Public Bodies Climate Change Duties 2017 Report: POPULATED EXAMPLES

SSN has compiled these example answers using content from the 2015-16 submitted reports. A range of public bodies' reports have been used and content has been anonymised as far as possible. Some numbers have been edited.

Sustainable Scotland Network

PART OF THE Keep Scotland Beautiful CHARITY

Good alignment with 3b)

PART 3: EMISSIONS, TARGETS AND PROJECTS

EXAMPLE 1

3a Emissions from start of the year which the body uses as a baseline (for its carbon footprint) to the end of the report year							
Reference Year	**Year**	**Scope1**	**Scope2**	**Scope3**	**Total**	**Units**	**Comments**
Baseline carbon footprint	2015/16	901	1414	3428	5743	tCO2e	Public Body X re-baselined its carbon footprint in 2015/16. The previous Phase 1 was from 2009/10 to 2015/16 and the carbon footprint was calculated for each year, using a boundary that included all the energy for which the organisation is the counterparty on the contract, therefore this included the Commercial Property Portfolio. The boundary also included energy use in office and all staff and dependent travel but not waste and water. The footprint in the baseline year of 2009/10 was calculated as 8,704 tCO2e and the carbon footprint in the final year of Phase 1 (2015/16) was 7,497 tCOe. This equates to a reduction of 1,207 tCO2, which is a 13.9% reduction. However, the boundary was rescoped in 2015/16 to remove the tenant consumption of energy in the Commercial Property Portfolio and also dependents travel. The new Phase 2 baseline for 2015/16 is shown in this table and equates to 5,743 tCO2e.

Scopes allocated correctly

3b Breakdown of emission sources									
Total	**Comments – reason for difference between Q3a & 3b.**	**Emission source**	**Scope**	**Consumption data**	**Units**	**Emission factor**	**Units**	**Emissions (tCO2e)**	**Comments**
5743.8		Average Car - Unknown Fuel	Scope 3	1943582	miles	0.2999013	kg CO2e/mile	582.9	This is all grey fleet miles that are claimed through expenses. There is no matched data available on fuel type or engine size.
		Domestic flight (average	Scope 3	3078398	passenger km	0.29795	kg	917.2	All staff flights within the UK or within other countries
		Short-haul flights	Scope 3	1232714	passenger km	0.16972	kg	209.2	All staff flights between UK and Europe and within Europe
		Long-haul flights	Scope 3	7521394	passenger km	0.19813	kg	1490.2	All staff flights to and from international destinations
		Rail (National rail)	Scope 3	2331850	passenger km	0.04506	kg	105.1	Any staff rail booked through travel agent or flexi pass scheme
		Natural Gas	Scope 1	2892838	kWh	0.18445	kg CO2e/kWh	533.6	Occupied offices
		Grid Electricity	Scope 2	1656282	kWh	0.46219	kg CO2e/kWh	765.5	Occupied offices
		Grid Electricity	Scope 3	1656282	kWh	0.03816	kg CO2e/kWh	63.2	Occupied offices
		Water - Supply	Scope 3	5403	m3	0.344	kg CO2e/m3	1.9	Occupied offices
		Water - Treatment	Scope 3	4998	m3	0.708	kg CO2e/m3	3.5	Occupied offices
		Refuse Commercial	Scope 3	2	tonnes	93	kg	0.2	Occupied offices
		Mixed recycling	Scope 3	33	tonnes	21	kg	0.7	Occupied office
		Paper & Board (Mixed)	Scope 3	26	tonnes	21	kg	0.5	Occupied offices
		Organic Food & Drink	Scope 3	23	tonnes	6	kg	0.1	Occupied offices
		Batteries Recycling	Scope 3	0	tonnes	65	kg	0.0	Figure below 1 tonne unable to report
		Metal Cans (Mixed)	Scope 3	0	tonnes	21	kg	0.0	Occupied offices figure below 1 tonne unable to report
		WEEE (Mixed) Recycling	Scope 3	0	tonnes	21	kg	0.0	Occupied offices, figure below 1 tonne, unable to report
		Natural Gas	Scope 1	1993707	kWh	0.18445	kg CO2e/kWh	367.7	Business Infrastructure Property Portfolio
		Grid Electricity	Scope 2	1403563	kWh	0.46219	kg CO2e/kWh	648.7	Business Infrastructure Property Portfolio
		Grid Electricity (transmission & distribution losses)	Scope 3	1403563	kWh	0.03816	kg CO2e/kWh	53.6	Business Infrastructure Property Portfolio

Great use of comments to provide additional context in 3a) and 3b)

Correct accounting for water supply & treatment - treatment is typically approx 95% of supply (if unknown assume 95%)

YELLOW = all Scope 1 sources
GREEN = all Scope 2 sources
BLUE = all Scope 3 sources

Correct treatment of electricity transmission & distribution losses

3c Generation, consumption and export of renewable energy					
	Renewable Electricity		Renewable Heat		
Technology	Total consumed by the organisation (kWh)	Total exported (kWh)	Total consumed by the organisation (kWh)	Total exported (kWh)	Comments
Solar PV	0	22110	0	0	All renewable energy is exported to the grid from PV

3d Targets										
Name of Target	Type of Target	Target	Units	Boundary/scope of Target	Progress against target	Year used as	Baseline figure	Units of baseline	Target completion	Comments
Phase 1 Carbon Reduction Target acheivements (2009-10 to 2015-16)	percentage	14	total % reduction	All emissions	7497	2009/10	8704	tCO2e	2015/16	Phase One of reporting which covers 2009-10 to 2015-16 reporting years (using old DEFRA conversion factors and boundaries) and demonstrates that in the Phase 1, we achieved an overall reduction of 13.9%. The total overall target for Phase 1 and Phase 2 was 42% reduction by 2019/20. Therefore there is 28% reduction still to be achieved in Phase 2.
Reduce waste to landfill	percentage	100	total % reduction	Waste	2	2015/16	2	tonnes	2019/20	This target is aimed at achieving zero waste (in tonnes) to landfill by 2019/20. This is measured against the 2015/16 waste figures, where 2 tonnes of waste was sent to landfill.
Phase 2 Carbon Reduction target	percentage	28	total % reduction	All emissions	5743	2015/16	5743	tCO2e	2019/20	Phase 2 of the Carbon Reduction target is based on the revised boundary described in Q1g and is aimed at reducing the updated carbon footprint by 28% by 2019/20. The 28% is the remaining reduction required to meet the overall 42% target.

Targets comprehensive & correctly expressed

3e Estimated total annual carbon savings from all projects implemented by the body in the report year			
Total	Emissions Source	Total estimated annual carbon savings (tCO2e)	Comments
16	Electricity	8	from 3f
	Natural gas	2	from 3f
	Other heating fuels		
	Waste		
	Water and sewerage		
	Business Travel	6	from 3f
	Fleet transport		
	Other (specify in comments)		BI Infrastructure improvements. Not included in the boundaries but all improvements assist Scotland in reducing its CO2

Totals in 3e) should be greater than or equal to 3f) - 3e) may be greater if not all projects have been reported in 3f)

3f Detail the top 10 carbon reduction projects to be carried out by the body in the report year										
Project name	Funding source	First full year of CO2e savings	Are these savings figures estimated or actual?	Capital cost (£)	Operational cost (£/annum)	Project lifetime (years)	Primary fuel/emission source saved	Estimated carbon savings per year (tCO2e/annum)	Estimated costs savings (£/annum)	Behaviour Change	Comments
Improvements to ground floor heating and cooling system at one of our offices	Property maintenance budget	2016/17	Estimated	5250		10	Natural Gas	2	600		

Climate Change awareness week	n/a	2016/17	Estimated			2	Grid Electricity	7	1400	During January 2016 we carried out an online promotion week to highlight our carbon emissions and what colleagues could do to help reduce our impact at work and home.	Raising awareness with the aim to reduce the environmental impact of our staff at work and home.
Earth Hour and Laurel the Panda awareness blog	n/a	2016/17	Estimated			1	Car - petrol (average)	6	3100	As part of our Earth Hour campaign we promoted the use of public transport and the WWF panda was used to show how easy travelling by public transport could be.	
Resource Efficient Scotland - Bronze Pledge Award	N/A	2016/17	Estimated			1	Grid Electricity	1	200	As part of our objectives for the resource efficiency bronze pledge we promoted energy efficiency to colleagues.	Achieved the Resource Efficient Scotland Bronze Pledge Award and started working towards the Sliver Pledge Award.

3g Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the report year

If the emissions increased or decreased due to any such factor in the report year, provide an estimate of the amount and direction.

Total	Emissions source	Total estimated annual emissions (tCO2e)	Increase or decrease in emissions	Comments
6	Estate changes	6	Increase	Acquisition of Building 1, SETP April'15. Completion of Regional Park Development August'15. Disposal of Unit 1A PIAP May'15. Disposal of Technology Centre July'15.
	Service provision			
	Staff numbers			
	Other (specify in			

Good alignment with 3e) - e.g sum of electricity projects in 3f) (orange) equals total electricity projects in 3e)

3h Anticipated annual carbon savings from all projects implemented by the body in the year ahead

Total	Source	Saving	Comments
53	Electricity	33	Reduction in energy through replacement of lights in Apex 1 Ground Floor and the reduction in floorspace. Completion of building refurbishment August 2016 - Overall increase in energy consumption (electricity & gas) however reduction in Annual Energy Consumption (MWh) from Elec 120 to 66 & Gas 129 to 79. Estimated Annual Energy Saving of £8,160. Estimated CO2 savings are expected to be 27 tonnes per year - electricity.
	Natural gas	20	Completion of building refurbishment August 2016 - Overall increase in energy consumption (electricity & gas) however reduction in Annual Energy Consumption (MWh) from Elec 120 to 66 & Gas 129 to 79. Estimated Annual Energy Saving of £8,160. Estimated CO2 savings are expected to be 20 tonnes per year - gas.
	Other heating fuels		
	Waste		
	Water and sewerage		
	Business Travel		
	Fleet transport		

Comments used for additional information

	Other (specify in comments)		

3i Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the year ahead				
If the emissions are likely to increase or decrease due to any such factor in the year ahead, provide an estimate of the amount and direction.				
Total	**Emissions source**	**Total estimated annual emissions (tCO2e)**	**Increase or decrease in emissions**	**Comments**
-142	Estate changes	142	Decrease	Reduction in estate at Apex 1 (Gas and electricity)
	Service provision			
	Staff numbers			
	Other (specify in			

3j Total carbon reduction project savings since the start of the year which the body uses as a baseline for its carbon footprint	
If the body has data available, estimate the total emissions savings made from projects since the start of that year ("the baseline year").	
Total	**Comments**
16	Phase two of reporting commenced in 2015-16, therefore we are only showing the carbon savings from the start of phase two. (Phase One of reporting covered 2009-10 to 2015-16 reporting years (using old DEFRA conversion factors and boundaries) and demonstrates that in the Phase 1, we achieved an overall reduction of 13.9%. The total overall target for Phase 1 and Phase 2 is 42% reduction by 2019/20.).

3k Supporting information and best practice

Provide any other relevant supporting information and any examples of best practice by the body in relation to its emissions, targets and projects.

Boundaries and reporting phases
The previous Phase 1 was from 2009/10 to 2015/16 and the carbon footprint was calculated for each year, using a boundary that included all the energy for which the organisation is the counterparty on the contract, therefore this included the tenanted Business Portfolio. The boundary also included energy use in office and all staff and dependent travel but not waste and water. The footprint in the baseline year of 2009/10 was calculated as 8,704 tCO2e and the carbon footprint in the final year of Phase 1 (2015/16) was 7,497 tCOe. This equates to a reduction of 1,207 tCO2, which is a 13.9% reduction. However, the boundary was rescoped in 2015/16 to remove the tenant consumption of energy in the BIPP and also dependent travel and now includes waste and water within our new reporting boundaries. The new Phase 2 baseline for 2015/16 equates to 5,743 tCO2e.

Tenant Handbook
We are drafting a "Tenant Handbook" on Resource Efficiency that will, upon completion, be distributed to tenants within the investment portfolio. The Handbook will act as a reference document to raise tenant awareness on the responsibilities they have in the operation and management of their business within our premises and encourage them to think of ways to reduce their energy consumption and comply with legislation that may affect their occupation of their premises.

The Handbook will take the form of an electronic document which will be emailed to all tenants or can be printed and inserted into induction packs for existing and new tenants. The Handbook will contain information on:-

- good housekeeping, behavioural change and an explanation on undertaking simple energy walkabouts
- water use management and conservation
- re-cycling, inc. possible clinical waste and general information on the benefits and regulations that apply to recycling waste
- re-cycling of food waste

The Handbook will include links to tools that are available on the "Resource Efficient Scotland" website, green champions training, energy surveys and other resources that are published.

Public Sector Climate Change Duties 2017 Report: POPULATED EXAMPLES

EXAMPLE 2

Correct reporting of baseline and subsequent years

3a Emissions from start of the year which the body uses as a baseline (for its carbon footprint) to the end of the report year							
Reference Year	**Year**	**Scope 1**	**Scope 2**	**Scope 3**	**Total**	**Units**	**Comments**
Baseline carbon footprint	2012/13	89689	2187		91876	tCO2e	This data is provided by external auditor, and contained in the most recent Carbon Trust Standard footprint calculator. This audit does not easily distinguish electricity for scope 2 and so all electricity is included in scope 1 for this question set 3a
Year 1 carbon footprint	2013/14	84309	2053		86362	tCO2e	This data is provided by external auditor, and contained in the most recent Carbon Trust Standard footprint calculator. This audit does not easily distinguish electricity for scope 2 and so all electricity is included in scope 1 for this question set 3a
Year 2 carbon footprint	2014/15	82291	2194		84485	tCO2e	This data is provided by external auditor, and contained in the most recent Carbon Trust Standard footprint calculator. This audit does not easily distinguish electricity for scope 2 and so all electricity is included in scope 1 for this question set 3a
Year 3 carbon footprint	2015/16	42717.57	38940	6309	87967	tCO2e	

Good alignment with 3b) - total emissions and emissions by Scope

3b Breakdown of emission sources								
Total	**Comments – reason for**	**Emission source**	**Scope**	**Consumption**	**Units**	**Emission**	**Units**	**Emissions**	**Comments**
87966.7		Natural Gas	Scope 1	222944829	kWh	0.18445	kg CO2e/kWh	41122.2	Primary gas consumed 223,190,721 less export to UofE at RIE 245,892
		Gas Oil	Scope 1	36401	litres	2.90884	kg CO2e/litre	105.9	Gas oil consumed by emergency standby generators and emergency secondary fuel for boilers
		Diesel (average biofuel blend)	Scope 1	571369	litres	2.5839	kg CO2e/litre	1476.4	Diesel fuel consumption of owned vehicles
		Biomass (Wood Chips)	Scope 1	1000000	kWh	0.01307	kg CO2e/kWh	13.1	
		Grid Electricity (generation)	Scope 2	84250610	kWh	0.46219	kg CO2e/kWh	38939.8	Primary electricity consumed 84,601,489 less export to UofE at RIE 350,879
		Grid Electricity (transmission & distribution losses)	Scope 3	84250610	kWh	0.03816	kg CO2e/kWh	3215.0	
		Average Car - Unknown Fuel	Scope 3	4187516	km	0.18635	kg CO2e/km	780.3	Transport fuel consumed by leased vehicles
		Average Car - Unknown Fuel	Scope 3	7545990	km	0.18635	kg CO2e/km	1406.2	Transport fuel consumed by staff vehicles used for business
		Other	Scope 3	645	tonnes	459	kg	296.1	Clinical waste for heat treatment and landfill (Orange)
		Mixed recycling	Scope 3	2700	tonnes	21	kg CO2e/tonne	56.7	Data obtained from WMO's waste management report to SDMG in May 2016
		Refuse Municipal to Landfill	Scope 3	517	tonnes	459	kg CO2e/tonne	237.3	Data obtained from WMO's waste management report to SDMG in May 2016
		Glass Recycling	Scope 3	32	tonnes	21	kg CO2e/tonne	0.7	Data obtained from WMO's waste management report to SDMG in May 2016
		Paper & Board (Mixed) Recycling	Scope 3	576	tonnes	21	kg CO2e/tonne	12.1	Data obtained from WMO's waste management report to SDMG in May 2016
		Organic Food & Drink AD	Scope 3	100	tonnes	21	kg CO2e/tonne	2.1	Data obtained from WMO's waste management report to SDMG in May 2016
		Other	Scope 3	54	tonnes	459	kg	24.8	Sanitary waste to landfill (SANPRO)
		Other	Scope 3	10	tonnes	1000	kg CO2e/tonne	10.0	Clinical waste for incineration, anatomical (red), pharmaceutical (blue), Cytotoxic (purple)

Correct treatment of electricity transmission & distribution losses

Good level of detail in emission source selection

YELLOW = all Scope 1 sources
GREEN = all Scope 2 sources
BLUE = all Scope 3 sources

		WEEE (Mixed) Recycling	Scope 3	54	tonnes	21	kg CO2e/tonne	1.1	This includes 50 tonnes of WEEE from IT and 4 tonnes from others mainly white goods.
		Water - Supply	Scope 3	775728	m3	0.344	kg CO2e/m3	266.9	The volume shown is an estimate provided to new supplier, the change of supplier has caused a temporary problem with metered reports
		Renewable Elec Purchase Direct Supply	Scope 2	41263	kWh		kg CO2e/kWh	0.0	Photovoltaic produced power at A and B

3c Generation, consumption and export of renewable energy

	Renewable Electricity		Renewable Heat		
Technology	Total	Total	Total	Total	Comments
Solar PV	41263	0	41263	0	43kW array on Building A and 1.5kW array on Centre 1
Ground Source Heat Pump					Ground source heat pumps at Building A and Centre 1, the heat produced is not metered
Solar thermal					Solar thermal panels at Building B provide heat for domestic hot water systems, the heat is not metered
Biomass			850000		

Good alignment with biomass emissions source reported in 3b) - adjustments for boiler efficiency (typically around 85%) means consumption in 3c) less than in 3b) (if boiler efficiency unknown assume 85%)

3d Targets

Name of Target	Type of Target	Target	Units	Boundary/scope of Target	Progress against target	Year used as	Baseline figure	Units of baseline	Target completion	Comments
HEAT Basic Target	percentage	6.8	total % reduction	Energy use in buildings		2014/15		kWh	2020/21	
HEAT Stretch Target	percentage	14.3	total % reduction	Energy use in buildings		2014/15		kWh	2020/21	

3e Estimated total annual carbon savings from all projects implemented by the body in the report year

Total	Emissions Source	Total estimated	Comments
3270	Electricity	1038	
	Natural gas	2163	Larger projects indicated in 3f provided savings in previous year and only residual in 2015-16, and reflects very little investment in 2015-16
	Other heating fuels	0	
	Waste	0	Difficulty is that more accurate and comprehensive reporting is increasing reported tonnages and probably doesn't reflect savings due to better management, recycling and segregation
	Water and sewerage	2	
	Business Travel	10	
	Fleet transport	57	
	Other (specify in comments)	0	unknown

Close alignment with 3f) - 3e) should be greater than or equal to 3f). Ideally these will match exactly if all projects are reported in 3f).

3f Detail the top 10 carbon reduction projects to be carried out by the body in the report year

Project name	Funding source	First full	Are these	Capital	Operational	Project	Primary	Estimated carbon	Estimated	Behaviour Change	Comments
Decentralisation of AA boiler plant	Capital programme	2016	Actual	1E+06		15	Natural Gas	1565	35000		Completion of 4 year programme
Decentralisation of AA boiler plant	Capital programme	2016	Actual	0		15	Grid Electricity	499	21000		Completion of 4 year programme. Capital cost is included in line above.
Corridor LED lighting	Capital	2017	Actual	100000		5	Grid Electricity	267	45000		Second phase of programme

RIE operating theatres, removal of humidification	Capital programme	2016	Actual	0		10	Natural Gas	499	90000		Confirmation of agreement to mothball the plant and retain for possible future use
WGH OPD replacement AHU fans and motors with VSD	Capital programme	2016		220000			Natural Gas	50	15000		Completion of 2 year programme
WGH OPD replacement AHU fans and motors with VSD	Capital programme	2016		0			Grid Electricity	150	40000		Completion of 2 year programme. Capital cost is included in line above.
In Year capital projects 2015-16	Capital programme	2017		53000		15	Natural Gas	49	15000		Boiler insulation and some BMS upgrades
In Year capital projects 2015-16	Capital programme	2017		49000		15	Grid Electricity	122	23000		Mainly LED lighting replacement

3g Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the report year

Total	Emissions source	Total estimated	Increase or	Comments
2630	Estate changes			
	Service provision	2630	Increase	Activity measured by annual turnover
	Staff numbers			
	Other (specify in			

3h Anticipated annual carbon savings from all projects implemented by the body in the year ahead

Total	Source	Saving	Comments
1333	Electricity	423	1% reduction
	Natural gas	823	2% reduction
	Other heating fuels		
	Waste	13	2% reduction
	Water and sewerage		
	Business Travel	44	2% reduction
	Fleet transport	30	2% reduction
	Other (specify in comments)		

3i Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the year ahead

Total	Emissions source	Total estimated	Increase or	Comments
7000	Estate changes	5000	Increase	In the year ahead we will face double running
	Service provision	2000	Increase	The Carbon Trust Standard methodology
	Staff numbers			
	Other (specify in			

3j Total carbon reduction project savings since the start of the year

Total	Comments
20945	This is a simple arithmetic addition of the savings made since base year 2012/13, it takes no account of weather correction or of the high level of "growth" of activity.

3k Supporting information and best practice
Public Body X has held the Carbon Trust Standard for 6 sequential years and has been reaccredited for another 2 years, to end of March 2018. The assessment is conducted every 2 years. This is an internationally recognised quality management standard and was one that was promoted for organisations to achieve as part of the UK Government's CRC Energy Efficiency Scheme. The organisation is the only body of its type continue to retain this Standard and one of very few public sector organisations to do so across the UK. Public Body X won the Excellence in Energy and Engineering award at the Annual Healthcare Conference for the completion of its energy project to decentralise heating and hot water services in 2014/15. The electric vehicle developments were highly commended at the 2016 HFS Annual Healthcare awards. Partnership with CEC - Healthy living centres, bioquarter District Heating. Public Body X has recently won an Oracle award for its development of VDI, Virtual Desktop Infrastructure, and introduction of software to automatically switch off networked IT devices when identified as being off line. Development of an "encompassing" automatic management system to enable more accurate and effective management of energy, carbon, revenue - using M&T software from SystemsLink, metering software from Elcomponent (MeterRing), manual meter reading software developed with INTHS (Integrated Hand Held Solutions), integration with Building Management Systems, Utility suppliers data files and integrated fully with NHSL's IT network.