Brunel Pension Partnership

Corporate Carbon Footprint Report 2023-24

Brunel Pension Partnership Limited

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Executive Summary

This is the third year Brunel Pension Partnership Ltd (Brunel) has commissioned a full operational carbon footprint report. This report covers the annual impact of the organisation's operations and staff travel, commuting and homeworking, but not the emissions impacts of investments nor related risks managed by Brunel which are reported separately via TCFD disclosures.

Brunel is one of eight UK Local Government Pension Scheme pools, with assets under management of c. GBP35 billion, having gained approval from the Financial Conduct Authority in 2018. Brunel has a registered office in Bristol, with some staff working partly or wholly remotely from home. This report covers the Brunel financial year from 1st October 2023 to 30th September 2024. It updates the status of Brunel's emissions in the most recent trading year and provides a further basis for improvement, such as developing actions to deliver a Net Zero strategy and adding more detail within the TCFD reporting framework.

Total emissions this year summary- Table 1

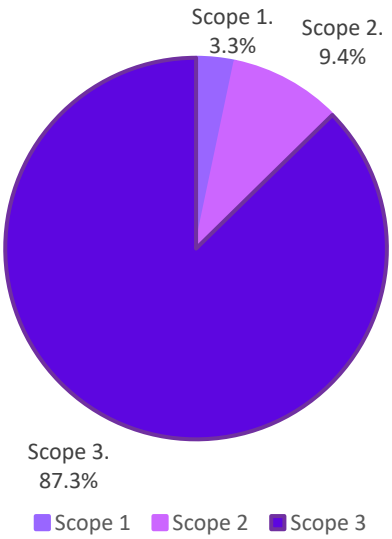
Scope	Data Type	23-24 Total (tCO2e)	23-24 Total (%)	22-23 Total (tCO2e)	21-22 Total (tCO2e)
Scope 1 (direct) Fuel & Refrigerant	Calculated from utility bills	4.19	3.3%	6.04	4.99
Scope 2 (indirect) Electricity Use	Calculated from utility bills	11.85 (0.00*)	9.4% (0.0*)	12.95 (0.00*)	10.24
Scope 3 Supply Chain	Calculated from expense data plus survey and spend estimates	110.66	87.3%	104.12	76.80
Total	-	**126.70**	**100%**	**123.11**	**92.03**

*Market-based figures. Brunel's electricity is renewable so both figures may be shown.

Previous year shown for comparison.

The footprint was calculated by Carbon Managers using the data supplied by Brunel[1]. The UK Government advises use of grid-average UK emissions for electricity usage, called *location-based reporting* in line with the Greenhouse Gas Protocols. This is the figure not in brackets, which should be reported in many official schemes, while any *market-based* reporting of zero-carbon renewables energy use (supported by certificates) can be given alongside this in some cases. The total figure for *market-based reporting* is therefore 0.0 t CO_2e but this does also have linked Scope 3 effects which are non-zero; while this is excellent there are still good reasons (including cost) why energy efficiency measures should be considered.

Brunel CO2e emissions split by Scope (% of total) – Figure 1



This footprint covers direct emissions from burning fuel and refrigerants (Scope 1), indirect emissions from electricity use (Scope 2) and supply- and value-chain emissions (Scope 3) from activities where the company has less control. This includes emissions from business travel, employee commuting, water use, waste disposal, resource use, and other indirect emissions associated with fuel/gas and energy production and supply. The boundary of control is operational rather than financial so includes some items such as travel paid for by clients or suppliers.

Brunel's emissions split is typical for an office-based service-sector company. The majority of Brunel's carbon impact sits within Scope 3 (primarily from various

[1] Footprint data were calculated using the 2024 DESNZ (Department of Energy Security and Net Zero, UK Government) carbon conversion factors, as this is the year in which the majority of emissions occurred. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024 If suitable factors were not available best-practice sector figures were used as noted.

types of travel), with a small portion in Scope 2 and the smallest in Scope 1. Scope 1 & 2 are small as is usual for office-based organisations in multi-tenanted buildings, and can be hard to reduce without direct control of the building.

Since Brunel has been growing their team size and business revenues, it is also worth reporting on relative metrics compared to revenue and employee numbers as this compares impact on a relative basis. The FTE number is taken from HR data and the revenue from the 2024 Annual Report.

Emissions compared to workforce in 2023-24 – Table 2

Workforce	Average FTE	Individuals
Employees prev. year	61.40	70
Employees this year	67.67	76.25
Ratio	**109%**	**101%**

Relative emissions performance metrics – Table 3

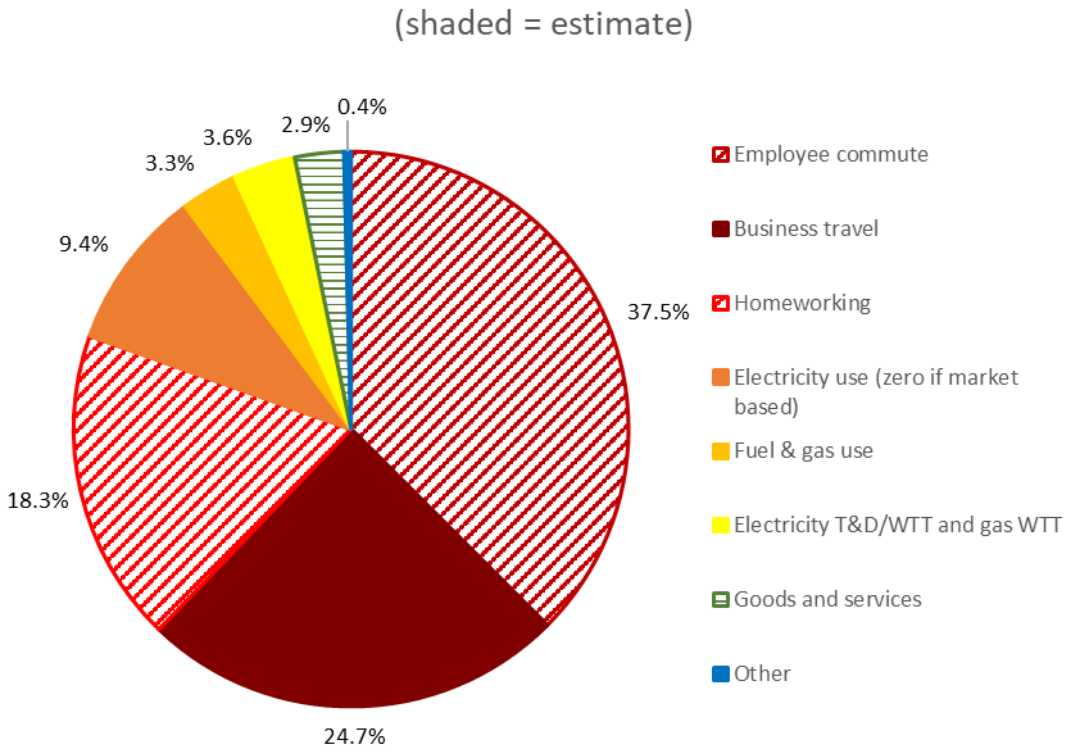
Name	KPI	Units
Carbon per FTE (last year 2022-23)	2.01	t CO_2e / FTE
Carbon per FTE (this year 2023-24)	1.87 [2]	t CO_2e / FTE
Carbon per revenue (last year 2022-23)	10.22	t CO_2e / £M
Carbon per revenue (this year 2023-24)	9.27	t CO_2e / £M

This improvement in carbon per FTE and revenue reflects a better efficiency of operations.

[2] The annual figure of 1.87 tonnes of CO2e per FTE lies between figures recently reported by other investment organisations at around the same time (such as Royal London for 2022/3 at approx. 6.3t CO2e/FTE which has significantly more overseas investment and travel, and the predominantly UK-based Government PPF for 2022-3, at 0.53t CO2e/FTE).

More accurate commuting data is reflected in an increase for that area, and this is the biggest source of emissions this year (37.49%). A large part of Brunel's footprint comes from business travel, although slightly reduced this year in second place (24.67% rather than 39.0% of the overall total). The next biggest is the combined impact of electricity and heat use from working at home as the third largest contributor, with all top three impact areas being Scope 3 (outside of office site emissions). These are followed by in-office electricity use (when using the mandated location-based figure- Scope 2) then office natural gas and air-conditioning refrigerant use (Scope 1) as the fourth and fifth largest respectively.

Brunel CO2e footprint impact categories as % of total 2023-24 – Figure 2

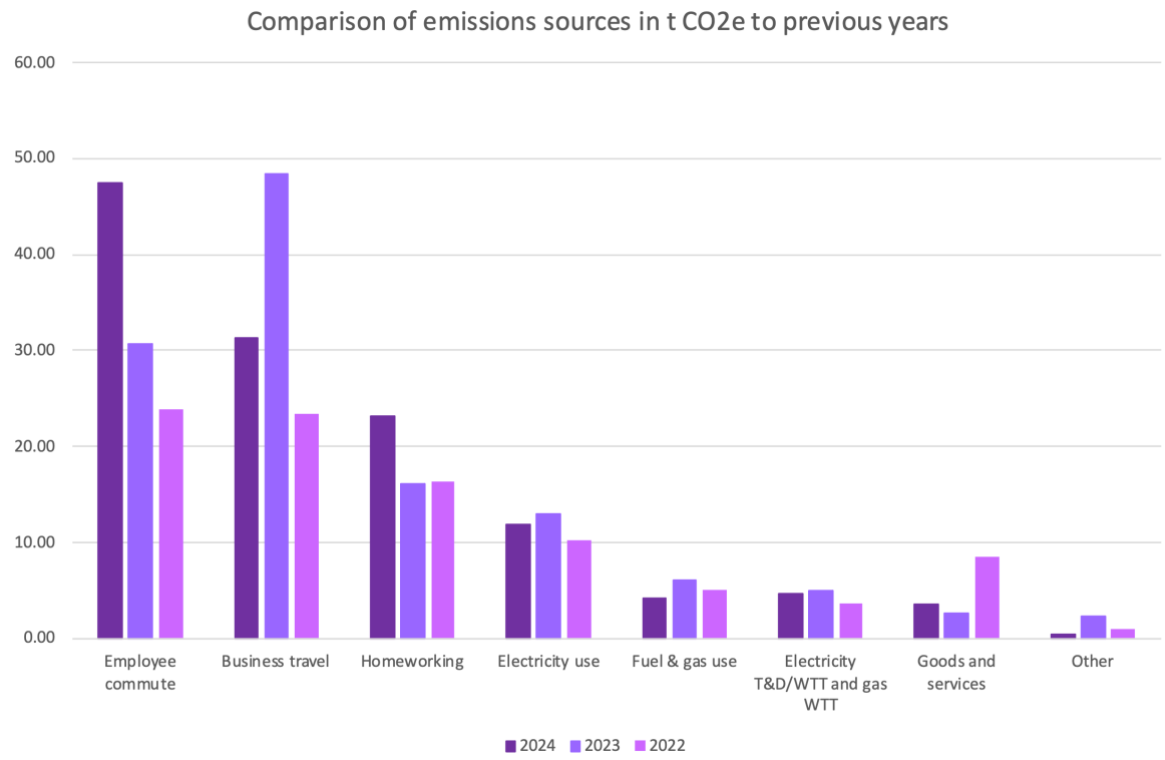


Since the offices create indirect emissions the next largest is "Electricity T&D/WTT and gas WTT" which refers to the supply-chain impacts of generating and delivering the same power and gas (under Scope 3), before it arrives at the company. Goods and Services reflect purchasing particularly of equipment and consumable materials, whose impacts are estimated by weight. The remaining impacts of waste and water use make up the remaining 0.4% of emissions.

Although the commuting and homeworking impacts must be estimated from a company survey, the quality of data collected this year is better and gives a more accurate picture of these areas.

The comparison for each impact with previously reported years is shown below in Fig 3.

Comparison of emissions sources in t CO2e to previous years - Figure 3



The Commuting and Homeworking categories have risen in impact due to slightly more employees working more hours, plus improved accuracy of data from this year's survey. Business Travel has reduced overall from a different mix of trips including less flying and driving, with fewer long flights and no Business Class flying, plus a small increase in vehicle efficiency. The office has used slightly less power and gas which may be due to a mild winter and cool damp summer, plus the national power and gas grid have become slightly more efficient. There was slightly more purchase of IT and office equipment than last year but similar in impact, as this is now spread across several years, rather than concentrated periodically as in the original year of 2022.

Recommendations in general

The quality of the footprint has improved this year with better data collection. We recommend that the figures in this report are used to update any reports and reduction plans. This footprint can be used to further improve data collection and accuracy. It could also be used to arrange a CO_2 offset purchase for this specific year using the certified carbon credit partners utilised in the previous year.

The remainder of this report is a short guide to the results in more detail and possible next steps, particularly for the current trading year. Managing the carbon impacts and other sustainability issues of business organisations has also been shown to confer competitive advantage with customers, lowered risks, better opportunity-access and efficiency gains to reduce costs. There are good business reasons to persevere, and early actions often yield the largest rewards.

The process of carrying out this report is in line with the commitments given in Brunel's RI & Stewardship Outcomes Report for 2024[3] and will support further work on improvements.

Recommended actions summary

Recommended actions this year would be to:

- **Identify and implement some emission reduction actions**
- **Keep improving the timeliness of and process for regular data collection, perhaps monthly or quarterly**
- **Engage with the office landlord to further enable access to accurate data for future footprints.**
- **Carry out the homeworking and commuting surveys within or just at the end of the trading year across all staff to give a more accurate picture, using the updated questions as for 23-24 or with further improvements.**

Updates:

- It is also recommended that Brunel updates its PPN 06/21 compliant Carbon Reduction Plan with this year's performance, and any updates to targets and reduction actions (particularly if this Public Procurement Note applies to Brunel's bids to renew contracts with County Councils).

[3] See page 64 in https://www.brunelpensionpartnership.org/wp-content/uploads/2024/06/2024-Responsible-Investment-and-Stewardship-Outcomes-Report-2.pdf

In addition, the first reduction actions which should be considered are:

- Reviewing travel and commuting policies and support to **see if flying can be reduced** at least domestically by replacement with train travel and by reducing trip numbers elsewhere.
- Introducing a policy limiting the engine size or emissions level of employee cars which can be used for company business travel and supporting employees to swap to more efficient vehicles. If this is done via support for better rules around car allowances and personal vehicle choices, it can also reduce commuting emissions. Where this is not appropriate access to day-hire efficient cars under a reasonable emissions limit would help.
- Consider piloting a detailed homeworking energy use survey to find out whether employees really heat their homes the way the Government thinks- it could be more, or less. This can then
    - Make the home heating footprint more meaningful and accurate
    - Allow targeted reduction actions that also help individual employees to stay warm/cool as needed
    - Create data that will reflect the impact of such actions (which the current blanket estimates cannot)
- If **offsetting the organisation's operational carbon**, this report could form a reasonable basis for doing that.

Recommended actions are highlighted in **bold** here and within the remainder of the report.

Methodology

The footprint has been calculated according to the Greenhouse Gas (GHG) Protocol using guidance and national data issued annually by the UK Government's Department for Energy Security and Net Zero (DESNZ- 2024 set for this report), best practice surrogate data where organisational data is lacking, and data collated from Brunel. The footprint is expressed in tonnes of CO_2e (equivalent) as it covers a standard basket of important greenhouse gases as well as CO_2; including for example methane; whose effects are stronger and converted as though they were an *equivalent* tonnage of CO_2.

An operational control boundary has been applied as e.g. some travel and commuting are not purchased by the organisation, yet its operations require travel, commuting and homeworking in order to be delivered.

Only activities relevant to PPN 06/21 style reporting are so far considered in the footprint. Logistics (a required category) is ignored as Brunel is an office-based service organisation with negligible shipping activity.

Data provided for the footprint calculation included:

- Expense system data and 3rd party funded travel
- Employee commuting/homeworking survey
- HR headcount
- Data from historical utility bills for the leased office (except water which is modelled using surrogate data as these are unavailable)
- Bill evidence that the office power is from a renewable source

Where the ability to provide the remaining data-based footprinting was limited due to incomplete data in some cases, this is noted in the text where applicable and the detailed results given in the data file returned with this report. Where gaps exist, estimates for areas of significant impact have been generated where possible, using surrogate or previous data in line with current best-practice.

Results in Detail

Scope 1- Fuel and Refrigerant Use

Brunel has no company vehicles but the office heating is at least partly gas (this usage may also be for providing hot water). The air-conditioning part of the office ventilation system uses refrigerant according to documents supplied, but no top-up usage data has been supplied so an industry estimate of 5% leakage has been used. The status of the Scope 1 data is shown below in Table 4.

Scope 1 data – Table 4

Scope 1 direct emissions from fuel/leaks

Footprint from data

Item	Status	Data Quality	Notes	Metric	
Heating fuel (office)	gas meter data	utility data- good	calculated from data	**3.26**	**t CO2e**
Refrigerant leaks	zero leaks or top-ups last year	poor- no maint. data	est. surrogate	**0.92**	**t CO2e**
			total Sc1	**4.19**	**t CO2e**

Any leaked refrigerant gas evaporates and must be added to the footprint; leaks are a feature of all HVAC systems although modern equipment is better and uses less carbon-intensive refrigerants. This leak rate can be established by comparing the litres of refrigerant filled or refilled into the system each year from the maintenance logs. (Currently there is no top-up data, so this is estimated from industry standard data).

Scope 1 Recommended Actions

Actions required are:

- **Continue to check each year for HVAC maintenance details of refrigerant replacement or top-up.**
- **It may be worth surveying staff to see if the office is overly hot or cold and controls could be changed in some areas to reduce heating gas and/or refrigerant use.**

Scope 2 Indirect Energy Emissions

This is based on the electricity used at Brunel premises. Scope 2 data are shown tabulated below in Table 5.

Scope 2 data – Table 5

Scope 2 indirect emissions from electricity use

Footprint from data

Item	Status	Data Quality	Notes	Metric
Electricity use/bills	1 building	utility data- good	calculated from data	**11.85 t CO2e***
		renewable tariff	*market based*	***0.00 t CO2e***
			total Sc2	**11.85 t CO2e**

*Location-based. This can be shown in parallel as zero under *Market based reporting* **if** a certificate proves it was 100% renewable (but there are still some Scope 3 from T&D losses, WTT etc)

Brunel's landlord purchases their power on a renewables-only tariff from Ecotricity, backed by Renewable Energy Guarantee of Origin (REGO) certificates accessible online. Therefore the direct emissions for Scope 2 can also be shown as zero emissions under Scope 2 with the parallel *market-based reporting* figure. The 11.85 t CO2e figure is the national average *location-based figure* which is mandatory. Both figures are used together. There is also a small additional footprint from the transmission and distribution losses of the power grid included under Scope 3 which is only reported one way regardless of the power source. See the section on Scope 3 for more detail.

Natural Gas and Power Data

This year full utility bill data for gas and electricity use were available including for common areas from the landlord. This has improved the accuracy of the Scope 1 and 2 footprints compared to last year significantly.

Both gas and power emissions are reduced compared to last year reflecting this better data, a possible slight decrease in use due to mild winter and cool summer weather, and a more efficient national supply in both cases.

Scope 2 Recommended Actions

While various actions could be taken to try to reduce Brunel's energy use (and hence costs), this is very dependent upon the landlord as the office is leased. For the moment the most immediate recommendation is to:

- **Continue to contact the energy provider (if necessary via the landlord) each year to obtain the REGO data to verify the office tariff.**
- **Encourage the landlord to provide timely energy and fuel use data for common areas and continue to collate any that Brunel pays for itself direct to the supplier.**
- **Try to engage with the landlord about any energy use reduction actions requiring their co-operation.**

Scope 3 - The Supply & Value Chain

This includes activities of employees such as travel in non-company vehicles, commuting, power and fuel use from homeworking, as well as supply chain impacts, water and waste, and the purchase and disposal of physical items. Since

this is a broad category the footprint summary is much more complex. It also includes the impact of *making and delivering* any fuel or electricity to the company, before it is used. For employees' own homes and cars, it includes both this indirect type and the direct emissions of fuels and electricity since the purchase decision and usage behaviour rests with the employee not the company. The data is tabulated below:

Scope 3 data – Table 6

Scope 3 indirect emissions caused by the supply chain/employee activity

Footprint from data

Item	Status	Data Quality	Notes	Metric
Company heat fuel WTT	utility bills/meters	utility data- good	Calculated	**0.54 t CO2e**
Company power T&D	utility bills/meters	utility data- good	Calculated	**1.05 t CO2e**
Power generation WTT*	utility bills/meters	utility data- good	Calculated	**2.77 t CO2e**
Power T&D WTT*	utility bills/meters	utility data- good	Calculated	**0.24 t CO2e**
Sc 3.3 Fuel and energy total				**4.60 t CO2e**
Company sewerage	est from standard	No data- estimate	Pro rata estimate	**0.15 t CO2e**
Company waste disposal	waste portal data	Waste data by tonne	Calculated	**0.36 t CO2e**
Sc 3.5 Waste total				**0.51 t CO2e**
Company material use	est from receipts	By cost/item not kg	Company purchases	**3.49 t CO2e**
Company water supply	est from standard	No data- estimate	Pro rata estimate	**0.12 t CO2e**
Sc 3.1 Purchased goods and services total				**3.62 t CO2e**
Business travel- hotels	complete data	Good	expense data	**2.34 t CO2e**
Business travel- flights	complete data	Good	expense data	**19.64 t CO2e**
Business travel- car miles	complete data	Good	expense data	**3.28 t CO2e**
Business travel- public	partial data	Moderate	expense data	**5.35 t CO2e**
Business travel- taxis	partial data	Moderate	expense data	**0.63 t CO2e**
Sc 3.6 Business travel total				**31.26 t CO2e**
Employee commute- cars	new survey	Moderate; partial	combined survey	**30.70 t CO2e**
UK flights	new survey	Moderate; partial	combined survey	**4.24 t CO2e**
public transport	new survey	Moderate; partial	combined survey	**12.57 t CO2e**
Employee commute sub total				47.50 t CO2e
Homeworking- fuel use	new survey	Moderate; partial	combined survey	**21.00 t CO2e**
Homeworking- power use	new survey	Moderate; partial	combined survey	**2.18 t CO2e**
Homeworking sub total				23.18 t CO2e
Sc 3.7 Commuting and homeworking total				**70.68 t CO2e**
			total Sc3	**110.66 t CO2e**

Commuting and homeworking data were collected via employee survey after year end in autumn 2024, (with 63 responses out of 71 active employees), which is a response rate of 89%. This data has been scaled up pro-rata to provide a better estimate of the full impact of these activities to cover missing responses. The data was assumed to be fairly typical, representative of the reporting year commuting and homeworking patterns, and the annual emissions calculated pro rata from this. The high response rate gives reasonable confidence in these estimates.

To keep and further improve the accuracy of the data collected regarding commuting such as vehicle types, the survey should continue to be conducted annually within the trading year or soon after for all employees. It is worth checking the question set with Carbon Managers before sending it out.

Commuting and Homeworking Recommended Actions

In future we would recommend the following actions:

- **Carry out a complete and updated employee survey during/at the end of the same reporting year as the footprint**, just in case working patterns are changing**.**
- **Encourage even higher response rates to capture all the data**, or otherwise establish if the sample is representative of the whole workforce.
- **Consider more accurate ways to collect commuting data** - perhaps via an updated more sophisticated survey or quarterly ones to cover different times of year and travel behaviours.
- **Consider collecting data at exit from employees who leave** as they cannot be contacted later.
- **Consider reduction actions**- how can employees be supported to commute or work from home with lower emissions.

Reductions actions to consider:

- Consider piloting a detailed homeworking energy use survey to find out whether employees really heat their homes the way the Government thinks- it could be more, or less. This can then
    - Make the home heating footprint more meaningful and accurate
    - Allow targeted reduction actions that also help individual employees to stay warm/cool as needed
    - Create data that will reflect the impact of such actions (which the current blanket estimates cannot)
- Introducing a policy limiting the engine size or emissions level of employee cars which can be used for company business travel can also reduce commuting emissions by supporting the choice of more efficient personal vehicles.
    - Where this is not appropriate access to day-hire efficient cars under a reasonable emissions limit would help reduce business travel emissions, but not commuting.

Utility data quality in Scope 3

Data for power supply-chain emissions are based pro rata on landlord data for common areas used by the whole building and the proportion of the leased building which Brunel staff occupy (4.34%) added to Brunel's own use established by submetered bills. No water data were given so as in 2023 an industry surrogate figure was used. Waste figures were reasonably accurate and taken from the 3rd party contractor reports while Brunel's material use data came from purchase data.

For future reporting, the utility figures should continue to be based on accurate and timely bill-based energy water and fuel use from the landlord and Brunel's supplier. Evidence may also be needed in future for home consumption and the organisation should start to consider how this might be achieved, as this is such a large factor within the organisation's footprint.

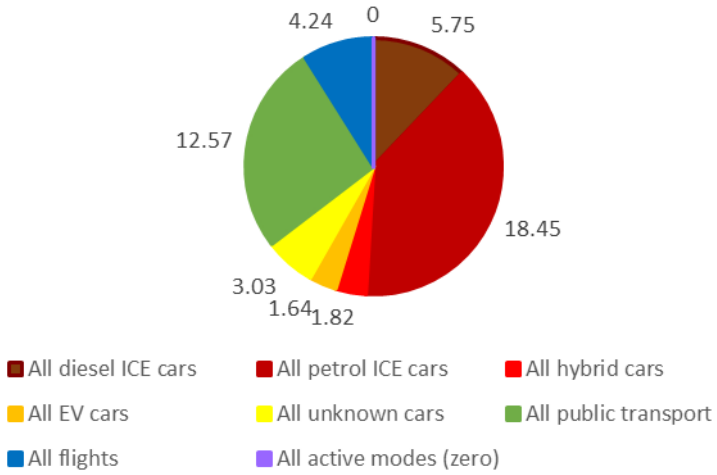
A more detailed breakdown of the most significant Scope 3 impact factors which Brunel can affect is given below.

Significant Scope 3 Impact Factors

Commuting

The response rate of 80% is relatively high for this type of survey when comparing response rates to other companies we have audited. The responses can therefore be considered representative of the general staff. In future reporting, updated emissions/correction factors will be applied for any missing submissions however the goal would be to still increase the response rate and timing in the first instance.

Commuting impact split by mode/tCO2e for 2023-24 – Figure 4



In the chart above, ICE refers to Internal Combustion Engine-only cars. These are the “traditional” car type without extra hybrid or electric-only components. EV refers to Electric Vehicle, i.e. battery-only and electric-powered with no direct tailpipe emissions. EVs do have a small amount of indirect emissions associated with their electricity use and its associated supply chain in Scope 3, as shown here. Non plug-in Hybrid (HEV) cars have both the direct and indirect impacts of fuel use but not mains power as they are not recharged with electrical power. There were no Plug-in Hybrid (PHEV) cars mentioned which would have both fuel and electricity use impacts, and no motorbikes in the data. The emissions from cars make up 65% of the total commute impact but only 39% of the miles.

New this year is commuting monthly by plane within the UK. This alone, makes up 9% of the commute emissions from only 3% of the miles and contributes to the significant increase over last year (55% in total).

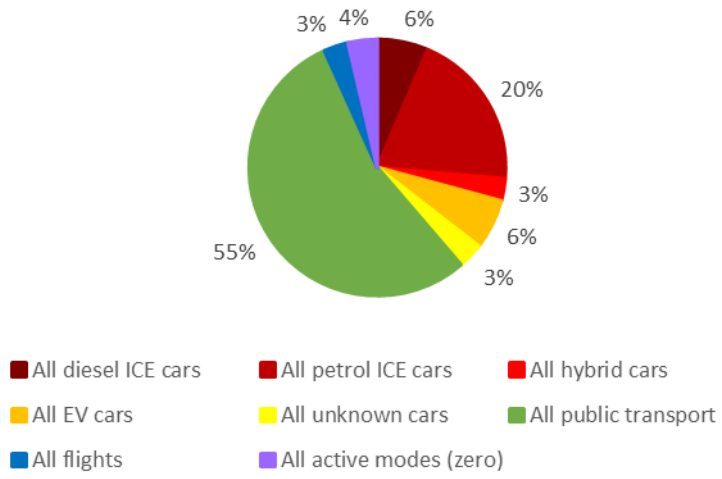
Public transport covers trains, trams and buses and a few taxi trips and make up the other 26% of the emissions but from 55% of the miles. Active modes cover walking or cycling (anything which is person-powered) and these modes naturally

have no “tailpipe” to have emissions from so are zero emission while being 4% of the distance travelled (an estimated 279,116 miles this year).

While the proportion of miles is based directly on the commute survey results, the total miles and their emissions have been adjusted pro rata to take account of missing employee responses (they and homeworking hours are all scale up by a factor of approximately 12%). This is to give the closest possible estimate to Brunel’s total impacts.

The split by % miles travelled for the same categories is shown below: keeping the same colours for each mode to assist with comparison with the emissions in Fig 4.

Commuting miles split by mode 2023-24 – Figure 5



For emissions, cars dominate the commute, so an initial action should be:

- **Find out why employees who only drive do not or cannot commute partly or wholly by lower carbon methods such as public transport,** given Bristol is a city with some public transport.

Given the new data on flying commuting, it is advisable to check for double counting or missing data:

- **Find out what has changed: whether this flying commute was missing from previous data, is new (and if so why) or whether this has usually been claimed as a business travel expense**

Driving might be related to the location of the Brunel office relative to scheduled services and could be improved by a few simple actions potentially such as car sharing. It is noticeable this year that car shares have begun to appear in the commute data, and more park-and-ride commute details which may reflect changing habits for the better:

- **Look at further lift-sharing and car-pooling to reduce car related emissions**
- **Investigate any local new plans for expanded provision e.g. traditional buses or on-demand flexible route services**
- **Enable more active modes by supporting secure bike storage, changing rooms and showers, or e.g. a Cycle to Work scheme**

Some of these ideas were mentioned in the suggestions section responses of the original employee survey (see 2022 report).

NB: It is important to note the carbon intensity of any electricity-based DESNZ emission factors used in carbon calculations will reduce with time as a result of the UK's Net Zero policy. This means even though plug-in hybrid and electric vehicles will still have a footprint from power use, it will reduce over time.

Business Travel

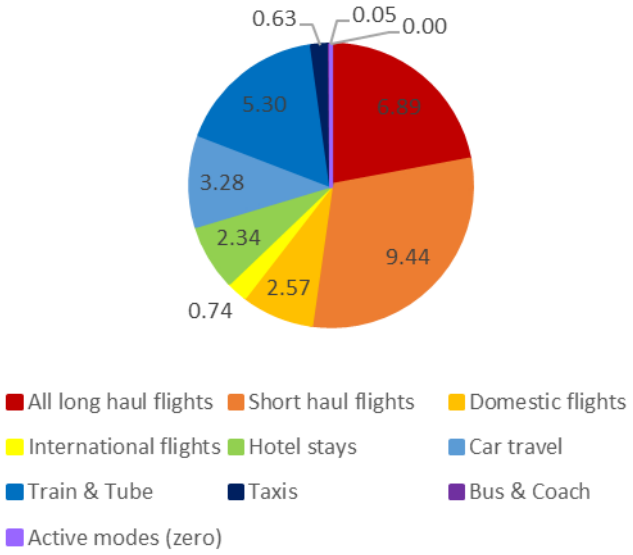
There was good data available for travel, including that not paid for by the organisation but undertaken by its employees. The raw data from the expense claim system has been combined with the 3rd party data to calculate the footprint.

The impacts from each type of travel are shown below: flying dominates because it is the most carbon-intensive form of travel and there were nearly 56,000 miles of flights taken during the year - down by 12% and including less long haul and business class travel. The total miles travelled reduced 4% year-on-year while the emissions fell around 35%.

Apart from changes in flying, the number of nights in hotels also reduced and occurred in less intensive countries leading to a drop of 23% in number and 33% in emissions.

The emissions impact from each travel mode and hotel stays is shown below in Figure 6.

Brunel Business Travel Impact t CO2e, 2023-24 – Figure 6



- *Domestic flights* occur wholly within the UK (and are the least efficient per mile). Ideally these should be replaced by train travel.
- *Short haul flights* are from the UK and typically to Europe.
- *Long haul flights* are from the UK to further off destinations, and longer ones will typically be in business or super-economy class, mainly the USA. There were none present in the data this year.
- *International flights* begin and end outside the UK- often these are a later local leg of a more complex UK-to-international trip.

All flights were assumed to be economy as no ticket class data was given. If any flights are business class their impact is substantially larger than the same distance in economy, due to the extra space (and hence % of the plane's fuel emissions) the passenger takes up. Flight distances between airports were checked with an independent online source for the calculations (see data file).

While longer flights may have no reasonable alternative (for example across the Atlantic) it is worth reviewing whether each trip is strictly necessary or whether more than one purpose/ trip could be combined. A "Travel Hierarchy" policy can help do this and is often available from travel booking platforms, along with information on the carbon impact of different methods of travel, to assist with better travel decision-making. Essentially it helps staff to review whether they need to travel at all by looking at options like Zoom, as well as reducing the impact by considering alternatives, whether the mode of travel or the route.

This year a total of 211 nights were spent in hotels (versus 274 last year so a significant decrease).

This is shown on the table below- the emissions per person per night on average in each country's hotels. Figures are drawn from the DESNZ 2024 UK

Government data except where unavailable as noted, where a country average from an industry source is shown.

Hotel emissions per night and total nights – Table 7

Country	Nights	Kg CO2e/pn
UK	176	10.40
USA	2	16.10
Japan	4	39.00
The Netherlands	4	14.80
Belgium	2	12.20
Denmark*	3	5.87
Ireland*	1	26.70
Germany	9	13.20
Norway*	1	17.70
Spain	1	7.00
Switzerland	7	6.60
France	1	6.70
Total	**211**	

* using https://www.hotelfootprints.org/

Recommended Actions on Travel

The recommended actions to reduce travel emissions are:

- **Work on replacing UK domestic flights with rail travel**
- **Trial a Travel Hierarchy policy and/or explore what a travel booking service can offer** for efficiency, information about exact emissions from different carriers or modes, or to help change travel behaviours; this will aid with avoiding and reducing or combining trips, as well as shifting them to lower impact transport modes, and
- **Promote virtual meetings wherever possible**
- **Introducing a policy limiting the engine size or emissions level of employee cars which can be used for company business travel** can reduce travel emissions by supporting the choice of more efficient personal vehicles.
    - Where this is not appropriate access to day-hire efficient cars under a reasonable emissions limit would help reduce business travel emissions.
    - Some providers can deliver the car to the employee's door, avoiding a drive to collect it in the first place.

Homeworking and Data Accuracy

Estimates were calculated for home working based on working patterns from the survey and national average factors from DESNZ. The energy provider name and tariff at home is needed if a more accurate footprint is desired, as not all renewable tariff providers have a zero footprint under market-based reporting, despite selling their tariffs as "renewable"; and not all employees use their heating as much or as little as the Government assumes, which can be a regional variation due to local climate and weather conditions.

This improved accuracy would require staff to monitor and share more data about their home energy and fuel use, as well as their own vehicles and travel behaviours. Note this can be done relatively simply if a system is set up to collect data in a process throughout the year and by engaging the workforce. Future employee surveys can be further modified to capture better information from staff, with assistance from Carbon Managers if required.

Emissions significance

The homeworking emissions at 23.18 tCO2e and 18.3 % of the total are the third biggest contributions to the company footprint this year. They are given combined for power and heating fuel. For comparison they are in total and for the first time now appreciably *larger* than the combined office emissions for power and fuel (a total of 20.64 tCO_2e across all Scopes). This may reflect on the proportion of working hours at home as opposed to in the office currently across the workforce.

If it is decided to make a more like-for-like comparison by splitting the homeworking emissions, this and previous year figures should be updated in future reports. See Table 8 below.

Homeworking impacts – Table 8

Homeworking impacts	units
Power use	2.18 t CO2e
Heating	21.00 t CO2e
Total	**23.18 t CO2e**

Recommended actions on homeworking

Evidently if homeworking remains significant or increases further, in future it may be necessary to consider the following reduction action:

- **introduce employee benefits or grants to support home energy efficiency improvement or renewable energy purchasing**, rather than a car allowance for example.

- It may also be necessary to work with specific sections of the staff to have the greatest impact in reductions (if this can be established- such as those with the most poorly insulated homes).

Reducing Brunel's homeworking footprint may also help alleviate cost of living rises and any energy poverty across the workforce.

Materials use

This year the company supplied or replaced a moderate number of laptops and screens, which contributes an impact as IT equipment is carbon-intensive to make (this is called embodied emissions, for manufactured goods). It also replaced some office equipment although this was mostly not electronics- without item weights and the main material they are constructed from, this is difficult to assess but some industry standard weights and materials were used to help convert this data into emissions (see data files).

The IT equipment which was replaced was mostly donated or sold to employees which drastically reduced the disposal impacts.

Recommended Actions on Material Use

It is worth continuing to consider:

- **Can any new equipment be bought second hand, or reconditioned?**
- **Can used equipment be sold off, put into a recycling/reconditioning scheme or donated rather than disposed of to waste?**
- **When buying new, review the energy/efficiency rating of new equipment and look for better alternatives**

These approaches can also be combined potentially with leasing rather than buying equipment and there are an increasing number of service providers in this area, from office furnishings to IT. All of these can further reduce the company's carbon footprint.

- **When buying or disposing of items whether IT or office furniture, the most useful data is its weight, and for furniture, what it is made of.** Improving the capture of this data would help immensely.

The practice of spreading out replacements of equipment is working again this year as emissions have stayed similar at 3.49 compared to 2.55 t CO_2e, caused roughly 50:50 by electronics and furnishings.

Reducing Supply Chain Emissions from Utilities

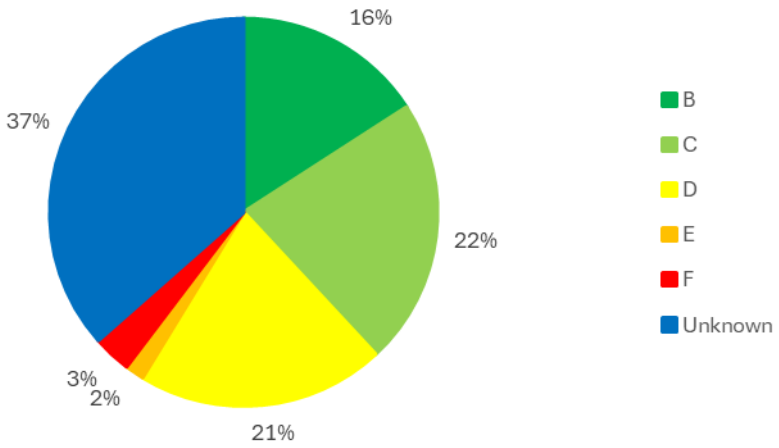
These are caused by the more direct usages reported under Scopes 1 and 2 and directly proportional. Therefore any action taken to reduce heating gas and office power use will automatically reduce these figures also.

Engaging with Employees

Many actions within Scope 3 in particular require employee engagement to either communicate new policies or to encourage changes in behaviours like commuting. Different and slightly more detailed information was collected this year in the survey.

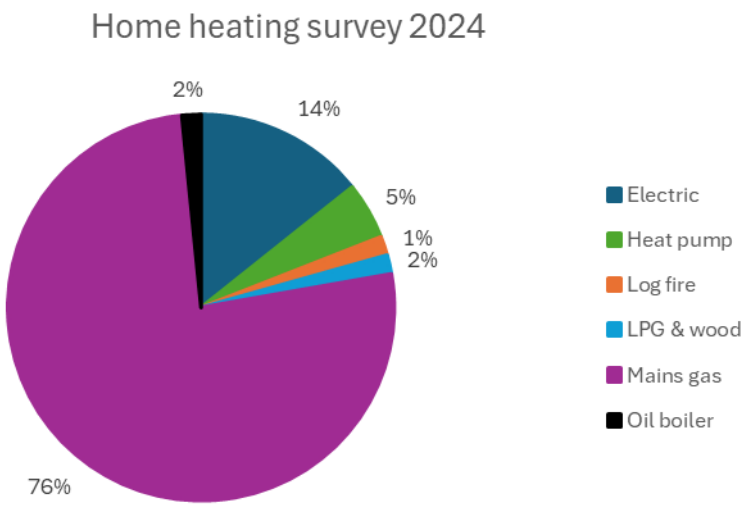
Awareness of the Energy Performance Certificate rating of their home has improved since the original survey. The results are summarised in Figure 7 below.

2024 EPC awareness amongst Brunel employees – Figure 7



Employees were asked how they heat their homes as this affects emissions when working. As expected the majority have gas central heating, although we do not yet know how often they use it. The data is summarised in Figure 8 below.

Employee home heating survey 2024 – Figure 8



Finally, in the original 2022 survey many of the employees had some useful ideas about how to help Brunel reduce emissions. This part of the survey has not yet been repeated so this is the most recent feedback available. The types of suggestions are summarised in 2022's report and included again in the Appendix here- for example the most popular suggestion is to reduce flying. As the office is leased some options will be limited but this range of responses shows a willingness to engage on this topic, including changing travel practices. It could form a useful starting point for setting up a network of employee champions to help identify and tackle different energy, emissions, or waste issues.

In particular employees are very aware of the impact of flying as a transport mode and seem keen to reduce its use. Certainly, alternative options for certain locations such as Europe could be explored in future.

Trends Since Last Year

Due to a slightly larger workforce, more commuting and longer hours the current trend is for increased emissions. The main exceptions are decreased travel emissions, as discussed earlier, and reduced power and gas use as well as reduced emissions from those, in the office.

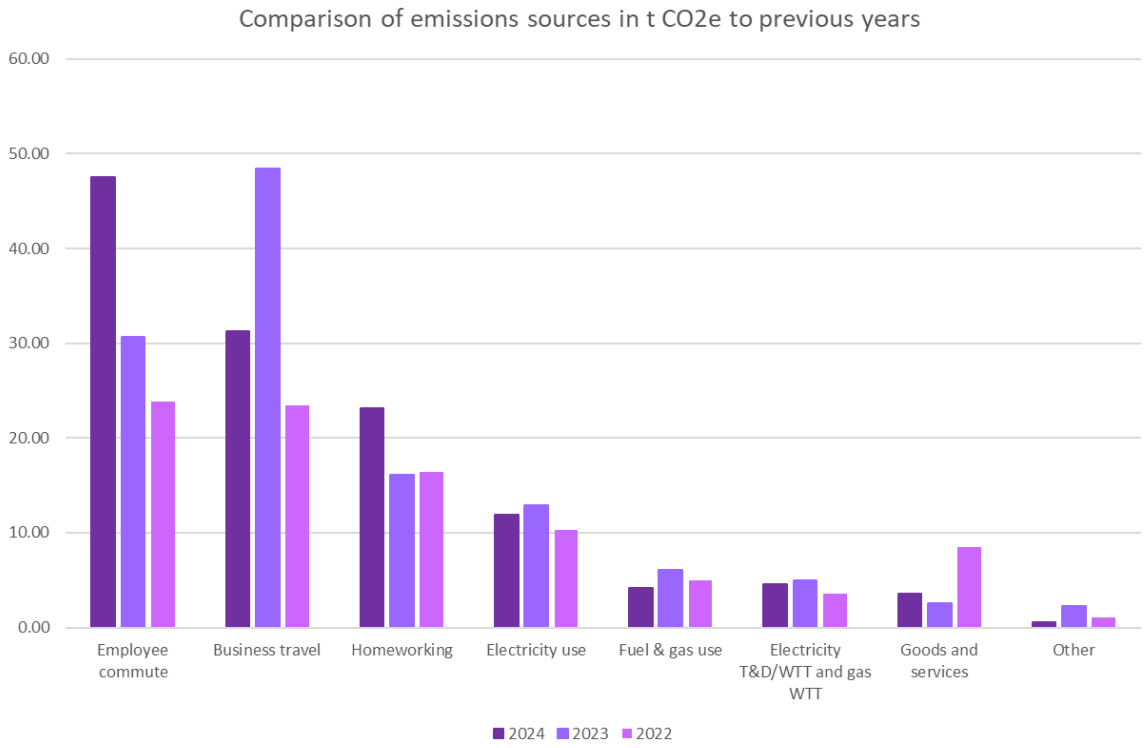
Detailed emissions impact figures are shown below. The net effect is an increase of only 3.59 t CO_2e or 2.9% in total emissions.

Detailed emissions comparison with last year – Table 9

				THIS YEAR			LAST YEAR			
Scope	Item	Notes	Type	2024	Unit	% of total	2023	Unit	% of total	YOY change %
Scope 3	Employee commute	Long and short, all modes incl domestic flight	estimated from combined survey	47.50	t CO2e	37.49%	30.65	t CO2e	24.9%	55.0%
Scope 3	Business travel	Incl hotels and paid by 3rd parties	calcs from expense data	31.26	t CO2e	24.67%	48.41	t CO2e	39.3%	-35.4%
Scope 3	Homeworking	Heating fuel and desk power use	estimated from combined survey	23.18	t CO2e	18.30%	16.16	t CO2e	13.1%	43.4%
Scope 2	Electricity use	1 leased office	ESTIMATE	11.85	t CO2e	9.36%	12.95	t CO2e	10.5%	-8.4%
Scope 1	Fuel & gas use	1 leased office	ESTIMATE	4.19	t CO2e	3.30%	6.04	t CO2e	4.9%	-30.7%
Scope 3	Electricity T&D/WTT and gas WTT	Supply side losses & emissions, generating & delivering	ESTIMATE	4.60	t CO2e	3.63%	5.01	t CO2e	4.1%	-8.2%
Scope 3	Goods and services	Primarily IT and office furniture	part estimated from receipts	3.62	t CO2e	2.85%	2.55	t CO2e	2.1%	41.6%
Various	Other	Water, waste etc	ESTIMATE	0.51	t CO2e	0.40%	2.30	t CO2e	1.9%	-77.9%
			total	**126.70**	**t CO2e**	**100.00%**	**123.11**	**t CO2e**	**75.9%**	**2.9%**

The relative size of emissions in each main impact area is repeated graphically below in Figure 9.

Comparison of emissions sources in t CO2e to previous years – Figure 9



Further Suggestions

In order to make progress, it is also strongly recommended that:

- A senior staff member continues to own and champion delivery of the carbon footprint process, along with other sustainability actions, as part of their objectives and authority.

- A year-round process is implemented, with tweaks to policies as needed, to enable the collection of data during the year, which is much easier to do accurately and in a timely fashion than in one big retrospective attempt. The better data will also enable improvements in other company governance activities.

- Brunel should consider upskilling staff internally to enable the use of an online portal for carbon footprint data; or at least adopting one to assist with more efficient annual footprints. This would assist with a year-round process, management, reduction and visibility of carbon emissions. A suitable platform can be identified and implemented with assistance from Carbon Managers.

- An annual review of the footprint and reporting on this plus progress on actions/targets should be implemented internally. Interim reviews are advisable too, perhaps quarterly.

- Any offsets after year's end should be purchased from a verified source, such as one accredited by Verified Carbon Standard (VCS, for purchased offsets). While this market is developing, this is currently best practice.

- Ideally targets and strategy/policies should be set and pursued in alignment with a well-recognised or accredited scheme e.g. SBTi (Science Based Targets Initiative) – this can also help fulfil requirements such as those for Net Zero for PPN 06/21.

- Integrate the outputs of this report with the production of the Annual Report and RI & Stewardship Outcomes Report

- Brunel may wish to also join an accreditation scheme such as SBTi to give its reporting and progress more credibility with stakeholders.

Further advice and support on taking these actions forward, or detailed discussion of the data, is available from www.carbonmanagers.com on request[4].

Questions can be addressed to William Thomas at william@carbonmanagers.com. This footprint report has been conducted and authored by Dr Julie Winnard on behalf of Carbon Managers Solutions Ltd. The report has been checked and reviewed for quality by a third party on behalf of Carbon Managers Solutions Ltd.

[4] An Excel file has been supplied of the calculations, for transparency and to inform any future reviews.

Appendix

Employee Suggestions from 2022 (text in full):

Type	Suggestion
Bike storage at office	Better bike storage More bike friendly offices (note- this might refer to availability of showers)
Renewable infrastructure	More electric charging points (EV we assume) Use of flat/inclined building surfaces for solar or wind assets
Reduce energy usage in office	Encourage people to take stairs not the lift Get rid of water cooler Aircon needs rebalancing/updating; meeting rooms seem to be freezing or baking As lights already go off automatically, could the heating go off at night?
HR policy changes	Suggest Brunel should stop encouraging employees to go into the office on a regular basis (i.e. one day per week) as this would reduce emissions and many people (such as myself) really prefer working from home and would like to feel it's acceptable to do this full time. Provide credible scheme for personal offsetting - salary sacrifice?
Improve Recycling	Encourage correct/better use of existing recycling bins to reduce general waste Prompt staff to think about where they are buying lunch and what packaging is used Supply reusable water bottles Move to glass milk bottles for the weekly office delivery to reduce plastic recycling
Employee education	Provide posters in the office with tips for individuals to increase their sustainability e.g. swap out single use items, shop seasonally, switch to eco-friendly products, use public transport etc. There is an attempt to manage the bins properly by office management but a lot of people do not bother putting things in the right place. A learning session for recycling with a specialist would be great to reinforce our commitments and make sure we recycle.
Business travel/ reduce flying	Carbon offset business travel. Reduce overseas travel- is this really needed? Too much corporate travel when unnecessary. We should be getting train to meet our investment managers or go to conferences in Europe (we currently fly). In addition, staff should be discouraged from flying from their homes (one person lives in Edinburgh) to go to meetings in London. In my view air travel reduction is a possibility. Some managers I know are no longer flying when travelling within Europe. Could Brunel get the train on these occasions and work on the train?.
Cut energy use when office empty	During non-office working ours (ie. early or late at night) the TV monitors always seem to be switched on (especially Station) Office and toilets heating seems to be on at times when the office is not being used. Reduce office heating level, esp overnight / early morning