National Library of Scotland
Public Sector Sustainability Report 2014 - 15

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CONTENT

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 40% 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; and
- 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.

NLS is considered a Major Player and is expected to do more than other public bodies, with additional actions laid out in the guidance.

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

- has been prepared in line with the Scottish Government Public Sector Sustainability Reporting – Guidance on the preparation of Annual Sustainability Reports Financial Year 2012-13

- shall be published alongside its Annual Reports and Accounts

2.0 Executive summary

2.1 Progress during 2014/15

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

In it, NLS set out it's a 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 pose to NLS in the medium to long term

and the following target:

National Library of Scotland will reduce CO_2 emissions from its operation by 42% by 2020 from 2008/09 levels.

During the financial year 2014 – 15 NLS suffered a slight increase in our GHG emissions and energy consumption over the year but we are still on target to meet 40% reduction in comparison to 2008/09 levels;

- reduced GHG emissions from its operation of -**38%**
- reduced energy consumption by -**39%**
- continued to stabilise it utilities costs

Areas which require renewed focus are;

- Most concerning is the **4.9%** increase in electricity consumption in George IV Bridge. We suspect this increase was due to the inclement weather causing an increase in the requirement for humidification within the collection spaces.
- Business travel, which has shown has again shown an increase in kilometres travelled. Whilst there was a decrease in domestic air travel, we are managed the equivalent of 50 return flights to London. Short haul flights show **43%** increase and long haul flights again show a **2.2%** increase. Data collection continues to be very laborious and cannot be sustained in its current form. It is still not possible to separately identify travel costs from subsistence costs.
- Waste, has shown a decrease in total waste arising's of **73%** compared to 2013/14, (although we suspect this figure has more to do with less accurate recording that an actual reduction in waste arising's). However **19%** of waste still going to landfill, and our target is to reduce our waste to landfill to **5%.** This target and better recording of total waste arising's have been built into our recently awarded waste management contract.

2.2 Summary of Performance: Status

Area	Target	Target source	2008/09 baseline	2014/15	% change	Status
GHG emissions (Tonnes CO2 e)	Reduce GHG emissions from operations by 42% by 2020 from 2008/09 levels	CMP	3,197	1,990	-37.8%	
Total energy consumed (kWh)	Reduced its energy consumption by at least 40% by 2020	SG	7,926,596	4,852,475	-38.8%	
Total energy expenditure	Not to exceed the baseline year numbers 2008/09		£585,252	£367,347	-37.2%	
Total waste arising's (Tonnes)	Departments to reduce their waste arising's by 25% by 2020, relative to 2004/2005 levels.	SOGE	128.9	37.63	-72.8%	
% waste recycled	Recycle 70% of all waste arising's by 2025	SG	49.3%	78.8%	+29.5%	
% waste to landfill	Only 5% of all waste arising's to go to landfill by 2025	SG	50.7%	19.1%	-31.6%	
Total waste expenditure after income	Not to exceed the baseline year numbers 2008/09		£14,452	£13,011	-9.9%	
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	-41.5%	
Water expenditure	Not to exceed the baseline year numbers 2008/09		£63,803	£56,288	-11.7%	
Owned transport & business travel (Km)	Not to exceed the baseline year numbers 2008/09		1,038,859	857,199	-17.4%	
Owned transport & travel expenditure	Not to exceed the baseline year numbers 2008/09		£105,264	£149,742	+42.2%	

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	2012/13	2013/14	2014/15
Non-financial indicators **(Tonnes CO_2e)**	**Gross emissions Scope 1**	Gas	530	391	313	309
		Organisation owned fleet	12	8	8	6
		Sub-total	**542**	**399**	**320**	**315**
	Gross emissions Scope 2	Electricity	2,511	1,531	1,374	1,558
		Sub-total	**2,511**	**1,531**	**1,374**	**1,558**
	Gross emissions Scope 3	Business travel	117	61	159	109
		Waste disposal	18	4	5	3
		Water supply & disposal	10	6	6	6
		Sub-total	**144**	**71**	**169**	**117**
	Total Gross emissions		**3,197**	**2,001**	**1,865**	**1,990**

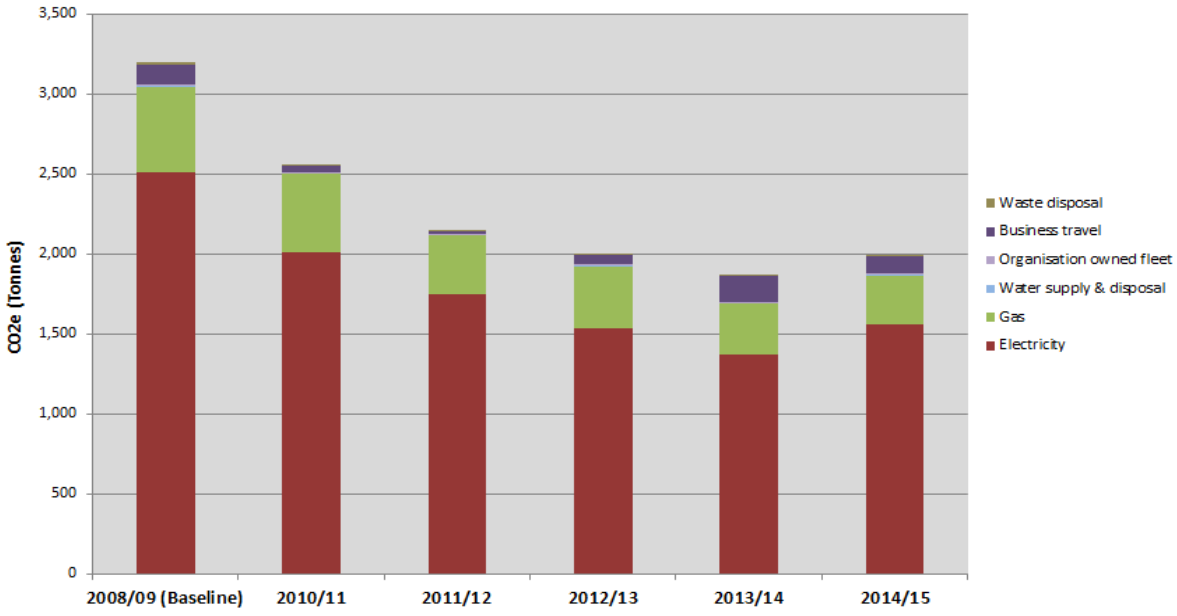

Figure 1 Total Green House Gas emissions

Targets: To reduce CO_2 emissions from operations by 30% by the end of financial year 2014/15 from 2008/09 levels. NLS has exceeded this commitment. NLS will review the CMP during 2014/15 and new targets set.

Direct impacts: 91% per cent of NLS emissions arise from energy consumption, of which 79% 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 39% 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.

3.2 Energy consumption		2008/09	2012/13	2013/14	2014/15
Non-financial indicators (kWh)	Electricity non-renewable	5,061,828	3,328,460	3,085,087	3,177,902
	Electricity renewable	0	0	0	0
	Gas	2,864,767	2,111,620	1,700,237	1,674,573
	LPG	0	0	0	0
	Other	0	0	0	0
	Total energy	**7,926,595**	**5,440,080**	**4,785,342**	**4,852,475**
	Total electricity per m sq.	130	104	83	85
	Total gas per m sq.	74	53	46	45
	Total energy per m sq.	**204**	**157**	**129**	**130**

Financial indicators	Total cost elec.	£508,988	£330,881	£321,975	£316,616
	Total cost gas	£76,264	£60,563	£68,070	£50,731
	Total cost	**£585,252**	**£391,444**	**£390,045**	**£367,347**
	Total cost elec. / total elec. consumption per kWh	£0.101	£0.099	£0.104	£0.100
	Total cost gas / total gas consumption kWh	£0.027	£0.029	£0.040	£0.030
	CRC License expenditure	£0	£0	£0	£0

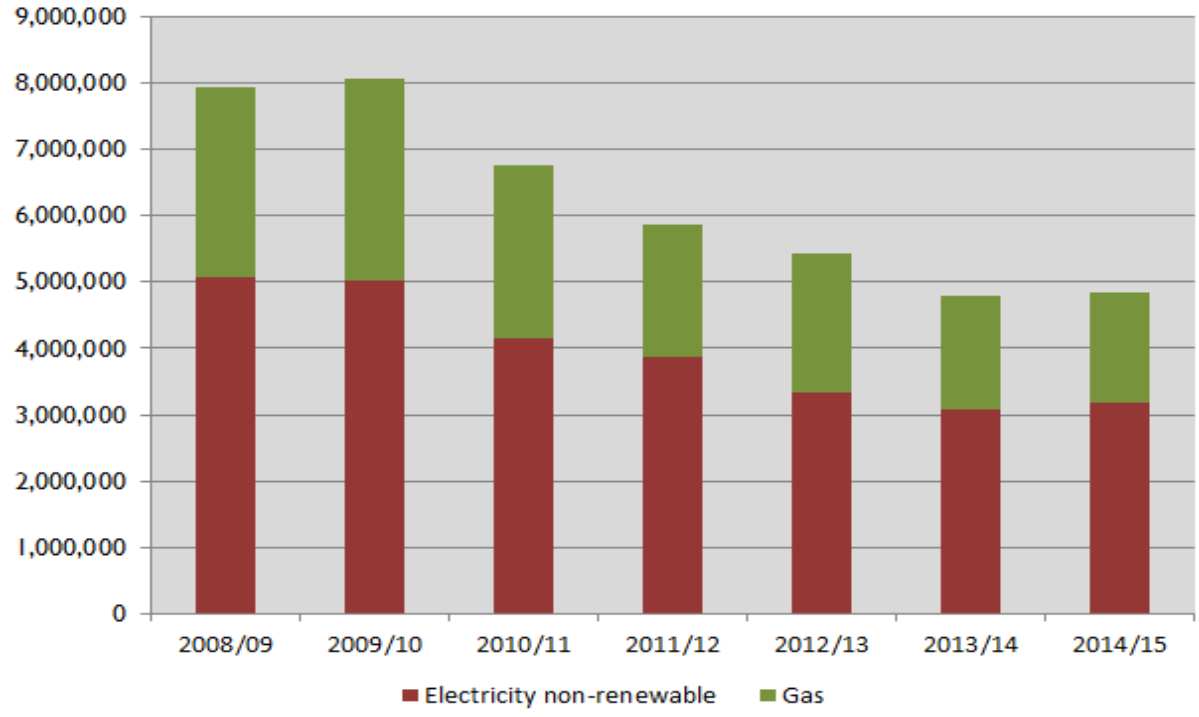

Figure 2 Total energy consumption (kWh)

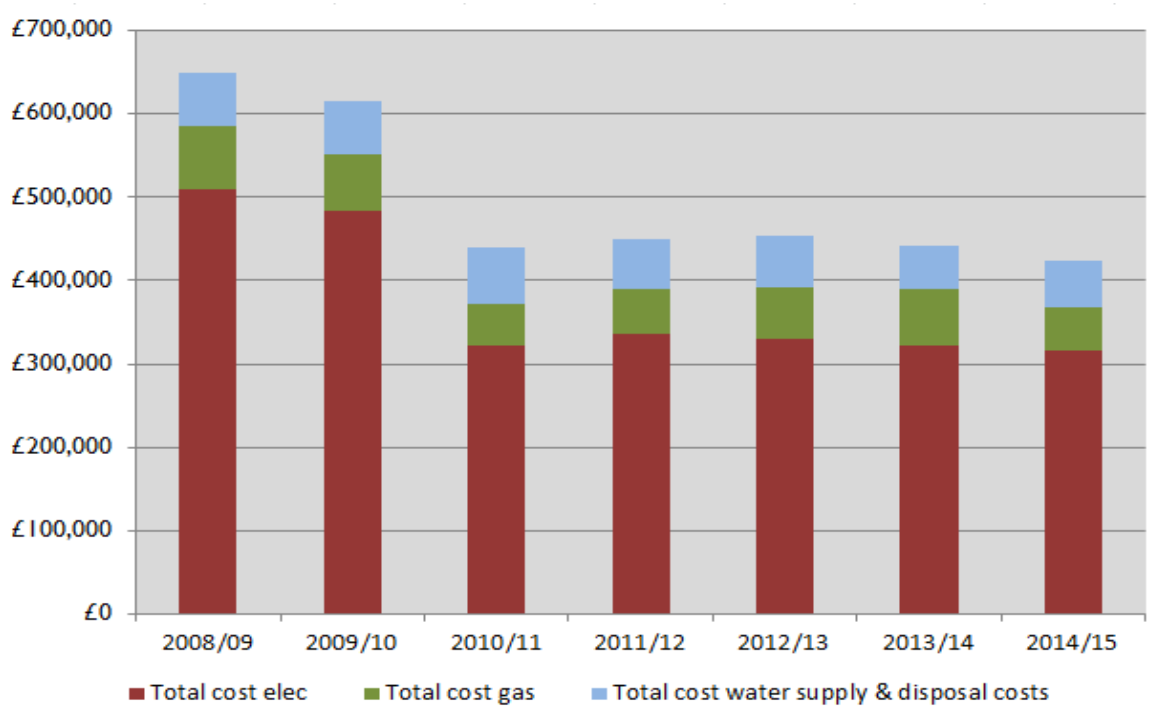

Figure 3 Total utility costs

Targets: NLS has reduced its energy consumption by 39% since 2008/09. This is near the Scottish Government target to reduce energy consumption by at least 40% by 2020. A more meaningful target will be set during the CMP review

Direct impacts: The predicted annual cost saving from the CMP during 2014/15 was £160k. The actual cost saving achieved was £165k. Importantly NLS expenditure on utilities over the period of the CMP has been stable despite significant instability in the unit price

3.3 Waste (Excluding construction)		2008/09	2012/13	2013/14	2014/15
Hazardous / special waste (Tonnes)	Hazardous waste	0.16	0.52	0.88	0.10
	Clinical waste		0.45	0.45	0.69
	Subtotal: Hazardous/Special waste		**0.97**	**1.33**	**0.79**
Non-Hazardous: Re-used / Recycled / Composted (Tonnes)	Aluminium & steel cans	0.04			
	Cardboard	3.09	5.31	5.50	5.45
	Plastic bottles	0.02			
	Paper - General	10.09			
	Mixed recycling	14.66	11.36	17.06	1.06
	Timber		0.74	0.00	0.00
	Paper - Confidential	26.61	1.17	4.92	3.21
	Metal	3.62	3.86	10.25	0.00
	Glass	1.61	2.05	2.20	3.07
	WEEE	3.52	3.13	0.41	1.21
	Print cartridges	0.27			
	Box board		3.66	5.09	5.31
	Food waste (Composted)		2.50	2.50	10.32
	Sundries (Furniture etc.)		2.00	0.00	0.00
	Subtotal: Recycled waste	**63.54**	**35.77**	**47.93**	**29.64**
Non-Hazardous: Landfill (Tonnes)	Solid waste to landfill (bins)	54.31	10.77	8.72	0.40
	Solid waste to landfill (skips)	11.05	1.46	7.06	6.80
	Subtotal: Waste to landfill	**65.36**	**12.23**	**15.78**	**7.20**
Non-financial indicators (Tonnes)	**Total waste arising's**	**128.90**	**48.97**	**65.04**	**37.63**
	% Waste recycled (SG & SOGE)	**49.3%**	**73.0%**	**73.7%**	**78.8%**
	% Waste to landfill (SG & SOGE)	**50.7%**	**25.0%**	**24.3%**	**19.1%**
Financial indicators	**Total waste disposal cost**	£14,452	£16,104	£13,215	£13,011
	Total waste income	£0	£474	£793	£0
	Balance disposal cost	£14,452	£15,630	£12,422	£13,011

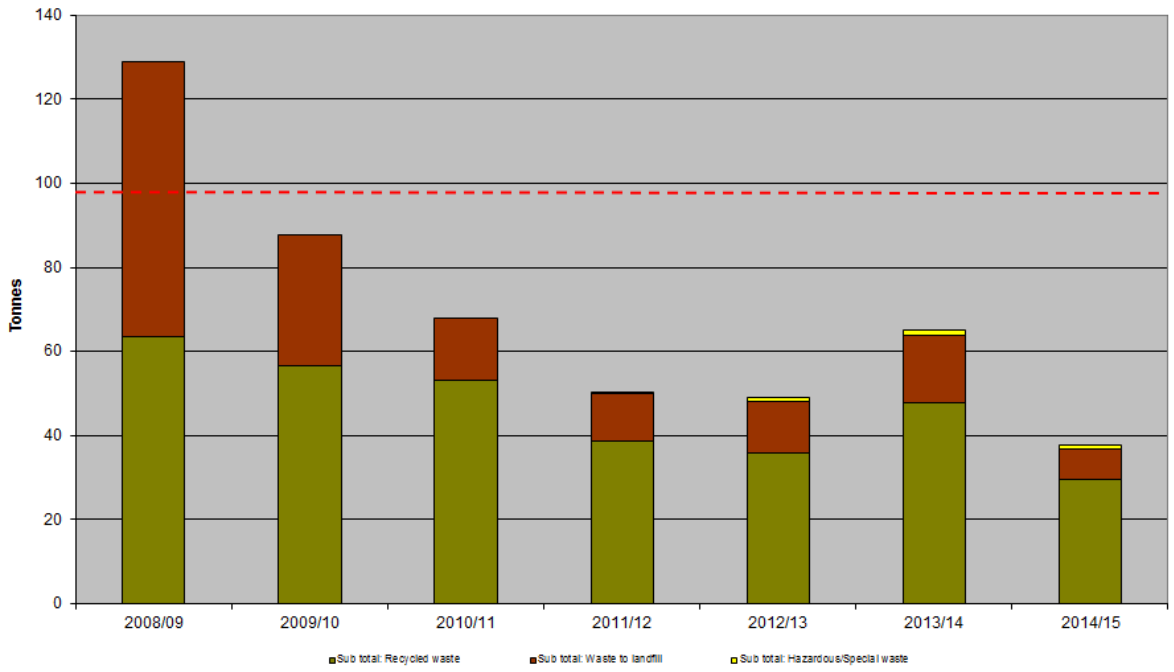

Figure 4 Total waste recycled / sent to landfill

Target: To recycle 70% of all waste arising's by 2025 with only 5% of all waste arising's to go to landfill by 2025. NLS has exceeded the target for the percentage of waste recycled for three successive years. However there has been no progress toward the target of 5% of all waste arising's to go to landfill by 2025.

Some of the apparent increase in the amount of waste arising's explained by problems in getting waste weighed. Estimates provided by the waste management provider have therefore had to be used, which are based on volume conversions and appear to overestimate the weights.

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.

3.4 Finite Resource Consumption - Water		2008/09	2012/13	2013/14	2014/15
Non-financial indicators (m3)	Supplied m3	9,124	5,372	5,556	5,332
	Disposed m3	9,124	5,372	5,556	5,332

Financial indicators	Water supply & disposal costs	**£63,803**	**£61,366**	**£51,800**	**£56,288**
	Total cost water / total water consumption m3	£6.993	£11.423	£9.323	£10.557

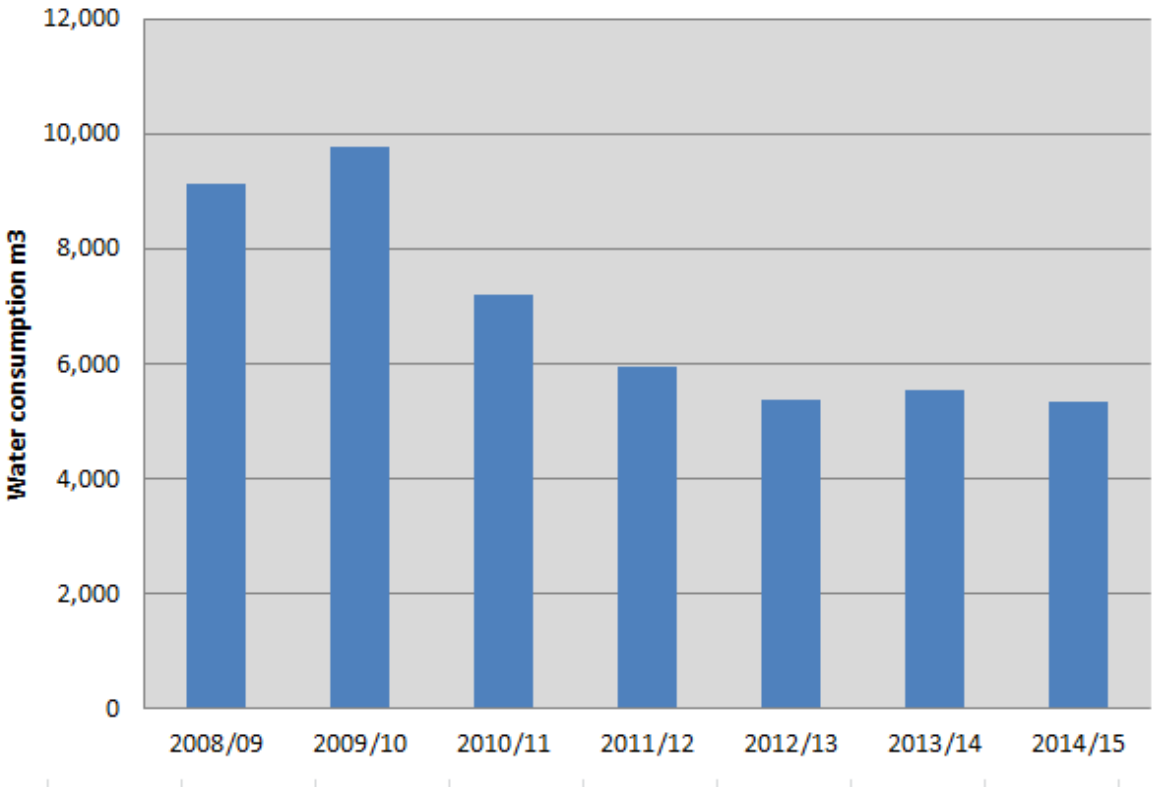

Figure 5 Total water consumption

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 & travel		2008/09	2012/13	2013/14	2014/15
Non-financial indicators (Km)	Owned fleet	54,247	39,311	35,316	26,061
	Business - Air domestic	140,000	39,922	82,627	64,347
	Business - Air short haul	68,952	58,500	60,976	87,051
	Business - Air long haul	556,692	101,719	393,390	402,140
	Business - Rail	200,540	186,112	258,534	260,189
	Business - Taxi	12,230	2,272	3,667	3,309
	Business - Car (Claimed)	6,198	2,468	11,870	7,324
	Business - Van hire	0	444	224	0
	Business - Car hire	0	2,951	1,767	5,391
	Business - Bus	0	252	3,825	1,388
	Total travel Km	**1,038,859**	**433,951**	**852,196**	**857,199**

Financial indicators	Total cost - Fleet maintenance & repairs	£4,768	£4,169	£3,339	£6,794
	Total cost - Fleet insurance	£2,886	£3,376	£3,545	£3,560
	Total cost - Fleet fuel	£5,184	£4,936	£5,031	£4,623
	Total cost - Vehicle rental	£3,370	£1,208	£4,469	£1,250
	Total - Taxi contract	£89,056	£5,057	£5,055	£3,451
	Total - T & S		£54,651	£121,122	£130,064
	Total cost	**£105,264**	**£73,497**	**£142,561**	**£149,742**

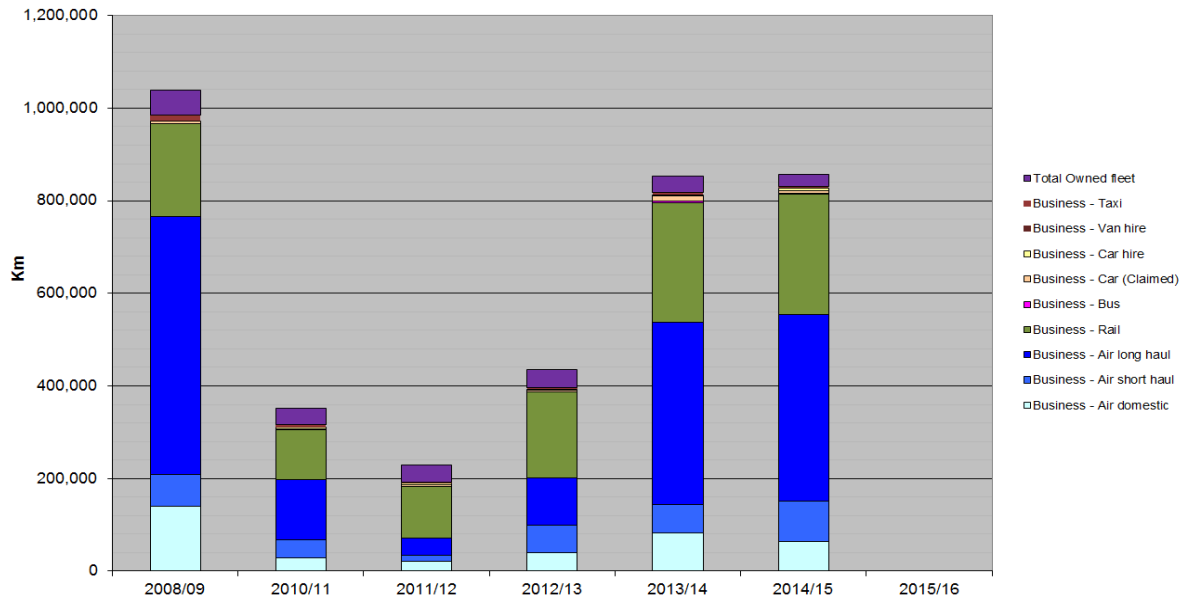

Figure 6 Total transport and travel

Targets: NLS does not have any travel targets, however green travel principles are embedded in the NLS Business Travel and Expenses Policy 2010, 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 increase in kilometres travelled during 2014/15, in particular a 42.76% increase in short haul flights and a 2.22% increase 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_2 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_2 emissions from:

- owned buildings energy use
- owned/Leased Fleet Fuel Use
- business travel
- waste produced by buildings and operations[1]
- water used in buildings and operations

[1] 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 recalulates all of its emmisions using the revised factors.

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

DEFRA UK Government Conversion Factors for Company Reporting	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Elec kge/Co2 per kWh	0.49608	0.49381	0.48531	0.45205	0.46002	0.44548	0.49023
Gas kge/Co2 per kWh	0.18500	0.18500	0.18500	0.18360	0.18521	0.18404	0.18455
Water kge/Co2 per m3	1.05000	1.04000	1.05260	1.05260	1.05260	1.05260	1.05260

Waste (kg CO_2e per tonne)	**Hazardous / special waste**	Hazardous waste						
		Clinical waste						
	Non-Hazardous: Re-used Recycled Composted	Aluminium & steel cans				21	21	21
		Cardboard						
		Plastic bottles						
		Paper - General						
		Mixed recycling						
		Timber						
		Paper - Confidential						
		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	290
		Solid waste to landfill (skips) - Mixed industrial	199	199	199	199	199	199	199

Transport & travel (Kg CO_2 e per v Km)	Medium diesel car 1.7 to 2.0 ltr	0.18095	0.18095	0.18095	0.18095			
	Diesel van Class I up to 1.305t	0.15678	0.15678	0.15678	0.15678	0.15324	0.15350	0.15346
	Diesel van Class III 1.74t - 3.5t	0.27011	0.27011	0.27011	0.27011	0.26642	0.26880	0.26881
	Car: Average unknown fuel	0.20459	0.20459	0.20459	0.20459	0.17750	0.17475	0.17720
	Taxi: Black cab	0.24329	0.24329	0.24329	0.24329	0.15709	0.15294	0.21877
	Air: Domestic	0.16484	0.16484	0.16484	0.16484	0.34387	0.32662	0.29316
	Air: Short haul	0.09229	0.09229	0.09229	0.09229	0.18705	0.18340	0.15835
	Air: Long haul	0.08137	0.08137	0.08137	0.08137	0.26233	0.26458	0.15054
	Rail	0.05649	0.05649	0.05649	0.05649	0.05818	0.04904	0.04738
	Bus	0.03064	0.03064	0.03064	0.03064	0.11195	0.01116	0.10946

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 & 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 acurate. 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 assests.

Transport

Fleet travel data is compiled from milage 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.