



## Our Vision

Proud to be leading the way to a better future for Wales by managing the environment and natural resources of Wales sustainably.

## Our Purpose

Through the new Environment (Wales) Act 2016, we

- must pursue the sustainable management of natural resources, and;
- apply the principles of sustainable management of natural resources;  
...in the exercise of our functions.

## Introduction

Our environmental management system (EMS) is helping develop Natural Resources Wales (NRW) into an excellent organisation by maintaining our ISO14001:2015 certification, our forest certification against the UK Woodland Assurance Standard and by reducing our own environmental impact and carbon footprint.

Our focus during this year has been to:

- reduce our carbon footprint – decarbonisation;
- maintain woodland certification (UK Woodland Assurance Standard) for the Welsh Government Woodland Estate that we manage;
- improve the status of designated features, access and interpretation on protected sites we manage;
- develop mechanisms for active and sustainable travel to be the favoured choice of NRW commuter travel and for appropriate business journeys

This report relates primarily to environmental sustainability, as distinct from wider sustainability actions or outcomes. Wider sustainability-related reporting can be found throughout our Annual Report & Accounts. During the coming years, we will continue to improve our corporate environmental reporting in working towards Integrated Reporting.

## Summary of Performance

This year we have:

- met our target to reduce our carbon footprint by 5% in relation to occupied buildings energy use and business travel;
- retained woodland certification (UK Woodland Assurance Standard) for the Welsh Government Woodland Estate that we manage, following independent external audits and verification
- completed 75% of the National Nature Reserve management audit target and ensured any improvement actions identified were implemented
- identified the number of staff who walk, cycle and use public transport for commuter and business travel

**Table 1: Corporate Environmental report summary table**

	Units	2015/16	2016/17	2017/18	2018/19
Greenhouse gas emissions <sup>1</sup>	Consumption (tCO <sub>2</sub> e)	6,021	5,115	4,387	4,199
Estate energy	Consumption (million kWh)	6.9	6.3	6.0	6.3
	Expenditure (£k)	657	776	618	583
Estate waste	Generated (tonnes)	864	1,424	1,141	966
	Expenditure (£k)	205	225	273	218
Estate water	Consumption (m <sup>3</sup> )	78,395	76,283	50,908	40,115
	Expenditure (£k)	39	32	25	30

Table 1 reflects relative change for key areas in the last year. More detail around each can be found within the related sections of this report.

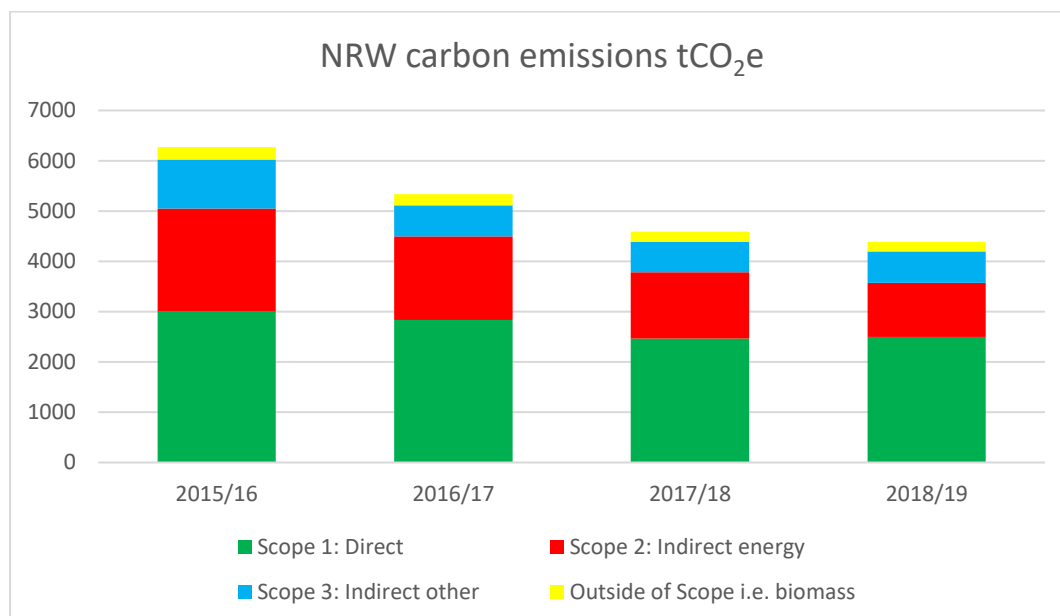
In summary:

- organisational carbon emissions decreased in 2018/19 by 4.3% compared with the previous year
- energy use increased in 2018/19 by 3.8% compared with the previous year
- waste disposed decreased in 2018/19 by 15.3% compared with the previous year
- water consumption decreased in 2018/19 by 21.2% compared with the previous year

<sup>1</sup> (Scopes 1, 2 and 3 including air/rail travel and excluding outside of scopes emissions)

## Greenhouse Gas Emissions

Our greenhouse gas emissions are outlined below:



Carbon emissions decreased in 2018/19 by 4.3% compared with the previous year.

Scope 1 direct emissions increased by 1.3%, this was due to the increase in gas and fuel used for heating.

Scope 2 energy indirect emissions decreased by 18.2%, this was due to the reduction in electricity use in occupied buildings and a reduction in the DEFRA greenhouse gas factor for electricity.

Scope 3 other indirect emissions increased by 3.5%, this was due to a slight increase in private car, hire car and air mileage.

**Table 2: Greenhouse gas emissions**

Greenhouse Gas Emissions	2015/16	2016/17	2017/18	2018/19
Scope 1: Direct emissions (tCO <sub>2</sub> e)	2,999	2,835	2,466	2,499
Scope 2: Energy indirect emissions (tCO <sub>2</sub> e)	2,048	1,662	1,317	1,077
Scope 3: Other indirect emissions (tCO <sub>2</sub> e)	974	617	603	624
<b>Total gross GHG emissions (tCO<sub>2</sub>e)</b>	<b>6,021</b>	<b>5,115</b>	<b>4,387</b>	<b>4,199</b>
<i>Outside of scopes (i.e. biomass)</i>	253	220	208	187

Note 1: Data not externally verified – Limited Assurance.

Note 2: The Scope 3 other indirect greenhouse gas emissions include; train travel, air travel, grey fleet travel, lease car travel, hire car travel, water and waste.

Note 3: Scope 3 emissions from the purchase of goods and services, aggregates use in construction and timber use are not included.

## Energy

Our total energy use (which includes electric, mains gas, LPG, heating oil and biomass) in both occupied and unoccupied buildings has increased by 3.8% based on the previous year's data.

Mains electricity use in occupied buildings decreased by 4.5%, due to installation of LED lighting the previous year.

Electricity use used in unmanned sites such as pumping and gauging stations increased by 15.8%.

A reduction in biomass and an increase in LPG used was mainly due to the biomass boiler at our Bwlch Nant Yr Arian visitor centre not working in 2018/19.

There were increases in mains gas (6.0%) and heating oil (13.4%) used, this was mainly due to a colder than normal winter.

The energy generated from renewables (PV panels) increased by 54% from 71,806 kWh to 110,598 kWh.

The energy generated from renewables (micro-hydro) increased by 63% from 35,050 kWh to 57,281 kWh.

The carbon emission savings from electricity use were higher than expected due to the DEFRA greenhouse gas conversion factor for UK electricity decreasing further in 2018. This was due to a significant decrease in coal generated electric and an increase in natural gas and renewables generation.

**Table 3: Energy Consumption**

Resource use – Estate energy	Units	2015/16	2016/17	2017/18	2018/19
Energy used: Occupied sites	Consumption (kWh)	5,550,100	5,209,072	4,918,340	4,973,616
	Consumption (tCO <sub>2</sub> e)	2,011	1,723	1,436	1,236
Energy used: Unoccupied sites	Consumption (kWh)	1,319,745	1,131,651	1,122,103	1,298,317
	Consumption (tCO <sub>2</sub> e)	610	466	395	367
Renewable energy: Self-generated	Generation (kWh)	81,713	76,649	106,856	167,879
	Consumption (% of energy used)	1.4%	1.4%	2.2%	3.4%
Energy used: Total	Consumption (kWh)	6,869,845	6,340,723	6,040,443	6,271,933
	Consumption (tCO <sub>2</sub> e)	2,621	2,189	1,830	1,603
	Expenditure (£k)	657	777	618	583

## Water

Overall water consumption decreased by 10,793 m<sup>3</sup> this was due to the amount of water abstracted to operate our fish hatchery decreasing from 36,721 m<sup>3</sup> to 25,424 m<sup>3</sup>.

Mains water consumption in our offices increased by 492 m<sup>3</sup> (8.9%) compared with the previous year. This was mainly due to increase in water at our two largest offices Ty Cambria, Cardiff and Maes Y Ffynnon, Bangor. Our water use intensity (m<sup>3</sup>/FTE) is 3.3, this is still below the average of 4.0 for water use <sup>2</sup>.

The mains water at our non-office sites decreased by 18 m<sup>3</sup> (0.3%) compared with the previous year.

**Table 4: Water Consumption**

Resource use – Estate water	Units	2015/16	2016/17	2017/18	2018/19
Water supplied - Office use: - Mains supply - Abstraction	Consumption (m <sup>3</sup> ) Consumption (m <sup>3</sup> )	6,830 3	5,923 15	5,555 22	6,047 32
Water supplied - Non-office use: - Mains supply - Abstraction	Consumption (m <sup>3</sup> ) Consumption (m <sup>3</sup> )	5,555 65,981	5,488 64,850	6,339 39,014	6,321 27,715
Water use intensity (for office use)	m <sup>3</sup> per FTE	3.4	3.3	3.1	3.3
<b>Water supplied: Total</b>	<b>Consumption (m<sup>3</sup>)</b>	<b>78,395</b>	<b>76,283</b>	<b>50,908</b>	<b>40,115</b>
	<b>Consumption (tCO<sub>2</sub>e)</b>	<b>27</b>	<b>26</b>	<b>18</b>	<b>14</b>
	<b>Expenditure (£k)</b>	<b>39</b>	<b>32</b>	<b>25</b>	<b>30</b>

## Travel

Our travel needs include; travel to manage sites, responding to serious environmental incidents, taking samples, dealing with flooding, site meetings and inter-office travel.

In 2018/19 our total business mileage increased by 3.7%, however the equivalent transport carbon emissions decreased by 0.8%, due to increase mileage in electric vehicles, low carbon badged vehicles and train travel.

We will continue to reduce inter-office travel using our travel decision tree and by increasing the use of skype conferencing, which will reduce the need to travel further.

<sup>2</sup> Average = 4m<sup>3</sup> per FTE (Source: Water Key Performance Indicators and benchmarks for offices and hotels. C657 CIRIA [www.ciria.org](http://www.ciria.org) )

**Table 5: Travel detail**

<b>Travel by vehicle</b>	<b>Units</b>	<b>2015/16</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>
Badged vehicles	Miles travelled	5,833,839	6,064,812	5,440,945	5,562,246
	Expenditure (£k)	800	768	749	789
Lease vehicles	Miles travelled	1,649,345	191,730	0	0
	Expenditure (£k)	162	18	0	0
Grey vehicles <sup>3</sup>	Miles travelled	552,343	639,064	590,998	614,868
	Expenditure (£k)	244	287	266	277
Hire	Miles travelled	256,654	322,505	261,039	277,390
	Expenditure (£k)	59	74	88	124
Train	Miles travelled	865,693	864,366	938,418	993,213
	Expenditure (£k)	221	223	183	328
Air	Miles travelled	18,898	71,057	33,661	50,299
	Expenditure (£k)	4	19	5	7
Bicycle	Miles travelled	1,944	2,346	2,301	3,714
	Expenditure (£k)	< 1	< 1	< 1	< 1
Motorbike	Miles travelled	4,475	2,447	1,735	1,155
	Expenditure (£k)	1	< 1	< 1	< 1
Electric	Miles travelled				32,832
<b>Total vehicle travel</b>	<b>Miles travelled</b>	<b>9,183,191</b>	<b>8,158,327</b>	<b>7,269,097</b>	<b>7,535,717</b>
	<b>Consumption (tCO<sub>2</sub>e)</b>	<b>2,629</b>	<b>2,249</b>	<b>2,019</b>	<b>2,002</b>
	<b>Expenditure (£k)</b>	<b>1,493</b>	<b>1,371</b>	<b>1,295</b>	<b>1,536</b>

## Waste Minimisation and Management

Total waste disposed of by the organisation decreased in 2018/19 by 15.3% compared with the previous year.

The equivalent carbon emissions associated with waste disposal increased by 0.7% due to an increase in waste to landfill.

Waste sent for incineration (diverted from landfill) increased for the third year in a row.

<sup>3</sup> Grey vehicles are staff's own private vehicles

**Table 6: Waste Generated**

<b>Waste generated</b>	<b>Units</b>	<b>2015/16</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>
Office waste Landfilled	Consumption (tonnes)	266	241	213	286
	Consumption (tCO <sub>2</sub> e)	122	101	125	168
	Expenditure (£k)	25	22	24	25
Office waste Recycled / reused	Consumption (tonnes)	451	934	600	431
	Consumption (tCO <sub>2</sub> e)	10	20	13	9
Office waste Incinerated	Consumption (tonnes)	14	15	27	31
	Consumption (tCO <sub>2</sub> e)	< 1	< 1	< 1	< 1
Fly tipped waste	Consumption (tonnes)	133	234	301	218
	Consumption (tCO <sub>2</sub> e)	32	65	135	98
<b>Total waste</b>	<b>Consumption (tonnes)</b>	<b>864</b>	<b>1,424</b>	<b>1,141</b>	<b>966</b>
	<b>Consumption (tCO<sub>2</sub>e)</b>	<b>164</b>	<b>186</b>	<b>274</b>	<b>276</b>
	<b>Expenditure (£k)</b>	<b>205</b>	<b>225</b>	<b>273</b>	<b>218</b>

## Sustainable Procurement

Our Vision for Procurement is to provide effective procurement leadership and direction in support of Natural Resources Wales mission and values and embed the fundamental concepts of a learning organisation with the Sustainable Management of Natural Resources (SMNR) as its central organising principle.

Our ambition for procurement is to use our commercial power wisely and strategically, and to be recognised as an exponent of innovative, sustainable and modern procurement and commercial practice, whilst striving for continuous improvement in our performance. We understand the need to be compliant, but it important for us to make the buying process as easy for staff as possible. To do this, we need to develop trusted relationships with staff and be involved in key decisions within the organisation.

“Procurement”, as a function and a strategic activity, can enable and positively influence a significant proportion of everything that Natural Resources Wales does. Making informed procurement decisions can aid in the delivery of our work programmes, ensuring that they are completed on time and to budget whilst driving efficiency that contributes to the achievement of sustainable development in Wales.

Effective procurement can help to deliver a wide range of socio-economic agendas (including equality and diversity, a successful “local” economy, a thriving third sector, community empowerment, value for money and natural resource management) and can be key in Natural Resources Wales delivering against its 7 Well-being Objectives.

## Behaviour change

As part of our work to embed our Environmental Management System (EMS) into the culture of our organisation, we have delivered several training courses to staff. Training areas have included awareness raising around our key environmental procedures, waste management, incident response and UKWAS.

## Environmental incidents

There have been thirteen environmental incidents because of our work or that of our contractors. This compares with fifteen environmental incidents in the previous year. There was one high category environmental incident in 2018/19 relating to potential non-compliance with a European Protected Species (EPS) licence. No enforcement action was taken following an independent investigation by a police wildlife officer. When incidents occur because of our work (or that of our contractors), we review what has happened, and act to address the root cause of the incident.

## Governance and Reporting

We report on our carbon footprint as part of our performance framework, which is reported by the Executive Team to the Board (in open public session) three times each year.

We collect the data used within this sustainability report through a combination of meter readings (e.g. gas, electricity), invoices (e.g. fuel card purchases), suppliers data (e.g. train miles) and finance data, using the most accurate source/s we have available. We also look to minimise use of any estimated data in our reporting, and we are working to improve in this area.

## Carbon Positive Project

NRW's Carbon Positive Project was funded by the Welsh Government to show leadership in decarbonisation in Wales' public sector and beyond.

During 2018/19 we have:

Developed an Enabling Plan setting out NRW's high-level decarbonisation ambition for the organisation. This has been approved and endorsed by the project steering group, the Natural Resource Management Business Board and will soon be presented to the NRW Board. We are developing an Action Plan that will deliver on this Enabling Plan, programming and prioritising mitigation opportunities for the organisation into a three to five year plan for decarbonisation.

Delivered a series of decarbonisation projects including: six peatland projects on the NRW estate, restoring water levels at modified bog or fen sites including Cors Bodeilio and Hafod Elwy; small projects to facilitate active travel or energy efficiency in our offices – such as installation of a new shower at Monmouth, an electric bike at Maes-Y-Ffynnon and additional roof insulation at Clawdd Newydd.



Worked with industry experts to improve our evidence base for future decarbonisation projects, including:

- A strategic assessment of the potential to roll out electric vehicles and charging infrastructure across the NRW estate, considering fleet composition at each office, journey details from the vehicle booking system and electrical connections at site. This work has also been informed by a staff travel survey run in conjunction with the EMS team and active travel group which received >900 responses.
- Site based assessments of the potential for small scale wind, hydro and solar renewable energy installations to supply power to NRW offices and visitor centres (previously prioritised in a desk-based analysis). The work includes development of technical drawings for promising installations and exploring grid connection restrictions.

Continued to publish and share the work of the project, as a reference for other organisations evaluating and managing their own carbon impact. Publications include: the technical report “Calculating NRW’s net carbon status”, detailing the approach taken to estimate the organisation’s emissions and sequestration; commissioned evidence reports assessing NRW peatland and woodland greenhouse gas emissions and a strategic fleet carbon review; case studies on our completed demonstration projects covering peatland restoration, electric cars and charging infrastructure, procurement emissions and the installation of solar panels on hydrometric assets. We continue to finalise our mitigation technical report setting out the costs and carbon savings of all decarbonisation opportunities identified for the organisation.

Worked with the Welsh Government to inform the development a potential public-sector emissions reporting approach to demonstrate progress towards the carbon neutral by 2030 ambition, including: drafting a survey for public-sector bodies assessing current reporting; running a contract exploring the strengths and weaknesses of available reporting approaches; and sharing our materials on a stand at the launch of WG’s first low carbon delivery plan.

## Future Strategy

Over the next three years in line with our corporate strategy 2017/22 we want to:

- Delivery of a carbon positive action plan 2019/22 to include; retrofit buildings with solar PV, reduce badged fleet fuel through installation of telematics, develop an electric vehicle (EV) charging infrastructure, increase the EV mileage, identify and deliver a programme of peatland projects
- Develop mechanisms for active and sustainable travel to be the favoured choice of NRW commuter travel and for appropriate business journeys
- Maximise the reduction of plastics in NRW including Single Use Plastics and packaging
- Continue to maintain woodland certification (UK Woodland Assurance Standard) for the Welsh Government Woodland Estate