Chapter 6 Emission reduction in the Residential sector

- 6.1 The residential sector is responsible for approximately a fifth of the emissions covered by the 3% target. The Emission Reduction Delivery Plan includes a range of measures to reduce improve energy efficiency, lower energy reduce energy demand and support micro-energy generation. An update on each of the residential measures is given below.
- 6.2 Figure 4 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 4


Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 residential sector target



Delivery of specific measures in the residential sector

WR1 – Area based domestic energy efficiency programmes

- 6.3 The *arbed* programme is Wales’ strategic area based energy performance investment programme. It aims to leverage and coordinate investment into the energy performance of homes in Wales, and is designed to maximise the environmental, social and economic benefits of this investment.
- 6.4 During Phase 1 of *arbed*, the Welsh Government provided £30m of funding to improve the energy performance of homes in some of the most deprived parts of Wales and also provided a boost to jobs, skills and regeneration. That investment leveraged a further £30 from energy companies and social housing providers leading to a total investment package of over £60m by the end of 2010-11.

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- 6.5 Together with our partners the *arbed* scheme has installed solid wall insulation to nearly 2,900 social and private homes installed over 1,800 solar PV panels in social housing, provided solar heated hot water to 1,000 households including several sheltered housing schemes, provided heat pumps and improved insulation levels to 121 households off the gas network.
- 6.6 Since then we have invested a further £6.6 m to expand *arbed* phase 1 schemes and enabled the reinvestment of approximately £3m released from the repayment of funding provided for solar PV projects. At least 6,000 homes have benefited from *arbed* phase 1 to date and with the additional funding we expect this number to rise to 7,500. Combined with the Welsh Government’s Home Energy Efficiency Scheme (the precursor scheme to Nest) and Boiler Scrappage Scheme, a total of 25,000 Welsh homes were improved and made cheaper to heat in 2010-11.

Arbed – Phase 2

- 6.7 Phase two of *arbed* has the same objectives as the first phase, but the delivery model will be different in order to fulfil the conditions associated with European funding. The scope of the projects supported will see schemes that vary in scale and in value:
- It is likely that individual schemes will support between 50 and 500 homes and cost between £250k and £2.5m.
 - We aim to deliver between 10 and 20 schemes in each year of the project - with approximately 50 schemes to be delivered in total.

The view of the Committee on Climate Change


- 6.8 The Committee singled out the *arbed* scheme as an example of how taking a “whole-house” approach to energy efficiency can be successful, particularly in the more challenging areas of solid wall insulation. Around 3,000 solid wall insulations took place in Wales during 2010-11 – equivalent to 20% of the total number of solid wall insulations that took place in the UK during that year. The Committee concluded that there is an important role for the Welsh Government in supporting roll out of energy efficiency improvement and renewable heat deployment.

The view of the Climate Change Commission for Wales

- 6.9 The Commission commended the Welsh Government on the success of *arbed* and Nest but highlighted that they were relatively small scale projects. The Commission recommended that the Welsh Government should speed up the transition from these projects to enable more ambitious, large-scale retrofit.

Welsh Government response:

- 6.10 The Welsh Government’s Nest and *arbed* programmes represent a significant and sustained investment in domestic energy efficiency improvement in Wales. For comparison is there is no equivalent of *arbed* in England and the broad equivalent of Nest in England – Warm Front - will no longer be available from the start of April. The Welsh Government will



maintain its investment in its domestic energy efficiency programmes but will also seek to maximise the investment available in Wales from UK-wide programmes, particularly the new Energy Company Obligation (ECO). We expect to invest £100m over the first five years of the Nest programme.


- 6.11 Phase 1 of *arbed* saw an investment of over £30m by the Welsh Government which leveraged an additional £30m from energy companies and registered social landlords in 2010-11. Since then we have been able to invest an additional £6m and enabled reinvestment of a further approximately £3m in 2011-12. Phase 2 of *arbed*, which is primarily funded through the European Regional Development Fund, will see an investment of approximately £43m over three years. We will continue to develop these programmes and future activity in this area and seek alternative funding sources.

WR2 – Demand-led energy efficiency programmes focused on those at risk of fuel poverty

- 6.12 Nest replaced the Home Energy Efficiency Scheme (HEES) from 1 April 2011. The new programme is managed by British Gas, working with the Energy Saving Trust (EST), on a five-year contract. Activity since April has been focused on getting the programme up and running and delivering support to householders in Wales. The programme is expected to deliver energy improvement packages to nearly 4000 householders in its first year as well as providing energy savings advice to 10,000 householders.
- 6.13 Nest will also deliver economic benefits through support to SMEs, apprenticeships and training opportunities. 54 SMEs are currently working on the project delivering home energy efficiency improvements.
- 6.14 Nest has been designed to provide ‘something for everyone’, ensuring that all households in Wales have access to some advice and support to help reduce their fuel bills and targeting the highest level of support at those households most in need.

WR3 – Supporting community scale energy generation

- 6.15 Ynni’r Fro is a jointly funded Welsh Government and European Regional Development Fund programme that aims to promote community scale, renewable energy generation. Ynni’r Fro promotes business growth, and new business opportunities by enabling the creation of sustainable social enterprises. The programme offers grants of up to £30,000 to cover pre-planning costs, grants up to £300,000 for capital costs and will offer capital loans up to £250,000.
- 6.16 A network of technical development officers across Wales has been established, to give guidance and support to social enterprises planning or undertaking a project. The programme is valued at £15m over its 5 year duration.
- 6.17 Following the commencement of Ynni’r Fro, the UK Department of Energy and Climate Change introduced feed in tariff payments to incentivise the energy generation market. The feed in tariff criteria stipulates that to qualify, ‘public funding’ grants are only eligible pre-installation. This means that community groups are no-longer eligible to receive a capital grant *and* the ‘dual’ benefit of a premium rate for energy generated.



6.18 Ynni'r Fro continues to provide funding for community groups to undertake early stage feasibility studies. Including environmental impact surveys and identifying suitable technologies. The Network of local Technical Development Officers has successfully engaged with 70 community enterprises across both convergence and competitiveness regions. Ynni'r Fro has responded to over 140 Expressions of Interest from communities in Wales since 2009. Twenty-three communities have developed their prospective projects, supported by 'Preparatory' grants, to assist with environmental assessment and decisions relating to project viability.

The view of the Climate Change Commission for Wales

6.19 The Climate Change Commission for Wales recommended that the Welsh Government should seek to increase investment opportunities for community scale energy and support the establishment of Community Energy Wales.

Welsh Government response:

6.20 The Welsh Government has taken a range of steps to increase investment opportunities in community scale energy generation and the Ynni'r Fro Programme is a good example of this. The Environment Agency has taken steps to improve its approach to regulating small scale renewables. This has included putting in place account managers for projects and developing a 'yes if' approach to regulation.

6.21 In 2009 we removed the need for planning permission for some micro-generation technologies on domestic properties. We will extend this further to other micro-generation technologies for domestic properties and non-domestic properties in 2012.

WR4 – Improving the energy performance of social housing

6.22 The Welsh Government uses the Code for Sustainable Homes as the assessment framework for new housing and requires at least Code Level 3 for all new housing that we influence through grant funding, investment and land disposals; moving to higher levels as quickly as possible.

6.23 In March 2011 the Welsh Government carried out a monitoring exercise on the performance of housing associations and local authorities in working towards to the WHQS for their existing homes. The findings show that an increasing number of homes are meeting the minimum SAP rating resulting – with around 71 % of housing association properties and 68 % of local authority homes achieving a rating of 65 or higher in 2010/11.

6.24 This has produced a number of wider benefits, for example, as part of maintenance and improvement programmes, housing associations and Local Authorities have created jobs, training opportunities and apprenticeships with local contractors. Fuel poverty is also being addressed as energy efficiency measures such as "A" rated boilers, loft and wall insulation are helping to reduce energy bills for tenants.



WR5 – Behaviour change at home

6.25 An update on this intervention has been included as part of the chapter “Wider Sectoral Contributions” on page 50.

WR6 – Low carbon new build in Wales

6.26 Transfer of Building Regulations to the Welsh Ministers took place on 31 December 2011. During 2012 it is our intention to consult on proposals to raise new housing energy performance (reduced carbon emissions) by 55 % against 2006 standards (40 % against current 2010 standards). The consultation will include proposals for improving the performance of existing dwellings and new and existing non domestic buildings.

6.27 The Low/Zero Carbon Hub has published its strategy for supporting the move to a local carbon built environment. Workstreams include new and existing buildings, skills and behaviour change.

6.28 We are committed to reviewing the implications of the proposed changes to Building Regulations on the national planning policy on sustainable buildings. The review will take place this year and will consider whether the national planning policy on sustainable buildings is still necessary.

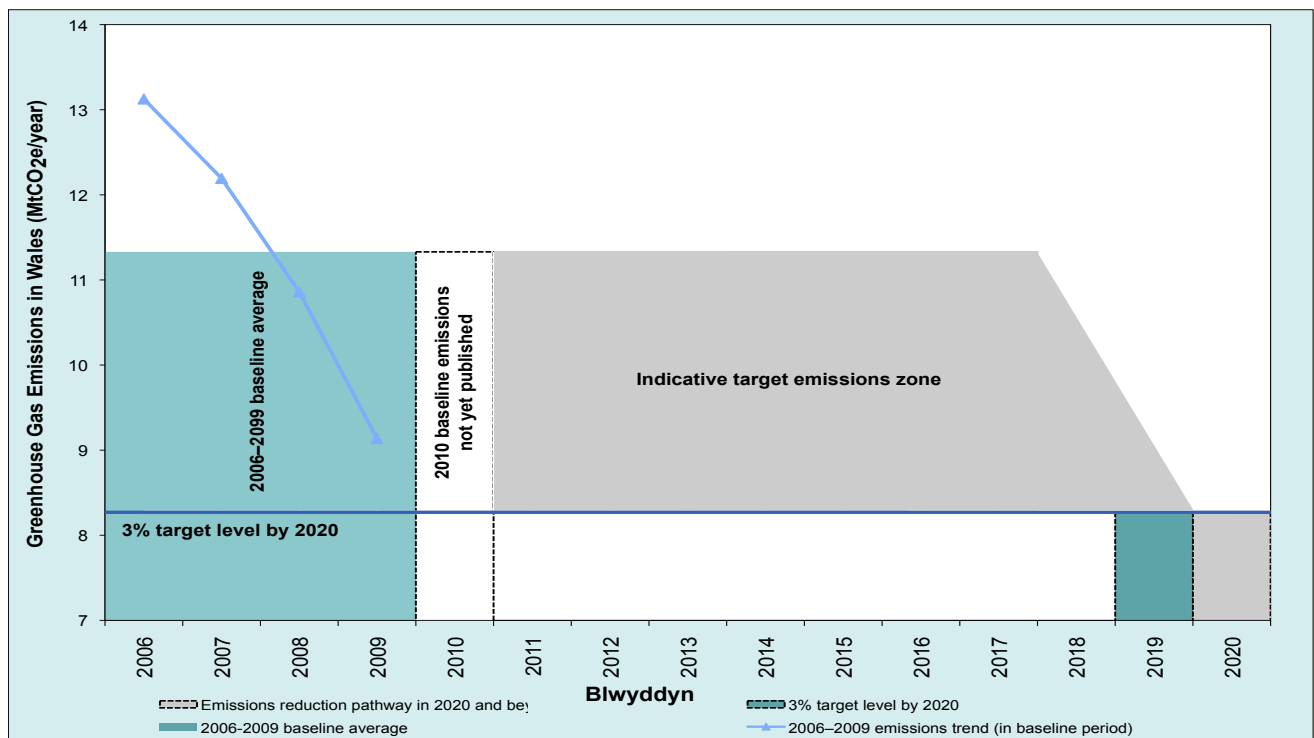
Chapter 7 Emission Reduction in the Business sector

7.1 The business sector (not including emissions from heavy industry and energy generation) is responsible for approximately a third of the emissions covered by the 3% target. There has been a steep downward trend in emissions in the business sector between 2006 and 2009 (i.e. during the baseline period). To a large degree, this decline relates to the effects of the economic recession and emissions in this sector had fallen to such an extent that in 2009 they were less than 1 MtCO₂e above the target we have set for 2020. Nevertheless, there is a high potential for rebound in business sector emissions in future years depending rates of economic growth in Wales. The measures set out in the Delivery Plan for Emission Reduction, therefore, focus on reducing the carbon intensity of the business sector through the processes, products and the premises in which businesses operates. An update on progress in delivering the business sector measures is provided below.

7.2 Figure 5 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 5

Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 business sector target



Delivery of specific measures in the business sector

WB1 – Economic Renewal: A new direction


- 7.3 'Economic Renewal: a new direction' establishes a renewed approach to economic development in Wales that is:
- better able to meet the needs of businesses;
 - encourage a stronger and more sustainable economy;
 - increase the prosperity and long-term well-being of the people of Wales.
- 7.4 An important part of the current programme is to ensure that the planning system in Wales enables us to deliver our sustainable development goals, and we continue to take forward changes to the planning system following the *Study to Examine the Planning Applications Process in Wales*.
- 7.5 We have consulted on updating national planning policy to ensure the planning system can support our aspirations for economic renewal. We will publish the final policy later this year and will consult on a new technical advice note on supporting the economy.
- 7.6 The Programme for Government includes our aim to improve the planning system to ensure it supports sustainable development. To take forward the planning reform agenda we will introduce a Planning Bill before 2016. The first stage of this has been the establishment of an Independent Advisory Group to consider option on how to deliver the planning system in the future. Additional work is being taken forward to complement this work to form part of the evidence base for a Planning White Paper, due to be published in 2013.

The view of the Climate Change Commission for Wales

- 7.7 The Commission recommended the Welsh Government should strengthen its engagement with the business sector in making the case for a transition to a low carbon, resilient economy especially through the following routes: the leadership role of the anchor companies; regional support; supply chains; support to small and medium sized enterprises.
- 7.8 The Commission also recommended the Welsh Government should work with anchor companies, business support networks and organisations such as the Carbon Trust to develop tailored advice packages for specific sectors, aimed at raising the level of engagement on emissions reduction.

Welsh Government response:

- 7.9 The newly developed nine sector approach to Economic Renewal is designed to give better focussed support, whilst we continue to support SMEs and micro-businesses, Anchor Companies and Regionally Important Companies. The Sector Strategy for Energy and Environment is looking at low carbon supply chain development in Wales, and all sector strategies will be looking to enhance supply chain capacity in Wales and the development of new products and technologies.
- 7.10 We align all of our property development activities to ensure sustainable development outcomes that help to tackle climate change, maximising the use of renewable resources and align delivery against the needs of the sectors and business we support.



7.11 Our work to create sector led Enterprise Zones will also create opportunities to deliver sustainable outcomes with all development based on the highest standards of delivery, creating opportunities for the use of renewable technologies.

WB2 – Carbon Trust

7.12 The Carbon Trust provides specialist support to help business and the public sector boost business returns by cutting carbon emissions, saving energy and commercialising low carbon technologies. It primarily supports businesses in reducing carbon emissions and achieving energy efficiency. Much of the work of the Trust divides into the two distinct areas of Carbon Now and Carbon Future.

i) Carbon Now

This focuses on immediate savings that can be made based on not just the environmental case for change (carbon reduction savings) but also the business case and cost savings that can be achieved. *Carbon Now* services include:

- Website information and advice
- Producing publications
- Face to face advice and support on energy efficiency and reducing carbon emissions
- Sector specific support for business and the public sector including interest free loans (including work with Salix Finance detailed below)
- Stakeholder events and workshops
- Accreditation.


7.13 The Trust has also played a role in the Microgeneration Certification Scheme (MCS) through its involvement as loan managers for companies wishing to undertake the scheme and gain certification. This arrangement piggybacks on the SME loan scheme that they also operate.

7.14 The Carbon Trust is also involved in providing loans to improve the energy efficiency and reduce carbon emissions of public sector organisations through the scheme operated by Salix Finance Ltd. Payback against such loans is then recycled for future use in public sector energy saving schemes in Wales.

ii) Carbon Future

7.15 This involves investment in the development of innovative products and technologies that can produce carbon savings in the future. This includes;

- Encouraging innovation
- Convening consortia to develop technologies
- Running demonstration programmes to raise awareness and test viability of emerging technologies
- Incubating start ups and fast tracking commercialisation
- Creating new ventures and supporting their early stage development
- Designing bespoke initiatives in response to specific challenges (e.g. barriers to biomass and marine energy)
- Investment in new initiatives.

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- 7.16 The Welsh Government is currently carrying out a scoping exercise on the future requirements for information, advice and support on resource efficiency, which includes the activities grant aided through the Carbon Trust and Energy Saving Trust in Wales. As a result the activities currently carried out by the Carbon Trust may change. The scoping exercise will consider how future advice and support currently funded by the Welsh Government can become better focused on the needs of the user/consumer while also cutting across the traditional policy boundaries and achieving economies of scale.

WB3 – Enabling more resource efficient business

WB5 – More efficient use of, and regulation of, waste heat and energy


- 7.17 Small and Medium Sized Enterprises account for a large percentage of businesses in Wales and have an important role to play in the economy. It is important that we provide specific programmes to enable companies across Wales to access advice and support on sustainable and cost-effective business practices to contribute to Wales's ambitions for a sustainable and low carbon economy.
- 7.18 The Welsh Government funded Regional Centre Service for SMEs has dedicated Environmental Management Advisers working with the lower end of the SME market specifically in relation to the implementation of the environmental management systems, waste and energy minimisation. This service has been in operation since April 2009 and to date has supported over 800 SMEs in Wales.
- 7.19 A new £8.3 million project which has been backed with £4.6 million from the European Regional Development Fund through the Welsh Government was launched in February 2012. The cutting-edge research project at Cardiff University has developed an innovative software tool to help small Welsh companies cut costs and reduce carbon emissions. The university's Geoenvironmental Research Centre (GRC) is launching the free software following research by its European-funded research project SEREN.
- 7.20 The Seren EcoCode software will assist Welsh small to medium sized enterprises (SMEs) to cut costs and carbon emissions arising from their utilities use, transport operations and waste.

The view of the Climate Change Commission for Wales

- 7.21 The Commission recommended that the significant potential for change amongst Welsh small and medium sized enterprises must be nurtured. The Commission believes that there is an ever widening gap in respect of the support to small business on climate change, which should be reversed by the Welsh Government.

Welsh Government response:

- 7.22 Support to businesses includes the support services delivered by the Carbon Trust as well as those delivered by Welsh Government directly. The Carbon Trust currently provide a range of services including a helpline to businesses, visits and energy services, grants for R&D projects and awareness raising events.



7.23 At a UK level, DECC have undertaken a landscape review of services in this area and are no longer funding the Carbon Trust to deliver support services to businesses. Within Wales we are carrying out a scoping exercise on the future requirements for information, advice and support on resource efficiency, which includes the activities grant aided through the Carbon Trust and Energy Saving Trust in Wales.

WB4 – Skills for a low carbon economy

7.24 Skills are a critical element to ensuring individuals and businesses possess the necessary capacity to action on emission reduction. The Programme for Government makes clear that our focus is to ensure the right training is available to help deliver our low carbon agenda and our Delivering Low Carbon Skills Project is leading the way in providing training for new low carbon industries.

7.25 Working with the Sector Skills Councils, and supported by the European Social Fund, we have invested in a range of training for businesses as part of our Sector Priorities Fund; from the installation of energy efficiency measures on properties through to maintenance of wind turbines. By July 2012, the Project is expected to have supported up to 700 participants and 300 businesses across a range of disciplines, including:

- The establishment of a new Apprenticeship framework for the operations and maintenance of wind turbines
- The delivery of new vocational qualifications for those professionals providing advice services prior to the installation of energy efficiency measures on properties
- Providing training for solid wall insulation
- Supporting the establishment of a new suite of upskilling training for the construction workforce covering the appropriateness and sensitivities associated with retrofitting pre-1919 properties.

Case Study: Nationwide Energy Services Ltd

The Swansea division of Nationwide Energy Services Ltd is one company that has felt the benefits of the Delivering Low Carbon Skills Project. The company provides a wide range of energy efficient and renewable energy solutions to homeowners, including loft and cavity wall insulation, and solar panels.

The company has a large field-based team that are required to possess knowledge of the impact that carbon emissions have on the environment, as well as people's homes. It is also essential that they have an understanding of forthcoming Government initiatives and legislation. Through the Delivering Low Carbon Skills Project the company was able to put its field-based team through the Level 3 Certificate in Energy Advice.

7.26 A key outcome of our Delivering Low Carbon Skills Project has been the creation of a cultural shift amongst training providers, such as Further Education Colleges, in terms of their understanding of the types of training needed by businesses. We have also produced a series of learning projects aimed at understanding the demand for low carbon skills and training support.

Case Study: Coleg Powys

Coleg Powys, in collaboration with Construction Skills and Ty-Mawr Lime, offered a series of Sustaining Traditional Buildings Train the Trainer courses, as part of the Delivering Low Carbon Skills Project. The modules were designed to help train an employee within a company to provide them with the skills to train other members of staff.

Through the Sustaining Traditional Buildings courses, participants received training in heritage skills including plasterwork, brickwork, wood occupations and painting and decorating.

The activities provided an introduction to the Level 3 NVQ in Heritage Skills and an awareness of the important role traditional building techniques play in retrofitting older properties to increase their measure of energy efficiency.

- 7.27 To enable companies to achieve accreditation under the Microgeneration Certification Scheme (MCS) and access the benefits of the UK Government's Feed-in Tariffs, support has been provided via the Energy Saving Trust to run a series of training courses targeting SMEs aimed at developing their understanding of the requirements of MCS and the quality management systems required as part of the accreditation process. Through this investment, a further 18 SMEs achieved the required certification.
- 7.28 In conjunction with Construction Skills and colleges from the Further Education sector, a new training pathway has been launched as part of the Pathways to Apprenticeship Programme aimed at providing a progression route for young people into the emerging solid wall insulation market. The Pathway provides a combination of technical and knowledge-based training on insulation alongside the broader issues associated with energy efficiency within properties.
- 7.29 Through investment made via the Centre for Regeneration Wales (CREW), a series of support programmes have been established to engage industry professionals from the built environment sector in their understanding of the emerging low carbon agenda. In addition, a series of new Continuous Professional Development modules have been developed by CREW, in conjunction with Construction Skills aimed at providing professionals with core knowledge on the considerations and issues associated with moving to a low carbon built environment sector in Wales.
- 7.30 To engage more businesses in the discussion on the skills needed to reduce GHG emissions, we are continuing the support the work of the Green Business Skills Forum – by working with the Forum we have developed an ongoing dialogue on future skills needs and maximising the opportunities for training from new low carbon markets.
- 7.31 Looking ahead, our continued investment in skills will focus on ensuring the right training is available to help deliver our low carbon agenda. This will include aligning our growth programmes to support the opportunities for skills development and job creation in moving to a low carbon economy.



WB6 – Low carbon energy

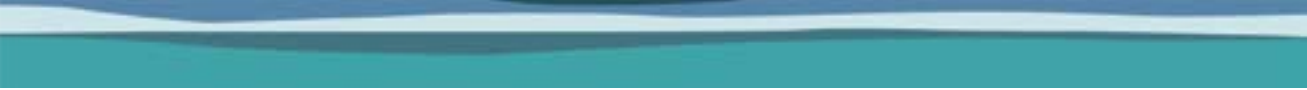
- 7.32 The move to a low carbon economy presents major opportunities. Wales has significant natural resources in virtually every energy source and we also have the infrastructure, including ports and grid, to make the most of this opportunity. The Welsh Government wants to maximize the generation of electricity from low carbon sources including onshore and offshore renewables, clean fossil fuels and nuclear, while ensuring value for money. We predict that – over the course of the next 5 years – there will be a significant improvement in the percentage of electricity consumed in Wales that is generated from renewable sources.
- 7.33 Welsh renewable electricity production was equivalent to about 9 % of our consumption in 2009. In Wales, 62 % of renewable generation stems from sources including wind and solar with a further 25 % coming from thermal renewable generation and 13 % from hydro generation. Current operational wind farms have a capacity of 562 MW with some significant developments due to come on stream in the next few years which will see this capacity increase by 576 MW from offshore and 263 MW from onshore developments.
- 7.34 We have commissioned work to research how the consenting process for renewable energy projects in Wales is currently working. This will establish an evidence base and uncover any factors that might be delaying consents for renewable energy projects. This is in response to claims that the current system has restricted the development of a number of renewable energy projects.
- 7.35 We will issue practice guidance in response to the Renewable Energy Directive to assist all those involved in the built environment identify ways in which they can reduce the carbon footprint of a new building, extension or refurbishment by optimising the use of renewable and low carbon energy technologies in the design process.
- 7.36 We are also working with industry to agree an approach that will allow local communities to share the benefits derived from grid improvements and energy projects – in the form of a direct share of the profits of a development as well as wider jobs and supply chain benefits.

View of the Climate Change Commission

- 7.37 The Climate Change Commission for Wales recommended the Welsh Government ensure that the development of the next generation of broadband across Wales is undertaken in a way that makes the most of emissions reduction opportunities.

Welsh Government response:

- 7.38 Environmental protection has formed an integral part of the development of the NGBW project. Environmental and sustainability criteria have been used to define the project scope and identify environmental risks and opportunities. Environmental and sustainability contractualised obligations will form part of the NGBW project terms of grant schedules.



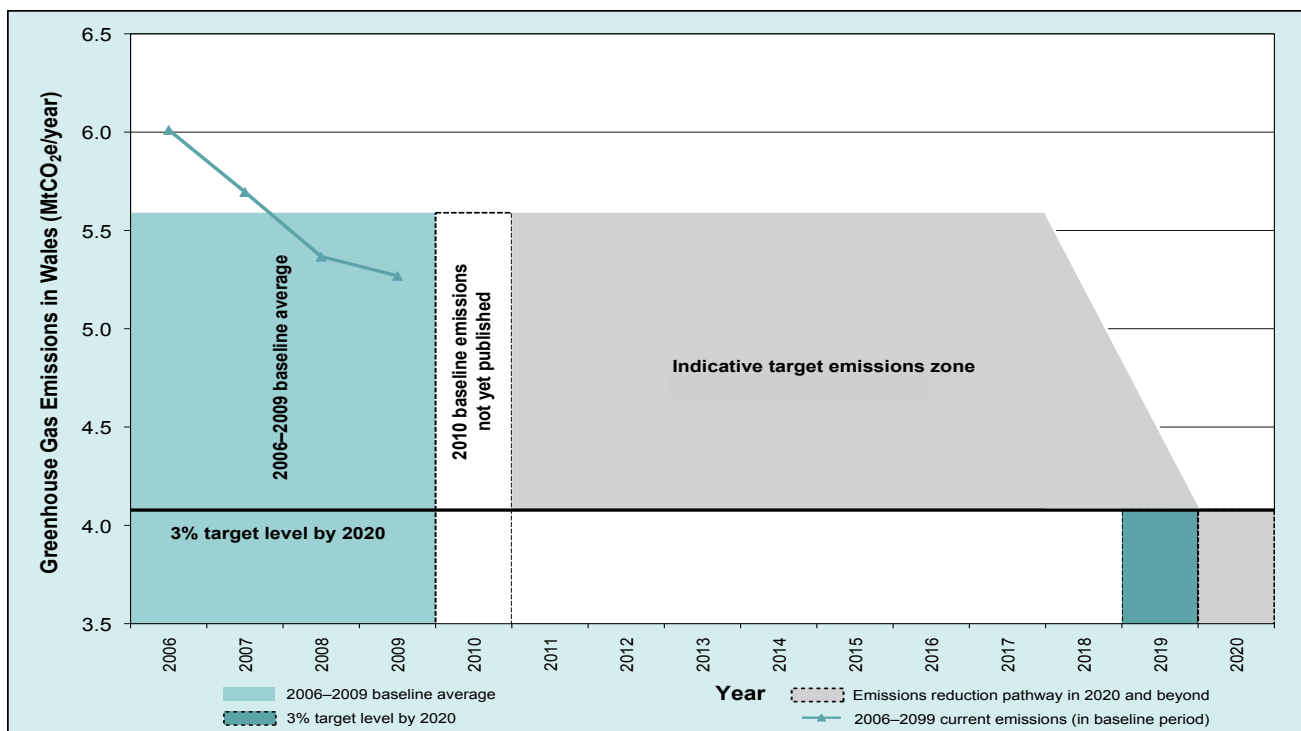
7.39 Measuring the impact of new ICT technology such as next generation broadband on greenhouse gas emissions is very complex. However, there is a significant body of evidence to indicate that greater exploitation of enhanced ICT infrastructure has the potential to improve the environment and reduce greenhouse gas emissions. These improvements are most directly associated with transport, where enhanced ICT can reduce the need for travel.

Chapter 8 Emission Reduction in the Agriculture and land use sector

- 8.1 The agriculture and land use sector is responsible for approximately a sixth of the emissions covered by the 3% target. An update on progress in delivering the business sector measures is provided below.
- 8.2 Figure 6 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 6

Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 agriculture and land use sector target



Delivery of specific measures in the agriculture and land use sector

WA1 – Woodland creation

- 8.3 The latest data from the National Forest Inventory (March 2011) estimated that there was 303.5 thousand hectares of woodland in Wales, as at 31 March 2010. This represented 14.3% of the total land area of Wales. The development of the Glastir woodland management programme will provide an opportunity to identify and map locations for suitable woodland creation. To date, nearly 400 applications for woodland creation have been submitted through Glastir covering an area of 1,100 hectares. Around 230 have been approved, covering an area of 687 hectares, as at November 2011. We will continue to promote Glastir woodland creation to grant aid for further woodland planting.

WA2 – Optimal management of current woodland sink

- 8.4 The Welsh Government's Woodlands for Wales strategy sets out plans for developing and using Welsh woodlands and trees so that they bring maximum benefit to the people of Wales. If we can manage woodlands and trees to help them to be resilient to climate change, they can help us to reduce net carbon emissions through sequestration. We believe that effective implementation of the Woodlands for Wales Strategy will manage the woodland sink.
- 8.5 The Woodland Carbon Code (FCW UK) was launched in July 2011 and aims to certify woodland creation projects designed to measure and account for the capture and storage of carbon. This is an independently audited standard, devised by a stakeholder group led by the Forestry Commission. We are adopting a conservative approach to soil carbon which maintains the integrity of the Woodland Carbon Code with respect to soil carbon exchange. It ensures that soil carbon emissions associated with woodland creation are not under-estimated and that any soil carbon sequestration associated with woodland creation is not over-estimated.
- 8.6 In addition to this, the Welsh Government's Plant! Scheme aims to plant a tree for every child born or adopted in Wales to act as a carbon sink. To date there are 5 sites and over 100,000 trees have been planted.

WA3 – Glastir

- 8.7 Glastir is a five year whole farm sustainable land management scheme available to farmers and land managers across Wales. From this year, Glastir will replace existing agri-environment schemes to ensure that future environmental challenges can be met. Glastir will support farmers in developing sustainable land management practices and includes prescriptions to support the preservation of soil carbon and to encourage on-farm renewable energy generation.
- 8.8 Glastir consists of five elements:
- **All-Wales Element (AWE)** – a whole farm land management scheme open to application from all farmers and land managers throughout Wales. It is designed to provide support for the delivery of environmental benefits that meet today's challenges and priorities. Successful applicants will make a commitment to deliver environmental goods for five years under a legally binding contract.
 - **Targeted Element (TE)** – a part farm scheme which will run alongside AWE. It is intended to deliver significant improvements to the environmental status of a range of habitats, species, soils and water. This may require changes to current agricultural practices. Financial support from the Welsh Government will be directed into areas where it will provide most environmental benefit.
 - **Common Land Element** – designed to provide support for the delivery of environmental benefits on common land.
 - **Woodlands Element** – designed to support land managers who wish to create new woodland and/or manage existing woodlands. The Woodlands Element will provide beneficial outcomes for a range of woodland types, species, soils and water.

- **Agricultural Carbon Reduction and Efficiency Scheme (ACRES)** – a capital grant scheme available to farmers and land managers who hold an AWE contract. It is aimed at improving business and resource efficiency, and reducing carbon emissions of agricultural and horticultural holdings.

The view of the Committee on Climate Change

8.9 The Committee concluded that, whilst these approaches should have a positive impact in reducing emissions from this sector in Wales, it was unclear what these measures trying to achieve. The Committee assessed that the Welsh Government needed to go further to identify soil and livestock measures that could significantly reduce emissions and that our policies needed to use stronger levers and incentives to achieve maximum amounts of emission reduction.

The view of the Climate Change Commission for Wales

8.10 The Commission agreed with the findings of the Committee and identified Glastir as one area where more could be done. The Commission recommended that the Welsh Government should seek to align the Glastir scheme's ambition to combat climate change with underlying abatement potential setting clear targets for emission reduction.

Welsh Government response:

8.11 Glastir is intended to bring multiple environmental benefits including climate change. The Welsh Government targets for Glastir are set by the requirements of the Common Monitoring and Evaluation Framework (CMEF) reporting process determined by the EU Commission for all Rural Development Programme schemes, of which Glastir is one. The CMEF sets targets in terms of land area and so Glastir targets are defined in those terms and not as megatons of greenhouse gases. Within the current RDP (until December 2013), Glastir has a target to manage 330,000 ha of land of which 180,000 ha will be managed to achieve greenhouse gas improvements.

8.12 The Welsh Government will consider further how best to assess the impact of Glastir on greenhouse gas emissions. It is not possible to make such estimates yet but planned development work should make that achievable in the next 2-3 years.

The view of the Climate Change Commission for Wales

8.13 The Commission recommended that the Welsh Government should monitor the success of Glastir and the woodland creation grant and should consider developing stronger levers and incentives if levels of uptake are not in line with targets.

Welsh Government response:

- 8.14 Glastir will have a comprehensive monitoring programme to capture evidence across the full range of indicators set by the EU Commission's Common Monitoring and Evaluation Framework (CMEF) which Glastir, as a Rural Development Plan funded scheme, must follow.
- 8.15 With Glastir introduced, the Deputy Minister for Agriculture, Food, Fisheries and European Programmes has announced that a taking stock exercise will be completed by the early summer to look at how Glastir and the application process can be improved. The Welsh Government will then be in a position to consider whether levers and incentives are appropriate. Any adjustments will however have to comply with European Commission requirements. Payment rates under Glastir are determined by a calculation based on income foregone and cost incurred. The European Commission needs to be satisfied that these are robust and that payments are not at a level that offers financial incentivisation of the scheme.

The view of the Climate Change Commission for Wales

- 8.16 The Commission felt the Welsh Government should provide a clear lead on land use and climate change. As a priority, the Welsh Government should act on the implementation plan produced in response to the Land Use and Climate Change Group Report, continue to integrate this into current work plans and ensure that work on the issue across different departments is joined up.

Welsh Government response:


- 8.17 The Welsh Government is leading the response to the challenges of land use and climate change through its own policies and programmes, and how these drive the behaviour of other persons and organisations, in partnership with the Climate Change Commission for Wales. The Welsh Government has established a cross departmental group to develop an updated plan in response to the Land Use and Climate Change Group report.

WA4 – Supporting behaviour change in farming practice

- 8.18 Menter a Busnes was awarded the Farming Connect contract for Knowledge Transfer in September 2011 which will run until December 2013. Best practice will be promoted through various means such as demonstration events, discussion groups and targeted advice. Approximately 50 events will take place although not all will have emission reduction as a central theme. However, all farms on the network will have climate change as a cross-cutting theme.

WA5 – Dairy and Red Meat Roadmaps

- 8.19 The Dairy Roadmap for Wales was published by Dairy Co in October 2010 and identifies the environmental impact of a specific product throughout the supply chain and then sets targets for reducing that product's environmental footprint. The Roadmap sets out practical actions, including medium and long term targets, to deliver a vision for reducing the environmental impacts of the dairy sector without adversely affecting its long-term sustainability.



8.20 The Dairy Roadmap for Wales is a 'living document' and will be regularly reviewed by stakeholders to include an official review in 2012 and a full report in 2015. Targets for 2020 include:

- Farmers will recycle or reuse 70 % of non-natural waste
- 40 % of energy used on farm comes from renewable sources
- 20-30 % reduction in greenhouse gas balance from farms, compared with 1990 levels
- 20 % absolute reduction of water use for all processors
- 10 % of processors' non-transport energy to come from renewable sources or Combined Heat & Power/Tri-Generation
- All tertiary packaging to be recyclable or re-usable
- Retailers to ensure that all new stores emit less carbon than existing one
- Mandatory energy benchmarking for processors.

8.21 'A sustainable future – the Welsh Red Meat Road Map' was published by Hybu Cig Cymru – Meat Promotion Wales in July 2011. The Roadmap offers stakeholders information on environmental issues, carbon reduction and increasing efficiency and profitability and includes an Industry Action Plan. The roadmap considers challenges such as reducing greenhouse gasses and reducing the carbon footprint of the industry, water quality and use, biodiversity, countryside management and carbon conservation and sequestration and their solutions.

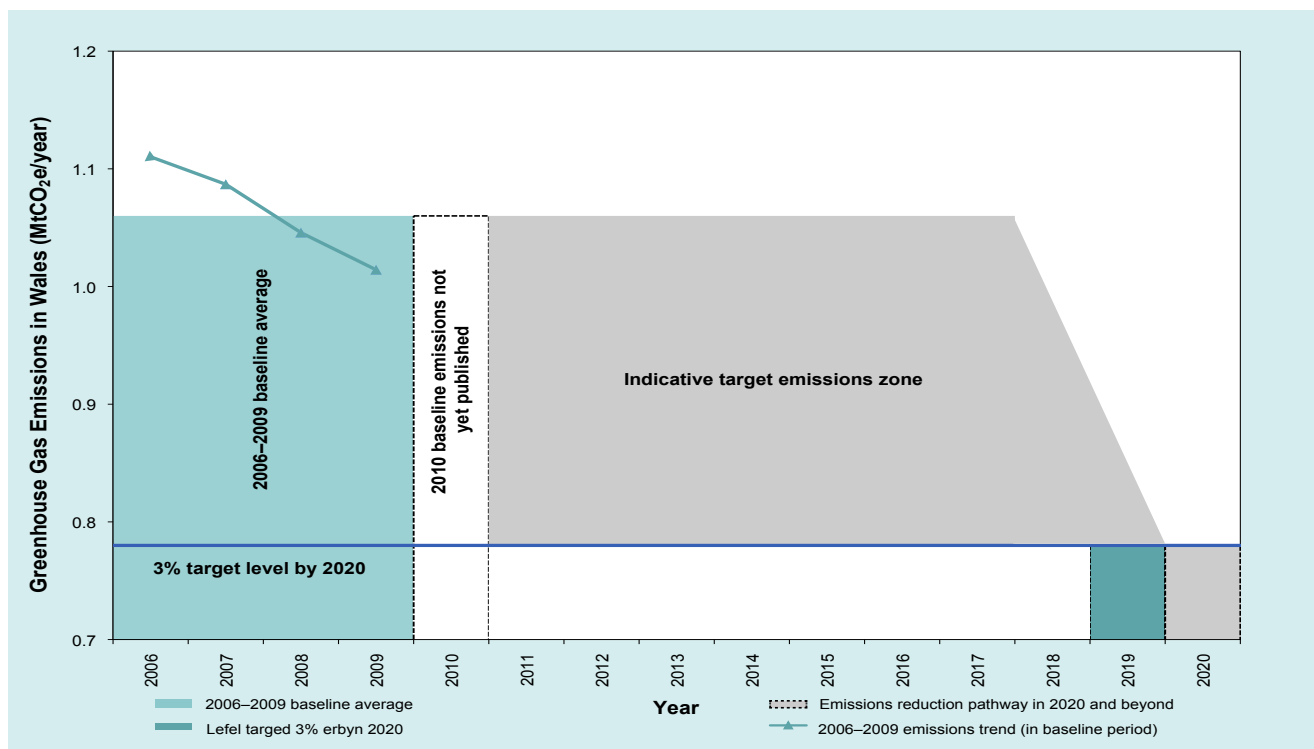
Chapter 9 Emission Reduction in the Waste and Resource Efficiency sector

9.1 The waste sector is responsible for a very small proportion of the emissions covered by the 3% target but is an important sector as it contributes to a high proportion of emissions for sectors where the Welsh Government can take action directly. An update on progress in delivering the business sector measures is provided below.

9.2 Figure 7 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 7

Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 waste sector target




Delivery of specific measures in the waste sector

WW1 – Diversion of biodegradable waste from landfill to recycling, composting and anaerobic digestion

9.3 Towards Zero Waste is the overarching waste strategy for Wales and places statutory recycling targets on local authorities for minimum levels of preparing for reuse, recycling and composting of municipal waste. These targets are as follows:

- 2012/13 – 52 %
- 2015/16 – 58 %
- 2019/20 – 64 %
- 2024/25 – 70 %



9.4 The latest recycling statistics for Wales show the highest quarterly recycling figures ever recorded in Wales or any UK nation. The figures show that:

- Combined reuse/recycling/composting rate of local authority municipal waste continued to increase to 46 per cent for the 12 months to the end of September 2011, based on provisional data, compared to 41 per cent for the 12 months to the end of September 2010.
- The percentage of local authority municipal waste prepared for reuse, recycled or composted in Wales continued to increase on a quarterly basis reaching a peak of 49 per cent in July to September 2011.
- The total amount of local authority municipal waste generated in Wales continued to decrease, falling to 388 thousand tonnes in July to September 2011. This was 5 per cent lower than for the same quarter in 2010.
- The residual household waste produced per person in Wales has also continued to decrease, falling to 59 kilograms per person in July to September 2011, from 68 kilograms per person in July to September 2010.

WW2 – Programme of work to reduce further existing greenhouse gas emissions and landfill

9.5 The Environment Agency corporate strategy, *Creating a Better Place 2010 – 2015* makes a commitment to reduce methane emissions from landfill. To reflect the importance of this work in delivering environmental outcomes the target number of landfill gas reviews has increased from 30 to 50 sites per year.

9.6 During 2010-11 the Environment Agency completed audits at Llandulas, Pen Y Bont, Pwllfawatkin, Nant Y Caws and Bryn Posteg sites. A great deal of extra work has been undertaken at previously audited sites which have resulted in a significant improvement in performance at some of these sites.

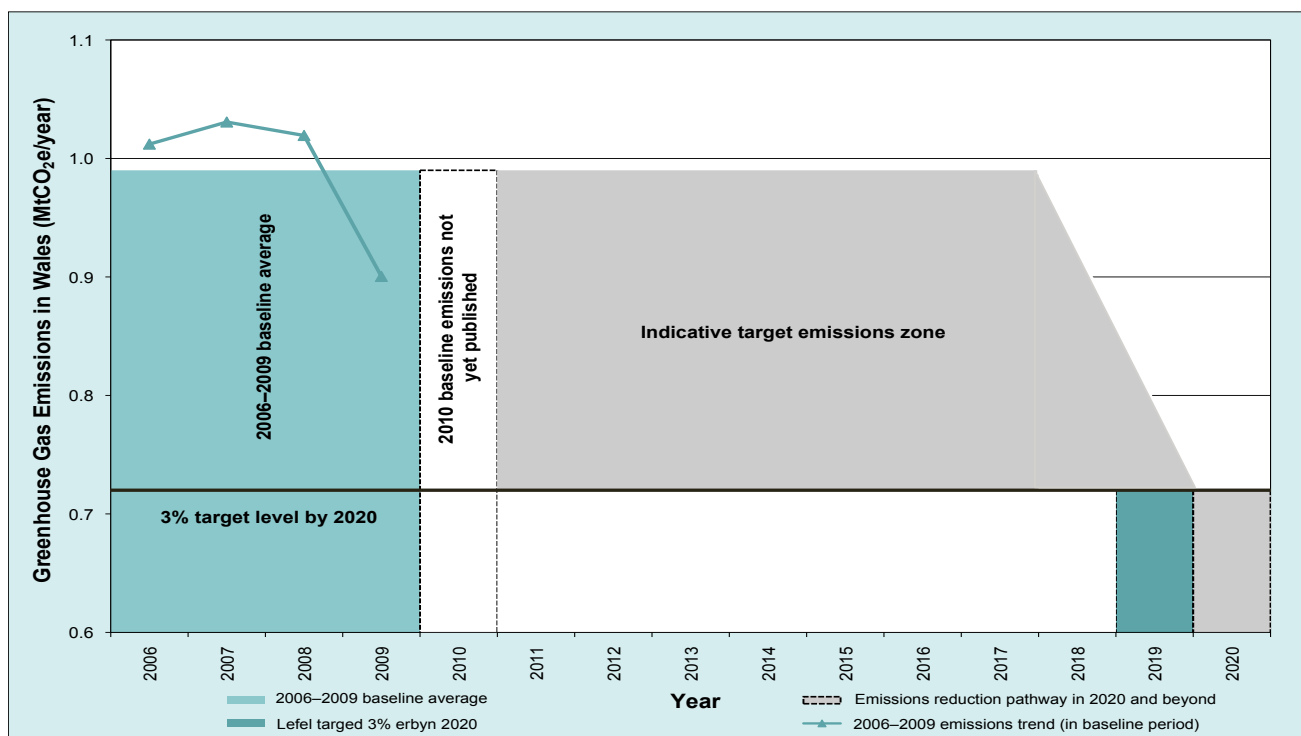
9.7 During 2011-12 audits are planned by the Environment Agency at a further eight sites across Wales and follow up work is planned at previously audited sites that still require significant input to realise potential savings and require further improvements in operational infrastructure and management.

Chapter 10 Emission Reduction in the Public Sector

- 10.1 The public sector in Wales has a critical role to play in leading action and developing good practice to tackle climate change, and the Welsh Government has committed to lead action in this area. It is working with other public bodies not only to reduce emissions and embed action to manage changes to our climate, but to catalyse wider contributions beyond this sector also.
- 10.2 Through the Outcome Agreements agreed in 2010-11, several Local Authorities committed to emission reduction targets in line with the Welsh Government's 3% target. A number of Authorities, including Newport City Council, Powys County Council and Gwynedd Council have already demonstrated solid progress in driving down emissions.
- 10.3 The carbon footprint of NHS Wales was confirmed towards the end of 2010 which has informed development of a Low Carbon Strategy for the NHS and delivery of a new carbon diagnostic tool (CarDio) to enable Local Health Boards and Trusts in Wales to report progress on emission reductions each year.
- 10.4 Figure 8 shows the baseline emissions in this sector between 2006 and 2009, and the indicative emissions target zone required to achieve the 2020 target.

Figure 8

Graph showing baseline emissions to date and indicative emissions target zone to 2020 to achieve the 2020 public sector target





10.5 A number of case studies reflecting the progress being made below.

Case Study: Reducing the carbon footprint of the Welsh Government estate

10.6 The Welsh Government has reduced its carbon emissions by 11 % in a single year, beating the 10:10 target to reduce emissions in key areas by 10 %.


10.7 In December 2009, the First Minister confirmed the Welsh Government's commitment to the 10:10 campaign, which asked organisations to reduce their emissions in certain areas by 10 % within an 'action year' that started in 2010. This reduction in our greenhouse gas emissions has been influenced by a number of actions in the last twelve months, including:

- the rationalisation of our administrative estate: During the 2010/11 period we were able to capitalise on a substantial amount of estate rationalisation opportunities, allowing us to vacate a total of 18 buildings, making a significant contribution towards reducing our emissions;
- enhancement of our Low Carbon Management Programme and the implementation of our Managing with Less agenda, which has led to a significant reduction in the resources we use;
- reduce the number of journeys made for meetings, by using video conferencing and other alternatives;
- further reducing the carbon usage of our ICT infrastructure by reducing the number of IT servers we had.

10.8 Through these measures we were able to make a total carbon saving of 1,643 tonnes of carbon in the areas covered by 10:10, equivalent to approximately 39,400 single car journeys from Cardiff to Westminster. In a separate announcement, the UK Government's Carbon Reduction Commitment Energy Efficiency (CRC) Scheme report, published on 08 November 2011, ranked the Welsh Government in the top 16 % of participating organisations finishing 321st out of a total of 2109.

Case study: Reducing the carbon footprint of the educational estate in Wales

10.9 The 21st Century Schools Programme aims to deliver sustainable school buildings. A key element of the programme has been to develop a school standard, with a specific element focussing on sustainable schools. This will provide practical guidance on making schools more environmentally sustainable, by reducing energy use, CO₂ emissions, and improving the school environment.

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- 10.10 Through the transitional capital investment projects, we continue to work with Local Authorities to ensure that all new school buildings capital projects meet the Building Research Establishment Environmental Assessment Method (BREEAM) 'excellent' standard. The standard ensures best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance. 35 transitional projects will achieve this by 2014-15.
- 10.11 Caerphilly Local Authority has just completed and opened a new state of the art primary school in Greenhill, Gelligaer. This brand new school is an excellent example of sustainability by being the first school in England and Wales to achieve an Energy Performance Certificate (EPC) rating of A+ and has recently achieved the 'Low/Zero Carbon Award' at the annual 'Constructing Excellence in Wales 2011' awards.
- 10.12 The new Greenhill primary school features a highly insulated external envelope, four wind turbines to take advantage of the school's elevated location and a large array of photovoltaic panels which will turn daylight into electricity. Any surplus electricity generated will be fed back into the National Grid.

Case study: National Assembly for Wales

- 10.13 As one of Wales key public institutions, the National Assembly for Wales believes in pushing the boundaries of sustainable development, taking actions that matter and investing in initiatives that will genuinely make a difference. In 2008/09, in collaboration with the Carbon Trust and environmental consultants the Assembly Commission launched a Carbon Management Plan to reduce the reliance on fossil fuels. Specifically this focused on reducing energy emissions by 40% and business travel emissions by 15% by 2015. Two years in, the Assembly is optimistic about achieving this compelling vision and is currently exceeding its targets.
- 10.14 Headline achievements in 2010-11 included:
- 182 tonnes (6.6%) reduction in net CO₂e emissions;
 - 11.1% reduction in energy emissions (equivalent to £62,000 saving);
 - Cumulative reduction of 19% in energy emissions over the last two years; almost half of the total 40% reduction required as part of the Carbon Management Plan;
 - 18.7% reduction in business travel emissions (equivalent to £62,000 saving)
 - 68% of all waste arising reused or recycled
 - 6% reduction in water consumption.
- 10.15 The Assembly's emissions from road, rail and air travel totalled 154t CO₂e in 2010/11. Business mileage fell by 122,807 miles over the year and costs fell by £62,000. This is a reduction of 18.7% on the previous year and represents a continued decline in business travel over the last 2 years – a 34% reduction in emissions. This is due to measures such as:
- All employees recording and submitting their mileage and mode of transport after each journey.

- A car hire policy relating to the size of cars required for business travel. This resulted in the average CO₂ emissions dropping from 146g/km in 2009/10 to 132g/km last year and a reduction in the average engine size from 1.6l to 1.4l.
- A low emission pool car (98g CO₂/km) for staff use. In the past year, this has displaced almost 11,000 miles from hire cars and grey fleet resulting in a saving of 506kg/CO₂e.
- A Sustainable Travel Plan, an evolving document aimed at reducing single car occupancy. It contains a list of improvements together with a suite of sustainable travel incentives for all occupants. These include a popular cycle to work scheme, car sharing program, secure bike sheds, showers and changing facilities for cyclists.

The view of the Climate Change Commission for Wales

10.16 The Commission made several recommendations relating to the public sector in Wales. These are outlined below.

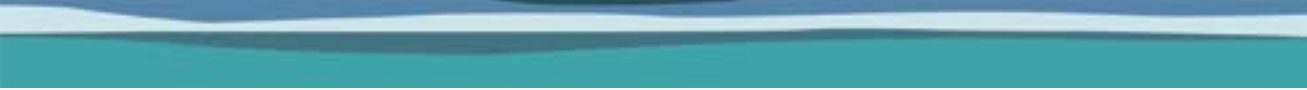
10.17 **Commission:** Given their leadership role, the Welsh Government should set a target for reducing emissions from the public sector, and should monitor and report on progress in achieving it. The Welsh Government should work with local authorities to develop county-wide targets.

Welsh Government response:

10.18 For the public sector's direct emissions from its buildings, the Welsh Government decided to set a maximum emission levels for 2020 rather than a target range for minimum levels of emissions reduction. We have taken this approach to reflect our commitment for the public sector to lead by example in its efforts to curb emissions and influence emission reduction much more widely through delivery of services, through procurement and through the sector's community leadership role. We are fully committed to working with the public sector to monitor and report on progress in the coming years.

10.19 Outcome Agreements exist between each individual local authority and the Welsh Government and will last for three years, ending in March 2013. Two of the 10 broad themes within the Agreements bear directly on the sustainability agenda committing the local authority to ensure that 'Wales is an energy efficient, low carbon and low waste society' and that 'the environment is protected and sustainable'. The Welsh Government works with local authorities in both developing and monitoring these outcome agreements. Highlights from 2010-11 include:

- Newport City Council reduced emissions by 12.4 % through commitments such as switching off over 1000 street lights between midnight and 5.30am.
- Powys County Council reduced building emissions by 3.4 %, increased the number of fuel-efficient vehicles in its fleet and established a joint courier service with the local health board to minimise vehicle use.
- Gwynedd Council reduced building emissions by 12.2 % and vehicle emissions by 9.9 % compared to levels in 2005-6 and 2007-8 respectively. Its local public service partners reduced building and vehicle emissions by 8 % on the same terms.



10.20 Commission: Further progress should be made on the strategic role for local government in energy efficiency and generation, building on the renewable energy assessments and Green Deal implementation.

Welsh Government response:

10.21 The Welsh Government recognises the key role that local government can play in promoting energy efficiency. We have worked closely with local authorities throughout the development of the *arbed* programme and every local authority in Wales has submitted at least one project for consideration in the first round of funding in 2012.

10.22 We raised awareness of the opportunity that the Green Deal offers and will continue to work with local authorities in developing an appropriate role for them in Green Deal delivery in Wales as the detail of how Green Deal will work becomes clearer.

10.23 Commission: The Welsh Government must demonstrate clear leadership on the work in the low carbon spatial plan which helps build a resilient Wales, and ensure that it is taken forward in the Programme for Government.

Welsh Government response:

10.24 We welcome the Commission's recognition of the work undertaken by the Wales Spatial Plan area groups in relation to low carbon regions and will consider their comments as we reflect on how to most effectively take this work forward. The Welsh Government is developing a Wales Infrastructure Investment Plan (WIIP) to ensure future investment is strategically prioritised, delivering maximum benefit for Wales.

10.25 The Welsh Government's objectives in developing the WIIP are to:

- ensure our investments are aligned with our strategic priorities;
- lever more funding into public sector infrastructure investment to boost jobs and growth;
- drive better value from the money we are investing; and
- make better use of our assets.

10.26 The WIIP will bring strategic level Welsh infrastructure investment plans together in a single place. An important area of consideration will be the relationship between this and other national level plans, government priorities and obligations in Wales. We are already engaging with the business community and delivery partners in the public sector and third sectors – on future infrastructure challenges, opportunities and priorities for Wales. This engagement will help to shape the approach and on going iterations of the WIIP and, as such, we welcome input into this process.

Chapter 11 The wider contribution of others in Wales

- 11.1 Around a third of the emissions covered by the 3% target will be met through what we have termed, 'Wider Sectoral Contributions'. This recognises the extent to which behaviours must change across all sectors including businesses, local government, and the wider public sector, the Third Sector and communities and individuals, outside of the specific actions we have already discussed in order to achieve our targets.
- 11.2 This is a large scale, long term challenge, which will need time to develop and deliver tangible benefits. The scale of the challenge means there is no 'quick fix' to achieve the level of change we need.
- 11.3 Behavioural change is addressed throughout the actions which the Welsh Government is taking, and many of these are reported on within the policy interventions that influence the reduction of emissions from wider sectoral contributions. These include the following:
- **Transport sector:** through the development of the Sustainable Travel Centres, placing greater emphasis on smarter choices and the promotion of smart driving, cycling and walking.
 - **Residential sector:** through the provision of advice for households and individuals, encouraging the installation of energy efficiency measures in households and supporting community scale energy generation.
 - **Business sector:** through support for business emission reduction and support for low carbon research and development, skills and business development.
 - **Agriculture and land use sector:** through the provision of expert advice and training as well as targeted communication and engagement programmes.
 - **Resource efficiency and waste sector:** through the provision of expert advice and engagement to encourage individuals, local authorities and businesses to reduce waste.
 - **Public sector:** through embedding climate change in community strategies, reducing the carbon footprint of education and health services and through encouraging the public sector to showcase low carbon actions.

The view of the Committee on Climate Change

- 11.4 The Committee concluded that the strategy required significant emission reductions through *wider contributions from others*. The Committee found that the exact scope of these contributions was uncertain, and more detail needed to be provided about what exactly is envisaged here, in order to provide confidence that emission reductions will actually ensue.



The view of the Climate Change Commission for Wales


- 11.5 The Climate Change Commission recommended that:
- The Welsh Government should put in place a strong monitoring and evaluation framework which allows learning on behaviour change to be developed. This learning should then be used to drive larger and more ambitious behaviour change programmes.
 - The Welsh Government should work with local government and engage with local service boards both in mitigation and adaptation.
- 11.6 The Commission also made some recommendations for further engagement with the Third Sector:
- The Welsh Government should explore and resource ways to engage effectively with and harness the significant reach of the third sector on behaviour change programmes.
 - The Welsh Government and third sector should work together to develop a progressive pathway for third sector action on climate change, within which behaviour change is just one of several modes of action, and ensure that this is supported via all the relevant agencies and resources.

Welsh Government response:

- 11.7 The Climate Change Strategy committed to setting out how we would encourage the wider sectoral changes which are required. The Climate Change Engagement Strategy, published in August 2011, outlines our approach to encouraging action to reduce emissions and prepare for the impacts of climate change. It aims to help people, communities and organisations to:
- Relate to climate change and understand how it connects to the way they live and work
 - Feel that climate change is an issues where they can make a positive difference
 - Change the way they live to adopt more climate aware choices and habits.
- 11.8 The Climate Change Engagement Strategy has an associated delivery plan, which will be updated during 2012. The following programme of work has been delivered since its launch.

Developing a vision of a low carbon, resilient Wales

- 11.9 We are developing a tested narrative to engage and excite people in a low carbon, sustainable Wales. This project will identify the language, narratives and images which motivate people to take action themselves as well as explaining Welsh Government action.
- 11.10 We have developed a suite of business cases for action on climate change in the public, business and third sectors. We hope that providing a robust business case setting out a clear rationale for action, written in language which is meaningful to the sector, should enable more effective local delivery.
- 11.11 We have produced a DVD, in partnership with the Carbon Trust, to showcase the actions that Local Service Boards have already taken to tackle climate change and the wider benefits they have realised through this action.


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- 11.12 For the past four years our Climate Change Champions PR campaign has been successful in normalising the actions people can take to reduce their carbon footprint. We are now developing a new campaign, which will be more focused on specific groups of the public, informed by our audience research.
 - 11.13 We are currently looking at options for the development of an independent website to support engagement on climate change and sustainable development in Wales. We are looking into the most cost-effective option for delivery and intend that the site will be launched in 2012.

Developing the capacity for action at the local level and within sectors

- 11.14 Our Support for Sustainable Living framework contract continues to enable delivery of a range of key projects related to climate change and sustainable development. The Supporting Sustainable Living grant scheme has already provided support for more than 15 projects focusing on low carbon behaviour change. The scheme also enables access to training in designing effective programmes through its training grants, and is helping public, private and third sector organisations build skills in delivering these programmes.
- 11.15 We have piloted training on models of behaviour change for practitioners with development officers delivering our own programmes, and with policy makers. We funded an event for over 100 practitioners on community based social marketing, and provided individual expert advice on ten projects in development for Wales.
- 11.16 We continue to support engagement with young people through our grant funding of the Eco Schools programme and of Funky Dragon for engagement on climate change and sustainable development. We also support the Sustainable Futures Practitioners Network to share information and skills, and work regionally on climate change and sustainable development projects.
- 11.17 As part of an internal engagement programme, we are working with colleagues in the four main Welsh Government buildings to develop visual displays to show the building users and general public the way each building is tackling climate change. These pilots will be evaluated and will form the basis of a project to encourage the public sector to carry out similar projects.

Developing our Evidence Base

- 11.18 We have appointed an Evidence Base Manager, who is providing the expert resource to establish an evaluation framework for the programme of work under the engagement strategy.
- 11.19 We have produced two reports which identify the behaviours which have the most impact for emission reduction, and are the most likely to be adopted, for domestic energy and



transport. We hope that these will help a range of organisations to give their work a more productive focus.

- 11.20 We have completed a research project on the values, attitudes and behaviours of people in Wales related to sustainable living and climate change. This is the first piece of work providing a statistically significant sample within Wales: the project surveyed over 1500 people across Wales through face to face interviews. This provides organisations across Wales with a robust understanding of what people currently do, and are prepared to do, around a range of behaviours related to energy, transport, waste and water. The research was launched at a Sustainable Futures Practitioners event in December 2011.
- 11.21 From this research, we are developing an audience model for Wales which reflects how people feel about issues related to the economy, social issues, the environment and wider sustainability issues, and reflects which of these are important in people's daily lives. This model provides a strong basis for targeting engagement to specific groups and behaviours.
- 11.22 Our Pathfinders community action research programme is trialling different approaches to engaging communities with climate change issues. The six pathfinder officers are supporting their selected projects, and working with the participants to research the effective ways in which the groups work, and also to identify the potential barriers to success. The project will report in September 2012.
- 11.23 We have begun to explore options for the development of our social marketing pilots. These pilots will inform the extent to which social marketing can engage people with infrastructure projects, and how much this engagement can contribute to emissions reduction. We intend to work with phase two of the Arbed programme to run a domestic energy pilot.

Consumption emissions and ecological footprinting


- 11.24 Wales' contribution to global greenhouse gases is not limited to its own geographical area. By importing and consuming good and services from elsewhere in the world, people and organisations in Wales are encouraging the production of greenhouse gases in other countries.

View of the Climate Change Commission

- 11.25 The Commission recommended that the Welsh Government clearly demonstrate that the One Wales: One Planet ecological footprint consumption target helps to drive the work on climate change and behaviour change.

Welsh Government response:

- 11.26 We measure resources used in producing and transporting goods produced elsewhere in the world but consumed in Wales through the Welsh Government's Ecological Footprint indicator, which is one of our headline indicators of sustainable development.

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- 11.27 In 2008, the Welsh Government launched a report which recalculated our Ecological Footprint. It showed that the largest contributors to our ecological footprint in Wales are housing, food, transport and consumer items. This work provided evidence to underpin development of our Sustainable Development Scheme, *One Wales: One Planet* in which we commit Wales to use only our fair share of the earth's resources so that our ecological footprint is reduced to the global average availability of resources, within the lifetime of a generation.
- 11.28 The ecological footprint of Wales was slightly smaller than for the UK in 2006, but was more than double the average 'earthshare'. Global Footprint Network estimates for 2006 show that the average 'earthshare' was 1.8 global hectares per person. The 'earthshare' is the average amount of global resources available per person.
- 11.29 The latest data we have on the ecological footprint is for 2006 and we are exploring with the Stockholm Environment Institute at the University of York (who produced the 2006 dataset) options for recalculating Wales ecological footprint figure.
- 11.30 Reducing Wales' ecological footprint is at the heart of the Welsh Government's Sustainable Development Scheme and we are committed to helping others embrace and deliver a sustainable Wales by enabling action through policy, incentives, education and communication.

Chapter 12 Progress on meeting commitments outlined in the Adaptation Delivery Plan


- 12.1 The earlier Wales starts to prepare - by understanding our vulnerability to climate impacts, increasing our resilience and building the capacity to adapt - the better equipped we will be to manage future changes to our climate.
- 12.2 We have made solid progress in starting to prepare for a changing climate, by improving our understanding of climate impacts and by providing advice and support to organisations delivering public services in Wales. Our approach focuses on managing the risks and opportunities for each sector to ensure that Wales is more resilient and less vulnerable to climate change.

Adapting to Climate Change Impacts

- 12.3 The Welsh Government has already delivered a number of key measures set out in the Adaptation Delivery Plan. In 2011, we published new statutory guidance, *Preparing for a Changing Climate*, and the *National Strategy for Flood and Coastal Risk Management*, as well as launching a Knowledge Transfer Programme to provide support and advice to public bodies, communities and businesses.
- 12.4 The Welsh Government also co-funded the UK Climate Change Risk Assessment published in early 2012, and we will be using its findings to help shape our Sectoral Adaptation Plans. Looking ahead, we will publish further guidance and develop performance indicators to help monitor progress in delivering this sectoral approach.

The Climate Change Risk Assessment

- 12.5 The UK Climate Change Risk Assessment, (CCRA) published in January 2012 analyses the key risks and opportunities that the whole of the UK faces as a result of a changing climate, and it paves the way for discussion and prioritised action in such areas as infrastructure investment and build, health, biodiversity management and the delivery of core services. The CCRA includes a specific report for Wales that presents a wide-reaching assessment of the potential risks arising from climate change for the next eighty years.
- 12.6 For Wales, the CCRA identifies some opportunities for Wales that are likely to emerge as a result of a changing climate, but the findings indicate that these will be vastly outweighed by the costs of managing adverse impacts. The key threats for Wales include increased flooding – both on the coast and inland, lower river flows and reduced water availability in summer. In addition, the CCRA concludes that, in future decades, Wales may experience higher death rates during summer months as a result of very hot days. We may also see changes in soil conditions and biodiversity as a result of warmer, drier summers, as well as changes in species and habitats, and an increased risk of pests and diseases affecting agriculture and forestry.

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- 12.7 The main opportunities for Wales identified in the CCRA relate to an extended tourist season and the potential to increase visitor numbers, increased crop yields, and a likely fall in winter deaths as a result of milder temperatures. Each of these opportunities comes with caveats, however for example, crop yields will increase provided that the availability of water and soil nutrients is sufficient.
- 12.8 In many areas, we have already made good progress in managing and reducing the risks. The Adaptation Delivery Plan set out the specific policies and places to deliver on the commitments of the Adaptation Framework to build the evidence base on the impacts of climate; mainstream adaptation within the Welsh Government and public bodies and raise awareness of climate change impacts and how to respond to them.

Adaptation Delivery Plan

Strategic Actions

Action 1: Build consideration of climate change impacts into Welsh Government business planning

- 12.9 Sectoral adaptation planning has been identified as the key mechanism for delivering against this action.

View of the Climate Change Commission

- 12.10 The Commission recommended that the Welsh Government must take a lead role in 2012 on developing, mainstreaming, embedding and enabling action with a priority given to initiating the communities, infrastructure and business Sectoral Adaptation Programmes, which should be in place by the end of 2012.

View of the Committee on Climate Change

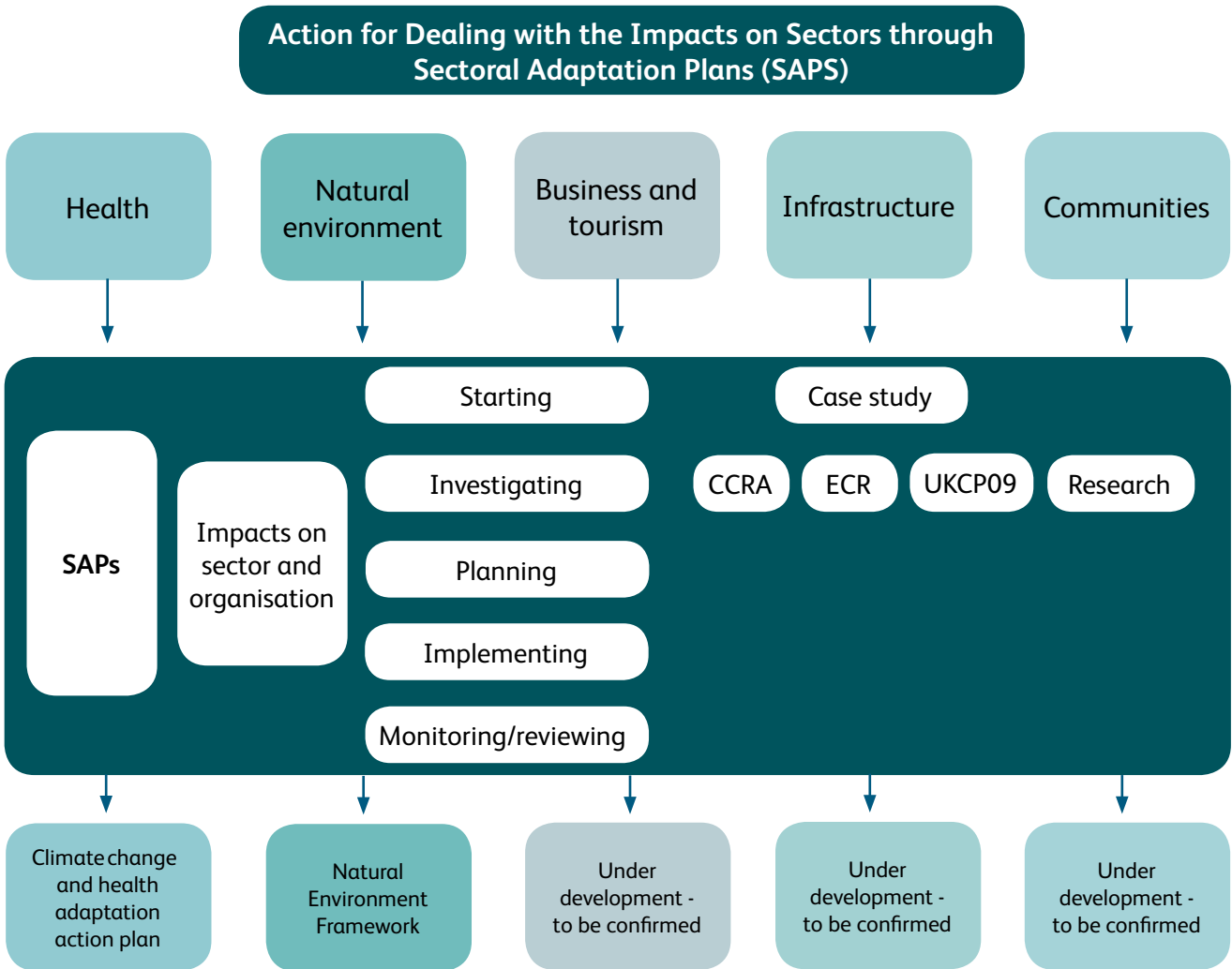
- 12.11 The Committee on Climate Change noted that the Welsh Government will need to ensure that the remaining plans are produced and providing advice on the formation and delivery of Sectoral Adaptation Plans.

Welsh Government response

- 12.12 Progress in this area has focused on securing buy-in for the formation of Sectoral Adaptation Plans and building capacity within ministerial portfolios to develop plans. A process for developing Sectoral Adaptation Plans has been produced (see Figure 9) and will be trailed within the Housing Regeneration and Heritage portfolio with a view to delivering sectoral adaptation plans for all sectors by June 2013. The Sectoral Adaptation Plans will identify the risks and opportunities for each sector, analyse the current policy response, identify gaps and barriers and put in place a programme for embedding climate change throughout the sector. A set of performance indicators will be developed for each plan.


Figure 9

Diagram illustrating how the Welsh Government is looking at sector impacts through the process of Sectoral Adaptation Plan



Action 2: Assess the risks and opportunities for Wales presented by climate change through active engagement in UK research programmes

12.13 The Climate Change Risk Assessment (CCRA) was published in January 2012. The Welsh Government is fully engaged as a co-funder of the Economics of Climate Resilience (ECR) project and are members of the UK Government’s Domestic Adaptation Programme Board. The findings of the CCRA will be used in developing sectoral adaptation plans underpinning the prioritisation of adaptation actions.



Action 3: Integrate into all public bodies in Wales the assessment of risks and opportunities presented by climate change and support the development of adaptation plans

- 12.14 A Policy Statement identifying reporting authorities in Wales and the use of adaptation powers in the Climate Change Act 2008 was published in October 2010 along with parts 1 and 2 of *Preparing for a Changing Climate* statutory guidance, which all reporting authorities should have regard to in developing their adaptation programmes. The guidance is being supported through our knowledge transfer programme with targeted workshops, pilot studies, partnership projects and the development of other tools and resources.
- 12.15 Parts 3, 4 and 5 of the *Preparing for a Changing Climate* guidance will be published later in 2012.

Action 4: Work with UK Government and relevant stakeholders to ensure an increased awareness and understanding of the impacts of climate change

- 12.16 UKCIP have an active role on the Climate Change Commission for Wales. The Welsh Government is a member of Climate UK and has developed strong links with Climate Scotland, exemplified by the sharing of knowledge in relation to adaptation guidance. We are members of the Marine Climate Change Impacts Partnership that brings together scientists, government, government agencies, and NGOs to provide advice on climate change impacts around our coast and in our seas. We continue to work with Defra and the Environment Agency on the relationship to Wales of the Environment's Agency's adaptation delivery role in England and on non devolved matters. We have developed a series of case studies on the use of UKCP09 climate projections, which is due for publication in summer 2012 alongside our final phases of our Statutory Guidance.
- 12.17 This action will be amalgamated with Action 5 and taken forward through the knowledge transfer programme.

Action 5: Targeted resource to support implementation of the adaptation components of the Welsh Government's Climate Change Strategy and wider adaptation work

View of the Climate Change Commission

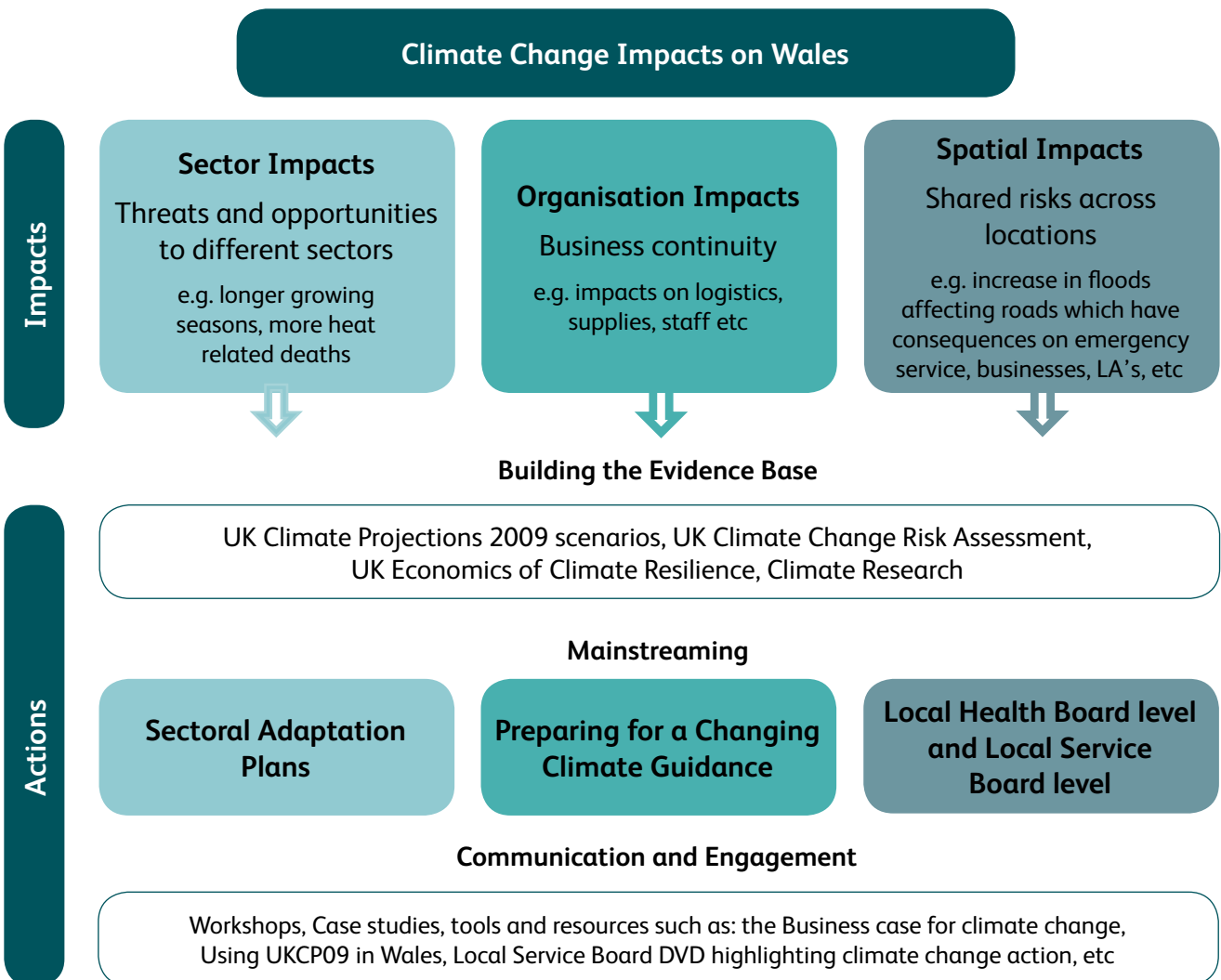
- 12.18 The Commission recommended that the Welsh Government should develop and communicate a coherent strategic approach to adaptation early in 2012, in the light of the publication of the Climate Change Risk Assessment (CCRA). Clear leadership and clarity of purpose is needed to ensure that adaptation has the profile it requires.

Welsh Government response

- 12.19** The Climate Change Strategy highlights that the impacts of climate change will affect our economy, environment and communities in Wales. We are therefore targeting resource that take account the differences in sectors, organisations and spatial locations. The targeted resource will be done through the Welsh Government’s Knowledge transfer programme which is an exchange process between the Welsh Government and its key stakeholders in Wales. It aims to build resilience against the impacts of climate change through the exchange of knowledge, skills, and resources between the Welsh Government, organisations and sectors in Wales, whilst understanding stakeholder’s needs and requirements to enable effective action against the impacts of climate change.
- 12.20** The Knowledge Transfer Programme is focusing on key policy priorities as identified in the Adaptation Delivery Plan and is utilising the behaviour change approach as outlined in the Climate Change Engagement Strategy. Figure 10 shows how the knowledge transfer will support the implementation of the adaptation components of the climate change strategy and wider work.

Figure 10

Diagram showing how climate change will impact Wales and how the Welsh Government’s is taking action through it’s policies, processes and knowledge transfer activities



12.21 The Climate Change Engagement Strategy has set out our approach for engagement. We are working in partnership, providing the resources at a national level in order to support action led at the local level. We have adopted the Exemplify, Enable, Encourage, Engage model (4 E's model) for our approach to promoting behaviour change. Our objective in adopting this approach is to catalyse action. Our approach has broadly encompassed elements set out in Table 2.

Table 2

Exemplify	Encourage
<ul style="list-style-type: none"> • Leading by example. • Achieving consistency in policies. • Ensure learning from organisations that have already looked at adaptation, are fed back to others e.g. the learning from the Changing Climate Changing Places project is being fed to others. 	<ul style="list-style-type: none"> • Expenditure – grants. Our Supporting Sustainable Living Grant includes provisions relating to adaptation. • Recognition/social pressure – league tables. • We will look to utilise other policy mechanism where possible to embed adaptation into sector areas and organisations.
Enable	Engage
<ul style="list-style-type: none"> • Remove barriers through upstream actions (such as policy development) and downstream processes (such as tools and resources). We have produced a number of tools such as the business case for the private, public and third sector to take action on climate change. • Give information – by providing it one centralised location. We are looking to continually develop our website which will contain useful tools and resources all in one place. • Train/provide skills – for key stakeholders such as the potential Reporting Authorities, see Figure 11 for programme of activity. • Provide capacity, by training, sharing knowledge, case studies and learning from one. 	<ul style="list-style-type: none"> • Community action – we have harnessed peer to peer learning by creating a DVD showing what a Local authority and Local Service Board are doing on emission reduction and adaptation. • Co-production – we will look for opportunities for organisations and sectors to work together to reduce work loads such as through Local Service Boards and the Local Authority Sustainable Development network. • We will engage with wider networks and start to look at shared risks through Local Service Boards and Local health boards. • Use networks – our approach will look to utilise existing well established networks in different sectors and organisations, to engage stakeholders such as the stakeholders in the health sector which we will look to engage with through the Climate Change and Health Working Group.

Public Sector

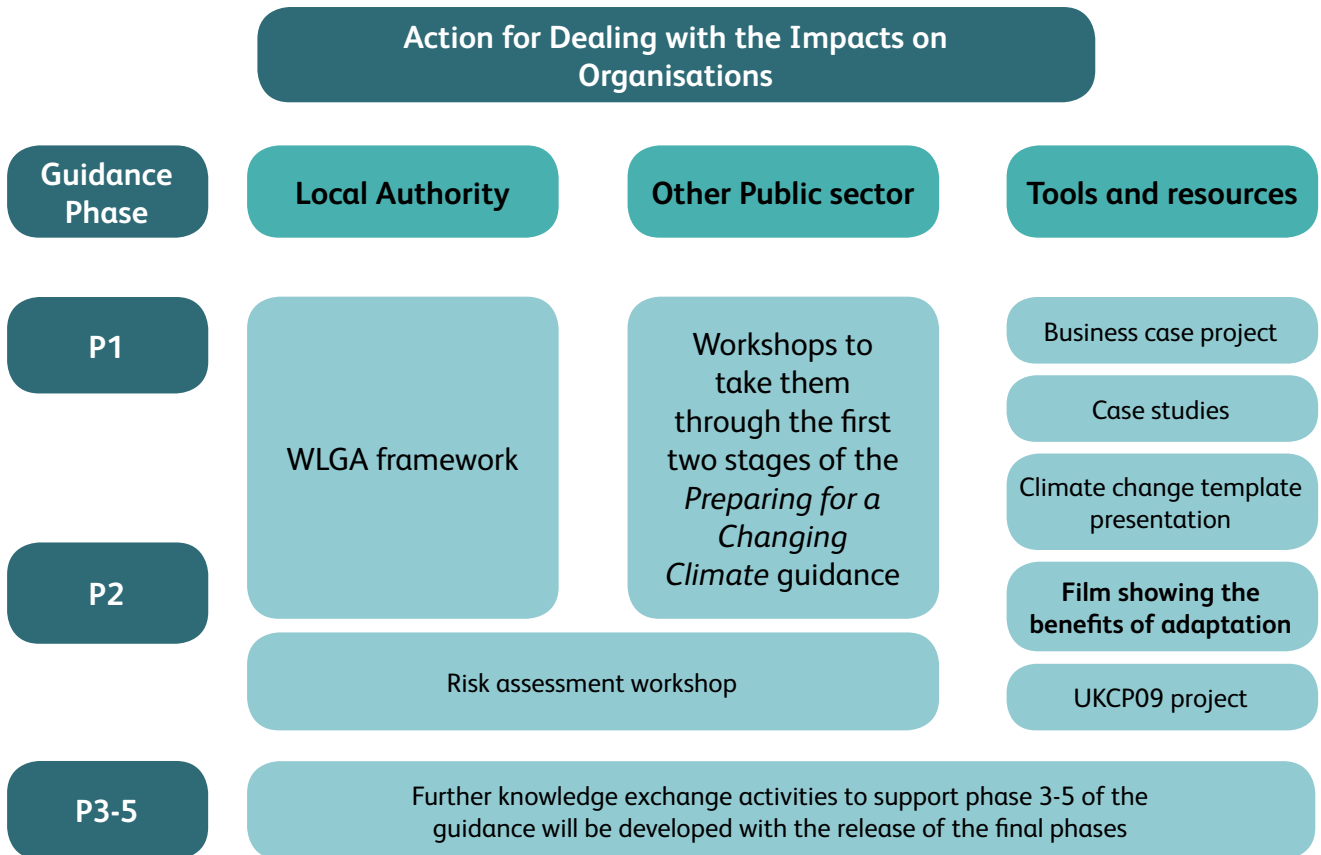
12.22 The public sector has a vital role to play in ensuring that Wales adapts to the impacts of climate change. Local authorities and the public sector deliver a range of key services and, in planning for the future of their local area and the services they deliver, they can build adaptation into decision making. The main emphasis of the Knowledge Transfer Programme is focusing on building resilience in this sector. The public sector has been identified as a priority sector for engagement due to their responsibility for national infrastructure and their vulnerability to the impacts of climate change. This classification mirrors that used to identify reporting authorities under the Climate Change Act 2008. The Knowledge Transfer Programme has initially focussed on building capacity in organisations to take them through the first two stages of the Preparing for a Changing Climate Guidance, actions include:

- Providing further support for local authorities through the Welsh Local Government Association, Sustainable Development Framework programme. It is a well established and recognised programme for the sector and ensures learning between different local authorities. Since the Welsh Climate Change Strategy was published there has been a significant increase in activity on adaptation in local authorities. In 2010 local authority engagement on adaptation issues was focused on the four pilot authorities who took part in the Changing Climate Changing Places project. There are now eleven local authorities in Wales (50%) addressing climate change adaptation in their organisation or through their Local Service Board areas. Each local authority is unique and looking at different aspects such as financial savings, the natural environment, impacts on communities, infrastructure, and organisation risks. Collectively this is a useful network of learning and resources.
- We will shortly be working with other public sector organisations to take them through the first 2 stages of the Guidance through workshops. The workshops will be held throughout spring/summer 2012 at key prearranged meetings held by the public sector organisation to maximise attendance and impact.
- A number of tools and resources have been developed to aid organisations mainstream adaptation. Many organisations are spending time and effort on developing the business case for action on climate change. To save time and effort, we have developed the business case for the public, private and third sector organisations to take action on emission reduction and adaptation.
- We have developed resources to help organisations utilise the UK Climate Projections 2009 (UKCP09). The project has undertaken a gap analysis of adaptation activity across Wales, specifically focusing on the utilisation of the UKCP09 scenarios. A case study project has been undertaken utilising the UKCP09 scenarios, to show others how they can be used. Each case study focuses on a different tool within the projections and collectively should help organisations in risk assessment planning.

12.23 Figure 11 shows knowledge transfer activities in relation to the first 2 phases of the Guidance.

Figure 11

Diagram showing knowledge transfer programme activities to support public sector organisations through the first 2 stages of the *Preparing for a Changing Climate* Guidance




Business sector

12.24 Climate change presents a range of risks for businesses in Wales. We need to consider how to adapt to the unavoidable changes that climate change will bring and how businesses can play a role in this adaptation. Changing weather events and increasing extreme weather events will have an impact on customers, suppliers and everyday logistics. We will be looking to engage with the sector through our business support activity and through existing established channels.

The Third Sector

12.25 The third sector has a fundamental role in enabling people and communities to adapt to the unavoidable impacts of climate change. This will include helping and supporting the more vulnerable members of our communities in preparing for extreme weather events



and a changing climate. The knowledge transfer programme will focus around supporting third sector organisations taking into account the impacts of climate change on their organisational processes and through the services they deliver. Please see action 19 for further information and updates on activities in relation to knowledge transfer activities in the third sector.

The Natural Environment

Action 6: Continue to develop an understanding of the effects of climate change on biodiversity and work to address them

- 12.26 We are developing a Natural Environment Framework – A Living Wales, which adopts an integrated ecosystems approach to management of the natural environment. Climate change is identified as one of the four reasons for developing the new framework, and work is underway to embed consideration of climate change impacts within it. The ecosystem services approach provides opportunities for embedding of adaptation, across this whole sector and means this sector is in position to drive adaptation agenda in Wales. A consultation on Green Paper for Living Wales is currently underway, closing at the end of May 2012.
- 12.27 The Countryside Council for Wales have published a Compendium of best practice examples of biodiversity adaptation in Wales.

Action 7: Ensure that marine spatial planning, its implementation and monitoring consider the impacts of climate change on marine and coastal ecosystems and species

- 12.28 Marine planning will provide an important tool for meeting the long-term challenges posed by climate change, and we have consulted on our approach to marine planning in Wales. Together with the other governments in the UK, we published the UK Marine Policy Statement (2011) that sets out the policies that will help achieve sustainable development in the UK marine area.
- 12.29 We will publish a National Marine Plan for the Welsh inshore and offshore areas by 2013. Using powers in the Marine Act, we will create a small number of highly protected Marine Conservation Zones, which are expected to enhance marine ecosystem recovery and resilience.

Action 8: Support and encourage land managers to adapt to the effects of climate change

- 12.30 Glastir is the Welsh Government's new sustainable land management scheme. Glastir has been designed to respond to the challenges of climate change, carbon capture, water management and biodiversity, as set out in the Common Agriculture Policy Health – check Agenda. A range of measures specifically targeted at climate change adaptation are included in the scheme and are designed to reduce the likelihood and risks in Wales of:

- **flood incidents** – through interception plantings to increase infiltration of water, and better management and restoration of key upper catchment wetland habitats which act to slow down the transfer of heavy precipitation into water courses
- **water pollution** caused by increased incidents of high rainfall – through restrictions on the applications of fertilisers and manures near water courses, greater enforcement of good practice for growing maize in areas at risk of flooding, and grants for better slurry storage linked to enforced closed periods
- **water shortages** in dry summer months – through measures which include grants for improved water efficiency and storage
- **species extinctions** under predicted climate change scenarios – the scheme aims to reduce the loss of species and habitats by i) improved protection of the overall resource and consequently increasing resilience to changed climate, and ii) targeting support at particular key species and habitats in key focal areas and networks thereby improving connectivity and potential for populations to migrate over time under changing climate scenarios.

12.31 2,904 applications were lodged to join Glastir All-Wales Element (AWE) from January 2012. There are now 2,168 live applications as 736 have been withdrawn or rejected. The Targeted Element (TE) of Glastir will direct financial support into areas where it will provide most environmental benefit.

12.32 Our Animal Health Planning Framework was developed with stakeholders and is a proactive approach to preventing animal disease. We will be reviewing and testing contingency plans for animal disease emergencies to improve our preparedness.

Action 9: Improve woodland resilience to climate change

12.33 Responding to climate change is one of the key themes in the forestry strategy, Woodlands for Wales. Glastir features a grant for woodland creation, which will improve local resilience to the impacts of climate change and guidance on adaptation is now incorporated into Glastir woodland management prescriptions.

12.34 The Forestry Commission has a target to create 100,000 hectares of new woodland in Wales by 2030. This will help to mitigate the impacts of climate change, for example by reducing run-off after heavy downpours.

Action 10: Support consideration of climate change impacts in sustainable infrastructure development and regeneration

12.35 Creating Sustainable Places Together and the Sustainable Development Tool are available and used to embed consideration of climate change in the Department for Business Enterprise and Technology.



Action 11: Publish and implement strategies addressing flood and coastal erosion risk management


- 12.36 The National Strategy for Flood and Coastal Erosion Risk Management in Wales was published on 14 November 2011. Guidance on the preparation of Local Flood Risk Management Strategies was issued on 28 November 2011.
- 12.37 The flood risk management community engagement toolkit, designed to assist risk management authorities, was launched in November 2011.
- 12.38 Guidance for risk management authorities on “adapting to climate change” and on “delivering sustainable development” through flood and coastal erosion risk management was issued in January 2012.
- 12.39 Capacity building workshops for risk management authorities in Wales on the preparation of Local Flood Risk Management Strategies will continue to take place till April 2012.
- 12.40 Development of a suite of training programmes including e-learning packages to assist with the implementation of National and Local Strategies will continue till April 2012.
- 12.41 Further guidance on “information sharing and co-operation”, the “transfer of ordinary water course regulatory powers from the EA to LLFA” and the “designation of structures and features” through flood and coastal erosion risk management will be issued by April 2012.
- 12.42 A summary of the National Strategy and guidance on its application will be issued by April 2012.
- 12.43 Further commencement of the required provisions within the Flood and Water Management Act 2010 will take place in April and October 2012.

Action 12: Support Wales Spatial Plan area groups to consider the impacts of climate change on their area

- 12.44 The future of the Wales Spatial Plan is currently under review.

Action 13: Improve resilience of water infrastructure to the effects of climate change

- 12.45 Dŵr Cymru and Dee Valley Water have explored their risks from climate change and developed plans for managing those risks. In addition water companies are required to prepare Water Resource Management Plans that look ahead 25 years and show how the companies intend to secure a sustainable balance between supply and demand for water, while taking into account the impacts of climate change.
- 12.46 Water policy in Wales is supported by the Environment Agency’s Water Resources Strategy for Wales and Action Plan.
- 12.47 A Water Strategy document for Wales will be published for consultation in Spring 2012 to inform the Welsh Government’s strategic direction for future water policy in Wales.



As part of the development of the water strategy document we will be looking at water resource availability in Wales and a range of options to plan for the impacts of climate change. We will also develop options to take forward water efficiency policies following the Walker Review consultation.

Action 14: Identify opportunities to support adaptation in the built environment

12.48 With the devolution of Building Regulations to Wales, we are now able to set new standards for new buildings. We are looking to improve the energy performance of the built environment and its resilience to climate change. Consultation on Part L of the Building Regulations will take place in April 2012 (Domestic) and in August 2012 (Non domestic).

12.49 A process for developing Sectoral Adaptation Plans has been produced and will be trailed within the Housing Regeneration and Heritage portfolio in Spring 2012.

Action 15: Review the resilience of the transport infrastructure to the effects of climate change, and develop a programme to address risks

12.50 A key long-term outcome of the Wales Transport Strategy is a transport system that is adapting to the impacts of climate change.

12.51 We are making progress in a number of areas:

- **Biodiversity:** In 2004 we published a Trunk Road Biodiversity Action Plan with the aim of maximising opportunities for protecting and enhancing our diverse natural environment and supporting its ability to adapt to the likely effects of climate change.
- **Drainage:** We are currently updating our records of drainage assets on the trunk road network and maintaining a list of areas across the network that have experienced flooding or are at a high risk of flooding so that mitigation measures can be implemented in the short to medium term, pending permanent works to the address the problems. New schemes are designed with reference to best practice guidance on sustainable drainage solutions.
- **Water Quality:** We are currently identifying every outfall on the trunk road network, assessing its potential to pollute watercourses and preparing a priority programme of remedial works to achieve the 2015 deadlines for water quality controls set out in the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.
- **Design Standards and Written Guidance:** The trunk road network in Wales is operated, maintained and improved in accordance with the Design Manual for Roads and Bridges. These standards are frequently updated to ensure that they reflect best practice with respect to climate change, environmental management and sustainability.

Action 16: Review Shoreline Management Plans

12.52 All four draft Shoreline Management Plans have been to public consultation and will be signed off by Welsh Government by the end of 2012.



Action 17: Explore the consequences of climate change for the historic environment

12.53 The potential impacts of climate change on the historic environment of Wales is currently being considered by the Historic Environment Group (HEG) which is considering the threat posed to a wider range of historic assets including historic parks and gardens and also historic buildings as well as Scheduled Ancient Monuments. This study will consider the impact of flood risk, changing temperatures, increased rainfall, coastal erosion, drying out of wetland locations and other consequences of climate change on historic assets. The first phase of the results of the study will be available in May 2012.

Communities

Action 18: Build adaptation into local authority operational processes

12.54 Paragraph 12.19-12.22 describe activity underway in relation to local authorities.

Action 19a: Inform community and third sector organisations of the impacts and consequences of climate change


Action 19b: Support and enable community and third sector projects that help their communities adapt to climate change

Action 19c: Support equalities and human rights organisations to identify and understand the social justice implications of climate change adaptation

12.55 Last year the Welsh Government in partnership with the Welsh Council for Voluntary Action held four events across Wales looking to build resilience in communities to the impacts of climate change. Over 100 people attended and the events looked at how the impacts and consequences of climate change were going to affect organisations and the communities that they worked with. The events looked to engage and build capacity within the sector through the development of adaptation plans.

12.56 Going forward we will be looking at adaptation by piloting work that is targeted at deprived communities using an area based approach. This programme is currently being shaped.

12.57 We have integrated adaptation into grant funding schemes such as the Supporting Sustainable Living Grant and the Big Lottery Fund, to encourage more organisations and communities to undertake adaptation projects. We have directed the Big Lottery Fund, who is the delivery organisation for the Dormant Accounts fund, to focus the grant allocation towards community adaptation projects. The announcement of the programme of work will take place later in 2012.

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- 12.58 Last year we held a joint seminar research seminar event with the Joseph Rowntree Foundation. The event was aimed at policy officials, third sector organisations and local authorities and aimed to disseminate the latest UK research around social justice issues to enable attendees to take account climate change and social justice issues in their work.
- 12.59 Going forward we have made an annual commitment to continue to hold these types of events in Wales with the Joseph Rowntree Foundation and Welsh academic institutions.

Action 20: Raise awareness of flood risk

- 12.60 An independent review of raising awareness and public engagement activity undertaken across Wales was completed in October 2011 and a review of the three raising awareness pilot studies funded by the Welsh Government completed in November 2011 and published in December 2011. A toolkit of best practice for raising awareness and public engagement published in October 2011. This is primarily aimed at local authorities but has some wider application.
- 12.61 An England and Wales working group was established to look at communicating flood risk in relation to caravan and camp sites and produced its first report in November 2011. We will establish a policy to implement the recommendations in the report from the caravans and camp site working group by April 2012.
- 12.62 We will identify the requirements of flood victims and those at risk of flooding in terms of advice and support by May 2012 with a view to establishing a service akin to the National Flood Forum in England.

Action 21: Progress Climate Change Partnership with Mbale, Uganda and manage the delivery of agreed outcomes

- 12.63 Wales and the Mbale region of Uganda were selected as two of the pilot regions for the UN Development Programme (UNDP) Territorial Approach to Climate Change project. This project is using Welsh expertise to develop an Integrated Territorial Climate Plan for Mbale, which will then be used to draw international funds to help the Mbale region adapt to climate change. Glamorgan University has been appointed as consultants to the Welsh Steering Group and four expert placements have been made to date with further Welsh placements identified.

Health

Action 22: Implement and mainstream the Heatwave Plan for Wales 2009: 'A Framework for Preparedness and Response'

- 12.64 The Heatwave Plan for Wales was implemented in readiness for summer 2009, and adapted as necessary for the summer of 2010 and 2011 respectively. Key stakeholders are engaged and notified in advance of the heatwave period that the Heatwave Plan for Wales is in place and available on the Welsh Government's website for the period 1 June to 15 September each year. This approach will continue for future years.



Action 23: Implement Climate Change Adaptation Action Plan for Health

12.65 The Climate Change Adaptation Action Plan for Health has been implemented and updates against actions are reported in advance of biannual meetings of the Climate Change and Health Working Group. Of the 21 actions identified in the Action Plan 81 % have a status of “GREEN” (either completed or on-going) and 19 % have a status of “AMBER” (work has commenced but there are slight delays). In the cases of all actions classed as “AMBER” the slight delays are due to circumstances outside of the Working Group’s control but the delays do not present any immediate concerns. Following the publication of the CCRA, the Climate Change Adaptation Action Plan for Health is currently under review.

Business and tourism

Action 24: Provide adaptation advice to businesses

12.66 We provide advice and support to Small and medium sized enterprises (SMEs) through our Entrepreneurship and Business Information Service and via the Business Wales website.

12.67 We recognise the importance of tourism in Wales and the challenge that climate change presents to the industry. We have developed a suite of information aimed at helping tourism businesses to respond to the challenge in a sustainable way. The sustainable tourism online toolkit is an example of this as well as other initiatives underway as part of our Sustainable Tourism Framework. The work to date includes:

- Impacts of climate change on tourism destinations;
- Emissions from tourism industry;
- Adaptation and mitigation measures and practices; and
- Practical case studies.

Chapter 13 Commentary on delivery of UK measures in Wales


- 13.1 Around a third of the emissions covered by the 3% target will be met through the implementation in Wales of measures that are the responsibility of the UK Government. The UK Government's Carbon Plan, which was published in December 2011, sets out the Government's plans for achieving the emissions reductions committed to in the first four carbon budgets, on a pathway consistent with meeting the UK Government's 2050 target of an 80% reduction in greenhouse gas emissions, against a 1990 baseline.
- 13.2 The UK Carbon Plan brings together the Government's strategy to curb greenhouse gas emissions and includes actions and milestones for the next five years and contains details of the package of policies aimed at delivering the emissions reductions necessary to meet the first three carbon budgets and to provide incentives for the development and take-up of the portfolio of technologies necessary to put the UK on track to meet the 2050 targets.
- 13.3 Domestic policies such as the Green Deal, the Renewable Heat Incentive, roll-out of Smart Meters and Enhanced Capital Allowances will all contribute to meeting the 3% target here in Wales.
- 13.4 In its 3rd Progress Report to Parliament, published in June 2011, the Committee on Climate Change reported that underlying emission trends during 2010 were broadly flat. Analysis of the UK Government's performance indicators showed mixed progress in implementing abatement measures. The Committee found that, while emissions were continuing to run significantly below the first budget cap, acceleration in the pace of emissions reduction would be needed if future carbon budgets are to be achieved. The report highlighted some key policies to drive this acceleration, including the Electricity Market Reform and the Green Deal.

The view of the Climate Change Commission for Wales

- 13.5 The Commission for Wales recommended the Welsh Government ensure Wales is ready for the Green Deal by ensuring that appropriate funding mechanisms support structures and communication is in place for homeowners and businesses.

Welsh Government response:

- 13.6 The Green Deal is a UK Government-led initiative and stems from the largely market led finance mechanisms established through the Energy Act 2011. It aims to establish a new financing framework enabling private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses. In doing so it attempts to overcome some of the financial barriers to the uptake of energy efficiency measures without up-front costs being incurred.
- 13.7 Given the market led nature of the initiative, the majority of demand for it will be driven by the market itself, without government investment in marketing. Instead the majority of marketing and the costs associated with it will be borne by those participating in the market i.e. Green Deal Providers, Advisors, Installers and ultimately customers.

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- 13.8 The Green Deal does offer specific opportunities for Wales, notably, support to the supply chain to ensure they are positioned to participate in the market, ensuring that local authorities and others in Wales can make informed decisions about the role that they wish to play in the Green Deal. To date the Welsh Government has maintained an enabling role, raising awareness of the opportunities and allowing potential participants in the market to determine whether they wish to participate.
- 13.9 The Welsh Government responded to the UK Government consultation on the Green Deal which closed in January. The issues raised by the Welsh Government were focused on: consumer protection; the links between the Welsh Government's own programmes, Nest and arbed; the focus of the new Energy Company Obligation (ECO) and the need to manage and develop the supply chain.
- 13.10 With regard to the ECO, Welsh Government is maintaining discussions with Department for Energy and Climate Change the ECO to ensure Wales maximises its share of the ECO and can align our own programmes, Nest and *arbed* alongside the ECO.

Chapter 14 Future reports from the Welsh Government

14.1 Future Welsh Government reports assessing progress towards our climate change commitments will draw on the performance indicators described in this report and set out in detail in the accompanying Technical Annex. These reports will reflect performance in relation to the most up to date emission inventory data available so that progress in delivering our emission reduction targets can be assessed. The Welsh Government will make a statement this autumn to confirm the 2006-10 emissions baseline against which our 3% and associated sectoral targets are being measured.

14.2 The Welsh Government's next annual progress report will be published in the autumn of 2013 and will reflect actual emissions performance in the first target year, 2011. This report will respond to future advice from the UK Committee on Climate Change and the Climate Change Commission also. At the same time, the Welsh Government will publish refreshed Delivery Plans for Emission Reduction and Adaptation.

14.3 Figure 12 sets out the indicative timeline for publishing future reports.

Figure 12

Indicative timeline for future Welsh Government annual reports, associated emission figures and independent advice and challenge

