

ANNUAL REPORT

13/14

CARBON SCRUTINY

Carbon Management Plan:
Five year progress report

Audit Scotland is a statutory body set up in April 2000 under the Public Finance and Accountability (Scotland) Act 2000. We help the Auditor General for Scotland and the Accounts Commission check that organisations spending public money use it properly, efficiently and effectively.

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Background

1. Climate change represents a significant, long-term challenge for Scotland and the rest of the world. Scotland has ambitious targets to reduce its emissions of greenhouse gases over future decades. Audit Scotland will play a key role in holding public sector organisations to account for their performance in this area. We are also committed to reducing the greenhouse gas emissions that are caused by our own operations.
2. The public sector has a key leadership role in reducing greenhouse gas emissions in Scotland and across the UK. The Carbon Trust developed a Public Sector Carbon Management programme to assist organisations to save money on energy and put it to good use in other areas, whilst making a positive contribution to the environment by lowering their carbon emissions.
3. In 2009, Audit Scotland participated in the Public Sector Carbon Management programme. In partnership with the Carbon Trust, we developed a Carbon Management Plan, which committed us to reducing our CO₂ emissions by 20 per cent by 2014, relative to 2008/09. This would also offer us total potential financial savings of around £40,000.
4. Our Carbon Management Plan was approved by Audit Scotland's Management Team in April 2010 and by Audit Scotland's Board in June 2010. The plan was revised in April 2011 to capture changes to our original projects and to incorporate refined benchmark data. Its key areas of focus include: consolidating our Edinburgh property portfolio; reducing the impact of our business travel; and capping the emissions of leased cars.
5. As part of Audit Scotland's commitment to delivering its Carbon Management Plan, a Carbon Scrutiny Board was established in October 2011. The principal role of the Carbon Scrutiny Board is to monitor and report on progress against the Carbon Management Plan and to identify and promote environmentally friendly activities and practices across the business. To do this, members of the Carbon Scrutiny Board represent all business groups, including Performance Audit and Best Value, Audit Services and Corporate Services Group (including members from finance, information services and HR).
6. The Carbon Scrutiny Board began reporting annual performance against our Carbon Management Plan in 2011/12. Feedback from Resource Efficient Scotland, the successor body to the Carbon Trust, is that our reporting is very good in comparison to other similar bodies. This report is the third annual report from Audit Scotland's Carbon Scrutiny Board and summarises overall progress in implementing the 2014 targets. It draws to an end the actions and performance contained in Audit Scotland's 2009-2014 Carbon Management Plan.
7. A new Carbon Management Plan covering the period 2015-2020 will be prepared during the financial year 2014/15, alongside and aligned with the development of Audit Scotland's new corporate plan. The Carbon Scrutiny Board will work in partnership with Resource Efficient Scotland in preparing our new plan. Based on advice from Resource Efficient Scotland, the plan is likely to focus on the following key areas:

- Travel
- Energy use (buildings, ICT)
- Waste reduction
- Behaviour change among staff
- Procurement
- Mainstreaming environmental performance management and reporting

Our five year achievements

- **Reduced carbon dioxide (CO₂) emissions by 41 per cent over five years, more than double our target.¹**
- **Reduced energy consumption by 50 per cent, resulting in 142.5 fewer tonnes of CO₂ each year.**
- **Reduced business mileage by 30 per cent and improved the CO₂ rating of our lease car fleet by 17 percent, resulting in 52 per cent less CO₂ emissions from business car travel.**

Summary of performance

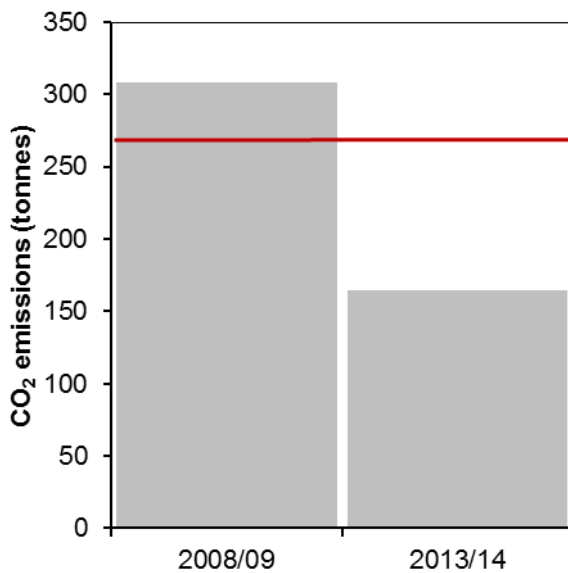
8. We have completed our 2009-2014 Carbon Management Plan. We aimed to reduce our CO₂ emissions by 20 per cent, equivalent to 107 tonnes of CO₂. Although accurate comparisons with our baseline are difficult due to changes in data recording and guidance, we estimate that over the past five years we have achieved around double our target.
9. We have never formally monitored the financial savings associated with our reductions in CO₂ emissions. However, we have achieved significantly more than our original £40,000 estimate. For example, we estimate that reductions in business travel since 2009 have saved around £20,000 in travel and subsistence claims. This equates to half our original target, but it is a relatively insignificant saving compared to those achieved through reduced energy consumption from our office rationalisation programme to date.
10. Our Carbon Management Plan identified seven projects, five of which included anticipated CO₂ savings. While we have had to make changes to the way in which we have measured some of the areas, we can demonstrate strong performance against each of these projects (Exhibit 1).

¹ Since establishing our carbon reduction target in our 2009 Carbon Management Plan, we revised our target level of emissions based on improved data. Data we use to calculate our emissions has been continually improving since 2009, making comparisons over time increasingly difficult.

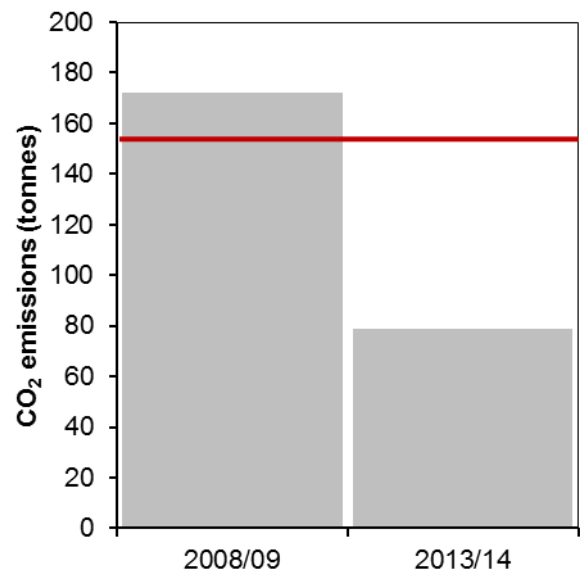
Exhibit 1

Progress against the Carbon Management Plan five-year targets

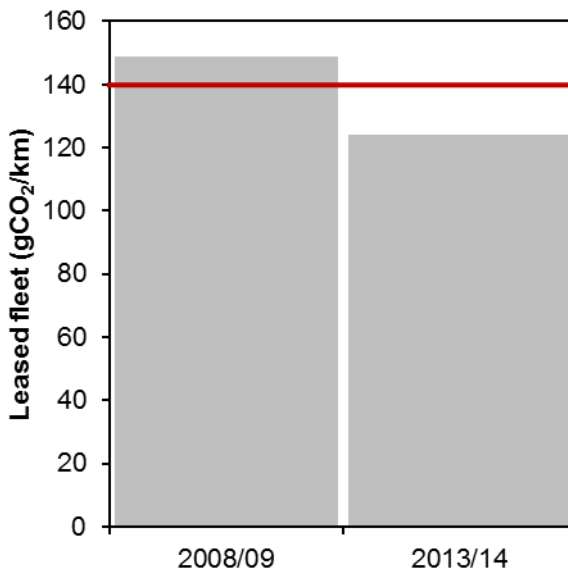
Reduce the amount of energy used: through office rationalisation and by our information technology



Reduce business car travel by 10 per cent



Reduce the carbon profile of our leased cars



Reduce the amount of waste we produce

This has not been a viable measure. In 2013/14 we diverted the equivalent of 14.7 tonnes CO₂ through recycling

Note: Horizontal lines in the upper two charts are the targets set in the Carbon Management Plan. The horizontal line in the lower chart is the cap placed on new leased cars in 2013.

Source: Audit Scotland

Performance against our seven Carbon Management Plan projects

11. The following sections of the report outline performance and actions taken for each of the Carbon Management Plan projects.

Energy use – property

Carbon Management Plan: project 1

Target:

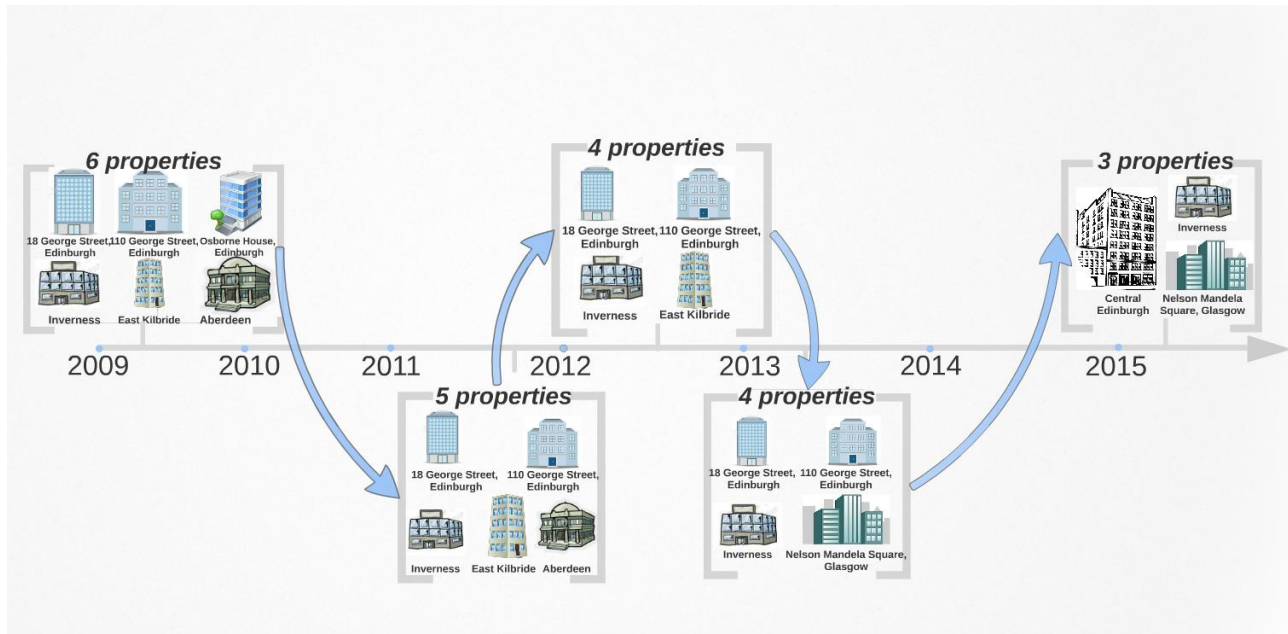
- Reduce the amount of energy we use by rationalising our property portfolio.

Performance:

- ✓ We have reduced our property portfolio from six offices to four and moved to a more energy efficient West of Scotland office.
- ✓ Over the past five years we have significantly reduced our annual energy consumption, reducing our emissions by 43.6 per cent – equivalent to 142.5 tonnes of CO₂.

Property rationalisation

12. During 2013/14 we consumed a total of 570,634 kWh of energy (gas plus electricity) across our offices. This produced the equivalent of 165.3 tonnes of CO₂.
13. A key area of focus for reducing energy related emissions in our initial Carbon Management Plan was the rationalisation of our property portfolio when lease break opportunities arose. Throughout the period of the plan, Audit Scotland has been successful in taking this agenda forward ([Exhibit 2](#)).

Exhibit 2**Changes to our property portfolio**

Source: Audit Scotland

14. Over the past five years our reduced energy consumption has seen our annual emissions fall by 43.6 per cent compared with 2008/09, equivalent to 142.5 tonnes of CO₂.
15. The closure of Osborne House and our Aberdeen office has significantly reduced our energy consumption. The relocation of our East Kilbride office to central Glasgow has also had a positive impact on our environmental performance – the office is more energy efficient and encourages more environmentally friendly staff behaviour, through its public transport links (particularly to Edinburgh) and increased provision of recycling facilities.
16. Our reduction in energy consumption has been extremely successful, but has slowed in the last year. This reflects the phasing of our property rationalisation strategy. Changes to our property portfolio did still have a positive impact in 2013/14 however, with the move to our new West of Scotland office in Glasgow. The new Glasgow office uses approximately 60 per cent less electricity per annum compared to the East Kilbride office. Our Glasgow office has a gas supply (unlike East Kilbride) that offsets some of the electricity saving, but overall energy consumption has fallen, reflecting the new office's smaller size and improved energy efficiency.
17. We will move to a single Edinburgh office during 2015/16. This provides a further opportunity to reduce our energy related CO₂ emissions. Ensuring carbon management considerations (such as building performance and data availability) are part of the decision-making process for this office move will be an immediate priority for the Carbon Scrutiny Board.
18. As highlighted in previous annual reports we continue to face issues with the quality and availability of energy data. Improving our data will be a key focus of the Carbon Scrutiny Board in developing the new Carbon Management Plan for 2015 onwards.

Energy use – Information Communications Technology

Carbon Management Plan: project 2

Target:

- Reduce the amount of energy used by ICT.

Performance:

- ✓ We have estimated our IT energy usage to have fallen by around 30,000 kWh in 2013/14 alone.²

19. Reductions in energy use and emissions from ICT make a valuable contribution to our overall organisational reductions in energy use. We know that upgrading and reducing our ICT hardware is generating greater energy efficiency, although at present we are not fully able to identify the scale of savings. Over the period of the Carbon Management Plan we have changed the telephone system, reduced the number of servers and network equipment, changed to more energy efficient disk drives and reduced the power usage of the air conditioning.
20. We continued to make progress in 2013/14, reducing our estimated power consumption by at least 30,000 kWh, with estimated energy cost savings of around £3,000. We achieved this through the following projects:
 - Server virtualisation has allowed us to remove six physical servers and three network switches.
 - Replacement of the 3Com telephone system has allowed us to decommission four further physical servers, two digital gateways and two analogue gateways. The new phones are now all powered through network connections (POE) removing the need for additional power connections.
 - The closure of the East Kilbride office allowed us to remove a further two network switches and a fibre connection from our network.
 - Solid state drives have been introduced on six of our most highly used systems, reducing power consumption by 80 per cent as well as increasing performance.
 - Having reduced the server and network equipment we have been able reduce our air conditioning demands in the server room. As air conditioning units are a major energy consumer increasing the server room temperature by two degrees has significantly reduced our energy usage.

² We are not able to calculate the savings from all ICT projects. In addition, we have no means of measuring actual energy consumption in the computer rooms as consumption based on estimates and we often work from manufacturers' power ratings rather than actual consumption data, which could potentially cause errors in calculations.

- In our laptop refresh, we have 25 fewer laptops, with greater emphasis on pooling and sharing resources. Our new laptops also have solid state drives, significantly reducing their power consumption.
 - We introduced a 'Bring Your Own Device (BYOD)' policy; this allows access to work email in a secure and manageable environment on personal devices. Reducing the number of corporate handsets removes the need for staff to carry two devices, reducing the power required to charge multiple devices.
21. Future planned projects from 2014/15 onwards will greatly reduce our energy consumption and associated costs and emissions further. These include:
- moving our disaster recovery ICT hardware to a purpose built data centre, removing the need for air conditioning and power in the server room at our 110 George Street office and providing better network resiliency;
 - changing network file storage arrangements will further reduce the power requirement for equipment and cooling; and
 - reducing the number of printers and other network equipment in moving to a new single Edinburgh office. We will also take the opportunity to replace older hardware with more energy efficient solutions.
22. Due to the possible impact that ICT can have on our environmental performance, the Carbon Scrutiny Board has included a member of our Information Services Group (ISG) over the past few years. Examining our future ICT needs will be an important element of our new Carbon Management Plan.

Car travel and emissions

Carbon Management Plan: project 3

Target:

- Reduce Audit Scotland's business car mileage by ten per cent (between 2009 and 2014).

Performance:

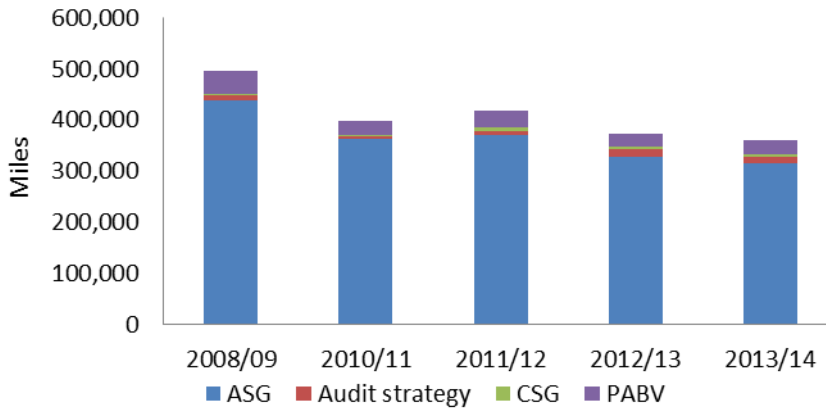
- ✓ In 2013/14 our business car mileage was 30 per cent lower than in 2008/09, three times better than our original 10 per cent target.
- ✓ In 2013/14 the average business car mileage per employee was 1,412 – a six per cent reduction on our 2011/12 figure.
- ✓ Over the past five years we have more than halved our CO₂ emissions from car travel.

Reducing the carbon impact of business travel

23. Our Carbon Management Plan focused on reducing the impact of our business car travel. We have substantially reduced car travel and seen an improvement in the environmental performance of our leased car fleet. We successfully introduced a CO₂ emission rate cap for lease cars in 2013. We also supported other technology to reducing travel, for example, investing in video conferencing technology facilities.
24. Our Carbon Management Plan estimated that our car business travel in 2008/09 produced approximately 172 tonnes of CO₂. In 2013/14 our estimated CO₂ emissions of 78.8 tonnes represents a decrease in emissions of 52.2 per cent. [Exhibit 3](#) shows the breakdown of business mileage by business group over the period of the Carbon Management Plan.

Exhibit 3

Business mileage by business group³



Source: Audit Scotland

- 25. Average car business mileage per employee has also fallen over the period of the Carbon Management Plan. In our first annual report in 2011/12 the average mileage per employee was 1,506. In 2013/14 that figure had fallen by six per cent to 1,412.
- 26. It is difficult to determine exact causes for the reduction in our business mileage levels over the period of the Carbon Management Plan. However the fact our WTE staffing levels have fallen by around 12.5 per cent since 2008/09, the introduction of video conferencing and better out-of-office access to our IT systems, are all likely to have contributed to the reduction in total business travel.
- 27. The move to our new central Glasgow office has seen train travel between Edinburgh and Glasgow increase. We believe that train travel is substituting the car travel to our previous office at East Kilbride, resulting in a reduced environmental impact.
- 28. We have seen an increase in CO₂ emissions from air travel in 2013/14 compared to 2012/13, up by almost five tonnes. This is primarily due to increased international work. Air travel is unpredictable year on year, but has a relatively minimal impact on our overall environmental performance.

³ Data was not collated for 2009/10 as monitoring against the plan did not begin until 2010. The PABV business group was established in summer 2013, data for 2010/11 to 2012/13 is a combination of the business groups which now form PABV (PAG and BVSI) and for 2008/09 this data refers to the Public Reporting Group which was the predecessor to these business groups. Totals may not add up to overall business mileage totals due to impact of a small number of business mileage claimants who are not accounted for by any specific business group (such as the AGS and Audit Scotland Board members).

Carbon Management Plan: project 4

Target:

- Place a 140 gCO₂/km cap on lease cars.

Performance

- ✓ A cap of 140 gCO₂/km was introduced for new lease cars from January 2013. In 2008/09, 65 per cent of our lease fleet exceeded 140 gCO₂/km. Following implementation of the CO₂ cap, only 17.5 per cent of our fleet remain above this level.
- ✓ Over the past five years, average emissions from our lease car fleet have reduced by around 17 per cent, and are now 124 gCO₂/km.

29. One of our carbon management objectives was to impose a cap of 140 gCO₂/km on any new car leased by Audit Scotland. In 2008/09, 70 per cent of business miles were travelled in leased cars, 65 per cent of which had emissions of over 140 gCO₂/km. Placing an upper limit on emissions of 140 gCO₂/km was identified as having the potential to save 6.9 tonnes of CO₂ per year (assuming no change in business mileage).
30. Only 17 of Audit Scotland's current 97 lease cars exceed the 140 gCO₂/km emissions cap. This proportion will continue to fall as existing car leases are renewed in line with the new policy. Assuming no change to business mileage, if all lease cars which currently exceed the cap were replaced with cars with CO₂ ratings of 140 gCO₂/km we would further reduce our annual CO₂ output by approximately one tonne (1.8 per cent).
31. Imposing the emissions cap is a positive step forward and achieves a goal of our Carbon Management Plan. However, prior to introducing our emissions cap, the performance of our fleet had been improving, reflecting the impact of wider factors such as fuel costs and tax liabilities. It is our view that Audit Scotland should continue to keep the emissions cap under review to reflect broader changes, such as the EU now working towards a limit of 95 gCO₂/km for new cars by 2020.

Waste

Carbon Management Plan: project 5

Objective:

- Reduce the amount of waste we produce.

Performance:

- ✓ We recycled over 12.4 tonnes of waste from our Edinburgh and Glasgow offices in 2013/14, diverting approximately 14.7 tonnes of CO₂.⁴

32. In our Carbon Management Plan we set a target of reducing our waste by one tonne by 2014. Our commercial waste is not weighed and recorded as part of our commercial waste collection service. As such, we have no reliable information on the total amount of waste we produce.
33. However, our recycling contractor does provide useful data on the waste we recycle from our Edinburgh offices and our new Glasgow office. Prior to opening our Glasgow office, we only received recycling data for our Edinburgh offices. Based on this, we previously estimated recycling at our other office locations. With the inclusion of the Glasgow office we have improved data that covers the workplace of approximately 95 per cent of our staff⁵.
34. In 2013/14, we recycled around 12.4 tonnes of waste, diverting around 14.7 tonnes of CO₂. Due to the inclusion of data for Glasgow in 2013/14, we cannot accurately compare our total recycling from last year. However, a comparison based on only our Edinburgh offices shows recycling to have fallen by two per cent. This is due to a reduction in paper recycling, which accounts for the majority of our recycling. This is likely to reflect changes in disposing of confidential paper. Staff now shred documents eliminating our need for confidential waste to be collected separately. It may also reflect a general reduction in the use of paper by staff.
35. Encouragingly, we have increased the amount of cardboard, plastic bottles, drinks cartons, glass and plastic cups we recycled. This indicates employees' continuing environmental awareness and commitment to recycling and will have been helped in part by better recycling facilities in our new Glasgow office. We have also begun collecting printer cartridges and batteries for recycling.
36. Audit Scotland implemented a new e-publications policy in 2013, which has significantly reduced the number of hard copy reports we produce. While this does not directly relate to our own performance in reducing waste or increasing recycling, it does help to reduce the use of raw materials and energy required in the printing process. By making our reports tablet and

⁴ There is a complex ratio between the amount of waste recycled and associated CO₂ diverted. This figure is calculated by our recycling contractor.

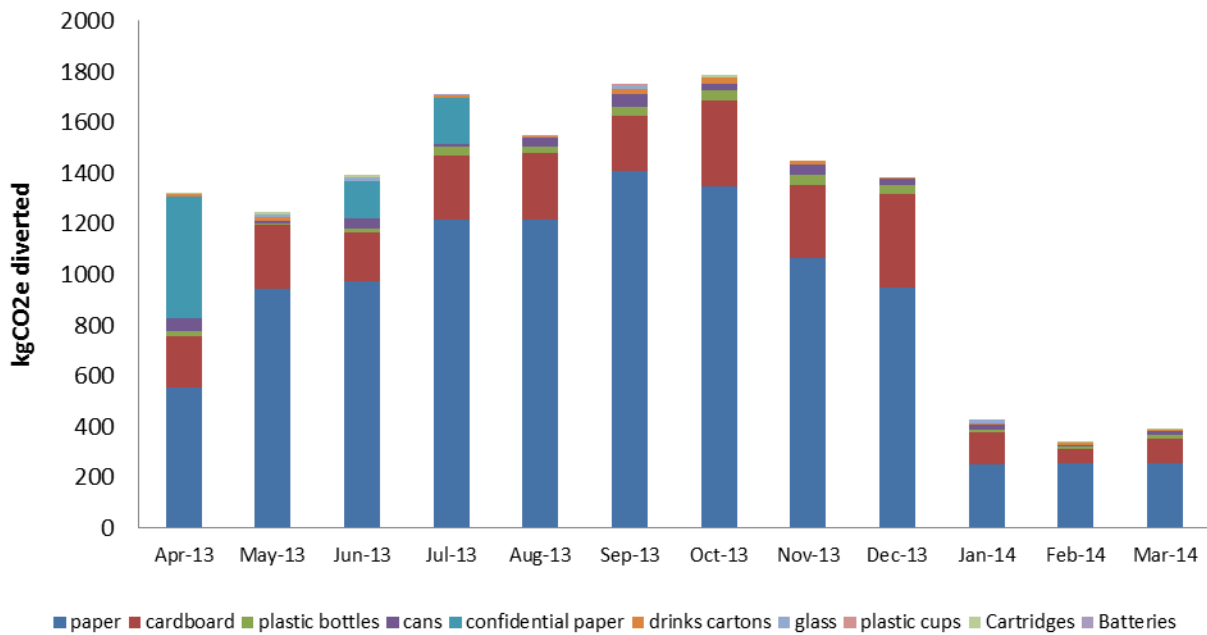
⁵ As our Edinburgh and Glasgow offices are the base locations for approximately 95 per cent of our staff we have not attempted to estimate the data for our other office locations due to the marginal impact.

smartphone friendly we are supporting audited bodies and stakeholders to be more environmentally aware and to reduce their paper usage.

- 37. Revised, lower, CO₂ conversion rates for recycling were agreed by the Scottish Government from 2014. These aim to give a more accurate picture of CO₂ diversion from recycling. This has affected recent data, significantly reducing the amount of CO₂ diverted from January 2014 ([Exhibit 4](#)). The full effects of this change will be seen in future years and will impact on our data comparisons over time.

Exhibit 4

CO₂ diverted through recycling



Source: Changeworks Recycling

- 38. We will continue to both minimise our waste and maximise the proportion we recycle and will continue efforts to improve data to more clearly demonstrate our impact.

Carbon impact assessments for policies

Carbon Management Plan: project 6

39. The aim of this project was to ensure that new and existing policies included a carbon impact assessment. An initial review identified the following policies were most likely to have an impact on carbon emissions:
 - travel policy (including the introduction of the lease car CO₂ emissions cap)
 - home-working policy
 - international policy
 - office opening hours.
40. The Carbon Scrutiny Board has liaised with Resource Efficient Scotland and others to identify good practice for carbon impact assessments. This has highlighted that there is no clear approach or methodology to impact assessments that Audit Scotland can easily adopt. Despite the absence of any clear methodology, we will continue to consider our carbon impact in an appropriate and proportionate way when developing new policies and taking decisions.
41. During 2013/14 an HR representative joined the Carbon Scrutiny Board. This will help in providing a better link to corporate policy making and to influence behavioural changes across Audit Scotland.

Data monitoring and reporting

Carbon Management Plan: project 7

42. We recognise the need for better data on energy use and all our travel, along with a consistent methodology to help us to calculate our emissions. We currently work within limitations, particularly around the energy and water use of our offices. However, as already highlighted throughout this report, where possible we have made improvements over the life of our Carbon Management Plan. This includes:
- the electronic expenses claim system improving data on business travel; and
 - improved recycling and utilities data at our West of Scotland office in Glasgow.
43. Since 2013/14, the Carbon Scrutiny Board has been working with Resource Efficient Scotland to assess our approach to carbon scrutiny and the processes we currently have in place to gather and analyse data. Initial feedback from Resource Efficient Scotland has highlighted that we have a sound approach and are using a good range of data compared to many other comparable organisations. The Carbon Scrutiny Board will continue to work with Resource Efficient Scotland to develop the new Carbon Management Plan for 2015 and beyond and to improve our processes further (see the next chapter for more details of planned future actions).

Staff engagement with the sustainability agenda

44. Over time, we are experiencing diminishing reductions in our CO₂ emissions. We have not reached the threshold where further reductions cannot be made. Our 2015-2020 Carbon Management Plan will need to have a stronger focus on our culture, behaviours and policies if we are to continue to improve.
45. We have begun to reduce our environmental impact through behavioural and policy changes. We have: introduced an e-publication policy that encourages people to access our work online; continued to support flexible working arrangements and improved IT provision at client sites, reducing the need for business travel. During 2014 we have also focused on longer-term behavioural change, for example, introducing of the Do:nation initiative ([Exhibit 5](#)) and a new bike-to-work scheme.

Exhibit 5

Do:nation – supporting staff to do good with actions not money

The [Do:nation](#) initiative encourages people to pledge small changes in their behaviour to reduce their environmental impact and improve their health and wellbeing. Pledges include taking the stairs instead of the lift, cycling to work and reducing food waste, among other things. Audit Scotland joined the initiative in January 2014. In total, 61 members of staff made 131 pledges and by April 2014 almost 70 per cent had been completed. [Do:nation](#) estimate that if these pledges are maintained this will save over 9,000 kg of CO₂ per year.

Highlights from our pledges include:

- Staff taking the stairs instead of the lift have climbed the equivalent of 2.5 times Mount Everest
- Staff switching off lights when not needed have saved the equivalent of 225 days worth of lighting
- Our estimated annual reduction in CO₂ is the equivalent of 21 flights from Glasgow to New York

Source: Audit Scotland/The Do:nation

Future plan

46. During 2015 the Carbon Scrutiny Board will be working to develop a new Carbon Management Plan for 2015 onwards. As highlighted above the board will be working with Resource Efficient Scotland to develop the plan.
47. Key areas the new plan will focus on include travel, energy use (buildings and ICT), waste reduction, staff behavioural change, and mainstreaming environmental performance management.
48. Perhaps the most significant development during the period of our new plan will be Audit Scotland's move to a new single Edinburgh office. The Carbon Scrutiny Board will strive to ensure that, insofar as possible, environmental sustainability, such as energy efficiency and public transport accessibility, is a key factor in the choice of new office accommodation.
49. We recognise that more focus is required on staff behavioural changes if the organisation is to continue to make improvements in our environmental performance, particularly in the areas of travel and waste reduction. To support this we will develop stronger links with broader Audit Scotland activity and look to mainstream our focus on environmental performance. For example we will aim to build links with the organisation's response to the Best Companies survey results, the corporate plan refresh in 2014, and development of group business plans for 2014/15 and onwards.
50. We will continue to focus on improving the availability and quality of data to support management and scrutiny of our environmental performance. This will involve advising on and encouraging the development of better data collection methods, particularly in relation to utilities data within the new Edinburgh office. We will also work to integrate environmental performance monitoring within Audit Scotland's corporate performance monitoring arrangements.

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