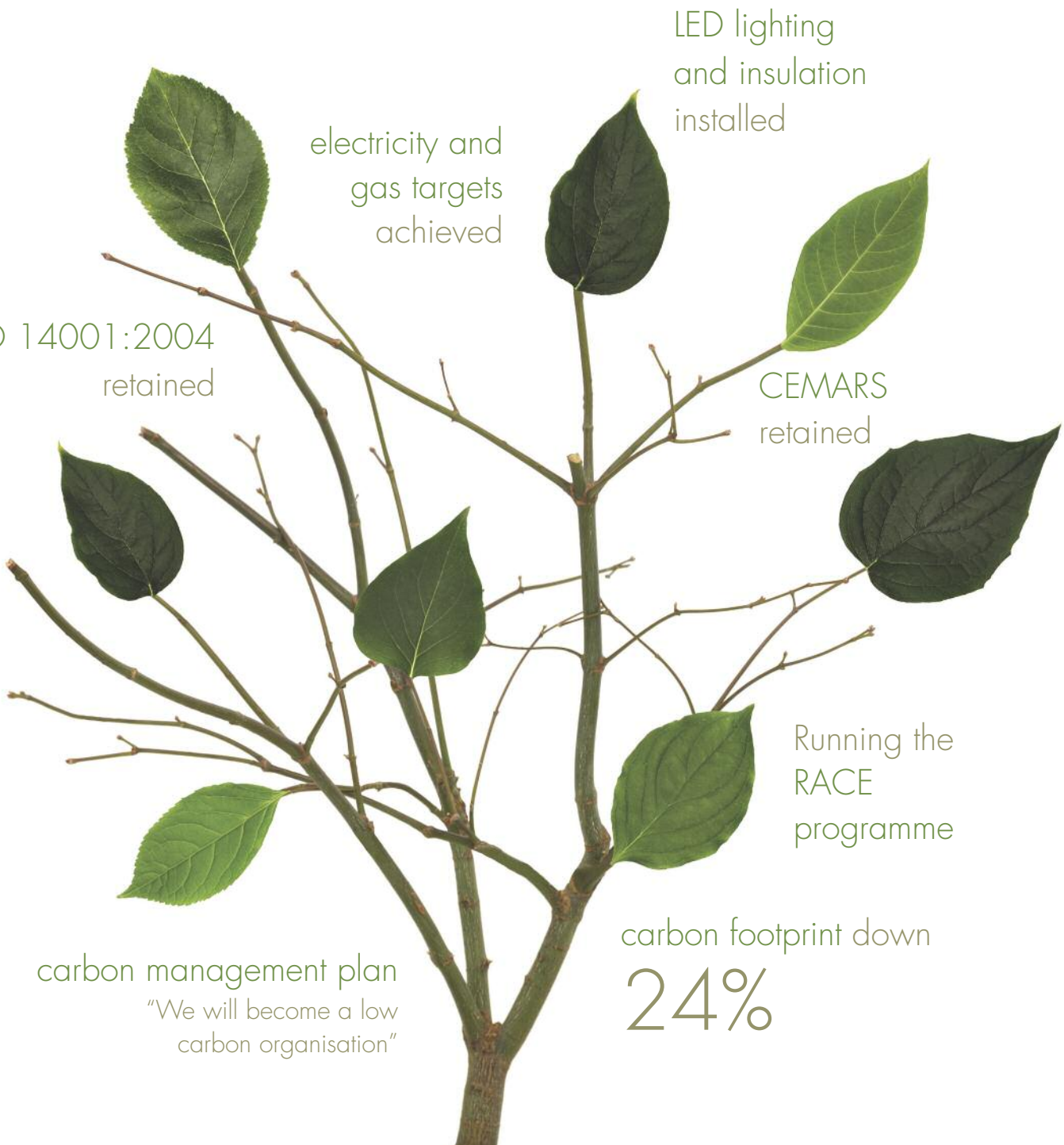
The Scottish Parliament
Pàrlamaid na h-Alba

Scottish Parliamentary Corporate Body

Environmental & Sustainability Annual Report 11/12


LED lighting
and insulation
installed
electricity and
gas targets
achieved
ISO 14001:2004
retained
CEMARS
retained
Running the
RACE
programme
carbon footprint down
24%
carbon management plan
"We will become a low
carbon organisation"

I am pleased to be able to introduce the Scottish Parliamentary Corporate Body's (SPCB) fifth environmental and sustainability annual report. 2011/12 was one of our most successful years to date for environmental management in the Parliament, with carbon emissions reduced considerably over the last year. Our plan to reduce our carbon footprint by 42% by 2020 is now ahead of schedule.

Our carbon footprint has been reduced by 24%, or 1,001 tonnes compared to 2005/06. The majority of this reduction has been achieved by reducing the electricity and gas consumed in the Parliament building. A number of technologies which we installed in early 2011, such as an air cooled chiller and LED lighting, have reduced electricity consumption as predicted, and electricity use is now down by more than 22%. Gas and electricity costs were £120,000 less than the previous year due to these reductions.

In addition, this year a range of energy and carbon management strategies have been implemented further to reduce our energy consumption. These include additional insulation for our oldest building (Queensberry House), further LED lighting and a reduction in the number of offices which were heated during the Christmas break.

Building users are also key to our environmental ambitions and many have attended RACE (Real Action on Carbon Emissions) events this year and helped to implement our Zero Waste Parliament plan. This will help to further reduce landfill waste and increase recycling rates.

By implementing these projects, and with the help of our building users, we will ensure we achieve our ambitious targets for the year ahead.

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 reducing our carbon emissions and taking proactive steps to act sustainably such as through our procurement practices. In the coming year we will start to consider in more detail what the SPCB needs to do to respond to a changing climate.

If you have any comments on this report or on our approach to environmental or carbon management, I would be very pleased to hear them.

I hope you find this report interesting and informative.

Paul Grice, Chief Executive

Area	Target	Actual performance	Expenditure
Carbon footprint	20% reduction by 2015 18% reduction by 2012	24% reduction 3,341 tonnes CO_2e[1]	n/a
Carbon Reduction Commitment emissions	n/a	3,178 tonnes CO_2e	£39,457 (Including licence fee)
Electricity	24% reduction by 2015 20% reduction by 2012	22% reduction 5,128,849 kWh 2,704 tonnes CO_2e	£477,724
Gas	Not to exceed 3,135,000 KWh per year	2,202,713 kWh 408 tonnes CO_2e	£74,845
Business travel	n/a	117 tonnes CO_2e	£95,189
Total waste arising	n/a	258 tonnes	£26,799
Landfill waste	75% reduction by 2015 70% reduction by 2012	67% reduction 50 tonnes 21 tonnes CO_2e	Included in total waste arising costs
Recycled and composted waste	n/a	80% reduction 208 tonnes	Included in total waste arising costs
Water	n/a	25,173 m3 20 tonnes CO_2e	£283,564
Paper	35% reduction during parliamentary session 4 (2011-2016)	40% reduction 9,024 reams 24 tonnes	£45,449 (office paper) £115,238 (toner and printer cartridges) £157,610 (leaflets, brochures) £580,366 (parliamentary business publications)

[1] CO_2e – tonnes of carbon dioxide equivalent. CO2e includes the emissions of the gases included in the 2011 Guidelines to Defra / Department of Energy and Climate Change's (DECC) Greenhouse Gas (GHG) Conversion Factors for Company Reporting. The emission factor for electricity is the factor taken from Table 3c – electricity consumed, grid rolling average, total direct GHG. The emissions for electricity for 2005/2006 have been calculated from the Defra emission factor for 2008, which is the earliest factor included in E-manage. E-manage is the tool used by the Parliament's carbon footprint auditor.

Carbon management plan

Vision

“We will become a low carbon organisation.”

We will reduce carbon emissions by 20% by 2015, by 42% by 2020 and by 80% by 2050.

In 2009/10 the Parliament developed its carbon management plan. The plan comprises the road map for reducing the Parliament’s carbon emissions.

The plan has been developed around four strategic themes, and projects have been identified under each of these themes:

- **Decision Making**
- **Building Emissions**
- **Sustainable Travel**
- **The RACE: R**eal **A**ction on **C**arbon **E**missions

Delivering the plan is predicted to lead to savings of approximately £245,000 per year by 2015 and a reduction of more than 1,000 tonnes of CO_2e per year.

Implementation of the plan by March 2012 reduced expenditure on gas and electricity by £120,000 and CO_2e by 1,001 tonnes.

Decision Making:

- Responsible procurement
- Project governance
- Management reports
- Environmental policy

Building Emissions:

- Lighting (LEDs)
- Heating controls
- Cooling and ventilation
- Pumps
- Insulation

RACE:
Real Action on Carbon Emissions

- Engagement
- Information
- Events
- Clubs

RACE
Real Action on Carbon Emissions

Sustainable Travel:

- Carbon report
- Policy
- Cycling facilities

RACE

Real Action on Carbon Emissions

Zero waste information event

Now in its second year, the RACE programme continues to engage staff with reducing carbon emissions, adapting to climate change and improving our environmental practices.

The RACE programme has provided a valuable contribution towards improving our environmental performance by helping to reduce waste and energy use.

Initiatives for 2011/12 include the launch of ‘Zero Waste Parliament’ and various events which encourage low carbon behaviour such as the popular ‘Dr Bike’.

The RACE programme is currently being 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.

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.

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 for each tonne of carbon dioxide emitted. Allowances are charged at £12 per tonne, which resulted in costs of £38,136 in the financial year 2011/12.

This is a different methodology from that used by the Parliament for calculating its carbon footprint (page 9), which includes more emission sources such as travel and waste. The CRC footprint calculations include only emissions resulting from the consumption of electricity and gas.

Year	CO_2e (tonnes)
2010/11	3,615
2011/12	3,178

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 2012.

To achieve certification to this scheme an organisation must demonstrate that it has a robust commitment and plan to reduce green house gases 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, waste and water figures presented in this report are accurate.

Medium term target:
Reduce our carbon footprint **by 20%** from the 2005/2006 total by March 2015.

Interim target:
Reduce our carbon footprint **by 18%** from the 2005/2006 total by March 2012.

Total reduction achieved – 24%

The Parliament's carbon footprint has been reduced by 24% between 2005/06 and 2011/12. The calculation of this reduction has been confirmed following external audit as part of the process to retain certification to CEMARS. 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 currently around halfway towards our 2020 target with some 1,001 tonnes removed from the footprint since 2005/06, and a significant reduction of more than 500 tonnes achieved since 2010/11.

		2005/06	2010/11	2011/12
Scope	Emission Source	CO_2e (tonnes)	CO_2e (tonnes)	CO_2e (tonnes)
One	Natural Gas	558	595	408
One	Other[2]	2	44	70
Two	Electricity	3,564	3,063	2,704
Three	Travel	185	112	117
Three	Waste	61	20	21
Three	Water	7	21	20
Total		4,377	3,855	3,341

[2] Other includes F-gas emissions and diesel used for the onsite generator and site van.

Medium term target:
Reduce incoming electricity consumption **by 24%** from the 2005/2006 total by March 2015.

Interim target:
Reduce incoming electricity use **by 20%** from the 2005/2006 total by March 2012.

Total reduction achieved – 22%

LED Committee Room lights

Initiatives that have contributed towards reducing electricity use include:

- completing the replacement of less efficient lighting in committee rooms and various meeting rooms with very efficient long life LED lighting. More than 1,000 LED lamps are now used in the Parliament
- improved control of pumps which circulate cooled water to areas of the building such as committee rooms which on occasion need to be cooled
- improved control of lighting in the MSP Building stairwells and other stairwells by installing additional movement sensors.

In February 2010 the chiller used to keep the IT server rooms and other areas of the building cool was replaced with a state-of-the-art air cooled chiller. This new unit has proved to be very successful and has contributed greatly to the reduction in electricity consumption.

Year	Electricity (kWh)	% reduction
2005/06	6,606,490	
2010/11	5,620,498	15%
2011/12	**5,128,849**	**22%**

Target:
Gas use not to exceed 3,135,000 kWh between March 2011 and March 2012.

Controlling office heat

The Parliament used more than 30% less gas in 2011/12 than in each of the previous two years. The winter of 2010/11 was relatively mild so a reduction in gas consumption would be expected. However, 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 decreased in the Parliament.

Initiatives that have contributed towards reducing gas use include:

- greatly increased levels of insulation in the loft space of Queensberry House (the Parliament's oldest building) and work undertaken to prevent draughts
- improved control of the boilers and the heating system
- asking staff who worked between Christmas and New Year to work together from a reduced number of rooms, allowing the heating in other rooms to be switched off.

Year	Gas (kWh) absolute	Degree days[3]	kWh per degree day
2009/10	3,255,087	2,615	1,245
2010/11	3,219,048	2,740	1,175
2011/12	**2,202,713**	**2,220**	**992**

[3] 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 you take these into account, it's possible to compare one year with another and to determine whether any initiatives have resulted in energy savings.

Medium term target:
Reduce landfill waste[4] by 75% from the 2005/2006 total by March 2015.

Interim target:
Reduce landfill waste by 70% from the 2005/2006 total by March 2012.[5]

Total reduction achieved – 67%
In 2011/12, 50 tonnes of waste were sent to landfill – 103 tonnes less fewer than in 2005/06.

Parliament recycling

Total waste arising has been reduced by:

- replacing bottled water for committee meetings and the Chamber with jugs of water
- ensuring bread, vegetables and fruit are delivered in reusable plastic trays instead of single-use cardboard trays
- the caterers using three-gallon milk pergals instead of two-litre milk bottles – one pergal replaces 13 bottles
- replacing paper towels with hand-driers in toilets.

Landfill waste has been reduced and recycling rates increased by:

- collecting food waste for offsite composting
- improving recycling facilities.

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

[5] The target is based on the results of waste audits undertaken by the Parliament's staff. The tonnage of waste sent to landfill is calculated from information supplied by the Parliament's waste disposal contractor.

The Zero Waste Parliament initiative was launched in 2011 to help move the Parliament closer to its target to reduce landfill waste by 75% by 2015. As part of this initiative, recycling hubs were created or improved in all staff office areas and more than 150 individual waste bins were removed, including more than 60 on the ministerial floors. 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.

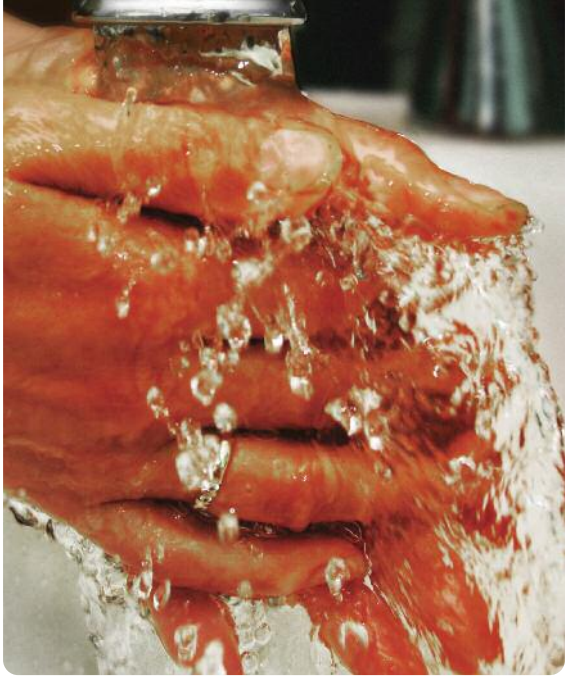
High efficiency hand-drier

Recycling rates have increased to 80% from the previous year, and total measured waste reduced slightly in 2011/12 by six tonnes from 2010/11. In future years, increased emphasis will be placed on reducing total waste arising, as well as on increasing recycling and recovery rates.

Year	Total waste arising	Landfill waste (tonnes)	% reduction	Recycled and composted waste (tonnes)	% recycled
2005/06	263	154	n/a	109	41%
2010/11	264	54	65%	210	79%
2011/12	**258**	**50**	**67%**	**208**	**80%**

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

A licence has been purchased from Scottish Environmental Protection Agency to allow the Parliament to extract water from two onsite boreholes. This water is used to fill the ornamental ponds at the front of the building and also to flush the toilets. The use of borehole water for flushing toilets has a lower environmental impact than mains water as this water is not chemically treated and doesn't have to be pumped over large distances. The borehole water used for the ponds is chemically treated to control algae growth.



Water use at the Parliament

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

No targets have been set to reduce water use, but water use is carefully monitored and managed. Through this approach, a large reduction in borehole water use was achieved between 2009/10 and 2011/12. Mains water usage increased due to the opening a number of taps in a controlled way to prevent water stagnation.

Year	Borehole (m^3)	Mains (m^3)	Total (m^3)
2009/10	21,252	5,122	26,374
2010/11	28,487	4,624	33,111
2011/12	18,258	6,915	25,173

Target:
Reduce paper consumption **by 35%** from the session 2 total[6] during session 4 (2011-2016).

Total reduction achieved – 40%

The target to reduce paper use in the building is on course to be achieved. However, the final results won't be known until the end of the fourth parliamentary session in 2016. Paper used within the building and also to print official parliamentary documentation such as the Business Bulletin and information leaflets is included in this measure. In total, 9,024 reams of paper were used in 2011/12 compared to more than 16,000 reams in an average year during session 2.

Paper use is very dependent on the type and quantity of parliamentary business. In particular, the publication of official documents has been reduced considerably by encouraging the use of online publications.

[6] 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 is divided into 7 areas:

- Professional standards
- Environmental impact
- Ethical & Social issues
- Small and Medium-sized Enterprises and Scottish suppliers
- Tools for purchasers
- Engagement with suppliers
- Communication plan

All environmental objectives from phase one of the Responsible Purchasing Strategy have been met and many on-going objectives are now fully embedded in our practices. The monitoring of the carbon footprint of our contracts continues to prove difficult to implement due to the complexity of measuring CO2 emissions from the lifecycle of products/services we use. However, we will continue to keep abreast of relevant developments in this field.

Responsible Purchasing has been embedded in all new high value/risk contracts. Contractors have developed environmental action plans for their contracts and Responsible Purchasing is an integral part of the on-going contractor performance monitoring.

Headed Stationery & Fulfilment contract – case study:

The buyer and customer recognised early in the project the key environmental impacts of this requirement and called on the expertise of the Environmental Performance Manager to assist with the development of a specification that would seek to deliver value for money whilst delivering environmental solutions.

- Where possible, all inks used are vegetable based such as linseed inks.
- All paper must be 100% recycled paper comprising genuine post-consumer waste.
- Any paper containing any virgin pulp may only be used when it is from sustainably managed sources. Sustainable sources should have Forestry Stewardship Council or equivalent chain of custody certification. Both the virgin pulp and the recycling process must be chlorine free, i.e. manufactured using non-chlorine bleaching agents such as oxygen, peracetic acid, sodium peroxide or by using more efficient pulping techniques. This applies to all products such as envelopes and boxes used to package reports.
- All packaging used must be made of 100% recycled paper comprising genuine post-consumer waste.
- Active minimisation of packaging and maximising of re-usable packaging.
- Efficient use of energy and maximisation of biodegradable and recycled products where possible.
- Waste reduction through re-use and recycling and the use of refurbished and recycled products and materials where they are available.
- Contractor expected to investigate and introduce processes and products that minimise environmental impacts (including the disposal of inks and toner).
- Encouragement of use of energy efficient machinery.
- Use of efficient delivery methods, e.g. reduction of unnecessary deliveries (frequency/numbers/group deliveries).
- Production process to minimise the release of greenhouse gases, volatile organic compounds (VOCs) and other substances damaging to health and the environment.

The SPCB continues to maintain its grounds to support the bio-diversity of the area.

A large area of the grounds has been raised up and planted with indigenous Scottish wildflowers, trees and shrubs including wild grasses and trees found in the local area. 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 oak and lime trees in the landscaped area are designed to mirror those in the perimeter of Holyrood Palace. In addition, rowan trees have been planted in various locations around the Parliament.

The following targets have been agreed for March 2013 and March 2015:

Carbon footprint targets

- Reduce the carbon footprint **by 24%** from the 2005/2006 total by March 2015.
- Interim Target: Reduce the carbon footprint **by 21%** from the 2005/2006 total by March 2013.

Electricity

- Reduce incoming electricity use **by 26%** from the 2005/2006 total by March 2015.
- Interim Target: Reduce incoming electricity use **by 24%** from the 2005/2006 total by March 2013.

Waste

- Reduce landfill waste **by 75%** from the 2005/2006 total by March 2015.
- Interim Target: Reduce landfill waste **by 70%** from the 2005/2006 total by March 2013.

Gas

- Gas use not to exceed 3,000,000 kWh between April 2012 and March 2013.

Paper

- Reduce paper consumption by 35% from the session 2 total during session 4 (2011-2016).

further information

If you have an enquiry about information in languages other than English or in alternative formats (for example, Braille, large print or audio), please send it to Public Information. We welcome written correspondence in any language.

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