

# National Library of Scotland Public Sector Sustainability Report 2015-2016

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## 1.0 Introduction

In 2009 the Scottish Government set what remains, one of the most ambitious pieces of climate change legislation anywhere in the world, namely: The Climate Change (Scotland) Act 2009.

The Act commits Scotland to reduce its emissions by at least 80% from 1990 levels by 2050; with an interim emissions reduction target of 42% by 2020.

Section 44 of the Act places duties on Scottish public bodies which require that, in exercising their functions, they act:

- In the way best calculated to contribute to the delivery of the Act's emission reduction targets
- In the way best calculated to help deliver any statutory programme for adapting to the impacts of climate change
- In a way that it considers most sustainable.

Guidance to assist public bodies in complying with these duties is laid out in 'Public bodies climate change duties: Putting them into practice': [www.scotland.gov.uk/Publications/2011/02/04093254/0](http://www.scotland.gov.uk/Publications/2011/02/04093254/0).

In accordance with the Climate Change (Scotland) Act 2009, the Library is defined as a Major Player and is expected to do more than other public bodies, with additional actions laid out in the guidance. Below is the definition of what is expected of a Major Player:

'For the purposes of the public bodies climate change duties guidance 1, 'Major Players' are considered to be:

- Public bodies with large estates and large numbers of staff
- Public bodies with a high impact and influence, e.g. Scottish Government, local authorities, SEPA, SNH
- Public bodies with large expenditure
- Public bodies that provide an auditing or regulatory function.

'In some aspects of the guidance, it is suggested that Major Players could consider doing more in comparison with other public bodies. Where this is the case, it is clearly specified throughout the guidance in the sections containing 'suggested actions', which set out those suggested actions for Major Players in bold text. However, it is up to public bodies to decide what action is appropriate for them. Further detail on the classifications of Major Players and a full list of those bodies, according to these categories, suggested to be Major Players follows below. Please note that this list is not exhaustive, nor is it a cast-iron classification, and does not restrict those bodies not suggested as Major Players from taking forward actions suggested for Major Players if they so wish.'

In line with the principles and methods of reporting, laid out in the guidance, NLS is committed to demonstrating best practice by providing transparent and open reporting on the delivery of its climate change duties. To this end the report:

- Has been prepared in line with the Scottish Government Public Sector Sustainability Reporting – Guidance on the preparation of Annual Sustainability Reports Financial Year 2012-2013
- Shall be published alongside its Annual Reports and Accounts.

## 2.0 Executive summary

### 2.1 Progress during 2015/16

The National Library of Scotland (NLS) published its first Carbon Management Plan in April 2010.

In it, NLS set out its low carbon vision:

**NLS will rise to the ambition demonstrated by the Scottish Government and play its part in the transformation of the nation into a low-carbon economy**

**NLS will work to become a low-carbon, energy efficient organisation. In doing so it will mitigate against the challenges that climate change and energy security posed to NLS in the medium to long term**

And the following target:

**Having now met the initial Scottish government target for 2020, the National Library of Scotland are committed to further reduce CO<sub>2</sub> emissions from its operation by 50% by 2020 from 2008/09 levels.**

During the financial year 2015-2016 NLS manage to reach and exceed its targets for GHG emissions and energy consumption over the year to meet 42% reduction in comparison to 2008/09 levels;

- Reduced GHG emissions from its operation of - **47%**
- Reduced energy consumption by - **44%**
- Continued to stabilise its utilities costs.

Comments on results:

- The reductions in energy consumption have been particularly significant this year with a number of control strategy changes and a particularly mild autumn and early winter months yielding worthwhile results. The most rewarding changes to the control strategies are down to a relaxation of the environmental conditions within the collection spaces. This is verified with a **127%** reduction in greenhouse gas emissions in Causewayside, (this includes Pentland House) and a **45%** reduction in George IV Bridge. Whereas Kirkintilloch has a much closer control of the environmental conditions and shows a **55%** increase over the same period.
- Business travel has shown a considerable decrease with domestic air flights down **115%**, with the overall travel down by **127%** compared to 2014/15. The total cost of all T and S within the Library went up slightly by **4%** as compared to 2014/15; however this was mainly down to a **67%** increase in the cost of our in-house fleet maintenance and repairs.
- Waste has shown an increase in total arisings of **23%** compared to 2014/15. However **22%** of waste still going to landfill, (a **13%** increase compared to 2014/15), our target is to reduce our waste to landfill to **5%**. With the broadening of the scope of the Health and Safety Committee to include sustainability, we are hoping to carry out more staff engagement to try and reduce our total waste arisings and reduce our waste to landfill closer to the **5%** target. Estates are currently preparing a contract to remove a considerable amount of unused furniture and equipment which will increase the total waste arisings for 2016/17.

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 2.2 Summary of performance: Status

Area	Target	Target source	2008/09 baseline	2014/15	2015/16	% change	Status
GHG emissions (Tonnes CO2 e)	Reduce GHG emissions from operations by 42% by 2020 from 2008/09 levels	CMP	3,197	1,885	1,694	-47.0%	
Total energy consumed (kWh)	Reduced its energy consumption by at least 40% by 2020	SG	7,926,596	4,845,863	4,439,912	-43.9%	
Total energy expenditure	Not to exceed the baseline year numbers 2008/09		£585,252	£367,347	£311,576	-46.9%	
Total waste arisings (Tonnes)	Departments to reduce their waste arisings by 25% by 2020, relative to 2004/2005 levels.	SOGE	128.9	68.1	48.66	-62.2%	
% waste recycled	Recycle 70% of all waste arisings by 2025	SG	49.3%	88.3%	77.7%	+28.4%	
% waste to landfill	Only 5% of all waste arisings to go to landfill by 2025	SG	50.7%	10.6%	21.9%	-28.8%	
Total waste expenditure after income	Not to exceed the baseline year numbers 2008/09		£14,452	£13,215	£12,736	-11.8%	
Water consumption (m3)	Reduce water consumption by 25% in the office and non-office estate by 2020, relative to 2004/2005	SOGE	9,124	5,332	5,300	-41.9%	
Water expenditure	Not to exceed the baseline year numbers 2008/09		£63,803	£56,288	£54,999	-13.8%	
Owned transport and business travel (Km)	Not to exceed the baseline year numbers 2008/09		1,038,859	857,199	376,367	-63.7%	



Achieved / on target



Progress not sufficient to meet target / negative progress in reporting period



Negative progress

### 3.0 Key performance areas

3.1 Greenhouse gas emissions			2008/09	2013/14	2014/15	2015/16	
Non-financial indicators (Tonnes CO <sub>2</sub> e)	Gross emissions Scope 1	Gas	530	313	309	272	
		Organisation owned fleet	12	8	8	7	
		<b>Sub-total</b>	<b>542</b>	<b>320</b>	<b>315</b>	<b>279</b>	
	Gross emissions Scope 2	Electricity	2,511	1,374	1,558	1,369	
		<b>Sub-total</b>	<b>2,511</b>	<b>1,374</b>	<b>1,558</b>	<b>1,369</b>	
	Gross emissions Scope 3	Business travel	117	159	109	37	
		Waste disposal	18	5	3	3	
		Water supply and disposal	10	6	6	6	
		<b>Sub-total</b>	<b>144</b>	<b>169</b>	<b>117</b>	<b>46</b>	
	<b>Total gross emissions</b>			<b>3,197</b>	<b>1,865</b>	<b>1,990</b>	<b>1,694</b>

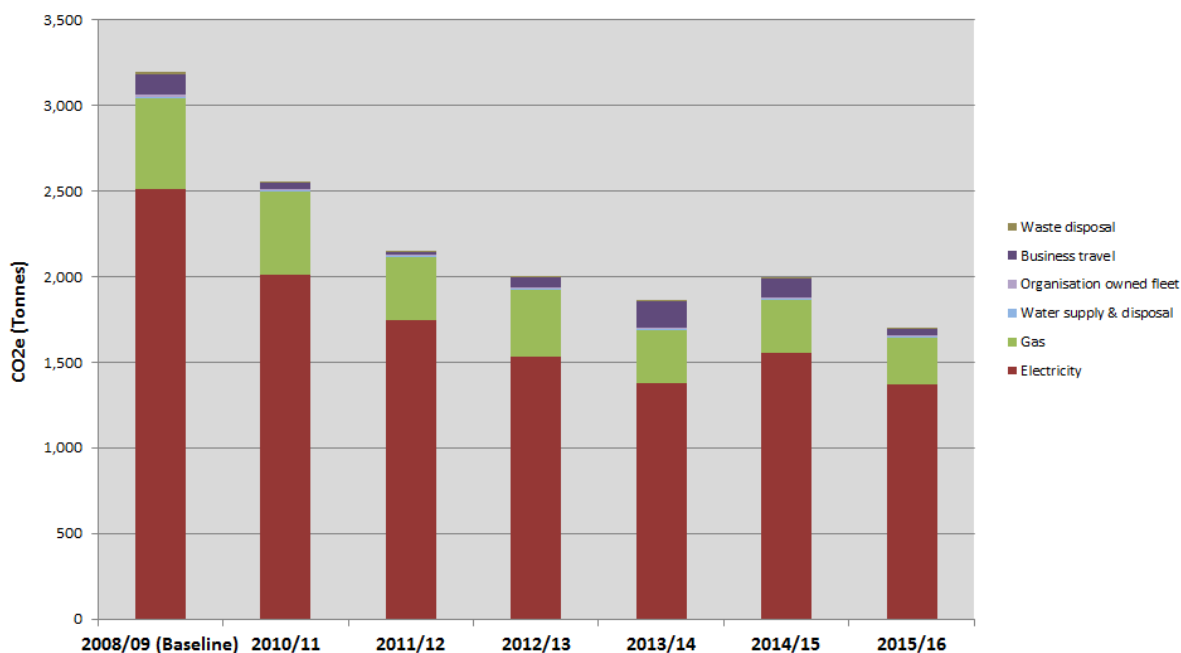


Figure 1 Total greenhouse gas emissions

**Targets:** To reduce CO<sub>2</sub> emissions from operations by 42% by the end of financial year 2015/16 from 2008/09 levels. NLS has exceeded this commitment. NLS has now set a target reduction of 50% emissions by 2020 based on 2008/09.

**Direct impacts:** 97% per cent of NLS emissions arise from energy consumption, of which 81% results from the consumption of electricity. The current CMP focuses on energy reduction measures as the most effective way of reducing GHG emissions. This has resulted in a 44% reduction in energy consumption. As a result other sources of emissions, such as transport, now represent a slightly higher percentage of the baseline. The focus will remain on reducing electricity consumption, with some focus on other sources of greenhouse gas emissions in the CMP review.

<b>3.2 Energy consumption</b>		<b>2008/09</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2015/16</b>
<b>Non-financial indicators (kWh)</b>	Electricity non-renewable	5,061,828	3,085,087	3,177,902	2,962,882
	Electricity renewable	0	0	0	0
	Gas	2,864,767	1,700,237	1,674,573	1,477,030
	LPG	0	0	0	0
	Other	0	0	0	0
	<b>Total energy</b>	<b>7,926,595</b>	<b>4,785,342</b>	<b>4,852,475</b>	<b>4,439,912</b>
	Total electricity per m sq.	130	83	85	78
	Total gas per m sq.	74	46	45	39
	<b>Total energy per m sq.</b>	<b>204</b>	<b>129</b>	<b>130</b>	<b>116</b>

<b>Financial indicators</b>	Total cost elec.	£508,988	£321,975	£316,616	£273,920
	Total cost gas	£76,264	£68,070	£50,731	£37,656
	<b>Total cost</b>	<b>£585,252</b>	<b>£390,045</b>	<b>£367,347</b>	<b>£311,576</b>
	Total cost elec. / total elec. consumption per kWh	£0.101	£0.104	£0.100	£0.092
	Total cost gas / total gas consumption kWh	£0.027	£0.040	£0.030	£0.025
	CRC License expenditure	£0	£0	£0	£0

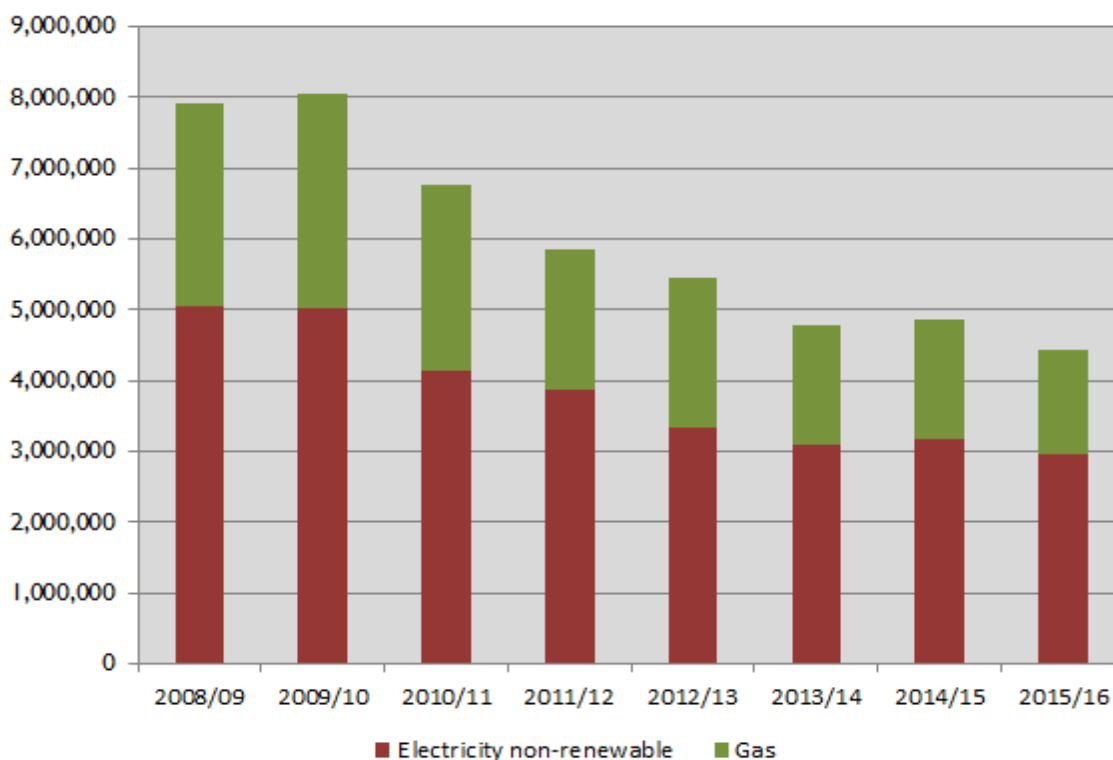


Figure 2 Total energy consumption (kWh)

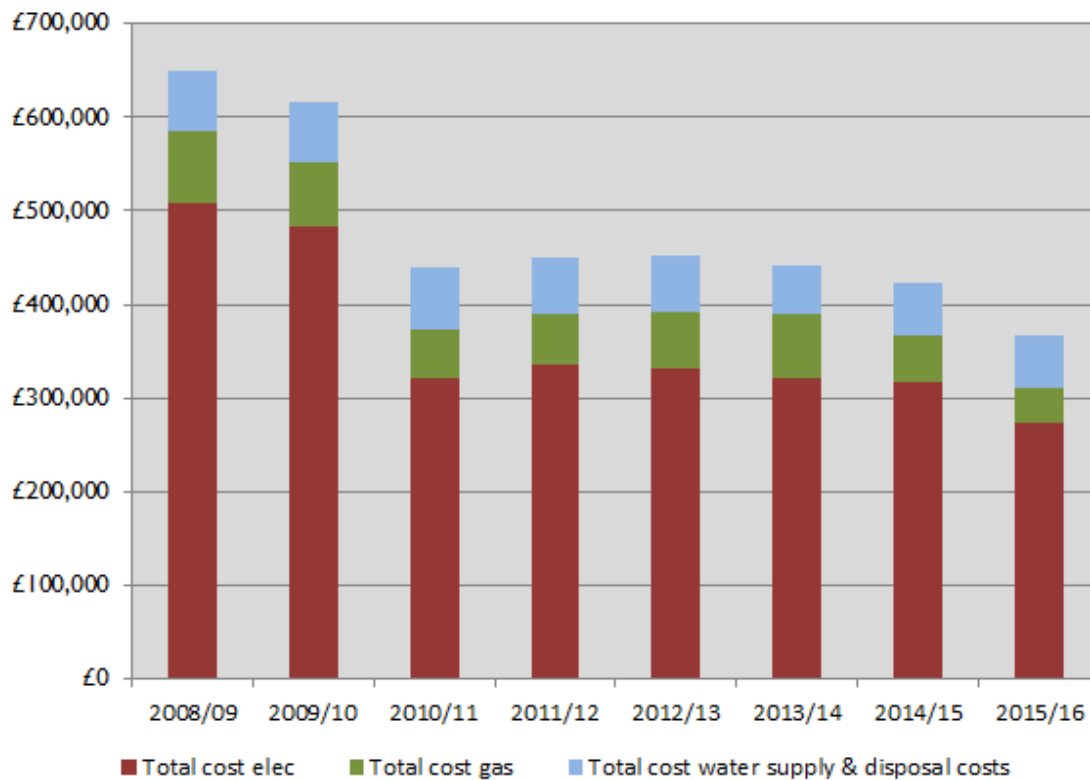


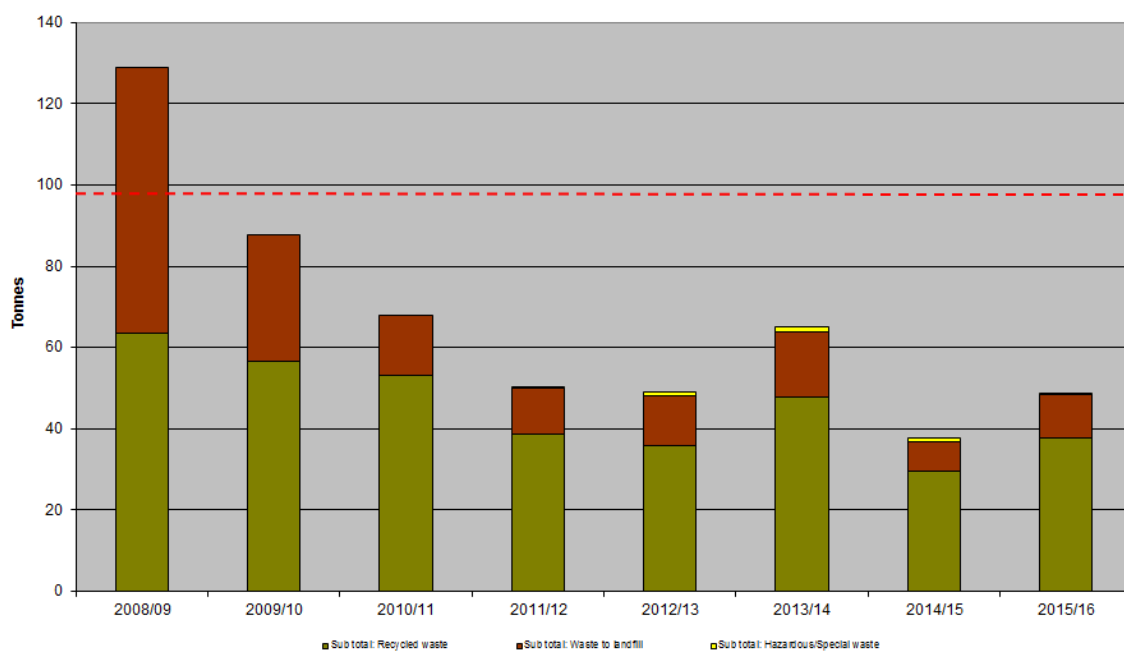
Figure 3 Total utility costs

**Targets:** NLS has reduced its energy consumption by **44%** since 2008/09. This is more than the Scottish Government target to reduce energy consumption by at least **40%** by 2020. A new target of maintaining this **44%** reduction in energy consumption to 2020 has been set.

**Direct impacts:** The cost of gas and electricity has reduced by 18% realising a financial saving of £56K.



<b>3.3 Waste (Excluding construction)</b>		<b>2008/09</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2015/16</b>
<b>Hazardous / special waste (Tonnes)</b>	Hazardous waste	0.16	0.88	0.10	0.00
	Clinical waste		0.45	0.69	0.22
	<b>Subtotal: Hazardous/Special waste</b>		<b>1.33</b>	<b>0.79</b>	<b>0.22</b>
<b>Non-hazardous: Re-used / Recycled / Composted (Tonnes)</b>	Aluminium and steel cans	0.04			
	Cardboard	3.09	5.50	5.45	1.44
	Plastic bottles	0.02			
	Paper - general	10.09			
	Mixed recycling	14.66	17.06	1.06	18.93
	Timber		0.00	0.00	0.00
	Paper - confidential	26.61	4.92	3.21	3.47
	Metal	3.62	10.25	0.00	4.95
	Glass	1.61	2.20	3.07	0.31
	WEEE	3.52	0.41	1.21	0.92
	Print cartridges	0.27			
	Box board		5.09	5.31	0.00
	Food waste (composted)		2.50	10.32	6.98
	Sundries (furniture etc.)		0.00	0.00	0.80
<b>Subtotal: Recycled waste</b>	<b>63.54</b>	<b>47.93</b>	<b>29.64</b>	<b>37.81</b>	
<b>Non-hazardous: Landfill (Tonnes)</b>	Solid waste to landfill (bins)	54.31	8.72	0.40	3.67
	Solid waste to landfill (skips)	11.05	7.06	6.80	6.96
	<b>Subtotal: Waste to landfill</b>	<b>65.36</b>	<b>15.78</b>	<b>7.20</b>	<b>10.63</b>
<b>Non-financial indicators (Tonnes)</b>	<b>Total waste arisings</b>	<b>128.90</b>	<b>65.04</b>	<b>37.63</b>	<b>48.66</b>
	<b>% Waste recycled (SG and SOGE)</b>	<b>49.3%</b>	<b>73.7%</b>	<b>78.8%</b>	<b>77.7%</b>
	<b>% Waste to landfill (SG and SOGE)</b>	<b>50.7%</b>	<b>24.3%</b>	<b>19.1%</b>	<b>21.9%</b>
<b>Financial indicators</b>	<b>Total waste disposal cost</b>	<b>£14,452</b>	<b>£13,215</b>	<b>£13,011</b>	<b>£13,044</b>
	<b>Total waste income</b>	<b>£0</b>	<b>£793</b>	<b>£0</b>	<b>£308</b>
	<b>Balance disposal cost</b>	<b>£14,452</b>	<b>£12,422</b>	<b>£13,011</b>	<b>£12,736</b>



**Figure 4 Total waste recycled / sent to landfill**

**Target:** To recycle **70%** of all waste arisings by 2025 with only **5%** of all waste arisings to go to landfill by 2025. NLS has continued to exceed the target for the percentage of waste recycled. There has been no progress toward the target of **5%** of all waste arisings to go to landfill by 2025 where we currently have only **21.9%**.

With the recent restructuring of the Health and Safety committee to include sustainability we are hoping that more staff engagement will result in better waste management throughout the estate.

**Direct impacts:** The new waste management contract was awarded May 2015. With a more robust waste management structure in place it is hoped that better waste statistics can now be collected and analysed. Whilst better statistics are now being provided, waste arising and waste to landfill appear very difficult to reduce.

3.4 Finite resource consumption - water		2008/09	2013/14	2014/15	2015/16
Non-financial indicators (m3)	Supplied m3	9,124	5,556	5,332	5,300
	Disposed m3	9,124	5,556	5,332	5,300

Financial indicators	Water supply and disposal costs	£63,803	£51,800	£56,288	£54,999
	Total cost water / total water consumption m3	£6.993	£9.323	£10.557	£10.377

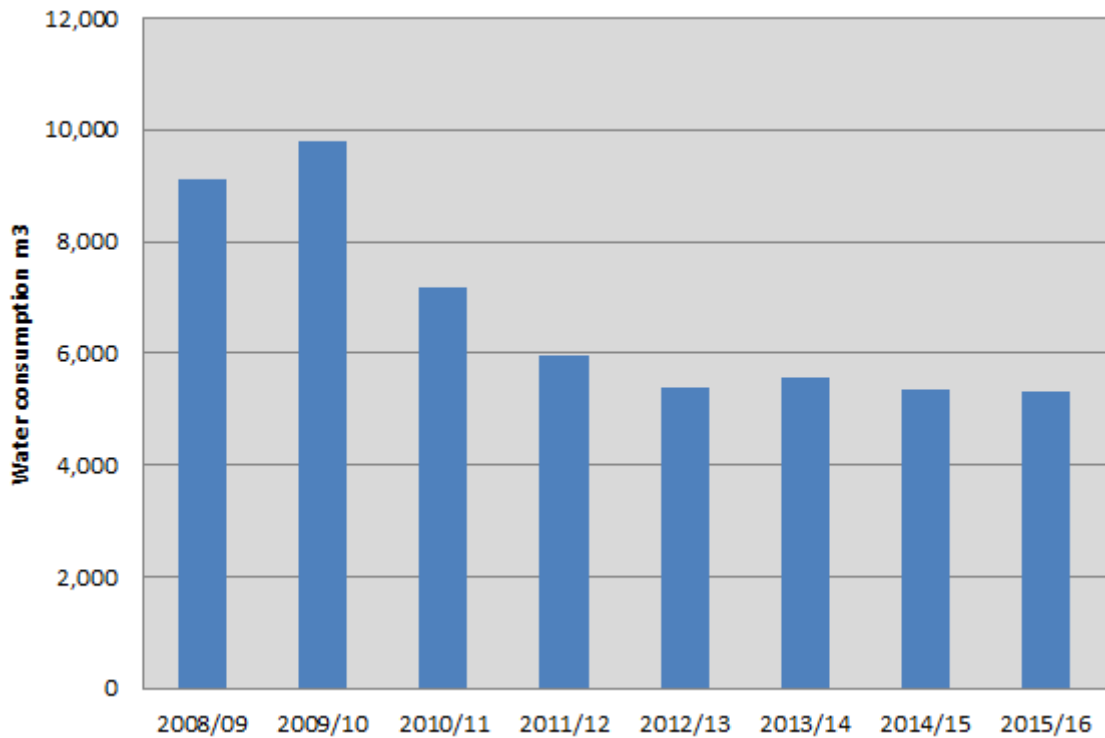


Figure 5 Total water consumption

**Target:** Reduce water consumption by **25%** in the office and non-office estate by 2020, relative to 2004/2005. NLS has exceeded this target and will therefore set a new meaningful target for water consumption within the revised CMP.

**Direct impacts:** Water consumption has been stabilised over the past two years. **66%** of all water consumption occurs in George IV Bridge, NLS's main public building. Future water saving initiatives will therefore be focused on this area.

3.5 Transport and travel		2008/09	2013/14	2014/15	2015/16
Non-financial indicators (Km)	Owned fleet	54,247	35,316	26,061	31,446
	Business - Air domestic	140,000	82,627	64,347	29,945
	Business - Air short haul	68,952	60,976	87,051	51,475
	Business - Air long haul	556,692	393,390	402,140	44,519
	Business - Rail	200,540	258,534	260,189	196,503
	Business - Taxi	12,230	3,667	3,309	2,341
	Business - Car (claimed)	6,198	11,870	7,324	10,376
	Business - Van hire	0	224	0	2,686
	Business - Car hire	0	1,767	5,391	5,097
	Business - Bus	0	3,825	1,388	1,978
<b>Total travel Km</b>		<b>1,038,859</b>	<b>852,196</b>	<b>857,199</b>	<b>376,367</b>

Financial indicators	Total cost - Fleet maintenance and repairs	£4,768	£3,339	£6,794	£20,518
	Total cost - Fleet insurance	£2,886	£3,545	£3,560	£3,604
	Total cost - Fleet fuel	£5,184	£5,031	£4,623	£4,816
	Total cost - Vehicle rental	£3,370	£4,469	£1,250	£2,417
	Total - Taxi contract	£89,056	£5,055	£3,451	£3,510
	Total - T and S		£121,122	£130,064	£121,267
	<b>Total cost</b>		<b>£105,264</b>	<b>£142,561</b>	<b>£149,742</b>

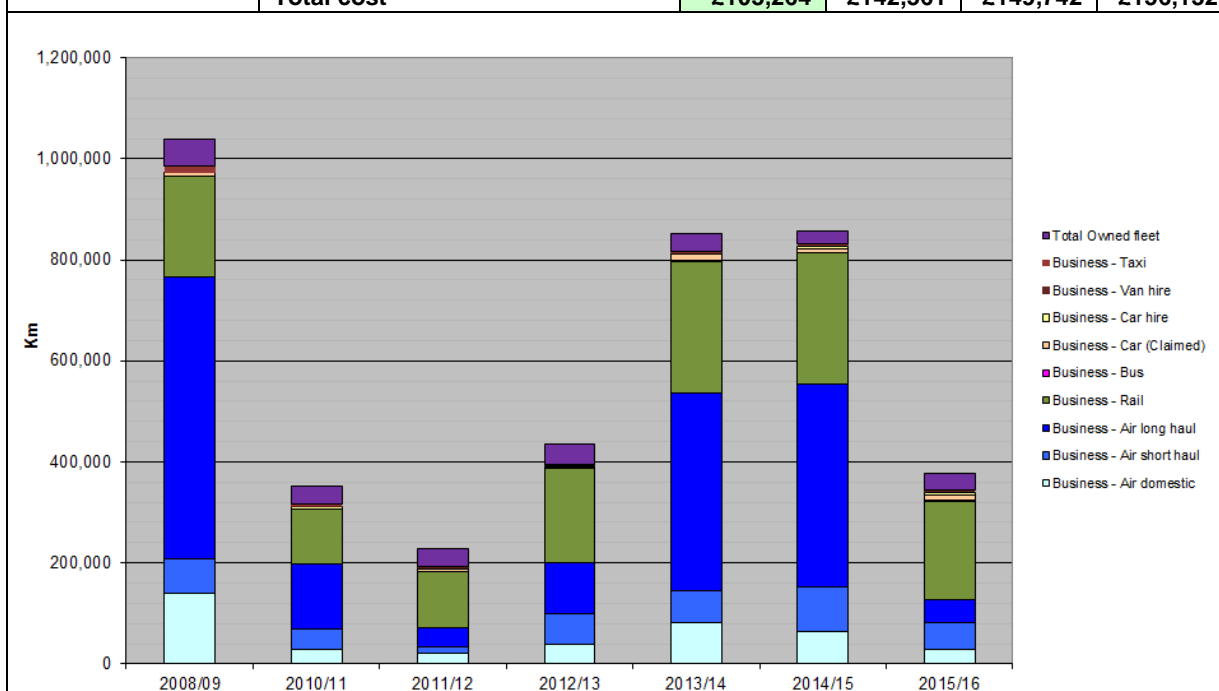


Figure 6 Total transport and travel

**Targets:** NLS does not have any travel targets, however green travel principles are embedded in the NLS Business Travel and Expenses Policy 2015, which provides guidance on the order of preference for mode of travel, i.e. walking/cycling; bus; rail; shared taxi; shared car; single occupancy taxi/car; air.

**Direct impacts:** There was a significant decrease in kilometres travelled during 2015/16, in particular a **40.86%** increase in short haul flights and an **88.92%** decrease in long haul flights. Data collection continues to be very laborious and it is still not possible to separately identify travel costs from subsistence costs.

#### **4.0 Biodiversity conservation measures**

NLS estate is located entirely on sites within city centres or satellite industrial estates. None of activities discharged by NLS has a direct connection to either the protection or the promotion of biodiversity.

NLS therefore does not currently have a formal approach to meeting its duties as a public body to further the conservation of biodiversity when performing its functions, as required under the Nature Conservation (Scotland) Act 2004. The nature of its estate and functions results in a limited opportunity to have a direct impact.

Biodiversity considerations only arise when the Library procures third party products and services. Any tests required to assure compliance follow the processes covered under the umbrella of 'Sustainable procurement'.

#### **5.0 Sustainable procurement**

The Library is currently working its way towards Stage 1 of the Flexible framework for sustainable procurement. The Library also intends to utilise the toolkit developed by the Scottish Government for the Prioritisation Methodology and Sustainability Test, where applicable for procurement projects.

A Community Benefits clause is now included in procurements where appropriate.

#### **6.0 Sustainable construction**

NLS does not currently have a system in place for the management of construction waste; however quality evaluation of waste management performance is included at PQQ and ITT stage for major construction projects. NLS aims to report construction waste separately for these projects.

NLS is actively trying to improve the sustainability of its estate by incorporating energy saving measures in all new projects. NLS is in the process of obtaining BREEAM in Use assessments for its George IV Bridge and Causewayside properties, in order that it can evaluate the impact of these measures over time, following completion of the external refurbishment projects which are currently being undertaken.

#### **7.0 Environmental management system**

In 2015 the Library Estates Division gained certification for ISO 9001 Quality Management System and ISO 14001 Environmental Management Systems.

NLS also takes part in an annual international benchmarking exercise as part of its membership of IAMFA, (International Association of Museum Facility Administrators). This is a comprehensive benchmarking exercise which measures not only utility consumption but, includes the performance of cleaning, security and maintenance operations within the Library and compares these against a number of major cultural institutions from around the world.

## Annex A: Methodology

### A.1 Targets

NLS aims to act in a way which supports the progress of Scottish Government toward its National Outcomes. NLS targets are therefore based on targets set by Scottish Government where relevant. These targets are:

#### **The Climate Change (Scotland) Act 2009**

The Act commits Scotland to reduce its emissions by at least 80% from 1990 levels by 2050; with an interim emissions reduction target of at least 42% by 2020.

The NLS Carbon Management Plan sets five year targets, based on a portfolio of achievable projects with the objective of helping the organisation toward the 2050 target.

Note: The NLS baseline is 2008/09, not 1990, due to the fact that there is insufficient data to create a meaningful 1990 baseline.

#### **The Conserve and Save: Energy Efficiency Action Plan 2010**

The Energy Efficiency Action Plan requires that by 2020:

- The public sector will have reduced its energy consumption by at least 12% (already achieved);
- Individual public bodies will all have set, and be monitoring, their own ambitious annual energy efficiency targets (original target set in the 2010 Carbon Management Plan of 30% reduction by 2015 – already achieved).

#### **Scotland's Zero Waste Plan 2010**

The plan sets a long term target for 2025 of recycling 70% of all Scotland's waste, and only 5% of the remaining waste going to landfill.

#### **Non-Scottish Government targets**

Where Scottish Government targets do not exist, NLS has adopted other UK targets, such as the SOGE targets.

### A.2 Scope

The baseline includes all of the significant sources of CO<sub>2</sub> emissions from the delivery of organisation functions at all of its sites. NLS does not outsource any of its services off site. The baseline relates to the utilities used in its buildings, waste, and transport to deliver the functions of the organisation, but not the embedded emissions in the goods procured by the organisation. The baseline is made up of CO<sub>2</sub> emissions from:

- Owned buildings energy use
- Owned/Leased fleet fuel use
- Business travel
- Waste produced by buildings and operations<sup>1</sup>
- Water used in buildings and operations.

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<sup>1</sup> Excluding waste from the Agency for Legal Deposit Libraries

### A.3 Baseline conversion factors

The data the DEFRA UK Government conversion factors for company reporting.

<http://www.ukconversionfactorscarbonsmart.co.uk/>

**Note:** DEFRA issues annual revision of historic conversion factors. In line with DEFRA guidance NLS recalculates all of its emissions using the revised factors.

The conversion factors, used to calculate the greenhouse gas emissions within the report are provided in the table below.

DEFRA UK Government Conversion Factors for Company Reporting	2008/09	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Elec kge/Co2 per kWh	0.49608	0.48531	0.45205	0.46002	0.44548	0.49023	0.46219
Gas kge/Co2 per kWh	0.18500	0.18500	0.18360	0.18521	0.18404	0.18455	0.18445
Water kge/Co2 per m3	1.05000	1.05260	1.05260	1.05260	1.05260	1.05260	1.05260

Waste (kg CO <sub>2</sub> e per tonne)	Hazardous / special waste	Hazardous waste						
		Clinical waste						
Non-hazardous: Re-used Recycled Composted	Aluminium and steel cans							
	Cardboard							
	Plastic bottles							
	Paper - general							
	Mixed recycling							
	Timber							
	Paper - confidential				21	21	21	21
	Metal							
	Glass							
	WEEE							
	Print cartridges							
	Box board							
	Food waste							
	Sundries (furniture etc.)							
Non-hazardous: Landfill	Solid waste to landfill (bins) - mixed municipal	290	290	290	290	290	290	
	Solid waste to landfill (skips) - mixed industrial	199	199	199	199	199	199	

Transport and travel (Kg CO <sub>2</sub> e per v Km)	Medium diesel car 1.7 to 2.0 ltr	0.18095	0.18095	0.18095				
	Diesel van Class I up to 1.305t	0.15678	0.15678	0.15678	0.15324	0.15350	0.15346	0.14447
	Diesel van Class III 1.74t-3.5t	0.27011	0.27011	0.27011	0.26642	0.26880	0.26881	0.26774
	Car: Average unknown fuel	0.20459	0.20459	0.20459	0.17750	0.17475	0.17720	0.17561
	Taxi: Black cab	0.24329	0.24329	0.24329	0.15709	0.15294	0.21877	0.21872
	Air: Domestic	0.16484	0.16484	0.16484	0.34387	0.32662	0.29316	0.29795
	Air: Short haul	0.09229	0.09229	0.09229	0.18705	0.18340	0.15835	0.16634
	Air: Long haul	0.08137	0.08137	0.08137	0.26233	0.26458	0.15054	0.15175
	Rail	0.05649	0.05649	0.05649	0.05818	0.04904	0.04738	0.04505
	Bus	0.03064	0.03064	0.03064	0.11195	0.01116	0.10946	0.10883

## A.4 Baseline data sources

The baseline data was taken for the financial year 2008/09.

### Stationary sources: Electricity and gas

Energy consumption data is gathered from weekly meter readings taken at each of the NLS property assets.

### Waste

The waste data for the baseline period was compiled by converting volumetric data into tonnage equivalents, based on a waste mapping exercise conducted by Leeds Metropolitan and Bradford Council and the compaction factor of the NLS compactor.

From October 2009 NLS started to weigh the majority of its waste on site. Data from this date onwards is therefore significantly more accurate. The weighed waste data indicates that the volume to weight conversion factors were probably too high, however, a decision was made not to recalculate historic data. Subsequent data is directly comparable.

During 2014/15 there were problems obtaining weights for food waste and mixed recycling. This meant that data provided by the waste management providers had to be used. This is based on volumetric conversions, and is therefore significantly less accurate.

### Water

Water consumption data is gathered from weekly meter readings taken at each of the NLS property assets.

### Transport

Fleet travel data is compiled from mileage log sheets for each fleet vehicle.

Business travel data prior to 2010/11 was taken from business expense claim forms and procurement card log sheets. Where departure and destination information was not provided the following assumptions for a typical generic journey were made to calculate the mileage:

- Train £3 - £20 = Edinburgh to Glasgow return
- Train £21 - £50 = Edinburgh to Dundee return.

From 2010/11 business travel data for journeys over £50 is as provided by the Scottish Government travel management service. Travel data below £50 continues to be collated from business expense claim forms and procurement card log sheets. Due to the introduction of new claim forms which capture travel information, journeys where the departure and arrival details cannot be identified have reduced.

Business travel costs continue to be inclusive of subsistence due to difficulties in separating the information. Separate cost codes are required to resolve this problem.

Taxi data prior to 2011/12 was calculated by using a conversion factor of £1 = 1 kilometer.

Taxi data for 2011/12 is as provided by the Scottish Government taxi provider.

Claimed car mileage is as recorded on expense claim forms.

Car hire data is as provided by the Scottish Government vehicle hire provider.