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**Environment**

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# **CROSS-DEPARTMENTAL WORKING GROUP ON CLIMATE CHANGE**

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## **ANNUAL PROGRESS REPORT**

MARCH 2016

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Copies of the CCDWCC 5th Annual Progress Report and the supporting annexes can be found on the DOE website at:

<https://www.doeni.gov.uk/publications/cross-departmental-working-group-climate-change-annual-report-2016>

## EXECUTIVE SUMMARY

This is the fifth, and final, annual progress report to be submitted by the Cross Departmental Working Group on Climate Change (CDWGCC) to the Executive during the current Assembly mandate. The report looks back on what has been achieved for both climate change mitigation and adaptation during this Assembly period as well as detailing progress made towards the Programme for Government (PfG) target of continuing to work towards a greenhouse gas (GHG) emissions reduction of at least 35% by 2025 based on 1990 levels. Of particular note in this year's report is the **projected NI GHG emissions reduction of 34.1% (excluding LULUCF) by 2025** detailed in Annex A. This represents an improvement on the projected like for like GHG emissions reduction of 32.3% for last year.

This year has also been significant with the signing of the Paris Agreement, with 195 countries committing to a legally binding global agreement limiting increases in GHG emissions with the aim of keeping the rise in global temperatures below 2°C. This marks a clear turning point towards a sustainable and low carbon future and sends a strong signal to investors that governments are committed to a low carbon economy.

All departments have contributed to this report and to the GHG emissions reduction that have been achieved. Annex B outlines actions taken by departments to reduce GHG emissions in 2015/16.

The severe flooding experienced through Christmas and the start of the year and the more regular occurrence of such extreme weather events, are testament for the need to take action. The report also provides an update on action taken by Departments to provide Northern Ireland input into the second UK Climate Change Risk Assessment (CCRA); work on

the development of a Northern Ireland climate change risks and opportunities evidence base and ongoing work on an interim evaluation of the Northern Ireland Climate Change Adaptation Programme (Adaptation Programme).

## **1. BACKGROUND**

### **Cross-Departmental Working Group on Climate Change**

In May 2010 the Northern Ireland Executive approved the establishment of what was then known as the Cross-Departmental Working Group on Greenhouse Gas Emissions, later re-constituted as the Cross Departmental Working Group on Climate Change. The group, chaired by the Minister and made up of senior officials of all departments, was tasked with developing a Greenhouse Gas Emissions Reduction Action Plan. The plan was published in February 2011 and a commitment was given to provide the Executive with an annual report on progress.

The Cross - Departmental Working Group on Climate Change (CDWGCC) has the following terms of reference:

- To review cross-departmental action on climate change on an annual basis, to ensure we remain on target to deliver the GHG emissions reduction target set out in the PfG and to meet the requirements of the UK Climate Change Act 2008;
- To support the preparation of a UK risk assessment of the current and predicted impact of climate change;
- To prepare and deliver a cross-departmental adaptation programme on climate change;
- To report to the Executive annually on performance; and
- To make recommendations and/or decisions on wider climate change mitigation and adaptation issues as appropriate.

The CDWGCC group is supported by three sub-groups; Mitigation, Adaptation and Analysts. They report to the CDWGCC group on their areas of responsibility. The purpose of this document is to fulfil the

responsibilities outlined above and, to provide reassurance to the Executive that appropriate progress is being made to:

- deliver on the PfG target on GHG emissions reduction; and
- prepare for the impacts of climate change.

### **Climate Change Targets**

Northern Ireland contributes to a range of climate change targets. Whilst climate change is a global issue, it requires action at a number of levels. At the highest level is the Paris Agreement signed by 195 countries and the EU in December 2015. It is a legally binding agreement requiring all signatories to reduce GHG emissions to limit global temperature rise to 2°C and goes further by stating that efforts should be pursued to limit to 1.5 degrees. The European Union (EU) has a target of reducing GHG emissions from 1990 levels by 20% by 2020 and 40% by 2030. These targets ensure that the EU is on the cost-effective track towards meeting its objective of cutting emissions by at least 80% by 2050.

The Climate Change Act 2008, covering England, Scotland, Wales and Northern Ireland established a legislative framework to enable the reduction of UK GHG emissions by 80% from 1990 levels by 2050 and by 34% by 2020. It also introduced legally binding five-year carbon budgets, which set a ceiling on the levels of GHGs the UK can emit on course to the longer-term target. In November 2015 the Committee on Climate Change (CCC) recommended to the UK government that the fifth carbon budget is set at 1,765 MtCO<sub>2</sub>e, including emissions from international shipping, over the period 2028 – 2032. This would limit annual emissions to an average of 57% below 1990 levels, consistent with the cost-effective path to the 2050 target in the Climate Change Act. Having taken account of the agreement reached in Paris, the CCC wrote



again to the UK government in January 2016 advising that it was still of the view that the fifth carbon budget be set at 1,765 MtCO<sub>2</sub>e.

The Northern Ireland Executive, in its PfG (2011-15), has a target of continuing to work towards a reduction in GHG emissions by at least 35% on 1990 levels by 2025.

## **2. COP 21**

The United Nations Framework Convention on Climate Change (UNFCCC), Conference of the Parties, known as CoP 21, took place in Paris from 30 November to 11 December 2015 with the aim of agreeing a global deal that would result in greater action by all countries to reduce greenhouse gas (GHG) emissions and limit global temperature rise to 2°C by 2050.

In preparation for the CoP 21, countries agreed to publicly outline what post-2020 climate actions they intended to take under a new international agreement, known as their Intended Nationally Determined Contributions (INDCs).

On 28 March 2015 the 28 Member States of the EU (including UK and Ireland) submitted their Intended Nationally Determined Contributions (INDC's) to the UNFCCC secretariat giving a commitment to an EU binding target of at least a 40% domestic reduction in greenhouse gas emissions by 2030 compared with 1990. The Minister fully endorsed this approach.

The Minister attended the CoP 21 as part of the UK delegation from 6<sup>th</sup> to 8<sup>th</sup> December 2015. Whilst there he met with Ministers from across the UK and Ireland, which provided the opportunity to exchange views on the impacts of climate change within their local areas and share experiences in taking action to mitigate and adapt to climate change. It also provided an insight to the lessons learned across different governments in the use of climate change legislation.

Having met with church leaders prior to the CoP 21 the Minister was aware that the impacts of climate change fall disproportionately on

vulnerable groups living in the poorest and less developed countries, the people who have done the least to cause climate change. During the Ministers time in Paris he met with organisations such as the Mary Robinson Foundation, Christian Aid, the Rockefeller Foundation and the Foundation for Environmental Education. These organisations have firsthand experience of the real life effects of climate change on people across the world. This reinforced the Ministers belief that we in Northern Ireland have a moral responsibility to do our best to protect them.

### **The Paris Agreement**

The Paris Agreement marks a clear turning point towards a sustainable and low carbon future and sends a strong signal to investors that governments are committed to a low carbon economy.

The 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 stock take 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. Includes explicit provisions for the use of markets/ carbon trading, and the establishment of a UN crediting mechanism, to deliver emissions reductions at lowest cost and prevent any double counting.
7. 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 that need it, helping them adapt to climate change.
8. Continues the commitment by developed countries to mobilise, from public and private sources, \$100bn per year to 2025, when the commitment will be reviewed (from a floor of \$100bn), to help developing countries, especially the poorest and most vulnerable, to curb their emissions whilst developing, adapt to climate change and build their own capacity to deal with the problem in the long term.
9. Incorporates a broader and more detailed work programme on reducing the risk of loss and damage but rules out compensation claims or liability based on the Agreement.
10. The Paris Agreement is legally binding in international law. The Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective

capabilities, in light of different national circumstances – which indicates that all countries will take action under the Agreement.

The agreement is an important step forward, with an unprecedented number of countries agreeing to a deal to limit global temperature rises and avoid the worst impacts of climate change. This is vital for long-term economic and global security. The deal ensures that all countries are held to account for their climate commitments and gives a clear signal to business to invest in the low carbon economy. For developing countries, the deal secured funding of \$100 billion a year, essential in order to help the poorest and most vulnerable countries to protect themselves from the effects of climate change and support low carbon development.

Article 2 of the agreement recognises that, in seeking to prevent interface with climate, we must do so in a manner that does not threaten food production. The agreement also recognises the need to account for both emissions and removals. The agricultural sector has this capability as land management techniques can remove emissions. This is important as agriculture is the biggest source of emissions locally. Worldwide, agriculture dominated economies are, in the main, all high emitters due to naturally occurring gases from livestock.

### **3. LEGISLATION**

The Climate Change Act 2008 covers all of the UK with targets set at the UK level. The Act sets no targets for Northern Ireland, England, Scotland or Wales. Following consultation in 2013 on proposals for a Northern Ireland Climate Change Act concerns were raised by stakeholders over the robustness of the data which might be used to set a target in NI legislation and possible adverse impacts on the NI economy. To address these issues the Greenhouse Gas projections modelling tool has been revised to take account of more specific NI data and work on NI carbon intensity indicators has been completed.

With this work completed and taking account of discussions with stakeholders over the intervening months, new EU targets and draft legislation in the Republic of Ireland and Wales, it was felt appropriate to bring forward proposals on climate change legislation for Northern Ireland.

On 30 November 2015 a motion was brought to the Assembly on climate change that contained the amendment 'to introduce a Climate Bill for Northern Ireland that includes legally-binding, long-term and interim targets on the reduction of greenhouse gas emissions.' The motion and the amendment were agreed by the Assembly.

A discussion paper issued on 1 December 2015 for an eight week period seeking views from stakeholders on proposals for taking forward Northern Ireland climate change legislation. The proposals included a long term target of an 80% reduction in Northern Ireland GHG emissions by 2050 and powers to introduce by secondary legislation: the setting of interim targets and carbon budgets; establishment of an independent advisory body; and reporting duties for local authorities. At the end of this

period 65 responses had been received, with 74% in favour of Northern Ireland climate change legislation.

In parallel with this exercise the Minister requested an update from the Committee on Climate Change on its 2011 paper 'The Appropriateness of a Northern Ireland Climate Change Act'. The updated report suggests that given the range of circumstances that are unique to Northern Ireland local legislation is appropriate. However it also advised that the benefits of specific legislation only outweigh the costs if it is possible to pass local legislation without adding undue additional costs on to the Northern Ireland Executive, departments or the wider economy.

The report claims that experience at the UK level and in Scotland suggests that legislation is helpful in underpinning low carbon objectives by making long term commitments to reduce emissions, and by providing greater certainty for businesses and policymakers. It goes on to state that approaches should be focused on government leadership to reduce emissions from agriculture, decarbonise the power sector by reducing fossil fuel consumption and increasing the use of renewables, low carbon heat and transport and increased energy efficiency of buildings.

A meeting of the CDWGCC was held on 1 February 2016. At this meeting the Minister sought the views of Departments on what they could support in Northern Ireland climate change legislation.

The Minister took account of all these factors, the knowledge and experience gained in Paris and that Scotland, Wales and Ireland have introduced legislation to address climate change. This informed an evidence paper that the Minister circulated to his Ministerial colleagues in March 2016 seeking their support to the introduction of Northern Ireland climate change legislation in the next Assembly.

## 4. MITIGATION

### Progress in 2015/16

#### Northern Ireland's Greenhouse Gas Emissions in 2013

The latest emission figures available for Northern Ireland, set out in the *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2013*, estimates the 2013 Northern Ireland emissions at 22 million tonnes of carbon dioxide equivalent (Mt CO<sub>2e</sub>); with 29% from agriculture, 18% from transport, 18% from energy supply and 13% from the residential sector. A significant drop in emissions was observed in the Land Use, Land Use Change and Forestry (LULUCF) sector as the previous year had included emissions from exceptional forest wildfires. In the waste sector there was also a notable reduction in emissions from landfill. However, emissions in the energy supply sector saw a large increase as global fuel prices are causing a shift in power generation from burning natural gas to coal. Across all sectors, the 2013 emissions levels show a longer term decrease of 16% since the base year. Transport emissions have increased by just under 22% since 1990, however, since peaking in 2007, there has been a reduction of over 11% in the last six reported years.

GHG emissions in the UK have reduced by 30% since the base year. Scotland and England have the greatest percentage reductions (35% and 32% respectively). Northern Ireland and Wales have lower reductions (16% and 12% respectively). However, caution should be exercised when comparing the relative performance of individual countries as the makeup of the emissions by sectors within each country varies significantly. The differences between NI and the rest of the UK are particularly notable in the type of fuel used and the agriculture sector.



This reflects both the importance of the agriculture sector in NI as well as the relatively small heavy industry sector here.

The level of uncertainty in the Northern Ireland figures for 2013 is measured as +/-12% around a central estimate of 22 Mt CO<sub>2</sub>e. The percentage reduction, between 1990 and 2013, is between 8% and 24%, with a central estimate of 16%. There remains greater uncertainty around emissions in Northern Ireland compared to other parts of the UK due to the relative importance of nitrous oxide emissions in the agriculture sector. Emissions of the gas are more difficult to estimate than carbon dioxide and agriculture comprises a larger share of Northern Ireland emissions than it does in the rest of the UK.

### **Other key points**

- Carbon dioxide is the main GHG, and accounted for 67% (15 MtCO<sub>2</sub>) of all GHG emissions in Northern Ireland in 2013.
- Northern Ireland's GHG emissions account for 4% of the total UK GHG emissions. However, Northern Ireland accounts for 7.8% of the UK's methane (CH<sub>4</sub>) and 9.1% of the UK's nitrous oxide (N<sub>2</sub>O) emissions. The higher share of these gases is due to naturally occurring emissions from agricultural sources which are hard to treat accounting for a higher proportion of the regional total than in the rest of the UK. Agricultural emissions are always high in countries or regions that are dominated by livestock production.

### **Greenhouse Gas Emissions - Projection to 2025**

The latest projection of GHG emissions reduction taking the net impact of applying the latest inventory, other routine data updates as well as the improvements to the projection tool methodology, suggests emissions will be 34.1% (excluding LULUCF) lower in 2025 than in 1990. This

figure shows an improvement on the projected like for like GHG emissions reduction of 32.3% for last year. The domestic and waste sectors in particular contributed to the greater reduction in projected emissions compared to the previous projection. However, the overall improvement was reduced by an upward revision in projected emissions for the power, road transport and livestock sectors. The analysis is based on the latest figures available in 2013 and the application of the projection methodology set out in full in Annex A.

### **Action Plans**

The 2015/16 work programme (Annex B) summarises the actions agreed by all Departments to address climate change that have been taken forward by the CDWGCC. For ease of reference those achieved are highlighted in green.

At the start of the year 37 actions were agreed by the CDWGCC. By 31 December 2015, 25 (68%) of these targets had been achieved, with 9 (24%) having made some progress being carried forward to 2016/17 for completion. It should be noted that the 2015/16 action plan has been shortened to nine months allowing for the end of the current Assembly mandate in March 2016.

The 2016/17 action plan has to be agreed by all departments, however, it is recognised that with the restructuring of departments, the new Assembly and the new departmental priorities and Programme for Government commitments these are likely to change. To take account of these changes the 2016/17 action plan will be developed in year.

## **5. ADAPTATION**

### **Background**

The first Northern Ireland Climate Change Adaptation Programme (NICCAP) was laid before the Assembly in January 2014. It contains the Government's response to the risks and opportunities identified in the Climate Change Risk Assessment (CCRA) for Northern Ireland, which was published in January 2012 as part of the overall UK CCRA.

### **2<sup>nd</sup> CCRA Evidence Report**

Work is continuing on the development and publication of the 2<sup>nd</sup> UK CCRA. The Adaptation Sub-Committee of the Committee of Climate Change (ASC) has been asked to prepare the independent evidence report. The ASC and secretariat, together with 9 independent lead contributors and 60 contributing authors from academia, 25 technical peer reviewers' and 100 policy reviewers are reviewing and commenting on the draft report. The Department of the Environment are part of the 2<sup>nd</sup> CCRA advisory board.

The 2<sup>nd</sup> CCRA evidence report will set out latest understanding of key risks and opportunities to the UK from climate change. It will assess the magnitude of impact and the urgency of action needed for different threats and opportunities, as well as developing an understanding of the possible net effect of different risks acting together. It will also comment on the assumptions and uncertainties in the evidence and produce a confidence score for different findings, following the scoring method from the first CCRA.

The evidence report will be structured into different parts and it will include a national summary for Northern Ireland, whose content will be based on the evidence included in the main report.

In developing the 2nd CCRA the ASC, through members of the Adaptation Sub Group, has engaged with key Northern Ireland stakeholders. It is anticipated that the input and contributions by Northern Ireland stakeholders from the various CCRA workgroups coupled with the outcome of the additional CCRA research projects (which are designed to fill key evidence gaps) will ensure that there is relevant Northern Ireland material in the final UK CCRA Evidence report.

### **NI Climate Change Risks and Opportunities Evidence Base Report**

When developing the 2nd NICCAP, the Adaptation Sub Group recognised that it was important to gain the views from external stakeholders on the value of the first NICCAP. The sub group asked Climate NI to develop a more comprehensive evidence base on the climate change risks and opportunities specific to Northern Ireland.

Work by Climate NI is still ongoing on the development of a Northern Ireland adaptation evidence base. It is anticipated that the stakeholder engagement report will be provided to the Adaptation Sub Group in the next few months. Climate NI has been asked to conduct the stakeholder engagement report around the chapter topics of the forthcoming 2<sup>nd</sup> CCRA. The report will therefore concentrate on the climate change risks and opportunities in the following areas: Infrastructure, Business and Industry, Natural Environment and Rural Economy and the People and Built Environment.

It is anticipated that the development of this local evidence base with targeted local adaptation information will help support the development and implementation of climate change adaptation policies and decision-making across all government departments, which will be outlined in the second NICCAP (2018-2023).

## **Interim Evaluation of NICCAP**

It is recognised that climate change adaptation is a complex concept, which will take time to embed into policy and practice and that it is very much a long term process. It will not be possible to fully assess the impact of an adaptation programme on climate change vulnerability until considerable time has passed. However, in order to meet the statutory requirements of the UK Climate Change Act 2008 we need to report in subsequent Adaptation Programmes how successful the previous NICCAP has been in delivering its aims, objectives and activities.

The Adaptation Sub Group has undertaken to produce an interim evaluation report on the NICCAP. Work is ongoing on the development of an interim evaluation report which will focus on the proposals and policies in the NICCAP that have been completed to date, and those that are ongoing for the lifetime of the Adaptation Programme.

## 6. CLIMATE CHANGE AND THE ECONOMY

In 2013 the UK economy experienced a healthy level of growth in Gross Domestic Product (2.2%)<sup>1</sup> which was a higher increase than the previous year (1.2%). Growth has subsequently improved further, with the most recent growth figures from 2014 showing a 2.9% increase in GDP.

The Northern Ireland economy also continued to grow in 2013, with Gross Value Added (GVA in current basic prices) increasing by 2.61% from £32.68bn to £33.54bn<sup>2</sup>. Note there are more recent economic indicators available and the economy has grown since 2013 (2.53% growth in 2014); however, the most recent emission figures for NI are from 2013 and the aim of this section is to try to highlight a link between emissions and the economy. Therefore, historical economic figures have been used. For a recent overview of the NI economy see DETI's economic commentary<sup>3</sup>.

The latest emission figures available for Northern Ireland (2013) show a slight annual increase in emissions of 0.052%. The level of greenhouse gas emissions is affected by a range of factors, including economic activity, energy prices and temperature. Possible drivers of emissions in 2013 included<sup>4</sup>:

- Economic Activity – an increase in GDP (and GVA in NI) as explained above, a fall in manufacturing output by 0.7% and real household disposable income decreased by 0.5%.
- Energy Prices - residential gas prices increased by 5% in real terms. Wholesale coal prices fell 9% in real terms in comparison to wholesale gas prices which rose 6%. Petrol and diesel prices

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<sup>1</sup> GDP Market Prices, Chained Volume Indices. Source: [http://www.ons.gov.uk/ons/dcp171778\\_429067.pdf](http://www.ons.gov.uk/ons/dcp171778_429067.pdf)

<sup>2</sup> Source: Office for National Statistics (ONS).

<sup>3</sup> <https://www.detini.gov.uk/publications/deti-economic-commentary>

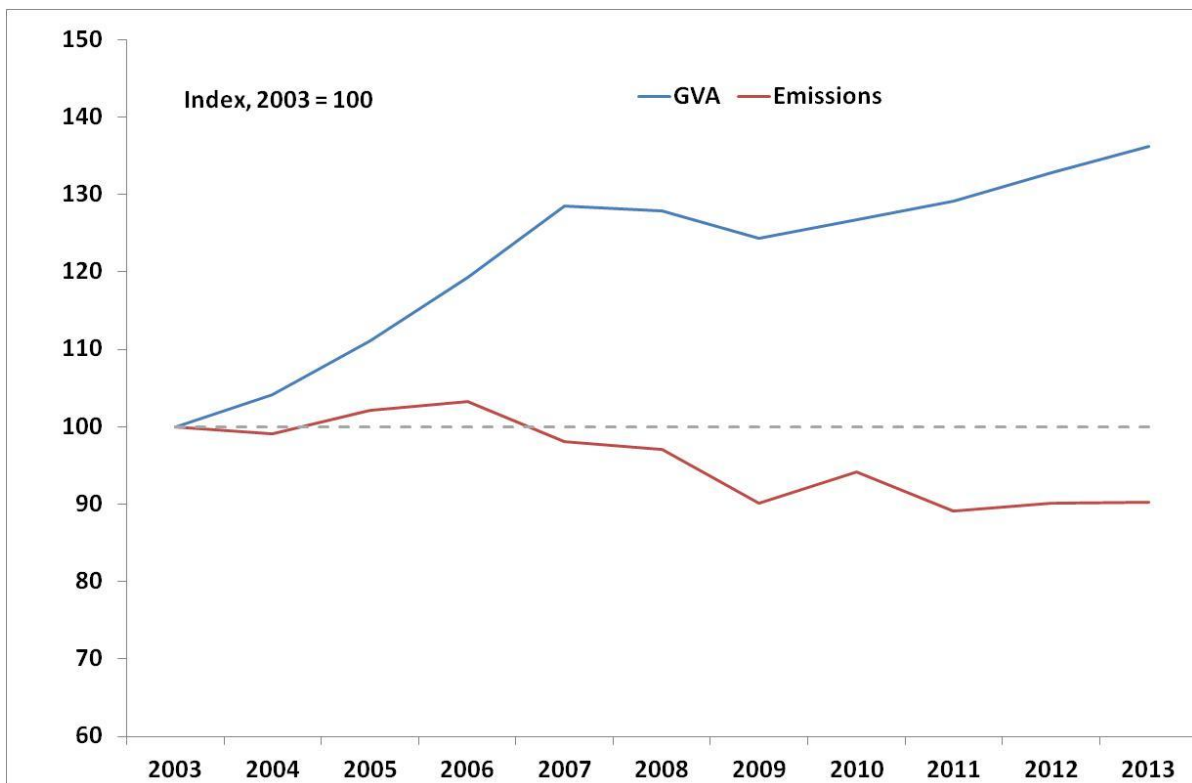
<sup>4</sup> Source: CCC 2014 Progress Report

decreased by 3% in real terms while residential electricity prices increased 5% in real terms.

- Temperature - 2013 had slightly colder winter months than 2012, with average winter temperatures (i.e. January, February and December) 0.3°C lower, and a 3% increase in heating degree days across the year.

Historically, economic growth and emissions have been intrinsically linked due to the structure of the global economy and the reliance on fossil fuels. Figure 1 below shows a ten year trend of Northern Ireland's GVA and emissions.

*Figure 1: NI's GVA and Emissions since 2003*



The graph highlights the link between economic growth and emissions as the trends have tended to match each other; note that emissions and

GVA were increasing until the economic downturn and then both began to decline, with emissions falling first (suggesting a time lag).

Between 2003 and 2013, GVA increased by 36.2% whereas emissions fell by 9.8% which suggests a decoupling of economic growth and emissions. However, as indicated above, there are other factors affecting emissions including temperature and energy prices and only when all variables have been considered could a conclusion on decoupling be made.

Since 2011, the beginning of the current Assembly mandate, emissions have increased by 1.17% whereas GVA has increased by 5.46%, again suggesting a certain level of decoupling. Nevertheless, this emphasises one of the key challenges facing the next Assembly – to continuing growing the economy whilst also reducing emissions; thereby contributing to the Programme for Government (PfG) target of continuing to work towards a greenhouse gas (GHG) emissions reduction of at least 35% by 2025 based on 1990 levels.



## **7. WHAT WAS ACHIEVED DURING THE ASSEMBLY MANDATE 2011-16**

With the current Assembly mandate ending in March 2016 it seems appropriate to reflect what has been achieved across the departments over the last five years to reduce greenhouse gas emissions.

There have been notable high level developments in renewable energy, expansion of the gas network, reductions in waste going to landfill to increased recycling and the development of a charging network for ecars. Schemes have been introduced or further developed by departments to help improve energy efficiency and boost renewable heat technologies across society. The departments themselves have invested in measures across their estates which have contributed to reductions in emissions and costs, monitoring and reporting mechanisms have also been developed. Progress has been made to educate our children on the need for sustainability and in the skills needed to participate and succeed in the new low carbon sectors.

The following summarises some of the achievements of the last five years:

- **Cross Departmental Working Group (CDWG) established** – The CDWG has developed the annual progress report that is submitted to the Executive to update on progress made to reduce emissions and action plans have been agreed by all departments to monitor progress and co-ordinate departmental action to progress emissions reduction. The Adaptation sub-group of the Cross Departmental Working Group on Climate Change was established. The group chaired by an official of the Department of the Environment and containing membership from all of the Northern Ireland Departments held its first meeting in August 2011. Analysts within the group

developed the projection tool and have refined annually to provide projections on emissions reduction out to 2025.

- **Departmental Estates** – Many departments have introduced and invested in waste management plans, energy efficiency measures and sustainability strategies. Some examples are:
  - The Carbon Emissions Reduction Initiative (CERI) by the DHSSPS, provided capital funding to its Arms Length Bodies for carbon emission reduction projects through energy efficiency. For the years 2011- 2013 the scheme resulted in recurring annual energy savings of 12.5million kWh's, equating to carbon savings of 5481.5 tonnes and annual recurring revenue savings of £1.3m. This has been achieved with a capital investment of £5.72million.
  - The schools' estate is the second highest energy user in the government estate and has high carbon emissions. A £10 million capital investment programme in 2014/15 resulted in energy efficiency measures ranging from PV panels, conversion and replacement of boilers, upgrade of lighting, automatic metering systems and window replacement being installed in over 500 schools. It is estimated that this may result in annual savings/income of £1 million and a reduction of *circa* 2000 tonne CO<sub>2</sub> in emissions.
- **Schemes and industry initiatives** – Have been taken forward by the departments. This has seen:
  - Work continues to address fuel poverty. The Warm Homes Scheme provided a range of measures, helping to make homes warmer, healthier and more energy efficient. From its inception the scheme helped to improve the energy efficiency of almost 130,000 homes and invested over £160 million in energy

efficiency measures. A new Affordable Warmth Scheme was launched in September 2014 and from April 2015 completely replaced Warm Homes. This new targeted approach involves partnership working with local Councils and the Housing Executive. The Scheme remains an energy efficiency programme for lower income households but with a very different approach in terms of assisting those in the most severe fuel poverty. In its first full year of operation it is estimated that the Affordable Warmth Scheme will invest £16.5 million on energy efficient measures in 4,000 homes.

- The Boiler Replacement Scheme launched in September 2012 provides grants to lower income households to replace old and inefficient boilers delivering an average annual household energy saving of at least 8,221KWh and an annual reduction in carbon emissions of 2.4 tonnes of CO<sub>2</sub> per household. To January 2016, approximately 24,500 homes have had new boilers installed, each one seeing an increase in thermal efficiency.
- Efficient Farming Cuts Greenhouse Gases - The Agriculture and Forestry Greenhouse Gas Implementation Partnership (GHGIP) was established in recognition of the need for the local agri-food sector to contribute to climate change objectives. The Partnership issued its “Efficient Farming Cuts Greenhouse Gases” strategy and action plan to tackle climate change within the agri-food sector in 2011 and is working on the launch of a Phase 2 Action Plan.
- The aim of the GHGIP has always been to encourage implementation of on-farm efficiency measures which will reduce the carbon intensity of local food production i.e. the amount of

carbon embedded in agricultural products such as a kilo of beef, pork or lamb or a litre of milk. This approach allows the agri-food sector to address its carbon footprint whilst also contributing to economic growth by meeting the growing global demand for food through exports from a relatively efficient region such as Northern Ireland. Reductions since 1990 with regard to carbon embedded in a litre of locally produced milk are expected to be significant.

- The Northern Ireland Renewable Heat Incentive was introduced in November 2012 to support generators of renewable heat within the non-domestic sector. The interim Renewable Heat Premium Payment (RHPP) scheme was launched for domestic customers in May 2012, with the Renewable Heat Incentive scheme being extended to domestic customers in December 2014. Since the schemes commenced support has been provided for 778 new renewable heat schemes in the domestic sector plus some 1200 transferring across from the interim Renewable Heat Premium Payment Scheme, (RHPP), and 1810 schemes in the non-domestic sector adding a total capacity of some 167 MW. Due to pressure on budgets both RHI schemes closed to new applications on 29 February 2016.
- Interest free loans of between £3,000 and £400,000 have been made available to assist Northern Ireland businesses to install new energy saving equipment to reduce operating costs. Over £45million in interest free loans has been made available to over 1,100 projects, leveraging an additional £44million of private sector investment. These projects will deliver lifetime energy cost savings of over £100 million and CO<sub>2</sub> savings of 0.48 MtCO<sub>2</sub>.

- Voluntary prosperity agreements have been made with several companies through which the Northern Ireland Environment Agency and an organisation or business can explore innovative approaches to reduce environmental impacts in ways that create prosperity and well-being. One of these companies, Linden Foods, was recently voted Green Company of the Year at the UTV Business Eye Awards. The company put this down to the environmental and sustainable journey it has been on since establishing a greentrack strategy.
- **Behavioural and structural change** – has been influenced by the legislation, investment and educational policies implemented across government departments. Examples of this are:
  - The reduction in waste going to landfill and increases in recycling. The latest figures available for 2014/15 show that the amount of local authority collected municipal waste arising in Northern Ireland was 951,423 tonnes, a reduction of 11% from 2006/07. The amount of biodegradable local authority collected municipal waste sent to landfill in Northern Ireland fell to 229,099 tonnes, which equates to 36% of the 1995 levels (against a target of 35% by 2020). The household waste recycling rate has increased from 9% in 2002 to 42% in 2014/15.
  - From its inception in 1996, there are now some 220,000 consumers connected to the natural gas network in Northern Ireland. Work is progressing to deliver the £250 million extension of the natural gas network to the west of Northern Ireland with installation of a new pipeline to Strabane having commenced in November 2015. Work to provide new gas pipelines between main towns in the West is expected to be completed by the end of 2017

and the wider project aims to provide connections to gas for up to a further 40,000 domestic and business customers. In December 2015, the Utility Regulator granted Phoenix Gas a licence extension for further expansion of the gas network to the south east of Northern Ireland, providing the opportunity for around 27,000 additional homes and businesses to have access to natural gas. Work to deliver the project in East Down is expected to commence during 2016 and both proposals should deliver significant carbon savings over the period of the gas licences, through reducing dependence on oil in particular.

- Supported by the Northern Ireland Renewables Obligation, renewable electricity has grown rapidly in recent years and currently stands at just over 20% of total electricity consumption (with approximately 800MW of installed renewable electricity generation capacity), thus meeting the NI Executive's Programme for Government target of 20% by 2015. The majority of this is from large scale onshore wind, however, the deployment of small scale technologies has contributed e.g. there are now over 10,000 solar PV generating stations, the vast majority of which are micro generation stations installed on domestic properties.
- The Regional Development Strategy has the strategic aim of reducing our carbon footprint and facilitating the mitigation and adaptation to climate change. In line with this the Regional transportation policy for 2015 and beyond sets the specific objective of reducing greenhouse gas emissions from transport. It aims to do this by supporting investment in more sustainable modes of travel such as public transport and active travel. Public Transport investment to date has already delivered bus lanes

throughout Belfast, significant increases in rail passenger numbers and increased park and ride spaces. Going forward investment has been committed to deliver a Belfast Rapid Transit System which aims to reduce the number of vehicles travelling into the city centre. To date there has been an average reduction of over 1,900 in the number of vehicles entering the Belfast City centre core area during the morning peak and an average reduction of around 10,900 in the number of vehicles entering that area over a 24 hour period.

- Beyond promoting a modal shift to public transport the Department for Regional Development (DRD) is also committed to increasing the level of active travel across Northern Ireland. With 1/6<sup>th</sup> all of car journeys made in Northern Ireland being less than 1 mile and 1/3<sup>rd</sup> being less than two miles, there is potential to reduce emissions and green house gases by providing support and encouragement to those who could make journeys actively by walking or cycling. The Bicycle Strategy for Northern Ireland published in August 2015 states the DRD's commitment to provide support for cyclists through infrastructure and developments in training, education and safety.
- In 2015/16 over £2m will be spent on cycling, which includes safe and direct routes for the increasing number of cyclists, initially focusing on Belfast. Three new routes are currently being constructed in Belfast due for completion by Easter 2016. These routes, along with more being developed, will make journeys by bicycle a more attractive option than journeys by car, especially short journeys. Following the publication of a draft Belfast Bicycle

Network Plan later this year, plans for other urban areas will be progressed.

- DRD is also hoping to publish a Strategic Greenways Plan for Northern Ireland by Easter 2016, which will provide interurban options for active journeys. We are also continuing to progress with the Active School Travel Programme where DRD in partnership with the Public Health Agency and Sustrans, have worked with 180 schools to encourage more active travel. In September 2013, 60 schools joined the Active School Travel programme funded by DRD and the Public Health Agency. Those 60 schools saw a drop in children being driven to school from 53% to 45% and then to 44% the following year.
- The Electric Vehicle charging infrastructure operated in Northern Ireland by the Electricity Supply Board is amongst some of the most modern and comprehensive in the UK, if not Europe. The 337 charge points in the Public Charge network means that no household is more than 10 miles from a charge point or 30 miles from a rapid charger. The network is also inter-operable with that in the Republic of Ireland. A further 54 charge points have been installed in the Public Sector Estate, principally for workplace usage, however at 23 locations the charge points have been made publically available. Electric vehicle ownership has increased from 5 electric vehicles in 2012 to approximately 1080 in 2015.
- In education, Northern Ireland is the first place in the world to achieve 100% Eco-school status, helping our children to learn and understand about the impacts of climate change and the need for sustainability in their everyday lives.



- Further education colleges are ensuring that their provision meets the needs of the local economy. Colleges provide a range of courses that support the sustainable energy sector e.g. foundation degrees specialising in wind technology and renewable energies and a variety of professional and technical courses at different levels that are relevant to the renewable energy sector.
- All colleges have been increasing their provision in the renewable energy sector. Specific examples include South Eastern Regional College's Environmental Skills Centre at its Newtownards Campus, providing a hub for sustainable development and renewable technology; Southern Regional College's GreenTec Centre in Newry, offering accredited training, seminars, business support in a wide range of green technology growth areas, including ecological building systems, renewable heat, energy efficiency and the design and installation of renewable technologies such as solar thermal, heat pumps and solar panels; and South West College's CREST Centre which will have demonstration and laboratory facilities for the design, development, manufacture and testing of renewable and sustainable technologies and aims to support businesses in bringing their ideas for new products to reality.
- **Adaptation** - to respond to the impacts of climate change and ensure that we take timely and well informed decisions that are responsive to the key risks and opportunities presented by climate change, the CDWGCC included the following terms of reference for climate change adaptation:
  - To support the preparation of an assessment of the risks to the United Kingdom of the current and predicted impact of climate change;

- To prepare and deliver a cross-departmental adaptation programme on climate change.
- In response the Adaptation sub-group were involved in providing input into the production of the following Climate Change Risk Assessment reports: Northern Ireland Climate Change Risk Assessment (CCRA); UK Government report; Evidence report; and eleven sector reports.
- The UK CCRA Evidence Report, and the Government's response to the UK CCRA (UK Government Report), was laid before Parliament on 25 January 2012. The main CCRA reports included a Northern Ireland CCRA which presented a national assessment of potential risks and opportunities from climate change facing Northern Ireland for the period to 2100. The findings were presented for a range of possible future scenarios and included an indication of confidence in the results. The confidence in the magnitude and timing of many of these threats and opportunities was variable and often low, due to the limited datasets and unsophisticated analysis currently available.
- The CCRA for Northern Ireland identified approximately 130 risks and opportunities, the Adaptation Sub Group oversaw a selection process whereby risks and opportunities that were considered urgent and required action in the next 5 years were taken forward in the Adaptation Programme.
- All Departments contributed towards the creation of the first Adaptation Programme which was laid in the Assembly in January 2014. The Adaptation Sub Group identified four Primary Areas for action these were Flooding; Water; Natural Environment; and Agriculture and Forestry.

- A number of key activities within these primary areas for action were identified by Government, the activities included development of flood risk management plans, development of a long term water strategy, review of PPS15 on planning and flood risk and development of social and environmental guidance for water and sewerage services.

## **8. CONCLUSION**

This is the 5th Annual Report, and last under the current Assembly mandate, monitoring progress on climate change targets and objectives. Progress in meeting the GHG emissions reduction target set by the Executive remains slow this year with the Greenhouse Gas Inventories indicating that up until 2013 Northern Ireland emissions have reduced by just over 16%. The latest GHG emission projections to 2025 show an increase in emissions reduction to 34.1%, excluding LULUCF.

The Paris Agreement, while welcome, will set challenges to government, requiring new monitoring, reporting and valuation of actions, development of mitigation plans and set reporting periods for reviewing targets to reduce emissions.

The new Executive will have the challenge of agreeing a new Programme for Government in a period of tightening budgets that needs to deliver on departmental priorities, at the same time as achieving cost effective reductions in GHG emissions. There continues to be significant external factors that will impact on what can be achieved locally in Northern Ireland. These will continue to play a part; ranging from the implications of decisions taken in Westminster, extremes of cold and hot weather to fluctuations in global prices for oil, gas and coal and the overall level of economic activity.

However, whilst acknowledging there is work still to be done, as highlighted in this report, there is much that has been achieved across all the departments and the different Ministers responsibilities. This sets the direction for the next Executive to move forward. The expansion of the gas network and uptake of electric vehicles, investment by NI Water to reduce energy costs and CO<sub>2</sub> emissions and the completion of the Belfast Rapid Transit system are some of the actions already moving

forward that will contribute to emissions reduction in the next Assembly term.

What has been achieved to date creates the basis for all of us to create the environment to drive and encourage innovation, to plan effectively in the technology needed and to generate employment as we make the transition to a lower carbon economy and a more sustainable society. Importantly, this must deliver for the people of Northern Ireland, from the delivery of government services to the support provided for industry. They must see the benefits of attracting business and industry in the jobs created and how together, through efficiency, planning and innovation, a better environment for all can be achieved.