

**National Assembly for Wales**  
Procurement and Sustainability team

Annual Environmental Report  
2009 - 2010



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Procurement and Sustainability team  
National Assembly for Wales  
Cardiff Bay  
CF99 1NA

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## Foreword

The National Assembly for Wales' strategy for the Third Assembly 2007 to 2011 has a strategy goal of:

### “Working Sustainably”

“We will show leadership in how we manage our work and estate, and we aim to provide the highest achievable level of sustainability in both.

We are committed to achieving environmental excellence and being an exemplar in environmental performance. The Green Dragon Environmental Management System provides the Commission with a systematic means to manage our environmental footprint and to continually improve our performance”.



**Lorraine Barrett AC/AM**  
Comisiynydd y Cynulliad sy'n gyfrifol am  
Gynladwyedd / Assembly Commissioner  
for the Sustainable Assembly



**Claire Clancy**  
Prif Weithredwr a Chlerc y Cynulliad/  
Chief Executive & Clerk to the Assembly

## Executive Summary

This is the 3<sup>rd</sup> Annual Environmental Report of the National Assembly for Wales environmental performance covering the Cardiff Bay estate business operations throughout 2009/10. The headline achievements during in the year can be found below.

Over the course of this year, we have taken significant steps into embedding our enthusiasm, commitment and motivation to reducing and managing our environmental impact through the creation of a Carbon Management Plan.

The plan addresses our most significant impacts, outlines challenging targets to achieve reductions in these areas and plots the path to becoming carbon neutral by 2015. We realise this isn't going to be easy and the need to focus on innovatively driving down our energy consumption and our business travel, ensuring we maintain engagement of our employees and drawing upon our internal expertise will all play a key part in delivering our objectives year on year.

We were successful in retaining Green Dragon Level 5 for the whole Cardiff Bay estate. As one of only 11 companies in Wales to achieve this accreditation, this clearly demonstrates our determination to improve. Furthermore, for the coming year we have set the goal of extending the system to include our North Wales office to gain an even more extensive profile of our complete business impact.

With an increasing emphasis on climate change, carbon management has become a strategic issue for businesses and this year for the first time, we have reported our carbon impact in terms of scope 1, 2 and 3 emissions. Scopes 1 and 2 account for our 'internal footprint' (gas, electricity and fuel) and scope 3 represents our 'external footprint' (business travel, water emissions).

In 2008/09, we worked hard to gather complete and accurate data on our carbon footprint to provide a baseline for the first time on which to set our goals and drive down our impact. Since then, we've continued to spend considerable time improving data management systems, drilling down into the detail to gather more data than ever before as we believe without the data, we can't make realistic, accurate proposals on which we can measure our performance.

As a result, we have recalculated our 2008/09 baseline to ensure our projections and comparisons are consistent with improving data systems.

We continue to work in partnership with Arups and the Carbon Trust who have undertaken energy assessments of our site and proposed solutions in line with our targets. We have delivered significant efficiencies in our building management system by replacing inefficient equipment and hardware resulting in notable reductions in energy use.

We have trialled 'natural ventilation' (bringing cool air in from outside rather than air conditioning) in one area of Ty Hywel and we continue to raise awareness and encourage staff buy-in through spot checks of staff computers and working with our security team to ensure that all lights, TVs and other equipment in our offices are turned off at night.

Business travel represents the second biggest environmental impact of the Assembly's operations and we continue to encourage smarter travel and if possible less travel and also try and find ways of making reductions through more efficient travel systems. This year, we have seen an 18% reduction in business travel emissions, and have introduced a more efficient 'low carbon' hire car contract and Eco pool car.

We've dramatically improved our waste management systems through the appointment of a new waste contractor that provides a more extensive 'mixed recycling' service and reliable management information and introduced a very successful food composting collection service that enables our food waste to be used in land reclamation projects in the local area.

This report provides a full overview of our performance and activity in 2009/10. If you would like to find out more about our work, please use the contact details on the back page.

# Environmental Achievements 2009-10

## Green Dragon Level 5 retained

In February 2010, the Assembly successfully retained Level 5 accreditation for the Cardiff Bay estate.

## Business travel emissions down by 18%

Significant reductions in air travel, hire car use and general business travel overall have led to large reductions in travel emissions.

## Energy emissions down by 8%

Significant improvements to the BMS, improved staff awareness and changing behaviour have resulted in the Assembly meeting the annual targets for energy consumption.

## 66% of all waste diverted from landfill

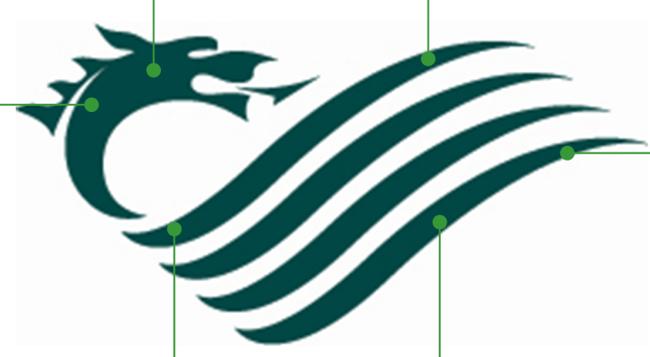
Mixed recycling, greater options for recycling more materials, food composting and increased recycling of cooking oil and ink toners have reduced our waste to landfill.

## Total carbon emissions down by 8.6%

The Assembly is committed to reducing its carbon emissions and the programme of improvements over the last year have led to significant reductions in our overall carbon footprint.

## 95% of paper purchased from recycled or FSC sources

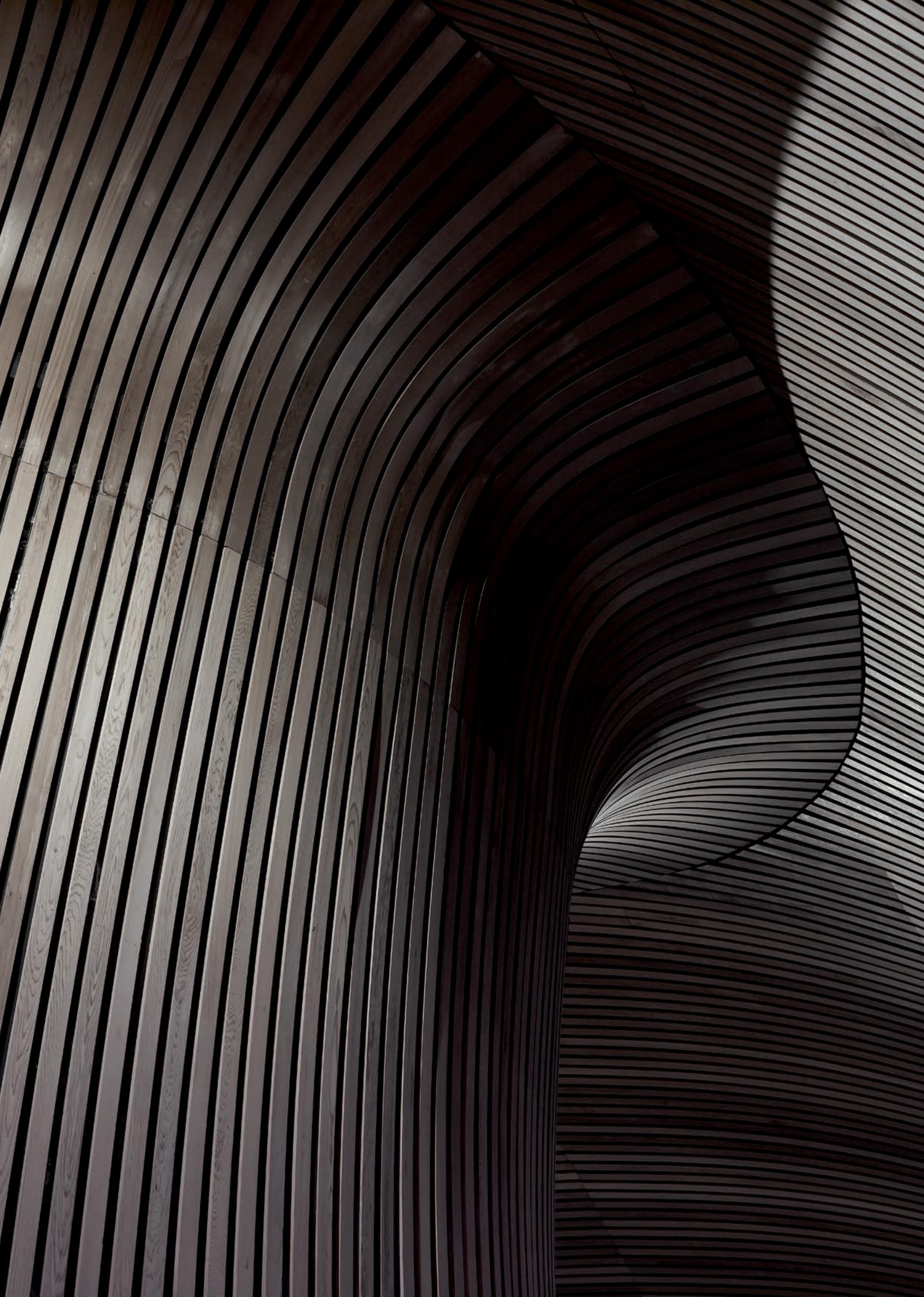
We continue to purchase 95% of all paper from recycled or FSC sources and print more in-house publications in the most environmentally friendly way to minimise the emissions from external print contractors.



## Themes and priorities for 2010-11

For the coming year, the Commission have identified and agreed some specific priorities to ensure we continue to work sustainably across the organisation.

- Develop an action plan to deliver carbon neutrality by 2015, supported by a sustainable asset management plan.
- Use our transparent and open approach to achieving a sustainable Assembly to demonstrate leadership, engage people and enhance the Assembly's reputation. Explore the scope for Bay-wide environmental initiatives.
- Develop a sustainable travel policy to encourage staff to choose sustainable modes of business travel. Embed sustainability into all our project work through the use of a sustainability assessment toolkit and advice to project managers.
- Gain the support of all those who work on the Assembly estate to help make the tough choices necessary to achieve a more sustainable organisation.
- Demonstrate continual improvement through the Green Dragon Environmental Management System and monitor environmental performance by regular audits and benchmarking.



# Introduction

## Third Annual Environmental Report

This is the third Annual Report of the environmental performance of the National Assembly for Wales since the Government for Wales Act 2006 came into effect. This is the second report of our performance in all buildings on the Cardiff Bay estate. It does not incorporate the activities of the North Wales Office.

This report outlines our environmental performance and progress against the objectives and targets set for 2009-2010. It also identifies our significant environmental impacts and illustrates statistics to demonstrate our performance.

Over this last year, there has been a significant milestone laid down by the Assembly in the form of the Carbon Management Plan, cementing the Assembly's commitment to sustainability and in the long term, achieving a carbon neutral estate. In 2009/10, there have been significant improvements and progress towards the challenging targets we have set ourselves to reduce our impact on the environment and improve our environmental performance.

This improvement is driven by our Level 5 Green Dragon Management system which continues to steer and measure our progress on an annual basis in line with the expectations of the standard at Level 5.

Specifically, we have taken big steps in building a roadmap towards a sustainable future with a vision and project plan to convert the buildings into the most sustainable structures they can be and in the same vein promote and influence the sustainable working behaviours amongst all our employees. We recognise that without employee intervention into our targets, a carbon neutral estate would not be achievable through building fabric improvements alone. We have also continued to enhance and develop the capture and monitoring of data in relation to our energy, travel and overall performance which will allow us to establish a more accurate 'footprint' for our estate and for reporting purposes.

We acknowledge the support and assistance of others who have helped us including the Carbon Trust, ARUPS, Cardiff Council and Groundwork Wales.

## **Transfer of Responsibility**

In May 2007, responsibility for managing the EMS passed from the Welsh Government to APS as a consequence of separation of the Legislative from the Executive under the Government of Wales Act 2006.

## **Baseline for the Future**

For the first time in 2008/09, the performance against the Objectives and Targets were reported for the whole Cardiff Bay estate. This consists of Tŷ Hywel, the Senedd and Pierhead Building.

It was agreed that 2008/09 would be the **baseline year** for our Environmental Management System for reporting in respect of the whole estate due to improvements made in data collection. However, it should be noted that as data capture continues to improve, this may have an adverse impact on our future carbon footprint as we include more elements within it. This may be reflected in the performance for 2009-10, particularly in relation to travel as we have improved the quantity of data we now capture and report on.

## **Compliance**

No breaches of environmental legislation have been recorded during the period under review.

## Environmental management system

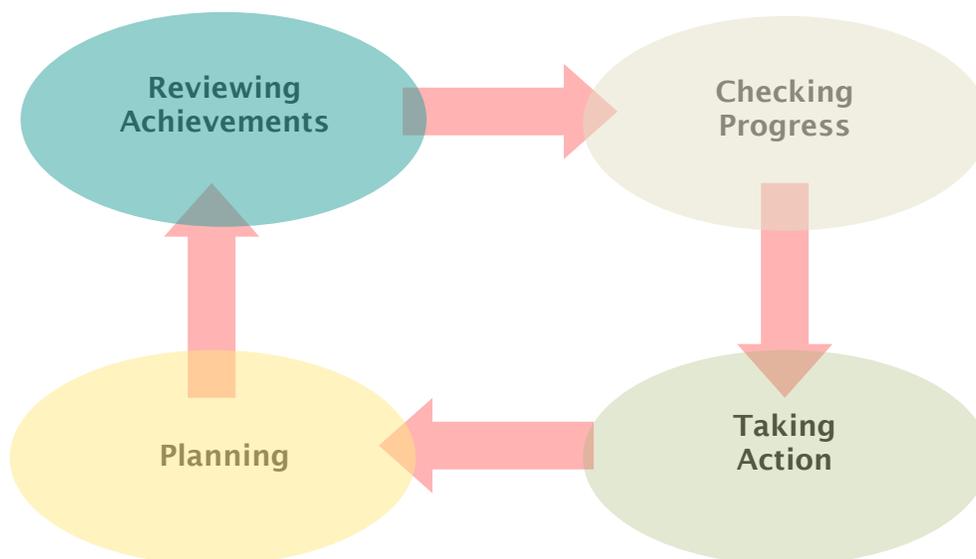
The National Assembly for Wales has adopted the Green Dragon Environmental Management System (EMS) as a means of systematically managing the environmental impacts of our business activities and ensuring that we make continuing improvements to our performance.

This is the second year that we have retained Level 5 formal accreditation for the whole estate.

The EMS reflects the key principles of the Green Dragon standard which are;

- Continuing Environmental Improvement;
- Compliance with Environmental Legislation;
- Prevention of Pollution and;
- Communication of Environmental Issues.

The EMS operates on the basis of these 4 key elements to ensure continual environmental improvement:



Monitoring of compliance with the EMS is undertaken via internal environmental audits. Any non-conformances or observations identified can be rectified with the appropriate actions.

The necessary EMS documents and procedures to ensure we continue to meet the requirements of the environmental standard at Level 5 are available on our intranet site:

[green dragon system](#)

Paper copies are also available to all members of staff from the Sustainability and Procurement team.

A copy of this report is available on our website:

<http://www.assemblywales.org/sen-home/sen-environmental-features/sen-environmental-features-sustainability-link-2>

## Background

The National Assembly for Wales Commission is responsible for ensuring that property, staff and services are provided for the efficient running of the National Assembly for Wales. The Commission comprises the public servants who undertake work on behalf of the Assembly Members.

The Assembly estate comprises buildings that are predominantly office-based and our environmental impacts result primarily from energy use for heating and cooling, the carbon footprint of our business travel and the consumption of resources such as paper and water.

Our priorities have been set by applying the corporate risk management framework to the identified environmental aspects of our activities. In considering risks we took into account the potential impact and probability of an occurrence in normal circumstances. We then considered the actions that were being taken to mitigate the risk and determined a residual level of risk from this. The residual risk was used to set our priorities.

The significant impacts that arose from this framework include energy consumption, waste including hazardous waste and recycling, transport impacts, water and the disposal of waste water and we continue to recognise the importance of other aspects including office activities, the use of paper, building management and procurement.

The organisation manages its Environmental Management System (EMS) through the Sustainability and Procurement team. In addition to the 3 buildings in the Cardiff Bay estate, National Assembly staff also work in our North Wales office. Over time, we hope to integrate this office into one overarching management system.

The report describes our performance against the Objectives and Targets set at the beginning of the financial year. Many objectives and targets have been met or exceeded and are documented [here](#).



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## **Environmental policy statement 2010-11**

The National Assembly for Wales Commission ensures the provision of the property, staff and services required for the effective functioning of the National Assembly for Wales. We will give due regard to the principle of promoting sustainable development and aim to be an exemplary organisation in terms of sustainability and environmental stewardship.

Our day-to-day operations have an impact on the environment, arising mainly through the consumption of resources (energy, water and paper), and the generation of waste.

We will minimise our environmental impact by consuming fewer non-renewable resources, reducing waste, recycling, preventing pollution and complying with all environmental legislation. In order to make continual year-on-year improvements we have set the following targets:

### **Building Management**

- We will maintain Green Dragon Level 5 accreditation for the Assembly's estate and seek to extend accreditation to include the North Wales Assembly office.
- We will continue to improve our Building Management Systems.

### **Energy**

- We will reduce the carbon "footprint" of our estate and business activities.
- We will reduce our energy consumption by 8% per year.
- We will aim to improve the energy ratings of our buildings by at least one grade.

### **Waste**

- We will reduce the level of waste sent to landfill from our estate.

### **Water**

- We will reduce water consumption across the Assembly's estate.

### **Paper**

- We will buy recycled paper or paper from certified managed forests.

## Travel

- We will develop the sustainable travel plan and promote sustainable forms of travel to all employees.
- We will reduce our business travel by 3% per year.

This policy statement will be reviewed annually and made available to all staff of the National Assembly for Wales through our intranet site, will be contractually binding on suppliers who use our premises and will be made available to anyone on request.

We will maintain Action Plans which identify the specific actions necessary to deliver these objectives.



**Lorraine Barrett AC/AM**

Comisiynydd y Cynulliad sy'n gyfrifol am  
Gynladwyedd / Assembly Commissioner  
for the Sustainable Assembly



**Claire Clancy**

Prif Weithredwr a Chlerc y Cynulliad/  
Chief Executive & Clerk to the Assembly

Issue: August 2010

Review: July 2011

## **Management review**

A management review of the full EMS takes place on an annual basis to ensure continued relevance and environmental improvements. The full review is undertaken by the members of the Clear Skies group who review the previous year's performance and endorse and agree the targets and objective. The environmental report is then sent up to Management Board for final sign off. The members of the Clear skies meeting group are supplied with the review for the year, the performance against the targets and objectives, the new targets and objectives for the coming year, reports on legal compliance and the environmental policy for consideration and approval.

The Review took place at management level and covered all areas of the estate. The revised environmental policy for 2010-11 was approved to include an emphasis on reducing the impact of our business travel. The environmental annual report was fully endorsed with the new objectives and targets in line with the expectations for the coming year.

The minutes and results of the management review can be found [here](#).

## Environmental impacts

The activities relating to the operations carried out by the National Assembly have been identified in the environmental review. The activities which produce the most significant aspects and impacts are explained below. The significant environmental aspects were determined after applying an individual risk assessment using the corporate risk matrix adopted throughout the Assembly. The resultant direct and indirect impacts of these were documented.

Impacts arising from our business activity are set out in a Register of Environmental Aspects and include the consumption of resources, air and water pollution including the production of greenhouse gases and the impact of landfill either as a result of our activity or those of our contractors.

Environmental aspect	Environmental impact
<b>Energy</b> ► the use of energy to heat and cool the buildings on the estate and to provide light.	► results in the depletion of natural resources, air emissions and increased greenhouse gas emissions.
<b>Waste &amp; hazardous waste</b> ► disposal of office waste, electric and electronic equipment, fluorescent tubes, packaging etc	► direct depletion of natural resources, waste to landfill resulting in greenhouse emissions, air and noise pollution.
<b>Transport</b> ► home to office travel, parking facilities, business travel and deliveries of goods/services.	► noise and air pollution, greenhouse gas emissions, water and land pollution and congestion.
<b>Water</b> ► use of water in buildings, catering and dishwashing, toilets, heating and showers.	► results in depletion of natural resources
<b>Office Activities</b> ► use of printers, copying, paper used in publications, shredding and e-mails.	► results in resource depletion, potential water and air pollution.

## Targets and objectives

The following summary outlines the targets and objectives for the period 2010-11 in line with our aim for continual improvement. These relate directly to the significant aspects outlined in the register of Environmental Impacts.

Objective	Target
▶ ensure continued environmental improvement across the estate.	▶ maintain Green Dragon Level 5 for the whole Assembly estate and extend system to include North Wales office.
▶ monitor smart metering system to prioritise actions for minimising energy use.	▶ reduce energy emissions across the estate by 8% per annum on the 2008/09 base line.
▶ reduce the organisation's greenhouse gas emissions from travel	▶ reduce carbon dioxide emissions from business travel by 3% per annum on the 2008/09 baseline
▶ reduce the amount of waste sent to landfill and increase recycling across the estate.	▶ reduce waste and increase recycling and create an accurate baseline by March 2011
▶ monitor utility bills and reduce the amount of water used across the estate	▶ reduce water usage and create an accurate baseline by March 2011.
▶ purchase all paper from either recycled sources or FSC accredited suppliers	▶ continue to purchase at least 95% of all paper from recycled sources or FSC accredited suppliers.
▶ ensure sustainable considerations are included in the procurement process	▶ ensure sustainability assessments are completed for all projects that go through the change board.



## Review of performance 2009-10

### (i). Energy

Using the data for 2008-09 as the baseline, this year we are able to provide more detailed reports on the Assembly's performance against last year's data, to include all three buildings on the estate.

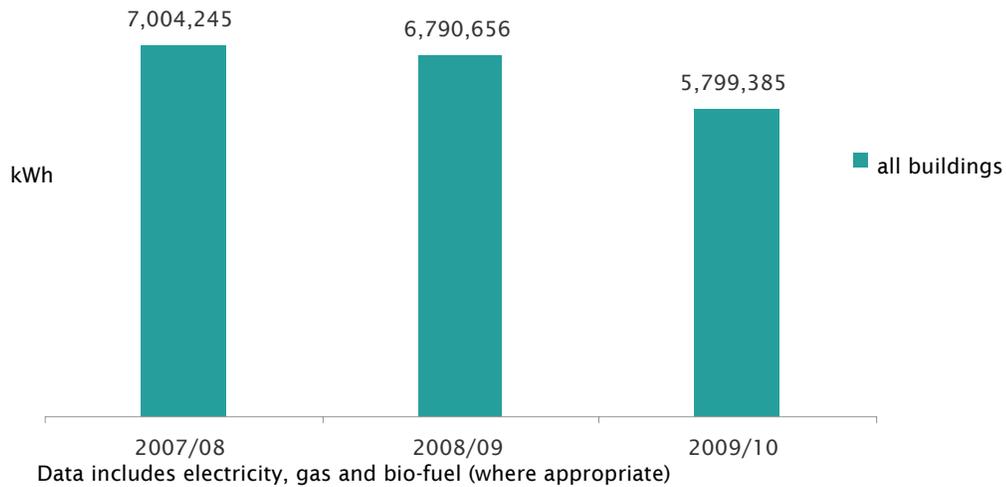
The Assembly uses energy for heating, cooling, lighting and powering equipment in offices.

During the period of the report, 5,799,385 kWh of energy was consumed across the estate representing a 14.6% reduction on the same period in 2008/09.

Total Energy Consumption for period 1 April 2009 – 31 March 2010						
	Total consumption (kWh)					
	Tŷ Hywel		Senedd		Pierhead	
	2008/09	2009/10	2008/09	2009/10	2008/09	2009/10
Electricity	3,071,440	2,899,827	917,896	858,844	116,476	126,269
Gas	1,903,848	1,436,384	300,420	344,696	116,672	77,365
Biofuel Pellets*	N/A	N/A	363,404	56,000	N/A	N/A
<b>Total Consumption (kwh)</b>	<b>4,975,788</b>	<b>4,336,211</b>	<b>1,581,720</b>	<b>1,259,540</b>	<b>233,148</b>	<b>203,634</b>
<b>Energy Savings (between 08/09 &amp; 09/10)</b>	<b>12.85%</b>		<b>20.3%</b>		<b>12.6%</b>	

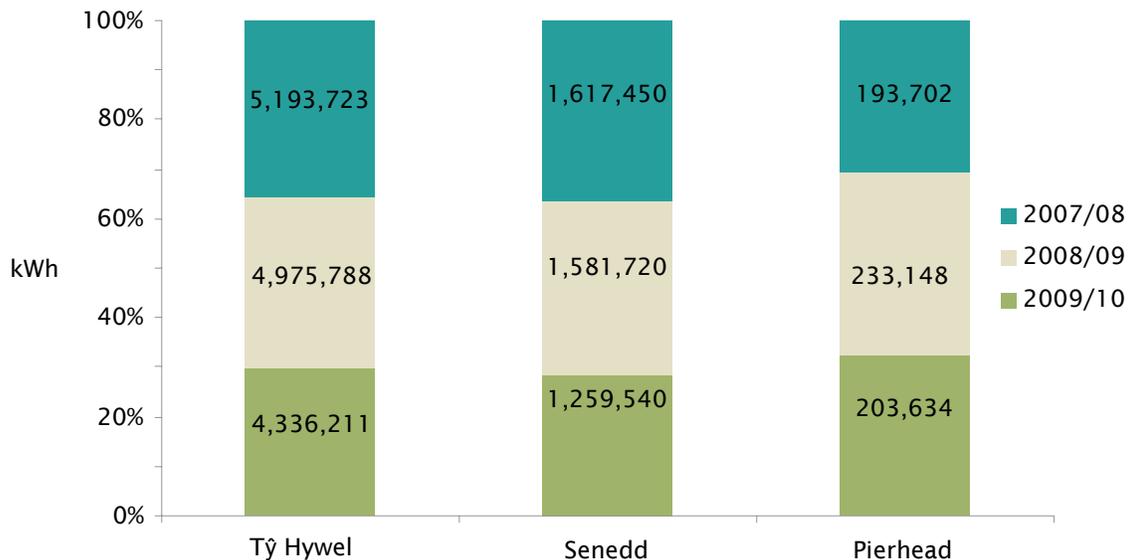
- Due to irregular deliveries of biofuel pellets, data is reported on purchases alone as currently the facility to record calorific value consumed is not available. Therefore, reports are based on consumption in arrears for each year.

## Cardiff Bay estate energy consumption (kWh)



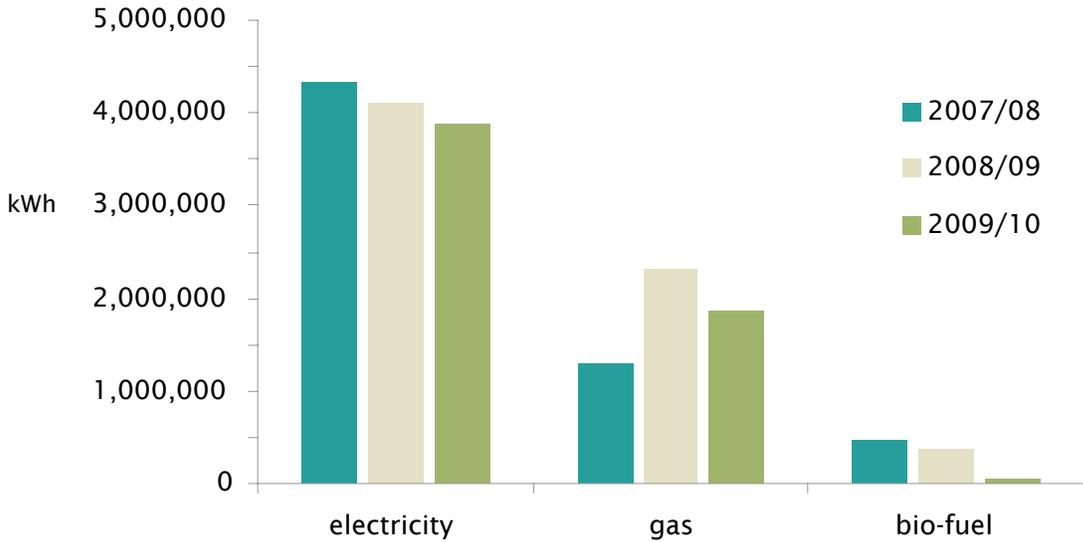
Since 2007/08, there has been a 17.2% reduction in energy consumption across the Cardiff Bay estate. This is equivalent to an average annual saving of 5.7%.

## Building Energy Consumption (kWh)



Since 2007/08, the Senedd has experienced the greatest reductions in energy consumption with a 22.7% saving on 2007/08 levels. Likewise, Ty Hÿwel has experienced savings of 16.5% on 2007/08. The Pierhead has experienced savings of 12.6% on 2008/09 levels.

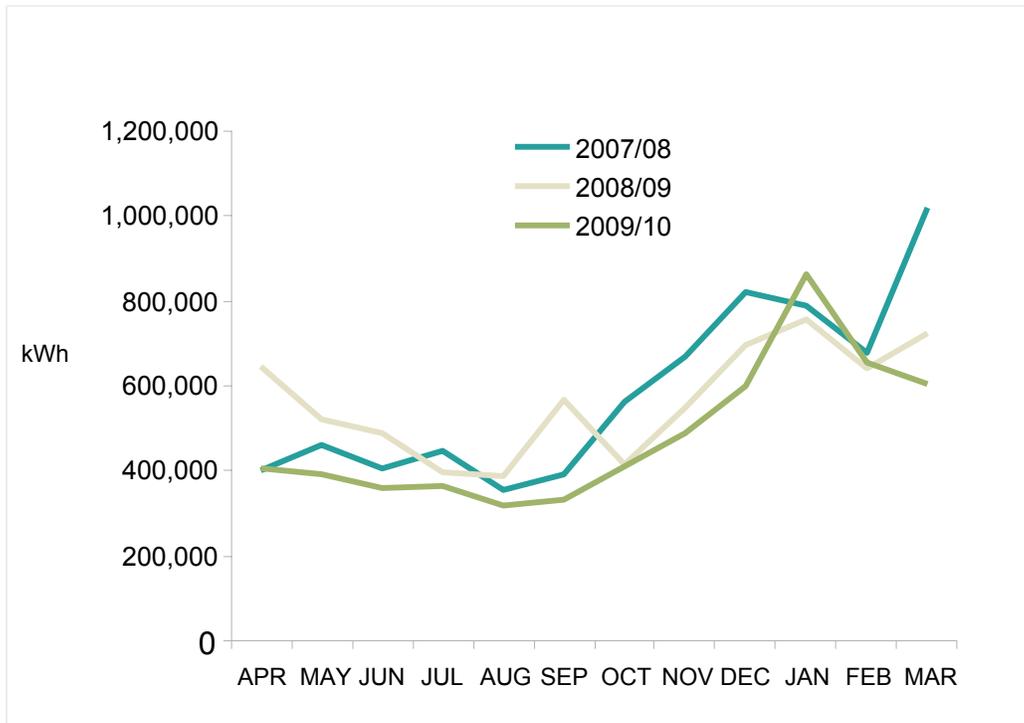
## Utility Consumption (kWh)



There has been a stepped reduction in electricity use across the estate since 2007/08 of about 10.2%, averaging at approximately 3.4% savings per year. Gas and bio-fuel has been more unpredictable, due in part to the shortage of supply of bio-fuel pellets in the coldest winter months leading to the consumption of natural gas for heating purposes in the Senedd.

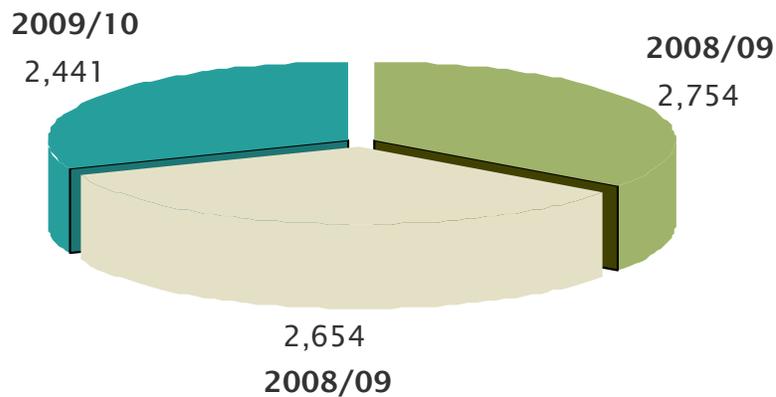
As a result of this, bio-fuel usage is uncharacteristically low for 2009-10 and in January (the coldest month), the closure of the supplier led to gas use for central heating in the Senedd while a new supplier was sourced. In addition to this, it is difficult to report on actual bio-fuel consumption as purchases are made in bulk (sometimes once a year) and stored rather than on a demand led basis, therefore reports are based on purchase in arrears rather than actual consumption.

### Monthly energy consumption (kWh)



Performance across the year has been very encouraging, illustrating savings on energy consumption on previous years over every month, apart from the cold winter spell in January for which the reasons are explained previously.

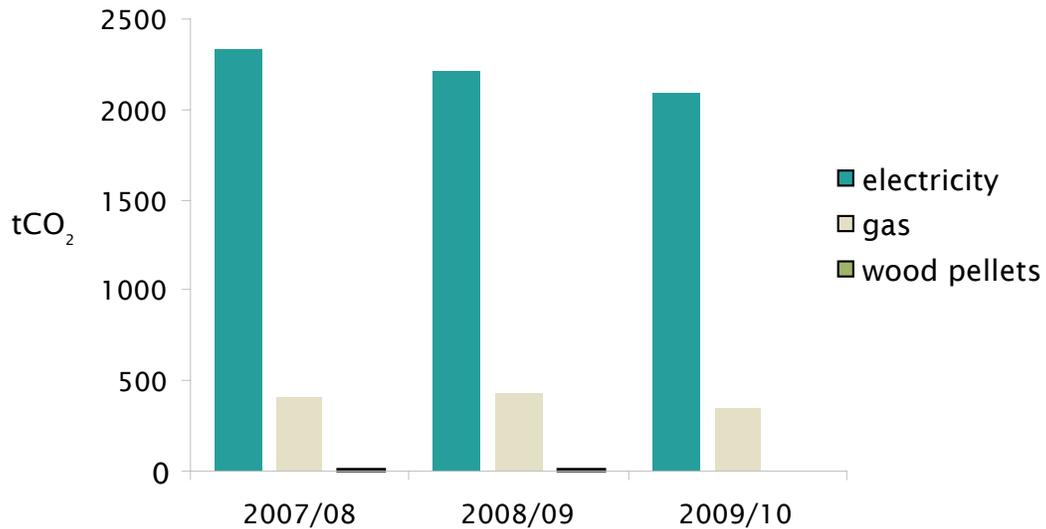
### Energy Carbon Footprint (tCO<sub>2</sub>)



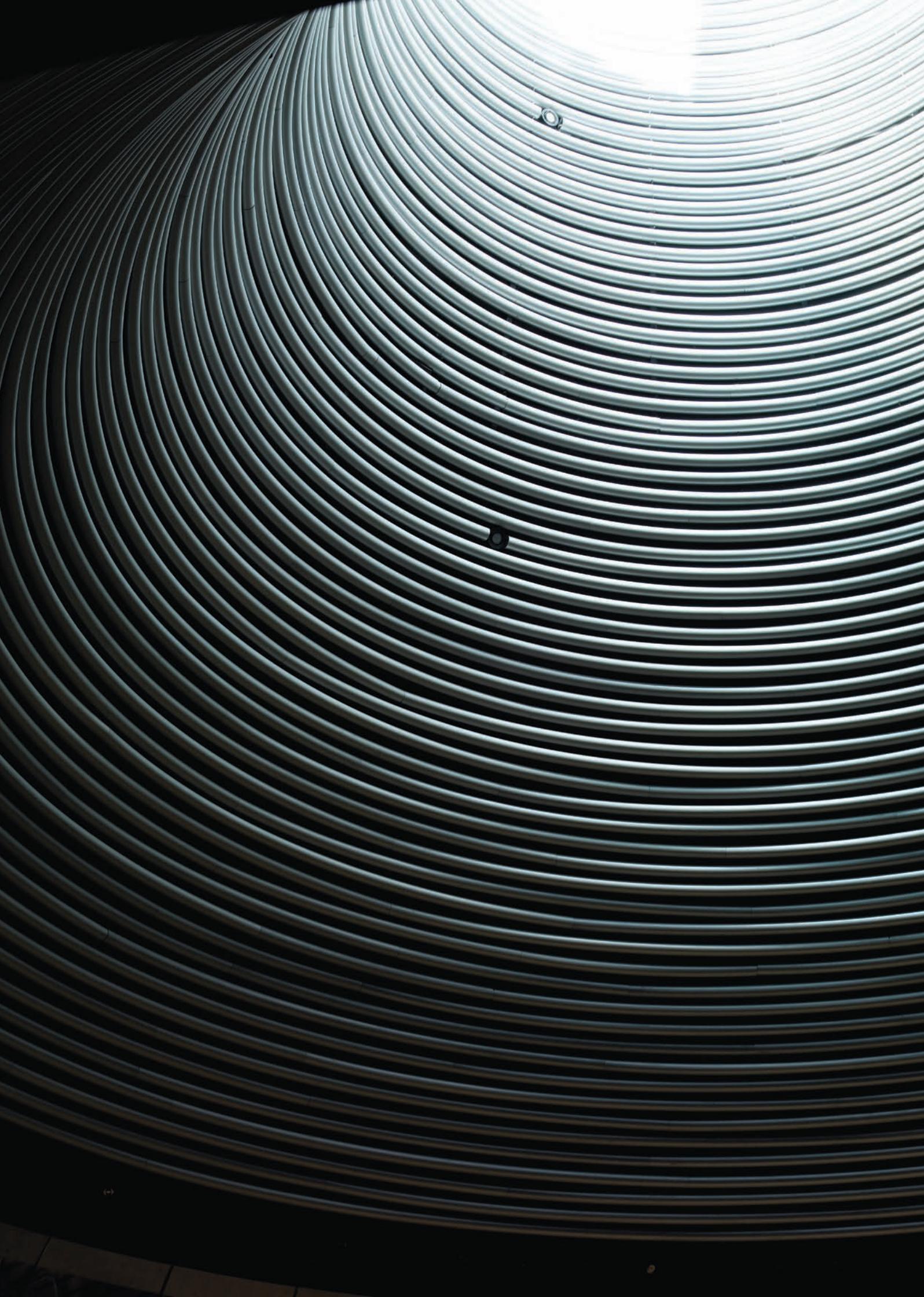
\* The carbon footprint is representative of electricity, gas and bio-fuel consumption only.

Since 2007/08, there has been a stepped reduction in energy emissions from the Assembly estate resulting in a drop of 11.4% on 2007/08 levels.

### Energy Emissions (tCO<sub>2</sub>)



The graph clearly illustrates that electricity consumption forms the largest part of our footprint which is normal for office based environments with gas used largely for central heating only. However, there have been gradual reductions in electricity use over the years (10% since 2007/08) and even bigger reductions in gas consumption (15.4%) helped also by the burning of biomass to heat the Senedd.



## (ii) Waste, hazardous waste and recycling

On the whole, the Assembly's waste and recycling is created from office based activities and catering materials. Up until November 2009, there were continued issues with obtaining transfer notes and quantities of waste collected from our waste contractor. As a result we did not receive any management information for the 2008/09 period and over half of the 2009/10 period. To that end, a new contract was tendered in the summer with specific obligations to provide accurate, timely management information and the new contractor has provided this since November when the contract commenced.

The new contractor provides a much improved recycling and municipal waste collection service and has the facilities to enable the provision of mixed recycling throughout the Assembly. Since the inception of the contract, management data supplied is very simply in terms of total recycling and municipal weights lifted. For the reasons outlined above, direct comparisons of the data are not achievable and for 2009/10, reporting on our waste data is representative of 5 months only.

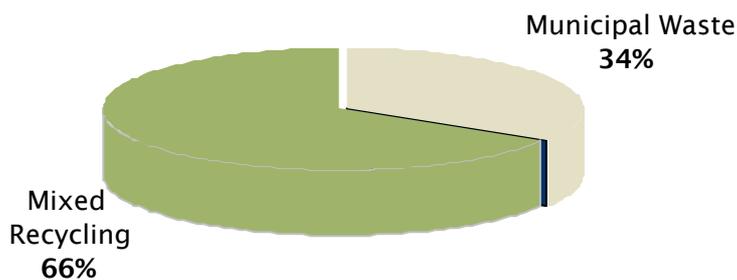
Total Waste arising for period 1 November 2009 – 31 March 2010						
	Total waste generation (tonnes)*					
	November	December	January	February	March	TOTAL
Mixed recycling	3.98	4.7	2.24	2.72	7.05	20.69
Municipal Waste	3.85	3.22	2.58	2.79	3.44	15.88
Ink toners	Total for complete year*					0.35
Cooking oil	Total for complete year**					2.7
Food composting	Total for complete year					7.3
Fluorescent tubes	Total for complete year					0.05
Total waste arising (tonnes)						46.97

\* Toners are recorded on the number recycled and the total weight is calculated based on the weight of one empty toner (this stands at 0.737kg) multiplied by the total. This figure is then converted into tonnes.

\*\* A total of 3000 litres of cooking oil was consumed across the estate (60 litres a week for a 50 week period). The weight in tonnes is calculated from converting the relative density of cooking oil which is 900kg/m<sup>3</sup> by the total volume consumed (1m<sup>3</sup> = 1000l = 900kg, 900x3 = 2,700kg = 2.7 tonnes).

Total figure does not include:  
North Wales office (relies on municipal recycling scheme)

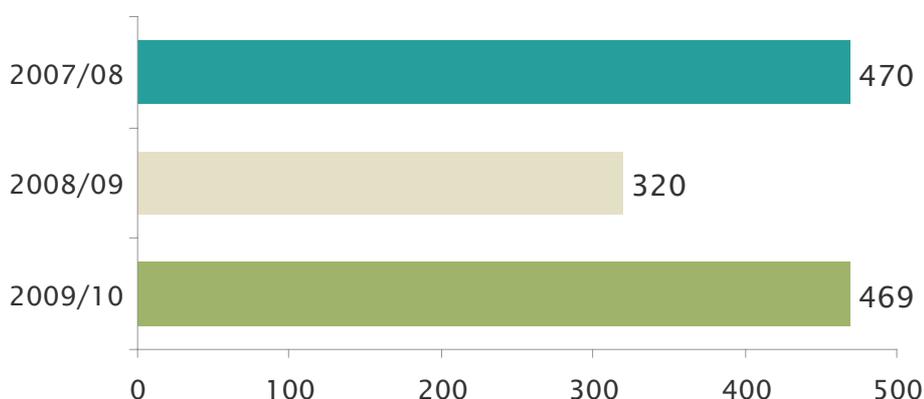
## Waste and Recycling Totals (Nov 09 – March 10 only)



## Ink toner recycling

In 2007/08, the Assembly started recycling used toner cartridges through a specialist recycling scheme provided by the supplier. This has been very successful in relation to reducing our environmental impact but also in terms of reducing costs. The number of cartridges recycled in 2009/10 has increased by 32% on last year.

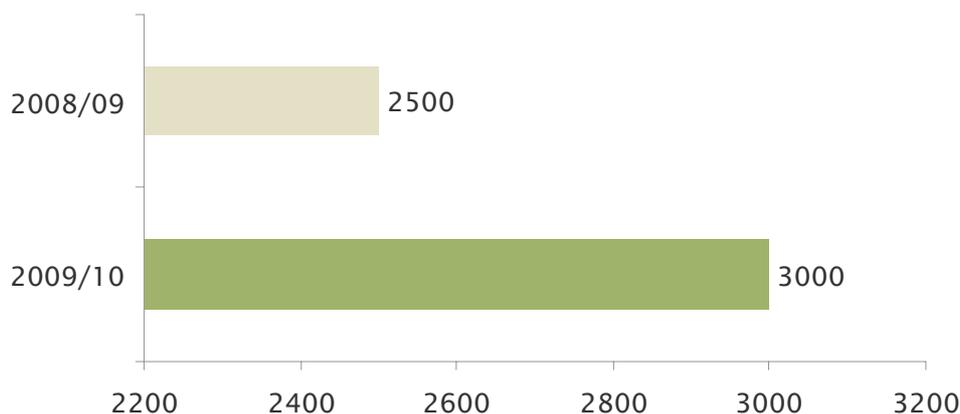
## Ink toners (no.)



## Cooking Oil Recycling

In 2008/09, the Assembly also started recycling the cooking oil used in the preparation of food in the onsite restaurant kitchen. This has increased by 16.7% on last year with 60 litres a week recycled over a 50 week period allowing for 2 weeks (cumulatively) for closure over bank holidays and Christmas.

## Cooking Oil (litres)



## Food composting

In June 2009, the Assembly set up a commercial food composting collection scheme provided by Cardiff Council for our catering food waste. The food waste is collected on demand and is used by the Council for land reclamation in the local area. This further increases our recycling rates and contributes to biodiversity in the surrounding region.

### (iii). Water and waste water

Water is used in the Assembly predominantly for sanitary means such as in toilets and sinks and also in the restaurant kitchen. The Senedd uses grey water for the flushing of toilets thereby minimising use of mains supply.

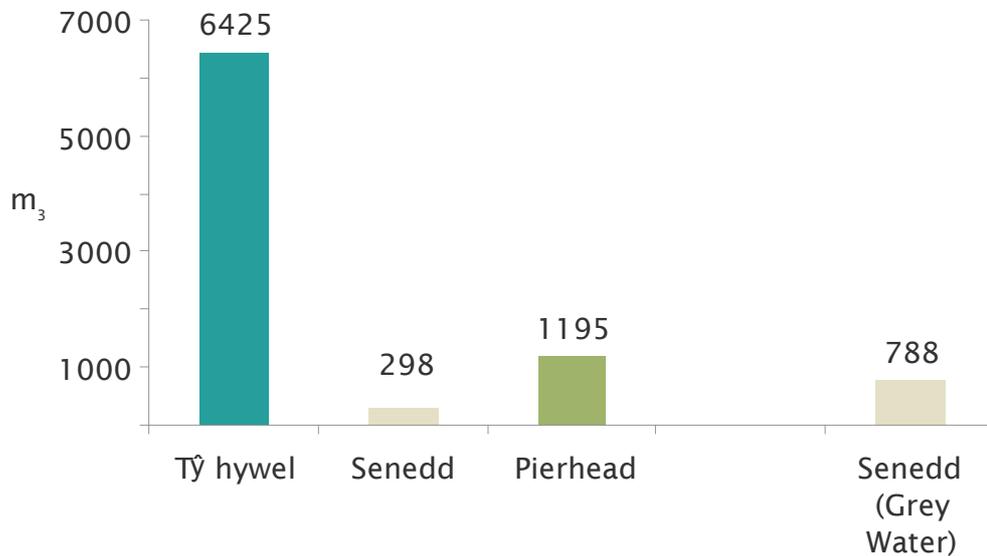
Following complications in relation to the Senedd water meter connected to a neighbouring site last year and it appears, years previous, the Assembly has not received a bill for water usage in the Senedd this year which suggests we are still owed payments. It was mentioned last year that as a consequence of this situation, no data would be available until this year and 2009-10 would form the base line year for accurate reporting on water consumption throughout the estate.

Water meter readings have been recorded for all three buildings this year and consumption is illustrated below.

As a result of the above, the data illustrated is for the reporting period only as comparisons would not be reliable or accurate.

During 2009-2010 a total of 7918m<sup>3</sup> of mains water and 788m<sup>3</sup> of grey water was consumed on the Assembly estate.

### Water consumption (m<sub>3</sub>)

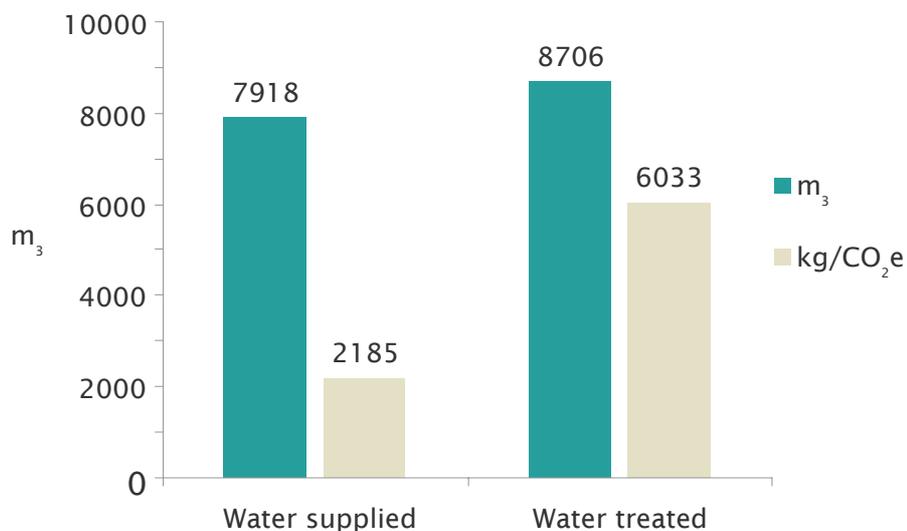


### Water Footprint

The graph below indicates the carbon emissions associated with the supply of water and the treatment of water based on the total consumed across the estate. The emissions related to the supply of water do not include the grey water consumed in the Senedd, however this water is treated like mains supply water after use, so it is factored into the emissions figure generated through treatment. A total of 8.2 tCO<sub>2</sub>e emissions were generated through the supply of treatment of water across the estate.

Greenhouse gas emissions result from the energy used in the supply and treatment of water and from waste and wastewater processes. Emissions include primarily carbon dioxide, methane and nitrous oxide.

## Water Footprint



\* Conversion factors applied sourced from Defra's 2009 Guidelines for company reporting

\*\* The emissions figures featured in the above graph are based on net life cycle emissions of GHG's and as a result are not directly comparable with other factors such as electricity which only account for emissions from point of use.

### (iv). Travel

The acquisition of travel data for 2008/09 enabled the formation of a baseline and this forms the basis for the comparison with the data for 2009/10 together with additional data gathered this year on a new pool car, the cleaning bus and the outreach bus thereby providing a more accurate measure of our total business travel. There have been considerable reductions in business travel over the year via air, rail and hire cars.

Staff and members travelled a total of 694,900 miles in 2009-10, a decrease of 28% on the total miles travelled in 2008/09.

## Business Travel

Business Travel for period 1 April 2009 – 31 March 2010					
Mode of transport	Total travel (miles and CO <sub>2</sub> )				
	2008/09		2009/10		Change (%) <sup>5</sup>
	Staff & Members (miles) <sup>1</sup>	CO <sub>2</sub> (kg)	Staff & Members (miles) <sup>1</sup>	CO <sub>2</sub> (kg)	
Private car	452,177	147,595	452,498	147,699	1.17%
Rail	192,879	17,923	129,284	12,014	-33%
Air	228,588	36,148	34,690	5,979	-83.5%
Coach/Bus	394	43	532	58	-34.9%
Ferry	1160	241	0	0	-100%
Taxi	7,275	1,854	6624	1,688	-9%
Hire car	75,066	24,502	45,772	14,940	-39%
Pool car	N/A	N/A	1300	205 <sup>4</sup>	100%
Other fleet					
Official car	10,000	3,202	13,700	4,388	37%
Outreach bus	N/A	0	6,325	5,647eq <sup>2</sup>	100%
Cleaning bus	N/A	0	4,175	1,754 <sup>3</sup>	100%
<b>TOTALS</b>	<b>967,539</b>	<b>231,508</b>	<b>694,900</b>	<b>194,372</b>	

<sup>1</sup> Where appropriate, calculations for CO<sub>2</sub> emissions have been created off the equivalent kilometre distances using Defra's 2009 Conversion Factors for Reporting.

<sup>2</sup> The figure for the outreach bus is expressed in terms of kg CO<sub>2</sub>eq as it runs on bio-diesel and the conversion factor for bio-diesel is calculated based on the lifecycle of the bio-fuel from field to tank. The conversion factor applied is taken from Defra's 2009 Conversion Factors for Reporting. The total emissions have been calculated based on the litres of diesel consumed throughout the year and not the mileage as this provides a more accurate representation.

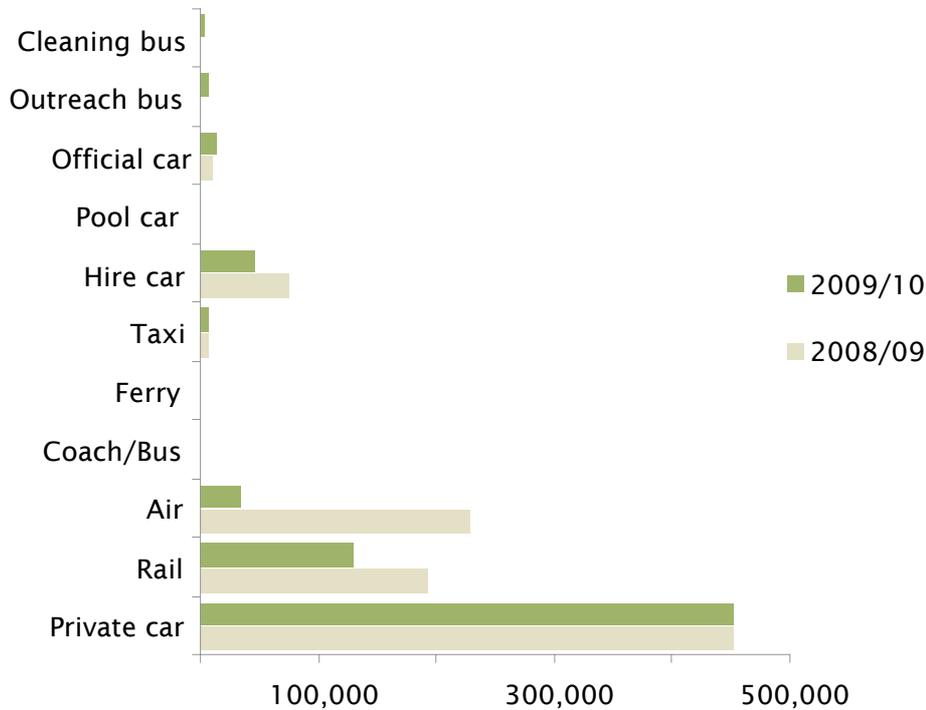
<sup>3</sup>The total emissions have been calculated based on the number of litres of diesel consumed (as opposed to mileage travelled) as this data was collected by the contractor and this provides a more accurate representation of emissions.

<sup>4</sup>The Pool car was acquired in January 2010 and the data represented is for February and March only. The car is a low emission vehicle with a rating of 98g CO<sub>2</sub>/km.

<sup>5</sup> Percentage change is representative of mileage only. Changes in CO<sub>2</sub> emissions are addressed later in the report.

## Business Travel Mileage

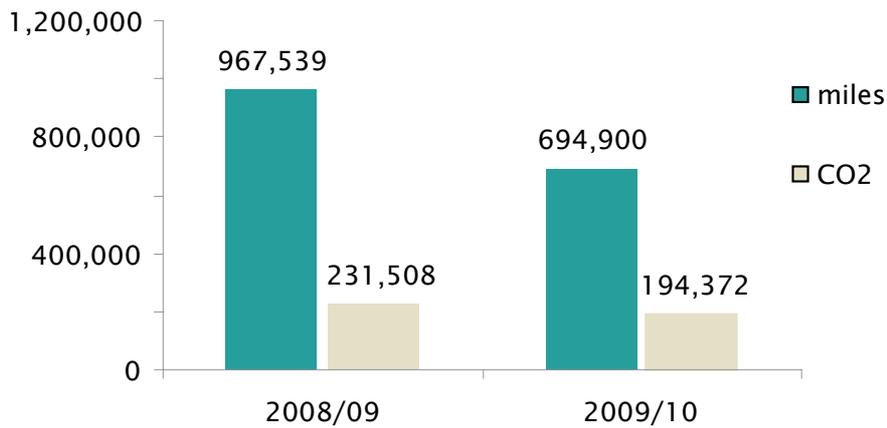
The following graph illustrates the total mileage travelled by both staff and members throughout 2009/10 via the various modes.



There have been significant reductions in mileage in both air and rail travel, although private car use has increased, be it marginally on last year. Air travel in particular has experienced an 83% reduction and hire car usage has also dropped by 39% on last year, reducing the Assembly's carbon emissions at the same time.

We have experienced increases in mileage through the introduction of a low emissions pool car, however this has resulted in a direct reduction in the number of hire cars used and the recording of mileage for the outreach bus and the cleaning bus this year has led to a 100% increase in mileage for these modes against last year.

## Business Travel – Mileage and CO<sub>2</sub> (kg)



As a result of reduced business travel through the modes of air, rail and hire car, the overall mileage has dropped by 272,639 miles. However, there was a marginal increase in private car use which may impact on this trend.

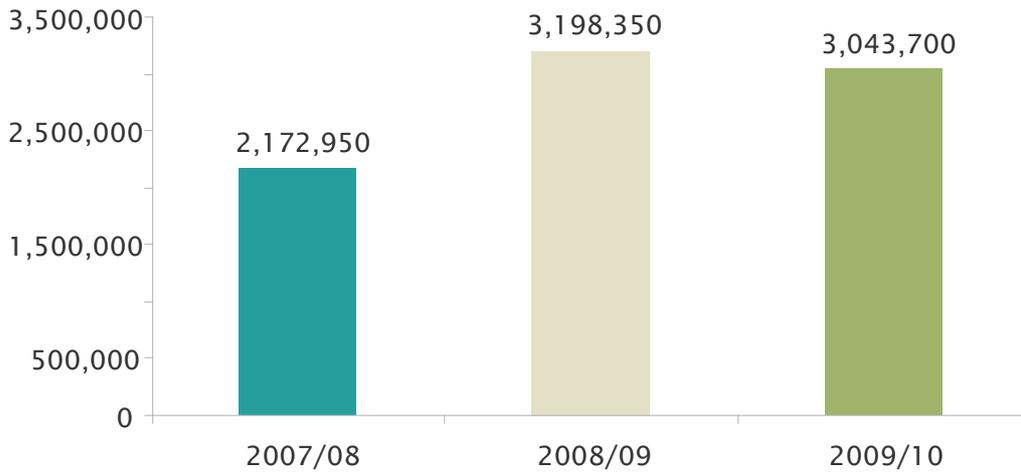
Total travel emissions during 2009-2010 amounted to 194,372kg of CO<sub>2</sub> which is equivalent to 194.4 tonnes. This represents a decrease of 18% on 2008/09.

## (v) Office Activities

### Paper

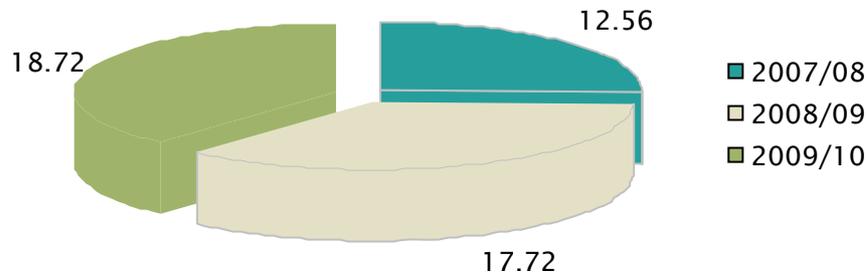
The Assembly operates a central copy unit that provides a comprehensive service for the printing of the vast majority of the Assembly's publications, reports, posters, bespoke material and any other print media that falls within the technical capabilities of the equipment on site. Specialist print jobs are outsourced to external printers when the need arises but this is kept to a minimum. Besides the central print service, there are also a large number of standard desk jet printers across the estate and 23 photocopiers for staff use.

## Internal Printing - number of sheets purchased



During 2009-10, the Assembly purchased 3,043,700 sheets of paper of which 95% was either produced from recycled sources or from FSC or PEFC accredited suppliers. Of this total, 2,834,000 sheets were A4 size and 209,700 were A3 size. This represents a reduction of 4.84% (154,650 sheets) on the number of sheets purchased in 2008/09 and an increase of 32% (870,750 sheets) on the number purchased in 2007/08.

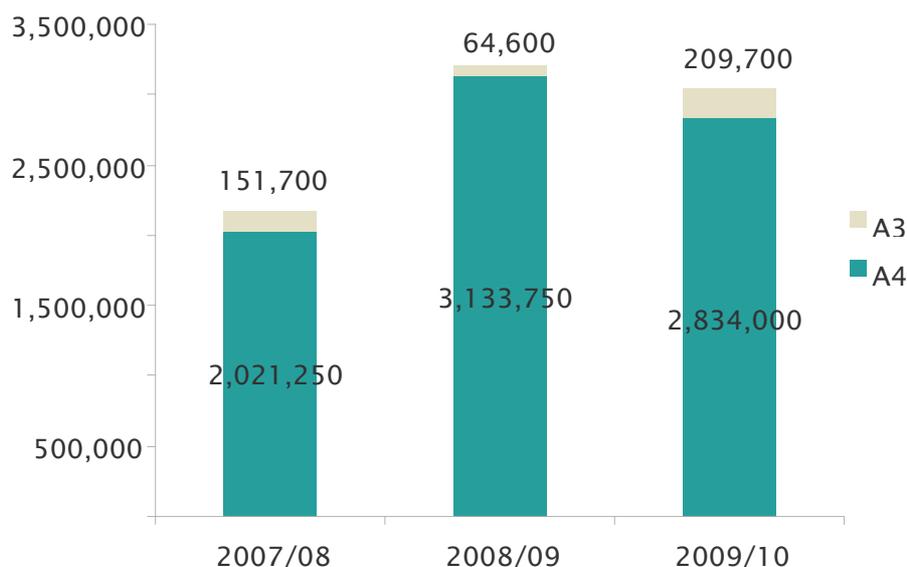
## Paper Weight (tonnes)



In contrast to the reduction in paper purchased, since 2007/08 there has been a steady increase in the weight of paper purchased as a result of purchasing heavier stocks to meet the demands of new internal printing specifications. Over the last 3 years, the weight of paper purchased has increased by 29.12% to 17.72 tonnes. In addition, in 2007/08, we stocked 13 grades of paper ranging between 80gsm and 300gsm for printing which has increased to 18 grades in 2009-10.

The single biggest increase has been evident in the purchase of SRA3 300gsm stock which has resulted in a weight increase of 75% (1288kg) since 2008/09.

## Type of paper purchased (sheets)



In relation to the type of paper purchased, there has been a clear increase in the quantity of A3 stock since 2008/09 (69%) largely as a result of printing reports and publications in house (A3 stock is used for printing report covers) but an overall reduction in A4 stock over the same period of 9.6%.

A sustainable procurement policy to minimise waste paper and to ensure that environmental criteria are built into paper-buying specifications forms the basis for the Assembly's paper usage. Efforts to reduce the use of paper in offices have been made by encouraging less printing, sending out media (both internally and externally) electronically, more efficient storage of files electronically, double sided printing, and raising awareness amongst staff through inductions, training and publications.

### External printing

A total of 25 print jobs were undertaken externally throughout the year, amounting to 53,972 copies of publications and 473,522 sheets printed. This is consistent with an increasing number of print jobs being undertaken in-house. The total weight of all external print jobs amounts to 3,568kg or 3.6 tonnes. All external printing is carried out on FSC certified paper, with 50% recycled post consumer content.



15 27

## **(vi). Sustainable Procurement**

A self-assessment of the Value Wales Sustainable Procurement Assessment Framework (SPAF) was undertaken in March 2010 on the procurement processes of the Assembly and we have demonstrated an improvement in both performance and overall scores throughout the year, and as a result, our organisational overall level under the framework is now 'Level 4 – Enhancing Organisation'. Some aspects of our performance resulted in Level 5, most notably the Strategic and Management issues such as commitment to sustainability, communication, and a more structured approach to procurement policies.

The actions that arise from the Sustainable Procurement Assessment Framework have been incorporated into the Green Dragon action plan. To further streamline processes, we have also transferred all the actions under the existing sustainable performance action plan into the Green Dragon action plan and this now exists as a stand alone system.

We have set 4 key priority actions for improvement:

1. Develop KPI's and supplier performance monitoring systems to include sustainability benchmarking
2. Identify scope for targeted staff refresher training on sustainability
3. Ensure sustainability assessments are completed for new or existing projects that feature within the Change Board programme.
4. Host a supplier event to communicate our strategy to suppliers.

A Sustainability Assessment tool has been created for staff involved in projects that feature within the Change Board programme to complete so that any potential issues that arise from the evaluation of the assessment can be addressed at an early stage, advice and improvements suggested and consideration of sustainability embedded in decision making throughout the project life cycle. It is also hoped that the assessment will apply to all new or re-tendered contracts over £25k.

## **(vii). Building Management**

Over the course of the year, we have continued to make further inroads into improving the building management system. Through close working relationships with Arups and the Carbon Trust, we have created a programme of improvements for all 3 buildings on the estate with timelines and costs for each of the proposed actions.

This programme will form the cornerstone of the building improvements undertaken over the next 3 years in line with the growing demands of the Carbon Management targets we have set ourselves.

We have started to explore the potential of the Smart Metering system in Tŷ Hywel linking all the readings from the sub-meters directly to a stand alone software based system so we can measure energy readings and adjust settings according to remote peaks and troughs. Technical difficulties related to data processing from the meters have prevented us from exploiting the vast ability of this system more than we would have liked but we are in the process of rectifying this currently.

It is then hoped that this will be frequently monitored and managed so we are able to make micro adjustments to energy consumption in all areas of Tŷ Hywel. As floors undergo refurbishment to open plan office spaces, PIR lighting is also installed as standard across Tŷ Hywel on a rolling programme.

## **(viii). Fire and Flood - emergencies**

Operational control procedures are in place to prevent and mitigate the environmental impact of emergencies arising from fire or flood. These include a doubled skinned, banded diesel tank, and spillage kits. There have been no recorded spillages in the Assembly over this reporting period.

## **Greenhouse gas emissions**

The UK has agreed to reduce its greenhouse gas emissions in accordance with the Kyoto Protocol. The Assembly recognises that the burning of fossil fuels have a significant impact on the environment.

The total CO<sub>2</sub> emissions for 2009-10 were calculated from our buildings energy use, refrigerant leaks and our business travel mileage. Although the Assembly currently uses green electricity for the Pierhead building, it is recognised that it has to be counted on a standard tariff and cannot be counted and reported as zero emissions under guidance provided by Defra:

*'For the reporting year 2008-9, the guidance will outline that Government expects that for most green tariffs, businesses use a grid average rate to reflect the existing evidence that the additional carbon benefit of green tariffs is limited'.*

## Total Emissions (tCO<sub>2</sub>)

Total Carbon Footprint for period 1 April 2009 – 31 March 2010					
Aspect	Total carbon footprint				
	2008/09 <sup>1</sup>		2009/10		Change (%)
	CO <sub>2</sub> (kg)	CO <sub>2</sub> (tonnes)	CO <sub>2</sub> (kg)	CO <sub>2</sub> (tonnes)	
Electricity	2,217,418	2,217	2,097,868	2,098	5.4%
Gas	427,053	427	341,954	342	-19.9%
Water <sup>3</sup>	N/A	N/A	8,219	8.2	100%
Biomass <sup>2</sup>	9,449	9	1,456	1	-88.9%
Private car	149,218	147.6	147,699	147.7	0.07%
Rail	17,923	17.9	12,014	12.01	-32.9%
Air	36,148	39.4	5,979	5.98	-84.8%
Coach/Bus	43	0.04	58	0.06	33.3%
Ferry	215	0.215	0	0	-100%
Taxi	1,854	1.85	1,688	1.69	-8.7%
Hire car	24,772	24.5	14,940	14.94	-39%
Pool Car	N/A	N/A	205.02	0.21	100%
Official Car	3,300	3.2	4,388	4.39	27.1%
Outreach Bus	N/A	N/A	5,647e	5.65e	100%
Cleaning Bus	N/A	N/A	1,754	1.75	100%
<b>TOTALS</b>	<b>2,887,383</b>	<b>2,887</b>	<b>2,643,869</b>	<b>2,644</b>	

<sup>1</sup>Due to changes in the ownership of the Green Dragon standard, it transpired that the conversion factors provided in the standard (as produced by Arena Network) and used to determine the carbon footprint for 2008/09 were out of date and did not fall in line with Defra's factors for the same reporting period. These factors were used as directed by the standard guidelines and were due to be revised in 2010. However, after careful examination, it appears they are not accurate and as a result, a recalculation of the 2008/09 baseline has taken place using Defra's 2009 conversion factors and is accurately represented in this

report. The overall footprint has not changed significantly, however a great weighting has been afforded to our energy consumption. This course of action has been recommended and endorsed by Groundwork Wales.

<sup>2</sup>Although burning biomass releases carbon dioxide into the atmosphere, this is offset by the carbon dioxide absorbed in the original growth of the biomass, or captured in the growth of new biomass to replace the materials used. It can be viewed as a form of stored solar energy which is captured by the organic matter as it grows. However, under the DEFRA reporting guidelines for GHG emissions factors, updated September 2009, an emissions conversion factor of 0.025 kgCO<sub>2</sub>/kWh is included in SAP2005, Table 12. SAP2005 is adopted by government as part of the calculation for energy.

<sup>3</sup>The emissions figures featured above for water are based on net life cycle emissions of GHG's and as a result are not directly comparable with other factors such as electricity which only account for emissions from point of use. However for the purposes of reporting, they will be included in the overall footprint.

Over the period under review, a total of 2,441 tonnes of CO<sub>2</sub> were emitted from the Assembly estate. This is a reduction of 261 tonnes (20%) on 2008/09 levels.



## Carbon footprint

A carbon footprint is defined as ‘the total greenhouse gas emissions caused directly and indirectly by an individual, organisation, event or product’ **Carbon Trust**.

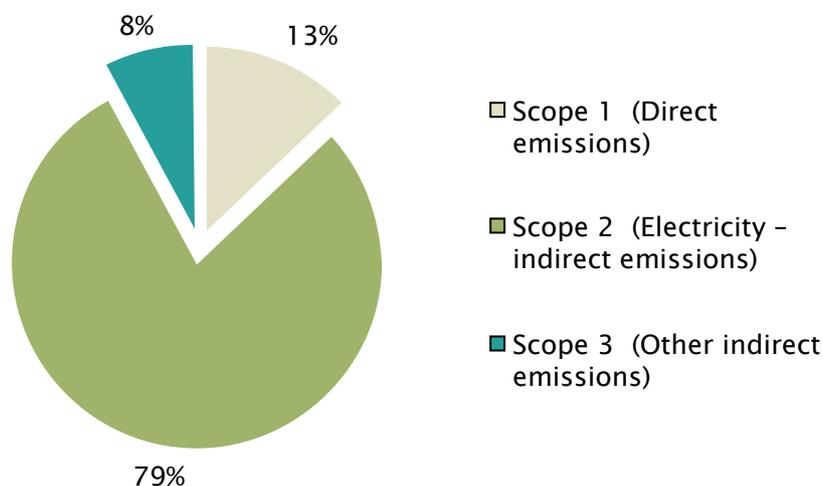
The data above represents the emissions information available to us at this time and it is hoped that in the following year, we will be able to comprehensively report our footprint in respect of all greenhouse gases emitted as a result of our operations. We also appreciate that the carbon footprint may increase or decrease as a result of changes or demands to the way our business operates and this will be reflected in the re-calculation of the baseline year if required. However, for 2009-10, the carbon footprint of the Assembly is represented as follows:

	GHG emissions 2008-09 (tonnes of CO <sub>2</sub> )	GHG emissions 2009-10 (tonnes of CO <sub>2</sub> )	Change (%)
<b>Scope 1</b>			
Gas consumption	427	342	19.9
Biomass	9	1	88.9
Owned transport	N/A	5,647eq	100
Fugitive emissions	0	0	0
<b>Total Scope 1</b>	<b>436</b>	<b>343</b>	<b>21.3</b>
<b>Scope 2</b>			
Purchased electricity	2,217	2,098	5.4
<b>Total scope 2</b>	<b>2,217</b>	<b>2,098</b>	<b>5.4</b>
<b>Significant scope 3</b>			
Business travel	237	194	18.4
Water supply and treatment	unavailable	8.2	100
<b>Total significant scope 3</b>	<b>237</b>	<b>202</b>	<b>14.7</b>

## Total Carbon Emissions

Carbon emissions data for period 1 April 2009 – 1 March 2010			
	Tonnes of CO <sub>2</sub>		
	2008-09	2009-10	Change (%)
Scope 1 (Direct emissions)	436	343	-21.3
Scope 2 (Electricity – indirect emissions)	2,217	2,098	-5.4
Scope 3 (Other indirect emissions)	237	202	-21.1
<b>Total Gross Emissions</b>	<b>2890</b>	<b>2643</b>	<b>-8.6%</b>

## Carbon Footprint - 2009/10



**NOTE:** there were no incidents of refrigerant leakage throughout the year, so they are not included in the carbon footprint graph above. However, they are always accounted for in calculating the overall footprint.

## Pollution prevention and mitigation

There are formal procedures in place to prevent or mitigate any potentially polluting incidents. A full pollution prevention plan is available which identifies our principle pollution risks and the measures and controls in place to mitigate the risk in the Environmental Manual. All staff assigned to handle any pollution incidents are trained accordingly.

## **Environmental training**

All new starters receive Environmental awareness training as part of their induction programme which includes information on the Green Dragon EMS, the Assembly's environmental impacts and targets, sustainable travel and how they as staff can help to reduce our impact. Environmental training is also provided to key staff as needs arise.

Certain key staff involved in the support and improvement of the Green Dragon management system have undertaken training in the following:

IEMA Associate Certificate in Environmental Management

IOSH Managing Safely

CPET Policy Training

## **Environmental Working Groups**

Staff from the Clear Skies and Green teams have continued to meet periodically to address environmental priorities, determine a roadmap to exemplary environmental performance, discuss ongoing initiatives and contribute ideas and suggestions to the ways we can improve the way we work and behave in relation to our environmental responsibilities.

Members of the Green Team were also responsible for organising 'Eco Day', a very successful event aimed at encouraging staff and Members to come along and learn about how they as individuals can save energy and money, consider options for sustainable travel, speak to company representatives about electricity and gas consumption and listen to a spokesperson about how we should consider the food chain. The event attracted a large number of staff and Assembly Members and was well supported by senior management. Feedback received was extremely positive.

## Legal compliance

We have recently subscribed to ELUS (Environmental Legislation Update Service), a service provided by Groundwork UK for businesses to use to keep abreast of changing and new legislation that may have implications for the operations. ELUS enables the bespoke compilation of a tailored legal register through accessible, simple interpretations of complex law. This not only saves time on interpreting the law, but enables companies to determine very quickly if the law is likely to apply to their business. Once compiled, the register also updates automatically as legislation changes ensuring that we maintain continuous legal compliance. To support this updates on legislation are also received on a monthly basis from Netregs. The Sustainability Co-ordinator is responsible for compiling and maintaining the legislation register as and when required. We will continue to meet our Duty of Care responsibilities with regard to the disposal of waste, WEEE and hazardous materials and ensure we use licensed carriers and contractors for our waste and receive the appropriate transfer notes.

## Proposed improvements in 2010-11

To meet the challenges that lay ahead, particularly in relation to the onset of the fourth Assembly in 2011 and also well documented economic restraints that will be imposed, we will continue to improve our environmental performance in order to maintain Green Dragon Level 5 and aim to reduce our environmental impact via the following goals:

Proposed Improvements
1. Maintain Green Dragon Level 5 for the Assembly estate and extend it to the North Wales Office by March 2011
2. Employ energy saving measures required to reduce energy emissions by 8% on the 2008-09 baseline.
3. Offset business air travel through the Government Carbon Offsetting Fund (GCOF II).
4. Drive improvement and efficiencies through the collection, interpretation and management of all data with an emphasis on reducing private car usage for business purposes.
5. Explore the scope for introducing additional pool cars as sustainable options for business travel.
6. Set up an Inter-Parliamentary forum with all UK parliaments for networking opportunities.
7. Hold a 'sustainable suppliers' event for all Assembly contractors by March 2011.
8. Maintain collaboration with WAG on internal environmental audits and look for opportunities to work with other businesses.
9. Improve the energy ratings of all the buildings on the estate by at least one grade by March 2011 in accordance with the assessment criteria.



## Acknowledgements

We would like to acknowledge the work and support of the following companies for their assistance over the year:

- Groundwork Wales for their support, suggested improvements to our Green Dragon Management Systems, business services and professional advice.
- Carbon Trust in collaboration with Arups for providing us with a detailed 'roadmap' of practical suggestions for reducing our energy usage and improving our buildings performance.
- Cardiff Council for their continued support and collaboration in relation to the promotion of sustainable travel throughout businesses in Cardiff.

## Contact information

Further information about the content of this report and the environmental work of the National Assembly for Wales can be obtained from;

### **Adrian Hobson**

Procurement & Sustainability Adviser  
National Assembly for Wales  
Cardiff Bay  
CF99 1NA  
+44 (0) 29 2082 1832

### **Neil Bradley**

Sustainability Co-ordinator  
National Assembly for Wales  
Cardiff Bay  
CF99 1NA  
+44 (0) 29 2089 8961

### **Nerys Evans**

Head of Facilities  
National Assembly for Wales  
Cardiff Bay  
CF99 1NA  
+44 (0) 29 2089 8078