

National Assembly for Wales

Annual environmental report
2011 – 2012



Cynulliad
Cenedlaethol
Cymru

National
Assembly for
Wales

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Claire Clancy
Chief Executive Officer



Peter Black
Commissioner for Sustainability

Foreword

It is our pleasure to present The National Assembly for Wales Annual Environmental Report for 2011/12 based on performance information collected from across the organisation. Sustainable development lies at the heart of our strategic approach to our business activities. This report of this year's achievements builds on the hard work undertaken in previous years to reduce the impact of our estate and continues to illustrate our success in driving down our emissions.

We understand the importance of measuring, reducing and reporting the Assembly's carbon footprint as an important aspect of our wider sustainability commitment. We acknowledge that we have a critical role to play in leading by example in mitigating the effects of climate change through innovation, investment and engagement whilst ensuring we continue to deliver a first class service to our Members and the people of Wales.

The reductions we have made, particularly to our energy consumption have done much to offset the effects of rising energy prices. Through a continuing programme of improvements aimed at enhancing the efficiency of our buildings and the development of a sustainable work culture, it's our primary aim to seek out key opportunities that will help us shape a sustainable Assembly fit for the future. We're particularly proud to announce that we have successfully reduced our energy emissions by a further 9% taking our total reduction in the last three years to 24%.

Over the past year, we have continued to develop robust mechanisms for capturing reliable data for the various sources of emissions associated with our activities. We have set challenging targets to reduce the Assembly's carbon emissions by 2015 and we appreciate we will need to work hard to achieve them but we are confident that with the progress we have achieved to date, we can maintain this momentum to make a low carbon Assembly a reality.

A handwritten signature in black ink that reads "Claire Clancy".

A handwritten signature in blue ink that reads "Peter Black".

Introduction

This is the National Assembly for Wales' 5th Annual Environmental Report on the sustainability performance of the core administrative estate. The report draws on baseline information and data relating to our environmental performance recorded from previous years for comparative purposes.

The information contained in the report demonstrates our continued enthusiasm, commitment and dedication to environmental responsibility and the steps taken to ensure we maintain our momentum on the journey to carbon neutrality.

2011 represented an unusual year in relation to the day to day operation of the Assembly. In May, the National Assembly for Wales election took place. This was the fourth election for seats in the National Assembly for Wales (previous elections having been held in 1999, 2003 and 2007). Prior to this in March 2011, a referendum on the law-making powers of the National Assembly for Wales was held with a resounding 'Yes' vote received from the people of Wales. Following this vote, the National Assembly for Wales will now be able to pass laws on all subjects in the 20 devolved areas without first needing the agreement of the UK Parliament.

This, coupled with challenging economic times and unpredictable weather and climate conditions, made for unusual environmental performance trends that are not typical of normal Assembly patterns.

However, our commitment to implementing measures to minimise and reduce our environmental impacts remains strong as we continue to embrace opportunities to achieve our goals.

Performance Highlights

Economic Data	2009/10	2010/11	2011/12
Total purchased grid electricity	£399,731	£334,749	£375,855
Total purchased gas (gross CV)	£57,138	£41,670	£47,392
Total biomass	£10,930	£27,799	£29,054
Transport – owned or leased vehicles	£5,870	£8,326	£7,854
Transport – official business travel	£242,074	£179,700	£307,271
Total waste and recycling ¹	£4,716	£15,512	£32,847
Total water and waste water	£23,320	£21,922	£22,561
Total operational costs	£743,779	£629,678	£822,834

Total CO₂e Emissions	2009/10	2010/10	2011/12
Scope 1 emissions in tonnes	353	357	295
Scope 2 emissions in tonnes	2,061	1,908	1,766
Scope 3 emissions in tonnes	279	368	551
Outside scopes emissions in tonnes	58	170	313
Total Gross CO₂e emissions in tonnes²	2,751	2,803	2,925
Total Net CO₂e emissions in tonnes²	2,693	2,633	2,612

Environmental Data	2009/10	2010/11	2011/12
Energy use in kWh	5,974,863	5,679,696	5,467,914
Associated CO ₂ e emissions in tonnes	2,465	2,365	2,303
Energy use per head in tonnes	3.7	3.5	3.1
Biomass consumption in kwh	164,220	480,480	885,000
Refrigerants in tCO ₂ e	n/a	n/a	58.70
Total waste disposed in tonnes	47.5	133.3	154.66
Waste to landfill in tonnes	15.9	42.6	40
Associated CO ₂ e emissions in tonnes	45.6	122	94
Waste recycled in tonnes	32	90.66	114.7
Associated CO ₂ e emissions in tonnes	43.1	95.7	238
Waste per head in tonnes	0.06	0.19	0.21
Water consumed in m ³	8,706	8,183	8,416
Associated CO ₂ e emissions in tonnes	9.2	8	8.9
Water use per head in m ³	11.8	11.1	11.4

Travel Data	2009/10	2010/11	2011/12
Total miles travelled	689,713	566,906	885,208
Associated CO ² e emissions	181	143	212
Miles per head ³	1,728	1,435	1,715

Paper Data	2009/10	2010/11	2011/12
Paper purchased in million sheets	3.47	4.24	1.92
Paper weight in tonnes	22.3	24.6	13.4
Number of sheets per head	4,114	5,197	2,608

¹ Comprehensive data for waste was not available for 2009/10.

² Refers to gross carbon emissions only including biomass emissions. Net emissions do not include biomass emissions.

³2011/12 represents the first year that a comprehensive set of business travel data has been included and direct comparisons cannot be made to previous years.

Our sustainability strategy

Our values

We are committed to **leading by example** in sustainability.

Our vision

We aim to be a **carbon neutral** organisation by 2015 through the achievement of clear targets and strategic resource management.

Our strategy

Continual improvement: We conduct our business in a sustainable and environmentally responsible manner. We aim to systematically reduce the impacts of our activities and operations in accordance with our corporate values.

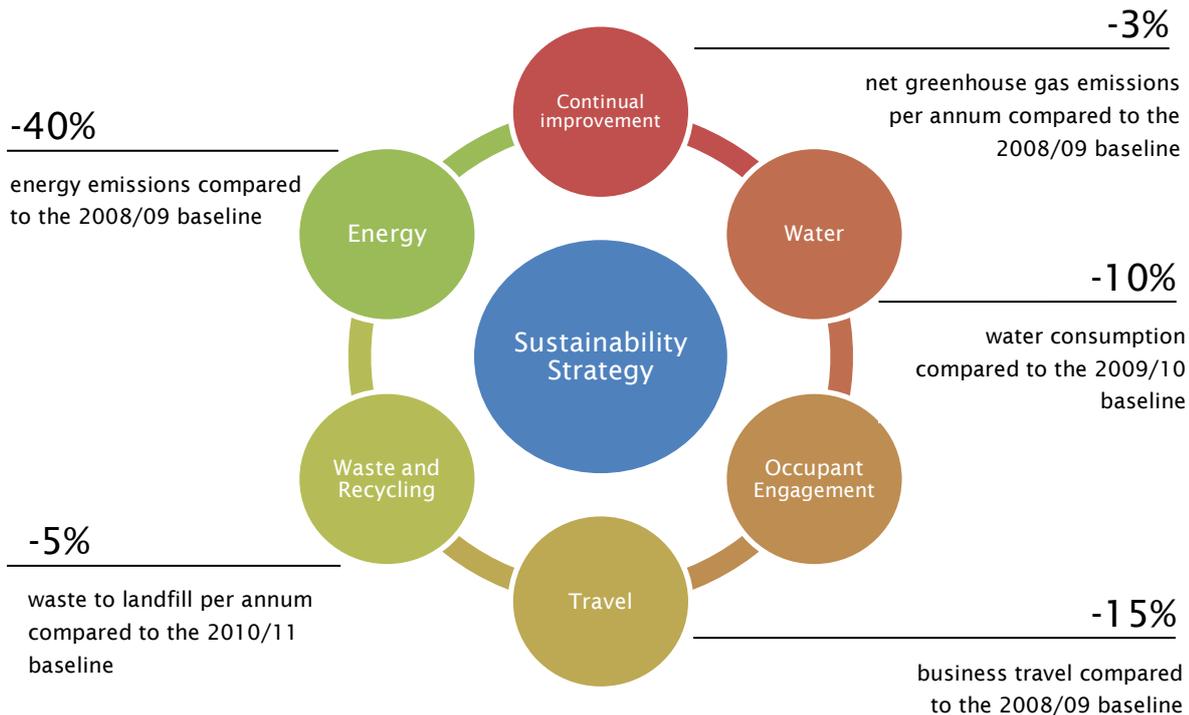
Our focus areas

Key targets: we have identified key reduction targets related to our most significant environmental impacts.

Six focus areas: we focus our efforts on six main areas that present the greatest challenge to achieving carbon neutrality as they relate to our operations.

Improved building management: we understand the importance of sustainable building design and the impact this can have on improving operational efficiency.

Our key focus areas and targets for 2015



About this report

This report has been prepared in accordance with the requirements outlined in the Green Dragon Environmental Management System standard and Defra's Guidance on reporting greenhouse gas emissions. The report supports the data included in the Assembly's Annual Report and represents the Assembly's commitment to transparent and public reporting of its environmental performance.

Independent Assurance

To promote transparency and provide greater confidence in the information presented in this report, all key environmental and economic performance indicators have been independently audited by the Welsh Audit Office. These include:

- Total CO2e emissions
- All cost data
- Energy consumption
- Business travel
- Waste
- Water

Given the volume and breadth of data required for inclusion in a comprehensive footprint, it is not possible for complete assurance to be provided on all data, however quality control procedures ensure all data sources are traceable back to source.

Scope

This report covers the same period as the Assembly's financial reporting year from 1 April 2011 to 31 March 2012. The report covers the activities, sites and assets in which the Assembly has direct control, but does not account for the GHG emissions from operations in which it owns an interest (in financial terms) but has little or no control. In this context, this refers to Assembly Member Constituency offices which are located all over Wales, homeworkers and those few staff located in Welsh Government run offices.

Within the Assembly's Financial Statements for 2011, we have extended reporting this year to include basic information about the Assembly's economic performance in relation to environmental metrics.

During 2011/12, there were no discontinued operations or changes to the Assembly's portfolio that would have caused significant change and affected the reporting on our sustainability performance. The reporting boundary remains the same as previous years, save for the addition of indicator performance on the Colwyn Bay office in North Wales this year as a result of improvements in data capture. Performance indicator reporting does not currently cover external contractors or suppliers of goods and services although it is intended to progressively include the environmental impacts of these activities in subsequent reporting years.

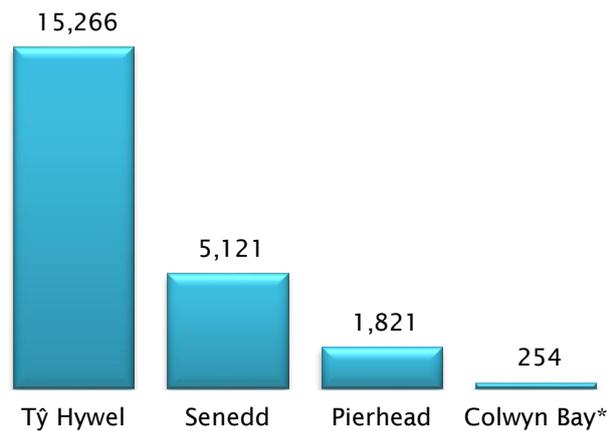
Organisational Structure

The National Assembly for Wales operates out of four buildings – Tŷ Hywel, the Senedd and Pierhead buildings in Cardiff Bay and a small office in Colwyn Bay. These buildings are a mixture of wholly owned and leased assets. Tŷ Hywel provides office accommodation for around 700 staff and the Senedd and Pierhead are public buildings open all year round to visitors. The Senedd houses the Assembly's debating chamber and is built to BREAAAM Excellent standards and the Pierhead is a Grade 1 listed building, home to a visitor and exhibition centre on Welsh history. The small office in Colwyn Bay is located in a multi-tenanted building.

Size of the Estate

The table below outlines the breakdown of the estate by floor area as at 31 March 2012. There has been a reduction of approximately 50% in the occupied floor space in the Colwyn Bay office (11% of total floor area) following a refurbishment, however occupant rates remain relatively constant. Some vacant space now exists in the upper floors of the Pierhead building following the refurbishment and transition into an exhibition and visitor centre.

Floor area (m²)
by building



*Excludes shared amenities and communal areas used by all ground floor tenants.

The total floor area remains constant at 22,462m². Tŷ Hywel accounts for 68% of this total area and provides flexible office accommodation for around 700 occupants. The ongoing refurbishment programme in Tŷ Hywel continues to provide modern, flexible, carbon efficient office space with improved facilities and working conditions for Members and staff.

Re-calculation Policy

The emissions figures contained in this report are calculated based on Defra's 2011 Conversion Factors which are specific to the UK. This represents the most recent update to the conversion factors which are reviewed annually as part of ongoing improvements to emissions reporting methodologies and inventories. For the purposes of reporting, the current year and two preceding years' data have been updated with the 2011 conversion factors to allow for accurate comparisons of performance. All emissions calculated using factors provided in a time based series (such as electricity) are updated every year with the latest dataset in accordance with the guidance.

We will recalculate our previous and base year emissions in the event that either:

- i) changes occur which meet the recalculation requirements outlined in Defra's 2009 'Guidance on how to measure and report your greenhouse gas emissions or;
- ii) changes occur that equate to or exceed a 5% deviation from the previously calculated data.

Base Year

For energy and business travel, we have set our base year as 2008/09. This period was chosen as the first year that we had sufficient, accurate data on energy consumption to establish a baseline profile, and enough data on business travel to enable us to set realistic targets. At the time, we understood that our data quality and capture methodologies were not verified, however it provided us with a standing on which we could move forwards and measure both our absolute and relative performance.

Corporate Governance

The Chief Executive Officer, Claire Clancy has overall responsibility for sustainability and together with Peter Black, the Commissioner for Sustainability, she approves the environmental policy annually and also approves the Annual Environmental Report following the recommendations of the Environmental Steering Group who undertake the management review and approve the annual sustainability targets and action plan.

The Assembly Commission and the Management Board are responsible for approving capital funding for the environmental programme as required. The Carbon Management Plan, which forms the cornerstone of the sustainability strategy is formally reviewed by the Management Board and the Assembly Commission to ensure progress against the key reduction targets is maintained and any issues are prioritised and addressed in a timely manner.

Environmental Policy

The Assembly's Environmental policy ensures we give due regard to the principle of promoting sustainable development and aim to be an exemplary organisation in terms of sustainability and environmental stewardship. It includes the following commitments:



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 and other requirements. In order to make continual year-on-year improvements we have set the following targets:

- We will maintain our certification to Green Dragon Level 5 through continual improvement of our performance and the development of our system.
- We will continue to improve our Building Management Systems.
- We will give due consideration to environmental issues and energy performance in the refurbishment and improvement in the design of buildings.
- We will continue to measure and reduce the carbon footprint of our business activities and estate to meet our published targets.
- We will reduce our energy emissions by 8% per year and improve the efficiency of our operations.
- We will improve our resource efficiency and reduce the volume of waste sent to landfill from our estate.
- We will manage and reduce water consumption across the Assembly's estate.
- We will develop our sustainable travel plan and promote sustainable forms of travel to all commuters.
- We will buy recycled or mixed source paper from certified managed forests.
- We will integrate the principles of environmental sustainability within our policies and practices, specifically those relating to the procurement of goods and services.

The policy is made available to all staff of the National Assembly for Wales through our intranet site, and any other interested parties through our website. It is contractually binding on suppliers who use our premises and is made available to anyone on request.

Environmental Management System

The Assembly ensures the mitigation of environmental impacts through the operation of a well established environmental management system (EMS). Audited annually and certified to Level 5 - the highest standard of the Green Dragon Environmental Standard (a Welsh standard broadly equivalent to ISO14001), the system is implemented across the Assembly estate in Cardiff Bay and is co-ordinated and managed through the Sustainability team.

The management system provides a systematic and methodical approach to minimising the impact of our activities and operations on the environment. Through a staged process of planning, implementing and reviewing our response to those impacts, it enables the Assembly to take corrective action and modify our practices, ensuring that environmental management remains a key priority of our daily business.

The EMS also ensures that as an organisation, we address the environmental issues that are relevant and thoroughly incorporated into normal business operations, to continually improve our environmental performance standards, ensure compliance with relevant legislation and the achievement of efficiency gains and resulting financial savings where possible.

The system is expected to deliver continual improvement in environmental performance to meet the requirements of re-certification, and we are proud to have maintained this for the past 4 years at Level 5. To ensure continued certification in the future, we have allocated our internal audits to a specialist third party for improved verification and assurance which also contributes to the development of the system and the evolution of processes and procedures in light of changes in the industry relevant to our operations.

The EMS continues to demand more effort and progress year on year and provides a robust baseline through which we can assess performance, identify priority areas, and manage control requirements in key areas such as energy management, water resource management; travel management; waste management; legislative compliance and measuring and reporting environmental performance.

Management Review

Each year, the EMS is subjected to a full management review to ensure its continued effectiveness as a vehicle for delivering continual environmental improvement and its relevance to the changing business demands of the Assembly. The review is undertaken by the Environmental Steering Group who review the previous year's performance, and consider, comment and collectively agree the objectives and targets for the current year. They also approve the Annual Environmental Report which is then sent to Claire Clancy and The Commissioner for Sustainability for final approval.

This year, a number of key members of the steering group have left the Assembly, and as a result the review was undertaken with the remaining members. The group collectively agreed the following:

- The environmental policy for 2012/13
- The objectives and targets for 2012/13 and action plan for the current year.
- The Annual Environmental report
- The communication programme for engaging occupants in sustainable working.

The group also applauded the progress we have continued to make but noted the impact that the Assembly's new powers together with new Members may have on the travel footprint of the Assembly in the next few years.

Environmental Aspects and Impacts

A key part of understanding the Assembly's impact on the environment is the identification of the direct and indirect ways in which the organisation interacts with the environment. To achieve this, we assess the aspects and impacts of our operations through a risk-assessment framework, and develop operational and management strategies to minimise impacts. For the purposes of maintaining consistency across the organisation, the Assembly's corporate risk matrix framework was adopted to identify the relevant environmental aspects and the significance rating of these aspects.

Significance is calculated by assessing each aspect in relation to their impact (the effect of the risk/benefit actually occurring) and likelihood (the probability of it occurring). This is further enhanced by an additional assessment to consider the degree of control available and any legal requirements applicable. Aspects are determined on their potential impact in normal, unusual and emergency circumstances. From this assessment, a significance score is determined with a maximum possible score of 30 afforded to those with the highest inherent risks.

The resultant impacts were then reviewed and documented. In some cases, the aspect can have a positive effect on the environment (eg use of renewable energy sources) and these are highlighted below.

An overview of the key significant aspects and impacts relevant to the Assembly are described below:

Environmental Aspects and Impacts					
Aspect	Activity	Impact	Significance rating	Control or Influence	Buildings affected
Use of energy	Heating and lighting, powering IT equipment, air conditioning and server rooms.	Resource depletion, air pollution - greenhouse gas emissions by electricity generators, use of renewable energy resources (+ve)	30	C/I	All
Buildings use of water	Catering/Dishwashing, Chillers/Humidifiers, Heating, Showers, Washbasins/WCs, Cleaning/Building cleaning	Greenhouse gas emissions, resource depletion, use of grey water (+ve)	30	C/I	All
Waste Management	Disposal of landfill waste, glass, plastic, composting (food waste), cardboard, tins, fluorescent tubes, furniture, ink toners, replacement fittings.	GHG emissions, resource depletion, use of water, oil, leather, nutrients put back in soil from composting (+ve), reduced use of chemical fertilisers (+ve)	20	C/I	All
Paper use	Printers, office activities, e-mails, copying, publications	Resource depletion, raw materials, 100% recycled paper supply (+ve)	30	C/I	All
Transport	Business travel, official travel, home to office travel, parking facilities.	Noise and air pollution, GHG emissions, water and land pollution, congestion.	30	I	All
Delivery of goods/ materials from supply chain	Fuel consumption, noise and traffic congestion from transport to and from site, spillage from deliveries.	GHG emissions by suppliers/ deliveries, environmental impacts of suppliers, resource depletion, land contamination.	30	I	All

Objectives and Targets

Following the approval of the Carbon Management Plan in 2009, we have gradually coordinated our strategic environmental objectives where possible to align with the target period outlined in the sustainability strategy. To support this strategy, the majority of targets now correspond with the key target date of 2015. Where this is not possible or applicable, a recurring annual target is applied. Each year we measure our progress against these targets and assess performance against the action plan.

The objectives and targets are stretching given the short timescales we have adopted and demonstrate our commitment to leading by example and pushing the boundaries of what a sustainable Assembly can look like. Since 2009, we have continued to make excellent progress in most areas and reap the rewards of innovative investment in our buildings and the responsible actions of our occupants in relation to resource consumption.

Below we have outlined our progress against the targets for 2011-12.

Objectives and Targets				
Aspect	Objective	Target	Progress	Status
GHG Emissions	To minimise the Assembly's carbon dioxide emissions.	Reduce the Assembly's <i>net</i> greenhouse gas emissions by 3% per annum on the 2008/09 baseline.	Total emissions dropped by 1% across the year.	Not achieved
Environmental Improvement	Ensure the highest levels of environmental stewardship are upheld, maintained and externally audited to the standards required for certification.	Maintain Green Dragon Level 5 certification for the whole Cardiff Bay estate.	Following the annual third party audit in March 2012, Level 5 certification was maintained for the Cardiff Bay estate.	Achieved
Use of energy	Reduce energy consumption and greenhouse gas emissions across the estate.	Reduce energy emissions by 40% compared to the 2008/09 baseline by 2015.	Achieved a reduction of 9% over the year equating to a total reduction of 24% compared to the FY2008 baseline.	Achieved
Transport and Travel	Minimise the Assembly's business travel related emissions through the promotion of sustainable travel modes.	Reduce business travel emissions by 15% compared to the 2008/09 baseline by 2015.	Travel emissions increased by 48% on the previous year but we still remain on track due to steep reductions in previous years.	On track
Waste	To minimise the amount of waste produced by the Assembly and maximise recycling and reuse where waste could not be prevented.	Reduce the volume of waste sent to landfill by 5% per annum on the 2010/11 baseline to achieve zero waste to landfill by 2018 in support of the Welsh Government's 'Towards Zero Waste strategy'.	We achieved a 6% drop in the volume of waste sent to landfill, exceeding the target.	Achieved
Water use	Minimise the volume of water consumed and treated across the	Reduce water consumption by 10% by 2015 compared to the 2009/10 baseline.	Water consumption increased by 3.7%	Not completed.

	Assembly.			
Procurement	To minimise the environmental impact of purchasing decisions wherever practicable.	<p>Aim to embed sustainable assessment into procurement processes and project management.</p> <p>Circulate 'supplier sustainability questionnaires' to top 20 suppliers (by spend) and analyse results to determine key areas of focus for engaging with suppliers.</p>	Part of a longer term project. These targets will be re-evaluated in the coming year.	Not completed.
Training and Awareness	Raise awareness of the importance of sustainability throughout the Assembly and how enhanced ownership and engagement of the environmental agenda can assist with achieving our long term targets.	<p>Create a communication strategy for encouraging all occupants to 'work sustainably' and embed sustainability in work.</p> <p>Improve transparency of our sustainability performance through the provision of information on the Assembly's website.</p>	<p>The roll-out of the strategy is in progress.</p> <p>New sustainability internet pages are now live containing comprehensive information on our sustainability strategy and performance.</p>	<p>On track</p> <p>Achieved</p>
Office Activities	Ensure all paper used for internal and external printing and copying is sourced from sustainable sources from legally managed forests.	<p>Ensure 95% of all paper used by the Assembly for copying and printing is sourced from legal and sustainable sources.</p> <p>Develop a sustainable paper procurement policy by October 2011.</p>	<p>All paper stocks continue to be sourced from legal and sustainable sources.</p> <p>The paper policy supports the Environmental policy.</p>	<p>Achieved</p> <p>Achieved</p>
Legal Compliance	Ensure all legal aspects of the Assembly's operations operate according to legislative requirements.	Ensure we receive zero notices or breaches of environmental legislation.	No breaches were received.	Achieved

The Year Ahead

The challenging objectives and targets we have set reflect our drive to succeed in delivering environmental, social and economic benefits to the Assembly. We will continue to be open minded in our approach to change, consider the wider implications of our decisions in light of our business needs, and draw on the collective power of technology, our occupants enthusiasm and dedication to sustainable working and channel our efforts towards 2015 and beyond.

The objectives and targets outlined below are broadly in line with the previous year and any changes reflect an assessment of our current progress as at 31 March 2012.

Aspect	Objective	Target	Timeline
GHG Emissions	To minimise the Assembly's carbon dioxide emissions.	Reduce the Assembly's <i>net</i> greenhouse gas emissions by 3% per annum on the 2008/09 baseline.	March 2013
Environmental Improvement	Ensure the highest levels of environmental stewardship are upheld, maintained and externally audited to the standards required for certification.	Maintain Green Dragon Level 5 certification for the whole Cardiff Bay estate.	March 2013
Use of energy	Reduce energy consumption and greenhouse gas emissions across the estate.	Reduce energy emissions by 40% compared to the 2008/09 baseline by 2015.	FY2015
Transport and Travel	Minimise the Assembly's business travel related emissions through the promotion of sustainable travel modes.	Reduce business travel emissions by 15% compared to the 2008/09 baseline by 2015.	FY2015
Waste	To minimise the amount of waste produced by the Assembly and maximise recycling and reuse where waste could not be prevented.	Reduce the volume of waste sent to landfill by 5% per annum on the 2010/11 baseline to achieve zero waste to landfill by 2018 in support of the Welsh Government's 'Towards Zero Waste strategy'. Reduce the volume of waste arising by 1.3% per annum in accordance with the Welsh Government Zero Waste Strategy.	FY2018
Water use	Minimise the volume of water consumed and treated across the Assembly.	Reduce water consumption by 10% by 2015 compared to the 2009/10 baseline.	FY2015

Supply Chain	To minimise the environmental impact of purchasing decisions wherever practicable.	Start a Supplier Engagement programme to provide assurance on the environmental standards of high spend suppliers.	March 2013
Communication and Engagement	Raise awareness of the importance of sustainability throughout the Assembly and how enhanced ownership and engagement of the environmental agenda can assist with achieving our long term targets.	Create an occupant communication strategy to engage and involve all building occupants in 'working sustainably'.	March 2013
Office Activities	Ensure all paper used for internal and external printing and copying is sourced from sustainable sources from legally managed forests.	Ensure 95% of all paper used by the Assembly for copying and printing is sourced from legal and sustainable sources.	March 2013
Legal Compliance	Ensure all legal aspects of the Assembly's operations operate according to legislative requirements.	Ensure we receive zero notices or breaches of environmental legislation.	March 2013

Regulatory Compliance

We take our legal obligations very seriously and understand the importance of complying with all relevant environmental legislation and regulation. We understand we have a responsibility and duty of care with regard to the disposal of waste, and make sure we keep abreast of any new legislation as it applies to our business and apply it as required to ensure compliance. To help with this, we manage our legislation register through ELUS (Environmental Legislation Update Service), a portal that provides a legislation interpretation service, highlights new legislation and keeps us informed of any updates relevant to the Assembly.

This is further supported by a monthly newsletter of new and changing legislation or regulations applicable to our organisation.

Throughout 2011/12, there were no breaches of environmental legislation.

Communication and Engagement

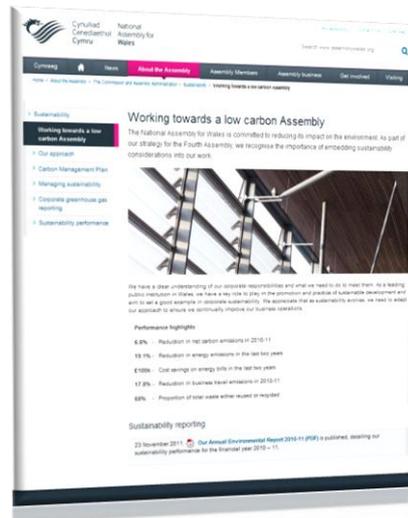
We fully understand the importance of engaging our workforce in 'thinking and working' sustainably and the influence that they as a collective group can have on the performance of our buildings. The continued upgrade and improvement to the building fabric go hand in hand with the communication activities that will inform and inspire the workforce and ultimately operational sustainability, attitudes to change and the ability to embrace new ways of working will be the key to our long term success in maintaining a high efficiency, low carbon estate.

We currently undertake a range of communication activities which include:

- A dedicated suite of Sustainability pages on the National Assembly for Wales website detailing performance highlights and our policies and strategies to sustainable development.

http://www.assemblywales.org/abthome/about_uscommission_assembly_administratio n/sustainability.htm

- A dedicated intranet site for Sustainability including the full environmental management system.
- Targeted inductions on sustainability for all new starters.
- Press releases and publication of the Assembly's environmental achievements and initiatives.
- Publication of an Annual Environmental Report and a link to the full report on the Assembly website.
- Information and involvement in various environmental events, such as Energy Saving Week, Earth Hour and World Environment Day.



Environmental Performance

Energy

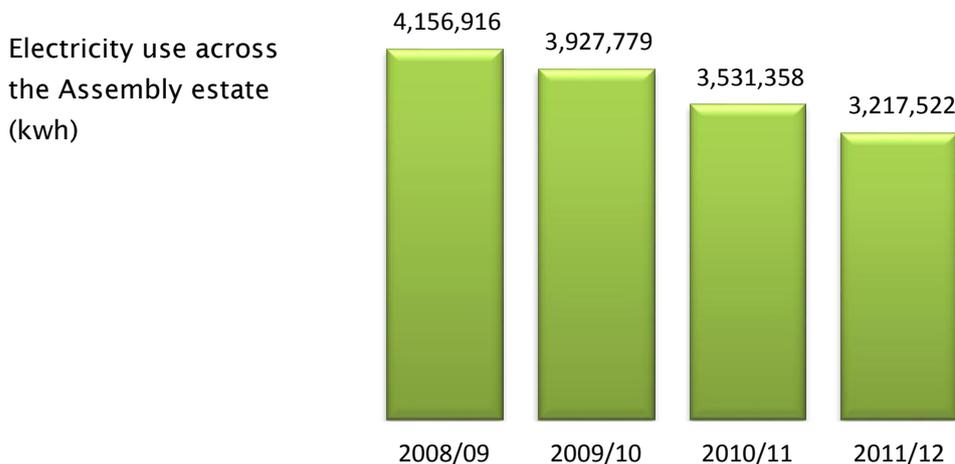
We use grid electricity, natural gas and biomass to power our buildings. Of this mix, electricity consumption accounts for 61.5% of the total, gas 22.3% and biomass the remaining 16.2%. Continual reduction is pivotal to achieving our long term goal and in essence, reducing fossil fuel consumption from energy forms the cornerstone of our strategy to decarbonise the Assembly estate.

Over the year, we have continued to implement a proactive energy management programme targeted largely towards reducing energy consumption. This included introducing a 'free cooling' system for our ground floor server room, optimising operation schedules for plant equipment, switching off radiators in transition areas around Tŷ Hywel, increasing the operating temperature of the server rooms to reduce required cooling and the continued roll out of motion sensor lighting.

Electricity

Our actions are heavily focussed on reducing our electricity consumption and we are pleased to report that we have reduced our electricity emissions every year for the last five years. Tŷ Hywel continues to be our main focus accounting for 70% of our total electricity consumption. This year, electricity consumption across the estate amounted to 3,217,522kWh, equivalent to 1,766 tonnes of CO₂e. This is a reduction of 7.4% in emissions on last year's figure.

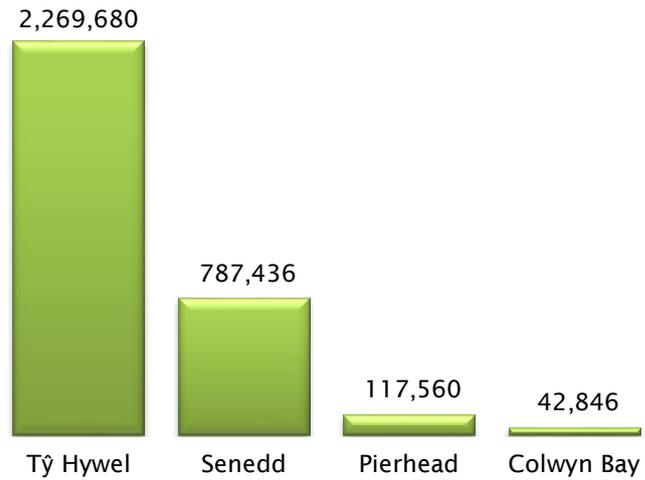
Figure 1.



The proportionate distribution of electricity consumed across the estate over the year continues to weigh heavily towards Tŷ Hywel as the most energy hungry building. Given the large floor area of the building and the occupancy rate, its electricity consumption rate amounts to 67% of the total electricity emissions generated.

Figure 2.

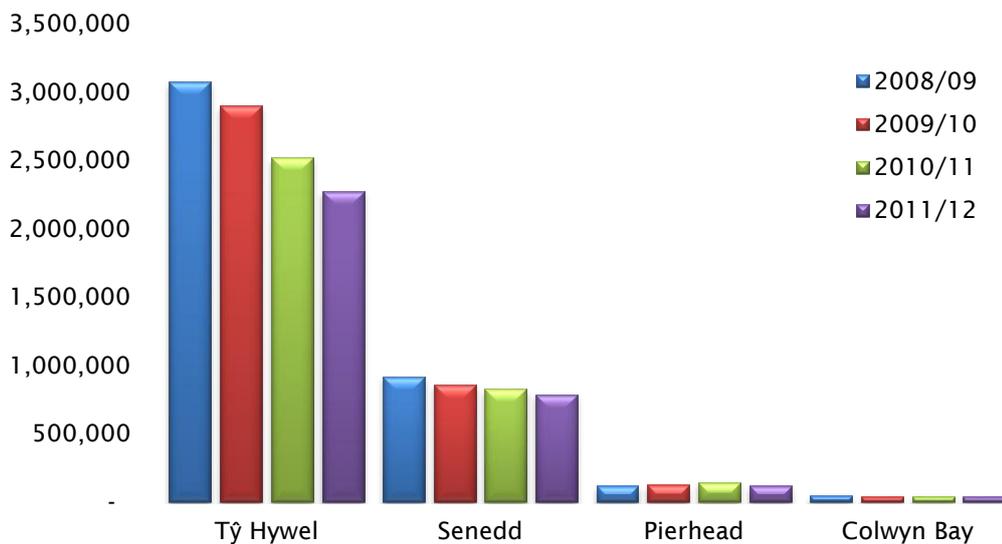
Electricity use across the Assembly buildings 2011/12 (kwh)



Electricity consumption across our buildings continues to drop consistently in line with previous years. The greatest reductions are evident in Tŷ Hywel reflecting the intensive energy management programme that has contributed to this success. The Senedd (being of relatively low energy intensity) has shown steady signs of reduction over the past four years, whilst the Pierhead has fluctuated a little and requires more attention in the coming year. Colwyn Bay represents a minor proportion of total consumption and remains relatively stable.

Figure 3.

Annual electricity use across our buildings (kwh)

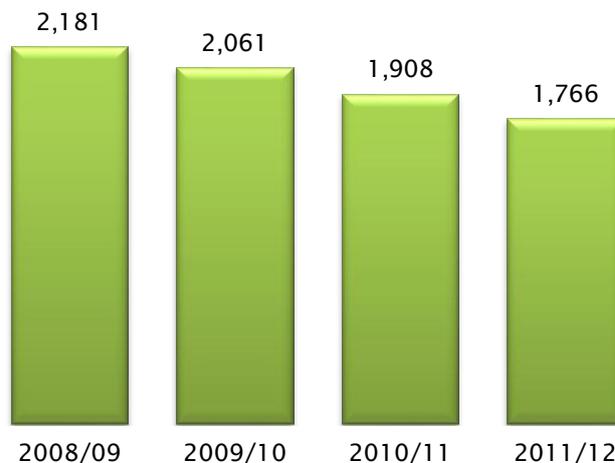


Electricity Footprint

Electricity represents the most carbon intensive fuel of the natural resources we utilise for powering our buildings. In the last four years, we have reduced our emissions by 19% including a reduction of 7.4% in the last year alone. Our energy emissions reduction target (inclusive of gas and electricity emissions) of 40% by 2015 challenges us to reduce our energy emissions by 8% per year (cumulatively). Of this figure approximately 6% is apportioned to electricity use, therefore we are still well on target to achieve this goal.

Figure 4.

Electricity emissions
across the estate
(tCO₂e)*



*where applicable, this includes electricity consumed for operation and air conditioning in offsite server farm.

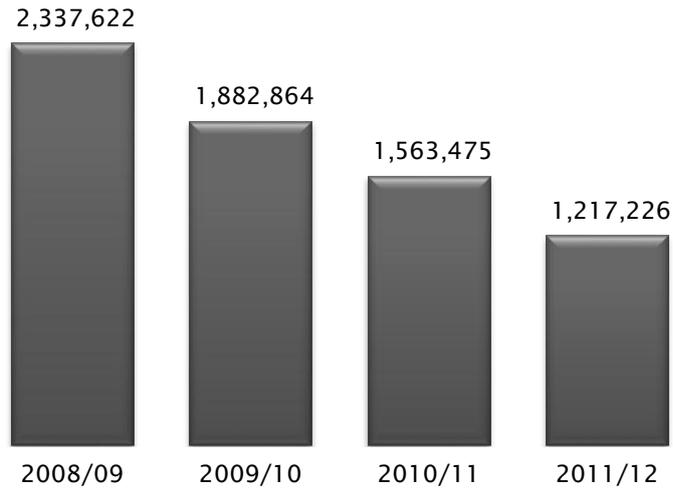
Gas

The unpredictability of the British weather in winter is proving challenging in terms of achieving optimised heating for our buildings. Following on from the 'coldest winter in 30 years' in 2010 with temperatures averaging just 1.5°C (Met Office) in which gas use increased for that spell; 2011 proved to be very different with a mild winter followed by cold spells in January and February. Despite these fluctuations, we have still managed to actively reduce our gas consumption across the estate through a carefully controlled programme schedule aimed at ensuring our buildings are adequately heated at the peak times of the day.

Since 2008, we have reduced our gas consumption by an impressive 48% illustrating the success of the ongoing Facilities improvement programme, lowering set points, boiler optimisation and Building Management System schedules. In the last year, we have achieved a reduction of 22% in consumption (largely due to the cold winter in the previous year) and continue to seek out ways of reducing demand for natural gas.

Figure 5.

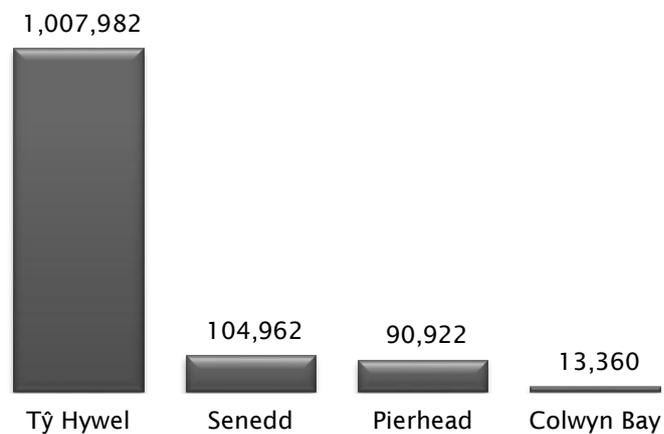
Natural gas consumption across the estate (kWh)



Not surprisingly, natural gas use tends to mirror electricity in terms of proportionate distribution. Tŷ Hywel accounts for 83% of the total, the Senedd 9%, Pierhead 7.5% and Colwyn Bay 1.1%. The Senedd benefits from heating from renewable sources (biomass and ground source heat pumps) which reduce the demand for natural gas supply. The Pierhead, although open 7 days a week only requires heating in certain areas of the building and the thick terracotta walls provide enhanced insulation.

Figure 6.

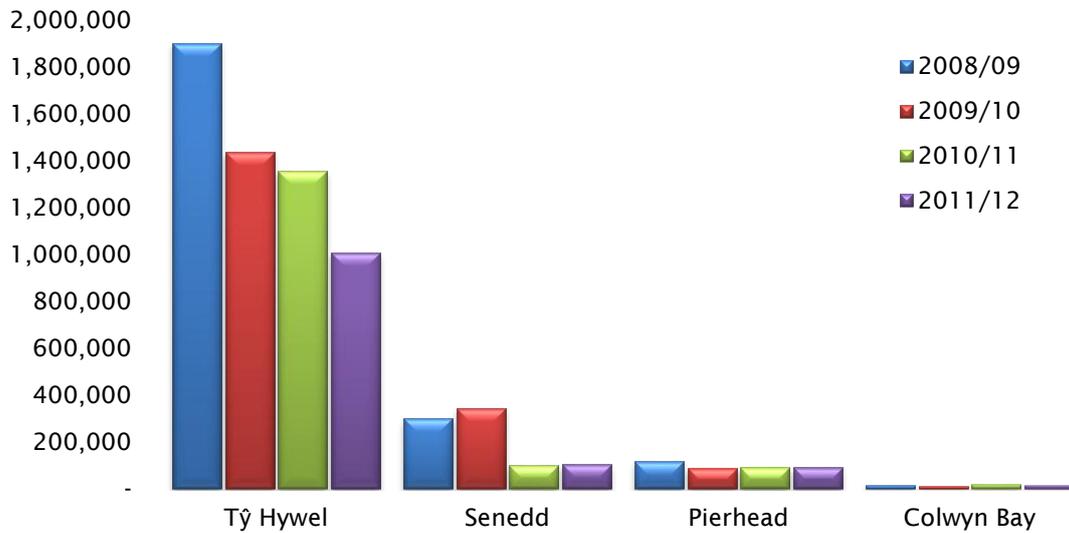
Natural gas use across our buildings 2011/12 (kWh)



Trends in overall gas consumption in recent years illustrate an impressive downward movement that continues to show no signs of slowing, particularly in relation to Tŷ Hywel's consumption. Following significant reductions in the early years, we have continued to achieve impressive reductions despite some challenging weather conditions over the recent two years. Since 2008, we have achieved an overall reduction of 48% in our gas consumption across the estate. Over the same period, Tŷ Hywel's consumption has dropped by 47% and in the last year despite the Senedd and Pierhead showing marginal increases in consumption (5.9% and 1.5% respectively), proportional consumption is low compared to Tŷ Hywel.

Figure 7.

Annual natural gas use across our buildings (kwh)



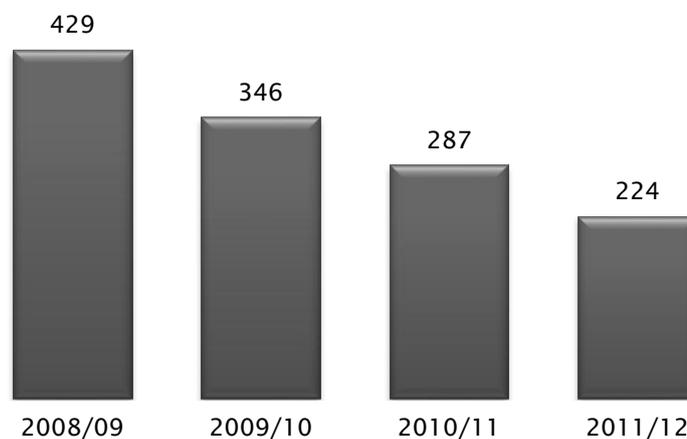
Gas Footprint

Through strategic scheduling, careful monitoring and improved awareness among our workforce, we have managed to minimise natural gas resource use whilst still achieving comfortable working conditions enabling us to drive down our emissions. As a key target within our Carbon Management Plan, we are currently exceeding targets and continue to operate robust systems even in light of difficult weather conditions.

In the last four years, we have reduced our gas emissions by 48% including a reduction of 19% in the last year alone. The energy reduction target of 40% by 2015 challenges us to reduce gas emissions by 2% per year and in the last year alone, we exceeded this by 16%.

Figure 8.

Natural gas emissions
across the estate
(tCO₂e)

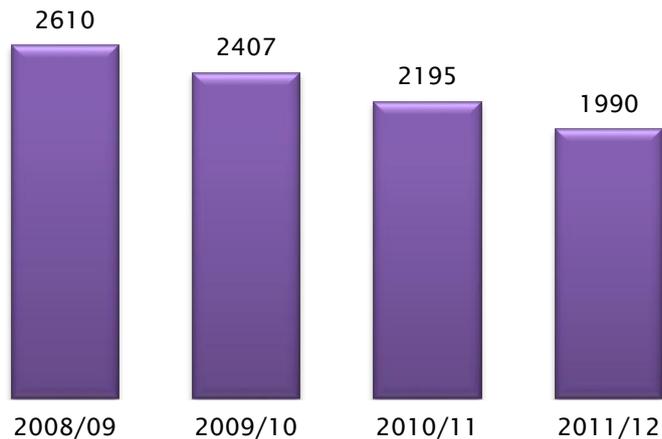


Combined Energy Footprint (electricity and gas)

In relation to our 40% reduction target, combined emissions reductions for energy are illustrated below. Based on the proportion of electricity consumed in comparison to gas, overall emissions reductions since 2008 amount to 24%. Over the last year, a reduction of 9% was achieved exceeding the annual reduction target of 8% ensuring we remain on target for 2015.

Figure 9.

Combined energy emissions across the estate (tCO₂e)



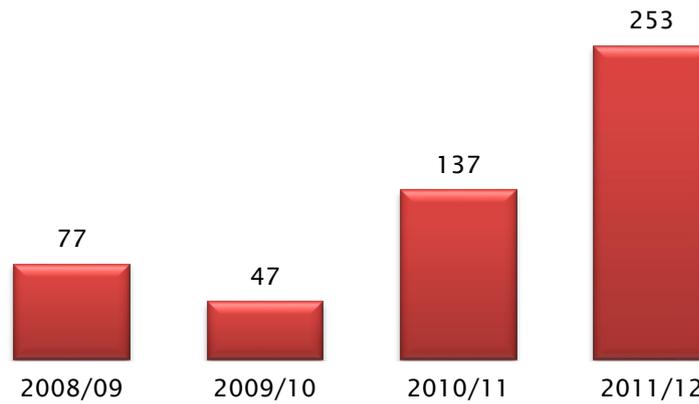
Biomass

During construction, the Senedd was installed with a 360kw dual fuel, modulating biomass boiler as part of the BREAAAM design brief. Since completion, the boiler has used wood chips and pellets to heat the building and largely displaces the need for natural gas consumption unless temperatures drop significantly and demand is too great. Since 2008, the boiler has burnt 128 tonnes of wood chips/pellets each year, and this has been increasing as the maintenance, reliability and supply of fuel for the boiler has improved.

All of our timber is sourced in accordance with the guidelines set out in the UK Government's Timber Procurement Advice note 2009. The boiler currently runs on wood chip sustainably sourced from a local supplier based in Monmouthshire, the first company in Wales to be quality assurance accredited by the Woodsure scheme, backed by the Forestry Commission. Deliveries are also infrequent as the biomass store is an adequate size to store 5 tonnes of wood chips which further reduces emissions from travel.

Figure 10.

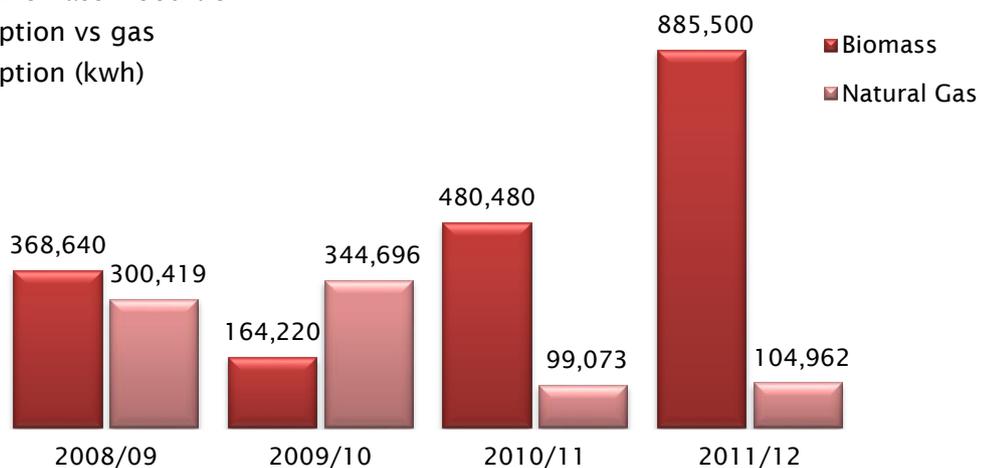
Senedd Biomass
woodfuel
consumption
(tonnes)



There has been an 85% increase in the quantity of biomass fuel consumed since last year. This is largely due to the fact that the boiler reliability has improved and heating demand has increased. In previous years, gas use has been higher as a result of supply issues preventing continual operation of the boiler or operational problems during the winter months of the year when the boiler is most in demand, resulting in natural gas use as a back up to ensure comfortable working temperatures are maintained. The graph below illustrates this point more clearly. Encouragingly, an increase in biomass consumption offsets the emissions generated by gas use and minimising fossil fuel consumption is central to achieving our reduction targets.

Figure 11.

Senedd Biomass woodfuel
consumption vs gas
consumption (kwh)



Over the last year, we have been successful in meeting almost all the heating demands of the Senedd through biomass fuel alone. Of the total heating demand, biomass accounted for 89.4%. This is an increase of 6.4% on the proportionate amount in the previous year. The increase in both biomass and gas is attributable to an increase in events, out of hours heating and additional use of the Senedd building for filming and broadcasting which result in longer heating periods. There is also a direct correlation between the increase in biomass and the small increase in gas use (6% on the previous year), as it is used to fire up the boiler and will fire up if the biomass boiler can't meet the heating demands of the building. An overall increase in heating demand was also

required as a result of colder than average conditions in February and March. The average temperature for the three months February 2012 to April 2012 was 6.8°C, 1.5 degrees lower than the same period a year earlier (www.decc.gov.uk).

Biomass Footprint

Although biomass fuel is classed as a renewable energy, it does still result in direct emissions generated during the combustion phase of the process. However, as emissions are calculated using a life-cycle impact methodology, the direct emissions that result from combustion fall outside of Scopes 1-3 for reporting purposes as the CO₂ is absorbed in the growth of the feedstock from which the biofuel is produced (www.defra.gov.uk).

For the purposes of this report, the total GHG emissions emitted during combustion are outlined below. Consistent with increases in consumption, emissions have increased by 84% over the last year. CO₂ emission factors are based on information from the BIOMASS Energy Centre (BEC).

Figure 12.

Biomass emissions
(tCO₂e)
at point of
combustion



Biomass – Positive Impacts

The Senedd was designed and fitted with a biomass boiler to act as the primary heating fuel for the building from the outset. As such, this largely displaces the gas that would otherwise be required (and the resultant emissions) with a renewable energy source. The emissions that result from the combustion of the fuel are re-absorbed during the growth phase thereby rendering it as a low carbon fuel. The savings in emissions that result from this displacement are difficult to calculate as the boiler was not retrofitted, however studies have shown that burning biomass represents a tenth of the emissions from burning natural gas.

Waste

We have a challenging goal of achieving zero waste to landfill by 2018 against a 2010/11 baseline. Despite improvements in data collection, we are still experiencing issues with obtaining reliable, auditable data on our waste disposal, however we continue to make progress in providing the best possible services for ensuring we maximise recycling and reuse where possible across our estate.

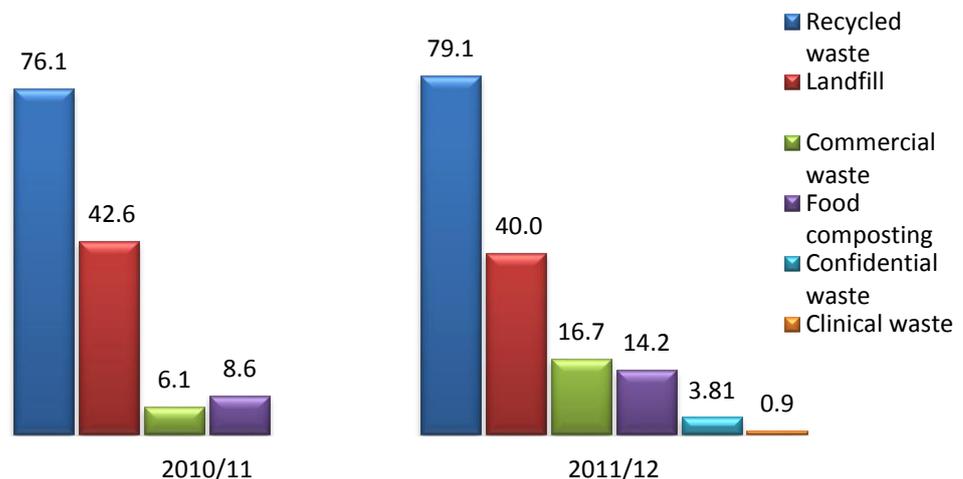
We measure and report our waste in two ways:

- Disposed to landfill
- Diverted from landfill through a combination of recycling, reuse, and composting.

In 2011/12, we generated 155 tonnes of waste and recycling, up by 16% on the previous year. This is largely due to improved data accounting for more waste streams but also increases in waste production.

Figure 13.

Waste production (tonnes)

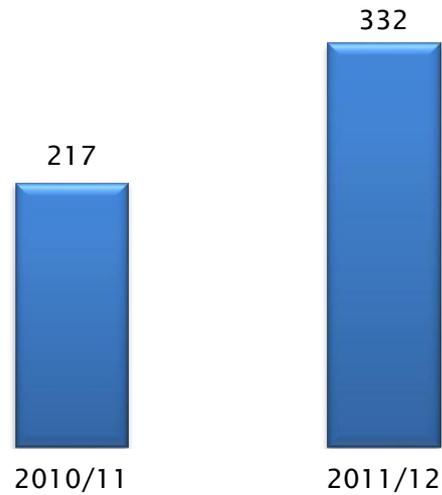


Total recycling rates (inclusive of commercial waste, food waste, confidential waste, cooking oil and toners) have increased by 25% on last year amounting to 73% of the total waste generated and landfilled waste has dropped by 6% exceeding our annual target of reducing waste to landfill by 5% per year. This demonstrates an improvement in recycling awareness and a small reduction in the volume of non-recyclable materials consumed on the estate. The volume of food composted has increased by 65% illustrating an improvement in consumer behaviour as far as disposal and accountability for the waste is concerned. The increase in commercial waste on last year is a result of improved data capture as this data was not being recorded previously. The same applies to confidential and clinical waste.

Waste Footprint

Figure 14.

Waste emissions
(tCO₂e)



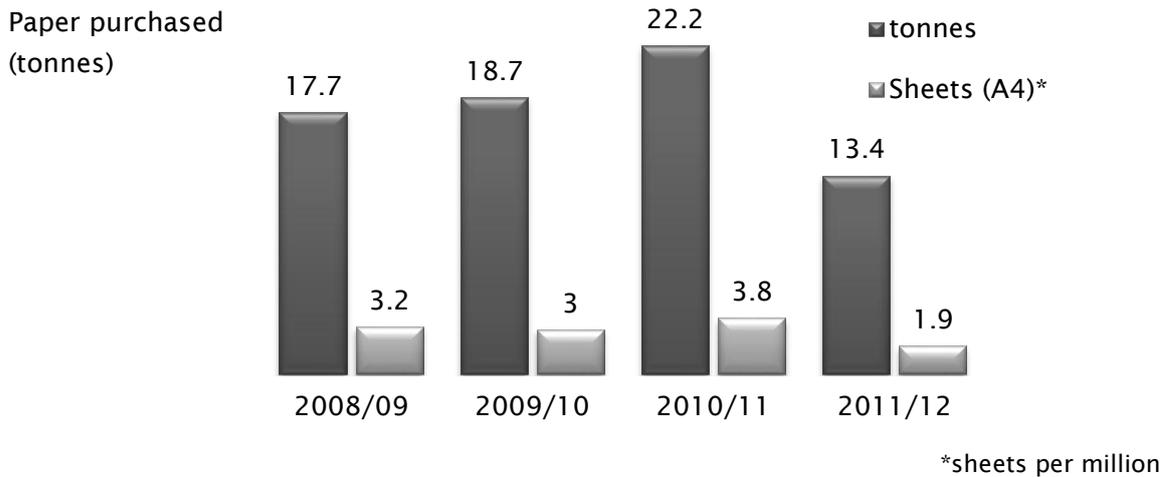
Consistent with the explanation above, overall waste and recycling emissions have increased on last year by 53% as a result of a greater volume of recorded waste disposal and the resultant emissions. It is hoped that future years data will enable us to make a more accurate comparison of our waste profile now all data is being recorded.

In line with previous years, the Assembly continues to collect and return empty ink cartridges from all its printers to the supplier for re-use. This amounts to around 0.7 tonnes a year. In addition, all cooking oil used in the onsite catering function is bottled up, stored and then collected by a local farm and converted into bio-diesel for use in agricultural machinery. This equates to around 3000 litres a year.

Paper

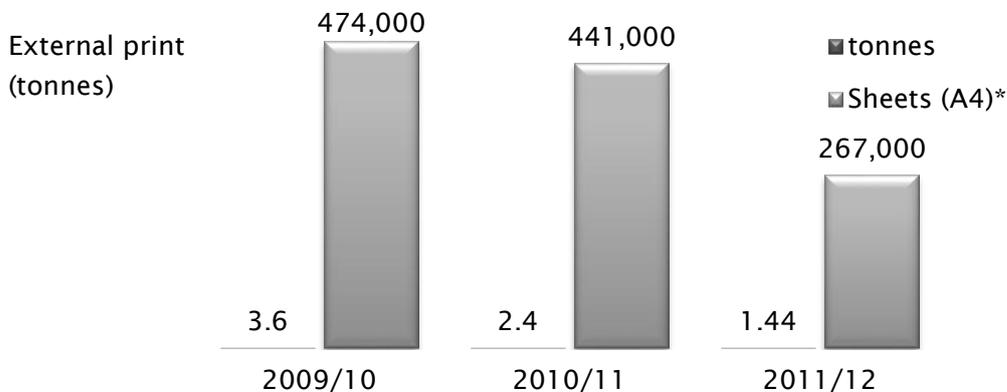
The National Assembly operates an onsite print unit that considerably reduces the costs associated with outsourcing print runs of small or large volumes and enables us to provide a tailored service to our Members. The Assembly Commission as a largely administrative organisation uses a large volume of paper annually in the exercise of its functions. In 2011/12, paper consumption dropped by 40% on the previous year. This was a natural consequence following the elections and the referendum as demand dropped and the start of the new Assembly followed.

Figure 15.



A small proportion of our print is outsourced as and when required for certain publication types that are not technically achievable inhouse. During the 2011/2012 financial year the National Assembly for Wales commissioned external print companies to print 12 separate print jobs. Each job was printed using Think White, a paper stock that is FSC certified, 50% recycled and carbon neutral. This amounted to 1.44 tonnes of paper, a reduction of 40% on the previous year. The number of sheets also dropped by 40%.

Figure 16.



Water

In comparison to the other significant environmental impacts of the Assembly operation, water does not represent a significant operating cost or a high carbon cost. However, from a conservation standpoint, it constitutes a natural resource under increasing pressure from climate change, warmer, drier winters and an increasing population across the country. Despite being one of the 'water rich' nations in the British Isles, the importance of continued water supply is vital to our operations and services and one we should not take for granted.

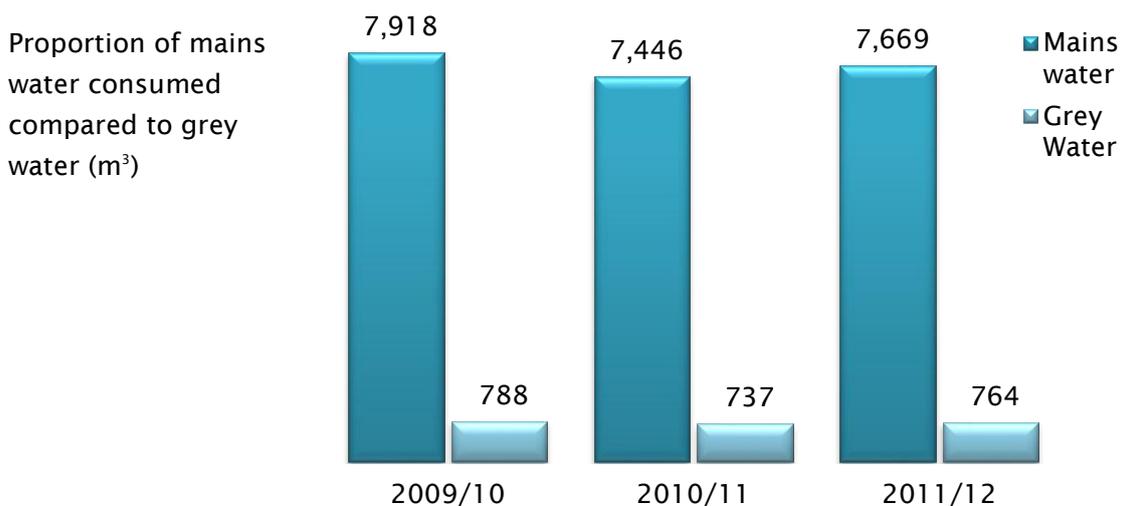
We measure the use of water in two ways:

- Mains water supplied and treated from our estate buildings;
- Grey water used and treated in the Senedd building

Over the past few years, we have made gradual improvements to our buildings in an effort to improve water efficiency (push taps, improved flush and drainage systems in our toilets, low flow showers) and reducing use of potable water through maximising our grey water supplies in the Senedd for flushing toilets, window cleaning and jet washing the exterior of the building.

We have only managed to capture reliable data on water consumption since 2009. In 2011, our total water consumption increased by 3.7% to 8,416m³ (8.5million litres) on the previous year (this includes the grey water). This represents an increase to 11.4m³ per FTE. The main reason for the increase results from jet washing the brickwork of Tŷ Hywel following an upgrade of the existing brickwork. This counteracts the improvements that have been made to our facilities such as installing push taps, and ultimately makes our reduction target for 2015 of reducing consumption by 10% more challenging with a stronger focus on efficiency required next year.

Figure 17.



Consumption of grey water has remained relatively consistent over the years with only a 3.6% increase in 2011/12. Usually, supply far outstrips demand given the relatively narrow scope of use for rainwater and we are keen to explore the viability of piping the

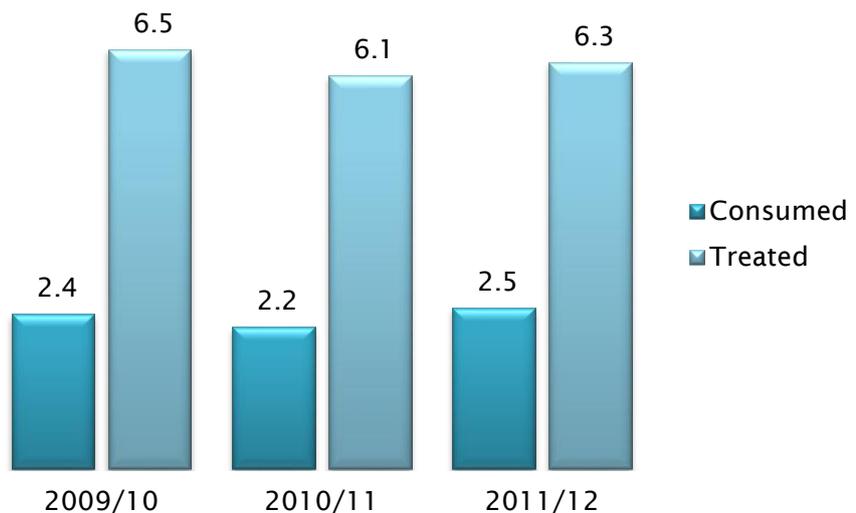
rainwater to our office block (a high demand building) to reduce potable water consumption. As it stands, 91% of our total consumption is sourced from mains supply and this represents an operating cost, a carbon cost and a treatment cost whereas rainwater harvesting provides a low cost, low carbon solution to harnessing the use of natural resources without the need for mains piping and expensive infrastructure. It also helps to minimise surface water run-off around our buildings, reduces the demand on drainage and the likelihood of flooding.

Water Footprint

Emissions attributable to the use and treatment of water are calculated using a lifecycle impact assessment which calculates the complete impact from abstraction to supply to treatment of water with the treatment process contributing the greatest environmental impact. Emissions profiles are calculated based on the total water supply for the estate, including harvested rainwater as this is drained and treated in the same way as mains water.

Figure 18.

Water emissions
(tCO₂e)
from consumption
and treatment
processes.

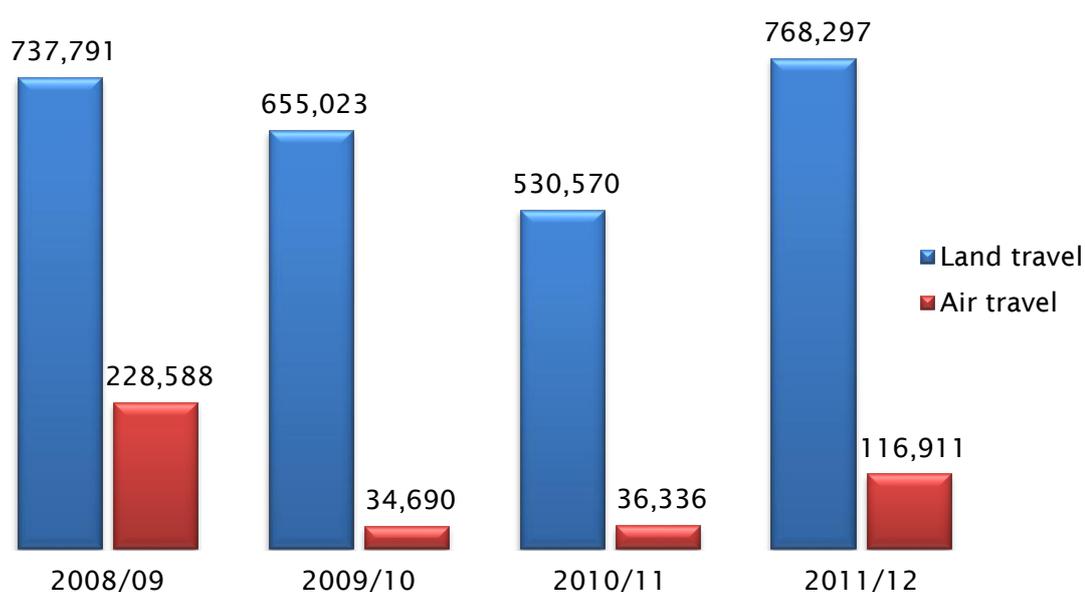


Business Travel

Given the nature of our business and our aim to support Members in their functions all across Wales and the wider world, business travel will always be a necessary part of the way we work. Nevertheless, we continue to challenge ourselves on the need, frequency and mode of travel used for all journeys. Our strategy for reducing travel emissions involves both reducing the number of journeys our occupants make and also looking for less carbon-intensive ways of travelling. We encourage our occupants to consider the travel hierarchy before they travel to ensure they choose the most effective method of travel with regard to cost, emissions and productive time. We also work to reduce unnecessary business travel, through the promotion of technological alternatives like video conferencing and teleconferencing. We understand that business travel is a complex issue as it's important for ensuring the efficient delivery of our services which is fundamental to the Assembly's core business, but we also appreciate it harms the environment and comes at a cost, so we are trying to strike the right balance.

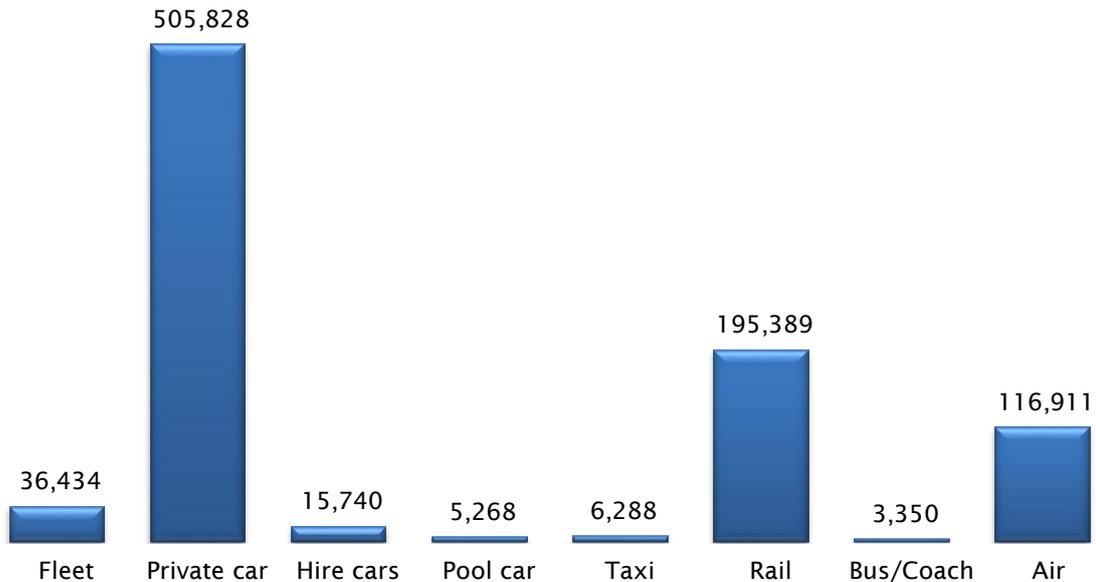
In 2011/12, business miles travelled amounted to 885,208, an increase of 56% on the previous year. This was in part a result of increased private car use as a consequence of the election activity, the onset of the Forth Assembly and the result of the Referendum in which we were afforded more powers. Air travel has also increased on last year by 221% and we have captured a full travel footprint for all occupants for the first time this year which increased overall emissions as a result. Of this total, 87% was attributable to land travel, an increase of 45% on 2010/11. Following a steep decline since 2008/09, air travel has shown an increase against previous years as a result of a few long haul corporate visits rather than an increasing frequency in air travel.

Figure 19: Annual Business Travel miles



In terms of travel modes, private car use continues to contribute the greatest proportion of total miles travelled with a 57% stake. However, it is encouraging to see that attitudes to public transport have improved with rail travel amounting to the second biggest contributor with a 22% stake, an increase of 90% on the previous year. Air travel was significant this year unlike previous years and the few fleet vehicles we own also represent a 4% stake. Use of hire cars and the pool car remain low in comparison.

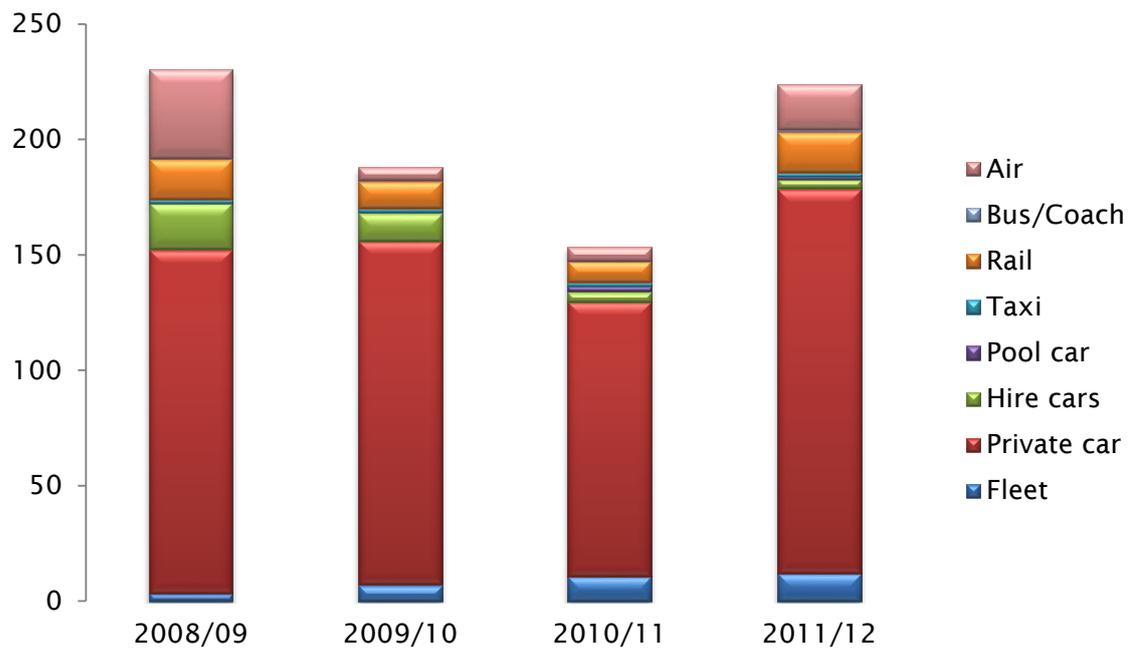
Figure 20: Business travel by mode (miles travelled) - 2011/12



Travel Footprint

Carbon emissions associated with business travel amounted to 212 tonnes of CO₂e in 2011/12. This represents a 48% increase on the previous year resulting from the capture of comprehensive travel data for the first time, a rise in air travel and a rise in private car use pursuant to changing business demands. As with previous years, travel is weighted heavily towards a few modes of transport, namely, cars, rail and air. Encouragingly, there is a modal shift occurring towards rail travel which constituted 8% of the total travel emissions a rise of 1.5% on 2010/11, however cars continue to be used extensively for business. This is not surprising given the nature of our organisation and the geographic dispersion of our Members in particular. In accordance with miles travelled, the majority of travel emissions are attributable to private car use and air travel (88%) with the lowest emissions arising from the less frequently used modes of transport - bus/coach, taxis and the low emission pool car.

Figure 21: Annual carbon emissions by mode (tCO₂e)



Carbon Footprint

Organisations and businesses have a central role to play in addressing climate change accounting for some 40% of the UK's total emissions. The Assembly's primary focus includes energy conservation and use of high-efficiency technologies such as generation of heat through the use of bio-fuels and other renewable energy sources. We strive to demonstrate robust disclosure of GHG emissions and hope to extend this reporting to include our supply chain in future years.

Through our approved Carbon Management Strategy and our duty under the Government of Wales Act 2006 to have due regard to sustainability in all our functions, we are committed to ensuring our estate operates efficiently and we use resources responsibly. In the delivery of our services, we will always endeavour to make the right choices in terms of cost and carbon to ensure we continue to meet the expectations of our stakeholders. Our carbon management strategy seeks to achieve a low carbon Assembly that is fit for the future, resilient to climate change and has minimal environmental impact. A review of progress against the Carbon Management Strategy is published on our website every year in December.

The National Assembly for Wales corporate carbon footprint for the 12 months between April 2011 and March 2012 amounted to 2,612 tonnes CO₂e equating to:

Tonnes of CO ₂ e	2011/12	2010/11	2009/10	2008/09
Total Scope 1 emissions:	295	357	353	432
Total Scope 2 emissions:	1,766	1,908	2,061	2,181
Total Scope 3 emissions:	551	368	279	227
Total outside scopes emissions:	313	170	58	129
Total Gross Emissions:	2,925	2,803	2,751	2,969
Total Net Emissions:	2,612	2,633	2,693	2,840

This represents a 1% reduction compared to 2010/11, and an absolute reduction of 8% compared to the baseline year, 2008/09. This includes emissions from Assembly operated facilities and vehicles. The Assembly operates out of four buildings, three in Cardiff Bay and one in Colwyn Bay, North Wales. For energy and water, the carbon footprint is calculated to reflect the independent GHG emissions associated with the usage and activities of each building and this contributes to the combined footprint indicated above.

The Assembly's carbon emissions can be mainly attributed to the use of purchased electricity, natural gas, diesel, petrol and waste. We monitor and report on emissions sources from Scopes 1-3 that are applicable to our operations and for the first time this year, include business travel emissions from all occupants across the estate.

Energy use represents one of the Assembly's most carbon intensive impacts accounting for approximately 78% of the Assembly's total GHG emissions from operations, so energy conservation forms the cornerstone of our emissions reduction program.

In 2011/12, 89% of the heating fuel required for the Senedd was from renewable sources, an increase of 7% on 2010. We have pursued a number of initiatives, particularly in relation to energy efficiency opportunities that will deliver reductions in greenhouse gas emissions to meet our targets in our Carbon Management Plan.

The carbon footprint has been calculated using Defra's 2011 guidance for measuring and reporting a carbon footprint together with the 2011 data set of Defra conversion factors. This is closely aligned with the Greenhouse Gas Protocol published by the World Resources Institute (WRI) and other international standards such as ISO 14064. In accordance with the Kyoto Protocol and improvements in Defra's reporting methodologies, it represents a detailed profile of the direct carbon dioxide equivalent emissions (CO₂, NO_x, CH₄) associated with the activities and processes over which we have direct operational control.

Our emissions are reported by identifying and categorising activities into three scopes:

- Scope 1 - owned transport and refrigerants released from the operation of air conditioning units and chillers.
- Scope 2 - purchased electricity.
- Scope 3 - business travel (all staff, Members and Members staff); waste and water.
- Outside Scopes - biomass (wood chips) consumption in the Senedd building.

Reporting Boundary

We report our emissions based on a financial control approach which includes those activities we can directly or indirectly control or influence. This more or less includes a comprehensive footprint of the impacts across Scopes 1-3 (together with biomass which sits outside those scopes) associated with our estate. The boundaries for our corporate footprint are illustrated below.

Table 1: Reporting Boundary

Emission Type	Carbon Source	Emissions included in footprint	Date source	GHG Scope
Fuel Combustion	Gas	YES	Primary	1
Owned Transport	Diesel/Petrol	YES	Primary	1
Process/Fugitive Emissions	AC units/Chillers	YES	Primary	1
Purchased Electricity	Electricity transport and use emissions	YES	Primary	2
Waste Disposal	Waste and Landfill emissions	YES	Primary	3
Business Travel	Depends on mode of travel	YES	Primary	3
Water	Transfer, use and treatment emissions	YES	Primary	3
Occupant Commuting	Depends on mode of travel	NO	Secondary	3
Purchased Materials	Raw materials used in goods	NO	Secondary	3
	Paper purchased	YES	Primary	3
Supply chain emissions	Depends on product/service	NO	Secondary	3
Biomass	Burning of wood chips	YES	Primary	Outside scopes

Carbon Footprint Data

All data is collected, analysed and reported in correspondence with the financial year – 1 April – 31 March. For consistency, the data in this report supports the headline data found in the Assembly’s Annual Report and also the data in the Assembly’s Carbon Management Plan.

All buildings are either owned or leased by us (in the case of leased buildings, we largely occupy, operate and maintain them) and all data is sourced directly from our own representatives or contractors. The only exception is in reference to the Colwyn Bay office, where despite being the primary tenant, a lack of sub-metering prevents accurate consumption of utilities across all four tenants.

Currently, only direct emissions are reported for each source. All data conversions are calculated in kg CO₂e and then converted into tonnes for reporting purposes. Data accuracy has improved year on year and very few assumptions or estimations are now made which in hand reduces the scope for error. However, certain limitations exist such as the continued manual recording of data leading to risk of human error and dissected accountability for operational data across the organisation making it difficult to obtain timely data at times and ensure quality control.

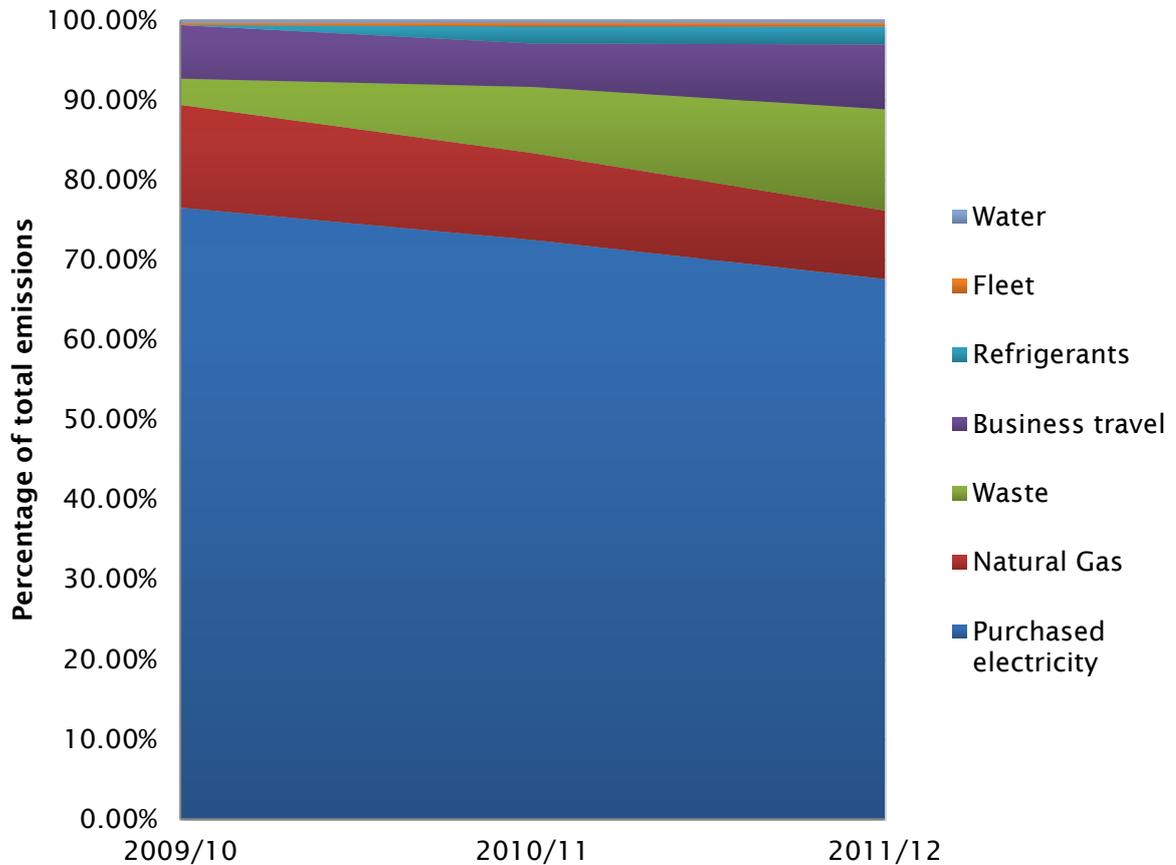
Emission Trends

In the financial year 2011/12, the Assembly’s total net GHG emissions amounted to 2,612 tonnes of carbon dioxide equivalent (tCO₂e), which is a reduction of 1% against the previous year. In order of the size of contribution, the primary sources of emissions were:

- Purchased electricity from the grid (68%)
- Natural gas consumption predominantly for heating (8.6%)
- Waste and recycling (12%)
- Business travel (8%)

Figure 2 below illustrates the trends in proportional percentage contributions of these sources over the last three years. In this period, total net emissions have decreased from 2693 tCO₂e to 2612 tCO₂e, a reduction of 3%.

Figure 22 – National Assembly for Wales GHG Emissions by Source



Electricity and gas continue to contribute around 76% of the total emissions from the estate however energy use continues to drop and combined emissions have decreased by 24% since 2008/09, the baseline year. This continuing trend is a result of ongoing investment in energy efficiency measures and optimisation of the Assembly’s estate buildings by the Facilities Management Department as the buildings become more energy-efficient together with energy conservation behaviours adopted by occupants of our buildings.

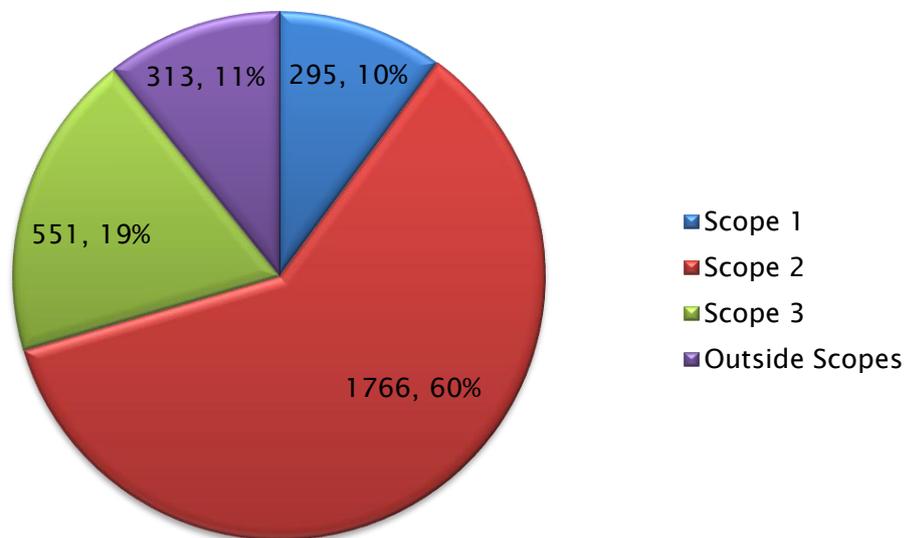
Waste and recycling represents the second largest contributor to the carbon footprint after energy amounting to 12.7% of the total. In reality, waste emissions have increased in recent years as a result of improved data capture and this has led to a more accurate baseline of our waste arising.

Business travel contributes 8% of the total footprint, a slight increase of 3% on last year, in part as a result of the inclusion of all business travel data from all occupants for the first time this year and an increase in private car use and air travel resulting from the business activities associated with the onset of the Fourth Assembly and our corporate goal of promoting Wales in the wider world.

Emissions by Scope

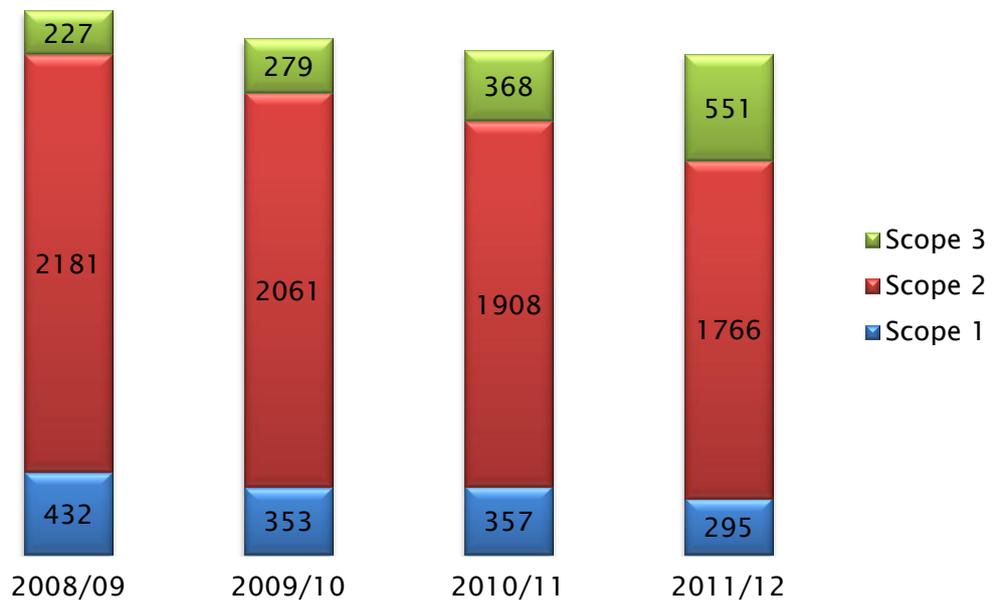
The Assembly's Scope 1 emissions comprise total mains gas consumed, direct emissions from our fleet vehicles and refrigerant emissions associated with the operation of air conditioning units and chillers. Scope 2 emissions account for purchased electricity from the National Grid and Scope 3 emissions are indirect emissions derived from business travel, waste and water. Outside scope emissions refer to biomass 'wood chip' consumption which despite emitting GHG's in the combustion stage, remains a carbon neutral fuel by way of the growth phase.

Figure 23 - Emissions by Scope (tCO₂e and percentage proportion)



Unsurprisingly, given the nature of our business, the largest proportion of emissions fall under Scope 2 (purchased electricity) and this is the area that receives our greatest attention. Operationally, the balance of the above graph reflects the operating demands of our buildings with the greatest demand placed on electricity for lighting, powering equipment, chillers for air conditioning, server farms and PCs; followed by business travel, waste and water (Scope 3) and gas for heating (Scope 1).

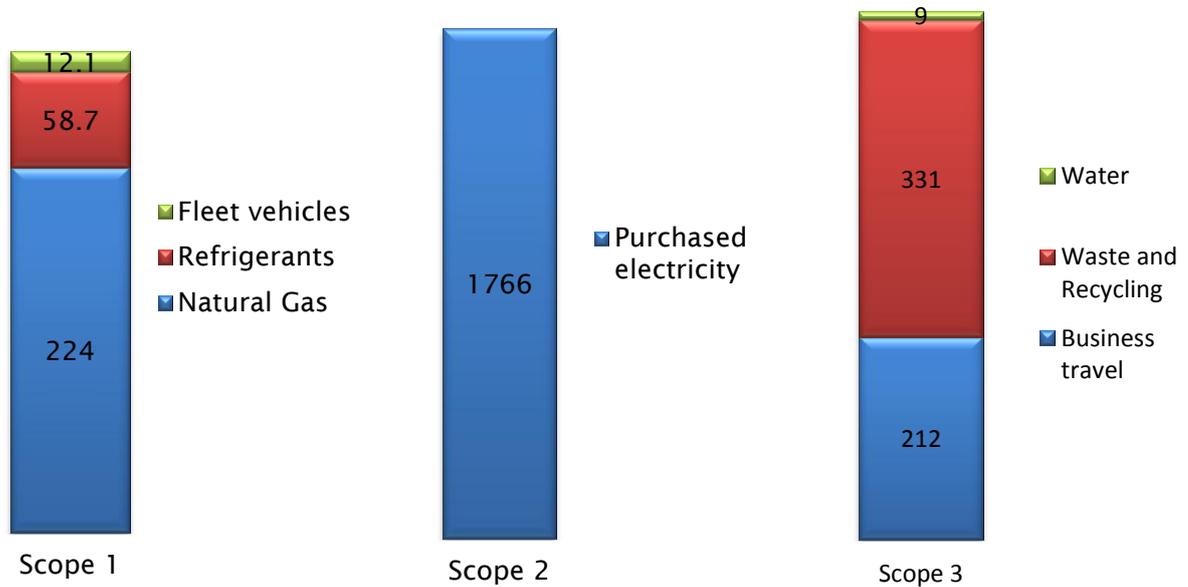
Figure 24 – Comparison of annual emissions by scope (tCO₂e)



The graph clearly demonstrates the continued reduction in Scope 2 emissions over the past four years that has resulted from significant investment in improving the energy efficiency of our buildings, in particular in Tŷ Hywel, the most energy hungry building on the estate. In contrast, it also illustrates an increasing trend in relation to Scope 3 emissions (business travel, waste and water) and this is largely the result of improved data capture year on year as opposed to increasing emissions. Business travel in 2011/12 has increased on last year, however this year also represents the most comprehensive waste and travel profiles we have had to date which contributes a large proportion of this increase. Pursuant to steep reductions in gas consumption, Scope 1 emissions mirror this downward trend.

The following graphs illustrate the proportionate breakdown of each Scope for 2011/12. Scope 1 represents those emission sources over which we have direct control, Scope 2 includes solely purchased electricity with which we do not have control over the mix of energy generation methods that contribute to the national grid electricity distribution and Scope 3, those indirect emissions associated with our business which we have some influence over.

Figure 25 – Emissions scope by activity (tCO₂e)



Addressing our supply chain emissions

As an organisation, we procure a wide range of goods and services that assist with the delivery of our services. This ultimately has an additional impact on the environment and we appreciate that we need to understand these impacts in detail to obtain a true picture of our full carbon footprint. Currently, we work with new and existing suppliers in the tender and contract stages to extract information on their environmental credentials, influence the way in which they deliver their services and ensure that all onsite contractors are bound by our suite of environmental policies.

Managing our supply chain is an area in which we need to develop going forwards, and because of the influence we have as a customer, we are in a strong position to create change that will lead to a reduction in our secondary emissions. From profiling our key contractors through to incorporating sustainability into each business unit's purchasing decisions, we can build healthy relationships and continue to demonstrate value and quality in our supply chain whilst having equal regard for our environmental impact.