

## Introduction

We have made the commitment that Sustainable Management of Natural Resources (SMNR) will be at the heart of all our business decisions. Over the coming years, we want to develop ourselves as an exemplar organisation with regards to sustainability and environmental management in Wales, especially in our management and use of carbon, waste, water and land.

Our focus during this year has been to:

- reduce our carbon footprint;
- ensure our environmental management system<sup>1</sup> (EMS) conforms to the revised ISO14001:2015 environmental standard;
- continue to embed our EMS into the culture of the organisation and contribute to the principles of Sustainable Management of Natural Resources (SMNR);
- delivery of the Natural Resources Wales (NRW) Carbon Positive Project;
- attaining UK Spill accreditation to meet the requirements of the NRW incident management enabling plan

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;
- attained certification to the ISO14001:2015 environmental standard following independent external audits and verification, demonstrating our own commitment to achieving the highest possible environmental standards as an organisation;
- retained UK Woodland Assurance Standard (UKWAS) for the Welsh Government Woodland Estate we manage, following independent external audits and verification, this enables us to produce FSC/PEFC<sup>2</sup> certified timber from the Welsh Government Woodland Estate we manage;
- attained UK spill accreditation for the first time

<sup>1</sup> The scope of our EMS is applicable to: "Activities and services associated with the sustainable management of the environment and the natural resources of Wales"

<sup>2</sup> Forest Stewardship Council (FSC). Programme for the Endorsement of Forest Certification (PEFC). As supported by our [UK Woodland Assurance Standard](#) (UKWAS) accreditation

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

Area	Units	2015/16	2016/17	Change
Greenhouse gas emissions <sup>1</sup>	Consumption (tCO <sub>2</sub> e)	6,021	5,115	Decrease
Estate energy	Consumption (million kWh)	6.9	6.3	Decrease
	Expenditure (£k)	657	776	Increase
Estate waste	Generated (tonnes)	864	1,424	Increase
	Expenditure (£k)	205	225	Increase
Estate water	Consumption (m <sup>3</sup> )	78,395	76,283	Decrease
	Expenditure (£k)	39	32	Decrease

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:

- overall carbon emissions in 2016/17 were reduced by 15.0% compared with the previous year
- energy use decreased in 2016/17 by 7.7% compared with 2015/16 data
- waste generated increased in 2016/17, this was mainly due to the sewage treatment plant at Coed y Brenin being inoperative throughout the year and the requirement to tanker 500 tonnes of sewage off-site to comply with the sites discharge permit
- water consumption decreased in 2016/17 by 2.7% compared with 2015/16 data

### Summary of Future Strategy

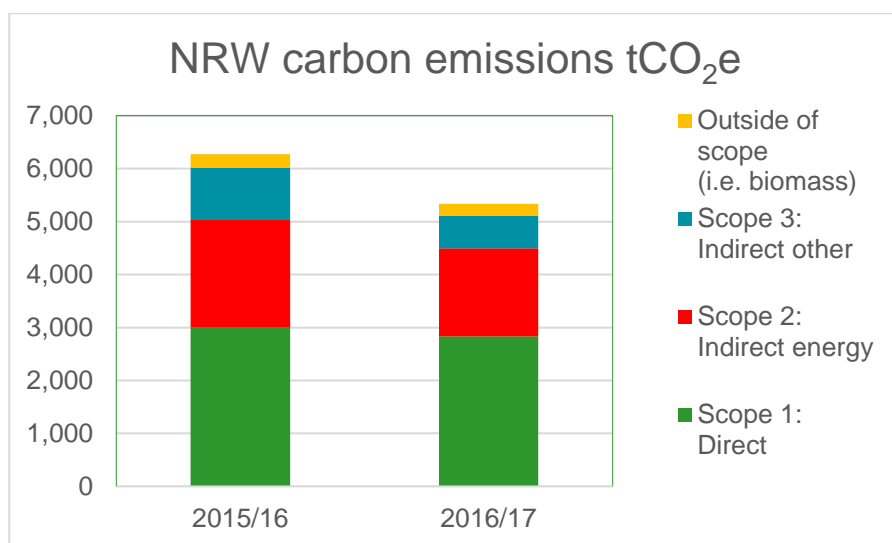
Next year we want to:

- Reduce our carbon footprint further and have set a target to reduce our carbon dioxide emissions (tCO<sub>2</sub>e) from occupied buildings, travel and water use by 5% based on 2016/17 data
- Maintain certification against the UK Woodland Assurance Standard (UKWAS)
- Improve the status of designated features, access and interpretation on protected sites we manage
- Reduce the average emissions of cars in the NRW fleet

<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:



Overall carbon emissions in 2016/17 were reduced by 15.0% compared with the previous year.

Scope 1 direct emissions were reduced by 5.5%, this was due to the decrease in red diesel use by operational teams.

Scope 2 energy indirect emissions were reduced by 18.8% due to the reduction in electricity usage in both offices and unmanned buildings. The DEFRA factor for electricity emissions in 2016/17 was also lower, which contributed to lower emissions compared with previous years.

Scope 3 other indirect emissions were reduced by 36.7%, although grey vehicle and hire car emissions increased, the overall reduction was due to the reduction in lease car emissions following the withdrawal of the NRW lease car scheme.

**Table 2: Greenhouse gas emissions**

Greenhouse gas emissions	2015/16	2016/17	Change
Scope 1: Direct GHG emissions (tCO <sub>2</sub> e)	2,999	2,835	Decrease
Scope 2: Energy indirect emissions (tCO <sub>2</sub> e)	2,048	1,662	Decrease
Scope 3: Other indirect GHG emissions (tCO <sub>2</sub> e)	974	617	Decrease
<b>Total gross GHG emissions (tCO<sub>2</sub>e)</b>	<b>6,021</b>	<b>5,115</b>	<b>Decrease</b>
<i>Outside of scopes (i.e. biomass)</i>	253	220	Decrease

Note: Data not externally verified – Limited Assurance.  
(The cost of external verification of the data would be £5-10K/year.)

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

## Waste Minimisation and Management

We have continued to improve the number of waste streams we can report in line with our target to measure and report on all NRW waste streams. The office waste sent to landfill was reduced by 9.4% in 2016/17 compared with the previous year.

The largest increase in waste was due to the sewage treatment plant at Coed y Brenin being inoperative throughout the year and the requirement to tanker 500 tonnes of sewage off-site to comply with the sites discharge permit.

Fly-tip is any waste deposited illegally by 3<sup>rd</sup> parties on land we manage, once deposited we become the owners and are responsible for the disposal and associated costs

The increase in fly-tip waste can be attributed to the fact we are now recording fly-tip waste in the South East and South West regions whereas in previous years this data was not available.

**Table 3: Waste Generated**

Waste generated	Units	2015/16	2016/17	Change
Office waste Landfilled	Consumption (tonnes)	266	241	Decrease
	Consumption (tCO2e)	122	101	Decrease
	Expenditure (£k)	25	22	Decrease
Office waste Recycled / reused	Consumption (tonnes)	451	934	Increase
	Consumption (tCO2e)	9	20	Increase
Office waste Incinerated	Consumption (tonnes)	14	15	Increase
	Consumption (tCO2e)	< 1	< 1	Increase
Fly tipped waste	Consumption (tonnes)	133	234	Increase
	Consumption (tCO2e)	32	65	Increase
Total waste	Consumption (tonnes)	864	1,424	Increase
	Consumption (tCO2e)	164	186	Increase
	Expenditure (£k)	205	225	Increase

## Water

Mains water consumption in our offices reduced by 13.2% compared with the previous year. Our water use intensity is below average for water use<sup>2</sup>, and we have set a further 5% reduction target for 2017/18.

Abstraction of water used to operate our fish hatchery site was the most significant water abstraction use this year, at 62,689 m<sup>3</sup>. We also abstract water at some of our visitor centres and remote sites where mains water is not available.

<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 4: Water Consumption**

Resource use – Estate water	Units	2015/16	2016/17	Change
Water supplied: Office use	Consumption (m <sup>3</sup> )	6,830	5,923	Decrease
Water supplied: Non-office use:				
- Mains supply	Consumption (m <sup>3</sup> )	5,555	5,488	Decrease
- Abstraction	Consumption (m <sup>3</sup> )	65,981	64,850	Decrease
- Rainwater	Consumption (m <sup>3</sup> )	29	22	Decrease
Water use intensity (for Office use)	m <sup>3</sup> per FTE	3.4	3.3	Decrease
Water supplied: Total	Consumption (m <sup>3</sup> )	78,395	76,283	Decrease
	Expenditure (£k)	39	32	Decrease
	Consumption (tCO <sub>2</sub> e)	27	26	Decrease

## Energy

Our energy use (which includes electric, mains gas, LPG, heating oil and biomass) in both occupied and unoccupied buildings has decreased this year. In the last year we have also generated 1.4% of our own energy use from onsite solar power. Our largest renewable installation (photovoltaic panels at the Maes Y Ffynnon office in Bangor) generated 24,649 kWh during the year. We aim to increase the number of onsite renewables on our own buildings in 2017/18 using funding from the Welsh Government's invest to save scheme.

**Table 5: Energy Consumption**

Resource use – Estate energy	Units	2015/16	2016/17	Change
Energy used: Occupied sites	Consumption (kwh)	5,550,100	5,209,072	Decrease
	Consumption (tCO <sub>2</sub> e)	2,011	1,723	Decrease
Energy used: Unoccupied sites	Consumption (kwh)	1,319,745	1,131,651	Decrease
	Consumption (tCO <sub>2</sub> e)	610	466	Decrease
Renewable energy: Self-generated	Generation (kwh)	81,713	76,649	Decrease
	Consumption (% of energy used)	1.4%	1.4%	No Change
Energy used: Total	Consumption (kwh)	6,869,845	6,340,723	Decrease
	Consumption (tCO <sub>2</sub> e)	2,621	2,189	Decrease
	Expenditure (£k)	657	777	Increase

## Sustainable Procurement

Sustainable procurement takes into account the economic, environmental and social impacts in our buying decisions. It allows our organisation to meet its need for goods and services in a way that achieves value for money on a whole-life basis, whilst also providing opportunities for Welsh SMEs. These key principles are reflected in our Sustainable Procurement Strategy 2015-2017, and our progress is reported throughout the year in our Business Plan Dashboard.

We have developed a Market Approach Plan which allows requisitioners to question the need to buy, and to consider in practical terms the impact of their purchase and all available options before entering into a contract. The plan also contains the Sustainability Impact Assessment, which examines the impact of the purchase on a whole life cost basis, and identifies mitigation controls.

In the forthcoming year, we will be building on this approach to consider the environmental and socio economic impact of procurement by further aligning to, and integrating, the provisions of the Wellbeing of Future Generations & Environment Acts, whilst also taking into account risk, scope and influence. This will enable us to work with suppliers ensuring their commitment to sustainability, and will help target areas where the best results can be realised. We will also continue to deliver community benefits introduced through key contract awards, and report on the outcomes delivered.

## Travel

Our travel needs include: working to manage sites, responding to serious environmental incidents, taking samples, dealing with flooding and site meetings. This year overall we have travelled 8,158,327 miles a reduction of 11.1% compared with the previous year.

**Table 6: Travel detail**

Travel by vehicle	Units	2015/16	2016/17	Change
Badged vehicles	Miles travelled	5,833,839	6,064,812	Increase
	Expenditure (£k)	800	768	Decrease
Lease vehicles	Miles travelled	1,649,345	191,730	Decrease
	Expenditure (£k)	162	18	Decrease
Grey vehicles <sup>3</sup>	Miles travelled	552,343	639,064	Increase
	Expenditure (£k)	244	287	Increase
Hire	Miles travelled	256,654	322,505	Increase
	Expenditure (£k)	59	74	Increase
Train	Miles travelled	865,693	864,366	Decrease
	Expenditure (£k)	221	223	Increase
Air	Miles travelled	18,898	71,057	Increase
	Expenditure (£k)	6	19	Increase
Bicycle	Miles travelled	1,944	2,346	Increase
	Expenditure (£k)	< 1	< 1	Increase
Motorbike	Miles travelled	4,475	2,447	Decrease
	Expenditure (£k)	1	1	Decrease
<b>Total vehicle travel</b>	Miles travelled	9,183,191	8,158,327	Decrease
	Expenditure (£k)	1,493	1,390	Decrease

Overall mileage was reduced due to the reduction in lease car travel following the withdrawal of the NRW lease car scheme. Some of the lease car mileage was taken up by badged, grey and hire car mileage but the bulk of the mileage was a saving.

Air mileage increased significantly due to several staff travelling to Japan in 2016/17.

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

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

## Environmental incidents

There have been ten environmental incidents as a result of our work or that of our contractors and ten near misses. This compares with eighteen environmental incidents and three near misses in the previous year. None of these incidents were classified as serious according to the environmental incident classification scheme that we apply to environmental incidents. Where incidents occur as a result of our work (or that of our contractors), we review what has happened, and act to address the root cause of the incident.

## Behaviour change

As part of our work to embed our Environmental Management System (EMS) into the culture of our organisation, we have delivered a number of training courses (to ~1,800 staff). Training areas have included awareness raising around our key environmental procedures, waste management, timber procurement and incident response.

## 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) and suppliers data (e.g. train miles), using the most accurate source/s we have available. We have improved our biomass and waste data reporting and baselines in this report. 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

The NRW Carbon Positive Project is looking beyond the carbon emissions we currently report to evaluate NRW's net carbon status. We have now completed an assessment of the net carbon status inclusive of all our corporate emissions using available data or estimates where necessary and modelled outputs for the carbon sequestered in our forests and peatlands.

In accounting for both greenhouse gas emissions and carbon sequestration across the whole of NRW's estate, the calculation builds upon the information from our EMS to understand the carbon footprint of the organisation in its wider sense e.g. emissions from the purchase of goods and services, timber production and construction. A report setting out the approach and the calculation will be published in autumn 2017.

Alongside this work, the Project has delivered a series of demonstration projects, including electric vehicles and charging infrastructure, renewables on flood risk assets, peatland restoration, woodland planting and carbon assessment and management in large procurement frameworks. These have been undertaken to assess their delivery and identify lessons learnt that can be shared across the Welsh public sector.

The Project has also evaluated the range of potential mitigation opportunities to reduce our carbon impact as an organisation, seeking input from both staff and other organisations. We are currently reviewing these measures to identify those that should be future priorities for the organisation based on their cost, carbon reduction potential and other benefits.

These measures will then be programmed into a 3 to 5 year plan for future implementation from 2018 onwards to embed carbon management across the organisation. This plan will be principally for internal use and will be finalised in late 2017.

The project will be sharing our approach and experiences through a series of events in late 2017 to disseminate our best practice and lessons learnt in carbon management across the Welsh public sector to assist in the delivery of Wales' goals for accelerated decarbonisation.