

Sustainability West Midlands Environmental Impact Report

**Business Carbon Footprint report for the financial years
April 2016- March 2018**

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About Sustainability West Midlands

We are the sustainability adviser for the leaders of the West Midlands. We are also the regional sustainability champion body for the West Midlands, designated by government. We are a not-for-profit company that works with our members in the business, public and voluntary sectors. Our Board is well led and has cross-sector representation; they are supported by our team of staff and associates.

Our vision is that by 2020 businesses and communities are thriving in a West Midlands that is environmentally sustainable and socially just.

Our role is to act as a catalyst for change through our advice to leaders, to develop practical solutions with our members and share success through our communications.

www.sustainabilitywestmidlands.org.uk

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Executive Summary

This aim of this report is to present Sustainability West Midlands' (SWM) carbon footprints in the financial years 2016/17 and 2017/18 and compare them to data collected in previous years. Due to SWM's size, it is not required to produce a report into its environmental impact but has reported voluntarily to demonstrate good practice and to find ways to reduce its impact on the environment. This report focuses solely on carbon footprint and does not include data for waste or water use, as SWM's size means the impact from these aspects will be minimal.

The report was written by Andrew Darler who undertook a six day placement with SWM to focus on the completion of this report and provide recommendations going forward. Andrew has expertise in Environmental Management Systems and was able to provide an independent perspective on SWM's current environmental impact and suggest recommendations going forward.

Three Key Findings

1. Emissions from heating and powering SWM's office space continue to make up over 70% of annual emissions, with the rest coming from business travel.
2. It is difficult for SWM to make reductions in office emissions because control is largely with the building owner, Groundwork UK. However, there will soon be an opportunity to make reductions as SWM is likely to move to a new office location in 2019/20. It should make the most of this opportunity by ensuring a move to an environmentally efficient office.
3. Emissions from business travel continue to rise because of increases in the use of cars and taxis. Controlling this type of travel should be a priority for SWM in 2019/20.

Recommendations

Choosing a new office

- SWM is likely move to a new office location in 2019. It should make the ability to measure its own emissions a consideration in the selection of the new building. At a minimum, the building should be able to provide overall building energy usage, as well as the number of people using the building so that SWM can accurately estimate its own usage.
- When selecting a new office location, SWM should use building energy efficiency, public transport links and use of renewable energy tariffs as selection criteria.

Travel habits

- Ensure car and taxi travel is only ever used as a genuine last resort with a target to reduce car travel in actual terms and as a proportion of overall business travel.
- Where travel by car is essential, investigate car-sharing as a way of making it more cost effective and reduce emissions per person. Where car-sharing is used, ensure this is recorded on travel expenses so it can be accounted for in future reports.

Office habits and procurement

- Small changes in printing habits can bring huge benefits. Only print when necessary. Make a business-wide effort to design documents around greyscale printing (i.e. design graphs to be clearly understood in black and white), as black and white printing is more environmentally friendly. Change printer settings to 'draft' quality and greyscale by default and only change when required for specific documents.

- Consider recording the procurement of office items such as ink cartridges so that waste can be measured and managed.
- When calculating the cost of new equipment, always calculate the projected savings of low energy choices across its expected lifetime (these savings may make up for any extra cost in the initial purchase).
- Commit to making low energy use a primary consideration when replacing existing equipment or purchasing new equipment.

The rest of this report provides more detail on how the above key findings were reached.

1. Scope of this report

The Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013 requires quoted companies to report on their greenhouse gas (GHG) emissions. The Regulations distinguish between three 'scopes' of emissions:

- **Scope 1: (Direct Emissions).** Emissions from activities owned or controlled by your organisation that releases emissions into the atmosphere. This includes emissions from combustion from owned or controlled boilers, furnaces or vehicles. It is mandatory that they are reported.
- **Scope 2: (Energy Indirect).** Emissions released into the atmosphere associated with your consumption of purchased electricity, heat, steam or cooling. These are indirect emissions that are consequences of your organisation's activities but are from sources you do not own or control. They are also subject to mandatory reporting.
- **Scope 3: (Other Indirect).** Emissions that are consequences of your organisation's activities but are from sources you do not own or control and do not fall under scope 2. For example, business travel, waste disposal and purchased materials. Scope 3 emissions are usually reported by businesses on a voluntary basis.¹

Although this is a voluntary report, it will follow the scopes outlined in the Regulations as follows:

- **Scope 1:** emissions from the building's boiler to heat SWM's office space
- **Scope 2:** emissions related to generating electricity for SWM's office space
- **Scope 3:** emissions related to business travel for employees. This does not include emissions as a result of regular day to day commuting or emissions arising from third parties travelling to meetings.

2. How emissions have been measured

2.1 Business Travel Emissions

Travel emissions are calculated from expense claims. Claims list the mode of transport used, the estimated distance and the cost of travel.

The Department of the Environment, Food and Rural Affairs (DEFRA) has an online tool which allows organisations to calculate greenhouse gas (GHG) emissions for transport per kilometre travelled.² This tool accounts for all GHG gases and uses a standardised measure of 'equivalent kilogrammes of CO₂' (kgCO₂e).³ Using information from the travel expense claims, this tool allows for estimates of emissions from each business travel journey made. Transport is categorised according to the mode of transport used (car/taxi, rail, bus, cycling and air).

¹ DEFRA, "Guidance on how to measure and report your greenhouse gas emissions"

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69282/pb13309-ghg-guidance-0909011.pdf page 13.

² <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

³ CO₂e measure which accounts for all GHGs and not just CO₂. Although CO₂ is a major greenhouse gas, it is not the only one. Others, while often emitted in smaller amounts, may have a larger impact. For instance, methane has a 'greenhouse effect' 25 times larger than CO₂, so 1kg of methane would be equivalent to 25 kg of CO₂- i.e. 25kgCO₂e.

2.2 Office Administration Emissions

Estimating office emissions is more difficult because of SWM's relationship with its landlord. It has one office, which it rents, in a larger building where other businesses also rent office space. SWM cannot control the heating or lighting in its own office space or in the many communal areas, and it is responsible for the procurement of only a small number of office supplies.

To find a best estimate of emissions, SWM energy use has been calculated as a proportion of the building's total emissions, considering what percentage of building users are SWM staff or volunteers. This method is far from perfect, but no other calculation was found that would give a more accurate result.

In addition, there was no accurate electricity usage figures for 2016/17 due to a problem with billing from the landlord's energy provider. The 2016/17 data has therefore been estimated using limited information. The landlord also reported a billing mix-up in 2017/18, which meant those figures also had to be estimated. However, the landlord has been able to provide accurate figures for the building's natural gas usage for both years.

3. Carbon emissions

3.1 Summary: breakdown of emissions for 2016/17 and 2017/18

Table 1: Summary of SWM's emissions in 2016/17 and 2017/18

Source of emissions	2016/2017 emissions (kgCO ₂ e)	2017/2018 emissions (kgCO ₂ e)
Natural gas (Scope 1)	1,311	1,286
Electricity (Scope 2)	943	866
Travel: Car and taxi (Scope 3)	311	708
Travel: Rail, tram and tube (Scope 3)	203	131
Travel: Bus (Scope 3)	4	7
Travel: Flight (Scope 3)	148	0
Total office energy emissions (Scope 1 & 2)	2,254	2,152
Total travel emissions (Scope 3)	666	846
Total Gross emissions (All)	2,920	2,998
Purchased Green Tariff*	(943)	(866)
Total Net Emissions (All)	1,977	2,132

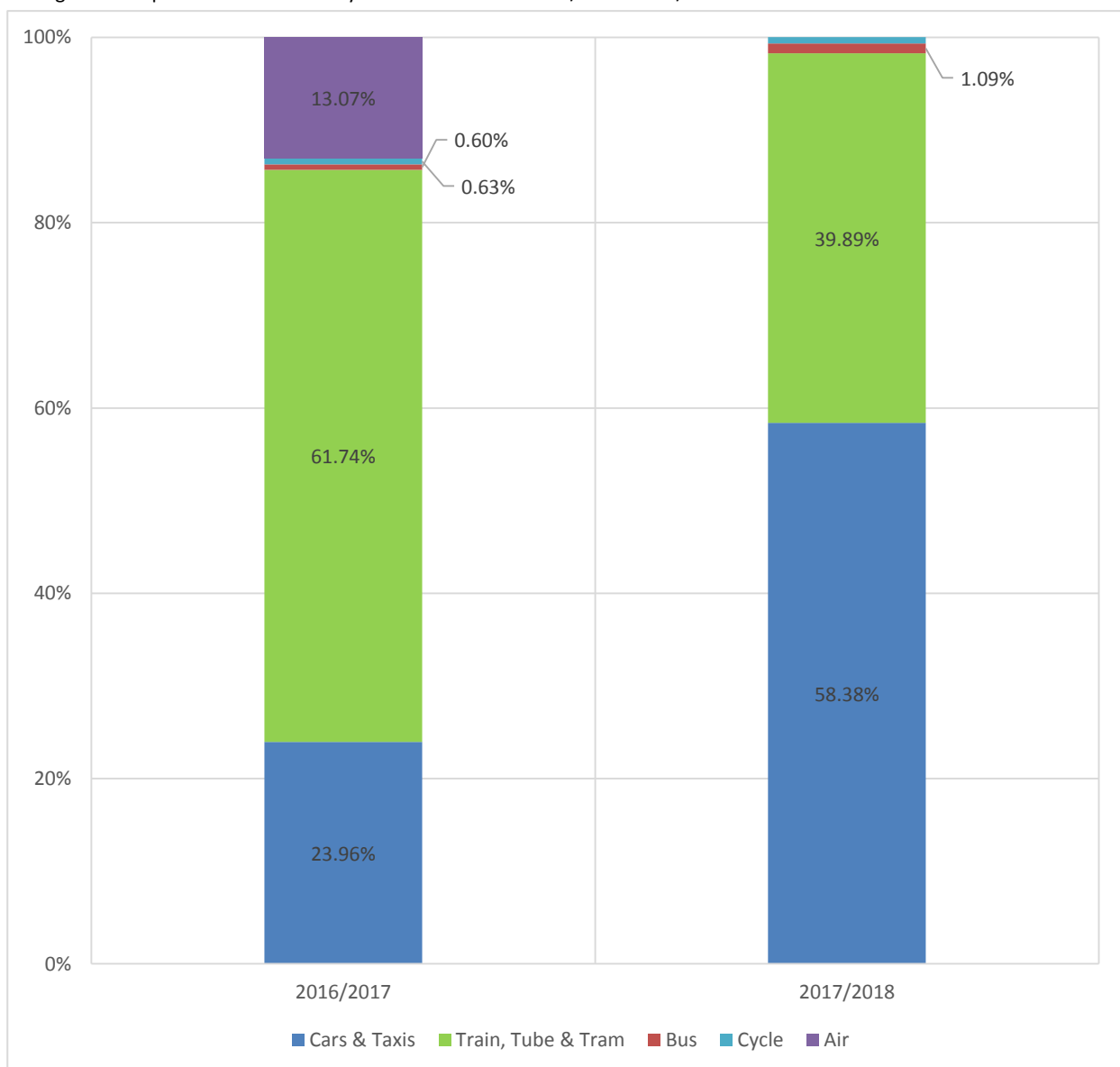
*Electricity provided by a 100% renewable tariff

3.2 Business Travel: 2016/17 and 2017/18

Table 2: Travel breakdown for 2016/17 and 2017/18 by distance, emissions, cost and emissions/£

Type of Journey	Estimated Distance (Km)		CO2 Emissions (KgCO ₂ e)		Total Cost		KgCO ₂ e/£	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Cars & Taxis	1,681	3,820	311	704	499	1,089	0.62	0.65
Bus	42	71	4	7	8	14	0.50	0.52
Train, Tube & Tram	4,331	2,610	203	125	542	411	0.37	0.32
Air	917	0	148	0	96	0.00	1.54	0.00
Cycle	44	42	0	0	6	5	0.00	0.00
TOTAL	7014.97	6543.43	666.08	835.59	1150.97	1519.08	0.58	0.56

Figure 1: Proportion of emissions by mode of travel for 2016/7 and 2017/18



2016/ 2017 Key Travel Trends

- Train, tube or tram journeys accounted for 62% of business journeys, down from an average of 72% between 2011 and 2016.
- One European flight accounted for 22% of SWM’s annual GHG emissions in 2016/17.
- Partly due to this flight, SWM recorded a 13% rise in travel emissions compared with 2015/16.

2017/ 2018 Key Travel Trends

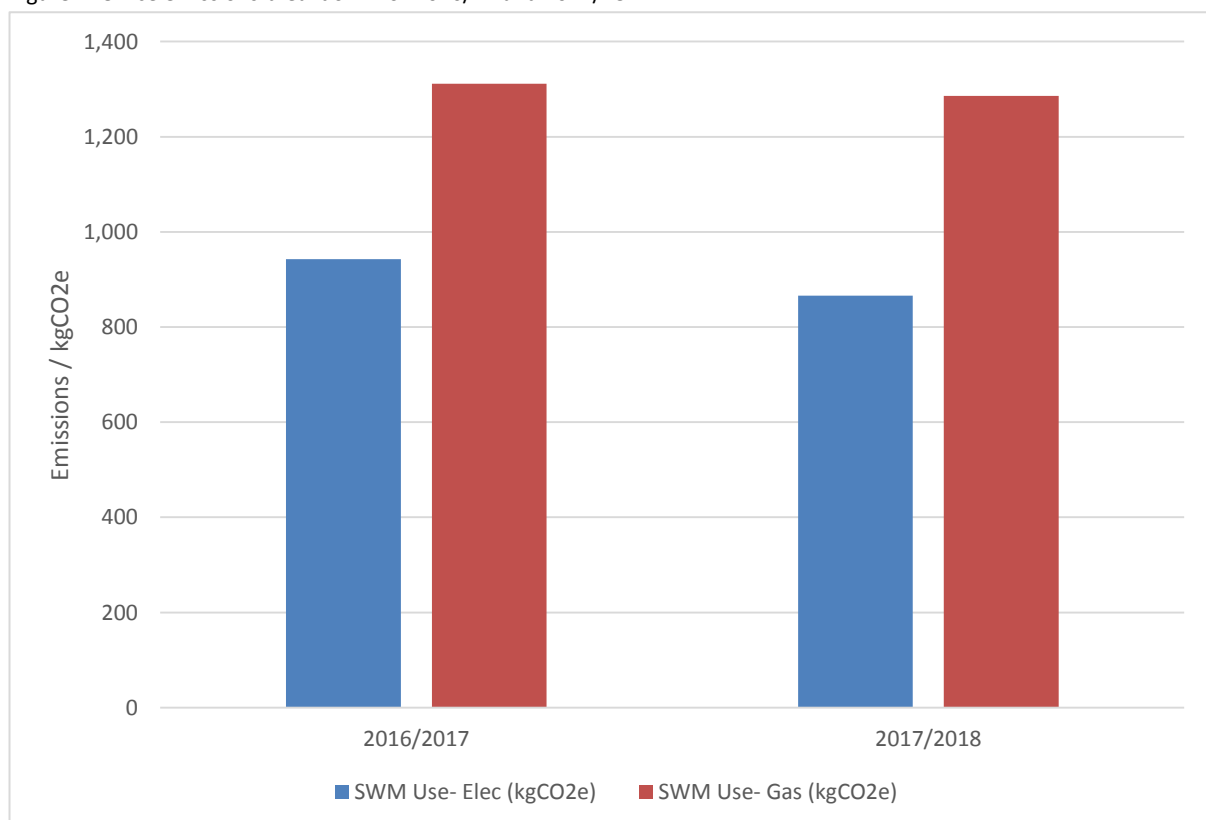
- In 2017/18, cars and taxis accounted for 58% of travel distance, 72% of travel expenditure and 84% of travel emissions.
- Car and taxi travel increased significantly in 2017/18, from 24% of travel distance in 2016/17 to 58% in 2017/18.
- Overall emissions from travel increased by 27% compared to 2016/17, even though overall travel distance declined by 7%.

3.3 Office Emissions: 2016/17 and 2017/18

Table 2: Office emissions breakdown for 2016/17 and 2017/18

SWM use	2016/2017	2017/2018
Electricity (kWh)	2,452	2,956
Natural Gas (kWh)	7,121	6,990
Electricity (kgCO ₂ e)	943	866
Natural Gas (kgCO ₂ e)	1,311	1,286
SWM combined energy use (kgCO ₂ e)	2,254	2,152

Figure 2: Office emissions breakdown for 2016/17 and 2017/18



As set out in section 2, it has been difficult to produce accurate estimates of energy use with the available information. SWM energy use has been calculated as a proportion of the building's total emissions, considering what percentage of building users are SWM staff or volunteers. This method is far from perfect, but no other calculation was found that would give a more accurate result. In addition, there was no accurate electricity usage figures for 2016/17 due to a problem with billing from the landlord's energy provider. The 2016/17 data has therefore been estimated using limited information. The total number of staff working in the building was also estimated for both years.

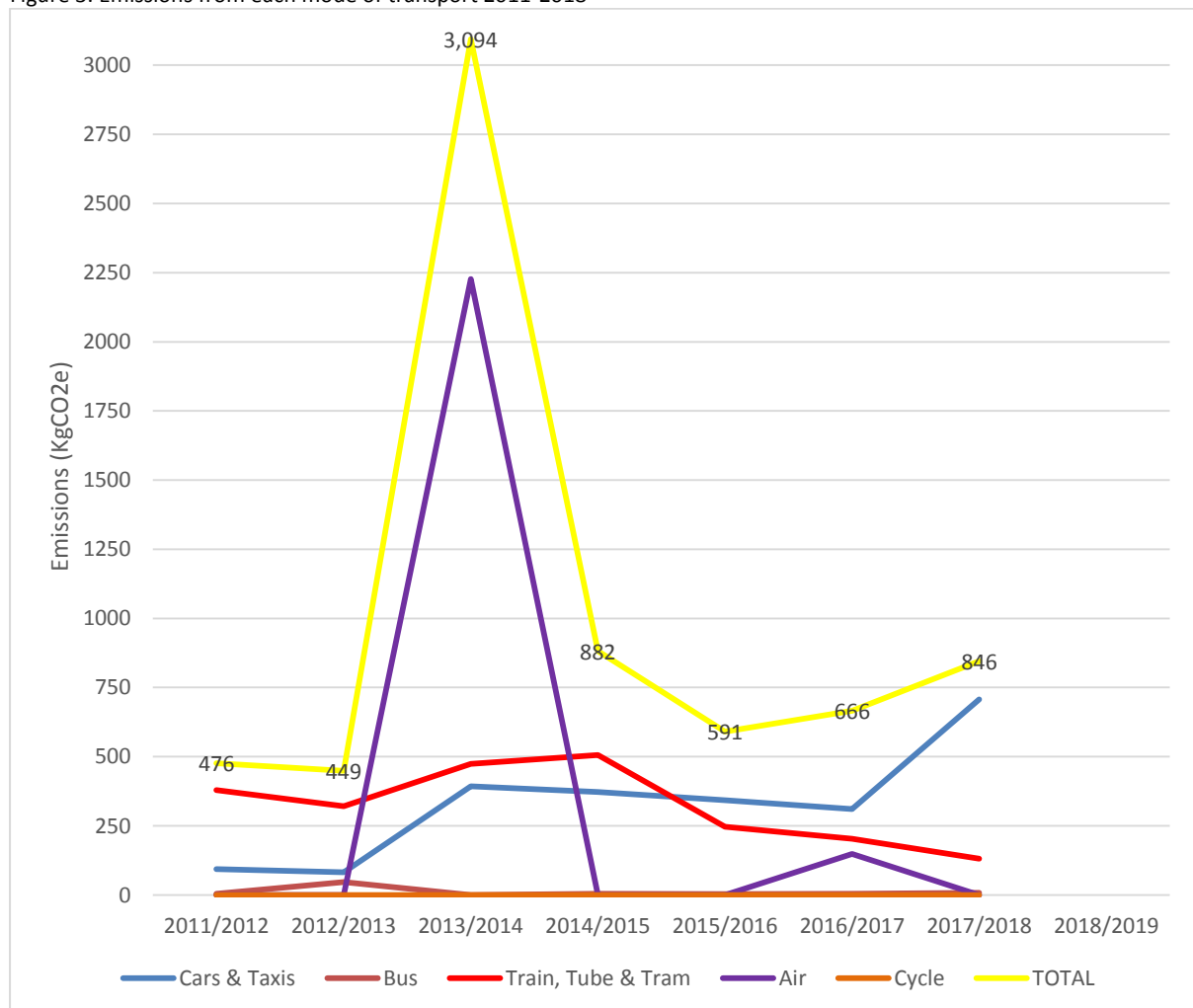
However, there will soon be an opportunity to make reductions as SWM is likely to move to a new office location in 2019/20. It should ensure that the management company is able to provide energy usage information so that accurate estimates can be made in the future.

4. Trends, Comparisons and Discussion for the period 2011/12 - 2017/18

4.1 Travel emissions: Cars and planes

As to be expected, cars and planes have an enormous impact on SWM's travel emissions. Air travel is uncommon and in fact the business has only made two flights since 2011 (one to China in 2013/14 and one to Amsterdam in 2016/17). Even so, the impact is clearly visible in the emissions data for these years.

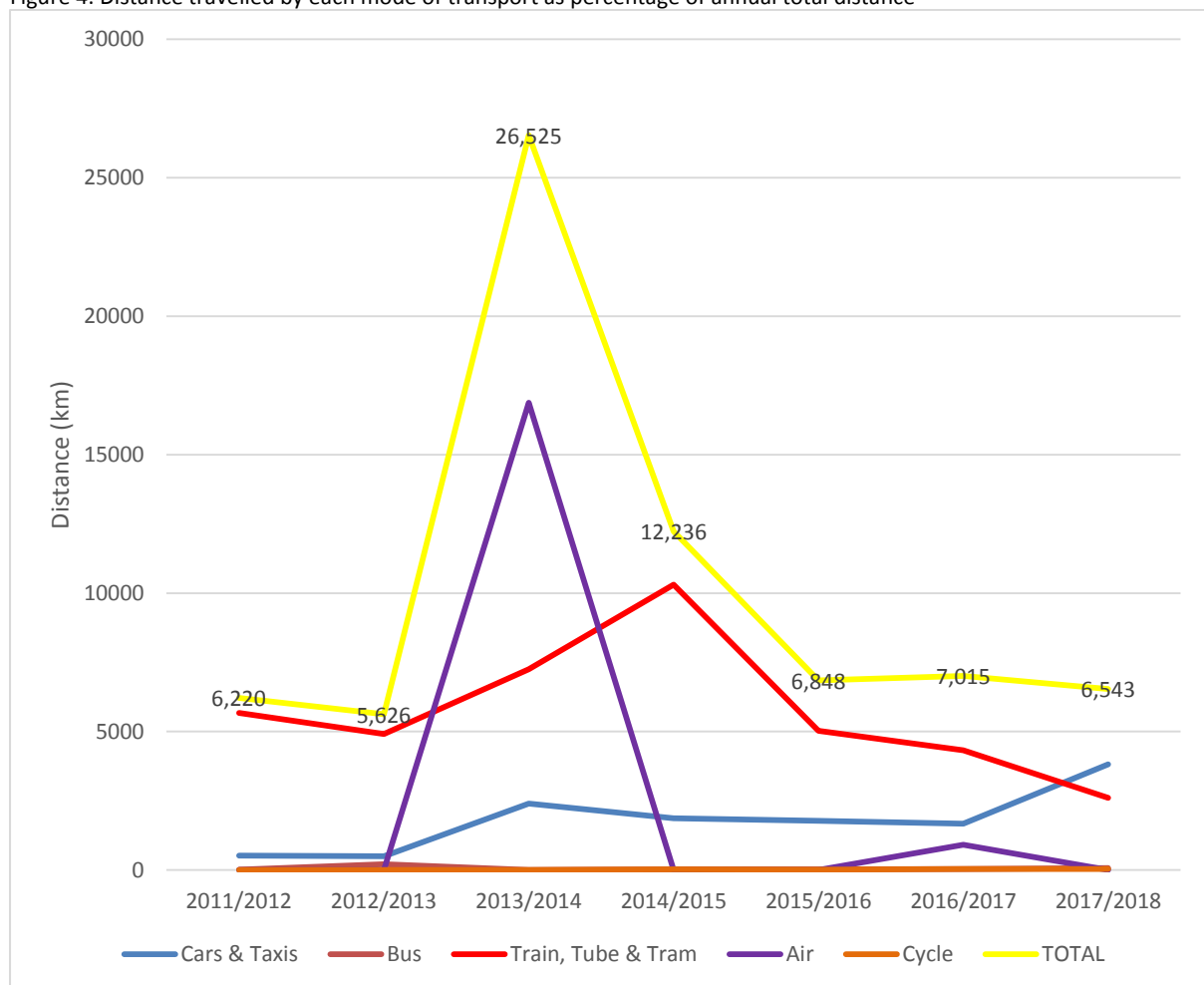
Figure 3: Emissions from each mode of transport 2011-2018



Flying has a serious environmental impact, but it is used by SWM staff very rarely. A more troublesome trend has been a recent increase in car travel. The model of car usually used for SWM’s business travel is a heavy polluter; in fact, it is not much cleaner per km than air travel. This means an increase in car travel is a big problem. Not only is it the most polluting transport method (not including flights), it is also the most expensive travel option, costing on average 29p per km in 2017/18, compared with 12p for cycling and 16p for rail travel, which are the cheapest options available.⁴

Travel by car and taxi was fairly constant for several years (see figure 4), but 2017/18 saw a significant increase, even though business travel declined slightly. The total distance travelled by each mode of transport is shown below.

Figure 4: Distance travelled by each mode of transport as percentage of annual total distance



Car travel rose to 3,820km in 2017/18, the most on record and more than the previous two years combined.

Car travel may have increased for several reasons: it is more convenient, it allows for fast travel to places without good transport links and is useful when materials are being taken to events or conferences. These may be valid reasons, but SWM should assess whether car travel is genuinely being used only when necessary and whether changes to working practices can be made that might reduce the need for such travel without impacting turnover. For instance, smarter thinking about

⁴ SWM runs a cycling scheme, where staff can claim 12p/km for business travel by bike. Air travel is technically even cheaper per km (about 10p) but is obviously not a day-to-day mode of transport.

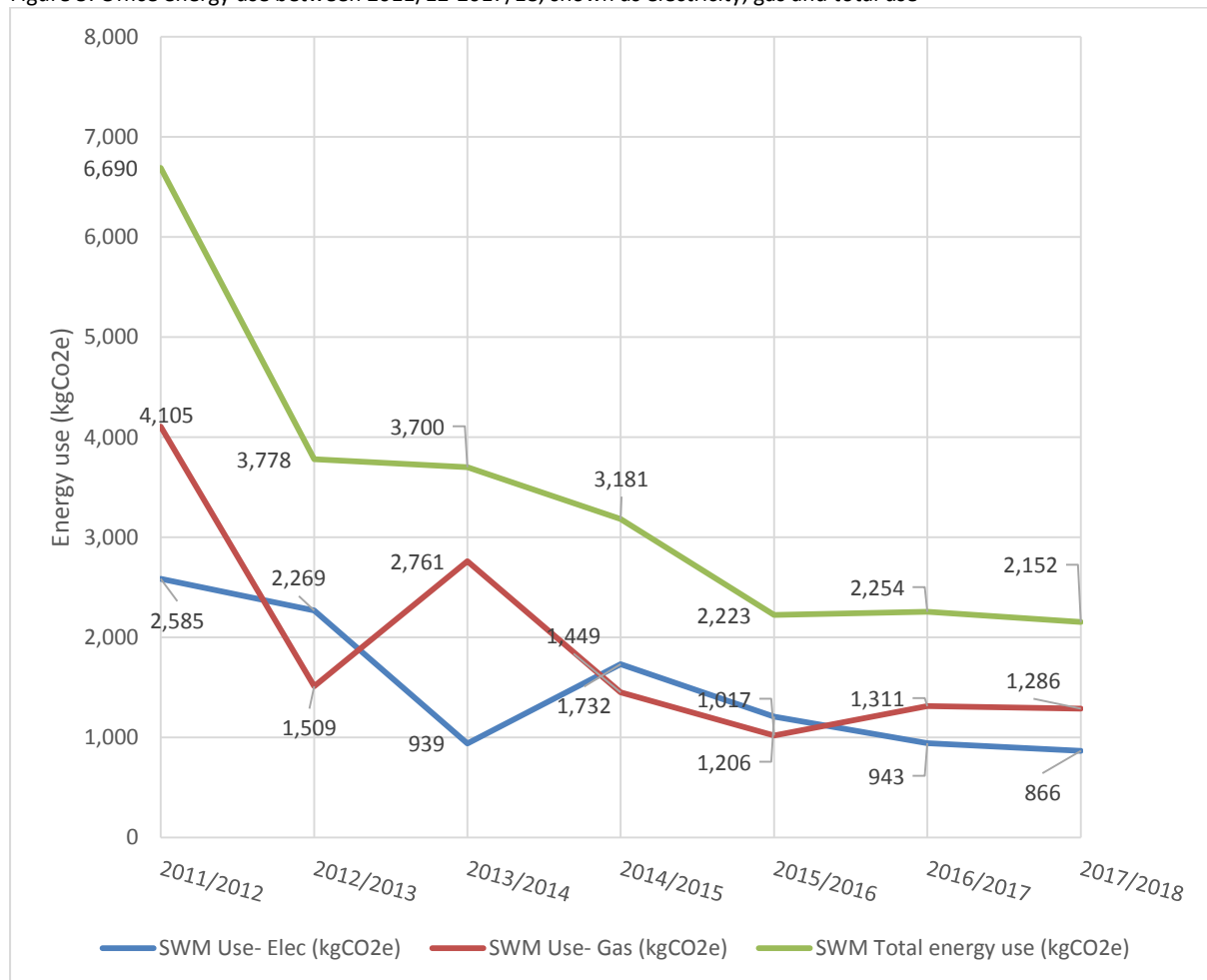
which materials to take to events might enable public transport to be used, or increased use of video conferencing where face to face meetings are unnecessary.

Overall, while distance travelled has remained fairly stable for since 2015/16, total emissions continue to increase (Figure 4) because car travel makes up an increasing percentage of travel. An estimated 804 kgCO₂e was emitted in 2017/18 due to business travel. To put this in perspective, this is almost equal to 881 kgCO₂e in 2014/15, despite 5,693 fewer kilometres travelled in 2017/18.

Reducing car travel should therefore be the top priority in order to reduce emissions from business travel.

4.2 Office and travel emissions: a comparison

Figure 5: Office energy use between 2011/12-2017/18, shown as electricity, gas and total use



Unlike travel emissions, SWM has little control over office energy usage. It does not control lighting and heating in communal areas or even the lighting in its own office, which is connected to motion sensors that cannot be overridden. Despite the lack of control, the landlord is an environmentally responsible company which has a 100% renewable electricity tariff for the building, which means all electricity used by SWM comes from renewable sources.

However, the lease with the landlord makes it difficult to measure and control other environmental impacts. For instance, all office supplies and stationary are supplied by the landlord and SWM does not record usage of items such as paper or ink cartridges. This makes it difficult to determine whether these are being used efficiently or even whether use is increasing or decreasing over time.

The only aspect that SWM has control over is ensuring office IT equipment is turned off when not in use and the heating in the office is not set too high. The staff are very conscientious on these matters, but it is unclear whether any impact can be seen in the electricity usage data because of the lack of accurate staff and usage information available.

Although there is limited control over building emissions within the current lease, there is an opportunity for SWM to have a real impact on its office emissions when it looks for a new office. If efficiency is used as a criteria for choosing a suitable office, SWM can make the most of this opportunity to make a big difference to its environmental impact. Because office emissions are such a large proportion of total emissions (figure 6), any reductions made in this area will see a big reduction in SWM's overall environmental impact.

Figure 6: Office and travel emissions between 2011/12-2017/18

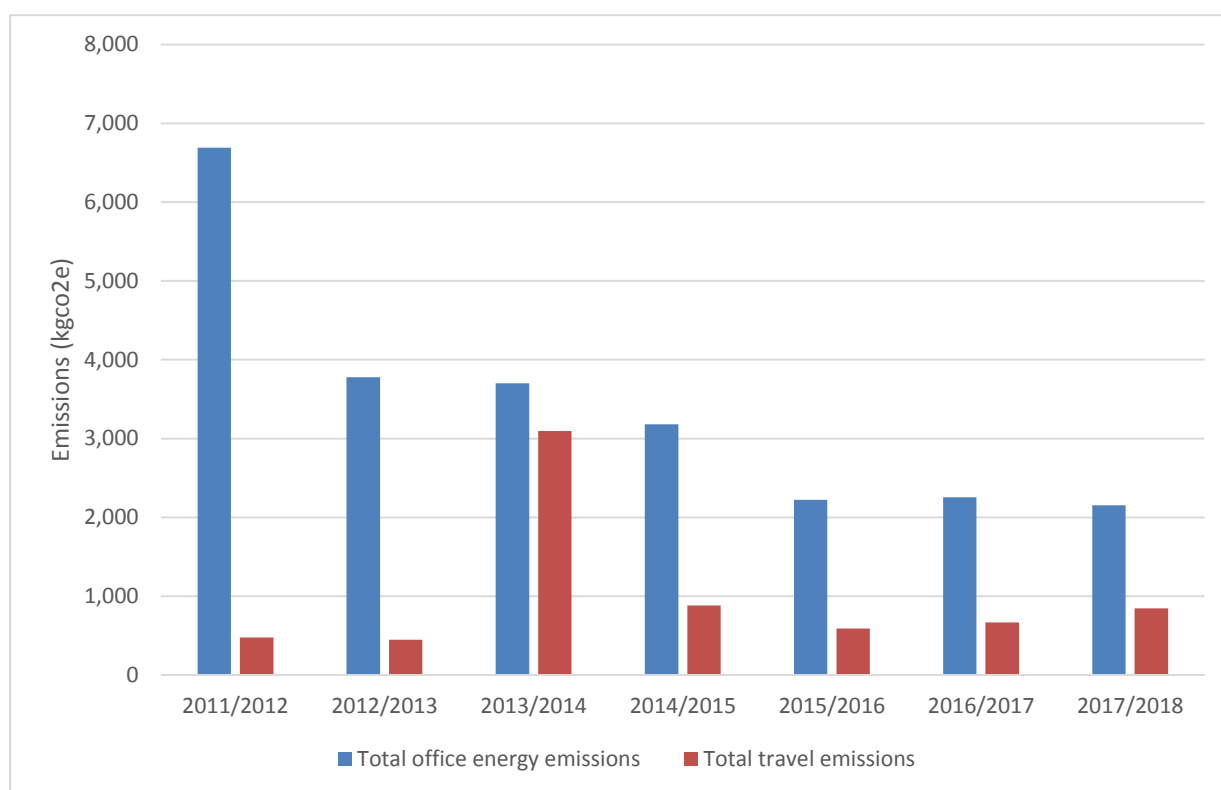


Table 3: Comparison of office and travel emissions, in kgCO₂e (graph) and as percentage of annual total emissions

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Office energy emissions (% of total emissions)	93.36%	89.38%	54.46%	78.29%	79.00%	77.19%	71.78%
Total travel emissions (% of total emissions)	6.64%	10.62%	45.54%	21.71%	21.00%	22.81%	28.22%

4.3 Carbon intensity (Normalised data)

For large organisations, it is common to normalise emissions data by comparing it against factors such as full-time equivalent (FTE) staff, turnover or office space. This is because changes in total emissions might be caused by changes in the business (for example, more staff). Normalising helps to see if emissions really are going up or down per staff member or relative to turnover.

Emissions data between 2011/12 and 2017/18 has therefore been normalised below. SWM's office space has not changed since 2011/12, so there is no benefit to normalising on this measure. The following graphs show total emissions by number of employees and by turnover.

Figure 7: Emissions data normalized by FTE 2011-2018

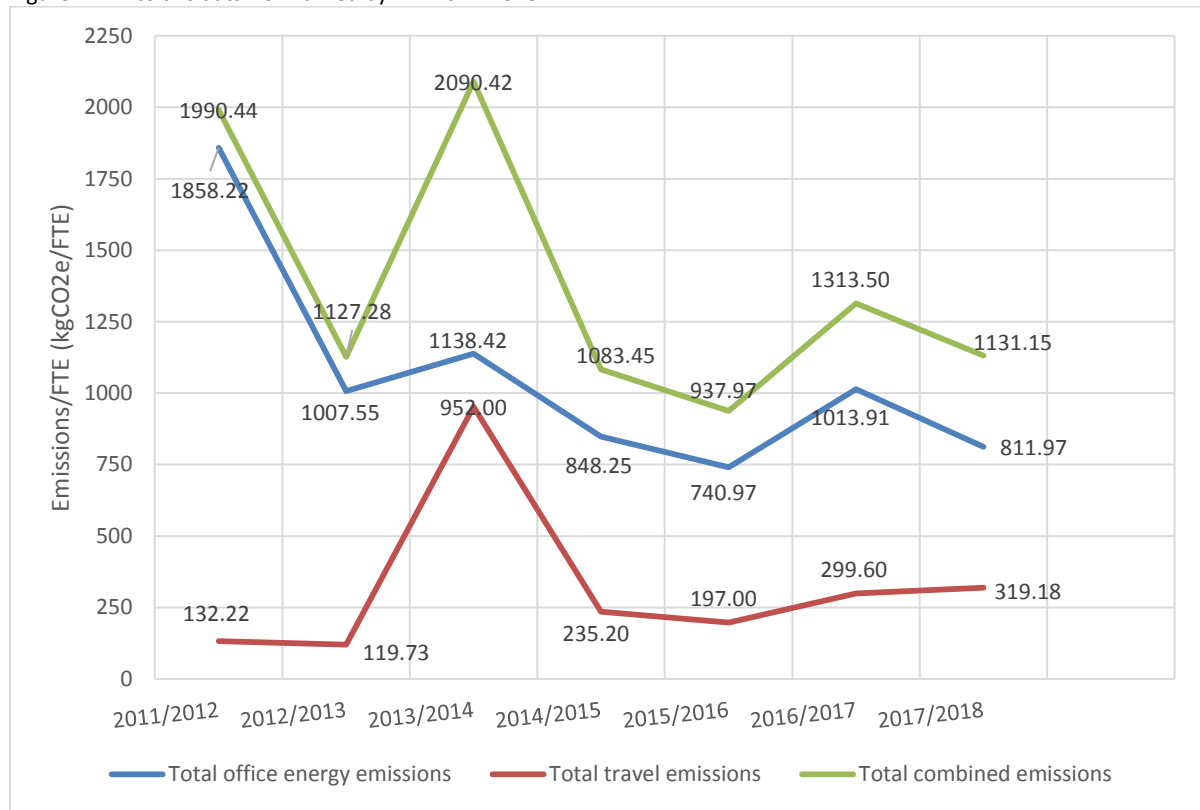
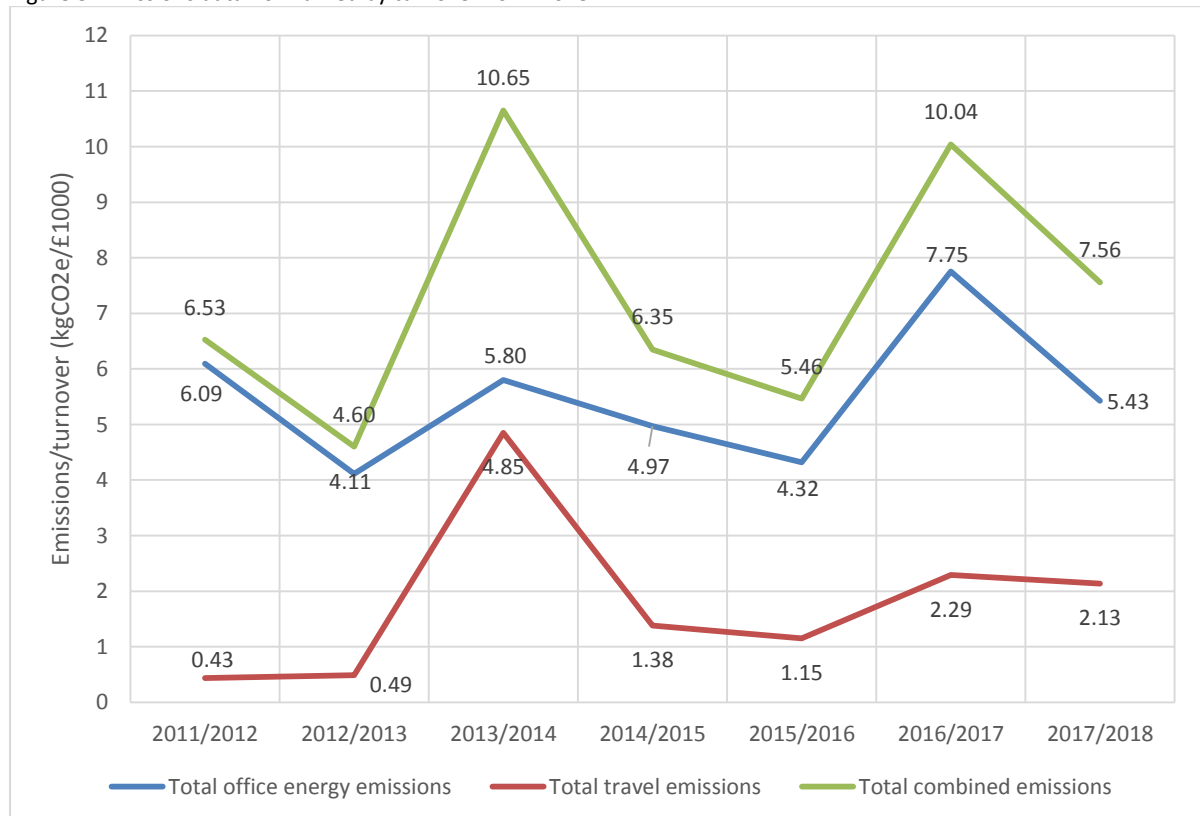


Figure 8: Emissions data normalized by turnover 2011-2018



Both these graphs show that, although there has been a rise in SWM's actual emissions, they have recently reduced relative to both staff numbers and turnover. This suggests that the business may be becoming more efficient in its energy use. In other words, in 2017-18 it generated more income for each kgCO₂e emitted and used less energy per staff member or volunteer. At first glance, it may seem that this justifies the extra car travel outlined in section 4.1. A closer look at the data however shows that normalised emissions declined *despite* more car travel (see appendix 3 for breakdown of normalised data by transport type).

There are also pronounced spikes in 2013/4 and 2016/17 in travel emissions on both graphs, suggesting that, financially, the air travel in these years was not worth the extra emissions it caused.

4.4 Comparisons with other organisations

Reporting GHG emissions is not mandatory for small companies in the UK. As a result, very few SMEs publish reports on their environmental impacts. For a comparison with SWM to be meaningful, it needs to be against an organisation of a similar size, in terms of office space and staff numbers and to be in a similar industry. No publicly available environmental reports from such companies were found. If SWM would like to make comparisons in the future, one way to do this might be to promote the benefit of environmental reporting to SMEs in its networks and share best practice to help those businesses produce their own reports that can be compared to SWM's.

5 Recommendations

Previous reports made recommendations for ways to reduce SWM's environmental impacts. These recommendations are summarised in section 5.1 and progress against them has been outlined in section 5.2. New recommendations have been made for 2019/20 and beyond in section 5.3.

5.1 Previous recommendations

In previous years, SWM has made the following recommendations to reduce its environmental impact (left column) with some progress being made against each (right column).

Previous year's recommendations	Progress
Signing up to a bicycle incentive scheme (Cycle scheme) so that employees can claim funds for cycling for business travel where possible.	Cycling accounts for less than 1% of business travel. By its nature, it is not a suitable method of travelling long distances. However, it is the cheapest and cleanest method and so any cycling should be welcomed and the scheme should continue to be promoted.
Encouraging staff to print double sided and only print when necessary.	It is difficult to measure the impact of printing double sided because SWM does not keep records of paper procured or pages printed. It would be a good idea to find a simple way of measuring printer usage (either by pages printed or ink cartridges used) in order to assess progress against this measure going forward. However, by default all users printing options are set to double-sided.
Continue implementing good practice and annual reporting and regular communication	Communication of performance has unfortunately been sporadic due to a lack of resources to undertake annual reporting.

of performance to employees and board members.	
Replaces as many non-essential business travel with tele conferencing or web-conferencing as possible.	SWM has recently begun to use Skype for video conferencing. Further efforts should be made to make partners aware of this facility and to encourage its use where possible.
Encouraged all members of staff to switch off equipment when not in office.	Staff habitually ensure all non-essential items are powered off at the end of each day and only turned on when needed.
Investigate with landlord ability to switch light in office on and off as currently on a movement sensor not a light sensor.	Improvements to the utilities in the current building have so far not been possible. The building will be sold soon, it is not reasonable to expect any changes at this stage.
Look to install cheap radiator panels/boosters to increase the efficiency of SWM radiators in the office.	As above.

5.2 Recommendations for the future

Choosing a new office

- SWM is likely move to a new office location in 2019. It should make the ability to measure its own emissions a consideration in the selection of the new building. At a minimum, the building should be able to provide overall building energy usage, as well as the number of people using the building so that SWM can accurately estimate its own usage.
- When selecting a new office location, SWM should use building energy efficiency, public transport links and use of renewable energy tariffs as selection criteria.

Travel habits

- Ensure car and taxi travel is only ever used as a genuine last resort with a target to reduce car travel in actual terms and as a proportion of overall business travel.
- Where travel by car is essential, investigate car-sharing as a way of making it more cost effective and reduce emissions per person. Where car-sharing is used, ensure this is recorded on travel expenses so it can be accounted for in future reports.

Office habits and procurement

- Small changes in printing habits can bring huge benefits. Only print when necessary. Make a business-wide effort to design documents around greyscale printing (i.e. design graphs to be clearly understood in black and white), as black and white printing is more environmentally friendly. Change printer settings to 'draft' quality and greyscale by default and only change when required for specific documents.
- Consider recording the procurement of office items such as ink cartridges so that waste can be measured and managed.
- When calculating the cost of new equipment, always calculate the projected savings of low energy choices across its expected lifetime (these savings may make up for any extra cost in the initial purchase).
- Commit to making low energy use a primary consideration when replacing existing equipment or purchasing new equipment.

Appendices: Data sets

Appendix 1: Business Travel Summary

	Estimated Distance (km)						
Type of Journey	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Cars & Taxis	525	504	2,399	1,875	1,778	1,681	3,820
Bus	19	209	0	32	25	42	71
Train, Tube & Tram	5,676	4,913	7,253	10,306	5,027	4,331	2,610
Air	0	0	16,872	0	0	917	0
Cycle	0	0	0	23	18	44	43
TOTAL	6,220	5,626	26,525	12,236	6,848	7,015	6,543
Year on year % change in total		-9.55%	+371.47%	-53.87%	-44.03%	+2.44%	-6.73%

	Calculated Yearly Travel Emissions (kgCO2e)						
Type of Journey	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Cars & Taxis	93	82	393	372	342	311	708
Bus	4	46	0	4	3	4	7
Train, Tube & Tram	379	321	474	506	246	203	131
Air	0	0	2,227	0	0	148	0.0
Cycle	0	0	0	0	0	0	0
TOTAL	477	450	3,094	881	590	666	846
Year on year % change in total		-5.66%	+587.56%	-71.53%	-33.03%	+12.88%	+27.00%

	Calculated Yearly Cost (£)						
Type of Journey	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Cars & Taxis	232.80	224.00	716.37	577.20	554.36	498.80	1,089.00
Bus	6.50	54.60	0.00	11.80	6.40	8.00	14.10
Train, Tube & Tram	1,096.70	824.95	1,275.30	2,146.75	745.35	542.30	410.70
Air	0.00	0.00	1,214.65	0.00	0.00	95.99	0.00
Cycle	0.00	0.00	0.00	2.90	2.20	5.88	5.28
TOTAL	1,336.00	1,103.55	3,206.32	2,738.65	1,308.31	1,150.97	1,519.08
Year on year % change in total		-17.40%	+190.55%	-14.59%	-52.23%	-12.03%	+31.98%

	Calculated Yearly Cost/km (£)						
Type of Journey	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Cars & Taxis	0.44	0.44	0.30	0.31	0.31	0.30	0.29
Bus	0.34	0.26	0.00	0.37	0.26	0.19	0.20
Train, Tube & Tram	0.19	0.17	0.18	0.21	0.15	0.13	0.16
Air	0.00	0.00	0.07	0.00	0.00	0.10	0.00
Cycle	0.00	0.00	0.00	0.13	0.12	0.13	0.12
AVERAGE	0.21	0.20	0.12	0.23	0.19	0.16	0.23
Year on year % change in total		-4.76%	-40.00%	+88.93%	-16.19%	-13.65%	+41.49%

	Calculated Yearly Emissions/£						
Type of Journey	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Cars & Taxis	0.40	0.37	0.55	0.64	0.62	0.62	0.65
Bus	0.62	0.84	0.00	0.34	0.47	0.50	0.52
Train, Tube & Tram	0.35	0.39	0.37	0.24	0.33	0.37	0.32
Air	0.00	0.00	1.83	0.00	0.00	1.54	0.00
Cycle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	0.36	0.41	0.96	0.32	0.45	0.58	0.56
Year on year % change in total		+14.21%	+136.64%	-66.66%	+40.19%	+28.31%	-3.77%

Appendix 2: Office emissions summary

Type of Energy	Office Energy Use						
	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Whole Building- Elec (kWh)	111210	108656	51,899	77,752	73,158	57,355	55,768
Whole Building- Gas (kWh)	427490	174961	369230.77	157475	138224	166563	131887
Whole Building- staff (FTE)	69	80	80	75	75	52	50
SWM staff (FTE)	3.60	3.75	3.25	3.75	3.00	2.22	2.65
SWM Use- Elec (kWh)	5802.2609	5093.25	2108.41	3887.6	2926.32	2451.9263	2955.704
SWM Use- Gas (kWh)	22303.826	8201.2969	15000	7873.75	5528.96	7120.5683	6990.011
Electricity Conversion factor	0.44548	0.44548	0.44548	0.44548	0.412	0.38443	0.29294
Gas conversion factor	0.18404	0.18404	0.18404	0.18404	0.18399	0.18416	0.18396
SWM Use- Elec (kgCO2e)	2,585	2,269	939	1,732	1,206	943	866
SWM Use- Gas (kgCO2e)	4,105	1,509	2,761	1,449	1,017	1,311	1,286
SWM Total energy use (kgCO2e)	6,690	3,778	3,700	3,181	2,223	2,254	2,152
SWM Use- Elec Year on year change		-12.22%	-58.60%	+84.39%	-30.38%	-21.82%	-8.14%
SWM Use- Gas year on year change		-63.23%	+82.90%	-47.51%	-29.80%	+28.91%	-1.94%
SWM Total energy use year on year change		-43.52%	-2.08%	-14.03%	-30.12%	+1.39%	-4.53%

Appendix 3: Normalised data summary

Normalised data by FTE							
Type of Energy (KgCO2e)	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
SWM staff (FTE)	3.60	3.75	3.25	3.75	3.00	2.22	2.65
SWM Electricity emissions	718.00	605.05	289.00	461.83	401.88	424.02	326.73
SWM Gas emissions	1140.22	402.50	849.42	386.42	339.09	589.89	485.24
SWM car and taxi emissions	25.83	21.87	120.92	99.20	114.00	139.90	266.99
SWM rail and tube emissions	105.28	85.60	145.85	134.93	82.00	91.32	49.45
SWM bus emissions	1.11	12.27	0.00	1.07	1.00	1.80	2.74
SWM flight emissions	0.00	0.00	685.23	0.00	0.00	66.58	0.00
Total office energy emissions	1858.22	1007.55	1138.42	848.25	740.97	1013.91	811.97
Total travel emissions	132.22	119.73	952.00	235.20	197.00	299.60	319.18
Total combined emissions	1990.44	1127.28	2090.42	1083.45	937.97	1313.50	1131.15

Normalised data by Turnover							
Type of Energy (KgCO2e)	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Turnover (£1,000s)	305.027	245.007	196.209	170.635	171.656	130.806	149.625
SWM Electricity emissions	2.35	2.47	1.47	2.71	2.34	3.24	2.18
SWM Gas emissions	3.74	1.64	4.33	2.26	1.98	4.51	3.24
SWM car and taxi emissions	0.08	0.09	0.62	0.58	0.66	1.07	1.78
SWM rail and tube emissions	0.35	0.35	0.74	0.79	0.48	0.70	0.33
SWM bus emissions	0.00	0.05	0.00	0.01	0.01	0.01	0.02
SWM flight emissions	0.00	0.00	3.49	0.00	0.00	0.51	0.00
Total office energy emissions	6.09	4.11	5.80	4.97	4.32	7.75	5.43
Total travel emissions	0.43	0.49	4.85	1.38	1.15	2.29	2.13
Total combined emissions	6.53	4.60	10.65	6.35	5.46	10.04	7.56