National Library of Scotland
Public Sector Sustainability Report 2016 - 17

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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 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; 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.

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 body's climate change duties guidance1, '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, the Library 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 2012-13.

- shall be published on the Library's website.

2.0 Executive summary

2.1 Progress during 2016/17

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

In it, the Library set out its low carbon vision;

> . **The Library 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**
>
> . **The Library 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_2 emissions from its operation by 50% by 2020 from 2008/09 levels.**

During the financial year 2016 – 17 the Library 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 – **54.17%**
- reduced energy consumption by – **48.66%**
- continued to stabilise its utilities costs

Comments on results;

- It is particularly rewarding to have managed to maintain a reduction in energy consumption this year. This has mainly been down to the diligent work of our ECG FM Team who have continued to develop and implement BMS control strategy changes. This reduction has also been helped by the continued relatively mild weather through autumn and winter months. Going forward, it should be noted these results do not include any significant staff engagement and to have any chance of meeting the **80%** reduction in greenhouse gas emission by **2050**, this, as well as continued plant investment will be required. It should also be noted that our utility consumption and costs do not tell the full picture because they do not include Kelvin Hall as that information is not currently available.

- Whilst business travel shows an overall increase of **8%**, air travel, both long haul and short haul, show an overall reduction of **31%**, however there was a **26%** increase in rail travel. We suspect this is most likely down to the opening of Kelvin Hall and an increase requirement for staff to travel through to Glasgow. We again show an increase in the in-house fleet costs which is entirely down to vehicle purchases.

- Waste has shown a decrease in total arisings of **22%** compared to 2014/15. However **15%** of waste is still going to landfill and with a target of reducing waste to landfill to **5%,** we still have a lot to do. 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 talk about the different waste streams. This is to increase our recycling in an attempt to reduce our waste to landfill. Further education is required around confidential waste as we are still experiencing material that is obviously not confidential waste being disposed of as confidential waste.

  We have started to record the amount of excess magazines and pamphlets which have to be collected for disposal. For the year 16/17 we estimate that we have disposed of over a tonne of excess magazines and pamphlets. These numbers will be accurately recorded for the next sustainability report.

2.2 Summary of Performance: Status

Area	Target	Target source	2008/09 baseline	2015/16	2016/17	% change	Status
GHG emissions (Tonnes CO2 e)	Reduce GHG emissions from operations by 42% by 2020 from 2008/09 levels	CMP	3,197	1,694	1,465	-54.17%	
Total energy consumed (kWh)	Reduced its energy consumption by at least 40% by 2020	SG	7,926,596	4,439,912	4,068,805	-48.66%	
Total energy expenditure	Not to exceed the baseline year numbers 2008/09		£585,252	£311,576	£329,837	-43.64%	
Total waste arisings (Tonnes)	Departments to reduce their waste arisings by 25% by 2020, relative to 2004/2005 levels.	SOGE	128.9	48.66	37.95	-70.55%	
% waste recycled	Recycle 70% of all waste arisings by 2025	SG	49.3%	77.7%	84.1%	+34.8%	
% waste to landfill	Only 5% of all waste arisings to go to landfill by 2025	SG	50.7%	21.9%	14.5%	-36.2%	
Total waste expenditure after income	Not to exceed the baseline year numbers 2008/09		£14,452	£12,736	£19,409	+25.5%	
Water consumption (m3)	Reduce water consumption by 25% in the office and non-office estate by 2020, relative to 2004/2005	SOGE	9,124	5,300	5,339	-41.48%	
Water expenditure	Not to exceed the baseline year numbers 2008/09		£63,803	£54,999	£59,201	-7.21%	
Owned transport & business travel (Km)	Not to exceed the baseline year numbers 2008/09		1,038,859	376,367	409,773	-60.55%	

Achieved / on target

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

Negative progress

3.0 Key Performance Areas

| Greenhouse Gas Emissions			2008/09	2013/14	2014/15	2015/16	2016/17
Non-financial indicators **(Tonnes CO$_2$e)**	**Gross emissions Scope 1**	Gas	530	313	309	272	257
		Organisation owned fleet	12	8	8	7	8
		Sub-total	**542**	**320**	**315**	**279**	**265**
	Gross emissions Scope 2	Electricity	2,511	1,374	1,558	1,369	1,159
		Sub-total	**2,511**	**1,374**	**1,558**	**1,369**	**1,159**
	Gross emissions Scope 3	Business travel	117	159	109	37	34
		Waste disposal	18	5	3	3	2
		Water supply & disposal	10	6	6	6	6
		Sub-total	**144**	**169**	**117**	**46**	**41**
	Total Gross emissions		**3,197**	**1,865**	**1,990**	**1,694**	**1,465**
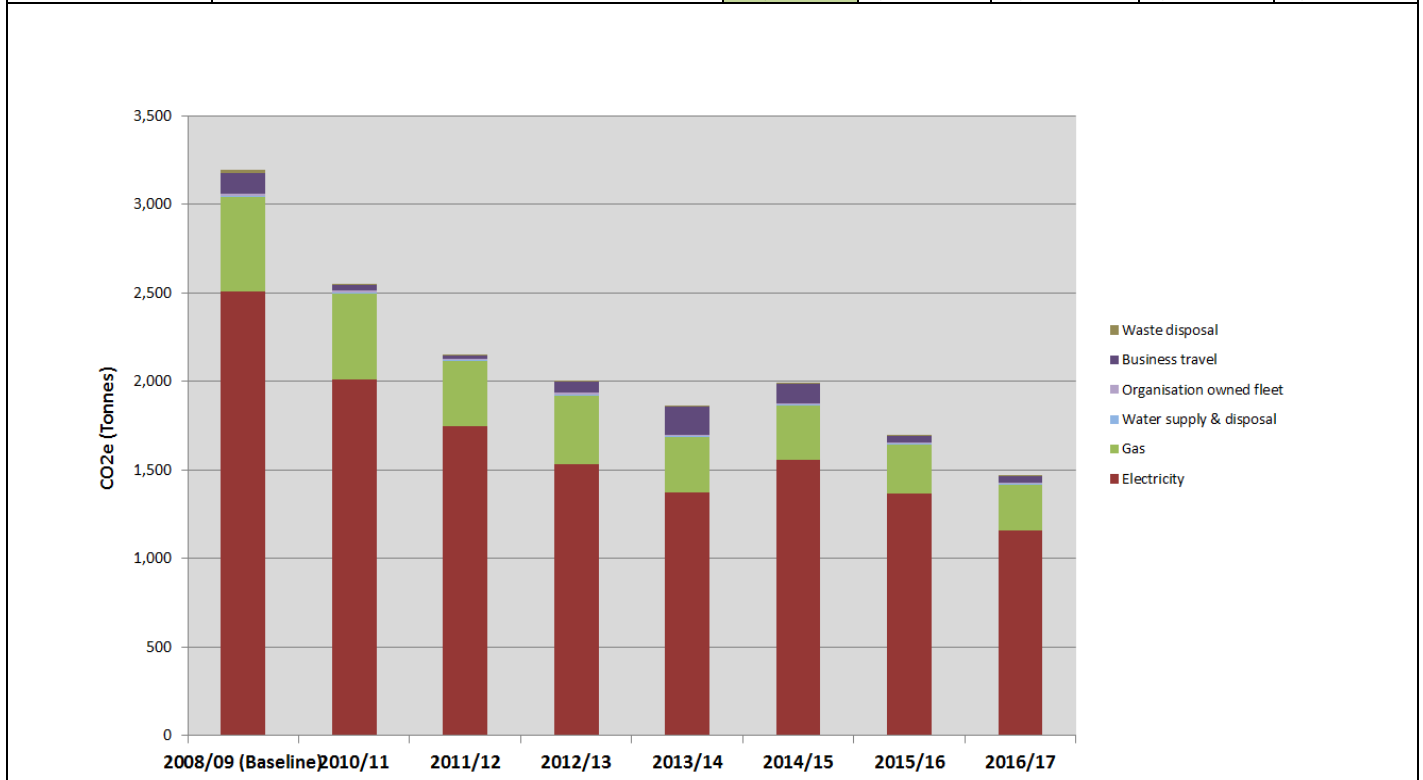
Figure 1 Total Green House Gas emissions

Targets: To reduce CO$_2$ emissions from operations by 42% by the end of financial year 2015/16 from 2008/09 levels. The Library has exceeded this commitment; therefore the Library has now reset a target reduction of 50% greenhouse gas emissions by 2020.

Direct impacts: **97%** per cent of the Library's emissions arise from energy consumption, of which **79%** results from the consumption of electricity. The current Carbon Management Plan, (CMP), focuses on energy reduction measures as the most effective way of reducing GHG emissions. This has resulted in a **49%** reduction in energy consumption. As other sources of emissions, such as transport, only represent **3%** of our greenhouse gas emissions, the focus will remain on reducing energy consumption, focusing on reducing electricity consumption in the current CMP review.

3.2 Energy consumption		2008/09	2013/14	2014/15	2015/16	2016/17
Non-financial indicators (kWh)	Electricity non-renewable	5,061,828	3,085,087	3,177,902	2,962,882	2,812,096
	Electricity renewable	0	0	0	0	0
	Gas	2,864,767	1,700,237	1,674,573	1,477,030	1,256,710
	LPG	0	0	0	0	0
	Other	0	0	0	0	0
	Total energy	7,926,595	4,785,342	4,852,475	4,439,912	4,068,805
	Total electricity per m sq.	130	83	85	78	74
	Total gas per m sq.	74	46	45	39	33
	Total energy per m sq.	**204**	**129**	**130**	**116**	**107**

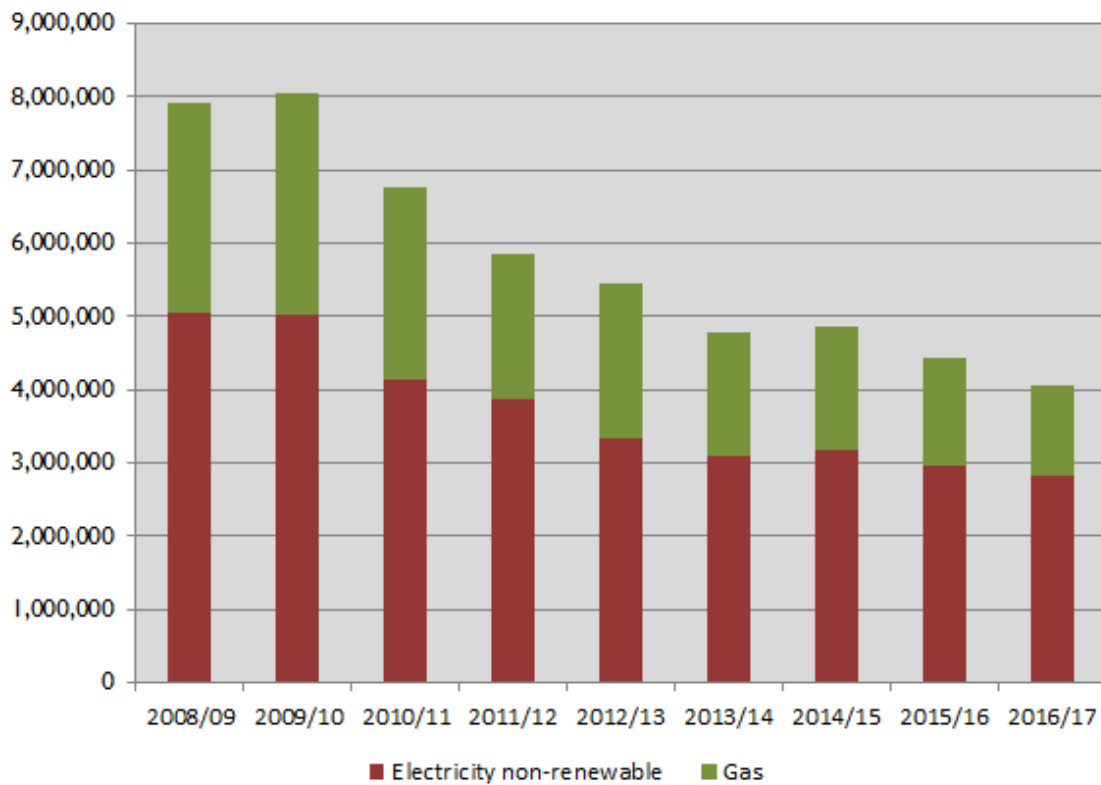| **Financial indicators**	Total cost elec.	£508,988	£321,975	£316,616	£273,920	£300,301
	Total cost gas	£76,264	£68,070	£50,731	£37,656	£29,536
	Total cost	**£585,252**	**£390,045**	**£367,347**	**£311,576**	**£329,837**
	Total cost elec. / total elec. consumption per kWh	£0.101	£0.104	£0.100	£0.092	£0.107
	Total cost gas / total gas consumption kWh	£0.027	£0.040	£0.030	£0.025	£0.024
	CRC License expenditure	£0	£0	£0	£0	£0

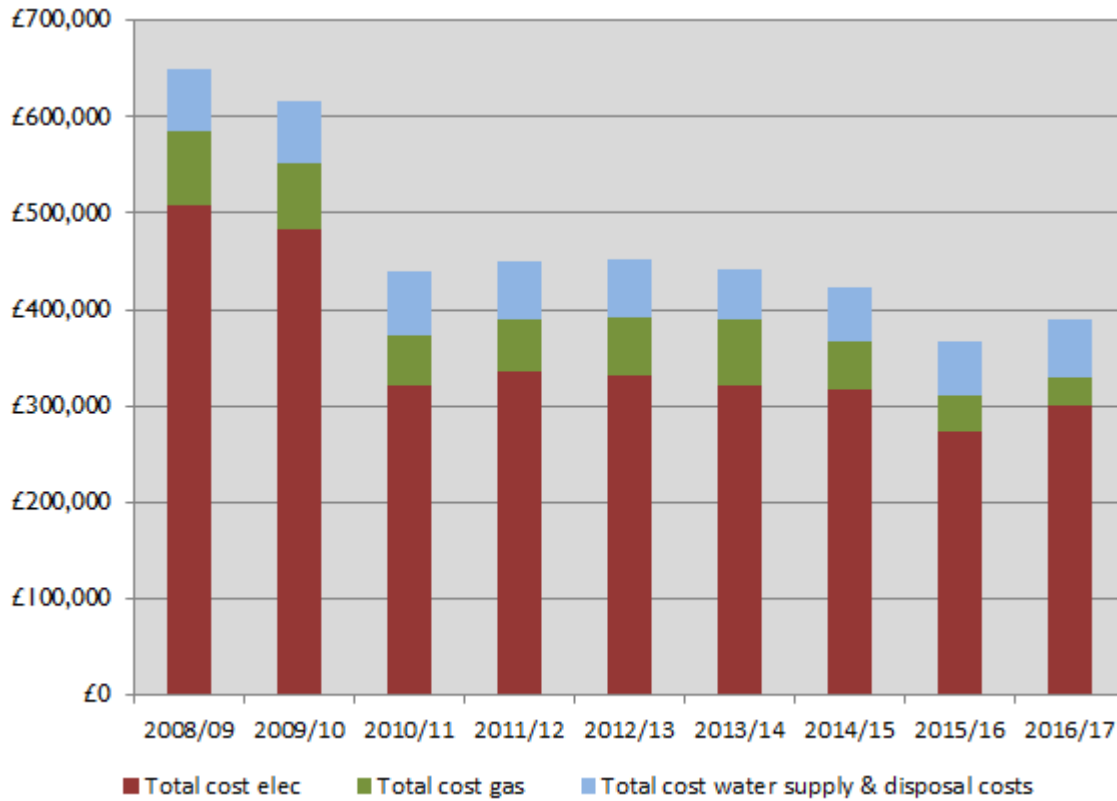**Figure 2 Total energy consumption (kWh)**

Figure 3 Total utility costs

Targets: The Library has reduced its energy consumption by **48%** since 2008/09. This is more than the Scottish Government targeting to reduce energy consumption by at least **40%** by 2020. A new target of maintaining this **48%** reduction in energy consumption to 2020 has been set.

Direct impacts: The average cost of electricity for 16/17 went up by approximately **10%-12%** We also recorded an increase in the overall cost of energy for electricity and gas of **£18,261**. However this increase in cost would have been much higher without the **8%** reduction in energy for this year.

Waste (Excluding construction)		2008/09	2013/14	2014/15	2015/16	2016/17
Hazardous / special waste (Tonnes)	Hazardous waste	0.16	0.88	0.10	0.00	0.38
	Clinical waste		0.45	0.69	0.22	0.16
	Subtotal: Hazardous/Special waste		**1.33**	**0.79**	**0.22**	**0.53**
Non-Hazardous: Re-used / Recycled / Composted (Tonnes)	Aluminium & steel cans	0.04				
	Cardboard	3.09	5.50	5.45	1.44	1.26
	Plastic bottles	0.02				0.01
	Paper - General	10.09				0.33
	Mixed recycling	14.66	17.06	1.06	18.93	19.28
	Timber		0.00	0.00	0.00	0.00
	Paper - Confidential	26.61	4.92	3.21	3.47	3.26
	Metal	3.62	10.25	0.00	4.95	0.00
	Glass	1.61	2.20	3.07	0.31	0.23
	WEEE	3.52	0.41	1.21	0.92	0.74
	Print cartridges	0.27				
	Box board		5.09	5.31	0.00	0.00
	Food waste (Composted)		2.50	10.32	6.98	4.82
	Sundries (Furniture etc.)		0.00	0.00	0.80	2.00
	Subtotal: Recycled waste	**63.54**	**47.93**	**29.64**	**37.81**	**31.93**
Non-Hazardous: Landfill (Tonnes)	Solid waste to landfill (bins)	54.31	8.72	0.40	3.67	2.57
	Solid waste to landfill (skips)	11.05	7.06	6.80	6.96	2.92
	Subtotal: Waste to landfill	**65.36**	**15.78**	**7.20**	**10.63**	**5.49**
Non-financial indicators (Tonnes)	**Total waste arisings**	**128.90**	**65.04**	**37.63**	**48.66**	**37.95**
	% Waste recycled (SG & SOGE)	**49.3%**	**73.7%**	**78.8%**	**77.7%**	**84.1%**
	% Waste to landfill (SG & SOGE)	**50.7%**	**24.3%**	**19.1%**	**21.9%**	**14.5%**
Financial indicators	**Total waste disposal cost**	£14,452	£13,215	£13,011	£13,044	£19,409
	Total waste income	£0	£793	£0	£308	£0
	Balance disposal cost	£14,452	£12,422	£13,011	£12,736	£19,409
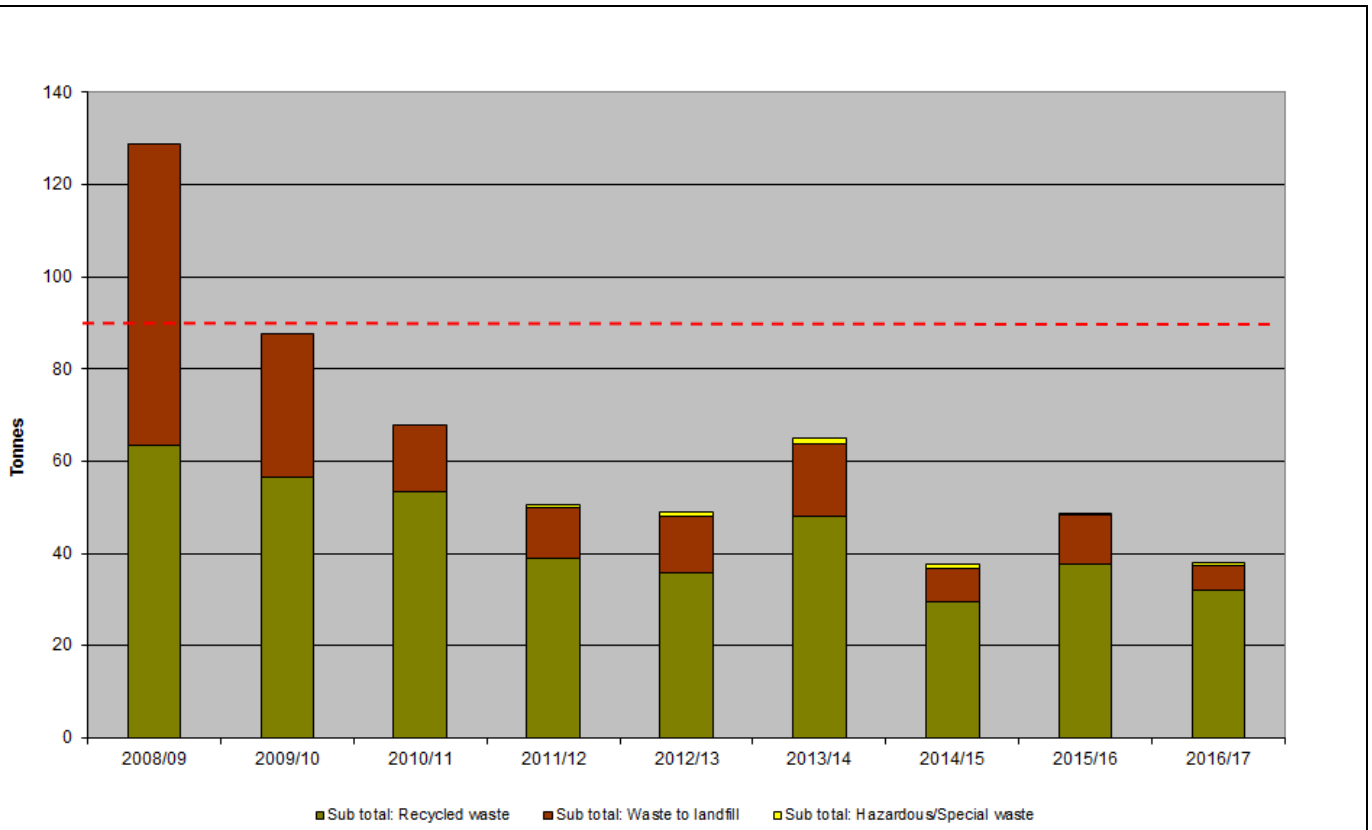
**Figure 4 Total waste recycled / sent to landfill**

Target: To recycle **70%** of all waste arisings by 2025 with only **5%** of all waste arisings to go to landfill by 2025. The Library 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 **14.5%.**

With the recent restructuring of the Health and Safety committee to include Sustainability we are hoping that more staff engagement and increased awareness of the consequence of unused promotional material 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, confidential waste and waste to landfill still appear very difficult to reduce.

3.4 Finite Resource Consumption - Water		2008/09	2013/14	2014/15	2015/16	2016/17
Non-financial indicators (m3)	Supplied m3	9,124	5,556	5,332	5,300	5,339
	Disposed m3	8,668	5,278	5,065	5,035	5,072

Financial indicators	Water supply & disposal costs	£63,803	£51,800	£56,288	£54,999	£59,201
	Total cost water / total water consumption m3	£6.993	£9.323	£10.557	£10.377	£11.088
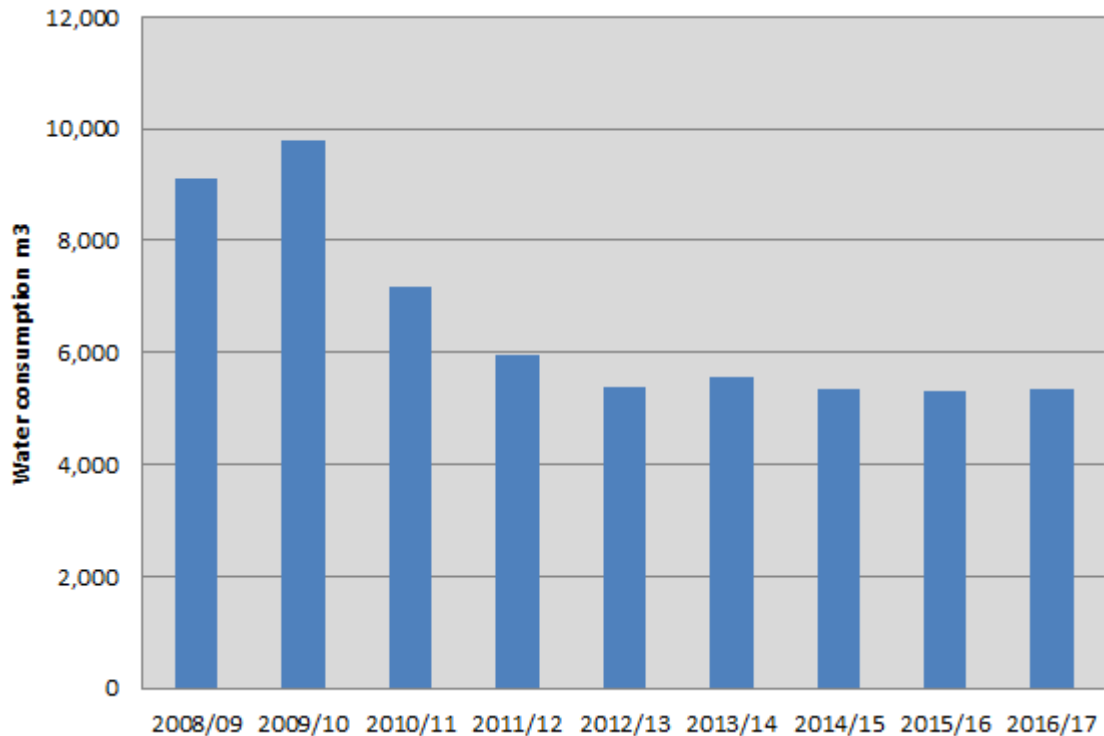
Figure 5 Total water consumption

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

Direct impacts: Water consumption has been stabilised over the past number of years. As **67%** of all water consumption occurs in George IV Bridge, the Library's main public building, all future water saving initiatives will therefore be focused on this area.

3.5 Transport & travel		2008/09	2013/14	2014/15	2015/16	2016/17
Non-financial indicators (Km)	Owned fleet	54,247	35,316	26,061	31,446	35,016
	Business - Air domestic	140,000	82,627	64,347	29,945	23,934
	Business - Air short haul	68,952	60,976	87,051	51,475	32,394
	Business - Air long haul	556,692	393,390	402,140	44,519	30,137
	Business - Rail	200,540	258,534	260,189	196,503	266,342
	Business - Taxi	12,230	3,667	3,309	2,341	2,436
	Business - Car (Claimed)	6,198	11,870	7,324	10,376	6,922
	Business - Van hire	0	224	0	2,686	3,745
	Business - Car hire	0	1,767	5,391	5,097	7,165
	Business - Bus	0	3,825	1,388	1,978	1,683
	Total travel Km	**1,038,859**	**852,196**	**857,199**	**376,367**	**409,773**

Financial indicators	Total cost - Fleet maintenance & repairs	£4,768	£3,339	£6,794	£20,518	£28,866
	Total cost - Fleet insurance	£2,886	£3,545	£3,560	£3,604	£3,232
	Total cost - Fleet fuel	£5,184	£5,031	£4,623	£4,816	£5,095
	Total cost - Vehicle rental	£3,370	£4,469	£1,250	£2,417	£1,836
	Total - Taxi contract	£89,056	£5,055	£3,451	£3,510	£2,546
	Total - T & S		£121,122	£130,064	£121,267	£143,107
	Total cost	**£105,264**	**£142,561**	**£149,742**	**£156,132**	**£184,681**
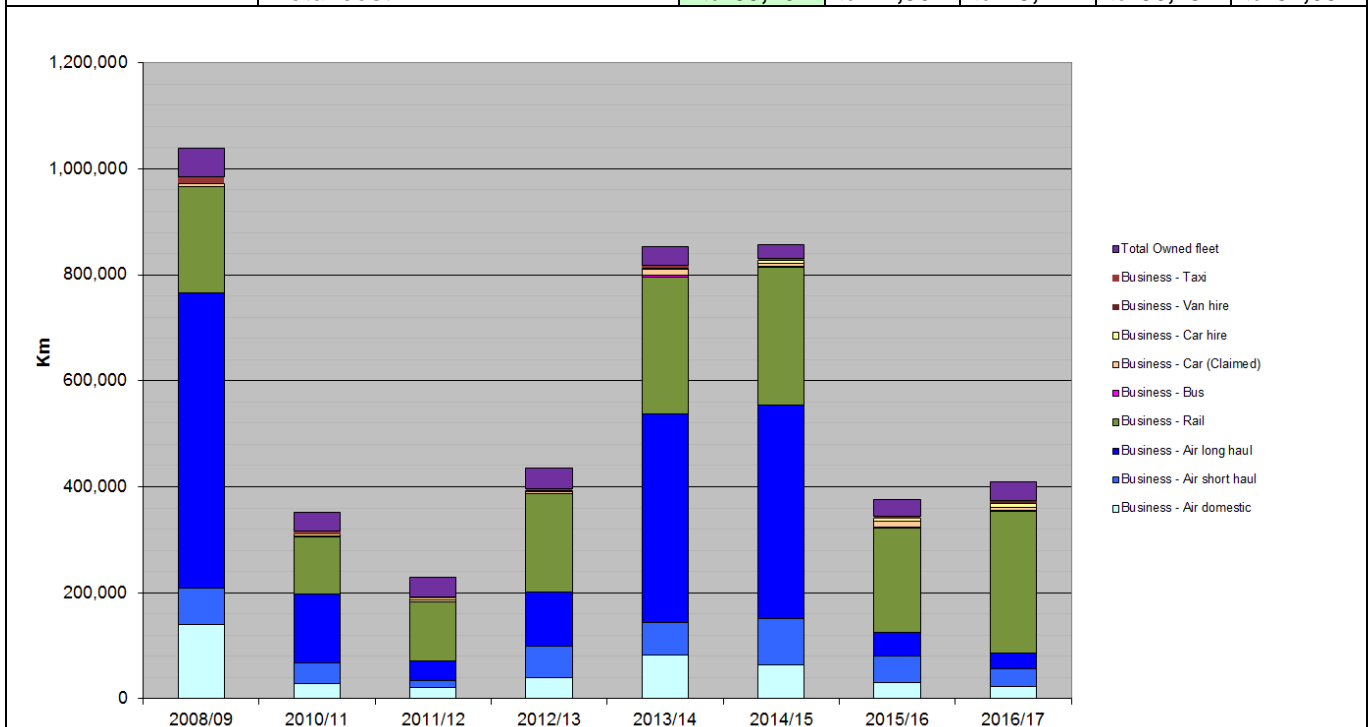
Figure 6 Total transport and travel

Targets: The Library does not have any specific travel targets, however green travel principles are embedded in the Library's 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: Data collection continues to be very laborious and it is still not possible to separately identify travel costs from subsistence costs. (We now calculate the average travel miles in bus trips, car hire, car personal, air and rail journeys. In most we know how many journeys The Library staff made but the travel distance is average calculated from the previous year's mileage.)

4.0 Biodiversity Conservation Measures

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

The Library 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

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

The Library is actively trying to improve the sustainability of its estate by incorporating energy saving measures in all new projects. The Library 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.

The Library 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

The Library aims to act in a way which supports the progress of Scottish Government toward its National Outcomes. The Library 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 Library's 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 Library's 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, the Library 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. The Library 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

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[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 the Library 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	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Elec kge/Co2 per kWh	0.49608	0.45205	0.46002	0.44548	0.49023	0.46219	0.41205
Gas kge/Co2 per kWh	0.18500	0.18360	0.18521	0.18404	0.18455	0.18445	0.20444
Water kge/Co2 per m3	1.05000	1.05260	1.05260	1.05260	1.05260	1.05260	1.05260

Waste (kg CO_2e per tonne)			2008/09	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	Hazardous / special waste	Hazardous waste							
		Clinical waste							
	Non-Hazardous: Re-used Recycled Composted	Aluminium & steel cans							
		Cardboard							
		Plastic bottles							
		Paper - General							
		Mixed recycling							
		Timber				21	21	21	21
		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)	2008/09	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Medium diesel car 1.7 to 2.0 ltr	0.18095	0.18095					
Diesel van Class I up to 1.305t	0.15678	0.15678	0.15324	0.15350	0.15346	0.14447	0.15438
Diesel van Class III 1.74t - 3.5t	0.27011	0.27011	0.26642	0.26880	0.26881	0.26774	0.28453
Car: Average unknown fuel	0.20459	0.20459	0.17750	0.17475	0.17720	0.17561	0.17741
Taxi: Black cab	0.24329	0.24329	0.15709	0.15294	0.21877	0.21872	0.21884
Air: Domestic	0.16484	0.16484	0.34387	0.32662	0.29316	0.29795	0.27867
Air: Short haul	0.09229	0.09229	0.18705	0.18340	0.15835	0.16634	0.16508
Air: Long haul	0.08137	0.08137	0.26233	0.26458	0.15054	0.15175	0.14678
Rail	0.05649	0.05649	0.05818	0.04904	0.04738	0.04505	0.04885
Bus	0.03064	0.03064	0.11195	0.01116	0.10946	0.10883	0.11986

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 Library's 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 Library compactor.

From October 2009 the Library 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 Library 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.