



Llywodraeth Cymru  
Welsh Government

# Sustainable Development and Climate Change Annual Report

2015

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## Ministerial Foreword



I am pleased to present the Welsh Government's Sustainable Development and Climate Change Annual Report. This report fulfils our duties under section 79(6) of the Government of Wales Act 2006 and Section 80 of the Climate Change Act 2008. The report sets out our progress and activities on sustainable development and climate change over the last year.

This period has seen momentous changes both at home and internationally. Internationally, we have seen the adoption of the UN Sustainable Development Goals and agreement on a binding international framework for tackling climate change. Here in Wales, we have reflected this agenda in two world-first pieces of legislation: the Wellbeing of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016, which translate these international goals into a progressive statutory framework tailored to Wales' needs. I firmly believe that this legislation will provide the lasting constitutional basis for ensuring that sustainable development is at the heart of everything we do and the decisions we take.

This report records our current progress against our existing targets and indicators. Our Sustainable Development indicators show there has been general improvement and once again we have met our 3% annual emissions target. Our emissions against the 40% target for 2020 have increased however, highlighting that more must be done. Our legislative adoption of statutory targets and carbon budgeting will provide the basis to accelerate delivery, and sends a clear and positive signal to businesses of the move to a clean economy and low carbon society, building confidence and providing certainty for investment.

The report features, for the last time, commentary from Peter Davies, the outgoing Commissioner for Sustainable Futures and Chair of the Climate Change Commission for Wales. I am sincerely grateful to Peter for all his hard work over the years. The creative leadership he has shown, especially during the public conversation on the 'Wales we Want' reinforces my conviction on the importance and real value of ensuring that people, communities and businesses are fully engaged in the debate on the future of our nation. I look forward to working with his successor, Sophie Howe, the first statutory Future Generations Commissioner for Wales, in helping to make our ambitions a reality.

A handwritten signature in black ink that reads "Carl Sapan". The signature is written in a cursive style.

## Executive Summary

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This Annual report sets out the progress made in advancing sustainable development and tackling the causes and consequences of climate change. It also summarises many of the key actions taken by the Welsh Government over the reporting period. The report is divided into four key parts:-

### ***Wales and the world*** –

Over the last year there have been landmark international agreements on both sustainable development and climate change, with the United Nations Sustainable Development Goals and the Paris Climate Agreement, which give countries a common focus for action. The new agenda calls on countries to begin efforts to achieve 17 Sustainable Development Goals (SDGs) over the next 15 years, while reducing emissions to near net zero in the second half of the century if we are to avoid catastrophic climate change. The Agreements work together and reinforce one another. A strong climate agreement, backed by action on the ground, will help us achieve the Sustainable Development Goals to end poverty, build stronger economies and safer, healthier, and more liveable societies. Twelve of the seventeen Sustainable Development Goals directly involve taking action on climate change – in addition to climate change having its own goal.

***What we've done*** – In parallel with the international agenda, we have brought forward legislation for sustainable development through the Well-being of Future Generations (Wales) Act 2015, which has incorporated a national conversation on the Wales We Want to see for 2050 with people and communities across Wales. We believe that the Act is the first in the world to make a legislative

link to the UN Sustainable Development Goals agreed in September 2015, and is the first of its kind to put in place its own set of sustainable development goals within legislation. Wales is also in a small group of countries which has established a statutory Future Generations Commissioner role. This is complemented by the work on the Environment (Wales) Bill, which when enacted will make Wales, as far as we know, one of the first countries to fully legislate for the UN Convention on Biological Diversity, and one of the first state or regions to legislate for carbon budgets.

***Measuring progress*** – This section details the progress made using different measures and indicators. In terms of progress the latest set of Sustainable Development Indicators for Wales<sup>1</sup> showed that:

- 25 showed clear improvement;
- 16 showed little or no change;
- None showed a clear deterioration;
- 3 have insufficient or no comparable data.

All indicators which showed a clear improvement in 2013 have continued to show a clear improvement in 2014. In addition, 3 indicators which showed 'little or no change' in 2013 have showed a 'clear improvement' in 2014; these were Ecological impacts of air pollution (acidity), Health inequality (infant mortality) and Benefit dependency.

In addition, in terms of our emissions, once again we have met our 3% annual

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<sup>1</sup> How do you measure a nation's progress: Proposals for the national indicators to measure whether Wales is achieving the seven well-being goals in the Well-being of Future Generations (Wales) Act 2015, Welsh Government (2015) <http://gov.wales/statistics-and-research/sustainable-development-indicators/?lang=en>

emissions target and provisional data indicates that we are also on course meet the target for 2014. In terms of progress against our wider 40% target by 2020 however, the report shows that in contrast our total emissions have decreased by 11.9% against the 1990 baseline. In 2013 emissions in Wales rose by 10.3% compared with 2012 driven predominantly by an increase in emissions from the iron and steel sector and a shift from natural gas to coal use in power stations.

In setting out the contribution to the 3% target from each of the key sectors, the report shows that all sectors have reduced their emissions in comparison with the baseline, the reductions for each sector being as follows: Transport Sector (-8.7%), Residential Sector (-10.5%), Business Sector (-20.1%), Agriculture and

Land-use sector (-4.5%), Resource Efficiency and Waste Sector (-46.7%) and the Devolved Public Sector (-13.6%).

Overall, this means that all sectors have reduced their emissions since 2012, although the rate of progress has varied between the different sectors with the Resource Efficiency and Waste Sector showing the greatest reductions of -14.5%.

***Additional actions and sector progress***

- Annex 1 details key actions taken by the Welsh Government, which supplements the programme for government progress report published in 2015. Annex 2 details the sector progress.

## Commentary from Commissioner for Sustainable Futures and Chair of the Climate Change Commission for Wales

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I have had the honour of holding independent roles related to the Welsh Government's duty to promote sustainable development since 2007; first as the Commissioner for Wales on the UK Sustainable Development Commissioner to 2011, then as Commissioner for Sustainable Futures and Chair of the Climate Change Commission. Over that period, I have had the opportunity to provide a commentary on the Welsh Government's Sustainable Development Annual Report.

I have always been clear that the Sustainable Development Annual Report, as required by the Government of Wales Act, should represent a snapshot of the contribution that the Programme of Government has made towards our long term development goals over the last year. It therefore needs to address the material issues, be focused on outcomes, include lessons from failures and be accessible to all. Each year this commentary has included a reflection on the weaknesses in

the report in delivering against these principles and this year is no different in that there is:

- the overlaying of the Sustainable Development Indicators with no connection to the reports on programmes and policies
- little analysis of the contribution of interventions to overall progress against the indicators or assessment of what is making most material impact
- much focus on commitments and inputs as opposed to outputs and outcomes, with gaps in reporting on key programmes such as Resource Efficient Wales
- a need to address difficult issues where there is debate on policy direction, such as the M4 relief road and their contribution to sustainable development
- difference in approach from the various contributing departments, sometimes retrofitting work against sustainable development principles
- little focus on how the report can engage with the public
- always the sense that the report is bolted on and disconnected from reporting on the Programme of Government.

I am therefore delighted to say that this commentary will be the last on a report of its type! The Well-being of Future Generations Act draws on the lessons of the past and addresses the weakness of sustainable development being a bolt on concept. It will provide a much stronger legislative framework for ensuring better delivery and reporting, not least by hardwiring the connection between our

national goals and indicators with the Programme of Government.

The report is right then to emphasise the importance of the legislation that has been introduced over the last year and to set it in the context of global developments. I have always emphasised that our commitment to sustainable development has been a distinctive dimension of the devolution journey. This new legislation represents a major step forward in addressing the past lessons and providing global leadership for the future. It has been recognised by the United Nations in the landmark year of the UN Sustainable Development Goals and the Paris Climate Change agreement.

The evidence from global leaders clearly shows that progress is dependent on clear, consistent decision making, backed by a strong regulatory framework, built on a partnership between public, private and voluntary sectors and communicated via transparent progress reports.

The experience of recent years indicates the importance of consistency in decision making across all parts of the public sector. The majority of issues raised with me as Commissioner were connected with the lack alignment between national policy and local implementation. It is hoped that the new legislation, which covers all of the devolved public sector, will ensure a much greater alignment and consistency in decision making across the public service, focused on common goals and based on common principles. There is no doubt that public bodies will require a step change if they are to deliver the intent of the Wellbeing of Future Generations Act.

There are important lessons that need to be taken forward from this report into the implementation of the Act:

- The role of indicators to inform policy and to act as a catalyst for communication is significantly affected by the time lag associated with their production, as with the Ecological Footprint which relates to 2011 data
- The nature of the high level sustainable development indicators means that it is unlikely that annual progress reports will show significant shifts, so they are ineffective in stimulating national debate and action. I would encourage the Future Generations Commissioner to establish a core list of drivers of progress, with associated proxy indicators, where there would be clearer evidence of annual progression on issues necessary to shift the long term national indicators.
- Indicators mean little without milestones and benchmarks to establish whether "*Wales is moving in the right direction at the right pace*". The setting of milestones required under the WFG Act will be critical process for the new Government and Commissioner, as they need to be understood and owned by all.
- The contribution of Government interventions to progress against indicators can be difficult to attribute, but there needs to be a much greater focus on outcomes and communication of the effectiveness of specific programmes.
- The report needs to be set within a communications and engagement plan that can involve wider society in reviewing progress towards the Wales we Want. The Wales we Want national conversation highlighted that we have a long way to go in truly engaging and



empowering people and communities, so it is critical that the reporting process connects and forms part of a two-way conversation

- The importance of being part of the CIPFA Global Public Sector reporting pilot, which was a recommendation in last year's commentary, as a means of improving standards of reporting across the public sector.

This Annual Report also incorporates the Welsh Government's commitment to report annually on the progress in delivering the climate change strategy. There is positive progress against the annual 3% emission reduction target on devolved areas and it is good to see the emphasis on adaptation and resilience being reported. The performance against our 2020 40% reduction target highlights the challenge for our country. We have a proportionately larger concentration of high energy using manufacturing companies as anchor companies in our economy; and our devolved government has limited levers and is heavily reliant on the impact of UK and EU policies for emission reduction. The example of renewable energy is a case in point, where progress is significantly dependent on UK Government policy. Nevertheless, in this case the relative lack of progress on community scale renewable energy remains a frustration and a disappointment.

The passing of the Environment Bill will undoubtedly provide a stronger legal framework for emission reduction, with responsibilities for carbon budgets across

government. Meeting the scale of the challenge will require a step change in our approach as set out in the Climate Change Commission's manifesto.

There is no doubt that we have made important progress since 2007, with areas of outstanding success such as in recycling rates. There have been great leadership examples from public bodies, business and community groups, many of whom have demonstrated their commitment through signing the Sustainable Development Charter. It is very important that Government continues to enable the action of others and the Charter can play a key role going forward.

Progress has not yet added up to the transformation set out in the aspirations best summarised in Welsh Government's 2009 "One Wales One Planet" sustainable development scheme. However, the Paris Agreement and the commitment to the UN Global Goals demonstrate that we are now in a different place with a clear global consensus for action across countries and companies. I believe there is a strong platform for the next Government to deliver against these raised expectations.

My Commissioner journey began as a two day a month appointment with one member of staff. It ends by handing over to a Future Generations Commissioner with legal powers and duties, backed by a well-resourced office. Finally, I would like to take this opportunity to thank Cynnal Cymru staff for the great support they have provided over the last four years and to wish Sophie Howe well in her exciting new role.

## 1. Introduction

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### ***Why do we need a sustainable development and climate change annual report?***

We are required by law to report on our activities in relation to sustainable development and climate change. These duties are set out in section 79(6) of the Government of Wales Act 2006 and Section 80 of the Climate Change Act 2008. More specifically we are required to report on how the proposals set out in the Sustainable Development Scheme have been implemented in the last financial year and actions we have taken to tackle the causes and consequences of climate change.

In the future we will need to report differently. That is because the Well-being of Future Generations (Wales) Act 2015 (the 'WFG Act') comes into force, placing new requirements on Welsh Ministers to report on progress and a statement of the arrangements made to promote sustainable development. These are based on section 12 and 16 of the WFG Act. After this year's report we will put in place a new set of reporting arrangements for the Welsh Ministers, also to be applied separately to specified public bodies across Wales.

However, with the current Welsh Government's term of office due to end before the next reporting period there will not be a continuation of its Programme for Government, or reporting against it, beyond that point. Future reporting on sustainable development will instead be based on Sections 12 and 16 of the Well-being of Future Generations (Wales) Bill/Act 2015.

As a Government we also report on the progress we have made on the commitments we set out in 2011 through our Programme for Government. Our

sustainable development and climate change report therefore supplements this report with more information about what we've done.

### ***What is sustainable development?***

Sustainable Development is the central organising principle of the Welsh Government and over the last few years we have been working on integrating and aligning the Welsh Government's Programme of Government's actions with how we are promoting sustainable development. The last Sustainable Development Annual Report (2013/14) provided information on key areas of activity around the Programme for Government's commitments.

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... "sustainable development" means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals"

(Section 2 of the WFG Act)

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That approach was taken to further illustrate how sustainable development, as a central organising principle, was aligned to the Welsh Government's plan of action. This report builds on that step by outlining key examples of action we have taken that takes forward our commitment to

sustainable development. However, as such it is not designed as a comprehensive overview of Welsh Government activity, for which you should refer back to the Programme for Government Progress Report published in June 2015<sup>2</sup>

emission reduction performance indicators developed for each sector.

As recognised at the UN level through the key international agreements on the Global Goals and climate action, sustainable development is not possible without tackling the challenge of climate change. Taking a lead from the new international framework, this report therefore integrates and aligns reporting on our progress on climate change with the steps taken on sustainable development

### ***How is the report structured?***

This Annual Report starts with the global context for sustainable development and climate change and what this means for Wales. It then summarises the key progress that has been taken over the last year, in particular the action we have taken with other to legislate for sustainable development (Well-being of Future Generations Act) and the environment (Environment Bill). It then reports on the indicators we have in place to measure sustainable development in Wales, and our carbon emissions. The report then highlights key examples of activity on sustainable development and climate change against the structure provided by the Programme for Government reporting arrangements.

Lastly, an Annex is included setting out progress on emissions for each sector and explaining the impact of moving to Phase 3 of the EU's Emissions Trading System (EU-ETS). This report is accompanied by a Technical Annex, which includes the

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<sup>2</sup> <http://gov.wales/about/programmeforgov>

## 2. Wales and the world



**“What Wales is doing today the world will do tomorrow”**

(Nikel Seth, Director Sustainable Development, United Nations, 2015)

## 2.1. What has been happening internationally?

“This is the people’s agenda, a plan of action for ending poverty in all its dimensions, irreversibly, everywhere, and leaving no one behind,”

(Ban Ki Moon, 2015)

*Wales is not alone in finding ways to address and respond to some of the long term sustainability challenges our communities face. To become a globally responsible country means preparing, and at times, leading the way in contributing to a more sustainable world. This section tells the story of what has been happening internationally over the reporting period to set the context for what we have done in Wales.*

### Global goals

Since 2012 countries across the world, led by the United Nations have been engaged in a large exercise to develop a set of Sustainable Development Goals (SDGs) to **end poverty, protect the planet, and ensure prosperity for all** as part of a new sustainable development agenda. These goals build upon, and replace the Millennium Development Goals that covered the period 2000-2015.

The process of arriving at the post 2015 development agenda was Member State-led with broad participation from Major Groups and other civil society stakeholders. On 25 September 2015, the United Nations General Assembly formally adopted the universal, integrated and transformative 2030 Agenda for Sustainable Development, along with a set of 17 Sustainable Development Goals. Each goal has specific targets to be

Figure 1 – The 17 Sustainable Development Goals



Source: [www.un.org](http://www.un.org)

achieved over the next 15 years.

These new goals are outlined in [‘Transforming our world the 2030 Agenda for Sustainable Development’](#) agreed by the UN General Assembly<sup>3</sup>. They are a set of universal and inclusive goals that include the goal to end poverty, promote sustainable prosperity and well-being for all, enhance the natural environment and address climate change and are key milestones in global history.

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***For the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and people like you***  
(United Nations, 2015)

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The Goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.

People	We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality in a healthy environment.
Planet	We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.
Prosperity	We are determined to

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<sup>3</sup> Transforming our world: the 2030 Agenda for Sustainable Development, 2015 (<https://sustainabledevelopment.un.org/post2015/transformingourworld>)

	ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.
Peace	We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.
Partnership	We are determined to mobilize the means required to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.
Source : Transforming our World, United Nations (2015)	

This is the first time in human history that all nations have come together and agreed a common position on Sustainable Development and a common focus for action. In his speech to the United Nations the UK Prime Minister stated

*“So we commit to make progress in a way that is sustainable and protects our one and only planet for the long term and treasures and conserves our natural resources for future generations”.*

The new Agenda calls on countries to begin efforts to achieve 17 Sustainable

Development Goals (SDGs) over the next 15 years.

A new monitoring process will be established to measure progress against the 17 goals and 168 targets which will be reported on annually.

Countries will now need to work together to implement the SDG's. The mobilization and means of implementation, include financial resources, technology development and transfer and capacity-building, as well as the role of partnerships, are also acknowledged as critical.

### ***United Nations Framework – Convention on Climate Change***

In December the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) took place in Paris. The summit had been hailed as our last chance to secure an international agreement to limit global climate change to two degrees Celsius, above which the UN's Intergovernmental Panel on Climate Change (IPCC) advises that the impacts pose a threat to humanity and could lead to irreversible climate change.

The Paris Agreement was an historic step forward, with almost 200 countries committing to action which they are held to account on for the first time ever. It marks a clear turning point towards a sustainable and low carbon future. Countries will now have to come together regularly to review their climate plans and collectively ensure that the necessary action is being taken to tackle climate change.

The deal sets out a clear long-term goal of near net zero emissions in the second half of the century, showing that the world is committed to decarbonising. This sends a strong signal to businesses that the shift to

a clean economy and low carbon society is global, irreversible and transformational, and provides confidence that will help drive the scale of investment needed. This will clear the path for the private sector to drive a long-term solution.

### **The Paris Agreement**

1. Requires countries to have national mitigation plans to reduce emissions and revisit these every five years from 2020 with a view to raising ambition in the future.
2. Mandates a stocktake of progress towards the long term goals on mitigation, adaptation, and finance, starting in 2018, and then every five years thereafter to inform countries' reviews of their mitigation plans.
3. Locks-in the below 2 degree goal as the global objective – and goes further by stating that efforts should be pursued to limit to 1.5 degrees.
4. Sets a collective long term goal for near net zero emissions in the second half of the century (so at least by the end of the century) – which all countries will work together to achieve. This gives a clear sense of direction to drive investment and help reduce the cost of climate action through cheaper technology and greater innovation.
5. Establishes a single framework for enhanced transparency which requires countries to report on their progress in implementing and achieving their mitigation plans, and then subject these to independent review and multilateral consideration.
6. Establishes a new long term goal to strengthen adaptation and resilience and reduce vulnerability to climate change. Countries will share their adaptation planning and cooperate to support those developing countries who need it, helping them adapt to climate change.



## 2.2. What we've been doing

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“Wales is not unique in trying to do this, but we are ahead of the game. ...We have been keeping abreast of the international developments to ensure that what we do in Wales mirrors that at the UN level.”

Carl Sargeant , Minister for Natural Resources  
(2015)

*The context for countries across the world to change has been made clear at the international level. We've been busy over the past few years to look at whether our legislation needs to change so that we become a more sustainable country, this has involved a conversation with people across Wales about the wales they want to see. This section describes how we have done this.*

### **Legislating for sustainable development**

In 2011 we committed to introducing legislation to make sustainable development the central organising principle of the Welsh Government and the devolved public sector in Wales and establishing an independent sustainable development body for Wales. Previous reports detail some of the early actions we took to realise this commitment, this report focuses on the considerable activity to pass the new law.

In July 2014 we introduced the Well-being of Future Generations (Wales) Bill to the National Assembly for Wales. This was the result of lots of policy development and engagement with stakeholders and experts to help in identifying how a new law could make Wales a more sustainable nation.

On 17 March 2015 the Well-being of Future Generations (Wales) Bill was approved by the National Assembly for Wales. This marks the beginning of a new period for sustainable development

in Wales, strengthening the governance arrangements of the Welsh Ministers and, significantly, specified public bodies in Wales.

The Well-being of Future Generations (Wales) Act 2015 will ensure that doing things in a sustainable way becomes the core principle that guides how public bodies in Wales make decisions that affect our society, our economy and our environment and culture. For the first time, public bodies listed in the Act (such as local councils, health boards and the National Library) will be under a legal duty to work towards achieving a set of shared goals which define the Wales people want to see in the future.

The main parts of the Act clarify what organisations are aiming to achieve and explain how they should work differently to achieve this; this is what is meant by sustainable development as a central organising principle.



An 'Essentials' document<sup>4</sup> has been produced by the Welsh Government as a communication to assist the reader of the Act, though this does not form part of the Act nor is statutory guidance in respect of the Act.

In developing the Act and in starting the work to support implementation we have delivered a number of key activities.

*Key activities include:-*

- ✓ *Engaging people on the wales we want* (see below)
- ✓ *Bringing experts together* – We established a Technical Advisory Group which ran between 2012 and 2014 to input into the development of the new law.
- ✓ *Assessing the impact on equality, children's rights, welsh language and rural proofing* – A combined impact assessment was completed for the Well-being of Future Generations (Wales) Bill to both meet our statutory and policy obligations but also to ensure that we took an integrated approach. This can be found [here](#)<sup>5</sup>
- ✓ *Assessing the impact of each proposed goal* – In addition to the combined assessment (above) we looked at these issues against each proposed goal. This can be found in Chapter 8 of the Explanatory Memorandum<sup>6</sup>.

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<sup>4</sup> <http://gov.wales/docs/dsjlg/publications/150428-guide-to-the-fg-act-en.pdf>

<sup>5</sup> The Well-being of Future Generations (Wales) Bill – Combined Impact Assessment, Welsh Government (2014)

<http://gov.wales/legislation/programme/assemblybill/s/future-generations>

<sup>6</sup> Well-being of Future Generations (Wales) Bill – Explanatory Memorandum, Welsh Government (2015)

[http://www.assembly.wales/laid%20documents/pri-ld9831-em-r-%20-%20well-being%20of%20future%20generations%20\(wales\)%2](http://www.assembly.wales/laid%20documents/pri-ld9831-em-r-%20-%20well-being%20of%20future%20generations%20(wales)%2)

- ✓ *Scrutiny* – Following introduction of the Bill activities were focused on supporting the scrutiny of the Bill through the Assembly and providing clarification and addressing key issues when they arose. Full details of the scrutiny of the Act can be found [here](#)<sup>7</sup>
- ✓ *Supporting an early adopters programme* – We provided a grant to the Welsh Local Government Association for their sustainable development framework which provided support to local authorities to be 'early adopters' for the new legislation<sup>8</sup> (further information below).
- ✓ *Guidance for public bodies* – in preparation for the Bill work started on the development of statutory guidance for public bodies, between February and May 2015 we coordinated an involvement period which gathered early views from stakeholders about the content and format of the guidance. A discussion document was published to prompt this discussion<sup>9</sup>.
- ✓ *How to measure a nation's progress* – We started work on the national indicators to measure the seven well-being goals, and held a number of events across Wales to gather people's views.

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<http://gov.wales/docs/dsjlg/publications/150428-guide-to-the-fg-act-en.pdf>

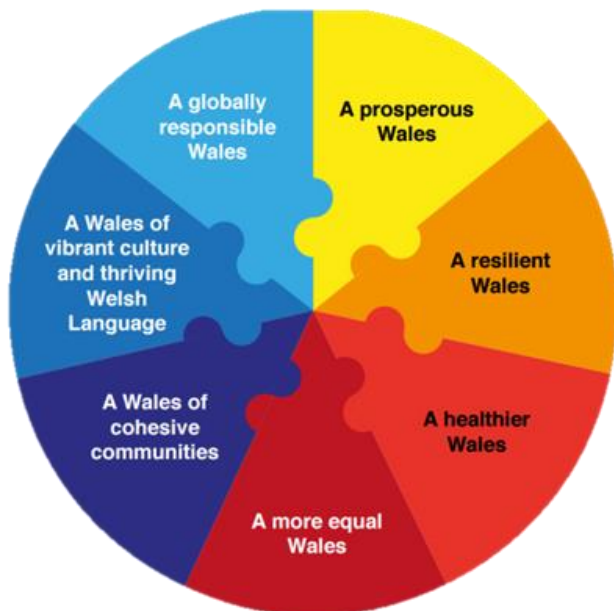
<sup>7</sup> <http://www.senedd.assembly.wales/mgIssueHistoryHome.aspx?lId=10103>

<sup>8</sup> <http://www.wlga.gov.uk/well-being-of-future-generations-act-early-adopter-resources-and-materials/>

<sup>9</sup> <http://gov.wales/topics/people-and-communities/people/future-generations-bill/drafting-guidance-for-the-well-being-of-future-generations-wales-bill/?lang=en>

- ✓ *One Welsh Public Service* - Achieving the well-being goals needs effective leadership in public bodies to drive action across Wales. To support this we have developed a common set of One Welsh Public Service values and behaviours which were launched at the Public Service Summit in November 2015. The leadership challenge for each of use, regardless of where we sit in an organisation, is to work in a way that improves economic, social, environmental and cultural well-being to help us create a Wales that we want to live in now and in the future. It is a way of thinking and behaving – developing a shared future where we can all work together with a shared purpose. Further information on the One Welsh Public Service can be found through [Academi Wales](http://www.academiwales.org.uk/)<sup>10</sup>

**Figure 2 – The seven well-being goals and 5 ways of working**



<sup>10</sup> Academi Wales <http://www.academiwales.org.uk/>

## ***A conversation on the Wales We Want***

Just as the United Nations initiated a global conversation on ‘The World We Want’<sup>11</sup>, we initiated a ‘Wales We Want’ national conversation. This started with a statement on ‘The Wales we Want by 2050’ to stimulate discussion across Wales on long term sustainable development goals that we should work to. This statement was made in February 2014<sup>12</sup> and made it clear of the need to think differently and act collectively. It recognises that in Wales too, we needed to build consensus around shared goals which are the most important to all of us, including our children and grandchildren.

The Wales We Want, ‘National Conversation’ was initiated in February 2014 by the then Minister for Communities and Tackling Poverty, Jeff Cuthbert AM, it was led by Peter Davies with support from Cynnal Cymru as part of the Welsh Government’s contract with them to support sustainable development in Wales.. More details on the wales we want can be found on <http://thewaleswewant.co.uk/>, including videos and statements by people across Wales on the wales they wanted to see by 2050.

We supported this conversation and used the findings to determine the 6 well-being goals that were included in the Well-being of Future Generations (Wales) Bill in July 2014. The National Conversation engaged around 7,000 people across Wales and tested different approaches to engage people – this

<sup>11</sup> <https://www.worldwewant2030.org/>

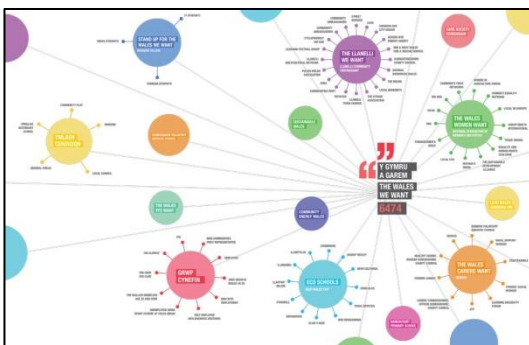
<sup>12</sup> Written Statement – The Future Generations Bill – the wales we want by 2050, Welsh Government (2014) <http://gov.wales/about/cabinet/cabinetstatements/2014/futuregenerationsbill/?lang=en>

conversation continued throughout the scrutiny of the Bill.

A key feature has been the recruitment of Futures' Champions whose role has been to take the Conversation forward, becoming advocates for future generations and raising the issues affecting their groups, communities, and organisations.

The Wales We Want Report as a pilot for the Future Generations Report, which will be a function of the Future Generations Commissioner, represents the culmination of a year-long conversation with people across Wales.

Figure 3 – The Wales We Want Report (2015)



### Early adopters

In 2014 the Welsh Local Government Association developed a work programme for Early Adopter authorities and recruited 14 authorities to explore ways in which, the then Bill, might affect their work.

They commissioned Netherwood Sustainable Futures and PWC to support 13 authorities and develop pan Wales activity and TYF to support Monmouthshire Council.

The Early Adopter authorities included: Blaenau Gwent, Caerphilly, Cardiff, Merthyr Tydfil, Monmouthshire, Newport, Powys, Swansea, Torfaen, Vale of

Glamorgan, Wrexham and the three Welsh National Parks, Brecon Beacons, Pembrokeshire Coast and Snowdonia.

The aim of the programme was to develop bespoke support for each of these authorities and develop five areas of pan-Wales activity – a diagnostic tool, member training modules; officer briefings, a webinar on using sustainable development 'upfront in management' and WLGA website development to signpost resources for authorities responding to the Act. The programme has engaged an estimated 200+ officers and members over a 9 month period.

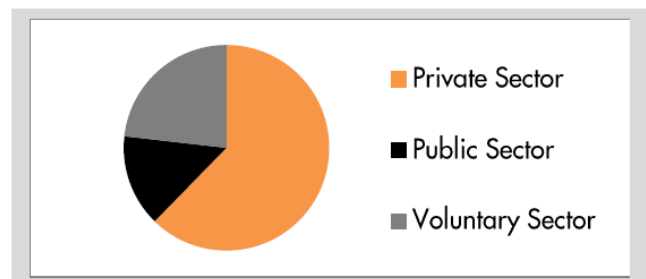
Further information can be found here :- <http://www.wlga.gov.uk/well-being-of-future-generations-act-early-adopter-resources-and-materials/>

### Sustainable Development Charter

Whilst the Act places duties on a range of specific public bodies to contribute to the seven well-being goals for Wales, many other organisations from the public, private and third sector, including

#### Breakdown of signatories by sector

There are 187 Private sector signatories, 39 Public sector signatories and 65 Voluntary sector signatories.



communities themselves can play an important role.

Over the past year the Sustainable Development Charter has continued to grow, so that by the end of the March 2015 over 290 organisations had become signatories; a growth of almost a third over the year. Around two thirds of the network comes from the private sector, with the rest made up of Third and public sector organisations.

Whilst the growth of the Charter is a positive trend, a significant benefit from membership is the support provided in developing organisational challenges which are scrutinised by the network's support team in Cynnal Cymru. This rigour is helping public bodies prepare for the duties they will be subject to under the Well-being of Future Generations (Wales) Act and allowing private and Third sector organisations to align to their activities to the principles and spirit of the Act.



Additionally peer to peer comparison between members allows them, within a positive environment, test out different approaches to make sustainable development their central organising principle.

Further positive activity relates to the collaborative challenges shared between members such as:

- Fareshare Cymru working with Rhondda Housing Association to support their residents with the rising cost of food,
- Llanelli Town Council, Carmarthenshire Council, Cynefin, Communities 1<sup>st</sup>, Netherwood Sustainable Futures, Natural Resource Wales and One Voice Wales working together on a climate change adaptation project,
- Bee Research Foundation working with multiple parties to promote the understanding for the conservation of nature, biodiversity and sustainability through bees and beekeeping.

These type of actions have been the long-standing aim of the network, to draw on their collective strengths to achieve economic, social, environmental and cultural benefits to the well-being of Wales. The latest Annual Report on the Sustainable Development Charter can be found on [www.sd-charter.net](http://www.sd-charter.net).<sup>13</sup>

### Environment (Wales) Bill

In parallel with the Well-being of Future Generations (Wales) Act, the Environment (Wales) Bill will put in place legislation to plan and manage Wales' resources in a sustainable and joined-up way. In doing so, it establishes a pioneering law for embedding the best practice ecosystem approach, endorsed by the UN Convention on Biological Diversity. This approach recognises the vital role natural resources and their services provide to the economy, communities and environment, by focusing on ensuring the resilience of ecosystems. The Bill also puts in place a legal framework for not only emission

<sup>13</sup> Sustainable Development Charter Annual Report 2014/15, <http://www.sd-charter.net/wp-content/uploads/2015/03/SD-Charter-Report-Final-for-signatories.pdf>



reduction targets, but also carbon budgeting to help meet out a statutory goal of at least an 80% reduction in emissions by 2050.

In establishing a robust and transparent framework for tackling climate change, we are setting a clear pathway within the context of our existing UK and EU obligations. A clear pathway for decarbonisation will also provide certainty and clarity for business and investment.

### **Planning (Wales) Act**

The Planning (Wales) Act has provided an opportunity to reform and simplify the planning system in Wales. The Act provides the modern legislative framework for a world class planning system which Wales can be proud of. Taken together with proposed changes to secondary legislation, policy and guidance, the Act delivers a planning system which is fair, positive in outlook, resilient and enables appropriate development. It will improve delivery of planning services helping to create sustainable places where citizens have improved access to quality homes, jobs and infrastructure that Wales requires; whilst enhancing our most important built and natural environments and supporting the use of the Welsh Language.

The Planning (Wales) Act introduces a number of complimentary measures that are designed to strengthen the planning system's approach to sustainable development. These measures include introducing a statutory purpose for the planning system in Wales; ensuring that the key planning functions specified under current legislation are exercised in accordance with the sustainable development principles contained in the Well-being of Future Generations (Wales) Act.

When published, the National Development Framework will be structured around the well-being goals, ensuring that the principles of sustainable development continue to be at the heart of the planning system.

### **Action on climate change**

Over the last few years although we have been meeting our 3% target, we have highlighted the further need for action if we are to meet our future commitments and play our part in the challenge of climate change. As part of the policy refresh the Minister for Natural Resource set out in his statement the priorities for that refreshed approach, namely:

- Driving out climate risk.
- Driving down emissions.
- Driving up Energy Efficiency; and,
- Driving forward Low Carbon Energy.

Focusing on Green Growth, tackling social vulnerability and strengthening governance to support engagement and involvement.

Over the last year we have been strengthening our governance through the Well-being of Future Generations Act and the Environment Bill. Climate change is integral to all of the Well-being Goals, which recognise - similar to the international context - that the case for action on climate change is clear and is fundamental to our prosperity going forward and to the resilience of our society. The Act has strengthened action on climate change through a number of ways:

- Climate change is integral to the Future Trends Report In looking at the likely future trends in the economic, social, environmental and cultural well-being of Wales. The Future Trends reports will need to

take into the Climate Change Risk Assessment, which ensures that our underlying evidence base recognises the long terms changes in the weather and climate.

- The Act require public bodies to outline how they are looking to achieve the goals and will have to take into account the Future Trends Reports and Climate Change Risk Assessment, when preparing and developing their plans. This complements the existing requirements under the Climate Change Act 2008, where Reporting authorities (public bodies) are required to have regard to guidance issued by Welsh Ministers, to help organisations build climate resilience<sup>14</sup>.
- Climate change is also a key part of the role for the Future Generations Commissioner for Wales where the Commissioner can provide advice or assistance to a public body (which includes providing advice on climate change).

Going forward the Welsh Government will not only be reporting on delivery against the Well-being goals but also reporting on progress sectorally against our carbon budgets through the Environment Bill.

We have been focusing on driving down emissions, low carbon energy and energy efficiency through our Green Growth Wales work and our Energy Efficiency Strategy. For further details on these areas, please refer to the footnote and Annex.

### ***Building Climate Resilience***

To ensure that Wales is well placed to adapt to a changing climate, we have

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<sup>14</sup> Preparing for a changing climate, <http://gov.wales/topics/environmentcountryside/climatechange/publications/preparingpart1/?lang=en>

been continuing to deliver on our adaptation framework which address vulnerability to a changing climate by:

- Building the evidence base
- Mainstreaming adaptation
- Communicating on climate change impacts and adaptation

The UK Climate Change Risk Assessment (CCRA) presents an assessment of the potential risks and opportunities arising from climate change for the rest of this century and is led by the UK Climate Change Committee's Adaptation Sub-Committee. The first CCRA, delivered in 2012, is a key component of the Welsh Government's evidence base and is being used to help inform climate change policy and develop Sectoral Adaptation Plans. Work is currently underway on CCRA2, which will be delivered in January 2017. It will include the following new aspects, following on from the first risk assessment:

- a fuller assessment of how climate interacts with socio-economic factors in affecting risk
- how the effects of adaptation actions are/could alter risk levels
- how climate change overseas could affect the UK

In addition, there are currently four research projects that have been developed focusing on:

- updates to flood projections across the UK
- updates to water availability projections across the UK
- an assessment of aggregate climate change impacts on the natural environment, and
- an assessment of the feasibility of creating high++ scenarios for

variables other than sea level rise and storm surge

Working with NRW, the Climate Change Commission Adaptation Sub group and our wider stakeholders, we are currently co-ordinating Welsh input into CCRA2 and have already held two workshops looking initially at risks and policy response.

Following on from the Ministerial Statement to fully understand climate change's disproportionate impact on the most vulnerable, work has been undertaken to improve our understanding about the impacts of climate change on social vulnerability. A cross department group has been set up to look at the impacts on social justice and the distributional effects of flooding and heatwaves on people's well-being.

## 3. **Measuring progress**



### 3.1 Sustainable Development Indicators

Our Sustainable Development indicators and climate change targets are an important means of measuring our progress here in Wales. They help provide the structure for the current sustainable development scheme and were confirmed when *One Wales: One Planet* was published in May 2009 and the *Climate Change Strategy* was published in 2010.

The latest set of Sustainable Development Indicators for Wales<sup>15</sup>, published on 21 August 2014, summarise a suite of indicators measuring sustainable development across Wales, including in respect of health, jobs, housing, crime, education and the environment. During the reporting period, for the 44 sustainable development indicators, covering 29 key issues, compared with the base year of 2003:

- 25 showed clear improvement;
- 16 showed little or no change;
- None showed a clear deterioration;
- 3 have insufficient or no comparable data.

All indicators which showed a clear improvement in 2013 have continued to show a clear improvement in 2014. In addition, 3 indicators which showed 'little or no change' in 2013 have showed a 'clear improvement' in 2014; these were Ecological impacts of air pollution (acidity), Health inequality (infant mortality) and Benefit dependency.

There were no indicators in 2014 with the status of 'clear deterioration'.

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<sup>15</sup> How do you measure a nation's progress: Proposals for the national indicators to measure whether Wales is achieving the seven well-being goals in the Well-being of Future Generations (Wales) Act 2015, Welsh Government (2015) <http://gov.wales/statistics-and-research/sustainable-development-indicators/?lang=en>

#### *Note on Sustainable Development Indicators*

The Well-being of Future Generations (Wales) Act 2015 puts in place seven well-being goals for Wales. Section 11 of the Act places a requirement on Welsh Ministers to set national indicators which must be applied for the purpose of measuring progress towards the achievement of the well-being goals.

These new indicators will replace the current set of Sustainable Development Indicators. Proposals for the national indicators were published in October 2015 as part of a public consultation on the new set. Full details of the consultation on the new set of indicators can be found on our website<sup>16</sup>.

#### **Ecological Footprint**

A new estimate of the ecological and carbon footprints of Wales for 2011 was commissioned and published building on previous studies<sup>17</sup>.

An ecological footprint is an indicator of the total environmental burden that society places on the planet. It represents the area of land needed to provide raw materials, energy and food, as well as absorb pollution and waste created and is measured in global hectares. The latest report highlights that at Wales' current level of consumption, a number of key natural resources are being depleted faster than they can be replenished, and the planet's capacity to absorb our wastes is exceeded.

In common with other developed countries, Wales has a much higher consumption rate

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<sup>16</sup>

<sup>17</sup> <http://gov.wales/docs/desh/publications/150724-ecological-footprint-of-wales-report-en.pdf>

than the global average. However, previous comparative studies have found that the ecological footprint for Wales is marginally lower than the UK average, and we do not expect this to have changed. The report also highlights the consumption categories

with the biggest impact, signposting the areas in which impact reduction could have the greatest overall benefit.

## 3.2 Climate Change Indicators

### 3% Emission Target

As a Government, our two key overarching targets for reducing greenhouse gas emissions in Wales are firstly to reduce emissions by 3% annually in areas of devolved competence and secondly to reduce overall emissions by 40% by 2020.

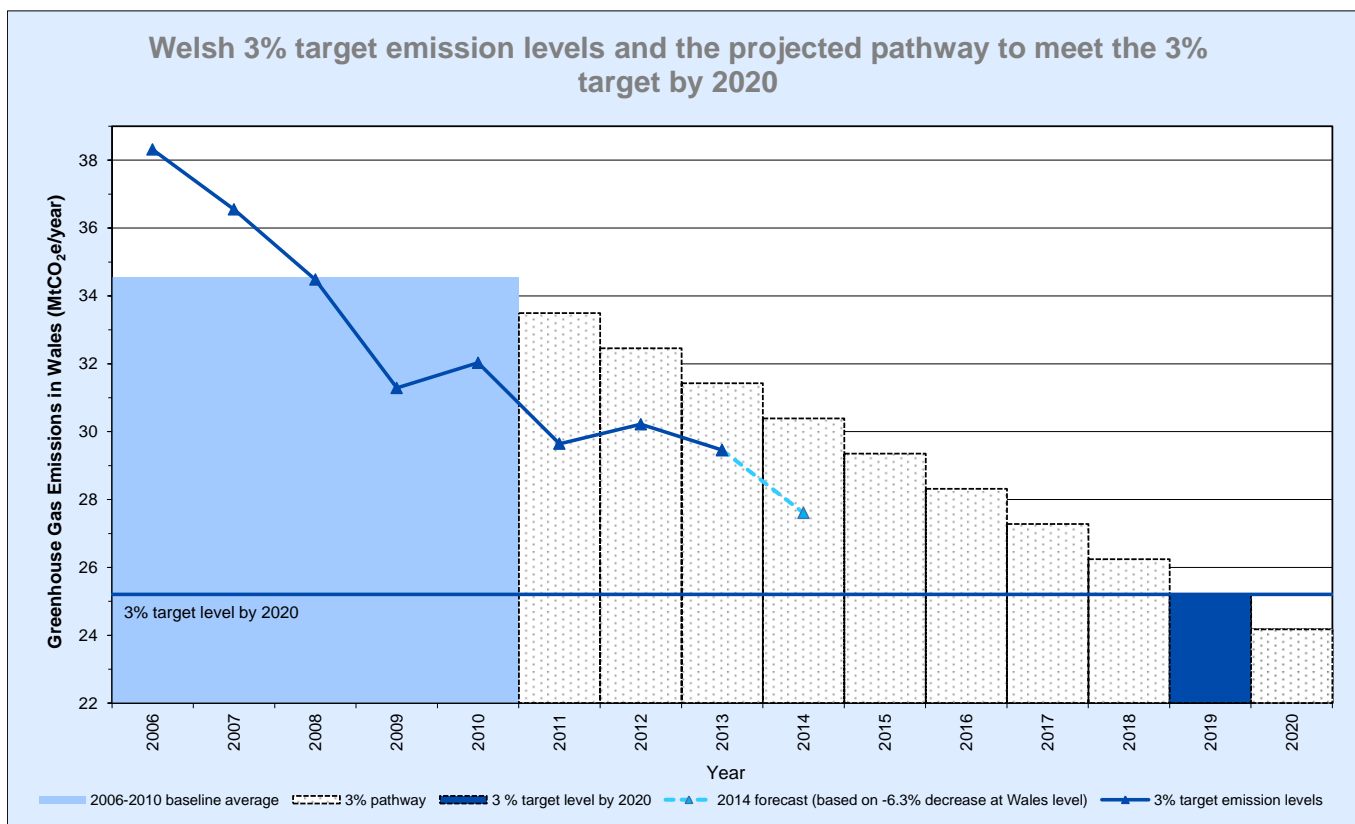
The 3% target is a commitment to reduce emissions within areas of devolved competence by 3% each year from 2011, against a baseline of average emissions over the period 2006-2010.

The 3% target and the supporting monitoring framework have been developed to provide a robust mechanism for effectively tracking progress. The emissions reporting and verification procedure means that emissions are available with a time-lag

Wales' 3% target performance for the third year (2013) of the 3% target reporting.

The baseline emissions figure for the 3% target is 34.53 MtCO<sub>2</sub>e<sup>18</sup>. Progress for the target against the baseline is shown in the graph overleaf. It highlights that in 2013, the emissions were 29.46 MtCO<sub>2</sub>e which equates to a decrease from the baseline of 14.7%. This reduction is therefore in excess of our 3% reduction target of 9% for 2013.

As anticipated by last year's report, annual emissions for 2013 have declined in comparison with those reported for 2012. This decrease of -2.5% compared with 2012 resulted from decreases in all sectors within the 3% target coverage, with the most significant reductions occurring in waste (-14.5%) and the devolved public (-13.6%) sectors.



of approximately 18 months. As a result, this report provides an assessment of

<sup>18</sup> Methodological improvements to the GHG inventory that emerge with each year's data are back-cast across the full inventory time-series, including the baseline. The impact of this is that the 2006-2010 baseline is not an entirely fixed reference point and may vary slightly with each new release of the inventory.

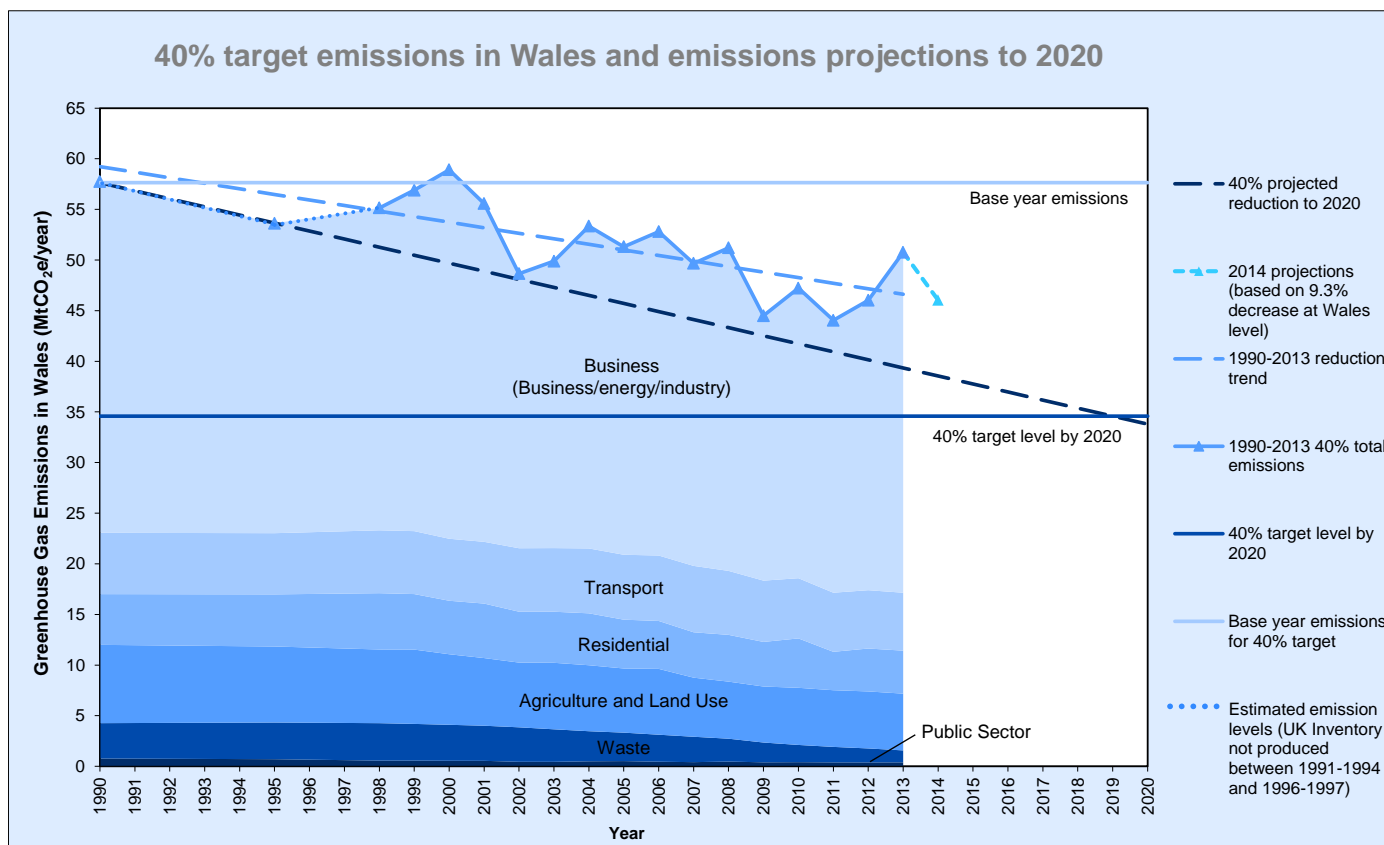
Provisional emission estimates for 2014 show that emissions are likely to decrease further in comparison with those for 2013. This reduction is largely driven by a decrease in electricity generation coupled with a change in the fuel mix with a reduction in the use of coal for electricity generation than in 2013. There are large uncertainties in providing a forecast for the devolved target, so at this stage it is only a provisional indication of 2014 emissions. However, the forecast does suggest that we are likely to meet our 3% target for 2014.

### 40% Emission target

The 40% target relates to our aim of reducing all Welsh greenhouse gas emissions by 40% by 2020. The target is measured from a 1990 baseline<sup>19</sup> when

The following graph shows progress against the target, including the latest figures from 2013, and the relative contribution made by different sectors to the total emissions. It shows that emissions in Wales have declined from the baseline to 50.76 MtCO<sub>2</sub>e in 2013. This represents an 11.9% reduction in total emissions since the baseline. It also shows that in 2013 emissions in Wales rose by 10.3% compared with 2012 driven predominantly by an increase in emissions from the iron and steel sector due to the restart of Tata Steel's Port Talbot No.4 Blast Furnace in February 2013, and a shift from natural gas to coal use in power stations.

As displayed in the graph below, the trend in relation to the 40% target therefore continues to fall short of the projected reduction required. However, emissions in



emissions levels were at 57.63 MtCO<sub>2</sub>e.

<sup>19</sup> The base year for the 40% target is calculated from the sum of emissions in 1990 for carbon dioxide, methane and nitrous oxide, and in 1995 for the fluorinated gases (HFCs, PFCs & SF<sub>6</sub>).

2014 are forecasted to reduce by -9.3% bringing emissions back towards the levels recorded in 2012.

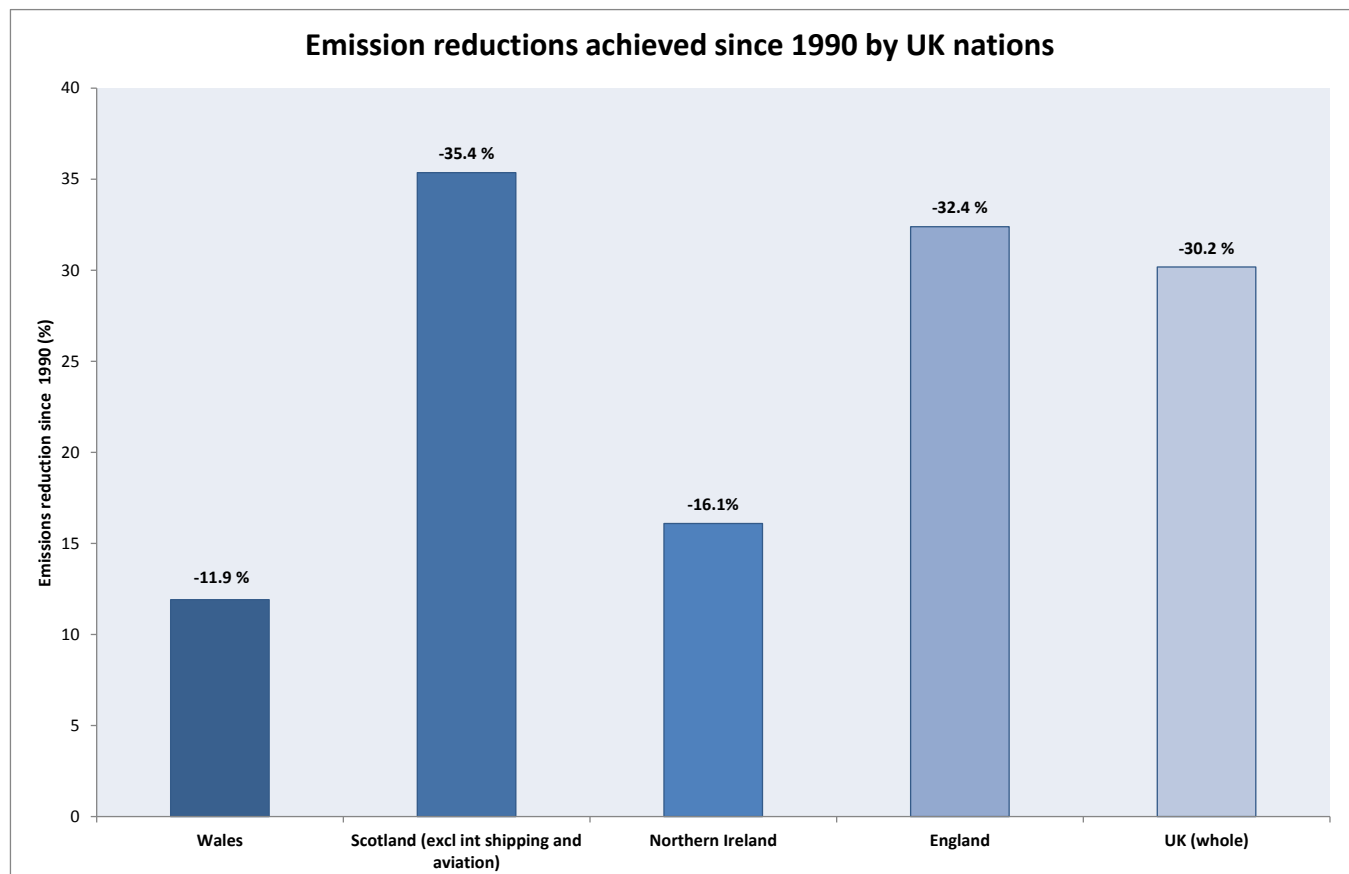
As a result of this recent increase, when placed on a comparative basis with other

UK nations, Wales' total emission reduction since the baseline has fallen below that of other UK nations<sup>20</sup> and is below the UK average, as illustrated in the graph below.

since 1990 – compared to that achieved on a production or territorial basis. This is highlighted in the following graph which compares Wales' emissions with the rest of the UK.

### Consumption Reporting

To gain a better understanding of progress however it is also important to note that as a net exporter of energy, all emissions associated with the production and refinement of energy in Wales fall within the 40% emission reduction target, despite the fact that some of that energy is consumed elsewhere. For comparison therefore, if emissions are assigned on an end-user consumption basis, then Wales has a lower share of UK emissions<sup>21</sup> and has achieved

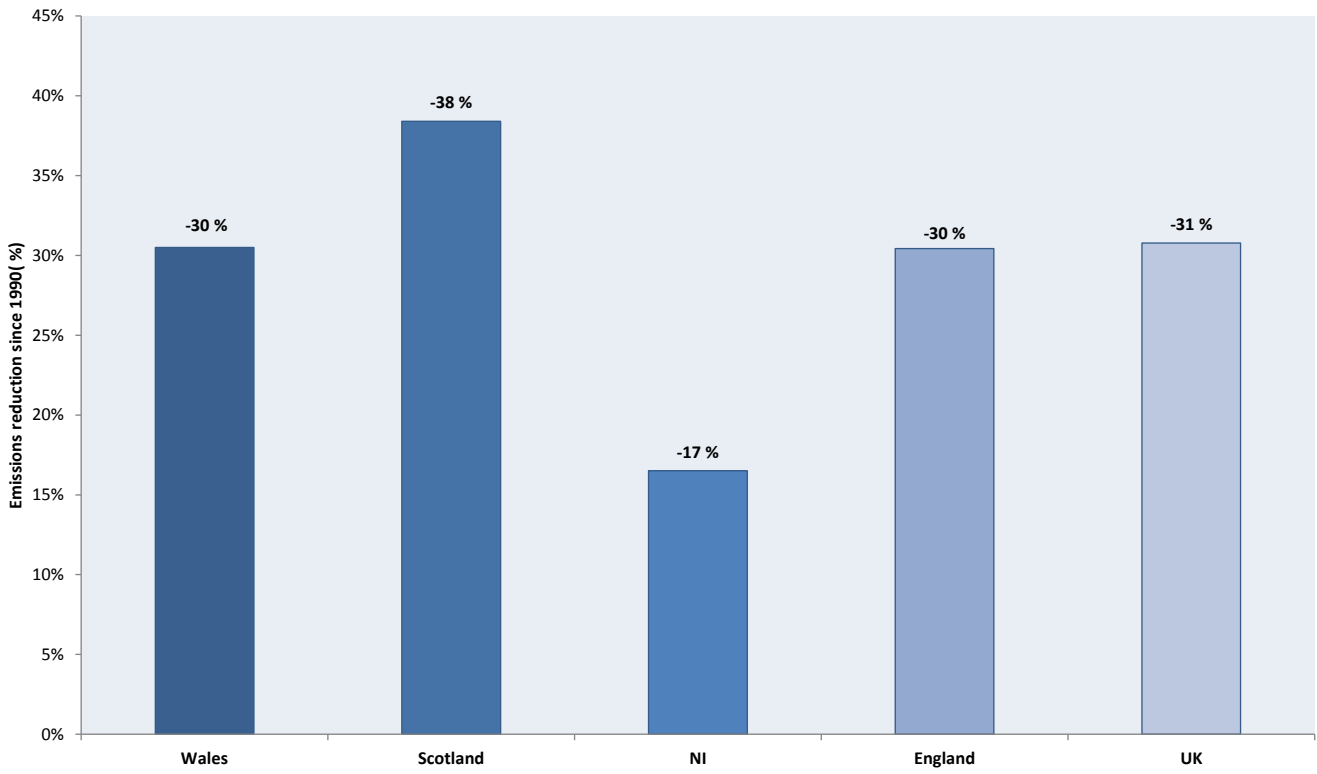


a greater reduction in emissions – by -30%

<sup>20</sup> The graph excludes international shipping and aviation from the published by-source inventory for Scotland to make emissions coverage comparable between DA's.

<sup>21</sup> 7.2% compared to 9.0% by-source.

### End-use emission reductions (excluding exports) achieved since 1990 by UK nations



Overall however, the progress against the 40% target highlights that significant further action is required, not just to ensure that we meet the 2020 target but to mitigate climate change risks and deliver against our long-term emission reduction commitment of at least 80% by 2050.

Across Welsh Government departments actions are being put in place, to both

reduce emissions and prepare for climatic changes that are already locked in from historic emissions..

In terms of sector breakdown, all sectors have reduced their emission against the baseline. For further information on sector progress see please Appendix 2.

### Annex 1 – Example of key activity being taken

This report is not designed as a comprehensive overview of Welsh Government activity, however highlights key examples of activity on sustainable development and climate change against the structure provided by the Programme for Government reporting arrangements.

#### **Growth and Sustainable Jobs**

The Welsh Government has sustainability at the heart of policy making. We are making it happen, with legislation, policies and major renewable energy and infrastructure projects already in place to ensure and enable our transition to a low-carbon economy. Our role as the Welsh Government is to create the best possible conditions for businesses to deliver sustainable growth, through policy and delivery. Wales has a significant natural resource advantage and longstanding experience in large-scale energy production dating back to the industrial era.

Our aim is to create a step change in green investments across all sectors of our economy. It is not just about growth in the energy and environment sector, but is achieving greater efficiencies and sustainability across our broad economy. Our vision is also dependent upon our physical as well as economic environment that is resilient to changes such as reducing the waste we consume, tackling climate change and supporting our timber industry. The following chapter outlines the efforts of the Welsh Government in developing skills, procurement, and support for the rural economy from the Common Agricultural Policy.

#### **Green Growth**

This is economic growth that also delivers prosperity and social equity and ensures the considerate use of our natural resources so they can continue to sustain us. The Welsh Government is pushing for higher ambition by working with our Energy Intensive Industries to assist them in identifying measures and applying innovative financing to reduce both emissions and increase energy efficiency.

Our work to put in place the finance, support, innovation, skills and legislation to drive Green Growth and has already committed £5 million to the development of Green Growth Wales. Green Growth Wales is developing a pipeline of projects encompassing renewable energy, resource efficiency and energy from waste, with the intention to raise significant levels of private finance to support those projects. These projects will provide new opportunities for businesses in Wales and protect and create jobs.

We are working alongside businesses in practical ways to support their growth, such as identifying skills gaps and supporting skills development; creating beneficial industry networks; supporting strong supply chains; cluster initiatives; funding innovative programmes and research and development; facilitating infrastructure and property development; identifying recruitment and property location opportunities and more.

## **Green Growth across our Business Sectors**

Achieving our transition to a low carbon economy requires innovative businesses, products, technologies and services. So we are maximising our energy and environmental investment and supporting businesses whose innovations underpin this sustainable growth both financially and with the recruitment and development of a skilled workforce. Supporting our sustainable business growth we have the highest financial support rates available in the UK permitted by European Union rules and, during 2014-2020, over £2bn of European funding will be invested across Wales in infrastructure; renewable energy and energy efficiency; skills, research and innovation.

Our flexible suite of finance packages can help with project costs, from sourcing a property to recruiting key people, from capital investment to R&D that can bring concepts through to market. We are working to help businesses access wider UK and EU funding opportunities, such as the EU's Horizon 2020 and Innovate UK's research programmes, or to collaborate across borders through European Territorial Cooperation programmes.

The European Regional Development Fund (ERDF) is looking to invest over £140m in renewable energy and energy efficiency across Wales, including £75m to develop marine energy and around £60m in growing our research capacity in low carbon energy.

We are seeing large investments from overseas companies in Wales, such as RWE and Vattenfall, who are using these assets to develop sustainable energy sources. These investments are creating large numbers of jobs in the local area in the initial construction phase and the ongoing operation and maintenance of wind turbines.

Wales is home to a wide mix of hydro businesses ranging from utility providers such as Dwr Cymru Welsh Water to large hydro energy scheme operators including RWE Innogy. In recent years, there's also been a surge of interest in small scale hydro operations of 5 MW or less – especially in areas such as farmland and community development. Wave and tidal energy are at an earlier stage but with the potential to contribute significantly over the medium to longer term. Two new demonstration zones were announced in 2014 – at west Anglesey and south Pembrokeshire. And our seven major ports along our north, west and south coast are equipped to support marine and other renewable energy projects by providing expertise in operations, maintenance and shipping.

Construction is a key component of our economy which can contribute towards the green growth agenda. We are committed to promoting timber as a construction material, particularly Welsh timber whenever possible. Use of this material can create employment opportunities from its growth and harvest, right through to its end use in a variety of applications.

The Advanced Materials and Manufacturing (AM&M) approach to Sustainable Development is integrated, supporting businesses in the sector to make environment improvements (reduce, reuse (including remanufacturing and cascaded use), and recycle (including recovery)) which require a business case to take account of



economic factors and which will sustain employment both directly and also within the supply chain / employment footprint of that operation (supporting social sustainability).

Innovation in all its guises is important in shaping the future. This includes Wales working smarter and new projects requiring advanced materials and supply chain support. This is well illustrated with the aerospace and automotive industries which are investing heavily in developing sustainable technologies to counter reliance on fossil fuels. Significant progress has been made by both industries in improving their own environmental credentials, with significant improvements during manufacture; reduction in energy consumption, materials going to land fill and Co2. Today's aircraft are quieter and more fuel efficient, with around a 70% improvement since the 1970s. Today's motor vehicles are safer, reliable, have increased the volume of recyclable materials and fuel efficiency. Traditional manufacturing companies such as Tata are actively collaborating with Welsh academia to develop innovative technologies to aid their transformation. As a result, work between Tata and Swansea University has produced a spin-out – BIPV Co Ltd – that have developed a novel integrated solar PV solution primarily aimed at the commercial and industrial sectors.

Tourism is another area reporting positive green growth developments. Studies have been undertaken on impacts of climate change on tourism destinations, emissions from tourism industry, adaptation and mitigation measures and practices, and practical case studies. A suite of information and guidance tools aimed at helping tourism businesses respond to challenges in a sustainable way has been made available. We continue to expand business advice on the Sustainable Tourism Toolkit providing practical advice and guidance. We have recently added a climate change booklet and sector specific videos promoting best practice in the industry.

### **Delivering a sustainable nation: projects and opportunities**

Wales' transition to a low carbon economy offers a wide range of commercial opportunities as the private and public sectors work jointly to meet our targets. We have supported AB InBev (Brewer) on a project delivering over 7,000 tonnes CO2 reduction over the next four years. This has contributed to the business' ability to successfully secure an additional 58 jobs and investment at their Newport site.

Environmental Professional Services businesses are in demand, as are waste and recycling businesses as targets increase, and we need experts to run our growing RE:FIT energy efficiency support advice scheme for business. We need contractors to help us deliver our targets of saving over £380m on public sector energy bills and more than 1.5m tonnes of carbon emissions – and the opportunities are long-term. *Invest to Save* green growth schemes have already seen £20m invested in projects including streetlight replacements, LED lighting in fire stations and hospitals and heating and lighting replacement in schools. These opportunities provide a real growth platform for the businesses delivering these contracts: the investments are recycled as they are repaid, so the original £28m initial amounts to more than £120m over 20 years.

Hitachi's construction of a new, £12 billion nuclear power station on Anglesey will be completed by the mid-2020s, and includes a commitment to bring 60% of the project

value to native suppliers and inward investors. The station's projected 60-year operational lifetime means security, engineering, maintenance and other contracts could provide security for businesses' long-term growth.

As well as improving energy efficiency and reducing emissions we are also ensuring our communities are resilient to the impacts of climate change. We will have invested £287m by the end of this year in a six-year flood and coastal erosion risk management programme to protect our homes and businesses. Our focus continues on increasing the underlying resilience of Wales through investment in green infrastructure. Between 2018 and 2021 we will be spending £150m on coastal risk management and are looking for partner businesses to provide innovative, sustainable solutions to manage risk now and for future generations.

### **Using public money wisely**

As well as providing an environment in which businesses can flourish, the Welsh Government is using the Welsh public purse to help support key sustainability outcomes. Public procurement is able to make an enormous difference to the long-term social, economic and environmental well-being of Wales and the Wales Procurement Policy Statement (WPPS) is in place to ensure this opportunity is maximised. The WPPS sets out the procurement practices and actions required of every public sector organisation in Wales. The WPPS defines procurement and value for money in the very widest sense, in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment'. The WPPS was refreshed in June 2015 to ensure it fully aligned to the 7 principles of the Well Being of Future Generations Act.

In support of the WPPS Welsh Government has also taken an early lead in promoting electronic procurement with its ePS programme supporting the public sector organisations to achieve greater financial and resource efficiencies – removing paper from the process and ensuring prompt payment. Using technology to deliver eprocurement solutions has both a positive impact for business and on the environment. The eProcurement Service has helped the Welsh public sector adopt more efficient processes including eTenderWales electronic sourcing & auctions, delivering reduction of in excess of 12million pages of paper, the equivalent of 1375 trees, through automating the tender stage of the procurement process.

We have supported the Welsh public sector to improve procurement outcomes through the contract pipeline of the National Procurement Service, embedding Welsh procurement policy to deliver more efficient public services. The National Procurement Service delivers collaborative contracts and frameworks on behalf of the public sector in Wales through the principle of 'buying once for Wales'. The National Procurement Service embeds the principles of the Wales Procurement Policy Statement and in line with this applies Community Benefits through its procurement activities wherever possible, endeavouring to ensure that a pound spent in Wales, stays in Wales. National Procurement Service undertakes sustainable risk assessments of its procurement activity to ensure that ethical and sustainable issues are taken into account in all key procurement decisions. Through its active supplier engagement the NPS has secured 115 new jobs in Wales. Welsh Government's own Corporate Procurement Services ensure procurement activity within Welsh Government is undertaken in line with the WPPS, applying the

Sustainability Risk Assessment to all contracts £25,000 and over, adopting a Community Benefits approach on all appropriate contracts to deliver maximum value for Wales.

The business case that supported the decision to establish **Natural Resources Wales** (NRW) identified the benefits to be achieved over its first decade. These are now integral part of NRW's corporate and business planning, ensuring:

- *Better delivery for Wales*: aligning their work more clearly with Wales' priorities, with sustainable development at the heart of all that we do
- *Better outcomes for Wales*: so that NRW provide joined up advice and clearer guidance in their roles as the principal adviser to the Welsh Government and statutory consultee
- *Better value for money*: NRW expect to generate benefits of £158 million over our first 10 years through the greater efficiencies gained by bringing three organisations into one.

NRW has also been a key partner in the development of the Well-being of Future Generations (Wales) Act 2015 and the Environment Bill. The requirement of aligning delivery to high level goals is already a central component of NRW's corporate thinking and approach to delivery.

### **Creating a skilled workforce**

The Skills policy statement, covering post-19 skills to boost employment prospects across all sectors, includes low carbon activity. Alongside the policy statement, there is an implementation plan which will support increased skills amongst the Welsh workforce, boosting employment prospects and the capabilities of businesses.

Our longstanding experience in large energy production – over 25% of the UK's gas and oil are supplied via Pembrokeshire – and our progress in moving renewables into the mainstream have produced an experienced, loyal and multi-skilled workforce. We work closely with every sector to support the skills employers need for green growth. In the past, we have worked with the Skills Sector Council, two of our renewable energy giants and our further education colleges to develop the ground-breaking, three-year Large Scale Wind Apprenticeship programme. We will continue to work with the wider energy sector to understand employer needs and to support new vocational programmes as this evolving sector develops.

### **Improving our Research in Wales for the future**

We are keen to grow the research capacity in Wales and create networks that bring together industry, academia and government. Current research centres, initiatives and networks in Wales include:

**Marine Energy Pembrokeshire:** Industry, including technology developers and the supply chain, academia and the public sector are working together to establish Pembrokeshire as a centre of excellence for sustainable marine energy generation.

**Aberystwyth Innovation and Enterprise Campus:** Created with £35m of ERDF investment, the campus supports the bio-economy for sustainable food, health, biotechnology and renewable energy.

**BEACON+:** Also ERDF-funded, this is a £12m bio-refining project that sees three of our universities working with industry to develop renewable materials, fuels and chemicals.

**Institute of Biological, Environmental and Rural Science (IBERS):** An internationally recognised centre of excellence at Aberystwyth University, IBERS works on sustainability projects including bio-fuel technologies and food production.

**Energy Safety Research Institute (ESRI):** The recently completed ESRI at Swansea University is working on the potential of marine renewable, tidal, nuclear and unconventional gas energy, collaborating with industrial and academic partners.

**Sêr Solar:** Swansea University is researching the efficiency, the affordability and the longevity of photo-voltaic solar cells, including solar technology that can be printed on metals.

**The National Research Network for Low Carbon Energy & Environment [NRN – LCEE]:** Our £50m Ser Cymru initiative to develop Wales' research capability has established research chairs and national research networks including the NRN-LCEE, which brings together five of our universities, the Centre for Ecology and Hydrology, the British Geological Survey Wales, and the UK Met Office.

**Sêr Cymru 2:** Bringing on-stream a flow of high potential early and mid-career researchers who will be joining the teams of academic experts across Wales, which will include a number of Professors working in engineering, manufacturing and environmental technology.

**The Centre for Automotive & Power System Engineering (CAPSE):** Based in the University of South Wales CAPSE is a nationally recognised independent research, development, test and certification house with a reputation for cutting edge research and knowledge transfer activities within the advanced automotive and power systems engineering sectors.

**The Hydrogen Research and Demonstration Centre:** Developed by the University of South Wales with ERDF part funding, this Centre is located at Baglan Energy Plant and is a focal point for new research, development and demonstration of hydrogen energy technology in Wales. The Hydrogen Centre was supported by Neath Port Talbot Council and the Welsh Government.

**Courtauld 2025:** WRAP Cymru (waste and resource action programme) is developing a new farm-to-fork industry wide commitment building on the work of the Courtauld Commitment; the Product Sustainability Forum and the Hospitality and Food Service Agreement. Courtauld 2025 will help consumers reduce avoidable food waste at home, and encourage businesses share efficiency savings along supply chains, waste less and get more value from unavoidable waste and increase business resilience.

**Food Innovation Wales:** This brings together three food centres of excellence dedicated to encouraging the development of the food sector and providing technical

and operational support on all aspects of food manufacturing. The food centres provide a strategic backbone to technical and new product development within Welsh businesses. They provide a unique service within the UK, on a range of technical issues, including BRC, SALSA, labelling advice, shelf life and packaging etc.

**Innovation Point:** This is a private limited company owned by Welsh Government Ministers and is working with digital technology companies to increase innovation funding in Wales and deliver technological innovation to create sustainable growth in Wales. This includes Smart City initiatives and Horizon 20:20 funding streams.

**SPECIFIC (Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings):** This is an innovative project designed to help the transformation of buildings into power generating facilities. It is led by Swansea University, and the project aims to commercialise technologies which will allow buildings to generate, store and release their own energy. This partnership project includes leading university groups, Small and Medium sized Enterprises and multinational businesses including Tata Steel, BASF and Pilkington. The project has leveraged significant funding from UK and EU sources and highlights the highly innovative research and technological developments taking place in Wales.

**Spearhead Science Wales:** Will seek to nurture a 'pipeline' of excellent research talent at the mid-career stage. The programme will assist universities to recruit and develop the 'rising stars' of the future, and provide them the supporting funding required to maximise the potential of their research. The main emphasis of the programme is to enhance research capability in Wales to enable even stronger competition on the global stage.

### **Resource Efficiency**

The Resource Efficient Wales service was launched in October 2014 to provide domestic, business, community, third, and public sectors with access to a variety of information, advice and support on such measures as using energy more efficiently, generating renewable energy, using water more efficiently and reducing the generation of all forms of material waste.

During its first year (Oct 2014 - Oct 2015), the service provided information, advice and support for:

- 2,789 households
- 122 community groups
- 627 business based projects
- 14 third sector projects
- 194 public sector projects.

This has resulted in estimated potential lifetime savings of 295,130 tonnes CO<sub>2</sub>e and cost savings of £36,677,033.

Wales is committed, through Towards Zero Waste, the waste strategy for Wales, to reducing direct greenhouse gas emissions from the waste sector – by diverting biodegradable waste from landfill to recycling, composting or anaerobic digestion and supporting businesses and others to manage waste. As such, direct greenhouse

gas emissions from waste have reduced every year from 2009 to 2012, and the total reduction is 258 000 tonnes over this period.

The Waste Infrastructure Procurement Programme is helping to address the affordability of sustainable waste infrastructure in Wales. The aim of the capital programme, delivered through public private partnerships, is to support local authorities deliver sufficient treatment capacity to meet EU landfill diversion and statutory national recycling targets (70% by 2025). Contributions towards economic, social and environmental outcomes include:

- the creation of jobs in a growing green economy through higher recycling and related infrastructure developments, for example with the construction of an anaerobic digestion plant at Bryn Pica, near Aberdare, during 2014/15;
- a commitment to support local authorities increase public participation in recycling and better resource management; and
- generation of renewable energy and high quality digestate, with the potential for large-scale district heat networks.

Significant economies of scale have been achieved through the collaboration of 21 authorities in regional consortia, while strong stakeholder relationships ensure close working across government departments, such as waste, finance and planning. To date, over £500m in revenue savings have been delivered against future forecast costs. Engagement with the public and local and national media is supported by Waste Awareness Wales.

With WRAP Cymru, the Waste Reduction Action Programme, we have developed financial support tools for Small and Medium Sized Enterprises (SMEs). These will help businesses in the hospitality, tourism, food service and food and drink manufacture sectors towards the cost of waste prevention or recycling equipment and consultancy. This can help them identify how to cut costs by reducing waste.

The Welsh Government expects any business seeking support to sign up to our principles of *Corporate Social Responsibility* (CSR) which includes a commitment to good employment practices, such as flexible working arrangements to encourage the creation of jobs that are accessible for parents and other carers. The CSR framework document and Responsible Business web zone promote best practice and case studies, along with an interactive online CSR module. Organisations are encouraged to develop their CSR principles by signing the Welsh Government's Sustainable Development Charter and 'Healthy Working Wales' work and health programme. Charter members become part of a network of organisations sharing best practice on the promotion of sustainable development, whilst Health Working Wales supports action to improve health and well-being in the workplace.

Business Wales provides a number of business case studies<sup>22</sup> to demonstrate the benefits of companies implementing and planning responsible business activity, these include AB Glass Windows & Doors, Castell Howell Foods, UES Energy, Crystal, Sony Technology and Toyota.

Admiral Group are currently engaged with the Welsh Government's Anchor

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<sup>22</sup> <https://business.wales.gov.uk/case-studies>

Company Autism Employment Programme (ACAEP) as part of their CSR plans. To date they have seen success in changing attitudes internally and in achieving a small number of work placements for individuals with Autism Spectrum Disorder. A number of companies have also expressed an interest in the ACAEP.

In addition the Early Years and Childcare Plan highlight the importance of engagement with the business community and the promotion of childcare and family friendly policies as part of the wider economic strategy. In taking action under the Plan forward, we are currently:

- Supporting child care businesses across Wales by providing business advice and support in areas where there are gaps in provision.
- Providing advice to businesses on the benefits and practicalities of adopting family friendly policies.
- Supporting existing childcare providers in pilot areas, Gwynedd and Blaenau Gwent, with a range of business support services delivered by Business Wales.

In the Blaenau Gwent pilot project a dedicated Business Wales advisor is engaging with the Local Authority and local childcare businesses in support of identifying specific business support requirements, and as a result a number of business support workshops will be delivered to the childcare sector. While in Gwynedd a childcare business support event is being plan with the support of Business Wales.

### **Supporting Infrastructure**

Infrastructure is a foundation of sustainable economic growth. Robust, efficient power grids, water and sewer systems, transportation systems and communications networks are essential to modern economies and societies. We are supporting industry and academia to develop, test and launch new products and innovative and smarter technologies and have continued to invest significantly in next generation broadband infrastructure. Delivering a Digital Wales, which sets the strategic framework for delivery of the Superfast Cymru programme, has promoting an inclusive, sustainable and prosperous society as a key objective. Superfast Cymru has the potential to improve the environment and reduce greenhouse gas emissions, most notably emissions associated with transport, as enhanced ICT can reduce the need for travel. The implementation of Superfast Cymru includes measures to mitigate and adapt to the potential effects of climate change - through the implementation of an Environmental Management System and Plan - together with a Low Carbon Impact Strategy to help minimise greenhouse gas emissions arising from broadband infrastructure work.

Emissions reduction is a key component of our approach to delivering a truly integrated transport system for Wales. The development of key projects high-lighted within the Welsh Government's National Transport Finance Plan such as the Metro scheme, provide an opportunity for businesses to develop innovative approach to low carbon transportation and increase modal shift to public transport. Work on delivery of the next phase of a modern, high-quality public transport Metro system for south east Wales could begin as early as 2017, estimated to cost £500 - £600 million, to serve the growing public transportation needs of the Cardiff Capital City.

To help address the non-financial barriers to electric vehicles in Wales, the Welsh Government's Minister for Economy, Science and Transport has established a Low

Carbon Vehicle Expert Steering Group to advise on key interventions required for promoting low carbon vehicle usage in Wales, including electric. The Group is expected to report this Autumn with a number of financial and non-financial recommendations.

### **Supporting Wales' rural economy**

The Welsh Government is doing everything to ensure that in Wales the *Common Agricultural Policy* continues to underpin the financial structures that are absolutely vital for sustainable, thriving rural communities. The Common Agricultural Policy is a long standing policy that provides a multi-million euro investment in rural Wales each year. It has two main elements - 'Pillars' - which are complementary tools to be used together as a means to develop a prosperous agricultural industry and rural economy. Pillar 1 (Direct Payments to farmers) supports farm businesses. Pillar 2 (the Rural Development Programme) provides support for farm business training and advice, support for environmentally beneficial farming practices, the processing and adding value to agricultural and forestry products, and the economic development of rural communities. Collectively the purpose of Common Agricultural Policy is help farming, forestry and rural Wales meet the challenges/opportunities ahead, strengthening supply chains, and ensuring a more integrated approach that is better for the natural environment.

The EU periodically reforms Common Agricultural Policy which applies to Wales because it is part of the UK which is an EU Member State. The reforms are put into action by regulations which the Welsh Government must adopt. Some of the provisions in the regulations are compulsory and others are optional. The latest round of reforms have been delayed and now commence in 2015. During the decision process about what will work best for Wales, the Welsh Government has undertaken extensive consultation exercises over the last four years for both Pillar 1 and Pillar 2 of Common Agricultural Policy involving stakeholder bodies and the industry. Consultation has included stakeholder events and evening public meetings with the Minister. Development work has been across the Welsh Government taking account of different policy areas and a wide range of goals.

Towards Sustainable Growth: An Action Plan for the Food and Drink Industry 2014-2020 sets out an ambition to grow the Welsh food and drinks sector by 30% in 2020 to an industry turnover of £7 Billion. It is focussed on delivering jobs, growth and wealth for the benefit of all our communities in Wales. The vision is one of green growth where businesses are the custodians of our natural resources, businesses that are both environmentally and socially responsible, and producing quality and safe food to secure improvements in the health and vitality of the people of Wales.

Welsh Government works with food and drink businesses in Wales on the competitive advantages that efficient energy use can bring. Promoting Wales as a low-carbon food producing country through the effective signposting of environmental service providers will reduce the ecological footprint of Welsh businesses, enhance the environmental credentials of Welsh produce and boost sales in line with the overall aim of growing the sector by 30% to £7 billion by 2020. We are actively encouraging food companies across Wales to sign up to Resource Efficient Wales, to gain a competitive edge and use energy, waste and water with more consideration in food manufacturing/retailing.



Welsh Government, through the Rural Development Programme 2007-14 Supply Chain Efficiencies scheme, provided funding to support the development of the Sustainability Tool-kit which provides a simple on-line assessment method for food businesses to measure their contribution to sustainable growth. The toolkit can be used to determine a sustainability baseline for a company; identify priority and preferred actions; and to evidence good practice.

### **Woodlands for Wales**

The Welsh Government's policy for woodlands and trees in Wales, "Woodlands for Wales", details the contribution that woodlands and trees can make to help Wales meet its carbon emission reduction targets. Woodland in Wales is predicted to remain a net sink for atmospheric carbon and current sequestration from woodlands is estimated to be approximately 1,419,000 tonnes annually (Woodlands for Wales Indicators 2014/15).

The Wales Climate Change Strategy contains an aspiration to create 100,000 hectares (ha) of new woodland between 2010 and 2030 as a means to help Wales meet its carbon emission reduction targets

The aspiration required planting of 5,000ha of additional woodland cover per annum from 2010 to 2030, a higher level of planting than any ever previously achieved in Wales, including the large scale planting during the 1950s and 1960s. In 2014, the Welsh Government commissioned ADAS to review the climate change target. ADAS recommended a reduction in the target to 50,000ha of woodland creation to be delivered over 25 years up to 2040. Both the Land Use and Climate Change Group and ADAS recommendations envisage new woodland creation at a level that is much higher than the actual achievement over recent years: between 2010 and 2015, 3,203ha of woodland has been created in Wales. To encourage woodland creation, the Welsh Government's Rural Development Plan provides direct funding for woodland creation. In addition, the Welsh Government is encouraging co-operation between land owners in the public and private sectors to deliver additional tree planting.

The Welsh Government has set a short-term target over the life of the "Woodlands for Wales Action Plan" of 10,000ha of new woodland to be created by 2020, an average of 2,000ha of tree planting per annum over the next five years. The statutory changes made by the Well-being of Future Generations (Wales) Act 2015 together with those proposed by the Environment Bill, including carbon budgeting, will help to further encourage tree planting in the future in the form of small areas of woodlands, hedgerow planting, community woodlands, shelter belts and urban planting to deliver a range of benefits to people and communities in Wales. This planting will deliver carbon sequestration and contribute towards Wales's climate change targets too.

### **Making the most of Welsh timber**

There is considerable potential for expanding the use of Welsh timber in construction to deliver significant economic, social and environmental benefits. Welsh timber is fit for purpose to meet most construction applications, but overcoming long standing in order to exploit this potential requires coordinated action across the supply chain.

In 2014 Welsh Government established a cross departmental Timber in Construction working group to explore how we accelerate the use of Welsh timber in construction, especially in house building. The group has representation from the Departments of the Economy, Science and Transport and Natural Resources as well as Value Wales and Natural Resources Wales. It works closely with the Climate Change Commission for Wales, the Wales Forest Business Partnership and the Grown in Britain initiative to develop the supply and demand for Welsh timber used in construction, including addressing outdated perceptions regarding the quality of home grown timber which can act as a barrier to its use by construction companies and public authorities.

The group is exploring the development of demonstration projects with Registered Social Landlords and local authorities that are of sufficient size to illustrate the economies of scale and to identify whether the WG can set performance standards for social housing, including energy performance, which would give a competitive advantage to timber construction systems. On the timber supply side WG is working to ensure that the new Glastir schemes maximise the opportunities to grow a range of tree species that are both productive and support bio-diverse habitats.

## **Health and the Well-Being of people**

As a nation we are faced with long-term challenges in improving health outcomes by ensuring the quality and safety of services is enhanced, improving access and patient experience and preventing poor health and reducing health inequalities. Tackling these challenges is a matter of fairness and social justice, but also recognising that our environment and our economy can influence health. Actions taken to reduce health inequalities have been found to benefit society in other ways, including strengthening the economy. While integrating the economic, social and environmental factors in decision making can help to identify multiple benefits. For example, understanding the relationship between health inequalities and other factors such as access to open space, transport and health provision can provide better outcomes for Wales.

The following chapter outlines how the Welsh Government is applying the principles of sustainable development set out in the Sustainable Development Scheme in this context. Particularly through preventative uses of health care and measures to support healthy living, efforts to address health inequalities and supporting individuals dealing with mental health issues.

### **Prudent healthcare**

The prudent healthcare movement is gaining momentum in Wales, and as part of that we have to work harder to create the conditions in which people are better able to take care of their own health and then explain the responsibility people have for creating conditions for good health in their own lives, effectively 'co-producing' good health in partnership with patients, the wider public and partner organisations. The need for this is clear. For instance, the 2013 Welsh Health Survey showed that 58% of adults were classified as overweight or obese, including 22% of adults classified as obese and that 21% of adults were current smokers. The Welsh Government has delivered a number of preventative health campaigns to help people to make changes to improve their health and wellbeing. These include the alcohol Change4Life campaign; Food Smart including Smart Restart which is encouraging families with primary school aged children to sign up to pledges focussing on small steps to healthy eating and being physically active; and the Fresh Start campaign to raise awareness of the dangers of second-hand smoke specifically in cars.

Change4Life Wales was launched in 2010 as part of the Welsh Government's broader response to help people to achieve and maintain a healthy body weight, to eat well and be physically active. The latest Change4Life Wales campaign, Sugar Swaps, focused on supporting families with children between 4 and 11 years of age make healthy swaps to reduce sugar in their children's diets. The campaign focussed on Community First Areas where levels of childhood obesity are higher than the rest of Wales. Over 6,500 new families signed up to the Sugar Swaps campaign in Wales, adding to the over 70,000 families already registered with Change4Life Wales.

### **Making it easier to lead healthier lives**

Each of us has a duty to look after ourselves - we must all become custodians of our own health, instead of handing ownership of our health to the nearest professional as we have traditionally done. Our Add to Your Life Programme provides a holistic

online health and wellbeing assessment accompanied by community-based support to maximise levels of participation.

The Programme is now in the user phase and current activities are focussed on encouraging people to use the website, as well as integrating Add to Your Life with preventative services (e.g. smoking cessation) and other on-line health portals such as 'My Health Online'. A wide range of roll out activities are taking place including a direct mail to members of the public around their 50<sup>th</sup> birthday (around 42,000 people turn 50 annually in Wales) who are registered with a GP. Since the beginning of October 2014 nearly 16,000 letters of invitation have been posted out in weekly batches. Since Add to Your Life was rolled out nationally over 10,500 people have accessed the site with over 5,500 completed assessments undertaken.

Our Active Travel (Wales) Act 2013 is intended to enable more people to walk and cycle and generally travel by non-motorised transport. Making walking and cycling safer and more practical encourages healthier lifestyles, reduces carbon emissions and improves Wales' environment. *The Active Travel (Wales) Act 2013 puts in place the framework to enable more people to walk and cycle rather than travel by car. This will deliver environmental benefits including reduced air pollution levels and congestion. The Minister for Economy, Science and Transport will very shortly publish the Active Travel Action Plan that sets out complementary measures to support the aims of the Act and increase the proportion of the population who make active travel journeys.*

### **Addressing health inequalities**

The Welsh Government is determined to tackle health inequalities such as poor diet and oral healthcare.

The *Free Breakfast in Primary Schools* scheme seeks to redress health inequalities brought about by poor diet, by providing a healthy start to the day for all primary-school aged children. Practically, the scheme provides employment for the supervisors present at each of the 1217 schools operating a breakfast club (as at April 2015). It also contributes to wider society with the consequential benefit of allowing parents to drop their children off at school earlier than they might have been able to, which, in some cases, allows parents to return to work without using costly childcare services. The breakfast scheme seeks to establish healthy eating habits at a young age, with the expectation that these habits are carried into adulthood. A healthy approach to nutrition - including not skipping breakfast - correlates with better overall health, and should result in less use of NHS resources from preventable illness (such as obesity).

This work is supplemented by the European Union School Milk Subsidy Scheme with the aim of maintaining or increasing consumption of milk products by primary and secondary school children and encouraging school children to form a life long habit of consuming milk products. The school milk scheme continues to provide learners with a good source of calcium (and other micronutrients) as part of a balanced diet. Welsh Government guidance on healthy eating in schools advises that skimmed or semi-skimmed milk should be consumed (although children in nursery school are permitted whole milk and should not be given skimmed milk).

*Designed to Smile* is a targeted national oral health improvement programme that aims to reduce the gap between the oral health of children from the most deprived and the least deprived families in Wales. An overseeing National Forum is in place and Steering Groups established in each Local Health Board area with funding secured for 2015/16. Figures for 2014 shows that uptake rates are increasing year on year. There are currently 92,948 children in 1,452 schools and nurseries across Wales now taking part in the supervised element of the scheme (59.5% of all children from pre-school to Year 2 in Wales).

Recent surveys also confirm that dental disease levels in children are improving in Wales across all social groups. There is no evidence of widening inequalities.

**Inappropriate attendances at Accident and Emergency departments** place a strain on the system at a time when budgets are under extreme pressure. It is essential to reduce this unnecessary burden if we are to maintain viable services for those who genuinely need them.

Health Boards and the Welsh Ambulance Services Trust are working together on alternative care pathways enabling paramedics, GPs and other healthcare professionals to avoid Emergency Departments attendances and admissions. Pathways are in place in five of seven health boards for fallers and patients with resolved epilepsy and diabetes, resulting in over 2000 patients being referred to services other than Accident and Emergency Departments.

NHS Direct Wales provides a 24/7 health advice and information telephone and web based service as well as a nurse led clinical triage service for Category C (non-emergency) 999 calls in support of the Welsh Ambulance Services Trust clinical model. This support typically avoids over 1,000 unnecessary ambulance conveyances per month. Looking forward, we are developing a national NHS 111 model for Wales, integrating NHS Direct Wales and out of hours services. This will ensure that quality, safety and patient experience are continually improved.

### **Building climate resilience**

The health sector has reinstated the Climate Change and Health Working Group to reduce emissions and build resilience in public health, health service provision and the NHS estate in Wales from climate change. The multidisciplinary Group will be focussing on coordinating evidence and policies to tackle the cause and consequences of climate change and the new requirements under the Wellbeing of Future Generations Act and the Environment Bill.

Adverse weather conditions can have an impact on public health, particularly for people in vulnerable groups such as the elderly, the very young or those with pre-existing medical conditions. Public Health Wales has produced public health guidelines which give advice on measures that can be taken to reduce the health risks from flooding, heatwaves and the extreme cold. The “Extreme Weather Public Health Alerts & Advice for Wales<sup>23</sup>” document published by Public Health Wales in 2015 provides a consolidated source of alerts and advice when extreme weather events occur or are forecast.

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<sup>23</sup> <http://www.wales.nhs.uk/sitesplus/888/page/43886>

Our approach to improving the health and wellbeing of the Welsh population is based on a 'whole system' model approach, where the environment is but one of several determinants of health (including cultural, ethnic, social, economic, biological and genetic factors) and which collectively contribute to our health and wellbeing. A healthy environment (clean air, soil, wholesome food and drinking water etc) is a strong driver for good individual and population health. Public Health Wales work closely and collaboratively with a number of partners, including Local Authorities, Natural Resources Wales, Health Boards, Welsh Government and the public on a variety of health and wellbeing programmes, using our knowledge and evidence of environmental hazards to support the case for prevention and early intervention. Examples include

- work on air quality and contaminated land issues links into work to promote actions to change behaviour and create healthy, sustainable communities and to address environmental inequities and health inequalities;
- working with housing colleagues, our smoking cessation service and community midwives to facilitate the early identification of carbon monoxide problems;
- linking more closely with Local Authority Planning Departments to advocate for environmental public health risks and solutions to be routinely considered in development control issues.
- exploring how best we can work with others to promote and improve people's health and to reduce inequalities in health where environmental factors have a role to play.

## **Educational Attainment**

Wales faces a number of long-term challenges at key points in the educational development of its citizens. This is as important in our early years experiences as much as in the standards at school and further and higher education.

The Welsh Government is working to raise the standards of education and training provision, attainment and infrastructure across Wales so that everyone can reach their potential. It also aims to deliver a suitably skilled workforce with high-quality opportunities for all learners, while supporting individuals, families, communities and businesses in improving economic and social well-being and reduce inequality through education and training.

Sustainable development fits naturally with this work and applying its principles can help deliver multiple economic, social, environmental and cultural benefits. The following examples to improve literacy and numeracy, tackling educational disadvantage, developing low carbon and resilient school infrastructure and supporting the Welsh language illustrate the positive benefit that has been made over the year.

### **Improving literacy and numeracy**

One of the key priorities for education in Wales is the improvement of standards in literacy and numeracy as the foundation for higher level learning and employability. Enabling young people to achieve their potential not only improves their well being, but also positively influences the economy of Wales as a whole. Investment during these formative years will help to prevent the requirement for investment in remedial programmes in the future. In line with this Government's priorities to raise standards of literacy and numeracy in schools across Wales, the Welsh Government launched the National Literacy Programme and the National Numeracy Programme, which explain all activities relating to improving standards in literacy and numeracy, setting out the actions the Welsh Government and its partners need to take to achieve the necessary improvements.

Key to the delivery of these is the National Literacy and Numeracy Framework, which establishes national expectations for pupils' learning. In addition, there are national reading and numeracy tests which are taken annually by pupils from Year 2 to Year 9. The tests are diagnostic and help schools identify individual pupils' support needs so that they can effectively target intervention.

Our Qualified for Life education improvement plan will capture the work to date and show how we continue to support literacy and numeracy e.g. through the findings from the Mathematics Task and Finish Group, new GCSE support programme and the implementation programme for the Literacy and Numeracy Framework. The refresh will provide an opportunity to reflect on progress and consider ways forward in the continued drive to improve standards. Originally the refresh was planned by autumn 2015, however the updated Literacy and Numeracy Programmes are now due to be published in spring 2016. The timescales of this work has been re-aligned with the development of the plans for the design of the new curriculum and assessments arrangements as set out in 'A Curriculum for Wales – a curriculum for life'. The impact of these programmes are expected to be seen over future GCSE results and PISA assessments as the cohorts of pupils progress through school. We

have commissioned an external evaluation of the programmes to help understand how well we delivered them as well as their impact.

### **Supporting pupils and deprived communities**

The Welsh Government encourages and supports education institutions to operate as part of the community in a number of ways to ensure wider community benefits such as promoting community cohesion, increasing flexible assets and widening access to higher education. The Education Department, in conjunction with the Communities Division, provided £3m of funding for a Communities First/Pupil Deprivation Grant (CF/PDG) Match funding grant scheme, which has funded a range of successful projects designed to improve the outcomes of learners, and promote closer working between schools and their wider communities via the Communities First clusters between 2013 and 2015. CF/PDG Match funding will not continue in 2016/17. We do, however, expect successful projects still to continue - the outcomes are a key part of our intended outcomes - and the better-than-expected settlement provides for this. It will allow for a less bureaucratic, hopefully more creative, approach to coordinated working.

To help promote community cohesions in June 2015, we produced family and community engagement (FaCE) guidance and a toolkit of resources specifically designed to help schools engage with parents and the wider community in order to raise standards, attainment and learner well-being. Resource 5 of the toolkit contains advice for schools on developing community partnerships, and promotes the role that schools can play in promoting and maintaining community cohesion and preventing violent extremism. Along with this resource, Estyn inspects schools on their provision for equality and diversity and on the way they work in partnership with their community. This prompts schools to be more outward facing and to develop an ethos that is inclusive and contributes towards community cohesion. An aim of the 21st Century Schools and Education Programme is to create flexible educational environments that meet both the needs of the learner and the wider community. The provision of wider benefits is considered when assessment of any project business case takes place and the added value of Community Benefits is an integral consideration in the procurement of all projects within the Programme. These measures ensure wider social, environmental and economic issues are taken into account during the project life cycle.

#### **Example of flexible assets and spaces in communities**

Ysgol y Gogarth, which is a school in Llandudno that caters for pupils with special educational needs contains a hydro pool and sports hall, which is accessible to other community groups and comprises a healthcare suite for adult services. In addition, Penarth Learning Campus, which is a school funded through our 21<sup>st</sup> Century Schools Transitional Programme has been responsible for creating training places and apprenticeships for 83 people, employed 1,422 people within a 25 mile radius during the construction and donated 457 hours to school projects. Further education colleges play a key part in the community from hosting local sporting events to developing agricultural course in conjunction with local farmers, this is reported through the Colegau Cymru newsletter, for example [http://www.collegeswales.ac.uk/en-GB/enews177\\_160315-721.aspx](http://www.collegeswales.ac.uk/en-GB/enews177_160315-721.aspx). This both assists the local communities and gives valuable experience to the students.



One of the key priorities for higher education is widening access which makes a significant contribution to the society and economy of Wales, and supports social justice, social mobility and economic upskilling. This is led by the Higher Education Funding Council for Wales (HEFCW). HEFCW's Remit Letter for 2015-16 sets out the Ministerial expectation that the Council will continue its strategic approach to encourage and incentivise universities and their partners to raise educational aspirations and achievement among communities that have traditionally been under-represented in higher education, particularly Communities First areas. Higher education institutions are expected to develop strong partnerships with their relevant Communities First Clusters, consider what actions they might take to ensure young people from deprived areas have the opportunity of higher education promoted to them proactively and support local partners in raising the aspiration of young people.

Following a joint HEFCW/Welsh Government conference on widening access in December 2014, HEFCW and the UK Economic and Social Research Council (ESRC) jointly commissioned and funded the Wales Institute of Social and Economic Research, Data and Methods (WISERD) to carry out research to gain a better understanding of the factors that shape patterns of participation in higher education in Wales and to explore the particular role played by policy initiatives to widen access to higher education in contributing to these patterns. WISERD's subsequent report, published in September 2015, presents the findings and policy implications of its research, and makes a number of recommendations for HEFCW, the Welsh Government and higher education providers to improve pupil progression to university from schools and colleges with historically low levels of this type of attainment.

### **Supporting young people through their education**

The higher education sector makes a substantial contribution to the economy of Wales through its expenditure and employment of staff. The sector's contribution towards sustainable economic growth is broad – through knowledge creation, developing a highly skilled workforce, and through engagement with local communities. The Welsh Government remains committed to opening up higher education to all those with the potential to benefit from it.

We continue to support young people through our Education Maintenance Allowance (EMA) Wales Scheme, encouraging 16-18 year olds from low-income households to remain in education. Around 30,000 students benefit from EMA annually with around £24 million paid out to students in academic year (AY) 2014/15. A key indicator is the percentage of EMA recipients who progress to higher education (HE). The latest figures show that 31% of EMA recipients in 2012/13 progressed to HE (either in 2013/14 or 2014/15). This indicator will increasingly build up a picture, over time, of our success in ensuring that access to HE should be on the basis of the individual's ability to benefit, not what they can afford to pay.

In 2013/14, we commissioned an independent evaluation which found that the support we provide through EMA benefits young people from low income households by widening access to education, reducing the rate of NEETs and addressing the link between poverty and educational attainment. Stakeholders and practitioners were represented on the Evaluation Steering Group and participated in the research,

along with students and parents. Any changes to the EMA Scheme (other than technical) will be subject to consultation.

To ensure that Wales has the skills it needs to meet the challenges of the future, universities and students have to have access to the resources and support they need. The Welsh Government has set a clear strategy for *tuition fees and support* – and these policies will remain in place at least until the end of the current Assembly term.

The non-means tested tuition fee grant covers any additional cost of tuition fees for students domiciled in Wales when compared to 2010/11. The tuition fee policy will have been awarded to around 57,000 students by the end of the 2014/15 academic year, meaning that the Welsh Government has prevented Welsh students from accumulating additional debt of around £270m during the first three years of the policy. The latest outcome data available is 2012/13 and as we go forward we will be carefully monitoring what impact the policy has had on widening access.

Disabled Students' Allowances (DSAs) are part of the higher education statutory student support package provided by the Welsh Government. In 2013/14 around £9m of DSAs were allocated to over 3,700 Welsh students towards a range of support, including the provision of support workers, the purchase of computers and specialised equipment and assistance with travel costs. The DSAs policy is currently being reviewed to ensure that DSAs funding is being targeted effectively.

### **Improving learning opportunities**

*Academi Wales* has been embedding a Managing Change Successfully programme across the public sector, the programme uses the principles of driving sustainable and collaborative change across organisation and sector boundaries, over 50 public services trainers have been given the skills and materials to embed the programme locally and nearly 3500 managers have been through the outcome based programme to date. *Academi Wales* will lead on a Public Service Values project and will publish for the first time a Leadership Competency and Qualities Framework for Welsh Public Service Senior leaders, both of these significant pieces of work will be based on the principles of the Well-being of Future Generations (Wales) Act and define the behaviours of those leading future focused and sustainable public service organisations.

### **Improving Welsh language in education**

As part of promoting and protecting our Welsh language, *A living language: a language for living* is the Welsh language strategy 2012 to 2017 for the promotion and facilitation of the use of Welsh language in everyday life. It supports our vision to see the Welsh language thriving in Wales. The provision of Welsh-medium education from early years through to workplace learning provides a key means of producing Welsh speakers and individuals who are confident to use the language at home, in their community and the workplace.

The Welsh-medium Education Strategy ensures that education and learning through the medium of Welsh is available across Wales and that progression from one phase

to the next is available in Welsh. The Strategy's Annual Report<sup>24</sup> shows the Welsh Government has taken steps to implement all of the allocated actions in the Strategy's Implementation Programme although some actions still require further interventions to make further progress towards the medium-term targets set. Some of the key achievements during the past twelve months include:

- Following the introduction of Welsh in Education Strategic Plans and Measuring Demand for Welsh-medium Education Regulations (Wales) 2013, the first statutory plans were received from all local authorities, which ensure the long-term planning and consideration of the development of Welsh-medium statutory education throughout Wales.
- The target to increase the number of learners aged 16–19 studying subjects through the medium of Welsh in further education colleges and work-based learning has been achieved. This achievement ensures that more individuals are maintaining their Welsh language skills for use in future employment.

We are in the final year of the Strategy and an independent evaluation is nearing completion. The evaluation report will be published in the summer.

Real challenges must be overcome if Welsh is to survive and prosper for the long term. Ensuring people have every opportunity to use Welsh in every part of their lives is one way of doing this and can be done through the Welsh Government's support for community groups to use Welsh and supporting communication media.

Organisations such as the the Urdd, the National Eisteddfod of Wales, The Young Farmers Clubs Movement and the Mentrau Iaith (Language Initiatives) have been provided with Welsh Government financial assistance to provide a wide variety of opportunities for people of all ages to use Welsh every day and live bilingually.

The Young Farmers Clubs Movement provides numerous activities to young people between the ages of 10 – 26 years of age, including, public speaking, stage performing skills as well as development of rural skills all being provided either in Welsh or bilingual in the north and south west Wales. The Urdd is a youth organisation which has over 50,000 members between the ages of 8 and 25 provides a wide range of activities which includes its Eisteddfodau, sport and leisure activities, exchange visits, and residential activities. These activities help support the use of Welsh amongst young people outside school hours and the Mentrau Iaith (Language Initiatives) provides numerous activities which help to increase the use of Welsh amongst families, young people and within the community. *The Welsh-language Technology and Digital Media Action Plan* has been developed to support Welsh-language digital media content and applications, allowing the Welsh language to flourish and enables Welsh speakers to participate fully as digital citizens. Our ambition is that Welsh speakers should be able to conduct their lives electronically through the medium of Welsh, whether that is for cultural, informational, entertainment, leisure, retail, transactional, community, or social networking purposes. When setting up our Welsh-language Technology and Digital Media Grant we focussed on scalable and shareable developments. Aberystwyth University's Welsh language mobile learning app meets these criteria in providing a learning tool for people to import their own lexicons, quizzes and exercises and output apps for Apple and Android devices.

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<sup>24</sup> <http://gov.wales/topics/educationandskills/publications/guidance/wmesreport/?lang=en>

By rewarding projects which embrace open licensing such as Creative Commons and Open Source, we are aiming to fund projects where the goods can be shared, reused and passed on to others. An example of this is our long-term relationship with the Language Technologies Unit of Canolfan Bedwyr at Bangor University. Welsh Government support has enabled them to share their publicly-funded assets under open licenses, using application programming interfaces. Others can then embed their online spellchecker Cysill to websites, which leads to greater confidence in the use of Welsh; a new voice recognition programme which is an important step to the full speech-to-text capacity which is needed in Welsh; and corpora of thousands of terms which can be downloaded for analysis by 'big data' researchers<sup>25</sup>.

### **Building better schools**

Efficient and resilient schools are a key part of our learning environment. The 21st Century Schools and Education Programme represents a major investment in our educational infrastructure. Band A of the Programme will see the rebuild and refurbishment of more than 150 schools and colleges across over the period ending 2019. The Programme aims to deliver sustainable buildings driving both energy efficiency and encouraging sustainable behaviour through our conditions of grant, which require Building Research Establishment Environmental Assessment Method (BREEAM) 'Excellent' and EPC 'A' rating as standard for new builds and significant remodelling projects. The purpose of this investment is to achieve:

- Better learning environments for children and young people in Wales aged from 3 to 19 to enable the successful implementation of strategies for school improvement and better educational outcomes over the long term;
- Better use of resources to improve the efficiency and cost-effectiveness of the education estate;
- Enhanced local public service provision; and
- A 21st Century Schools Standard for all schools in Wales which would reduce recurrent costs, energy consumption and carbon emissions, through excellent BREEAM ratings.

Welsh Government will work in partnership with local authorities and the further education sector to deliver these changes to educational provision. These changes link to wider improvements which include reduction of surplus places to achieve greater efficiency and in many cases link to wider regeneration in some of our most deprived communities, such as West Rhyl. All projects within our programme must consider wider community benefits. This includes provision of training and apprenticeship opportunities during construction, use of local suppliers and consideration of the use by and integration with the wider community as part of the business case.

As well as creating the right environment we are also ensuring our next generation understands the importance of sustainable development. The Welsh Government continues to support Keep Wales Tidy to deliver the highly successful Eco-Schools programme in 2016/17. Over 830 schools in Wales now hold the prestigious international Green Flag award and it is vital that children and young people learn about the challenges posed by a changing climate and how they can adopt more sustainable behaviours.

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<sup>25</sup> Further information of this work is available at <http://techiaith.org>.

## **Supporting children, families and vulnerable communities**

The Welsh Government is committed to having a fair and equal society where people have the same opportunities regardless of their background. Programme for Government commitments include actions to advance equality of opportunity and tackle discrimination, promote more inclusive and cohesive community; provide service users and carers with a stronger voice and greater control over the services they receive; ensure people receive the help they need to live fulfilled and healthy lives; reduce the level of crime and fear of crime; and provide high quality energy efficient and affordable housing.

Our approach to sustainable development reflects the levers available to the Welsh Government and provides a framework for addressing these issues by ensuring a consistent, long-term, preventative approach..

## **Tackling poverty**

Our 2013 Tackling Poverty Action Plan set specific milestones and targets to improving the outcomes of those living in low income households. Our 2015 Annual Report on Tackling Poverty, which we published in July, highlighted the progress made towards the targets we have set in our Tackling Poverty Action Plan. We have achieved our target to narrow the gap in attainment levels, between those eligible and not eligible for Free School Meals at Foundation Phase, ahead of time. We are also making good progress to achieve our target around reducing the number of young people who are not in employment, education or training (NEET), building affordable homes and delivering the Lift Programme. The number of children living in workless households in Wales is also at an all time low.

In March 2015, we also published a revised Child Poverty Strategy for Wales. This reaffirmed the Welsh Government's commitment to the ambition of eradicating child poverty by 2020. It also reaffirmed the three strategic objectives of the 2011 Child Poverty Strategy. These are focussed on reducing the number of children living in workless households, increasing the skills of parents and young people to enable them to secure well paid employment, and to reduce the inequalities which exist in the health, education and economic outcomes of children, young people and families living in poverty, by improving the outcomes of the poorest. In light of feedback from the consultation, we have also developed two new strategic objectives. These are: to use all available levers to create a strong economy and labour market which supports the tackling poverty agenda and reduces in-work poverty in Wales; and to support families living in poverty to increase household income – through income maximisation schemes, debt and financial advice, action to address the “poverty premium” (where households pay disproportionately more for goods and services) and action to mitigate the impacts of welfare reform. The revised Strategy commits to doing more to support low income households “here and now”. This will include developing new commitments for tackling food poverty; reducing in-work poverty; childcare; housing and regeneration; and mitigating the impacts of welfare reform.

The Tackling Poverty Action Plan remains the key delivery mechanism for achieving the aims and objectives of the Child Poverty Strategy. A range of different policies and programmes are contributing to the tackling poverty agenda and improving the outcomes of children and families living in poverty. This includes our key tackling poverty programmes – Flying Start, Communities First, Families First, Vibrant and

Viable Places and Supporting People. Programmes such as Parents Childcare and Employment (PaCE), Communities for Work and Lift are also playing a key role in supporting those furthest from the workplace to access employment and training opportunities.

The **Communities First programme** has three strategic objectives, helping to achieve:

- Prosperous Communities
- Learning Communities and
- Healthier Communities

Communities First Clusters produce delivery plans detailing activities in line with the strategic objectives supports work across a number of Welsh Government Portfolios including Health and Social Services, Education and Skills and Economy, Science and Transport. In 2014/15, as a result of the Communities First programme 2,646 participants over the age of 25 entered employment, 6,043 children increased their attendance at school, 11,050 children improved their academic performance, with 5,675 parents more engaged with their children's school. In addition to this 14,981 participants have increased their physical activity.

Working in partnership with other programmes and initiatives is a key feature of Communities First. Examples of this approach include piloting "Add to Your Life" (the Welsh Government online health and wellbeing check for the over 50s) in Communities First Areas and working with Citizens Advice Cymru in Communities First areas. Arising from Baroness Andrews' report *Culture and Poverty*, the *Fusion: Tackling Poverty through Culture* agenda is about connecting the cultural sector with tackling poverty. A key strand of Fusion is the *Pioneer Area programme* which is based on designing and delivering cultural activity that directly supports existing Communities First outcomes. This is currently being piloted in six Communities First areas across Wales.

### **Tackling domestic abuse and reducing crime**

Welsh Government recognises domestic abuse can happen in all kinds of intimate relationships and may be experienced through physical, sexual or emotional actions. We have continued to work collaboratively and support organisations across Wales to help identify and prevent all forms of domestic abuse. As a result of the work Welsh Government and partners have undertaken through the *10,000 Safer Lives Programme*, such as the implementation of the 11 minimum standards, the number of people who are safer or who feel safer has reached in excess of 13,000 between 2011-2012 and 2013-14.

The introduction of the *Violence against Women, Domestic Abuse and Sexual Violence (Wales) Act* will further strengthen our approach and ensure a focus across the public sector on the prevention of gender based violence, domestic abuse and sexual violence, the protection of victims and the support for those affected by such issues.

National and Local Strategies combined with a regional approach to funding will ensure services are needs based, sustainable and address the prevention, protection and supportive aspects of service delivery.

The *Youth Crime Prevention Fund* distributes funding across six regional partnerships. The Fund supports the priorities and outcomes in the Youth Justice Strategy and associated Delivery Plan. Regions report reductions in Anti Social Behaviour, in first time entrants to the youth justice system and reductions in re-offending. For example in the Cwm Taf area from 1 October 2014 to 31 March 2015, the Anti Social Behaviour Victim/Witness Support project reports that 71% of victims feel safer and are no longer experiencing anti social behaviour. During this period, 49 of the most vulnerable high risk victims were supported and no young people who were engaged on the project went on to reoffend.

### **Helping people with their money**

Funding of almost £1.9 m is in place until March 2017 to support *Credit Unions*. This funding will be used to enable Credit Unions to provide support to financially excluded people who may not be able to access mainstream financial products. Long term, the Welsh Government wants to see a sustainable Credit Union. To extend membership further, we are encouraging a stronger public sector Credit Union membership, across local authorities, local health board and the education sector, using accessible methods such as payroll deduction. Overall, our aim is to support Credit Unions to achieve 6 per cent market penetration by 2020.

Work to revise the Financial Inclusion Strategy currently underway will consider and include future actions in relation to strengthening the Credit Union movement in Wales. The commitments and priorities in the new Financial Inclusion Strategy will make an important contribution to supporting low income households in Wales. In particular, it will contribute to delivering the new objective in the Welsh Government's Child Poverty Strategy, which aims to support families to increase their household income by mitigating the impacts of welfare reform and tackling the poverty premium.

### **Improving people's homes and communities**

Improving the energy efficiency of the homes of low income households is the most effective way in which we can tackle fuel poverty, whilst also reducing emissions. As tackling poverty is an absolute priority for the Welsh Government, driving delivery through our energy efficiency programme Welsh Government Warm Homes that includes Nest and Arbed, together with work to leverage funding from the Energy Company Obligation (ECO) into Wales, is at the centre of our approach.

The arbed 2 ERDF scheme improved the energy efficiency of nearly 3000 homes in some of the most deprived areas of Wales. The programme created more than 470 new jobs and provided over 40,000 hours of training to new and existing employees. All of the schemes were delivered by Welsh based companies, including a consortia of local SMEs. The scheme managers working with Value Wales in developing the 'Community Benefit Tool' and have demonstrated up to a £2 return into the local communities for every £1 of investment. The programme had a modelled carbon saving of 2.48Ktc and energy savings of 9.5 gigawatt hours.

Nest is a Welsh Government scheme working to help reduce the number of households in fuel poverty and make Welsh homes warmer and more energy efficient places to live. Nest offers a range of advice and support for everyone to save energy and maximise income. In 2014-15 4 Nest improved more than 4,260

homes. The energy improvements made are estimated to have delivered average bill savings of over £470 per household. SAP ratings were increased by an average of 38 SAP points, with over 95% of homes improved to a level of EPC E or above. The total sum of CO2 lifetime savings resulting from these improvements is estimated at over 247,982 tonnes. During 2015-16, investment in Nest is expected to deliver improvements to more than 6,000 of the most energy inefficient homes.

In 2015 the Welsh Government published Green Growth Wales: Local Energy, setting out our vision for a future where communities and businesses use locally generated electricity and heat from a range of renewable installations to supply local demand. Installing and maintaining these renewable technologies and the systems used to manage them will provide decent local jobs for the long term.

We have worked with partners and provided support to develop a pipeline of community, local authority, Smart Living and Natural Resources Wales energy projects. We have provided public bodies with commercial expertise to help in delivering local energy generation and efficiency projects. Our Register of Community and Economic Benefits sets out how local communities have received support from energy developers to fund local priorities.

The Welsh Government's Local Energy service was launched at Taff Bargoed Park, Treharris in 2016. The service provides integrated support including help and advice from locally based Development Officers, access to preparatory and loan funding, and online resources including a toolkit and partnership portal. The partnership portal, hosted on the Welsh Government Local Energy website, will bring together partners such as community groups, local authorities, developers and investors to work together on projects, which will increase the options for shared ownership of developments. The toolkit includes various tools, templates and resources. The service is exploring different financial models for renewable energy projects in a non-subsidy environment. The project will also map new potential sites, and will help groups in more deprived areas to develop these sites, in partnership with others.

The service has been developed in collaboration with a group of community and local energy stakeholders, including Community Energy Wales, principally from Wales but also including respected members of the community energy sector across the UK and building on experiences from the Ynni'r Fro scheme. The design work recognised that we need communities, local authorities and developers all to work together in the interests of the people of Wales if we are to realise the full benefits from local energy. As a result of this co-design, the scheme will provide tailored support related to the capacity of the applicant, which will ensure that communities who need it most will receive the maximum support from the scheme.

### **Building resilience in our communities**

Under the Civil Contingencies Act 2004, public sector organisations captured by the duties having to carry out risk assessments, which involves a cycle of identifying potential hazards within the local context, assessing the risks, and considering how those risks should be managed. They also have a duty to maintain plans for



preventing emergencies; reducing, controlling or mitigating the effects of emergencies in both the response and recovery phases; and taking other action in the event of emergencies. This also includes a duty to maintain plans to ensure that they can continue to exercise their functions in the event of an emergency so far as is reasonably practicable. All this relies upon understanding and responding to the changing risks caused by climate change.

Action on climate change is an important component of tackling poverty as lower income and other disadvantaged groups contribute the least to causing climate change but are the most likely to be impacted by its effects. For example, typically older people, lower-income groups and tenants are most at risk of health impacts from extreme heat, cold and flooding, due to living in poorer-quality housing in coastal locations and pluvial flooding in urban areas with the least green space. In preparation for the Welsh report of the next UK Climate Change Risk Assessment, work has been undertaken to improve our understanding about the impacts of climate change on social vulnerability. A cross department group has been set up to look at the impacts on social justice and the distributional effects of flooding and heatwaves on people's well-being. The results from the project will feed in to the next CCRA.

A key part of building resilience is the work of Natural Resources Wales, who maintain almost 2000 miles of flood defences and main rivers and more than 4,000 sluices, floodgates and barriers in Wales which helps reduce the risk of flooding for over 73,000 homes. Throughout 2014/15 NRW continued to invest in flood defence, spending £18.7m, maintained flood prevention assets and exceeded their annual target of an additional 10,000 people taking action to prepare themselves against flood risk;

### **Supporting Wales' cultural heritage and local services**

Museums, archives and library services play a key role in supporting a sense of community and a sense of place. In increasingly challenging financial contexts, the regional and national delivery models are being looked at in terms of delivery in a more sustainable way.

The Every Child A Library Member initiative (ECALM) is targeting up to 35,000 children at year 4 to give every child library membership automatically, organise activities and encourage a love of reading. All local authorities will have joined the scheme by March 2016. The initial evaluation of the pilot phase with six authorities found 53% of the children surveyed said that other family members had since joined the library, and 70% of teachers who responded said they had seen immediate changes/improvements with reading levels and interest. Evidence shows that children who enjoy reading for pleasure outside of school have better literacy skills and improved life chances<sup>26</sup>. Evidence has also found that reading for pleasure is more important than factors such as parental level of education (IoE research). Automatically signing children up to the library service removes the need for a parent or guardian to be involved, thus helping to reach families who may not have the reading habit, helping to contribute towards tackling child and family poverty.

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<sup>26</sup> <http://www.ioe.ac.uk/newsEvents/89938.html>

Strengthening an individual's sense of place and identity is an important objective for the National Museums Strategy. CyMAL is working with the charity Kids in Museums to increase the level of engagement and participation by children and young people, for example, through *Taking Over Day* in November. On this day children and young people take over some of the functions in a museum (or other related organisation) and take charge. In 2014, 37 organisations took part in Taking Over Day and over 1,000 children and young people participated in events at Museums and related organisations across Wales giving some of them their first experience of cultural services. 60% of the children who took part in Taking Over had not previously visited their museum with their school or group. 94% of the children who took part identified that they felt happy being involved, while 84% said they felt proud.

The Welsh Government recognises the vital social role post offices play in local communities and have developed a *Post Office Development and Diversification Funds*. =. Example of the benefits of the fund include Meirion Store in Llangennyw in Abergele. It is the last shop in a rural village and offers a range of goods and services which local residents would otherwise have to travel outside the area to find such as a prescription pick up point, free access to cash and banking services and a range of grocery products. The PODF grant allowed them to fit a ramp to improve access to the shop and a new refrigeration unit to improve the range of fresh produce on offer. This small grant will make a difference to those with disabilities, those without transport and those with mobility issues making it difficult for them to travel.

Britton Ferry Post Office is located in an urban deprived area, serving regular customers who are mostly elderly, young parents or those in receipt of a variety of benefits including disability living allowance. The Sub-postmaster asked his customers what additional goods and services they needed. He was told better access and circulation space for the disabled and pushchairs and an increased range of grocery products as this helped customers avoid costly travel outside the area. The grant enabled a series of improvements that saw the shop's retail area double, creating a new convenience store attached to the post office. This now sells a range of fresh, frozen and store cupboard items not available elsewhere in the community.

## Annex 2 – Sector Progress

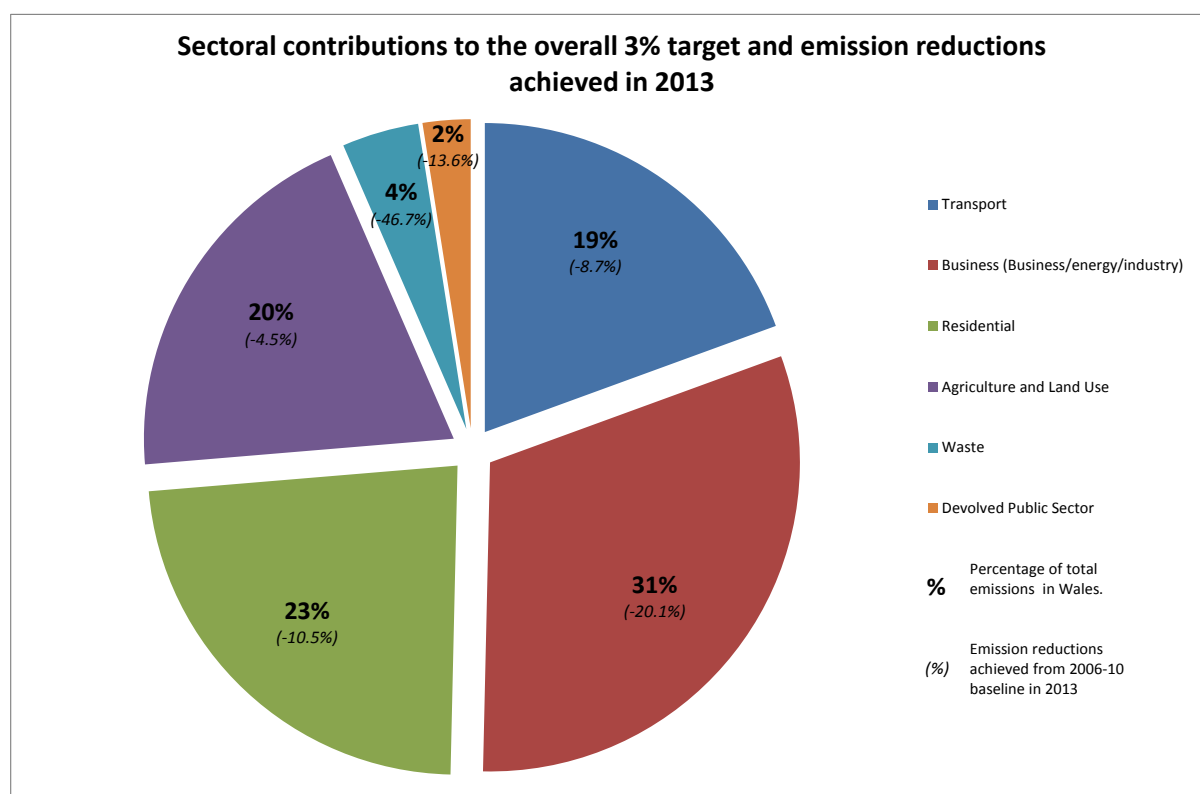
### Sector Progress

The following section shows the breakdown for each of the key sectors covered by the 3% annual target. It highlights that beneath the overall reduction of 15%, there is considerable variation within the sectors and there has also been considerable annual variation. Emissions have reduced in comparison with the baseline in all sectors, but the reductions range from -4.5% to -47%.

For each sector, the reductions against the 2006-10 baseline are as follows:

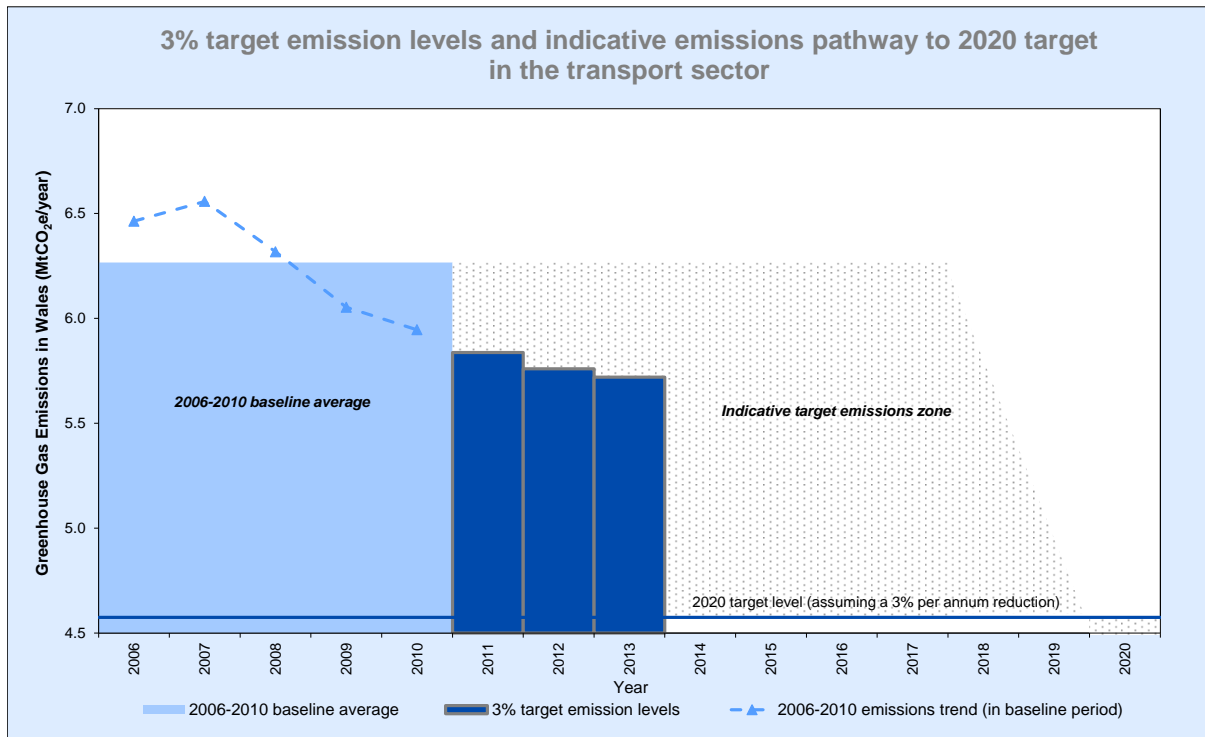
- Emissions from the Transport sector have reduced by -8.7%.
- Emissions from the Business sector have reduced by -20.1%.
- Emissions from the Residential sector have reduced by -10.5%.
- Emissions from the Agriculture and Land Use sector have reduced by -4.5%.
- Emissions from the Resource Efficiency and Waste sector have reduced by -46.7%.
- Emissions from the Devolved Public sector have reduced by -13.6%.

The proportion of emissions contributed by each of the sectors and the emissions reductions achieved in 2013 are set out in the following graph.



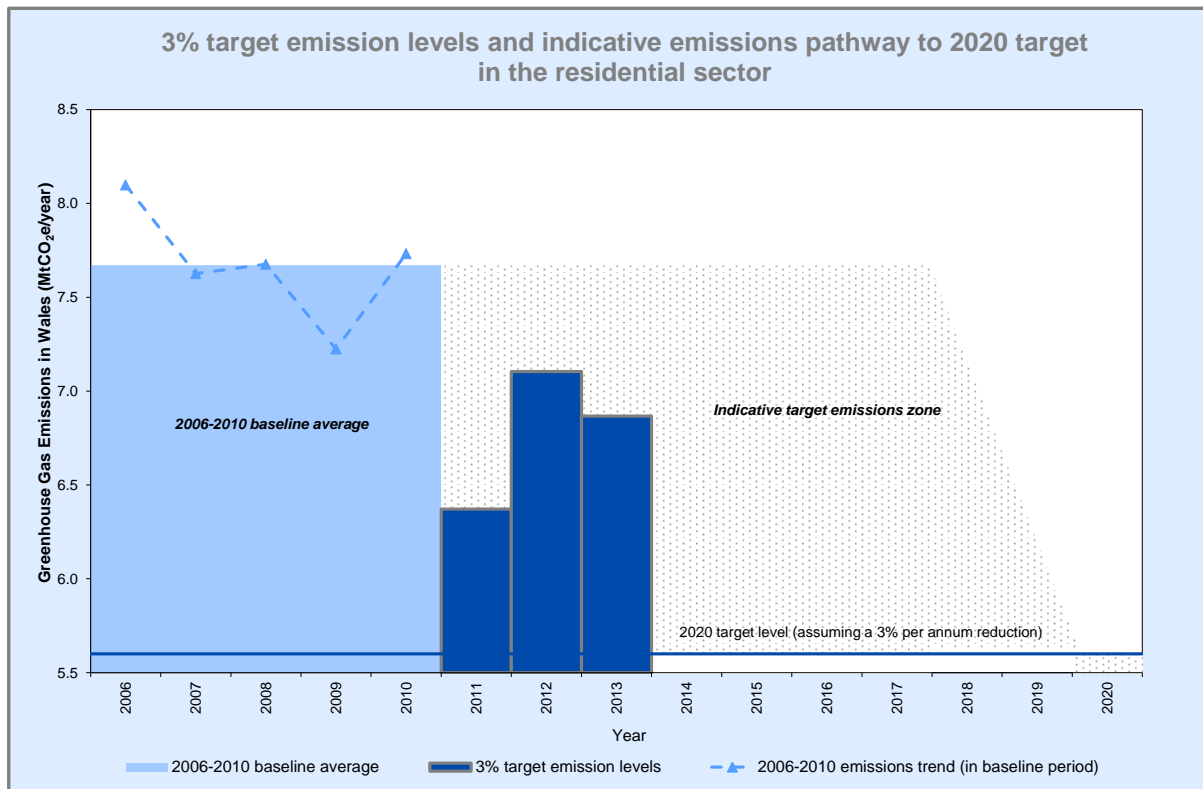
## Transport Sector

The Transport sector is responsible for approximately a fifth (19%) of emissions covered by our 3% reduction target, with the baseline average emission level of 6.27 MtCO<sub>2</sub>e. As shown by the graph below, the latest data shows that emissions from the Transport sector have reduced to 5.72 MtCO<sub>2</sub>e in 2013, which represents a - 8.7% reduction compared to the baseline. Transport sector emissions have declined by 0.7% since 2012, compared with 2013. Despite improvements in efficiency of transport vehicles, the sectors emission reductions are moderated by the growth in transport demand since 1990 and the increased affordability of cars over the period. Emissions peaked in 2007 and have since declined partly due to improvements in average fuel efficiency of vehicles and the switch from petrol to diesel cars in the latter part of the time series.



## Residential Sector

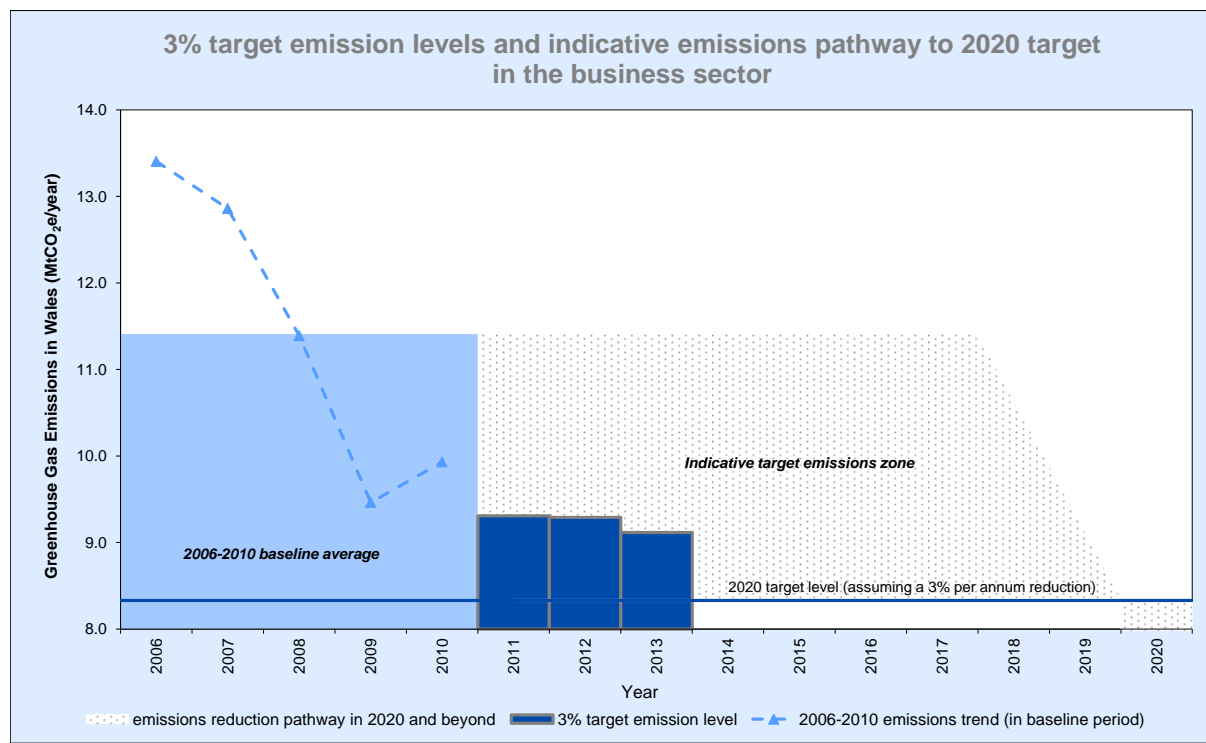
The Residential sector is responsible for 23% of emissions covered by the 3% target. The baseline average emissions in the sector are 7.67 MtCO<sub>2</sub>e and the latest data show emissions of 6.87 MtCO<sub>2</sub>e representing a reduction of -10.5% compared to the baseline, as highlighted by the graph below. Residential Sector emissions have decreased by -3.3% between 2012, and 2013 driven primarily by a 9% reduction in electricity consumption emissions that account for 38% of the sector emissions.



The 10.5% reduction in 2013 compared to the baseline is driven largely by improvements in residential energy efficiency and reductions in the energy intensity of UK electricity generation. However, Residential Sector emissions are subject to considerable inter-annual variability relating to the weather and the associated fuel consumption for heating. This is illustrated by the significant increase in Residential Sector emissions during the cold winter of 2010, and the decrease in emissions during the relatively warmer year of 2011.

## Business Sector

The Business Sector accounts for 31% of emissions covered by the 3% emissions reduction target<sup>27</sup> and has a baseline emission level of 11.41 MtCO<sub>2</sub>e. The graph below shows the latest emissions data at 9.12 MtCO<sub>2</sub>e which corresponds to a reduction in emissions within the sector by -20.1% from the baseline. Business Sector emissions have decreased by -1.9% between 2012 and 2013, largely due to a 6% decrease in end-use electricity consumption which account for 56% of the sector emissions.



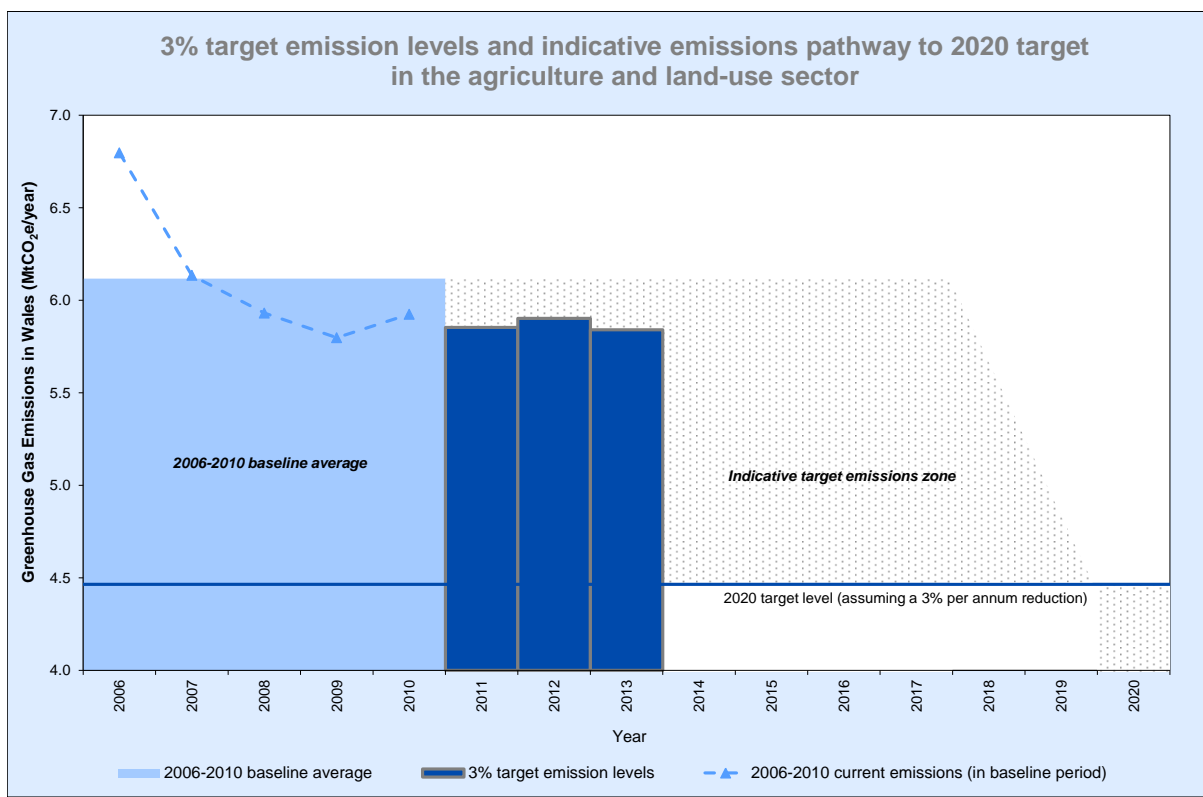
A considerable portion of the reduction since 2006 is undoubtedly due to the economic downturn in the UK during this period, with a dramatic reduction in emissions beginning in 2007 as a result of decreases in manufacturing output. Since 2009 emissions in the business sector have been relatively stable and there is a high potential for a rebound in business sector emissions in future years, depending on the rate and type of economic growth in Wales going forward.

End-use electricity consumption accounts for 56% of the Business sector emissions within the 3% target in 2013 and is primarily for heating, lighting and operating equipment in the sector. As such, in addition to manufacturing output, temperature also has a considerable influence on the sector emissions with increases in emissions during colder years associated with increased heating demands. The cold winter in 2010 is partly responsible for the increase in business sector emissions in 2010.

<sup>27</sup> This excludes direct emissions from heavy industry and energy generation.

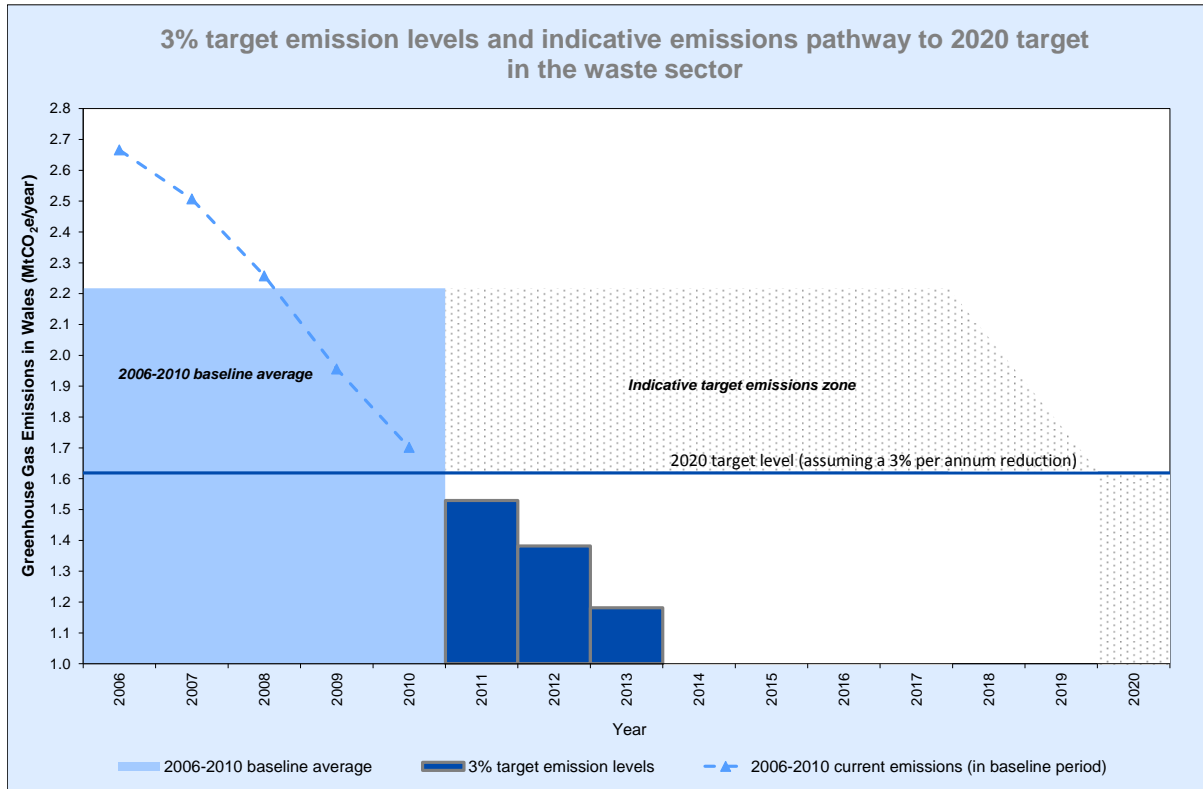
## Agriculture and Land-Use Sector

The Agriculture and Land Use sector accounts for 20% of emissions covered by the 3% target and has a baseline emission level of 6.12 MtCO<sub>2</sub>e. The graph below shows the latest emissions data at 5.84 MtCO<sub>2</sub>e which corresponds to a decrease in emissions from this sector by -4.5% compared to the baseline. Agriculture and Land-Use Sector emissions have decreased by -1.1% between 2012 and 2013. There was no significant trend in Agriculture sector emissions between 2012 and 2013 (0.3% decrease), although there has been a decrease in emissions from cattle and an increase in emissions from sheep. The reduction between 2012 and 2013 has been largely driven by a 1% increase in net removal of CO<sub>2</sub>e from LULUCF between 2012 and 2013 (an increase in the size of the sink). In addition, end-use electricity consumption emissions in the Agricultural sector decreased by 14% but electricity consumption in emissions in the sector are a small component accounting for just 4% of total sector emissions.



## Resource Efficiency and Waste Sector

The Resource Efficiency and Waste Sector emissions account for 4.0% of the total 3% target emissions and baseline emissions for the sector are 2.22 MtCO<sub>2</sub>e. The graph below shows that Resource Efficiency and Waste Sector emissions have reduced by 46.7% from the 2006-2010 baseline to 1.18 MtCO<sub>2</sub>e in 2013. Resource Efficiency and Waste Sector emissions have decreased by -14.5% between 2012 and 2013, due to improved management systems reducing methane emissions from landfill.



The long-term decrease in Resource Efficiency and Waste Sector emissions has mainly been due to the progressive introduction of methane capture and oxidation systems in the management of landfill sites.

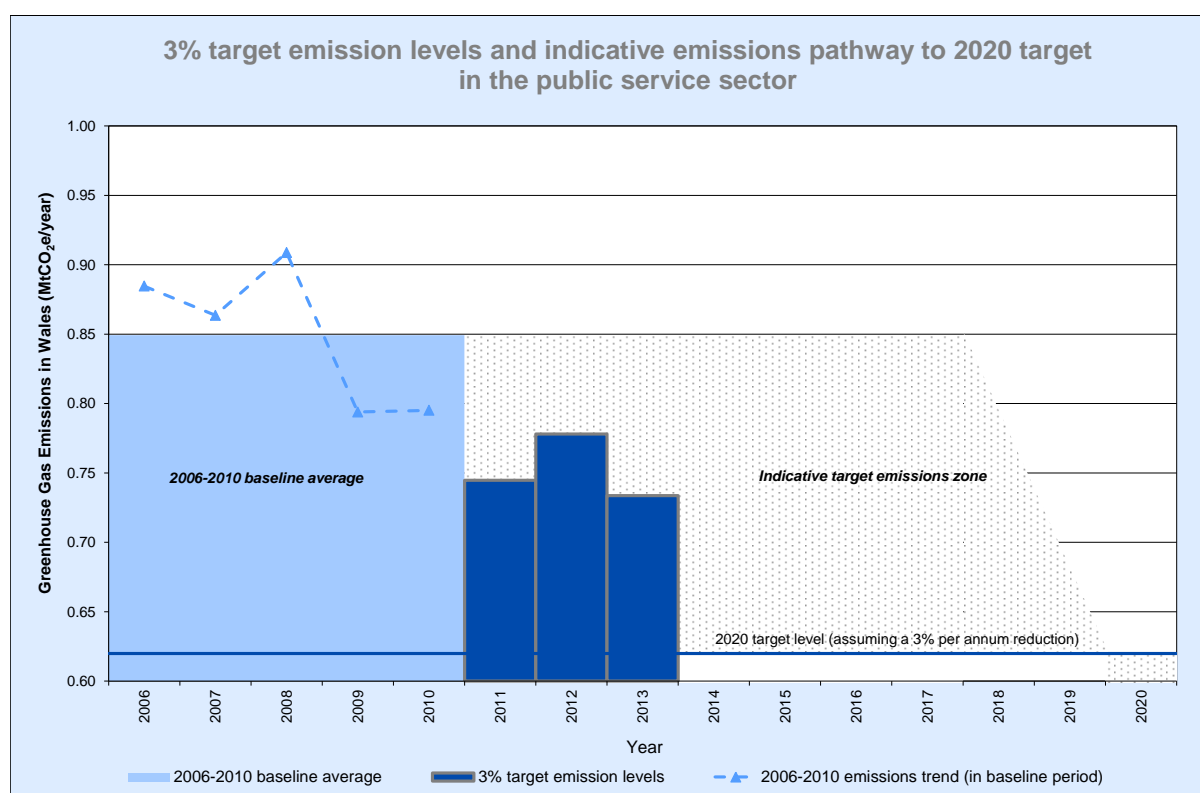


## Public Sector

The Climate Change Strategy 2010 states that the 3% target will report on Public Sector emissions that are directly attributable to the operations of the devolved Government of Wales<sup>28</sup>. As with the previous report, the devolved public sector is used to report on the 3% target performance in this report but both estimates are provided for comparison in the table below.

GHG Emissions (MtCO <sub>2</sub> e)	Baseline (2006-10)	2012	2013	% reduction from baseline in 2013
Public Sector (total)	0.89	0.81	0.77	-13.3%
Devolved Public Sector	0.85	0.78	0.73	-13.6%

The Devolved Public Service Sector accounts for 2.5% of the total 3% target emissions in 2013 and has a baseline of 0.85 MtCO<sub>2</sub>e. The Devolved Public Sector has achieved a reduction of -13.6% from the baseline to 0.73 MtCO<sub>2</sub>e in 2013. Devolved Public Sector emissions have decreased by -5.7% between 2012 and 2013, due primarily to an 11% decrease in emissions associated with electricity consumption that account for 54% of the sector emissions.



<sup>28</sup> Climate Change Strategy for Wales, 2010. Page 78. Available at: <http://wales.gov.uk/topics/environmentcountryside/climatechange/publications/strategy/>

## Impact of moving to Phase 3 of the EU-ETS

The EU-ETS operates in set phase periods and with each new phase the scope of EU-ETS coverage is expanded to cover additional combustion sources<sup>29</sup>. Phase 3 started in 2013 and has the effect of moving a greater proportion of emissions from the non-traded to the traded sector, effectively reducing the coverage of the 3% target between 2012 and 2013.

The 3% target method does not attempt to remove this artefact of the EU-ETS phase changes and applies the EU-ETS phasing methodology that applied at the time of the appropriate emission year (*i.e.* years up to 2007 use Phase 1 method, 2008-2012 use Phase 2 Method, and 2013 onwards use Phase 3 method).

The phased nature of the EU-ETS is an in-built feature of the trading system and it is not possible to totally remove the influence of EU-ETS phase changes on the 3% target. The methodological approach adopted in the 3% target ensures that the 3% target covers the full extent of emissions that fall within devolved competence at the time of their release and is consistent with the agreed definition of the 3% target. Although this approach may permit gasses to come out of the Welsh Government emissions reduction programme following a phase change within the EU-ETS, any excluded emissions are moving into a strong regulatory framework and will continue to be controlled and reduced at a Europe-wide level within the EU-ETS. Therefore, the overall aim of reducing GHG emissions will continue to be met under the EU-ETS.

The impact of the move to Phase 3 of the EU-ETS is difficult to quantify precisely because traded emissions are not constant between years and therefore any annual change is driven by both a change in traded sector emissions, as a result of differing production outputs, and the impact of an increase in the scope of the scheme, bringing in new sites and activities. The data does not allow for these two elements to be effectively isolated but the following observations can be made:

- At the EU-level, the increase in coverage due to the extension in scope of Phase 3 alone is estimated to account for 4 to 5% of the total EU emissions in 2013.
- EU-ETS emissions in Wales increased by 20.2% in 2013, compared to 2012.
- The number of installations within the EU-ETS in Wales increased by 6, from 56 to 62, between 2012 and 2013. This is due to both a natural year to year variation in the EU-ETS and the impact of the increased scope in Phase 3.
- The inclusion of new sites in the EU-ETS as a result of the year to year variability in the EU-ETS and the increased coverage of Phase 3 accounted for 3.9% of the increase in emissions in 2013.
- The growth in emissions at existing sites due to production variability and the increase in scope of activities included in Phase 3 accounted for 96.1% of the increase in 2013. Indeed, 80.7% of the increase in 2013 can be explained by increased emissions at just three sites including Aberthaw and Pembroke

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<sup>29</sup> Phase 3 of the EU-ETS was expanded to cover a broader definition of combustion that includes all burning of fuel. Phase 3 also sees the inclusion of new gases (Nitrous oxide (N<sub>2</sub>O) and Perfluorocarbons (PFCs)), aluminium production, and carbon capture, transport and geological storage within the EU-ETS. There are also some new exclusions including, a small emitters and hospitals opt out where these sites can choose to be excluded, and a exclusion for installations where only biomass is used.

power stations and the Port Talbot iron and steel works. Both Pembroke power station and Port Talbot Iron and steel works have seen significant increases in output in 2013 which is expected to have had a much greater influence on emissions than the change in scope due to the move to Phase 3 of the EU-ETS.

- Aviation changes under Phase 3 have not impacted on Wales as the two operators registered in Wales fall under the emissions threshold for inclusion in the EU-ETS.

In conclusion, although emissions within the EU-ETS in Wales have increased significantly in 2013, the majority of this increase is expected to be the result of production increases at EU-ETS sites. Although the change to Phase 3 will have also contributed to this increase its effect is difficult to isolate but is expected to be a relatively minor contributor. The change in scope with the start of Phase 3 will have contributed to the reported -2.5% decrease in emissions within the 3% target coverage in this year but the precise contribution can not be identified from the data.

# TECHNICAL ANNEX TO THE 2015 WALES EMISSIONS REPORT

Welsh Government

*Emissions  
reduction  
performance  
indicators  
2015*

**Acknowledgements**

This technical annex has been produced by the Strategic Evidence and Assessment Branch of the Welsh Government's Land, Nature and Forestry Department.

If you have any comments on the report, please contact the Welsh Government Climate change team: [climate-change@wales.gsi.gov.uk](mailto:climate-change@wales.gsi.gov.uk)

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## 1. Introduction

The Welsh Government has put in place a comprehensive performance monitoring framework to track progress towards meeting the emission reduction targets set in the Programme for Government and the ambitions of the Delivery Plan for Emission Reduction in the 2010 Climate Change Strategy for Wales.

This technical annex reports progress against the performance indicators developed for each of the policies listed in the Delivery Plan for Emission Reduction and enables a more detailed look at how policies have impacted on overall 2013 emissions reporting.

The technical annex sets out the indicators for each of the following sectors:

- Transport
- Residential
- Business
- Agriculture and land use
- Public Service

The indicator framework that we have adopted contains three tiers:





Tier	Description
<b>Tier 1:</b>	CO <sub>2</sub> equivalent emissions estimates which are consistent with the 3% target definition for each sector.
<b>Tier 2:</b>	Activity data or emissions factors which are generally linked to Tier 1 and often come directly from the Greenhouse Gas Inventory for Wales.
<b>Tier 3:</b>	Policy tier indicators that aim to monitor trends in areas which Government policies are actively aiming to influence and which are likely to reduce GHG emissions. This Tier can not be linked directly to Tier 1 or Tier 2.

For each sector there are indicators for both Welsh Government policies and UK Government policies. This is because national policies implemented at the UK level will contribute significantly to achieving emissions reductions in Wales. To keep things as simple as possible the coding used in this report for each of the policies and indicators will be consistent with the coding used in the Delivery Plan for Emission Reduction, ensuring that readers can clearly relate the indicator to the Climate Change Strategy for Wales published in October 2010. Within this report, Welsh Government policy and indicator codes are prefixed by a 'W' and UK policy and indicator codes by 'UK'. For example, within the business sector WB (1, 2 etc.) is used to represent Welsh Government business *policies* and WBI (1,2 etc.) is used to represent Welsh business sector *Indicators*. Similarly UK business sector policies are prefixed by UKB and the corresponding UK level indicators by UKBI.



## Defining performance against a baseline

For each indicator, an assessment of performance against a baseline has been made, with each being assigned to one of four categories: clear improvement; stable or no clear trend; clear deterioration; and baseline or insufficient data.

 Clear improvement	 Stable or no clear trend	 Clear deterioration	 Baseline or insufficient data
<p><b>Clear improvement</b> – An increase or decrease of any amount in the measured variable in 2013 against the 2012 in a favourable direction.</p> <p><b>Stable or no clear trend</b> – there is no change in the measured variable in 2013 against the 2012 or there are too many variables to determine overall indicator trend.</p> <p><b>Clear deterioration</b> - An increase or decrease of any amount in the measured variable in 2013 against the 2012 in an unfavourable direction.</p> <p><b>Baseline or insufficient data</b> – There is insufficient data to determine performance or the latest data is still within the baseline period.</p>			

To be consistent with the methodology used to report progress against the 3% target, an indicator baseline is defined as a 2006-2010 average of a measured variable where data is available. Where there is not data available for this averaging period, the most recent (or average of the most recent) data is used (up to and including 2010 data). Please note that some data is not based on a calendar year (i.e. January to December) and in these cases the data year is considered as the calendar year data collection starts. For example data running from April 2006 to March 2007 is viewed as 2006 data.

Within this report, performance is assessed for 2013 against the previous year even if an indicator has more recent data available. This allows us to assess performance in a single year and is consistent with reporting on the 3% target. However, the most up-to-date data can be found in the Emission Reduction Indicator spreadsheets (see 'Further Information' below).

### Important note on performance

The express purpose of the Emissions Reduction Indicators is to demonstrate progress towards meeting the targets outlined in Climate Change Strategy and to track the progress of policies identified in the Emissions Reduction Delivery Plan. It should be noted that the proxy data used to assess performance does not directly measure implementation of specific policy intervention measures but provides only an indication of 'direction of travel' regarding emission reductions. In addition, the performance category awarded is based solely on the likely impact on GHG emissions based on available data. It does not necessarily reflect on either the performance of a particular policy with regards to its primary purpose, or the policy goals of a particular sector to deliver wider outcomes for the people of Wales.

### Future development and addressing the UK CCC recommendations

There are a number of policies for which we have not been able to develop indicators at this stage. This has largely been due to data absence or restriction. The gaps will be highlighted in this annex.





### Format of this document

For each of the six sectors identified in section above, this document provides:

1. A summary table of key policies identified in the Emission Reduction Delivery Plan and where quantifiable, their estimated emissions reduction contribution in 2020. Where possible, each policy measure has been identified.
2. A summary table of indicators developed to measure progress against the identified policy measure and an assessment of progress in 2013 against 2012.
3. A breakdown of the data for each indicator, providing a graph depicting the recent trend and table providing figures on 2013 against 2012
4. A summary of the data trend for each indicator.
5. A link to the full indicator data tables and source data used in their compilation.

### Summary of performance

The table below provides a summary of the number of indicators within each performance category per sector. The table also presents the percentage of indicators which are classed as 'clear improvement' or 'stable/no clear trend'. Overall, 53% of emission reduction indicators show an improving or stable trend.

Sector					Percentage Stable or Improved
Transport	8	0	3	4	73%
Residential	1	0	2	5	33%
Business	2	0	1	0	67%
Agriculture and land use	8	1	1	3	90%
Resource Efficiency and Waste	5	0	0	2	100%
Public Service	4	1	1	1	83%
<b>Total</b>	<b>28</b>	<b>2</b>	<b>8</b>	<b>13</b>	<b>79%</b>

**Note: percentages are calculated excluding the 'insufficient or baseline' category as performance is currently unknown.**

### Further information

The information presented within this technical annex comprises the headline statistics within the Emission Reduction Indicator spreadsheets. These spreadsheets provide more information on the indicators and present a full breakdown of the data used in their compilation.

## 2. Transport Sector

This section contains the indicators for the transport sector. The transport sector is responsible for approximately a fifth (19%) of emissions covered by our 3% reduction target, with the baseline average emission level of 6.28 Mt CO<sub>2</sub>e. Welsh Government action in the transport sector is expected to deliver 0.29 Mt CO<sub>2</sub>e savings in 2020, whilst UK action in the transport sector will deliver 1.07 Mt CO<sub>2</sub>e savings in Wales in 2020.












Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WT1 and WT2, as shown below. Indicators are typically cross-cutting and linked to more than one policy, with these links shown in Table 2. There are some policy indicators for which there are currently no underlying indicators because of data gaps. This includes promotion of eco-driving (WT5), improving traffic management on the strategic road network (WT9) and alternative fuels infrastructure (WT11) - the latter is at an early stage in the planning and implementation process.





Table 1 - Transport sector Climate Change Strategy policies

Policy Number	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WT1	Sustainable Travel Centres.	0.22
WT2	Smarter Choices.	
WT3	Travel planning and provision of personalised travel information.	No additional savings for these policies to avoid double counting
WT4	Developing a series of strategic modal interchanges.	
WT5	Promotion of eco-driving.	0.03
WT6	Promotion and support for walking and cycling.	0.0005
WT7	Investment in rail services.	0.004
WT8	Investment in buses.	0.001
WT9	Improving traffic management on the strategic road network.	0.02
WT10	Supporting the freight industry to reduce emissions.	0.01
WT11	Alternative fuels infrastructure.	No direct reduction expected yet





UKT1	The Carbon Reduction Strategy for Transport Low Carbon Transport: A Greener Future.	0.96
UKT2	Fuel Duty increases	0.11

Table 2 - Transport sector indicators (TI)

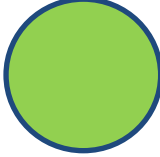
Policy Number	Indicator	Indicator number	Tier	Status
WT1-11	Transport sector GHG emissions	<a href="#">TI1</a>	1	
WT1-3, WT8	Total distance travelled - Vehicle kms	<a href="#">TI2</a>	2	
WT7	Fuel Consumption – Rail	<a href="#">TI3</a>	2	
WT10	Fuel Consumption - Rail Freight	<a href="#">TI4</a>	2	
WT1-3, WT6	Percentage of people travelling to work whose main mode of travel to work is cycling or walking	<a href="#">TI5</a>	3	
WT1-3, WT7	Rail passenger journeys	<a href="#">TI6</a>	3	
WT1-3, WT7	Train user satisfaction	<a href="#">TI7</a>	3	
WT1-3, WT8	Number of bus passenger journeys	<a href="#">TI8</a>	3	
WT1-3, WT8	Bus Travel Satisfaction	<a href="#">TI9</a>	3	
WT8	Average loading of buses in Wales	<a href="#">TI10</a>	3	
WT10	Traffic volumes of HGVs versus freight lifted in Wales	<a href="#">TI11</a>	3	

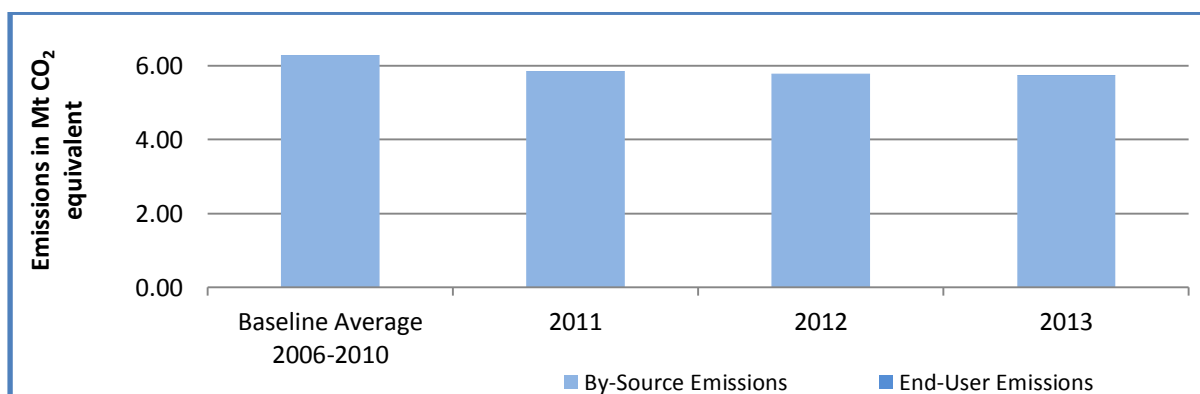
WT7	Proportion of passenger rail network in Wales electrified	<a href="#">TI12</a>	3	
UK1	Average new car CO <sub>2</sub> emissions	<a href="#">UKT1a</a>	3	
UK1	Ultra-low emission vehicles (ULEV) registered for the first time, United Kingdom	<a href="#">UKT1b</a>	3	
UK2	Total UK Road Transport Fuel Sales	<a href="#">UKT2</a>	3	

 Clear improvement	 Stable or no clear trend	 Clear deterioration	 Baseline or insufficient data
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### Welsh Transport Sector Indicator 1: Transport sector GHG emissions

	<b>Indicator:</b>	Transport sector GHG emissions
	<b>Tier:</b>	1
	<b>Status:</b>	Clear improvement
	<b>Policy indicator:</b>	WT11-11

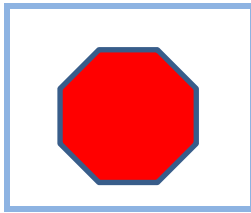


Transport sector GHG emissions	Baseline average 2006-10	2011	2012	2013
Mt CO <sub>2</sub> Equivalent	6.27	5.84	5.76	5.72

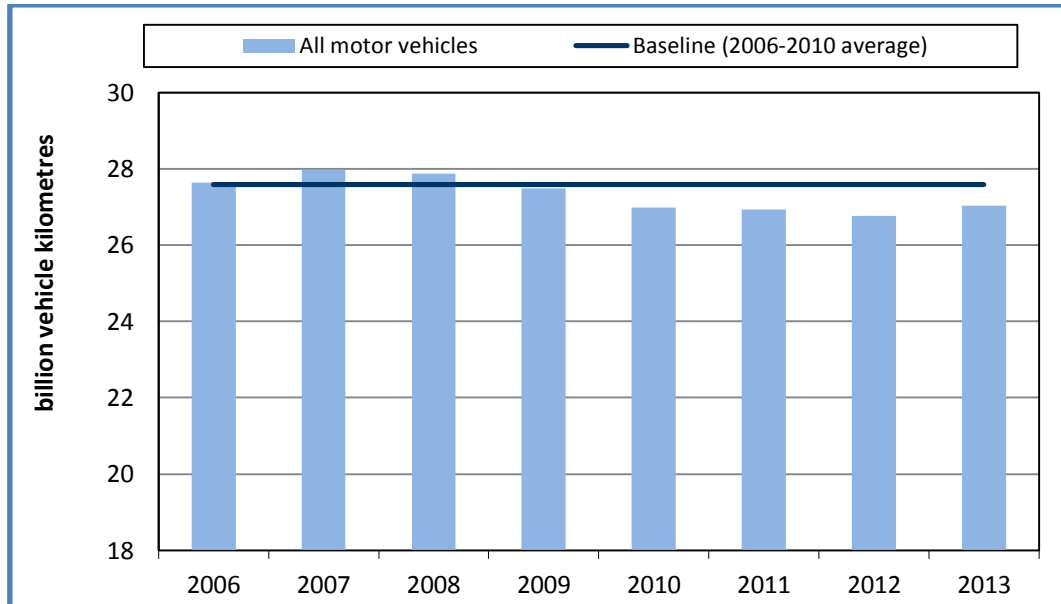
**Trend:** Transport emissions in Wales in 2013 are lower than in 2012. Following a small increase between 2006 and 2007, emissions have declined steadily between 2008 and 2012.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT11

### Welsh Transport Sector Indicator 2 - Total distance travelled - Vehicle kms



**Indicator:** Total distance travelled - Vehicle kms  
**Tier:** 2  
**Status:** Clear deterioration  
**Policy indicator:** WT11-3, WT8

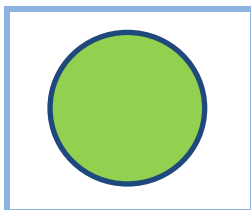


Total distance travelled (all motor vehicles)	Baseline (2006-2010 average)	2011	2012	2013
Billion vehicle kilometres	27.59	26.93	26.76	27.03

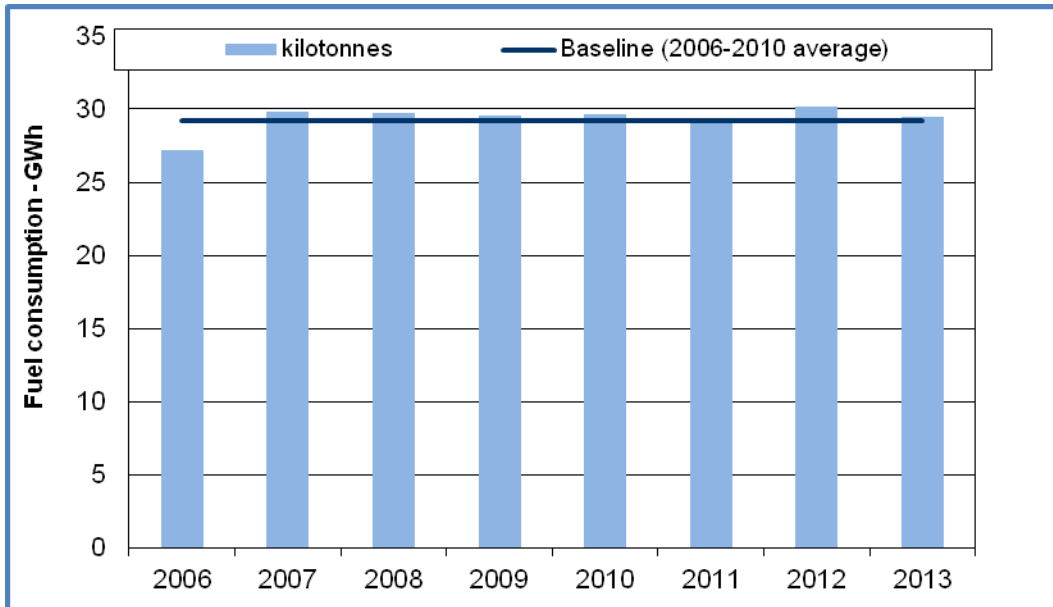
**Trend:** Total vehicle kilometres in Wales increased in 2012. Following an increase between 2006 and 2007 vehicle kilometres travelled declined steadily but now appear to be increasing.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT12

### Welsh Transport Sector Indicator 3 - Fuel Consumption – Rail



**Indicator:** Fuel Consumption – Rail  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WT17

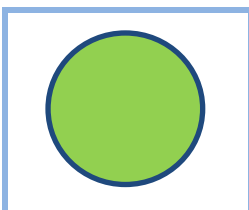


Fuel Consumption	Baseline (2006-2010 average)	2011	2012	2013
kilotonnes	29.19	29.20	30.15	29.50

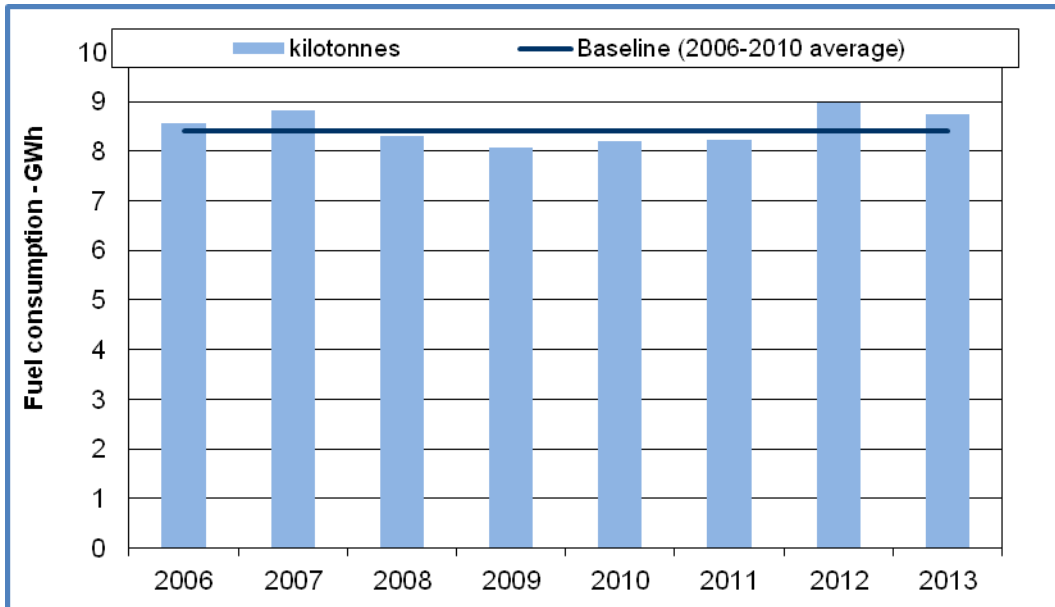
**Trend:** Rail fuel consumption in Wales decreased in 2013. Although this indicator is marked as clear improvement, fuel consumption remains above the baseline. An increase in rail fuel use is considered positive if it results in a reduction in road transport.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2014 WT13

**Welsh Transport Sector Indicator 4- Fuel Consumption - Rail Freight**



**Indicator:** Fuel Consumption - Rail Freight  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WT110

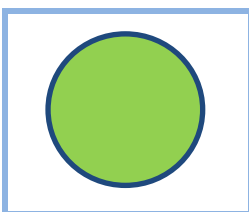


Fuel consumption	Baseline (2006-2010 average)	2011	2012	2013
kilotons	8.40	8.22	8.98	8.75

**Trend:** Rail freight fuel consumption in Wales increased in 2013. Although this indicator is marked as clear improvement, an increase in rail is considered preferable where it results in a decrease in road transport fuel use.

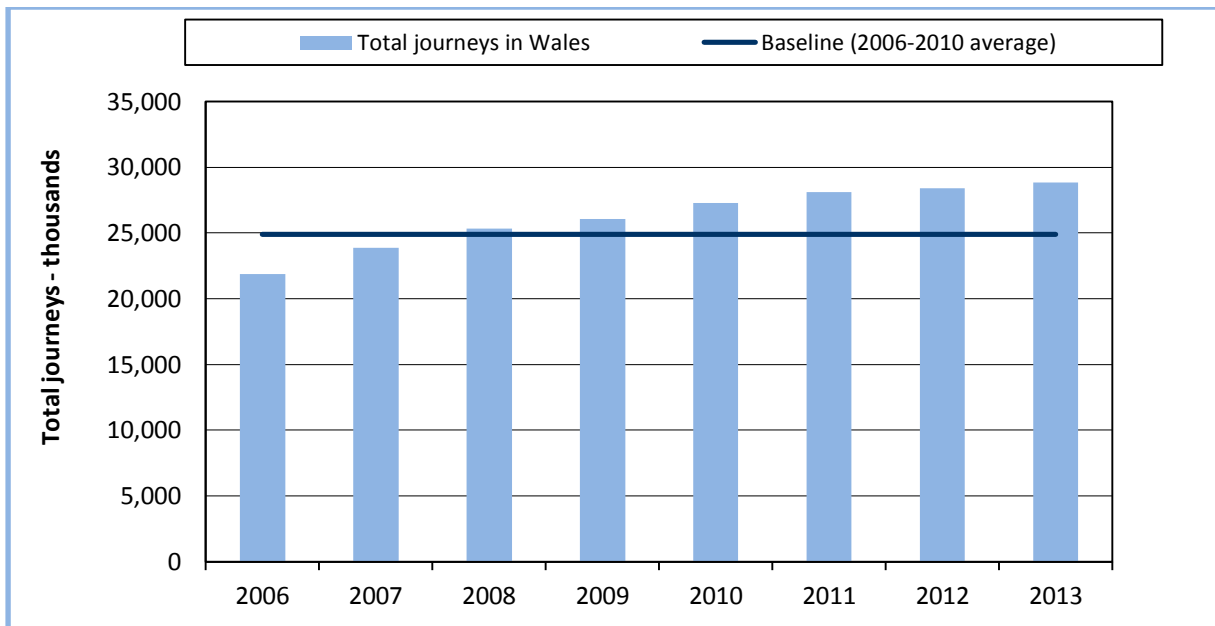
**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT14

**Welsh Transport Sector Indicator 6 - Rail passenger journeys**



**Indicator:** Rail passenger journeys  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WT11-3, WT17



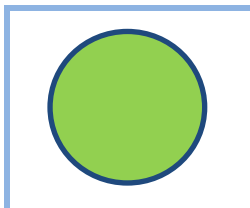


Total journeys in Wales	Baseline (2006-2010 average)	2011	2012	2013
Thousands of journeys	24,880	28,098	28,393	28,846

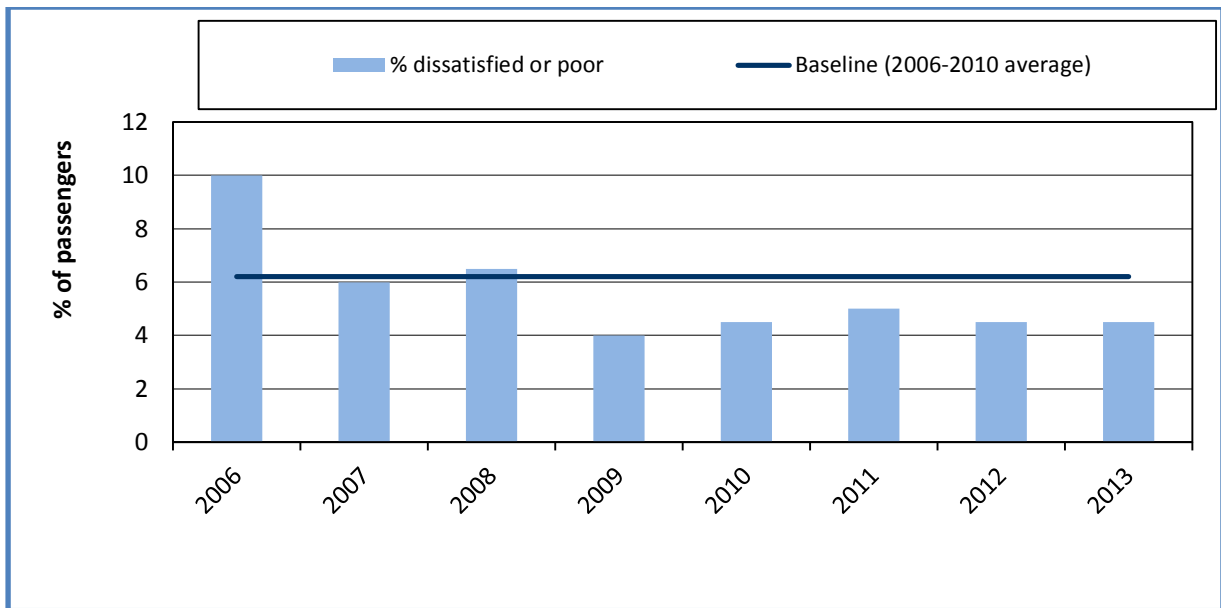
**Trend:** Rail passenger journeys in Wales have continued to increase in 2013. Passenger journeys have increased steadily since 2006.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT16

#### Welsh Transport Sector Indicator 7 - Train user satisfaction



**Indicator:** Train user satisfaction  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WT11-3, WT17

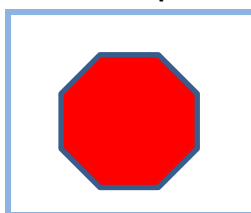


	Baseline (2006-2010 average)	2011	2012	2013
% dissatisfied	6.2	5	4.5	5

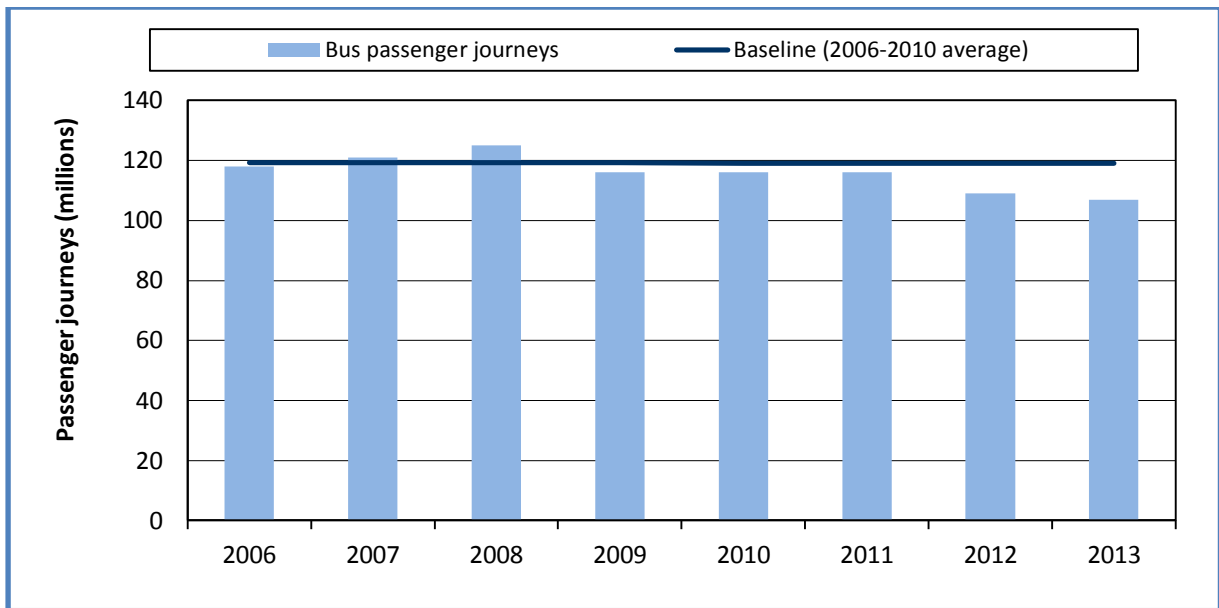
**Trend:** The percentage of rail passengers that were dissatisfied with the service reduce in 2013 compared to 2012. Satisfaction rate has been variable but has improved overall since 2006 – stagnating in recent years.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT17

#### Welsh Transport Sector Indicator 8 - Number of bus passenger journeys



**Indicator:** Number of bus passenger journeys  
**Tier:** 3  
**Status:** Clear deterioration  
**Policy indicator:** WT11-3, WT18

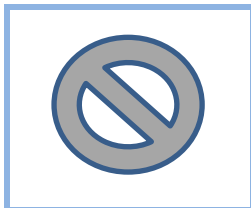


Bus passenger journeys	Baseline (2006-2010 average)	2011	2012	2013
Millions	119	116	109	107

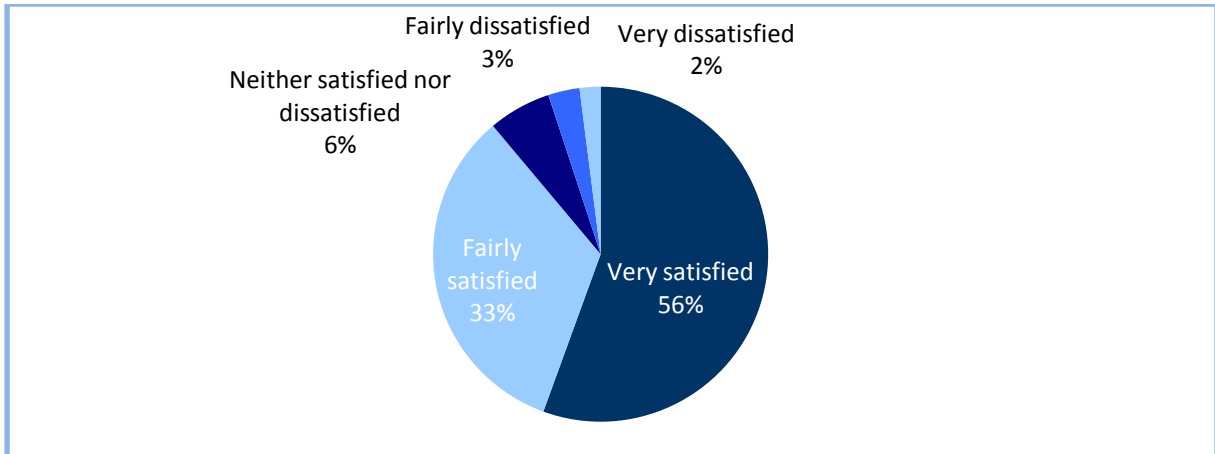
**Trend:** Number of bus passenger journeys has decreased in 2012 against 2012 and is currently at lower levels than the baseline period.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2014 WT18

#### Welsh Transport Sector Indicator 9 - Bus Travel Satisfaction



**Indicator:** Bus Travel Satisfaction  
**Tier:** 3  
**Status:** Baseline or insufficient data  
**Policy indicator:** WT11-3, WT18

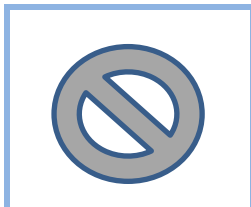


Bus passenger survey results for Wales - National Level 2010	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied
% of responses	55	33	6	3	2

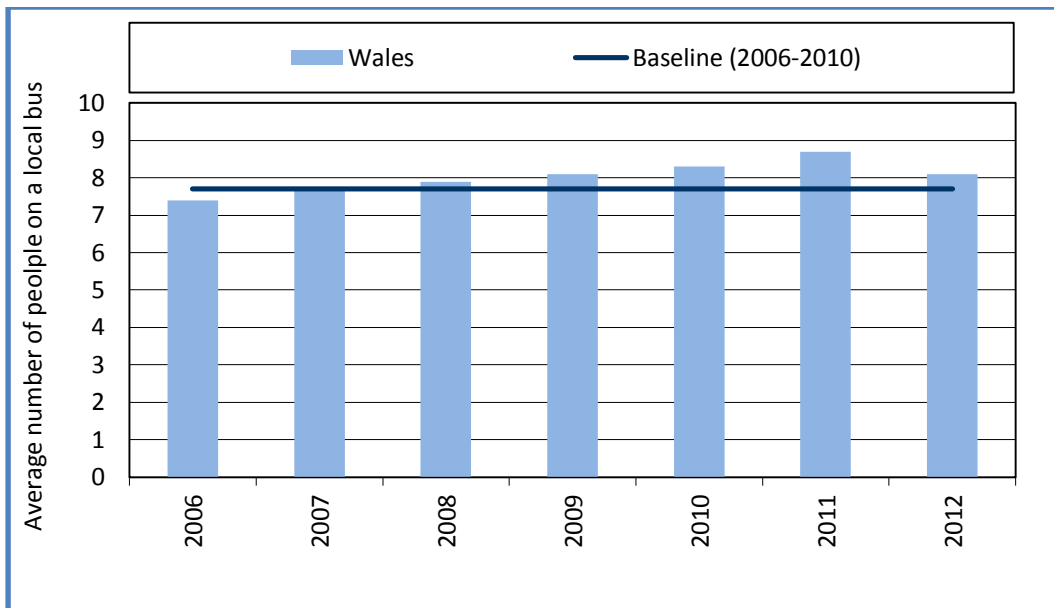
**Trend:** No historical data available since questionnaire has only taken place once in 2010.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2014 WT19

**Welsh Transport Sector Indicator 10 - Average loading of buses in Wales**



**Indicator:** Average loading of buses in Wales  
**Tier:** 3  
**Status:** Baseline or insufficient data  
**Policy indicator:** WT118

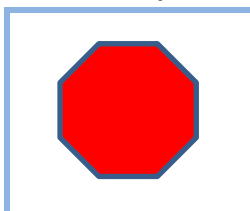


Average number of people on a local bus	Baseline (2006-2010)	2011	2012
Number	7.70	8.7	8.1

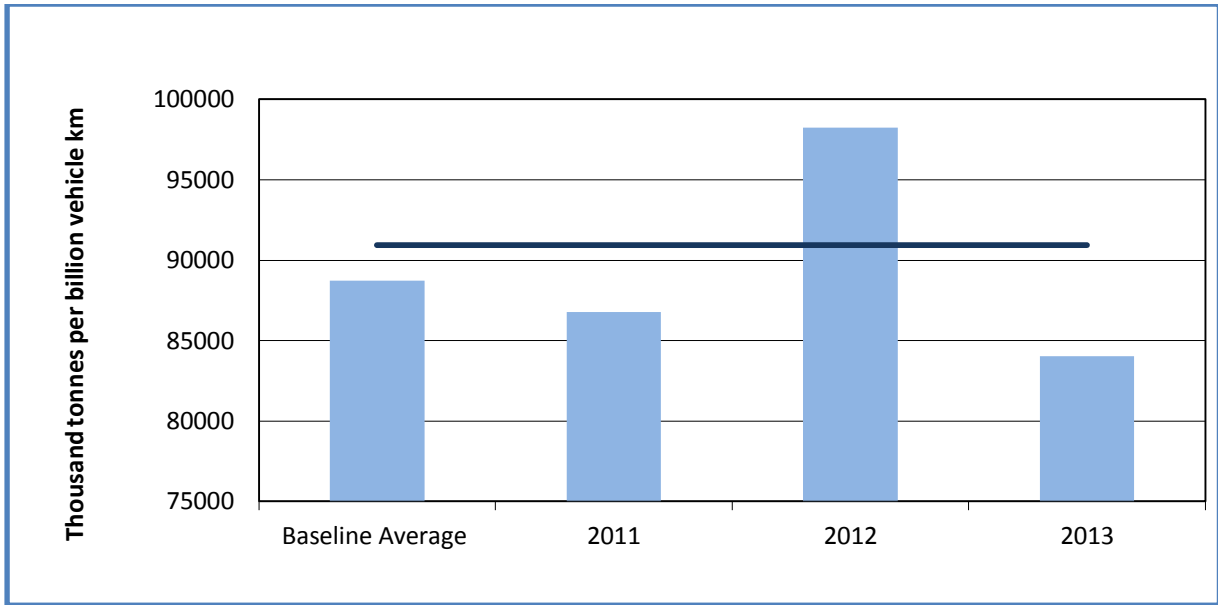
**Trend:** The average number of people on a local bus in Wales increased in 2011 against the baseline period. However, the average number decreased slightly in 2012. Compared to England and Scotland the average number of people on a local bus is lowest in Wales but the average distance travelled is greater in Wales. No data currently available for 2013

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2014 WT110

#### Welsh Transport Sector Indicator 11 - Traffic volumes of HGVs versus freight lifted in Wales



**Indicator:** Traffic volumes of HGVs versus freight lifted in Wales  
**Tier:** 3  
**Status:** Clear deterioration  
**Policy indicator:** WT110

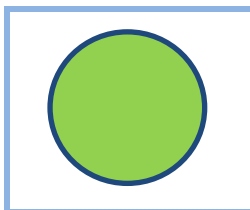


<i>Thousand tonnes per billion vehicle kms</i>	Baseline Average			
	2006-10	2011	2012	2013
Freight lifted per km travelled by goods vehicles	88,727	86,791	98,256	84,023

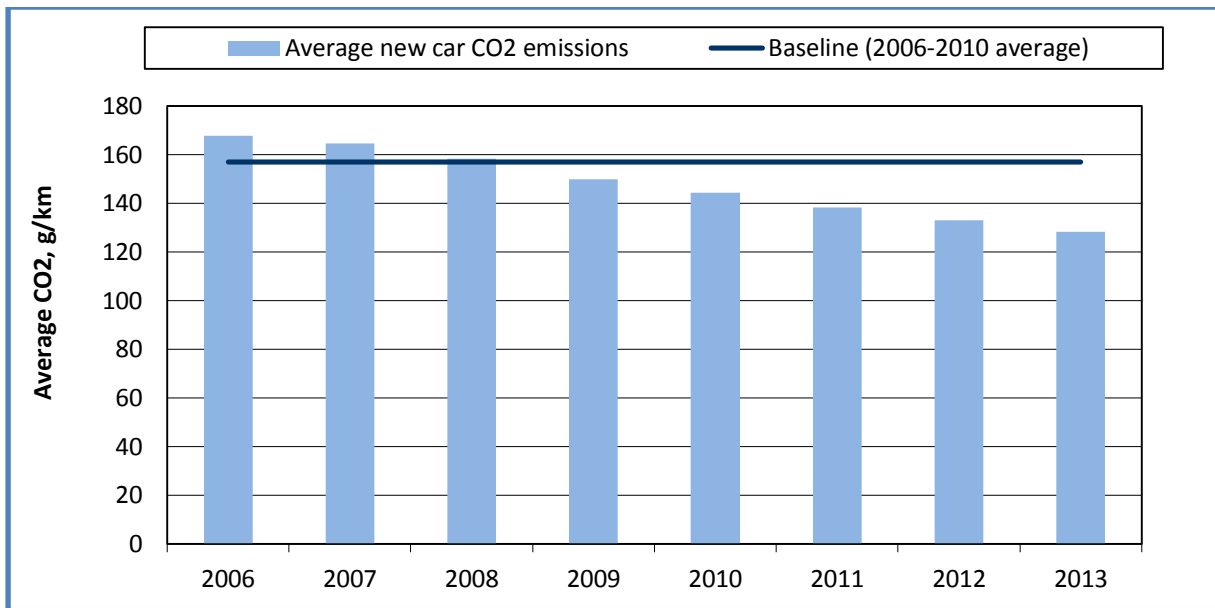
**Trend:** Freight lifted per km decreased in 2013 compared to 2012. Figures are now at their lowest level since 2009.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 WT111

**UK Transport Sector Indicator 1a - Average new car CO<sub>2</sub> emissions**



**Indicator:** Average new car CO<sub>2</sub> emissions  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** UKTI1a

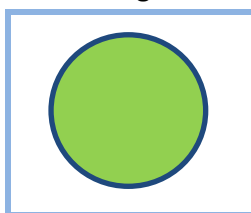


Cars registered for the first time by CO <sub>2</sub> emission band	Baseline (2006-2010 average)	2011	2012	2013
Average CO <sub>2</sub> emissions	156.9	138.2	133.0	128.4

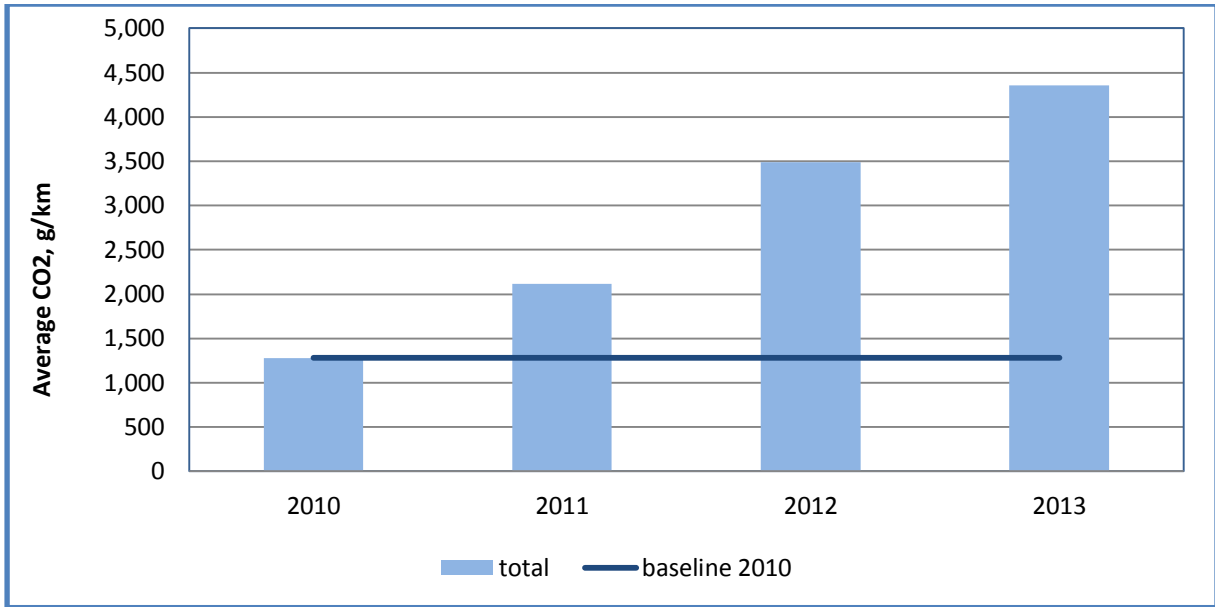
**Trend:** average new car CO<sub>2</sub> emissions have declined steadily year on year since 2006.

**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 UKI1a

**UK Transport Sector Indicator 1b - Ultra-low emission vehicles (ULEV) registered for the first time, United Kingdom**



**Indicator:** Ultra-low emission vehicles  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** UKT1

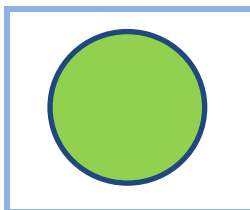


Number of ULEV registered	2010	2011	2012	2013
total	1,279	2,114	3,491	4,359

**Trend:** The number of Ultra-low emission vehicles (ULEV) registered for the first time in the United Kingdom rose continued to rise between 2012 and 2013.

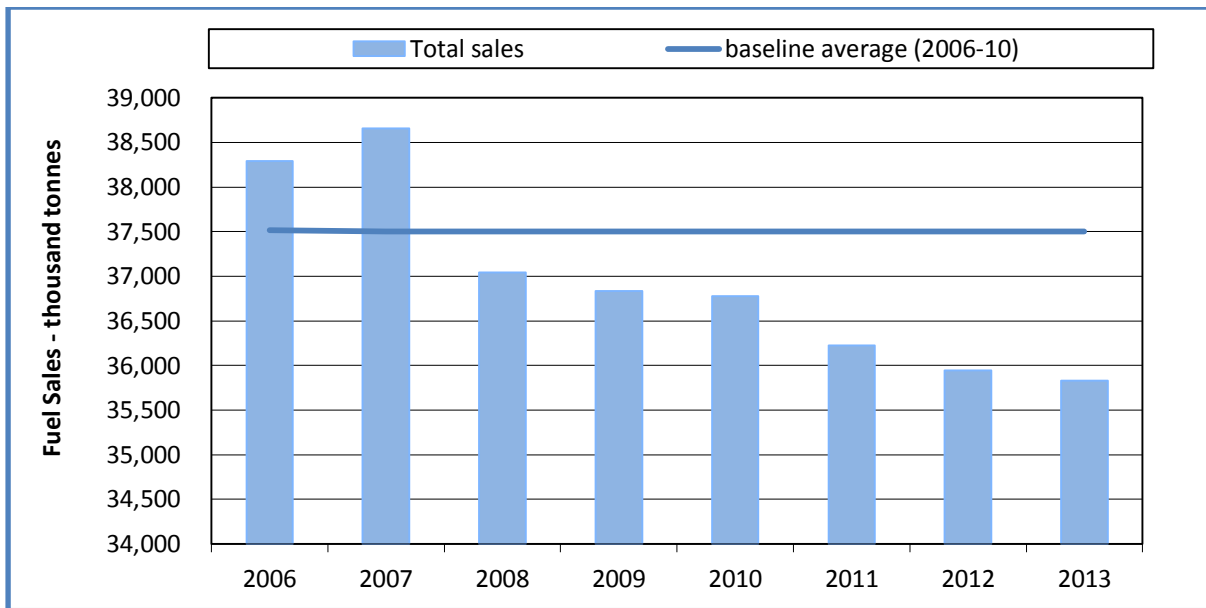
**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2014 UKI1b

**UK Transport Sector Indicator 2 – Total UK Road Transport Fuel Sales**



**Indicator:** Total UK Road Transport Fuel Sales  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** UKT2





Total UK Road Transport Fuel Sales	Baseline (2006-2010)	2011	2012	2013
Thousand tonnes	37,012	36,142	35,868	35,831

**Trend:** Total UK road transport fuel sales continued to decrease significantly in 2013. Following an increase between 2006 -2007, sales have decreased yearly.



**Indicator spread sheet reference:** Welsh Transport Sector Indicators 2015 UKI2







### 3. Residential Sector

This spreadsheet contains the indicators for the residential sector. The residential sector is responsible for 24% of emissions covered by the 3% target. The baseline average emissions in the sector are 7.69 Mt CO<sub>2</sub>e and the latest data shows emissions of 7.11MtCO<sub>2</sub>e. It is estimated that Welsh Government action in the residential sector will deliver 0.56 MtCO<sub>2</sub>e savings in 2020, whilst UK action in the residential sector will deliver 1.20 MtCO<sub>2</sub>e savings in Wales in 2020.





Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WR1 and WR2, as shown below. Indicators are typically cross-cutting and linked to more than one policy. Please note that due to changes in the way in which many residential sector policies are implemented and classified in Wales we need to revise the way we track progress over time. As a result many of the indicators in this sector are listed as *Baseline or insufficient data*.

Policy Number	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WR1	Area based domestic energy efficiency programmes. (Arbed)	0.03
WR2	Demand-led energy efficiency programmes focused on those at risk of fuel poverty.	0.19
WR3	Supporting community scale energy generation.	0.03
WR4	Improving the energy performance of social housing.	Not Quantified yet
WR5	Behaviour change at home.	0.31
WR6	Low carbon new build Wales.	Not Quantified yet
UKR1	Green Deal and Green Investment Bank	1.2
UKR2	Energy Saving Trust	Assumed to be part of other actions

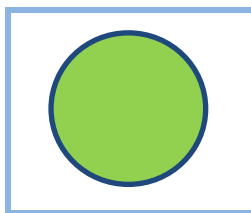
Policy number	Indicator	Indicator number	Tier	Status
WR1-6	Residential sector GHG emissions	<a href="#">R11</a>	1	
WR1-6	Residential fuel consumption	<a href="#">R12</a>	2	

WR4	Energy efficiency improvements - Households (inc social housing)	<a href="#">R13</a>	3	
WR1-2	Energy Efficiency improvements - Measures	<a href="#">R14</a>	3	
WR3	Microrenewables	<a href="#">R15</a>	3	
WR5	Behaviour change in the home	<a href="#">R16</a>	3	
WR6	Improving standards in new build in Wales	<a href="#">R17</a>	3	
UKR1	Domestic Green Deal	<a href="#">UKR1</a>	3	

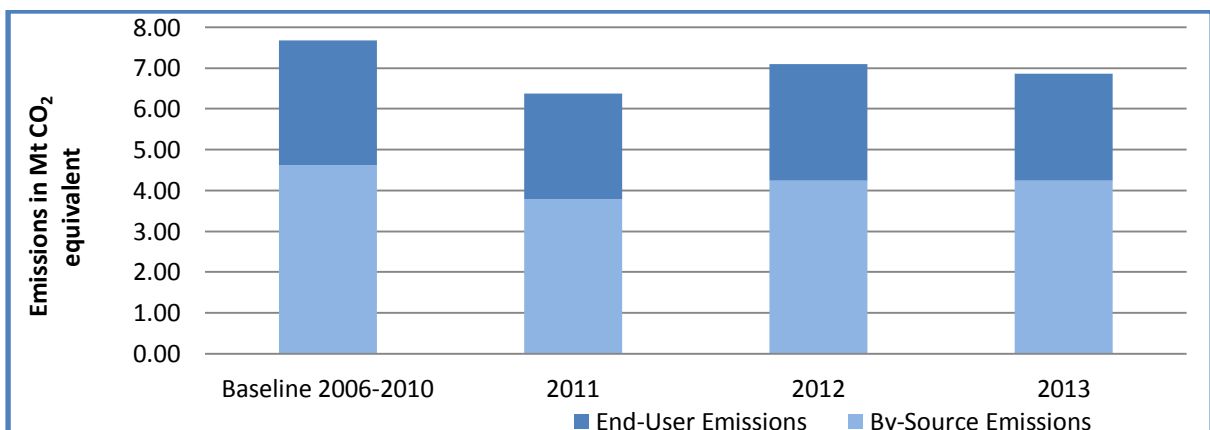
  

	Clear improvement		Stable or no clear trend		Clear deterioration		Baseline or insufficient data
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### Residential Sector Indicator 1 - Residential sector GHG emissions



**Indicator:** Residential Sector GHG emissions  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WR1-6

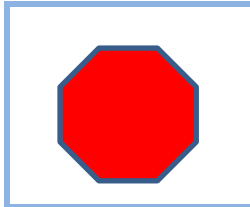


Residential sector GHG emissions	Baseline (2006-2009 average)	2011	2012	2013
Emissions in Mt CO <sub>2</sub> equivalent	7.67	6.37	7.10	6.87

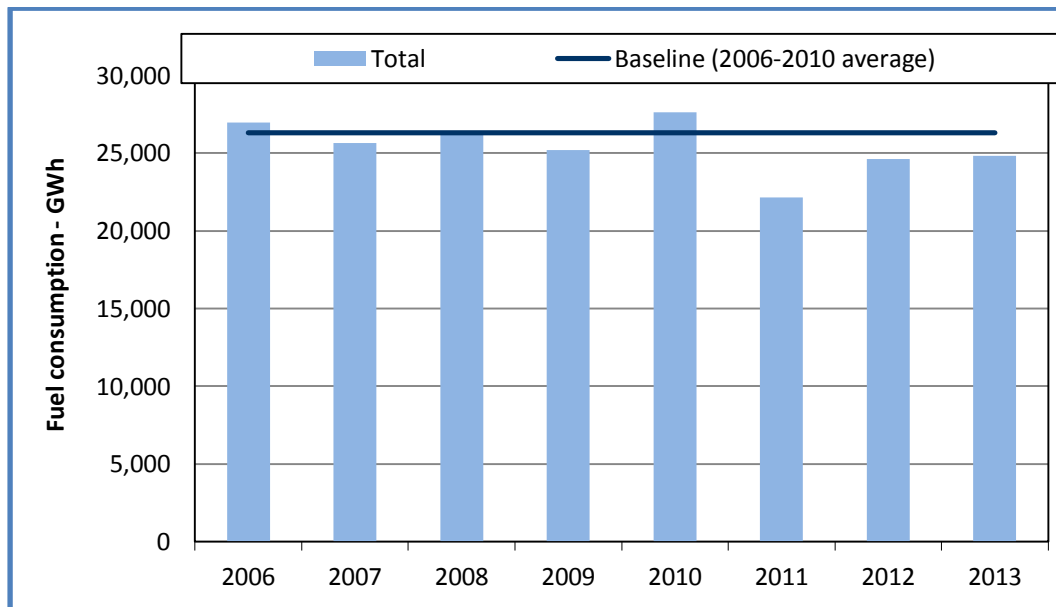
**Trend:** Residential sector GHG emissions reduced in 2013 against the 2012 emissions. Emissions from the residential sector are sporadic over the time series being driven by contextual factors such as average winter temperatures. However, emissions are currently below the baseline average emissions from 2006 to 2010.

**Indicator spread sheet reference:** Residential Sector Indicators 2015 RI1

**Residential Sector Indicator 2 - Residential fuel consumption**



**Indicator:** Residential fuel consumption  
**Tier:** 3  
**Status:** Clear deterioration  
**Policy indicator:** WR1-6



Fuel Consumption	Baseline (2006-2009 average)	2011	2012	2013
GWh	26,318	22,140	24,608	24,806

**Trend:** Fuel consumption in the Residential sector increased in 2013 compared to 2012. Residential fuel consumption has fluctuated since 2006, driven by contextual factors such as fuel price and average temperatures. However, fuel consumption was lower in the 2013 than the baseline.

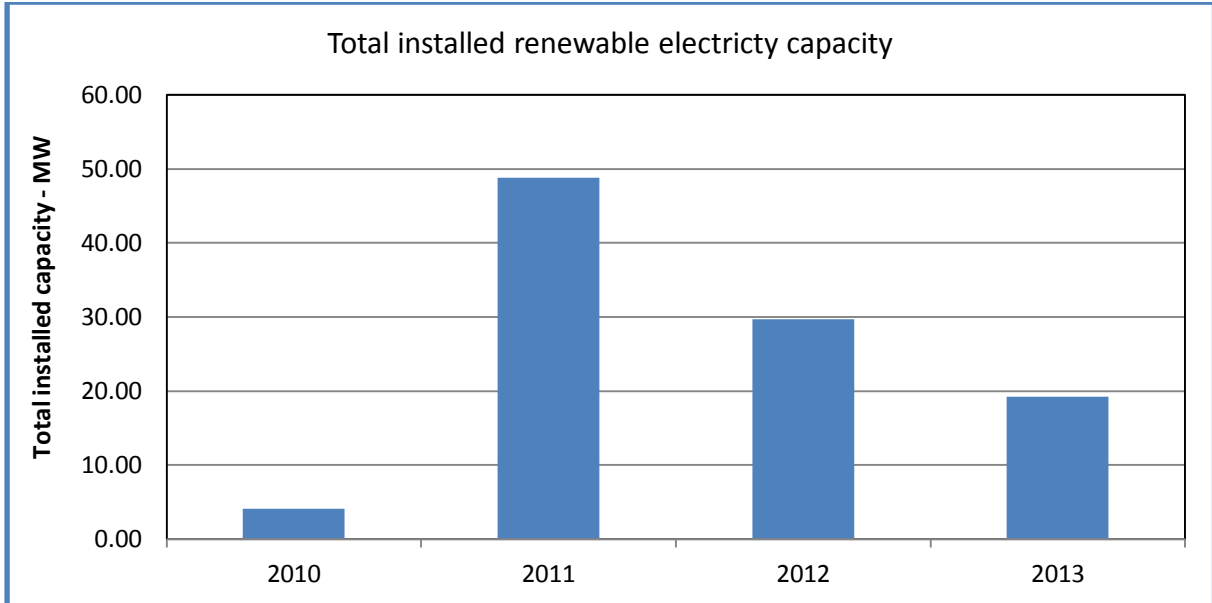
**Indicator spread sheet reference:** Residential Sector Indicators 2014 RI1

**Residential Sector Indicator 5 - Residential sector GHG emissions – Micro-renewables**



**Indicator:** Micro-renewables

**Tier:** 3  
**Status:** Clear deterioration  
**Policy indicator:** WR3

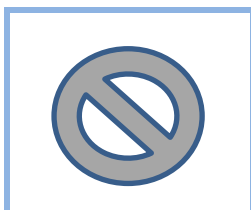


Total installed renewable electricity capacity	2010	2011	2012	2013
Capacity (MW)	4.068	48.838	29.662	19.247

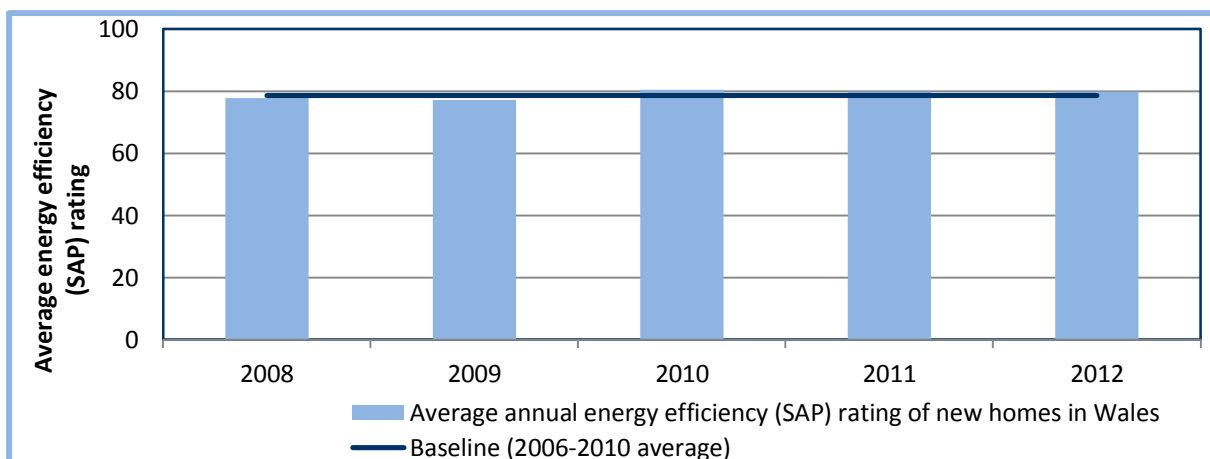
**Trend:** Total installed renewable electricity capacity decreased in 2013 against versus 2012. However, total installed renewable electricity capacity remains significantly higher than the 2010 baseline.

**Indicator spread sheet reference:** Residential Sector Indicators 2015 RI5

**Residential Sector Indicator 7 - Improving standards in new build in Wales**



**Indicator:** Improving standards in new build in Wales  
**Tier:** 3  
**Status:** Stable or no clear trend  
**Policy indicator:** WR6

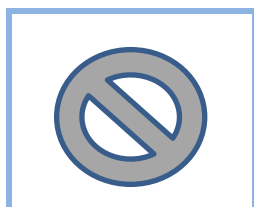


Average annual energy efficiency (SAP) rating of new homes in Wales	Baseline (2008-2010 average)	2011	2012
SAP rating	78.53	79.87	79.79

**Trend:** Average annual energy efficiency (SAP) rating of new homes in Wales in 2012 remains relatively stable. However, the average SAP ratings of new homes in Wales remain above the baseline. No new 2013 data.

**Indicator spread sheet reference:** Residential Sector Indicators 2015 RI7

#### UK Residential Sector Indicator 1 - Domestic Green Deal



**Indicator:** Projected savings from domestic green deal  
**Tier:** 3  
**Status:** Baseline or insufficient data  
**Policy indicator:** UKR1

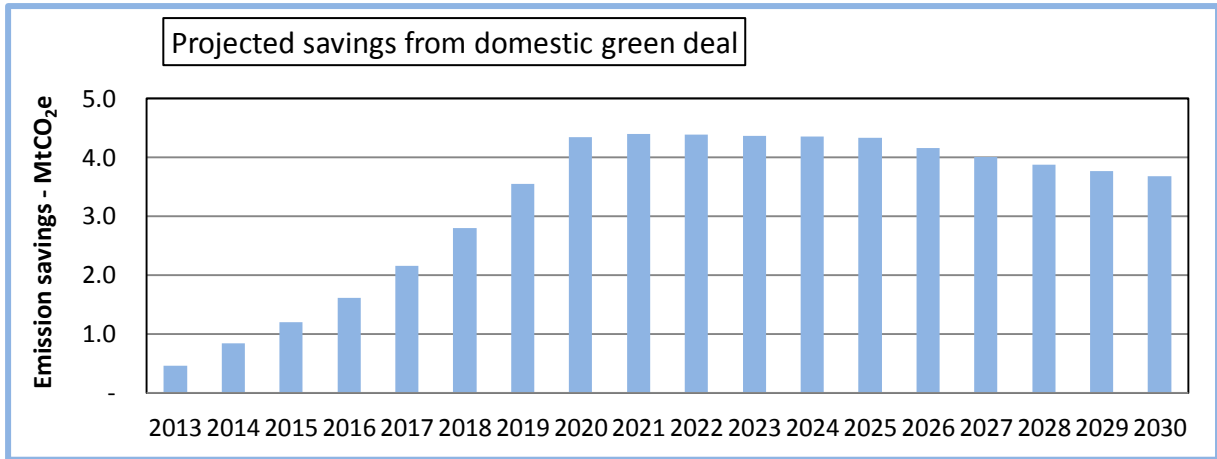


Figure 1 - Projected savings from domestic green deal

**Trend:** These are projection estimates. Data is currently unavailable on progress




**Indicator spread sheet reference:** Residential Sector Indicators 2015 UKR1

## 4. Business Sector





This section contains the indicators for the business sector. The business sector accounts for 31% of emissions covered by the 3% emission reduction target (excluding direct emissions from heavy industry and energy generation) with a baseline emission level of 11.27 MtCO<sub>2</sub>e. It is estimated that Welsh Government action in the business sector will deliver 0.62 MtCO<sub>2</sub>e savings in 2020, whilst UK action in the business sector will deliver 0.50 MtCO<sub>2</sub>e savings in Wales in 2020.

Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WB1 and WB2, as shown below. Indicators are typically cross-cutting and linked to more than one policy.

Policy No.	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WB1	Economic Renewal: a new direction	Not Quantified yet
WB2	Carbon Trust	0.31
WB3	Enabling more resource efficient business	0.17
WB4	Skills for a low carbon economy	Not Quantified yet
WB5	More efficient use of, and regulation of, waste heat and energy	0.14
WB6	Low carbon energy	Targets set on end user rather than by source
UKB1	Energy intensive business package	0.2
UKB2	Carbon Reduction Commitment Energy Efficiency Scheme.	0.04
UKB3	Enhanced capital allowances.	0.01
UKB4	Feed in Tariffs	0.25

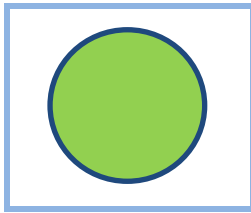
Policy code	Indicator	Indicator number	Tier	Status
WB1-6	Business sector GHG emissions	<a href="#">B1</a>	1	
WB1-6	Business sector fuel consumption	<a href="#">B2</a>	2	
UKB2	Business sector CRC emissions	<a href="#">UKB1</a>	3	

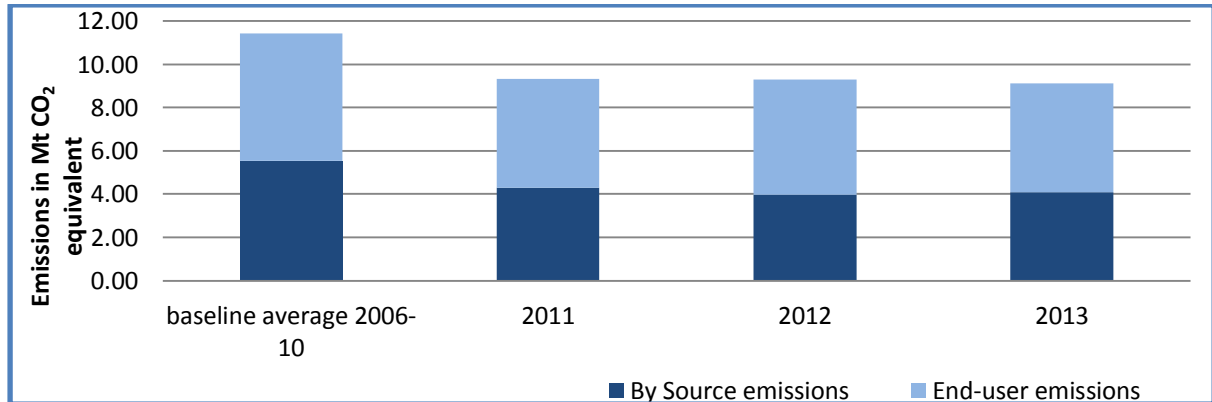
 Clear improvement	 Stable or no clear trend	 Clear deterioration	 Baseline or insufficient data
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### Welsh Business Indicator 1 - Business sector GHG emissions



**Indicator:** Business sector GHG emissions  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WB1-6

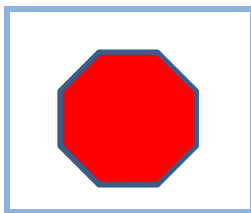


Emissions in Mt CO <sub>2</sub> e	Baseline Average 2006-2010	2011	2012	2013
Business sector GHG emissions	11.41	9.31	9.29	9.12

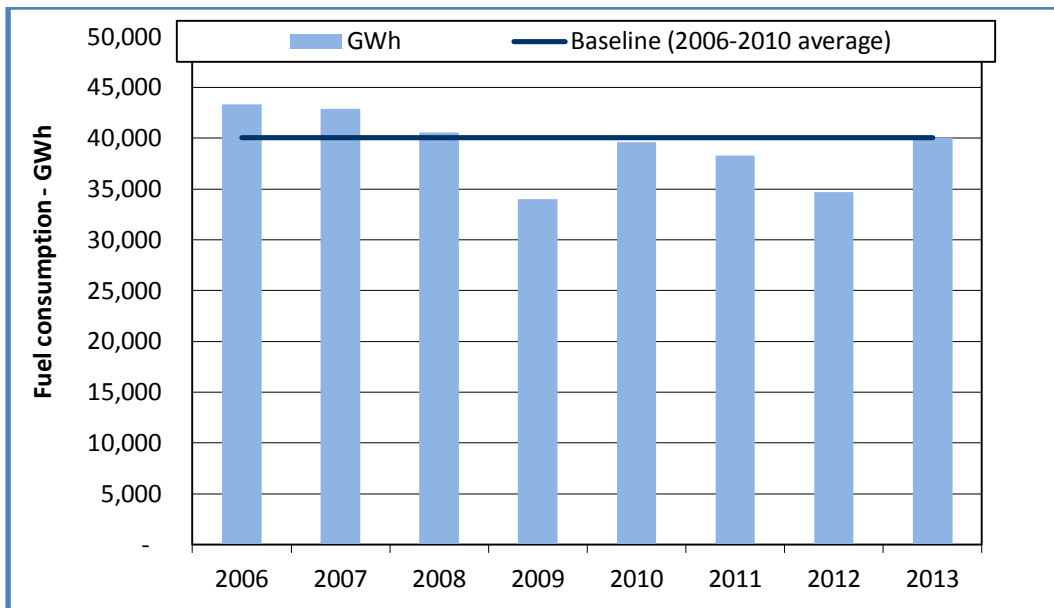
**Trend:** Business sector emissions decreased in 2013 compared to 2012. Emissions in the sector remain below the baseline average period. Note that the recession has led to a larger drop in emissions between 2008 and 2009 in many sectors.

**Indicator spread sheet reference:** Business Sector Indicators 2014 WB11

### Welsh Business Indicator 2: Business sector fuel consumption



**Indicator:** Business sector fuel consumption  
**Tier:** 2  
**Status:** Clear deterioration  
**Policy indicator:** WB1-6

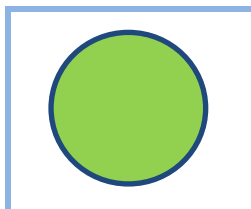


Fuel Consumption	Baseline Average 2006-2010	2011	2012	2013
Total GWh	40,072	38,288	34,683	40,042

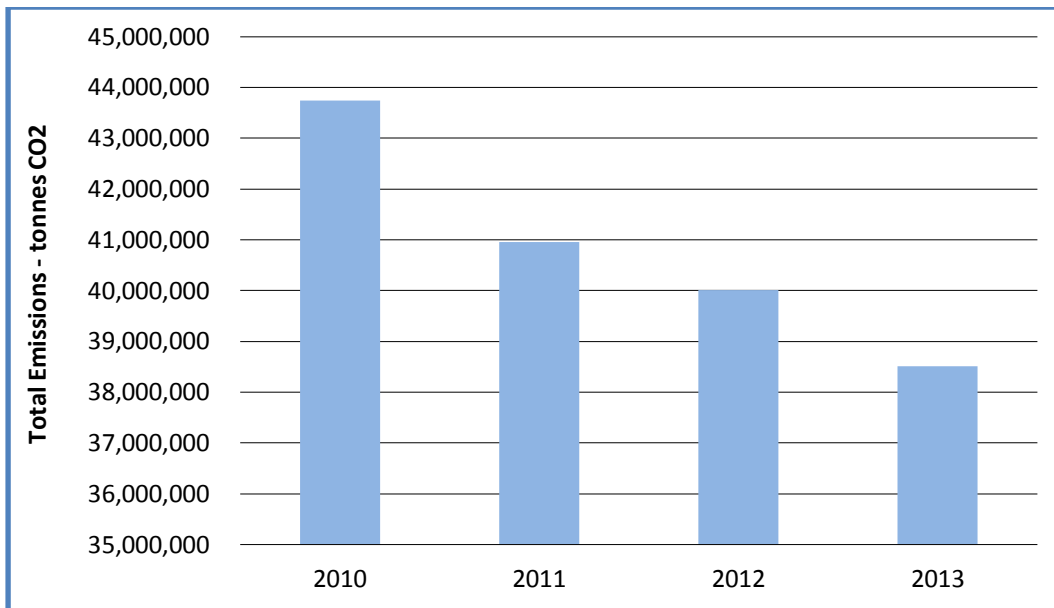
**Trends:** Business sector fuel consumption increased in 2013 against 2012.

**Indicator spread sheet reference:** Business Sector Indicators 2015 WB12

**UK Business Indicator 3: Business sector CRC emissions**



**Indicator:** Business sector CRC emissions  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WB1-6



Business Sector CRC emissions	2010	2011	2012	2013
Total	43,736,252	40,960,963	40,005,131	38,514,201

**Trends:** Carbon Reduction Commitment relevant emissions reduced in 2013 against 2012.








**Indicator spread sheet reference:** Business Sector Indicators 2015 UKBI1







## 5. Agriculture and land use sector

This section contains the indicators for the agriculture and land use land use change and forestry (LULUCF) sector. The Agriculture and Land Use sector accounts for 20% of emissions covered by the 3% target and has a baseline emission level of 6.00 Mt CO<sub>2</sub>e. It is estimated that the sector will deliver 0.60 MtCO<sub>2</sub>e savings in 2020.





Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WA1 and WA2, as shown below. Indicators are typically cross-cutting and linked to more than one policy.

Policy number	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WA1	Woodland creation.	Not Quantified yet
WA2	Optimal management of current woodland sink.	Not Quantified yet
WA3	Glastir	Not Quantified yet
WA4	Supporting behaviour change in farming practice.	Not Quantified yet
WA5	Dairy and Red Meat Road Maps.	Not Quantified yet

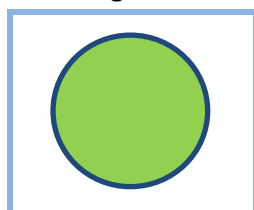
Policy number	Indicator	Indicator number	Tier	Status
WA1, WA3, WA4 and WA5	Agriculture and land-use sector GHG Emissions	ALI1	1	
WA2	LULUCF sector GHG Emissions	ALI2	1	
WA1	Woodland Area	<a href="#">ALI3</a>	2	
WA1	Land Converted to Forest Land (GHG Inventory)	<a href="#">ALI4</a>	2	
WA2	Management of existing forestland (GHG Inventory)	<a href="#">ALI5</a>	2	
WA4	Crop production and yield	<a href="#">ALI6</a>	2	
WA4	Average fertiliser application rates for England and Wales	<a href="#">ALI7</a>	2	

WA4	Livestock numbers	<a href="#">ALI8</a>	2	
WA4	Fuel Consumption by agricultural mobile machinery	<a href="#">ALI9</a>	2	
WA1	Annual planting rate - new planting and restocking	<a href="#">ALI10</a>	3	
WA1	Woodland Area	<a href="#">ALI11</a>	3	
WA3	Glastir and Farm Connect Scheme	<a href="#">ALI12</a>	3	
WA4	Menter a Busnes	<a href="#">ALI13</a>	3	

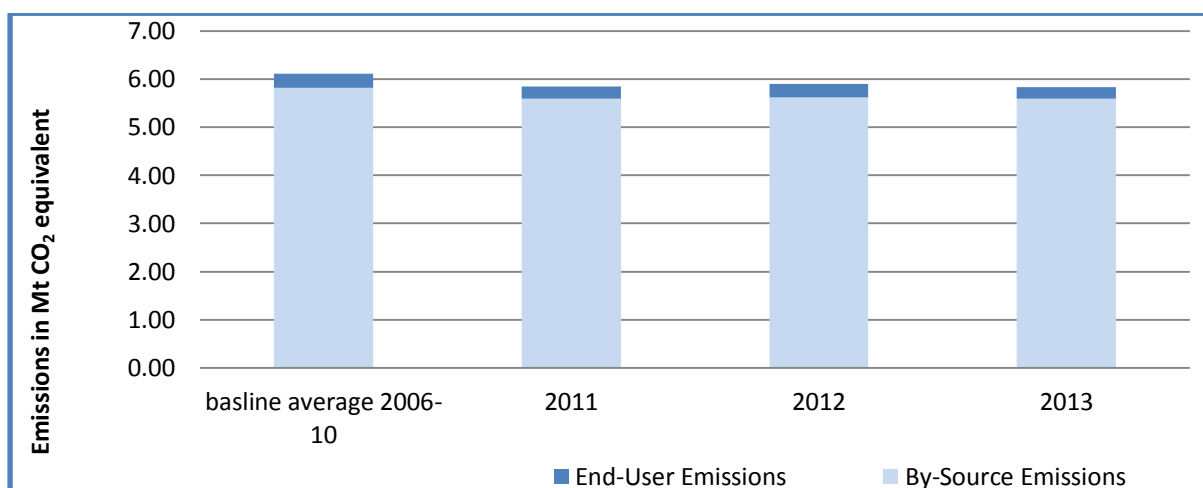
  

	Clear improvement		Stable or no clear trend		Clear deterioration		Baseline or insufficient data
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### Welsh Agriculture and Land Use Indicator 1 - Agriculture and land-use sector GHG Emissions



**Indicator:** Agriculture and land-use sector GHG Emissions  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WA1, WA3, WA4 and WA5

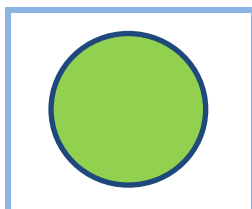


Agriculture and land-use sector GHG emissions	Baseline (2006-2010 average)	2011	2012	2013
Total (Mt CO <sub>2</sub> equivalent)	6.12	5.85	5.90	5.84

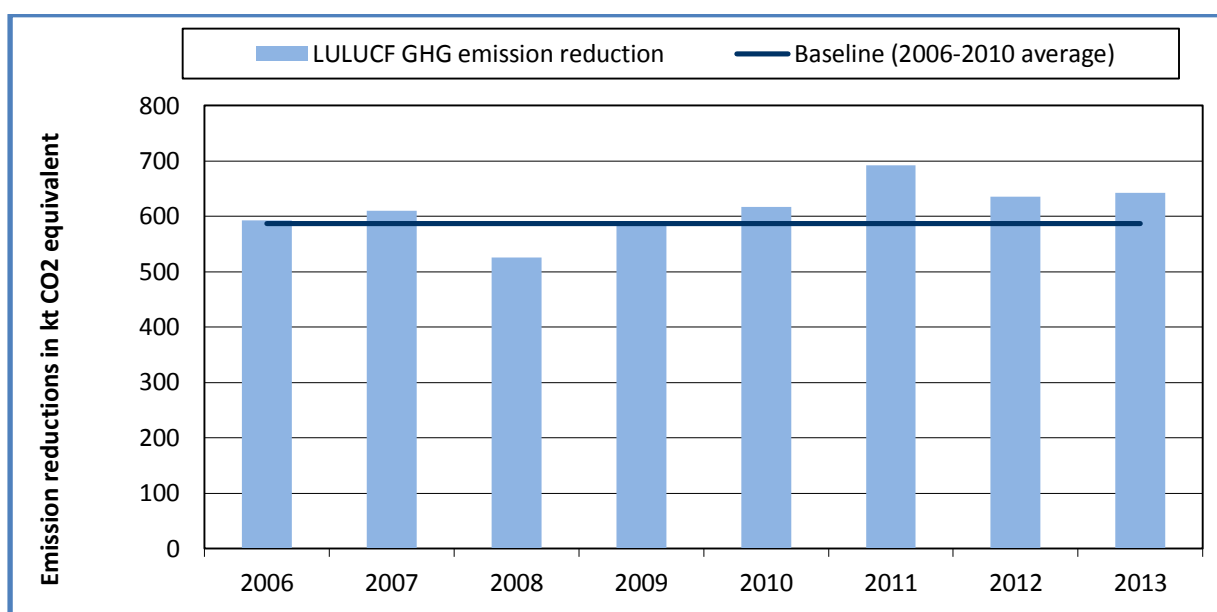
**Trend:** Agriculture and land-use sector GHG emissions decreased in 2013. Emissions remain below the 2006-2010 baseline in 2012.

**Indicator spread sheet reference:** Welsh Agriculture and Land Use Indicators 2015 WAI1

**Welsh Agriculture and Land Use Indicator 2 - LULUCF sector GHG Emissions**



**Indicator:** LULUCF sector GHG Emissions  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WA2

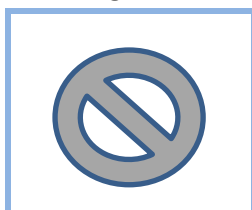


LULUCF GHG emission reductions	Baseline (2006-2010 average)	2011	2012	2013
Emissions in KtCO <sub>2</sub> equivalent	587.49	691.93	635.66	642.31

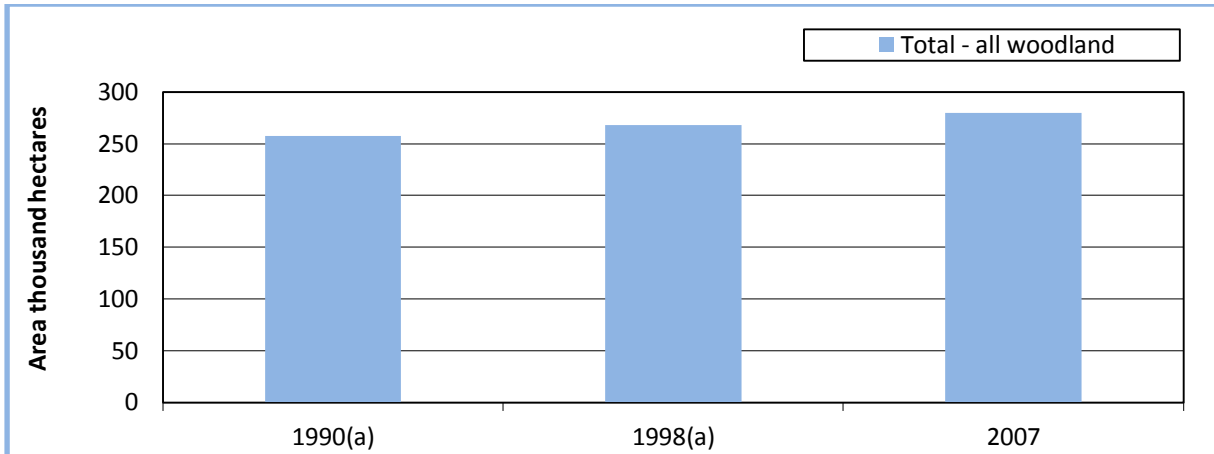
**Trend:** LULUCF sector GHG emissions reductions increased in 2013 against 2012.

**Indicator spread sheet reference:** Welsh Agriculture and Land Use Indicators 2015 WAI2

**Welsh Agriculture and Land Use Indicator 3 - Woodland Area**



**Indicator:** Woodland Area - Countryside Survey Data  
**Tier:** 2  
**Status:** Baseline or insufficient data  
**Policy indicator:** WA1

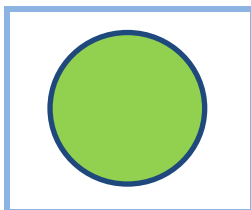


All woodland	1990	1998	2007
Thousand hectares	257	267	279

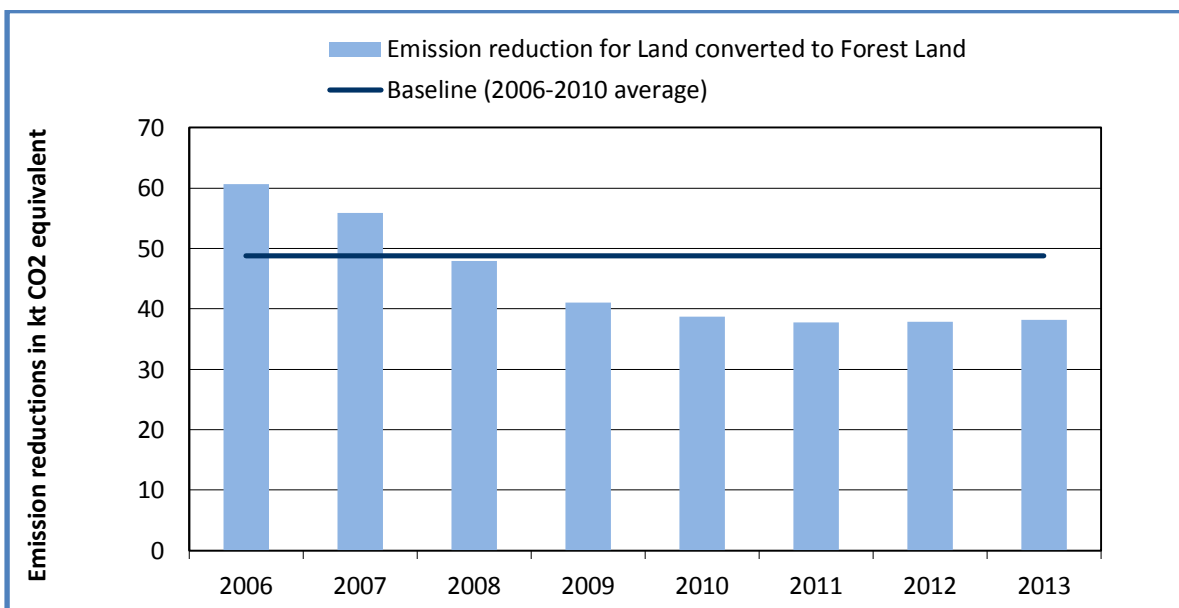
**Trends:** Woodland significantly increased between 1990 and 2007. However, there is no available data to assess the current trend and measure progress.

**Indicator spreadsheet reference:** Welsh Agriculture and Land Use Indicators 2015 WAI3

**Welsh Agriculture and land use Indicator 4 -Land Converted to Forest Land (GHG Inventory)**



**Indicator:** Land Converted to Forest Land (GHG Inventory)  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WA1

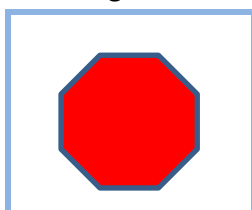


Land Converted to Forest Land	Baseline (2006-2010 average)	2011	2012	2013
Emissions in Kt CO <sub>2</sub> equivalent	48.83	37.75	37.87	38.19

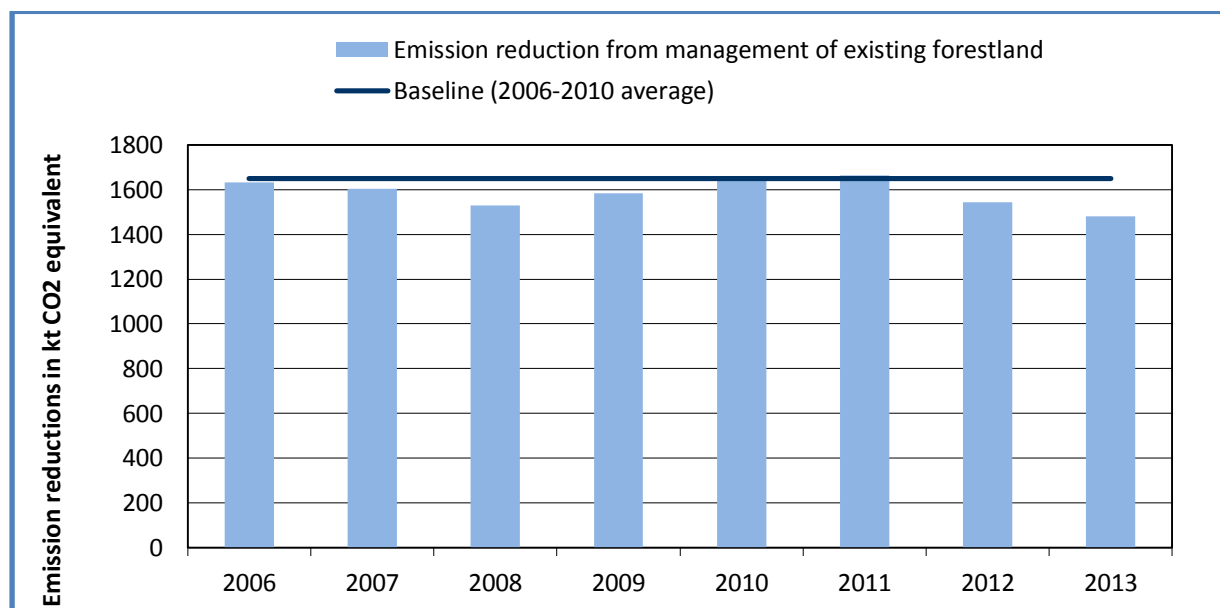
**Trend:** The emissions sink from Land Converted to forest land continued to increase in 2013. However, from 2006 to 2010 the sink declined year on year and remains below the average baseline period.

**Indicator spread sheet reference:** Welsh Agriculture and Land Use Indicators 2015 WAI4

**Welsh Agriculture and Land Use Indicator 5 -Management of existing forestland (GHG Inventory)**



**Indicator:** Management of existing forestland (GHG Inventory)  
**Tier:** 2  
**Status:** Clear deterioration  
**Policy indicator:** WA1



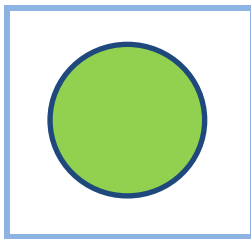
Emission reduction from management of existing forestland	Baseline (2006-2010 average)	2011	2012	2013
Emissions in Kt CO <sub>2</sub> equivalent	1648	1664	1544	1479

**Trend:** Emission reduction from management of existing forestland reduced in 2013 against 2012 and remains below the baseline period. .

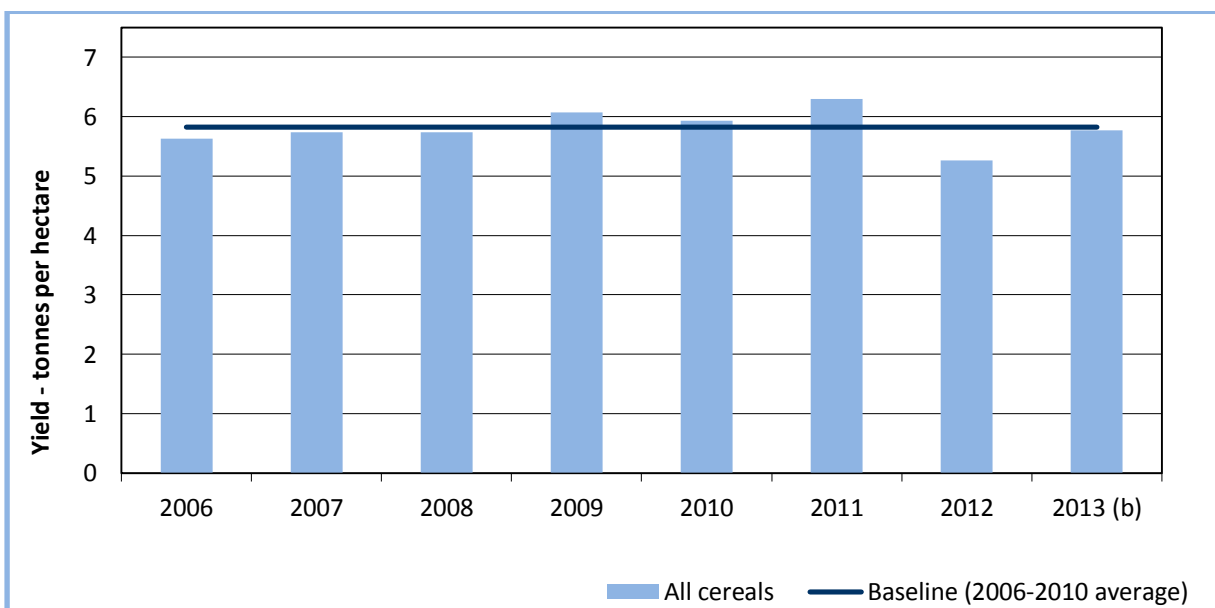
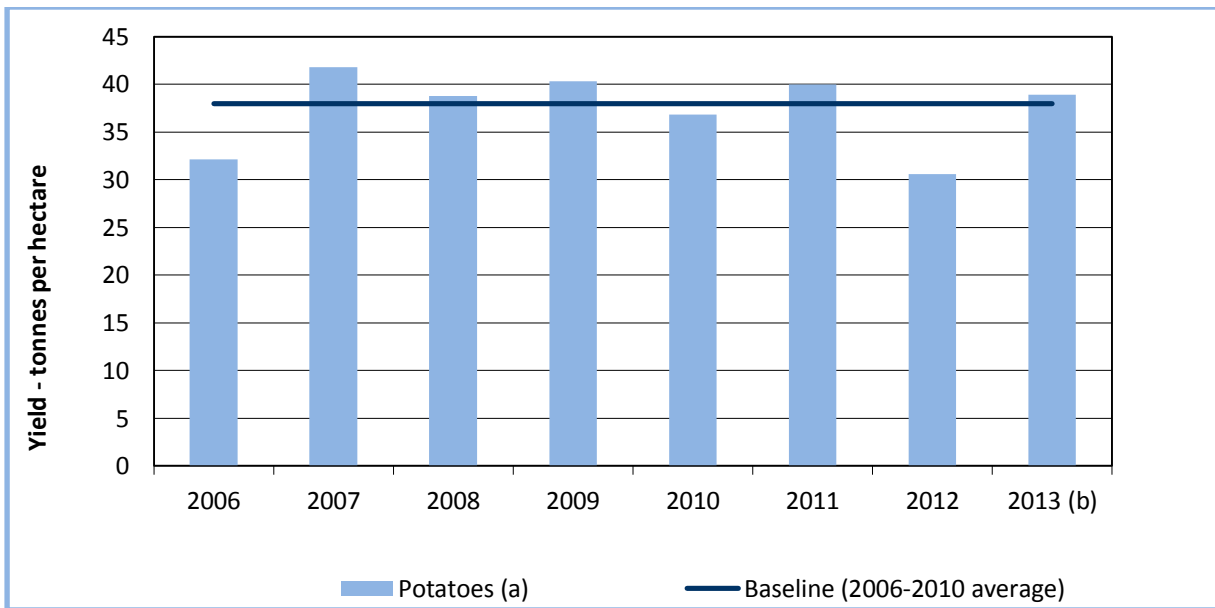


Indicator spread sheet reference: Welsh Agriculture and Land Use Indicators 2015WAI5

**Welsh Agriculture and Land Use Indicator 6 - Crop production of wheat, barley, oats and potatoes - Yield**



**Indicator:** Crop production of wheat, barley, oats and potatoes - Yield  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WA3



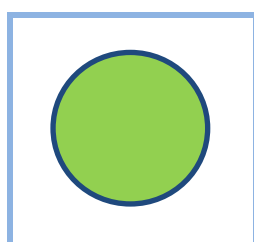
Yield (tonnes per hectare)	Baseline (2006-2010 average)	2011	2012	2013
30	38.5	40	30	39
40	38.5	40	30	39
5.0	5.8	6.3	5.2	5.8

Potatoes	38	40	30.6	38.9
All cereals	5.8	6.3	5.3	5.8

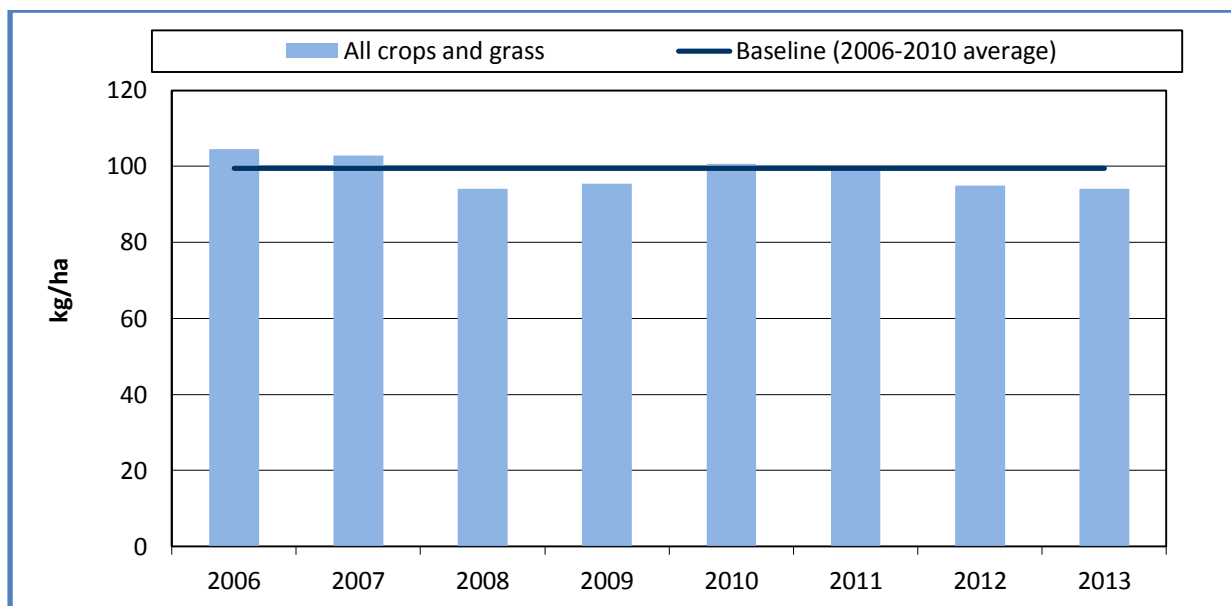
**Trends:** Crop production yield of wheat, barley, oats and potatoes increased in 2013. Increases in crop yield (tonnes per hectare) might correspond to increases in farming efficiency if Fertiliser Use (ALI9) is also declining for the same crops. Wheat and Barley are the major crops in terms of highest production and land area.

**Indicator spread sheet reference:** Welsh Agriculture and Land Use Indicators 2015 WAI6

**Welsh Agriculture and Land Use Indicator 7 - Average fertiliser application rates for England and Wales**



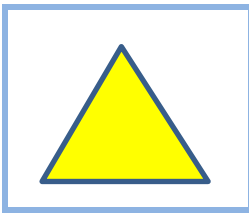
**Indicator:** Average fertiliser application rates for certain crops and grass (England and Wales)  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WA4



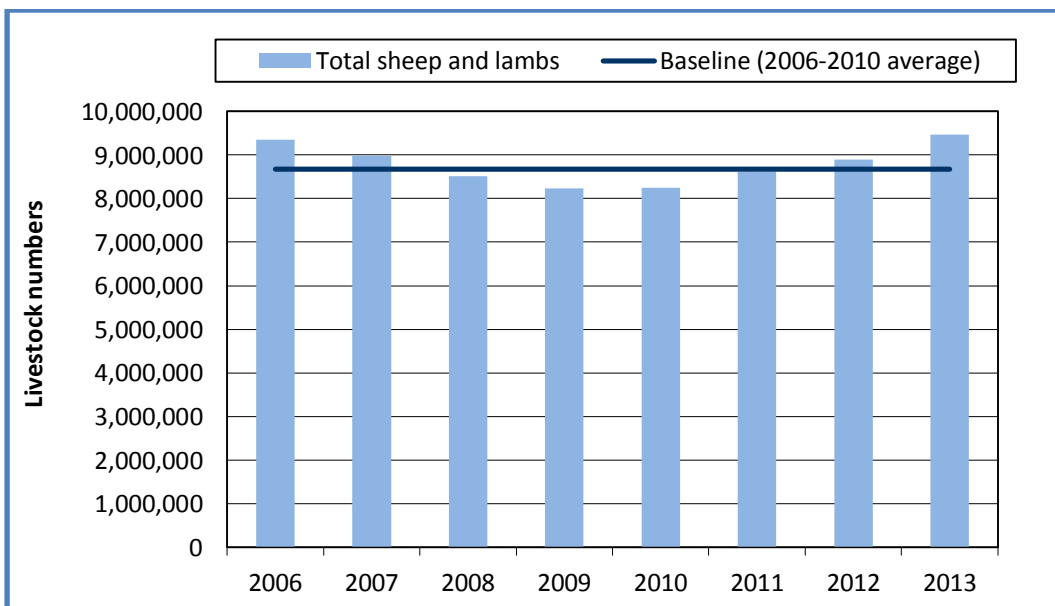
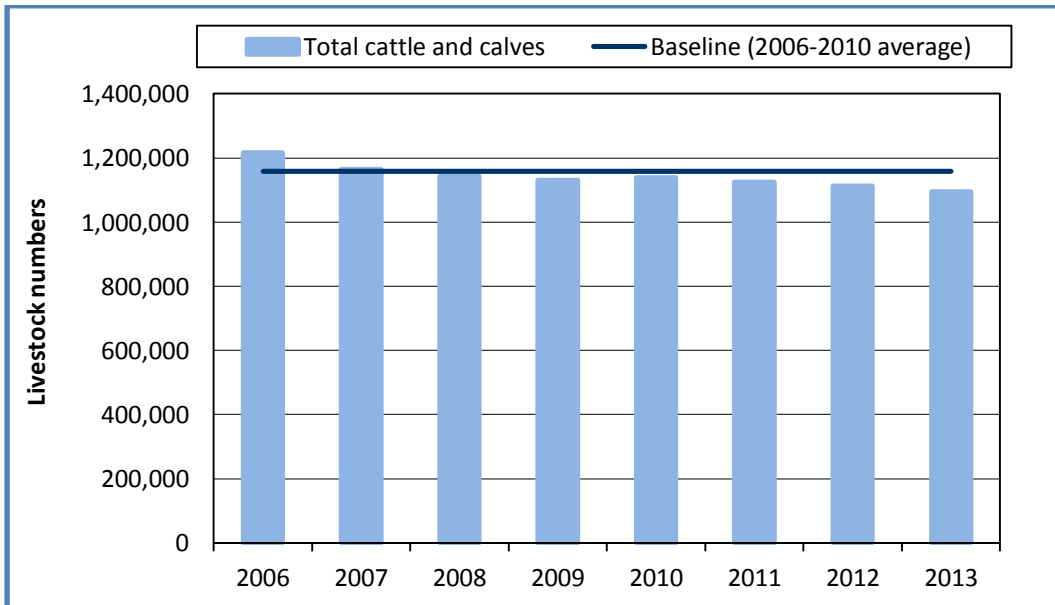
All crops and grass	Baseline (2006-2010 average)	2011	2012	2013
kg/ha	100	99	95	94

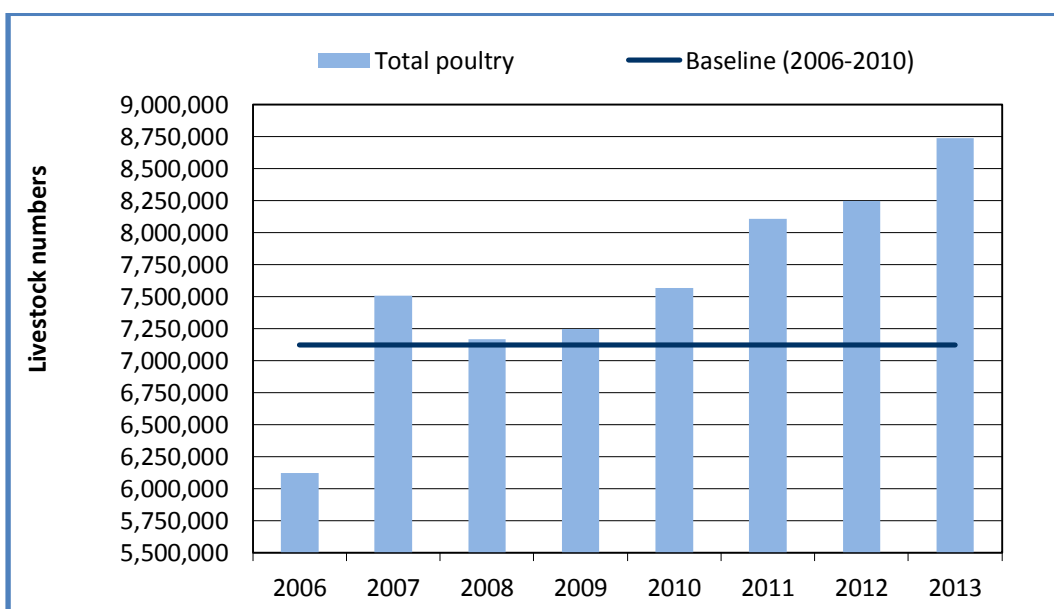
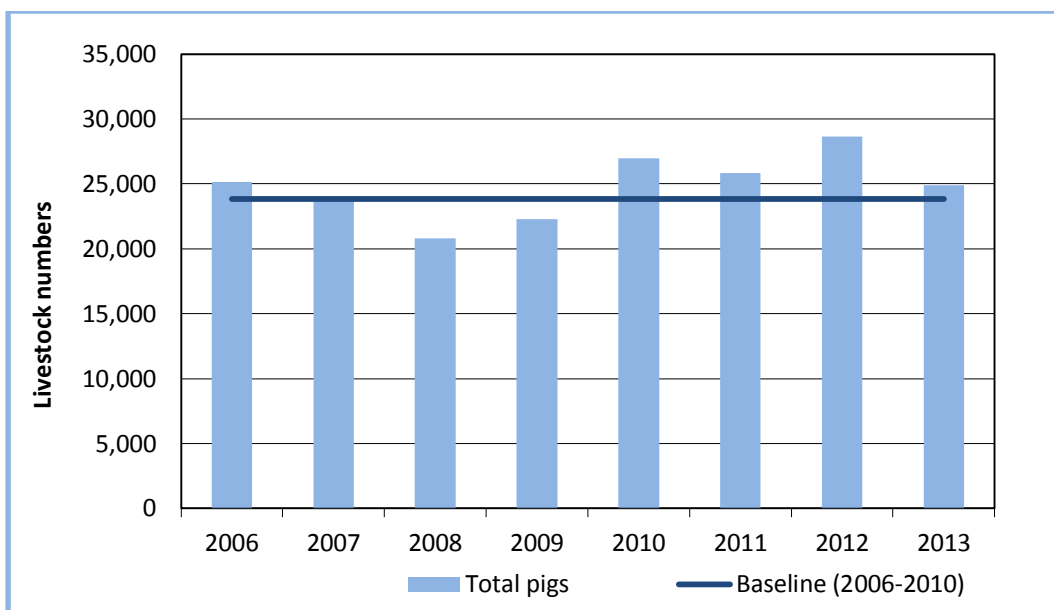
**Trend:** Average fertiliser application rates for certain crops and grass (England and Wales) have declined in 2013 against 2012. Average fertiliser application is currently lower than the baseline average.

Welsh Agriculture and Land Use Indicator 8 - Livestock numbers



**Indicator:** Livestock numbers  
**Tier:** 2  
**Status:** Stable or no clear trend  
**Policy indicator:** WA4



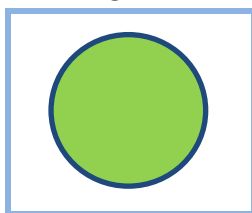


Livestock numbers	Baseline (2006-2010 average)	2011	2012	2013
Cattle and calves	1,158,447	1,123,449	1,113,141	1,094,644
Sheep and lambs	8,667,446	8,619,414	8,898,183	9,460,692
Pigs	23,813	25,809	28,665	24,890
Poultry	7,330,312	8,110,979	8,248,225	8,736,547

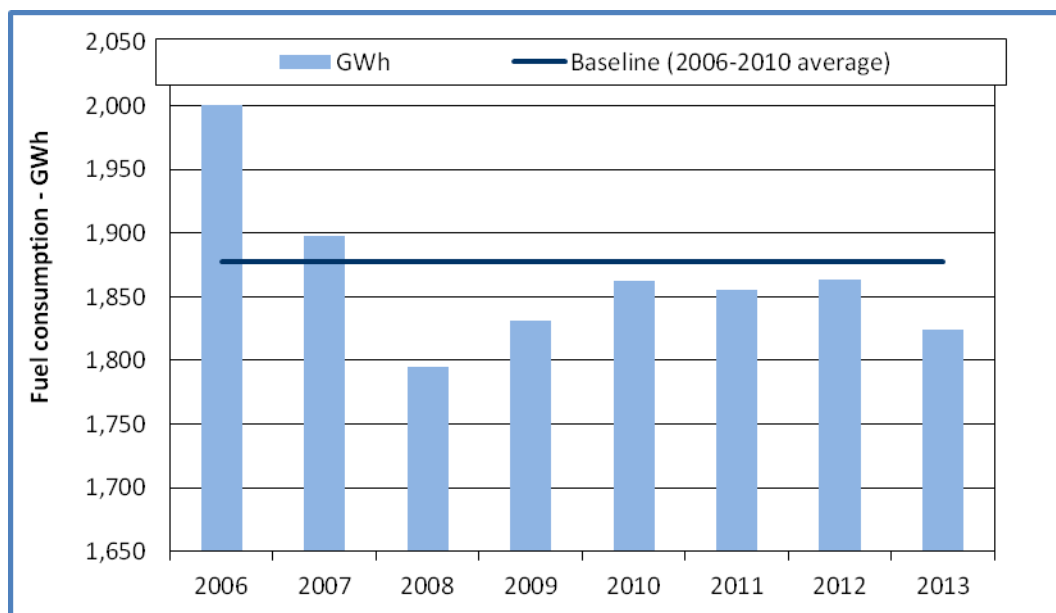
**Trend:** The trend in livestock numbers is relatively stable, while there has been a slight decrease in cattle and pigs, there has been an increase in sheep and poultry numbers. It is not possible to determine an overall status for this indicator

Indicator spread sheet reference: Welsh Agriculture and Land Use Indicators 2014 WAI8

**Welsh Agriculture and Land Use Indicator 9 - Fuel Consumption by agricultural mobile machinery**



**Indicator:** Fuel Consumption by agricultural mobile machinery  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WA4

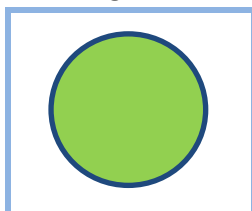


Fuel Consumption by agricultural mobile machinery	Baseline (2006-2010 average)	2011	2012
GWh	1877	1855	1863

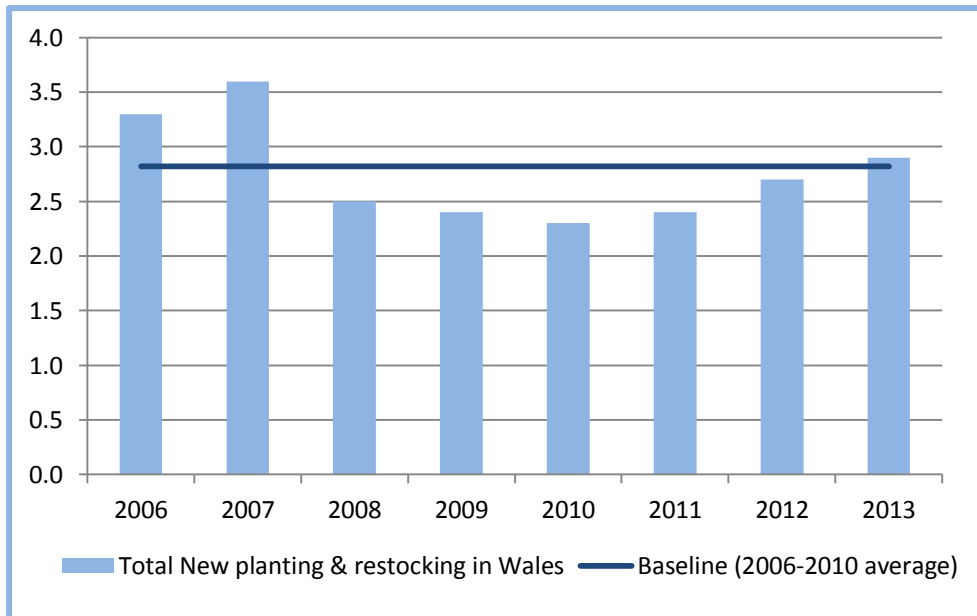
**Trend:** Fuel Consumption by agricultural machinery increased decreased in 2013 against 2012. Fuel Consumption by agricultural machinery reduced substantially in 2008 but has since begun to level out.

Indicator spread sheet reference: Welsh Agriculture and Land Use Indicators 2015 WAI9

**Welsh Agriculture and Land Use Indicator 10 - Annual planting rate - new planting and restocking**



**Indicator:** Annual planting rate - new planting and restocking  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WA1

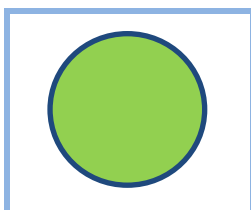


New planting in wales	Baseline (2006-2010 average)	2011	2012	2013
Thousand hectares	2.6	2.4	2.7	2.9

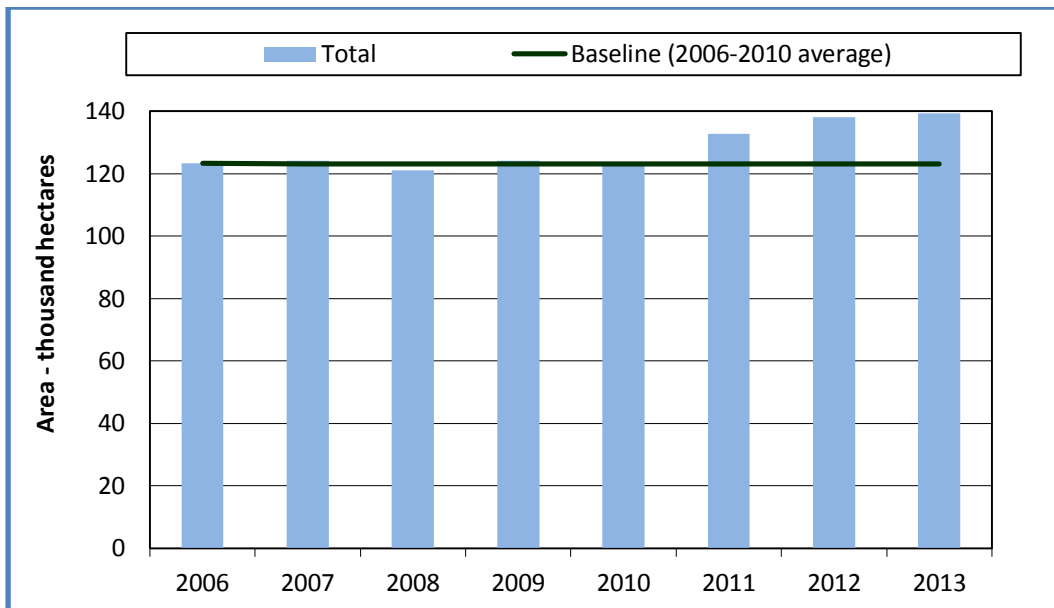
**Trend:** Total new planting and restocking in Wales continued to increase in 2013. . Whilst there has been an increase in new planting this has been offset by a substantial decline in restocking since 2006. Total new planting and restocking in Wales is now above the baseline period for the first time.

**Indicator spread sheet reference:** Agriculture and Land Use Indicators 2015 WAI10

**Welsh Agriculture and Land Use Indicator 11 - Certified Woodland Area**



**Indicator:** Certified woodland Area - National Forest Inventory  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WA1



Certified woodland area	Baseline (2006-2010 average)	2011	2012	2013
thousand of hectares	123.17	132.8	138.0	139.4

**Trend:** Certified woodland area in Wales increased in 2013. Certified woodland area in Wales was relatively static between 2006-2010, this was followed by a substantial increase in 2011, 2012 and 2013.








**Indicator spread sheet reference:** Agriculture and Land Use Indicators 2015 WA11

## 6. Resource Efficiency and Waste Sector





This spreadsheet contains the indicators for the waste and resource efficiency sector. The resource efficiency and waste sector emissions account for 4% of the total 3% target emissions and baseline emissions for the sector are 1.43 MtCO<sub>2</sub>e. The waste and resource efficiency sector is responsible for a very small proportion of the emissions covered by the 3% target. However, the waste and resource efficiency sector contributes a high proportion of emissions for sectors where the Welsh Government can take action directly. The waste and resource efficiency sector will deliver 0.66 Mt CO<sub>2</sub>e savings in 2020.

Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WW1 and WW2, as shown below. Indicators are typically cross-cutting and linked to more than one policy.

Policy Number	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WW1	Diversion of biodegradable waste from landfill to recycling, composting and anaerobic digestion	0.66
WW2	Programme of work to reduce further existing greenhouse gas emissions at landfills	Not Quantified yet

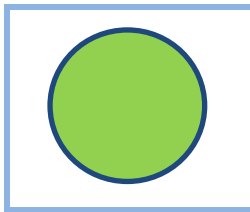
Policy number	Indicator	Indicator number	Tier	Status
WW1-2	Waste and resource efficiency sector GHG emissions	<a href="#">WI1</a>	1	
WW1	Volume of MSW to landfill	<a href="#">WI2</a>	2	
WW2	Landfill methane capture rate	<a href="#">WI3</a>	2	
WW2	GHG emissions from operational and closed landfill sites	<a href="#">WI4</a>	2	
WW1	Volume of biodegradable MSW to landfill	<a href="#">WI5</a>	2	
WW1	Volume of total waste to landfill	<a href="#">WI6</a>	2	
WW2	Landfill audits and best practice	<a href="#">WI7</a>	3	

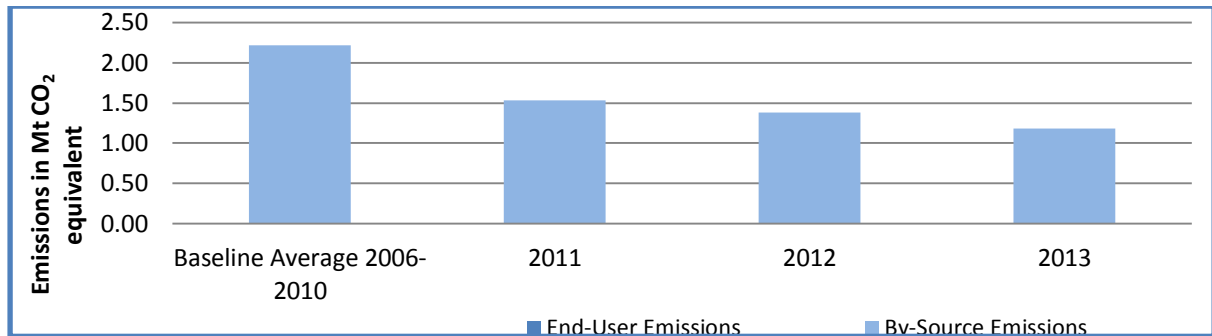
 Clear improvement	 Stable or no clear trend	 Clear deterioration	 Baseline or insufficient data
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**Waste and resource efficiency sector Indicator 1 - Waste and resource efficiency sector GHG emissions**



**Indicator:** Waste and resource efficiency sector GHG emissions  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WW1 and WW2

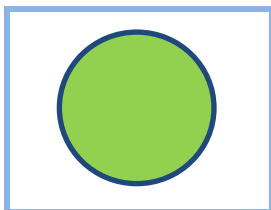


GHG emissions	Baseline Average	2011	2012	2013
MtCO <sub>2</sub> equivalent	2.22	1.53	1.38	1.18

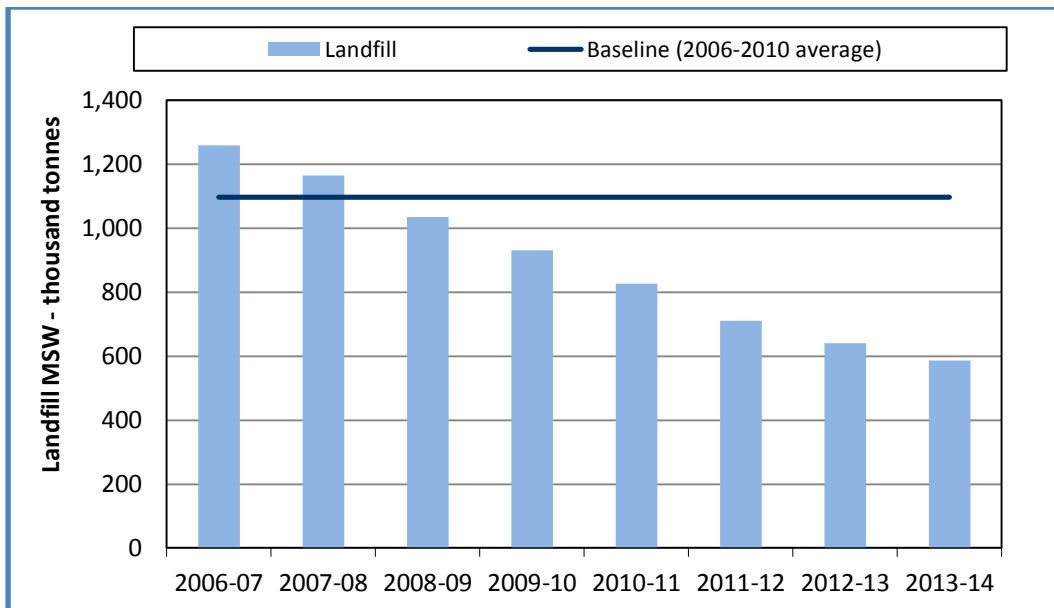
**Trend:** Waste and resource efficiency sector GHG emissions continued to reduce in 2013.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2015 WW11

**Waste and resource efficiency sector Indicator 2 - Volume of MSW to landfill**



**Indicator:** Volume of MSW to landfill (approx.)  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WW1 and WW2

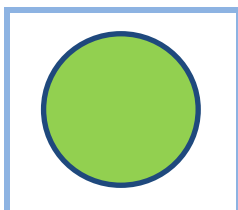


GHG emissions	Baseline Average	2011	2012	2013
thousand tonnes	1098	7108	641	587

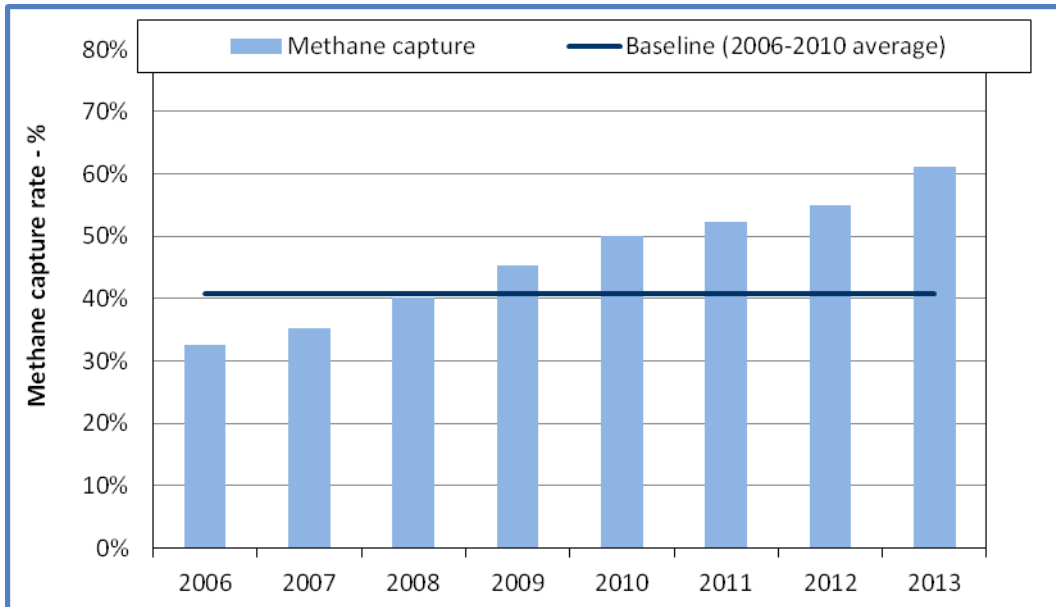
**Trend:** Waste and resource efficiency sector GHG emissions have reduced against the baseline period. Note that data availability changed in 2014 and data is now estimated based on percentage waste not diverted to reuse/recycling/compositing.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2015 WW11

**Waste and resource efficiency sector Indicator 3 - Landfill methane capture rate**



**Indicator:** Landfill methane capture rate  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WW2

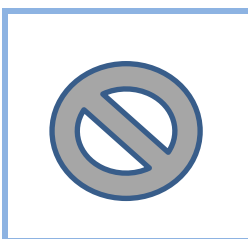


Landfill methane capture rate	Baseline (Average 2006-2010)	2011	2012	2013
Percentage	41%	52%	55%	61%

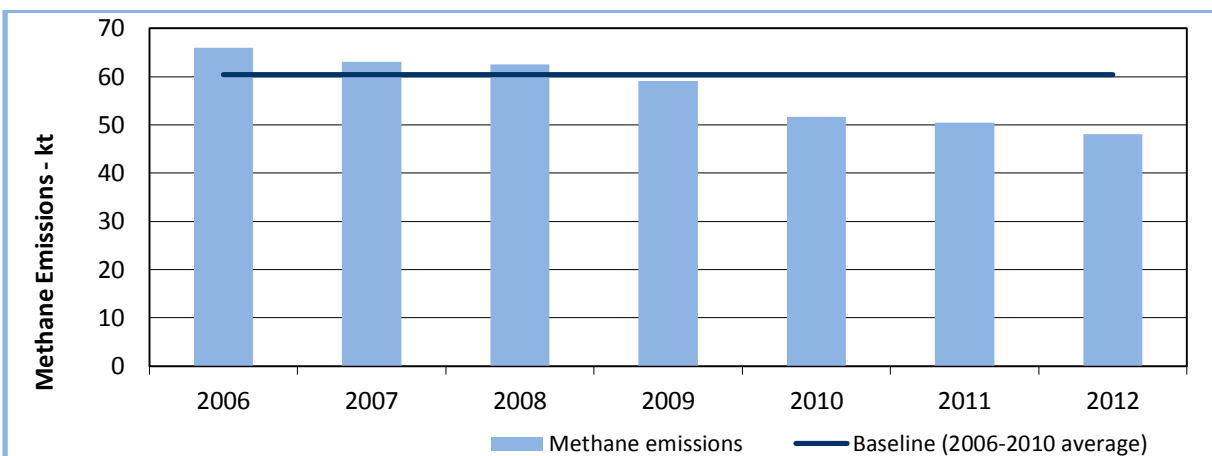
**Trend:** Methane capture rate increased in 2013. Methane capture rate has increased steadily since 2006.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2015 WWI3

**Waste and resource efficiency sector Indicator 4 - GHG emissions from operational and closed landfill sites**



**Indicator:** GHG emissions from operational and closed landfill sites  
**Tier:** 2  
**Status:** Baseline or insufficient data  
**Policy indicator:** WW1

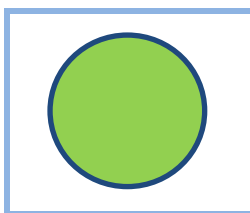


Methane emissions from operational and closed landfill sites	Baseline (2006-2010 average)	2011	2012
kilotonnes	60.46	50.51	48.08

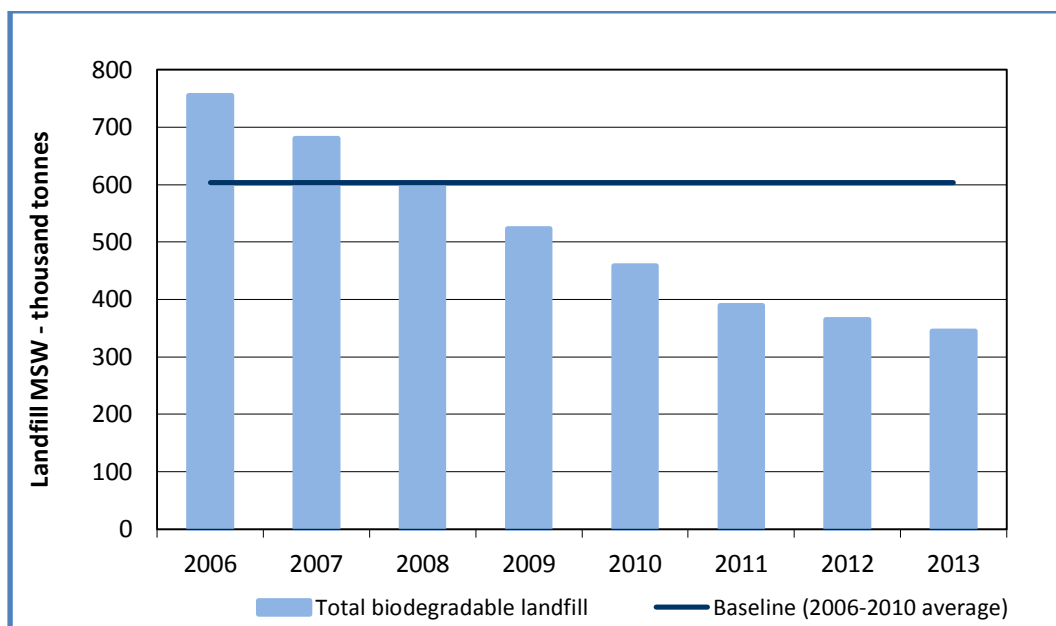
**Trend:** Methane emissions from operational and closed landfill sites. Information could not be updated for 2013.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2014 WWI4

**Waste and resource efficiency sector Indicator 5 - Volume of biodegradable MSW to landfill**



**Indicator:** Volume of biodegradable MSW to landfill  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WW1

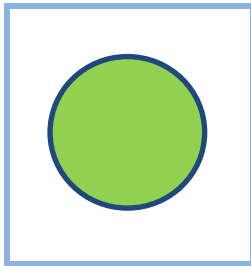


Volume of biodegradable MSW to landfill	Baseline (2006-2010 average)	2011	2012	2013
thousand tonnes	603	390	365	345

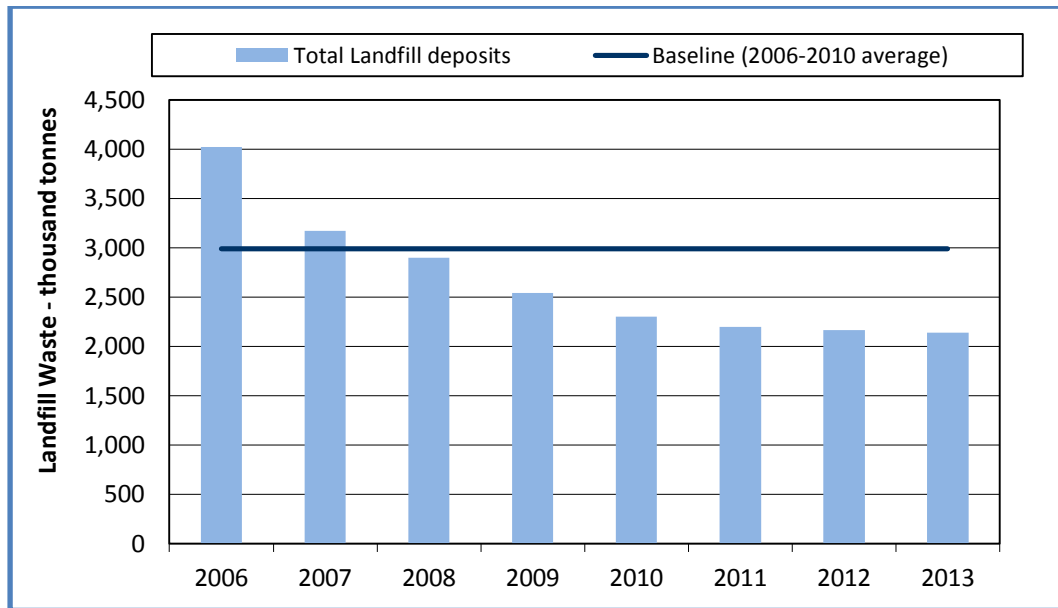
**Trend:** Volume of biodegradable MSW to landfill decreased in 2013 against the baseline period. Volume of biodegradable MSW to landfill has decreased steadily between 2006 and 2013.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2015 WWI5

**Waste and resource efficiency sector Indicator 6 - Volume of total waste to landfill**



**Indicator:** Volume of total waste to landfill  
**Tier:** 2  
**Status:** Clear improvement  
**Policy indicator:** WW2



Total Landfill deposits	Baseline (2006-2010 average)	2011	2012	2013
Kilotonnes	2,986	2,200	2,163	2,138

**Trend:** Volume of total waste to landfill decreased significantly in 2013. The total landfill deposits in Wales have been declining year on year since 2006.

**Indicator spread sheet reference:** Waste and resource efficiency Indicators 2015 WW16







## 7. Public Service Sector

This spreadsheet contains the indicators for the public service sector. The public service sector accounts for 3% of the total 3% target emissions in 2012 and have a baseline of 0.85 Mt CO<sub>2</sub>e. At this stage, the contribution of Welsh Government policies and actions to public sector emission reduction has not been quantified. It is estimated that UK action in the public sector will deliver 0.03 MtCO<sub>2</sub>e savings in Wales in 2020.





Indicators are grouped under the policies set out in the 2010 Climate Change Strategy for Wales, e.g. WPS1 and WPS2, as shown below. Indicators are typically cross-cutting and linked to more than one policy.

Policy number	Policy	Estimated Savings - MtCO <sub>2</sub> e in 2020
WPS1	Embedding action on climate change.	Not Quantified yet
WPS2	Reducing the carbon footprint of the Welsh Government estate.	Not Quantified yet
WPS3	Reducing the carbon footprint of the NHS.	Not Quantified yet
WPS4	Reducing the carbon footprint of education services.	Not Quantified yet
WPS5	Enabling wider contributions from others.	Not Quantified yet
WPS6	Land use planning.	Not Quantified yet
WPS7	Spatial Plan Low Carbon Regions work and Marine Spatial Planning	Not Quantified yet
UKPS1	Carbon Reduction Commitment Energy Efficiency Scheme	0.01
UKPS2	The Energy Service Directive (ESD)	Not Quantified yet
UKPS3	Energy Performance of Buildings Directive (EPBD)	Not Quantified yet

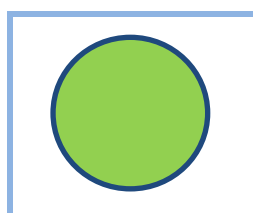
Policy number	Indicator	Indicator number	Tier	Status
WPS1-7	Public sector GHG emissions	<a href="#">PS11</a>	1	

WPS1-7	Public sector fuel consumption	<a href="#">PSI2</a>	2	
WPS1-7	NHS GHG Emissions	<a href="#">PSI3</a>	3	
WPS2	Welsh Government CRC Emissions	<a href="#">PSI4</a>	3	
WPS3	Education sector CRC emissions	<a href="#">PSI5</a>	3	
WPS4	Local Authority CRC emissions	<a href="#">PSI6</a>	3	
UKPS1	Public sector CRC emissions	<a href="#">UKPS1</a>	3	

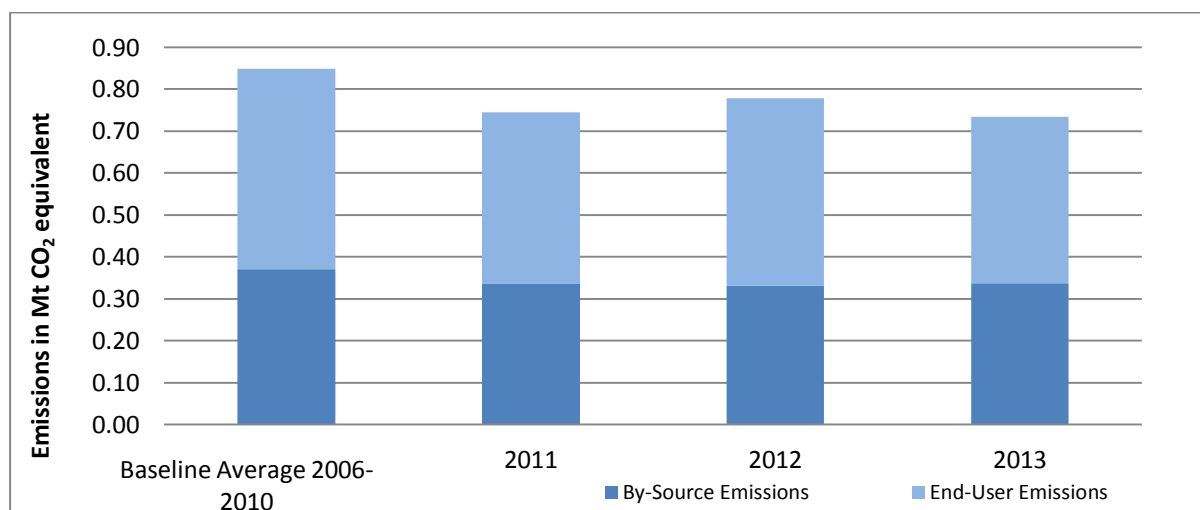
  

	Clear improvement		Stable or no clear trend		Clear deterioration		Baseline insufficient data	or
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### Welsh Public Sector Indicator 1: Public sector GHG emissions



**Indicator:** Public sector GHG emissions  
**Tier:** 1  
**Status:** Clear improvement  
**Policy indicator:** WP1-7

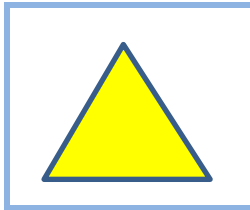


Public sector GHG emissions	Baseline (2006-2010 average)	2011	2012	2013
Mt CO <sub>2</sub> equivalent	0.85	0.74	0.78	0.73

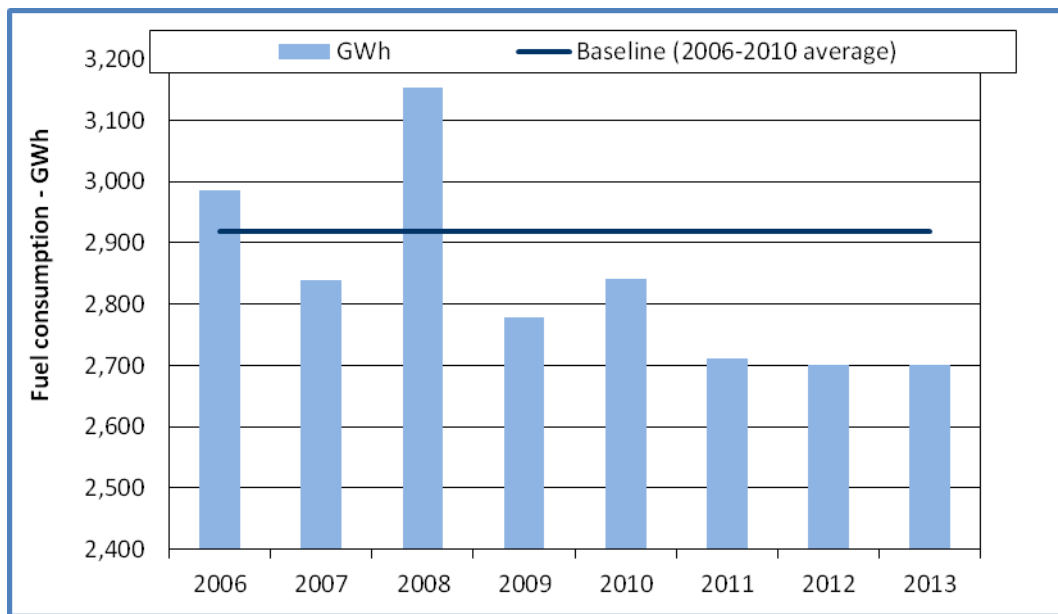
**Trend:** Emissions in the public sector decreased in 2013 and are currently below the baseline.

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2015 WPI1

**Welsh Public Sector Indicator 2: Public sector fuel consumption**



**Indicator:** Public sector fuel consumption  
**Tier:** 2  
**Status:** Stable or no clear trend  
**Policy indicator:** WPI1-7

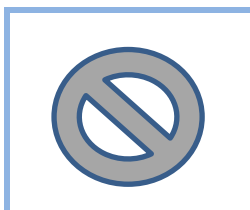


Fuel consumption	Baseline (2006-2010 average)	2011	2012	2013
GWh	2,919	2,711	2,701	2,701

**Trend:** Fuel consumption in the public sector was unchanged between 2012 and 2013. Public sector fuel consumption remains substantially below the baseline

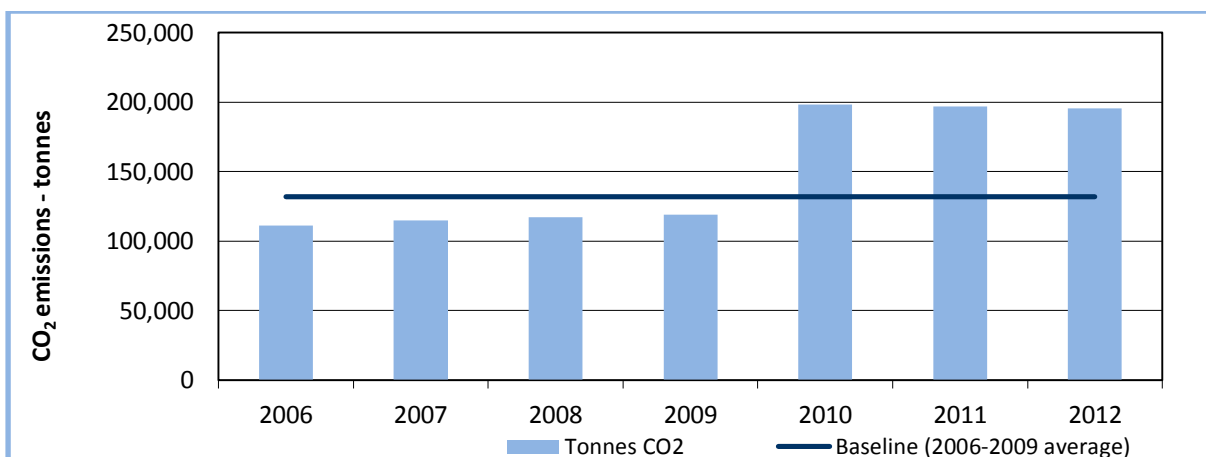
**Indicator spread sheet reference:** Welsh Public Sector Indicators 2014 WPI2

**Welsh Public Sector Indicator 3: NHS GHG Emissions**



**Indicator:** NHS GHG Emissions  
**Tier:** 3  
**Status:** Baseline or insufficient data  
**Policy indicator:** WP1-7



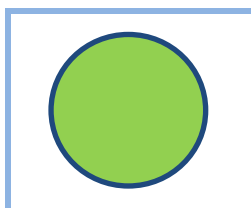


NHS GHG Emissions	Baseline (2006-2010 average)	2011	2012
Tonnes CO <sub>2</sub>	132,093	196,758	195,736

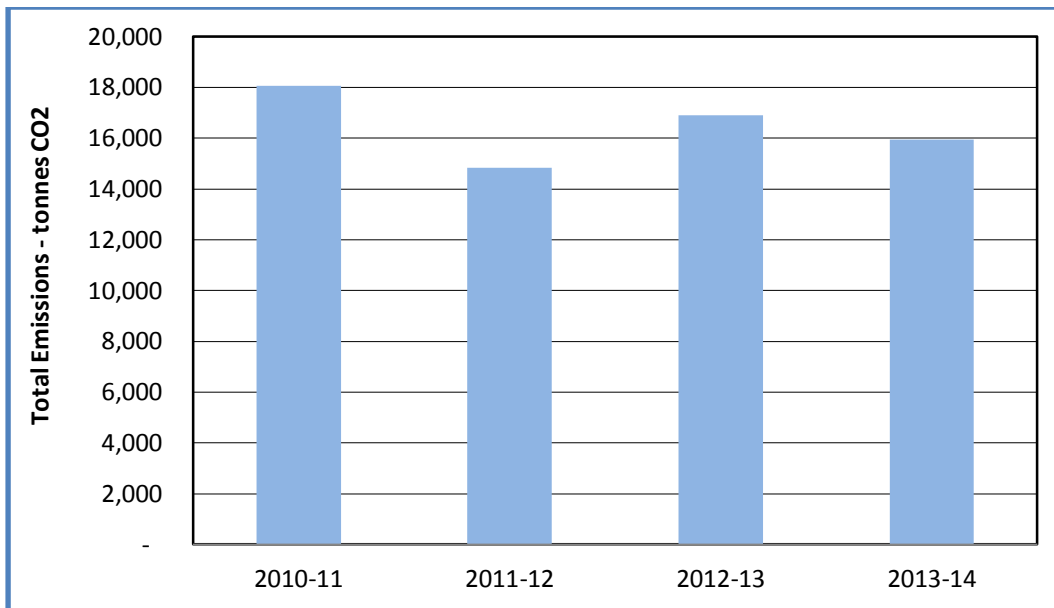
**Trend:** NHS GHG emissions decreased in 2012. Increases between 2009/10 and 2010/11 reporting years are due to change in calculation method. In line with Defra guidelines all “green electricity” is now treated as standard grid electricity and is not zero rated for carbon. Additionally, the carbon conversion factors used have been brought in line with those used for the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES) which accounts for the increase. **No new data for 2013 available.**

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2015 WPI3

**Welsh Public Sector Indicator 4: Welsh Government CRC Emissions**



**Indicator:** Welsh Government CRC Emissions  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WP1-7

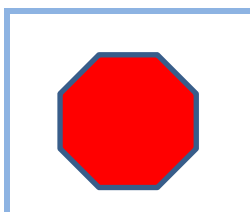


Welsh Government CRC emissions	2010	2011	2012	2013
Tonnes CO <sub>2</sub>	18,056	14,837	16,909	15,948

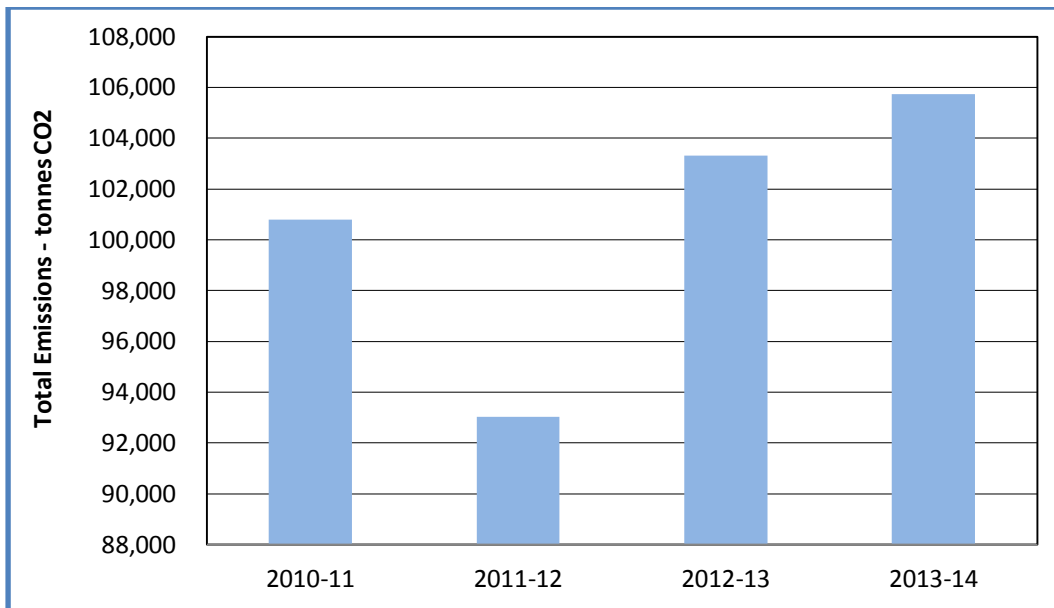
**Trend:** Welsh Government Carbon Reduction Commitment CO<sub>2</sub> emissions decreased in 2013. Please note that simplification of the CRC scheme introduced a number of changes to the information that participants must include in their annual reports. These changes mean that the information reported after 2012/13 is not directly comparable with that from 2010/11 and 2011/12.

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2015 WPI4

**Welsh Public Sector Indicator 5: Education sector CRC emissions**



**Indicator:** Education sector CRC emissions  
**Tier:** 3  
**Status:** Clear deterioration  
**Policy indicator:** WP1-7

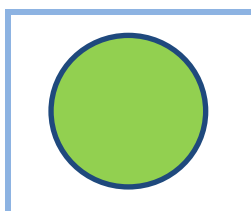


CRC emissions	2010	2011	2012	2013
Total emissions tonnes CO <sub>2</sub>	100,802	93,037	103,323	105,730

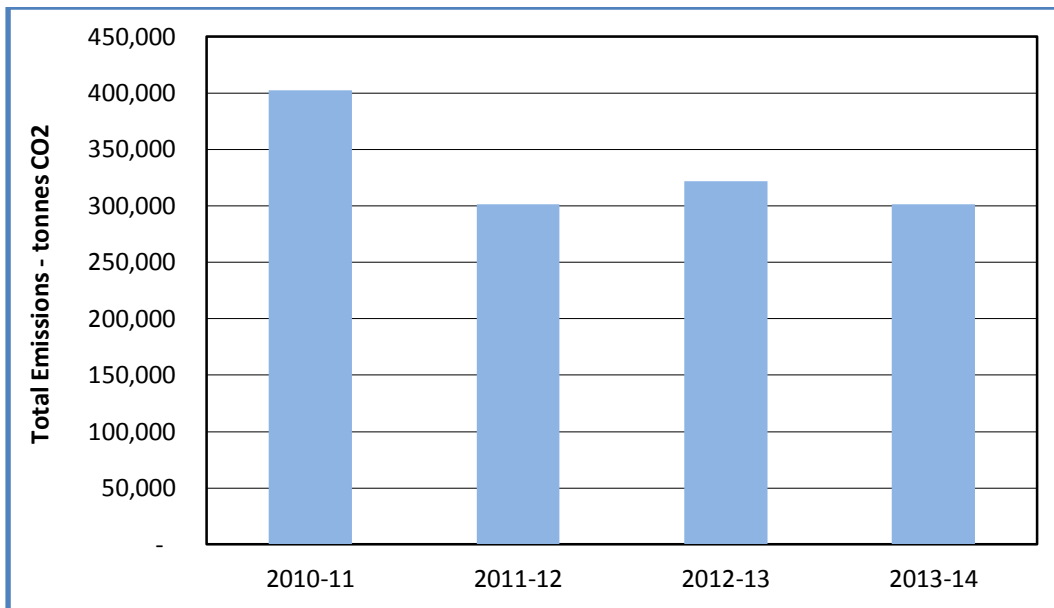
**Trend:** Education sector Carbon Reduction Commitment CO<sub>2</sub> emissions continued to increase in 2013 compared to 2012 and remain higher than the 2010 emissions. Please note that simplification of the CRC scheme introduced a number of changes to the information that participants must include in their annual reports. These changes mean that the information reported after 2012/13 is not directly comparable with that from 2010/11 and 2011/12.

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2015 WPI5

#### Welsh Public Sector Indicator 6 - Local Authority CRC emissions



**Indicator:** Local Authority CRC emissions  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WP1-7

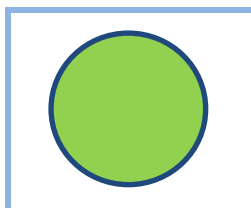


Welsh Government CRC emissions	2010	2011	2012	2013
Tonnes CO <sub>2</sub>	402,223	301,542	322,196	301,454

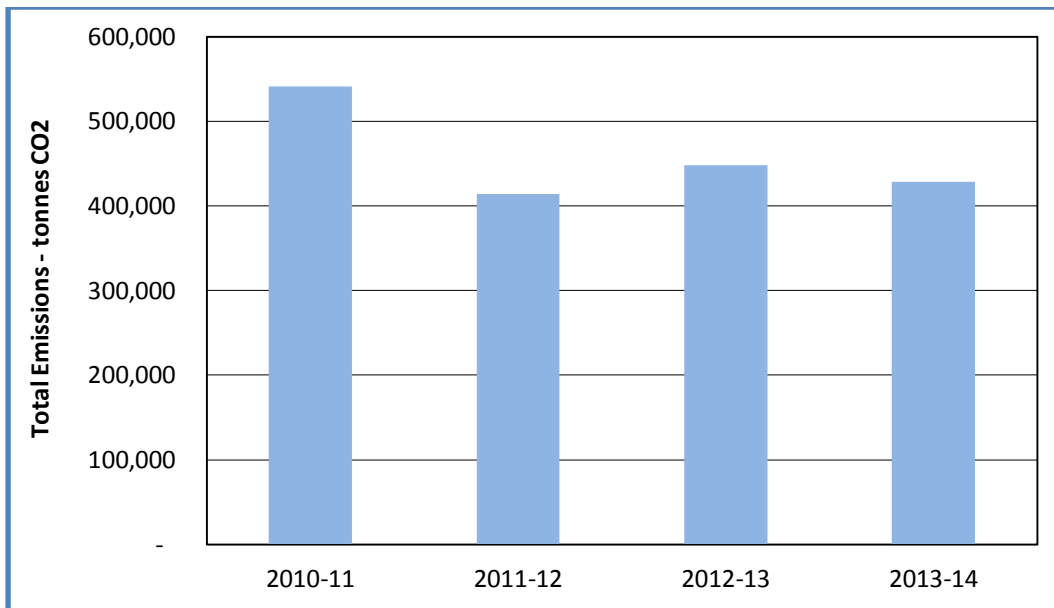
**Trend:** Local Authority Carbon Reduction Commitment CO<sub>2</sub> emissions reduced in 2011-2012 compared to 2010-11. Please note that simplification of the CRC scheme introduced a number of changes to the information that participants must include in their annual reports. These changes mean that the information reported for 2012/13 is not directly comparable with that from 2010/11 and 2011/12.

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2014 WPI6

**UK Public Sector Indicator 1 – Total public sector CRC emissions in Wales**



**Indicator:** Total public sector CRC emissions in Wales  
**Tier:** 3  
**Status:** Clear improvement  
**Policy indicator:** WP1-7



CRC emission		2010	2011	2012	2013
Total Emissions tonnes CO <sub>2</sub>	540,961		414,350	447,956	428,131

**Trend:** Total public sector Carbon Reduction CO<sub>2</sub> emissions Commitment in Wales decreased in 2013. Please note that simplification of the CRC scheme introduced a number of changes to the information that participants must include in their annual reports. These changes mean that the information reported for 2012/13 is not directly comparable with that from 2010/11 and 2011/12.

**Indicator spread sheet reference:** Welsh Public Sector Indicators 2015 UKPSI1

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