



Project Update Autumn 2016

About the project

Through our Carbon Positive Project we, at Natural Resources Wales (NRW), are evaluating our net carbon status, accounting for both greenhouse gas emissions and carbon sequestration across the whole of our owned or managed estate. We are identifying mitigation opportunities to reduce our carbon impact as an organisation, and delivering projects to demonstrate these measures. The project will also put in place a plan for future implementation of mitigation measures and embed carbon management across the organisation. Through sharing our approach and experience, we will help to disseminate best practice in carbon management across the Welsh public sector.

Calculation of NRW's net carbon status

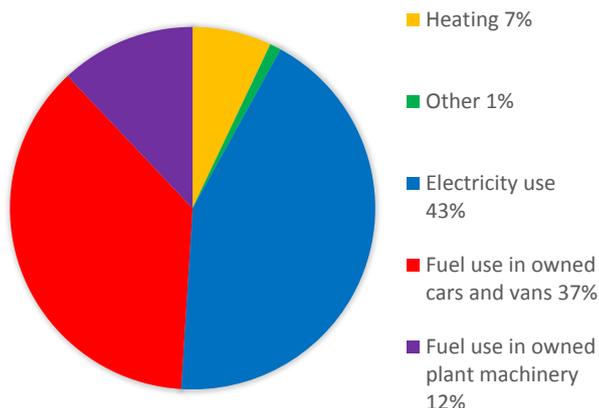
We have calculated our organisation's net carbon status, identifying which of our activities have the greatest greenhouse gas impact, and how the habitats on our estate contribute to carbon sequestration and storage.

Greenhouse gas emissions

We calculated our organisation's emissions across the full range our activities and operations, including buildings, transport, land, assets, and the procurement of goods and services. This involved collating data on our activities and combining it with standard DEFRA/DECC emissions data to estimate our emissions, for example: kilowatt hours of electricity used in offices and pumping stations; litres of diesel used in owned cars and vans; and money spent on materials. In 2015/6, our provisional results estimate that we emitted greenhouse gases totalling **37,600 tonnes CO₂e** (carbon dioxide equivalent). Results are reported in terms of our direct and electricity emissions (figure 1) and indirect emissions (figure 2). Our results highlight electricity and diesel use internally, and the procurement of goods and services externally, as key areas for reducing our organisation's greenhouse gas impact.

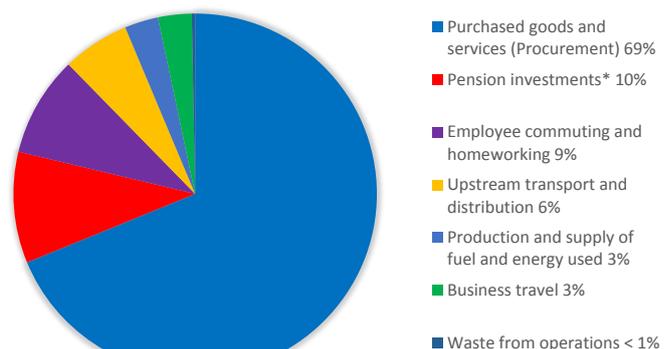
NRW direct and electricity emissions (figure 1)

Also known as 'Scope 1 & 2', these are our direct greenhouse gas emissions, mostly from fuel and emissions from electricity we use. In 2015/16, these emissions were estimated to be **4,900 tonnes CO₂e**.



NRW indirect emissions (figure 2)

Also known as 'Scope 3', these are our indirect greenhouse gas emissions, e.g. from the goods and services we buy in and staff travel in non-NRW owned vehicles. In 2015/16, these emissions were estimated to be **32,700 tonnes CO₂e**. *Note, NRW do not have control over pension scheme investment decisions.



Carbon sequestration and storage

We have estimated the amount of carbon stored in the vegetation and soils on our estate, and the rate of additional carbon being stored each year (annual sequestration). Woodland and peatland habitats make up approximately 84% of our estate, and make significant contributions to the estate's carbon status. Given the significance of these habitats, we are working with Forest Research and the Centre for Ecology and Hydrology to better model carbon stock and sequestration in the habitats, based on management and condition. An improved understanding of carbon storage in these valuable habitats and soils will help us to plan how we can best manage them to protect existing carbon stocks and enhance sequestration.

Please note: The figures presented in this update have not been independently verified to date and are subject to change.



Evaluating options for mitigation and demonstration projects

Building upon the net carbon status calculation, and collaborating with staff across the organisation, we are evaluating options for emissions mitigation, protecting carbon stocks and increasing sequestration in four key areas: **Buildings, Transport, Land and Assets**, and **Procurement**. Below are some examples of opportunities identified under each of the four key areas. In each area, the project is currently developing a series of demonstration projects to showcase the emission reduction opportunities available, and to deliver action now on improving our organisation's carbon status.

Buildings	<p><i>Electricity supply</i> Switching our organisation's electricity supply to a 100% renewable tariff/supplier.</p> <p><i>Building efficiency</i> Using Carbon Trust audits to evaluate the potential for energy efficiency and renewable energy generation in our buildings.</p> <p>Demonstration projects</p> <ul style="list-style-type: none">• Installing LED lighting, solar PV panels, insulation, energy efficient boilers and biomass boilers in our buildings.
Transport	<p><i>Strategic fleet carbon review</i> Undertaking a review of our current fleet and identifying opportunities to reduce diesel reliance and associated emissions, whilst providing value for money. This could include: low emission vehicles (e.g. electric vehicles), fuelling options (e.g. biofuel) and software solutions (e.g. telematics).</p> <p><i>Sustainable transport planning</i> Developing a sustainable transport plan, expanding and building upon the best practice currently seen in the organisation (e.g. the travel decision tree) to reduce emissions from business travel and commuting, including promoting active travel.</p> <p>Demonstration projects</p> <ul style="list-style-type: none">• Delivering three, Nissan Leaf, fully electric vehicles in the fleet (based at Maes-y-Ffynnon, Buckley and Llandarcy), alongside installing charging points at these offices and Haverfordwest.• Installing electric vehicle charging points for visitors at three key visitor centres.

Land & Assets	<p><i>Renewable energy generation</i> Assessing the renewable energy generation potential (i.e. small / medium scale hydro, wind and solar energy) of our estate as a means of reducing our organisation's dependency on electricity from the grid, which can reduce both our emissions and costs.</p> <p><i>Retrofitting assets</i> Reducing the emissions associated with operating our assets (e.g. pumping stations, gauging stations), including options for energy efficient pumps, solar power and CCTV. These measures could reduce our electricity consumption, generate power and reduce staff time in managing assets, whilst retaining key functions (e.g. flood risk management).</p> <p><i>Protecting and enhancing the land that we own or manage</i> Protecting existing stocks of carbon by identifying measures to maintain or enhance habitats on the estate and expanding the amount of carbon being sequestered each year, by restoring or expanding our key habitats (e.g. peatland and woodland).</p> <p>Demonstration projects</p> <ul style="list-style-type: none"> • Over 60 hectares of peatland restoration. • 14 hectares of broadleaved woodland planting with community involvement / benefits. • Pursuing opportunities to reduce energy use on assets (e.g. gauging stations).
Procurement	<p><i>Procurement of goods and services</i> Exploring what measures can be integrated into procurement policy to improve the carbon credentials of the goods and services we procure, including how our staff can better consider carbon impact when drafting their specifications.</p> <p>Demonstration projects</p> <ul style="list-style-type: none"> • Developing a carbon management policy. • Trialling new assessment tools. • Influencing key contracts, e.g. promoting the requirement for large flood asset construction contractors to complete a carbon calculator for material use; and working with forestry operations to estimate and reduce contractor emissions.

Next steps - Communications and working with others, recording our experience and planning future implementation

We are in the process of analysing the costs, carbon savings and wider benefits of mitigation measures identified to produce a costed, prioritised programme of work for our organisation (Carbon Positive Implementation Plan), alongside recording our experience in a project report. The project will seek to share our knowledge and learning with the Welsh public sector and our partners, with the ambition of accelerating decarbonisation.

Contact us

If you would like to know more about the Carbon Positive Project, please contact us at the project mailbox: carbonpositiveproject@naturalresourceswales.gov.uk