



The Scottish Parliament
Pàrlamaid na h-Alba

Scottish Parliamentary Corporate Body
**Environmental and
Sustainability Annual
Report 13/14**



Carbon footprint



32%



Electricity down



31%



Gas down



34%



Landfill waste down



68%



Paper down



39%



Water down



9%



The Scottish Parliamentary Corporate Body (SPCB) continues to make excellent progress towards its ambition to act sustainably and to reduce its carbon emissions. Our plan to reduce our carbon footprint by 42% by 2020 is on course to be achieved.

The carbon management plan continues to deliver reductions in our carbon emissions. Emissions are down by 32% compared to 2005/06 and by 12% on last year. The majority of this reduction has been achieved by reducing the electricity and gas we consume in the Parliament building and by a reduction in the carbon intensity of grid electricity. These improvements in efficiency are delivering annual savings in excess of £210,000.

In addition, we have managed to reduce consumption of water and paper and the total amount of waste we produce.

Building users are key to our environmental ambitions. I am very grateful to all the building users who have helped by considering how they can work in a more environmentally sustainable way.

The Climate Change (Scotland) Act 2009 places a number of duties on public sector organisations which can be summarised as working to reduce carbon emissions, acting sustainably and working to adapt to a changing climate. In this report we have provided clear evidence of how we are complying with these duties.

I hope you find this report interesting and informative.

Stewart Gilfillan,
Assistant Chief Executive
(Environmental Management Steering
Group chair)

Area	Target (against 2005/06, unless stated otherwise)	Actual performance	Expenditure
Carbon footprint	28% reduction by 2014 30% reduction by 2015	32% reduction 2,788 tonnes CO ₂ e ¹	n/a
Carbon Reduction Commitment emissions	n/a	2,877 tonnes CO ₂ e	£34,524 (excluding licence fee)
Electricity	28% reduction by 2014 30% reduction by 2015	31% reduction 4,571,767 kWh used 2,211 tonnes CO ₂ e	£488,539
Gas	9% reduction by 2014 15% reduction by 2015	34% reduction 2,202,225 kWh 406 tonnes CO ₂ e	£85,668
Business travel	n/a	105 tonnes CO ₂ e	£134,106
Total waste arising	n/a	250 tonnes	£27,119
Landfill waste	70% reduction by 2014 72% reduction by 2015	68% reduction 49 tonnes 16 tonnes CO ₂ e	Included in total waste arising costs
Recycled and composted waste	n/a	80% recycling rate 201 tonnes	Included in total waste arising costs
Water	10.5% reduction by 2014 11% reduction by 2015 (against 2011/12)	9% reduction 22,867 m ³ 18 tonnes CO ₂ e	£263,862
Paper	35% reduction during parliamentary session 4 (2011-2016) against session 2	39% reduction 9,903 reams 25 tonnes	£ 21,603 – office paper £ 58,207 – toner and printer cartridges

¹ CO₂e – tonnes of carbon dioxide equivalent.

Area	Target (against 2005/06, unless stated otherwise)	Equivalent performance
Carbon footprint	Reduce from the equivalent emissions of 374 Scottish residents to: <ul style="list-style-type: none"> • 295 by 2014 • 254 by 2015 	Emissions of 238 Scottish residents
Electricity	Reduce from the equivalent consumption of 2,002 households to: <ul style="list-style-type: none"> • 1,441 by 2014 • 1,361 by 2015 	Electricity consumption of 1,385 households
Gas	Reduce from the equivalent consumption of 209 households to: <ul style="list-style-type: none"> • 190 by 2014 • 178 by 2015 	Gas consumption of 138 households
Business travel	n/a	1,167 return train journeys Edinburgh to London
Total waste arising	n/a	Weight of 13.2 buses sent to landfill, recycled or composted
Recycling and landfill waste	Reduce landfill waste from the equivalent weight of 8 buses to: <ul style="list-style-type: none"> • 2.4 by 2014 • 2.24 by 2015 	Weight of 2.6 buses sent to landfill. More than 80% recycled or composted, the equivalent weight of 10.6 buses
Water	Reduce from the equivalent consumption of 185 households in 2011/12 to: <ul style="list-style-type: none"> • 166 by 2014 • 165 by 2015 	Water consumption of 168 households
Paper	Reduce from the equivalent of 984 trees' worth of paper to the equivalent of 640 trees' worth per year during parliamentary session 4 (2011-2016)	600 trees' worth of paper used (All paper used is 100% recycled so 600 trees were not harvested to produce the Parliament's paper.)

²References and assumptions are available on request.

Vision

“We will become a low carbon organisation.”

We will reduce carbon emissions from our 2005/06 level by 30% by 2015, by 42% by 2020 and by 80% by 2050.



Carbon management plan

We define a low carbon organisation as:

- **one which is making real efforts each year to reduce emissions**
- **one where emission reductions are evident and robust**
- **one where all decisions take account of our environmental impacts – big and small**
- **one which has exemplary environmental practices.**

In 2010 the Parliament developed its first carbon management plan (CMP). This was revised in April 2013 and the CMP 2020 launched. The plan set the roadmap for reducing the Parliament’s carbon emissions and challenging interim and long-term targets to reduce emissions and electricity use by 30% by 2015. Due to the faster than expected progress against our targets, the 2015 target will be increased.

More than 90% of the Parliament’s carbon emissions result from the use of electricity and gas. The CMP 2020 therefore focuses heavily on reducing use of electricity and gas by improving control of equipment in the building, making heating and ventilation systems more responsive to our requirements and investing in more energy efficient equipment.

Delivering the plan is predicted to lead to savings of approximately £300,000 per year by 2020 and a reduction of more than 1,800 tonnes of CO₂e per year.

Implementation of the first phase of the plan by March 2014 reduced expenditure on gas and electricity by £210,000 and CO₂e by 1,348 tonnes.





Wildflowers in the Parliament grounds



Real Action on Carbon Emissions

2013/14 was the RACE (Real Action on Carbon Emissions) programme's fourth year of engaging staff in reducing carbon emissions, adapting to climate change and improving our environmental practices.

The RACE programme is run by a team of volunteers who are passionate about improving the environment and helping others to live more sustainable lives at work and at home.

In 2013/14 the RACE team organised a wide range of events including:

- driving efficiency lessons – to help staff commute in an energy efficient way
- a book swap event – to encourage the reuse of books
- a stationery swap – to create an environment where we reuse resources
- a wildflower walk in the Parliament gardens – to show the increased biodiversity of plants (created by staff volunteers who grew the plants from seed)
- Doctor Bike – to provide bicycle safety checks for the increasing number of individuals who regularly cycle to work.

Aim Help the Parliament become a low carbon organisation by engaging building users with its carbon management plan

Vision An environmentally aware workforce actively working to reduce the Parliament's environmental impact

An Eco (Environmental Contacts) Network helps to further encourage good environmental practice in all offices across the Parliament. Network members have completed reviews in their areas of travel and transport and also of paper efficiency in the context of increased digital working.

Carbon Reduction Commitment (CRC)

The SPCB is required to comply with the UK Government's Carbon Reduction Commitment energy efficiency scheme. The CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations.

Organisations in the scheme are required to calculate their carbon footprint following the CRC's methodology and then purchase allowances from the Department of Energy and Climate Change (DECC) for each tonne of carbon dioxide emitted. Allowances are charged at £12 per tonne, which resulted in costs of £34,524 in the financial year 2013/14.

The CRC footprint calculations include only emissions resulting from the consumption of electricity and gas. The Parliament's methodology for calculating its carbon footprint (page 10) includes additional emission sources.

Due to the significant reduction in electricity consumed by the Parliament, the SPCB is not required to participate in the CRC scheme from 2014/15.

Year	2010/11	2011/12	2012/13	2013/14
CO ₂ e (tonnes)	3,615	3,178	3,188	2,877

Carbon footprint – CEMARS

The SPCB became the first public sector organisation to meet the requirements of CEMARS in 2011, with certification to the scheme retained in 2014.

To achieve certification to this scheme an organisation must demonstrate that it has a robust commitment and plan to reduce greenhouse gas emissions and that its carbon footprint has been calculated in accordance with the requirements of ISO 14064-1:2006. Certification is confirmed annually by an external audit.

The CEMARS audit has confirmed that the electricity, gas, travel, waste and water figures presented in this report are accurate.



Interim target:

- Reduce our carbon footprint **by 28%** from the 2005/06 total by March 2014.

Medium-term target:

- Reduce our carbon footprint **by 30%** from the 2005/06 total by March 2015.

Total reduction achieved: 32%

The Parliament's carbon footprint has been reduced by 32% between 2005/06 and 2013/14. The footprint covers emissions from a wide range of activities, including the use of gas for heating, electricity, waste, water and travel on parliamentary business.

We are now three-quarters of the way towards our 2020 target, with some 1,348 tonnes removed from the footprint since 2005/06 and a reduction of 368 tonnes since 2012/13.

The Department for Environment, Food and Rural Affairs has reviewed the emissions resulting from the use of grid electricity. These changes have required the recalculation of baseline emissions and emissions from all subsequent years. Electricity is now less carbon intense due to increased generation by renewable sources, contributing to a reduction in emissions of approximately 43 tonnes between 2012/13 and 2013/14.

Scope ³	Emission source	CO ₂ e (tonnes)		
		05/06	12/13	13/14
One	Natural gas	558	561	406
One	Other ⁴	2	8	32
Two + Three	Electricity	3,339	2,399	2,211
Three	Travel	169	147	105
Three	Waste	61	22	16
Three	Water	7	19	18
Total		4,136	3,156	2,788

³ The greenhouse gas protocol categorises emissions into three broad scopes.

⁴ 'Other' includes F-gas (refrigerant) emissions and diesel used for the onsite generator and site van.

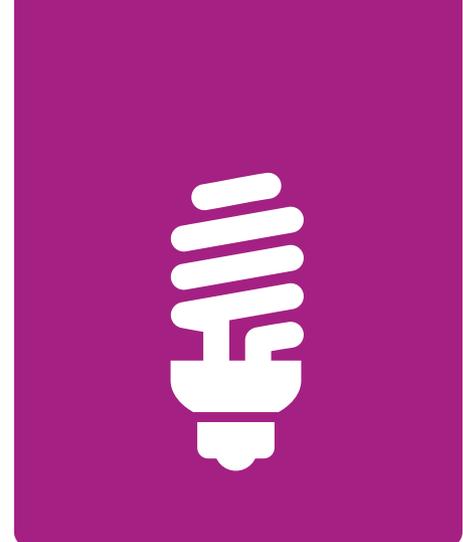
Interim target:

Reduce incoming electricity consumption **by 28%** from the 2005/06 total by March 2014.

Medium-term target:

Reduce incoming electricity consumption **by 30%** from the 2005/06 total by March 2015.

Total reduction achieved: 31%



In 2013/14 initiatives that have contributed towards reducing electricity consumption include:

- installation of LED light bulbs into additional areas, including the staff restaurant and Garden Lobby. More than 1,600 LED lamps are now used in the Parliament
- improved control of the ventilation system for the Debating Chamber
- improved control of the pumps used to circulate the water through the ponds
- installation of very efficient fans into the air conditioning units serving the IT server rooms.

Year	Electricity (kWh)	% reduction
2005/06	6,606,490	
2011/12	5,128,849	22%
2012/13	4,863,840	26%
2013/14	4,571,767	31%

Interim target:

Reduce gas consumption from the 2005/06 total by **9%** by 2014.

Medium-term target:

Reduce gas consumption from the 2005/06 total by **15%** by 2015.

Total reduction achieved: 34%



The Parliament reduced gas use in 2013/14 by 34% compared to 2005/06. It also used less gas in 2013/14 than in each of the last two years. Around half of this reduction is due to a mild winter and the remainder is due to improved building management.

To take account of changing temperatures in different years, a measure of weather conditions called degree days (DD) is used. This allows energy use in different years to be compared accurately. Against this measure and in absolute terms, gas use has decreased.

These reductions have been achieved through:

- careful management and programming of the building management system to ensure areas are heated only when they are in use
- modifying the control of the Debating Chamber ventilation to be controlled on both temperature and air quality so that at times of low occupancy less fresh air is provided, which reduces the quantity of cold air that needs to be heated
- asking staff who worked between Christmas and New Year to work together from a reduced number of rooms, allowing the heating in most of the building to be switched off.

Year	Gas consumption (kWh) absolute	Degree days ⁵	kWh per degree day
2005/06	3,349,164	2,460	1,361
2011/12	2,202,713	2,220	992
2012/13	3,039,074	2,902	1,047
2013/14	2,202,225	2,376	926

⁵ Degree days are a measure of the severity and duration of cold weather: the colder the weather in a given month, the higher the degree day value. If this is taken into account, it's possible to compare one year with another and to determine whether any initiatives have resulted in energy savings.

Interim target:

Reduce landfill waste⁶ **by 70%** from the 2005/06 total by March 2014.⁷

Medium-term target:

Reduce landfill waste **by 72%** from the 2005/06 total by March 2015.

Total reduction achieved: 68%



In 2013/14, 49 tonnes of waste were sent to landfill – 105 tonnes fewer than in 2005/06.

Since 2005/06 landfill waste has been reduced and recycling rates increased by:

- collecting food waste for offsite composting
- improving recycling facilities
- replacing paper towels with hand-driers
- creating recycling hubs and greatly reducing the number of individual bins.

⁶ Waste includes all waste from offices and from catering. It does not include waste generated by contractors during works.

⁷ The target is based on the results of waste audits undertaken by the Parliament's staff. The tonnage of waste sent to landfill and for recycling is calculated from information supplied by the Parliament's waste disposal contractor.

Each hub contains recycling for mixed paper, cardboard and plastic bottles, as well as a general waste bin. Additional collection points for food, cans and glass are available at tea points.

In a positive move, the total amount of waste which needed to be recycled has reduced by 21 tonnes, leading to an overall reduction in total waste arising.

Year	Total waste arising (tonnes)	Landfill waste (tonnes)	% reduction	Recycled and composted waste (tonnes)	% recycled rates
2005/06	263	154	n/a	109	41%
2011/12	258	50	67%	208	80%
2012/13	270	48	69%	222	82%
2013/14	250	49	68%	201	80%

Interim target:

Reduce water consumption from the 2011/12 total **by 10.5%** by March 2014.

Medium-term target:

Reduce water consumption from the 2011/12 total **by 11%** by March 2015.

Total reduction achieved: 9%



The Scottish Parliament uses both mains water and water from two onsite boreholes.

Borehole water is used to fill the ornamental ponds at the front of the building and to flush the toilets. The use of borehole water for flushing toilets has a lower environmental impact than mains water as it is not chemically treated. The borehole water used for the ponds is chemically treated to control algae growth.

Mains water is used for all remaining purposes such as hand washing, drinking and for the onsite cafés and restaurants.

Careful monitoring and management of water resulted in a reduction in total water use from the previous year. Mains water usage increased from a low in 2010/11 due to the controlled opening of a number of taps to prevent water stagnation.

The target to reduce water use was not quite achieved due to higher than expected water use through the ponds. Monitoring in this area has been improved, which should result in a further reduction in borehole water use in 2014/15.

Year	Borehole (m ³)	Mains (m ³)	Total (m ³)
2010/11	28,487	4,624	33,111
2011/12	18,258	6,915	25,173
2012/13	17,955	5,889	23,844
2013/14	16,752	6,115	22,867

Target:

Reduce paper consumption **by 35%** from the session 2⁸ total during session 4 (2011-2016).

Average yearly reduction achieved in session 4: 46%



Paper use is very dependent on the type and quantity of parliamentary business. Overall paper use has been reduced by instigating a policy of double-sided printing and reducing the number of printed copies of official parliamentary documentation such as the Business Bulletin.

A project entitled Paper Smart has started to try to reduce paper use further by taking advantage of new technologies and approaches to digital working.

Year	Tonnes	% reduction
Session 2 (average annual use)	40.8	
Session 4		
2011/12	16.6	60%
2012/13	24.6	40%
2013/14	24.8	39%
Session 4 average	21.9	46%

⁸ This baseline information is calculated from average paper use during 2005-2007 as information for the whole of session 2 (2003-2007) is unavailable.

The Responsible Purchasing Strategy covers 4 key areas:

- professional standards
- environmental impact
- ethical and social issues
- small and medium-sized enterprises and Scottish suppliers.

Following implementation of phase one of the Responsible Purchasing Strategy, our current focus is on working collaboratively with our internal customers and the Environmental Manager to ensure environmental considerations are embedded at all stages of procurement projects. The Environmental Manager inputs to the development of specifications for contracts that present high environmental risks and is involved in the development and evaluation of tender questions.

Annual environmental action plans are agreed with key contractors and progress is monitored on an on-going basis.

Case study for the catering equipment procurement project

The contract was for the supply and installation of catering equipment to improve the staff restaurant.

We identified that the key environmental impacts of the equipment resulted from the use of water and energy consumption and disposal of redundant equipment.

The specification was developed with this in mind and included the following requirements:

- the identification of the most water and energy efficient product in the product range available to the supplier, based on approved environmental labels such as the European Union (EU) energy label, EU water label, the Energy Saving Recommended logo administered by the Energy Savings Trust or an appropriate equivalent
- all replacement fridges and freezers to contain refrigerants with a global warming potential of less than 150
- disposals to be carried out in full compliance with all applicable waste regulations, in particular the Special Waste Amendment (Scotland) Regulations 2004 and the Waste Electrical and Electronic Equipment Regulations 2006
- the removal of all packaging from site and where it should be reused or recycling or for energy recovery.

Questions were asked of tenderers that sought to establish the environmental labelling and global warming potential rating of the equipment proposed. Tenderers were also asked to describe their methods for disposal of packaging.



Presiding Officer, the Rt Hon Tricia Marwick MSP, receiving the honey bees

The SPCB continues to maintain its grounds with the aim of supporting the biodiversity of the area.

A large area of the grounds has been raised up and planted with indigenous Scottish wildflowers, shrubs, wild grasses and trees. The wildflower meadows have been designed to contrast with the cut turf lawns and feature plants such as sticky catchfly, dropwort and meadow cranesbill.

The number of wild plant and flower species has been greatly increased in recent years by staff volunteers working with the Royal Botanic Garden Edinburgh (RBGE). RBGE and Parliament employees grew appropriate flowering plants such as foxglove, red and white campion and viper's bugloss, which they planted out in the grounds in autumn. In addition, a large quantity of yellow rattle seeds were planted by the team to help control the grass and give other wild plants the opportunity to flourish. Two years into this project, the grounds are full of colourful flowers enjoyed by both wildlife and people.

We have joined forces with Kelvin Valley Honey to locate two Scottish-bred honey bee colonies at the Parliament. We are participating in this initiative in an effort to increase public awareness of the plight of Scotland's honey bee populations and to help support biodiversity.

Depending on the summer weather, the hives should produce honey each year, which will be available for purchase through the Parliament's shop.

Environmental management system

The SPCB achieved certification to ISO 14001:2004 – the internationally recognised standard for environmental management systems – in January 2007 and has maintained certification to this standard for the last seven years. The system is applicable to the Scottish Parliament campus of buildings and facilities. To achieve and maintain the standard, an organisation must be able to demonstrate to an external environmental auditor that an environmental management system has been implemented and is thoroughly maintained. The system ensures that environmental considerations are embedded across the organisation and the areas that create an environmental impact or carry an environmental risk are regularly reviewed and controlled.

What is an environmental management system?

An environmental management system is a way to “Plan, Do, Check and Review” to improve environmental performance.

The standard assesses the way in which an organisation:

- integrates environmental considerations into its management structures
- handles its environmental impacts and continuously improves its environmental performance in areas such as waste, energy and procurement
- achieves legal compliance with all relevant environmental legislation.



In light of the progress made in 2013/14, the following targets have been agreed for future years.

Targets	2014/15	2019/20
Carbon emissions		
Reduce carbon emissions from the 2005/06 total by:	32%	42%
Electricity		
Reduce electricity consumption from the 2005/06 total by:	32%	40%
Gas		
Reduce gas consumption from the 2005/06 total by:	15%	15%
Water		
Reduce water consumption from the 2011/12 total by:	11%	14%
Waste		
Reduce landfill waste from the 2005/06 total by:	72%	90%
Paper		
Reduce total paper consumption by: 35% from the session 2 total during session 4 (2011-2016)		

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