Public Health England

Sustainability in Public Health England
2013

About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

Public Health England
133-155 Waterloo Road
Wellington House
London SE1 8UG
Tel: 020 7654 8000
http://www.gov.uk/phe
Twitter: @PHE_uk

Prepared by: Peter Hammond and Steve Owens
For queries relating to this document, please contact one of the above.

You can download this publication from www.gov.uk/phe

Published November 2013
PHE publications gateway number: 2013341

This document is available in other formats on request. Please call 0208 200 4400 and ask for Publications, or email publications@phe.gov.uk

Contents

The Sustainability Strategy Group

Sustainable Development across the PHE estate, particularly in relation to how we behave as an organisation, was managed at a corporate level during 2012/13 through the Sustainability Strategy Group. It comprised representation from the major executive 'property owners' in the organisation and activities at an operational level were undertaken largely through the respective facilities and estates managers. Its members provided professional advice to their respective senior management teams and to staff in general on all matters relating to sustainable development.

During 2012/13, the Sustainability Strategy Group reported to the Director of Finance and Resources and the Integrated Governance Group (IGG). It also reported through the IGG to the Audit Committee of the Board. Following the formation of PHE, the group reformed to better reflect the organisational structure of PHE and was renamed the Sustainable Development and Environmental Management Group. It now reports to the Director of Health Protection. The current members of the Group are given below. It is intended to expand the group further in the immediate future, to ensure more effective representation across the remaining areas of the organisation.

Angie Bone	Extreme Events, Health Protection Directorate
Hameet Chandar	Procurement
Alyson Gibbens	CRCE
Peter Gidman	PHE Estates
Brigitte Guile	Microbiology Services, Colindale
Peter Hammond	Health Protection Directorate (corporate)
Colin Hawkins	Chief Knowledge Officer's Directorate
Peter Jackson	MS, Specialist Microbiology Services
Jim McLauchlin	MS, Specialist Microbiology Network
Karen Martin	Health Protection Directorate (Secretary)
Steve Owens	Health Protection Directorate (corporate)
Lizzy Staincliffe	Microbiology Services, Porton

The following staff also served on the Sustainability Strategy Group during the 2012/13 year: David Allen (MS Colindale); Paul Day (Porton); Alison Finn (Finance); Jude Hughes (NIBSC); Joe Kearney (HPS); Andrew Kibble (CRCE Supra-regional); Steve Murray (NIBSC); Dave Sherrin (MS Colindale); Paul Steventon (CRCE Chilton); Lesley Swift (CRCE Glasgow); and Stuart Wilson (MS Porton).

Foreword

I am very pleased to introduce this first report from PHE on sustainability. There is a growing body of evidence that we are having an increasing impact on our environment and a recent report by the Intergovernmental Panel on Climate Change confirms that our climate is now changing more rapidly than before. This brings many challenges and raises the question of what PHE can do to respond to this threat. Our work is aimed at making people's lives better and we work with many others, including NHS England, to do this. We have a significant programme on climate change and extreme events and we produce guidance (underpinned by robust scientific evidence), on issues as diverse as the impact of flooding, heat wave and adverse winter weather. We have also advised on the health impacts of events like tsunamis and helped other countries cope with such devastating natural disasters.

In relation to our own activities, we have an important internal programme to monitor and understand PHE's effect on the environment. This allows us to develop a better understanding of how we can mitigate our impact, for example by minimising our use of resources such as electricity, gas, oil and water. We have introduced initiatives to produce less waste and to keep our travel to a minimum. We use teleconferencing whenever we can and only travel when it is essential for our business. When we must travel, we endeavour to use public transport, keeping our emissions as low as possible.

Our staff have been very effective in rising to these challenges and we continue to work hard to drive our carbon footprint down. Among other things, we have developed green travel initiatives, invested in more energy-efficient processes and equipment, encouraged more cycling to work and introduced allotments on two sites to help in a small way to promote biodiversity. We even have two beehives on our NW London site!

As healthcare professionals ourselves, we must lead by example and do everything we can to reduce our own impact on the environment. This may require us to focus more on sustainable development in the future and ensure that adequate resources are made available for this important work. By pooling our efforts we can create a healthier workplace for our staff, create programmes that bring a greater understanding of our impact on climate change, and in doing so, help others to lead a healthier lifestyle.

Dr Paul Cosford
PHE National Executive Lead for Sustainability

This page is intentionally blank

Executive summary

This report outlines the sustainable development activities in Public Health England (PHE) in relation to the organisation's own carbon footprint and its impact on the environment. As PHE was formed in April of this year, much of the information is based on the established data of its sender bodies for the year 2012/13. However, while identifying the origins of these data, wherever possible they have been presented in terms of PHE's estate and management structures.

The report will form the basis of work to minimise our emissions during our first year of operation. However, although PHE was developed from a number of existing organisations, its overall activities and remit are very different to its precursors. PHE is the expert national public health agency which fulfils the Secretary of State's statutory duty to protect health and address inequalities, and executes his power to promote the health and wellbeing of the nation. An important factor is therefore the way in which we – as an organisation and individuals – react to behaving in a more sustainable manner.

Our new focus means that there are now additional areas of sustainable development activity besides the management of our emissions and reduction of our carbon footprint. Thus, there are three main strands of sustainable development in PHE: the way in which we ourselves behave as an organisation, and our own impact on the environment; our work on climate change and extreme events (including the National Adaptation Programme); and our work on helping people to lead sustainable and healthy lives.

In relation to our own activities, we expect to gather sufficient and robust data during the present year to allow us to develop a new, true baseline for our own carbon footprint from April 2014. This, in turn, will be used to set new and challenging objectives and targets for our sustainable development and environmental management activities, in line with *Greening Government Commitment* requirements.

The overall carbon footprint of those sender bodies for which there were reliable data suggests a smaller reduction in emissions than we have achieved in previous years. In part, we believe that this reflects an increased activity in some parts of our business, although it has been difficult to analyse

this fully. We must therefore consider how we can unleash the potential of our staff to go further in driving down our emissions in the future.

There are already many excellent examples of the initiatives undertaken on some of our major sites, including promoting sustainability days, switch-off events and supporting biodiversity wherever we can. We have continued to promote green transport and there are capital programmes in place to improve our ageing infrastructure.

Although already at a low level, we have seen a further small reduction in the amount of waste we send to landfill, we have significantly increased the amount of waste we recycle and we have introduced additional energy-from-waste initiatives across the organisation. Our paper is purchased through the government's closed loop recycling scheme and in support of the drive to reduce paper usage, all tendering activity is now run through an *e*-tendering portal, with all contract documentation stored electronically. As part of our work on green procurement, sustainability plays an increasing role in the way we obtain our goods and services, and is a significant consideration when we buy equipment.

We have introduced a sustainable travel policy to help promote responsible choices when our staff travel on business. Although this is a relatively small component of our carbon emissions, it is an area where staff can individually make a difference, through the choices they make. We therefore hope to further reduce the amount of air travel we undertake, particularly domestic flights, although we recognise that as our business has an important international dimension, we will always have some need to travel overseas.

As might be expected, data indicate that the largest part of our carbon burden relates to the activities undertaken on those sites where we operate laboratories and manufacturing facilities. We have already introduced voltage optimisation equipment at our Colindale site and plan to do this on our Porton site in the near future. This will help to improve our management of the demand for electricity on these sites, reducing both carbon emissions and our energy bills.

Our activities are underpinned by a Carbon Reduction Delivery Plan which has been endorsed by the government's Carbon Trust. During the coming year, this will be updated to take account of the breadth of PHE's role in public health and we plan to refresh our Sustainable Development Management Plan. In doing so, we will continue to work with others, including NHS England's Sustainable Development Unit and other stakeholders.

Introduction

Sustainable development

Sustainability is about ensuring that we consider the environmental and social impacts of our lives, both at work and at home. These come together in the 'three tiers of sustainability', encompassing society, the environment and the economy. The accepted definition of sustainable development is *'Meeting the needs of the present without compromising the ability of future generations to meet their own needs'*.[1] At present, approximately 20% of the world population consumes about 80% of the earth's resources and this is not sustainable. Research suggests that greenhouse gases have increased by 39% since the industrial revolution and although the impact on climate change is vigorously debated, most agree that man's activities have contributed. PHE, like other organisations, must therefore ensure its own impact is minimal, while still delivering the outcomes required of it by government.

PHE is committed to protecting the environment and reducing the carbon emissions arising from its activities. To do this, it has developed a carbon reduction delivery plan, as part of its overall carbon management programme. PHE policies have been developed to help staff to consider their impact on the environment when travelling, purchasing goods and using energy. Where staff are working on sites that we do not own, we encourage them to contribute to the site owner's efforts to minimise their own carbon footprint.

Sustainable development in healthcare

Improved healthcare and modern medicine are helping people to live for longer and enjoy healthier lives and PHE recognises the importance of people's health to their sustainability. Nevertheless, strengthening the delivery of sustainable public health, supported by a robust social care system is still one of the most important challenges we face.

---

1 Bruntland (1987); see Our Common future: Report of the World Commission on Environment and Development (United Nations, 1987)




The principle of a sustainable health and care system is to identify and realise opportunities for improved quality of care, reduced costs and reduced environmental and social impacts.[2] Public bodies such as PHE are compelled to consider the impact that the services they commission may have and how they might improve the economic, environmental and social well-being of their locality.[3]

Public Health England is continuing to work hard to promote healthier lifestyles in our communities. As healthcare professionals we must demonstrate that we are working to reduce our own impact on the environment and in support of this, we have a number of initiatives within Public Health England to minimise our energy usage, waste production and the impact we ourselves have on the environment. We also have a major programme on adaptation and the mitigation of climate change and extreme events.

In the spring of 2013, the Department of Health published *Integrated Care and Support*,[4] which illustrates the importance of providing integrated healthcare in a sustainable way. This must include not only public health, but also social care; it must be focused less on treatment and more on prevention. To this end, PHE has a role in providing help and support to communities so that people can make informed choices about their health and wellbeing. We work with other parts of the health sector and organisations such as local authorities, helping to develop and deliver an integrated service of care and support, according to circumstances.

Sustainable development and climate change

Public Health England was formed in April 2013 from a number of 'Sender Bodies' in the healthcare sector, bringing together a wealth of expertise and an established background in sustainable development and environmental management. PHE's sustainable development activities are set against the context of its mission to protect and improve the nation's health, and the commitments of the UK government to the international community to reduce the nation's carbon footprint. Thus we are contributing to improving health

2 Government progress in mainstreaming sustainable development (May 2013); Department for Environment, Food and Rural Affairs

3 The Public Services (Social Value) Act 2012; see http://www.legislation.gov.uk/ukpga/2012/3/enacted

4 Integrated care and support: our shared commitment. Department of Health, May 2013. See https://www.gov.uk/government/publications/integrated-care

and well-being across the world, while also minimising our own impact on climate change.

These commitments are long-standing and began at the Rio Earth Summit in 1992 when the international community adopted 'Agenda 21', the global action plan for sustainable development. This was followed by the 'Kyoto Protocol' in 1997, which entered into force as a legally binding instrument in 2005. It was enacted in the UK through the Climate Change Act. The year 2012 saw another such summit, again in Rio. The outcome of the conference[5] was a document called *The Future We Want*.[6] However, much of this can considered to be aspirational, to be achieved through over 700 voluntary agreements, although by their very nature, these are not enforceable.[7]

Sustainable development within Public Health England

There have been a number of initiatives since the Climate Change Act came into force, including Sustainable Operations on the Government Estate (SOGE), Sustainable Development in Government (SDiG) and the Greening Government Commitment. Underlining our commitment to operating in a sustainable way over the long term, we have worked alongside the government's Carbon Trust on its Central Government Estate Carbon Management Scheme, we have developed Sustainable Development Action Plans and have an active Carbon Reduction Delivery Plan.

As PHE is a new organisation, its carbon footprint is still being established and in order to allow us to move forwards, we have taken the most recent data from the various sender organisations and estimated what the organisation's footprint would have been if it had operated in 2012/13. This has given us a baseline to work with and once we have more robust data on our footprint after our first full year of operations in 2013/14, this will be reviewed, to give us a solid foundation for moving forwards in future years. Much of PHE's inherited estate is office-based in nature and government formulae have been used to determine the carbon footprint for these premises. The estate from the former Health Protection Agency additionally comprises significant laboratory and manufacturing facilities and as there are

5 See http://www.un.org/en/sustainablefuture/pdf/rio20%20concludes_press%20release.pdf

6 Available from http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf

7 Rio+20 Voluntary Commitments: see http://www.uncsd2012.org/voluntarycommitments.html. A preliminary list is available at: http://www.uncsd2012.org/allcommitments.html

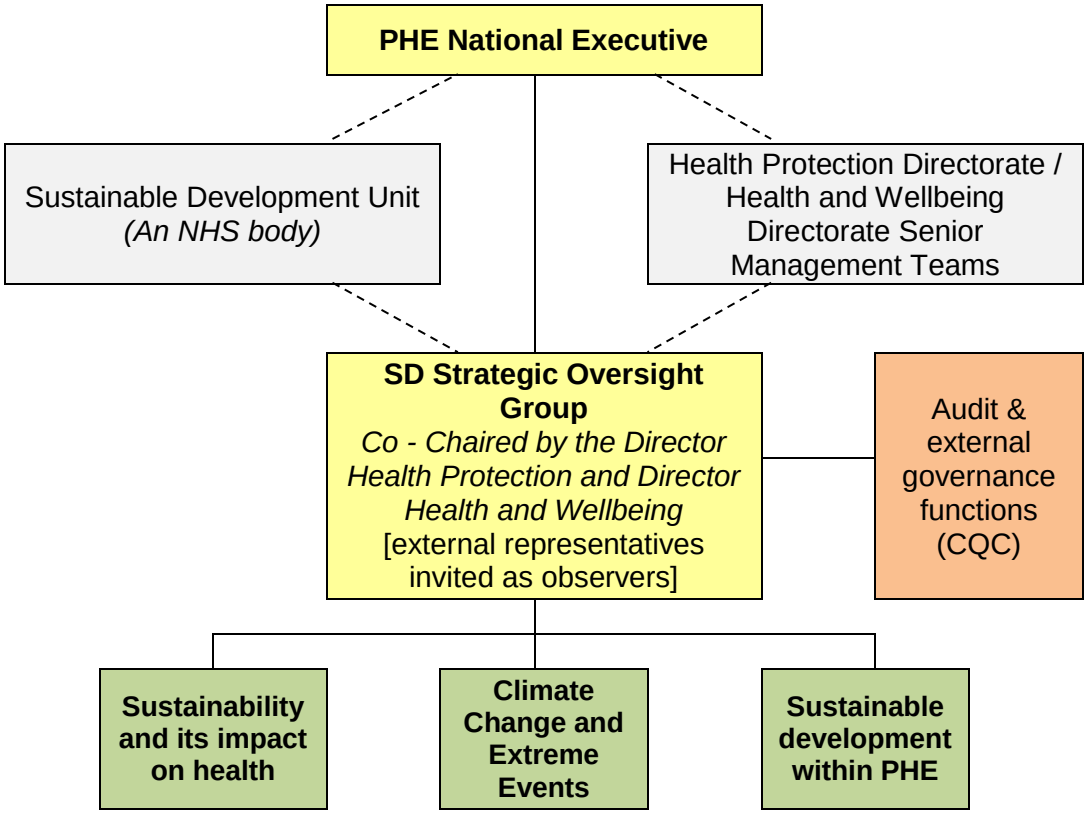
robust sustainability records for this part of PHE, these data have been a major component in estimating an overall footprint.

Governance

A member of the PHE National Executive has been nominated as sustainability lead for the organisation, demonstrating support at the highest level. Within PHE, there are three main areas of activity in relation to sustainable development:

- sustainability and its impact on health;
- climate change and extreme events; and
- sustainable development within PHE.

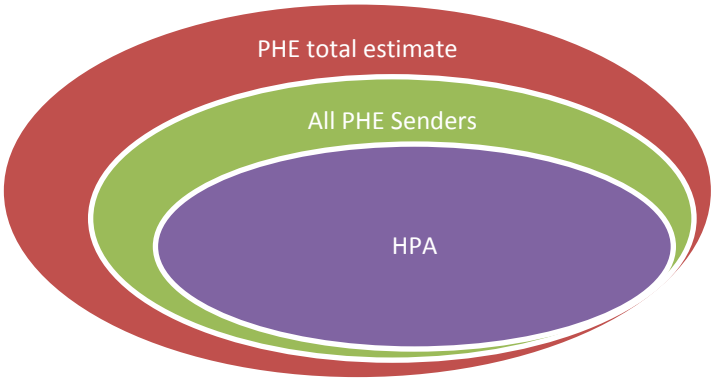
The work of these groups is coordinated through a Strategic Oversight Group, co-chaired by the Director of the Health Protection Directorate and the Director of the Health and Wellbeing Directorate. This structure is illustrated below.



The operational units (shown in green) work with external bodies such as local authorities etc, as necessary, to deliver agreed objectives.

PHE's carbon footprint in context

Following the formation of PHE in April 2013, it was necessary to develop a baseline for all of the parameters associated with measuring our carbon footprint, and to re-evaluate suitable targets against the Greening Government initiative. As PHE did not exist the previous year, this footprint has been developed using data from the sender organisations, as illustrated below. Some of these data have been estimated and the footprint will be reviewed at the end of the current financial year, when there are robust carbon emissions data for the first year of PHE's operational activity.



In April 2010, the baseline year for Greening Government was reset to 2010/11, but as PHE is very different to its precursor organisations, it was not possible to take the existing footprint at 31 March 2013 and extrapolate backwards. Moreover, the only one of the precursor organisations that had robust and detailed sustainability data was the Health Protection Agency and although its activities continue under Public Health England, they do not reflect the full extent of the activities now undertaken by PHE. In addition, a significant component (the National Institute for Biological Standards and Control) did not transfer to PHE, but to the MHRA.

In the interim, an estimate has therefore been made using the known footprint of the former HPA (minus that attributable to NIBSC) and a calculated footprint for the energy-related elements of the remainder of the inherited office estate. These calculations, which were based on DEFRA formulae for office use, are the same as those applied to the geographically distributed offices of the former HPA. The travel-related carbon footprint for the HPA was also fully established for 2012/13, but it has not been possible to estimate a travel footprint for the non-HPA sender organisations as there was no reasonable means of retrospectively gathering suitable data.

Managing the PHE estate

PHE's Property Asset Management Board approved the PHE estates strategy on 18 September 2013. This will guide property decisions taken during the period 1 April 2013 to 31 March 2018, ensuring that the estate remains fit for purpose, whilst allowing sufficient flexibility to respond to the developing requirements of the organisation. The vision for the estate is:

> *'To have the right property of the right standard, in the right place, at the right time, at the right cost'*

Thus, our activities and staff will be supported by an estate that is integrated, flexible and resilient, and which is both sustainable and represents value for money. In support of the vision, we have identified the following aims for the estate strategy:

> *'To have a core of efficiently used, flexible property, housing modern, high-tech facilities, meeting environmental standards and changing business needs, which provide healthy, secure and safe, productive places for our people to work.'*

In order to deliver the vision and aims of the estates strategy, PHE has set itself a number of objectives. In addition to endorsing PHE's overall sustainability objectives, the estate strategy states:

> *'Subject to achieving value for money, new buildings and major refurbishments to achieve a BREEAM 'excellent' rating, and all other refurbishments to achieve a BREEAM rating of 'very good', unless it is more appropriate to use the Royal Institute of Chartered Surveyors' "SKA assessment" method – in which case, a refurbishment should achieve a minimum SKA rating of silver.'*

To support these aims and objectives, we have identified a number of programmes and key work-streams which together make up the Implementation Plan. One of these programmes is the Accommodation Rationalisation Programme. This comprises a number of agreed accommodation projects which deliver operational synergies by vacating existing small properties and co-locating PHE staff based in the same town or city into a single building. Where a project involves the acquisition and fit-out of new premises, we take a sustainable approach to procurement and we specify the installation of energy and water saving measures such as the latest energy efficient movement sensitive lighting and low flush WCs.

Reporting initiatives

Greening Government

The government's principal targets for sustainable development are outlined in its 'Greening Government' initiative.

In February 2011, *Mainstreaming Sustainable Development*[8] introduced plans to embed sustainability at the heart of government. It described a new and refreshed vision, building on the UK's 2005 Sustainable Development Strategy.[9]

These new commitments replaced the earlier Sustainable Operations on the Government Estate (SOGE) targets with a series of new measures, to be introduced by 2015. *Greening Government* described how the government intends to deliver sustainable operations and sustainable procurement. They apply to the office and non-office estate of central government departments and their Executive Agencies (EAs), Non-Ministerial Departments (NMDs), and Non-Departmental Public Bodies (NDPBs). The scope for inclusion in *Greening Government* encompasses those organisations which reported under the SOGE targets. The following inclusion criteria apply:

- Departments or Executive NDPBs with 1,000 m^2 or above floor space (in total) and 250 or above Full Time Employees.
- All Non-Ministerial Departments.
- NDPBs who do not meet the minimal criteria for floor space and FTEs, but wish to report on a voluntary basis.

8 *Mainstreaming Sustainable Development - The Government's vision and what this means in practice (DEFRA, February 2011).* See http://sd.defra.gov.uk/documents/mainstreaming-sustainable-development.pdf

9 Security the Future: The UK Government Sustainable Development Strategy. Cm 6467 (2005).

Greening Government set out four areas of commitment.

1. To reduce greenhouse gas emissions by 25% from a 2009/10 baseline from the whole estate and business-related transport

    a) reduce carbon emissions from Central Government offices by 10% in 2010/11 and all ministerial HQs to publish online real time energy use information
    b) reduce domestic business travel flights by 20% by 2015 from a 2009/10 baseline.

2. To reduce the amount of waste generated by 25% from a 2009/10 baseline

    a) Cut our paper use by 10% in 2011/12

    b) Informed by a feasibility study to be published in 2011, Government will go to market with a requirement for "closed loop" recycled paper in 2011

    c) Ensure that redundant ICT equipment is re-used (within government, the public sector or wider society) or responsibly recycled

3. Reduce water consumption from a 2009/10 baseline, and report on office water use against best practice benchmarks[10]

    a) ≥6 m^3 water consumption per FTE poor practice

    b) 4 m^3 to 6 m^3 per FTE good practice

    c) ≤4 m^3 per FTE best practice

    d) % offices meeting best/good/poor practice benchmark.

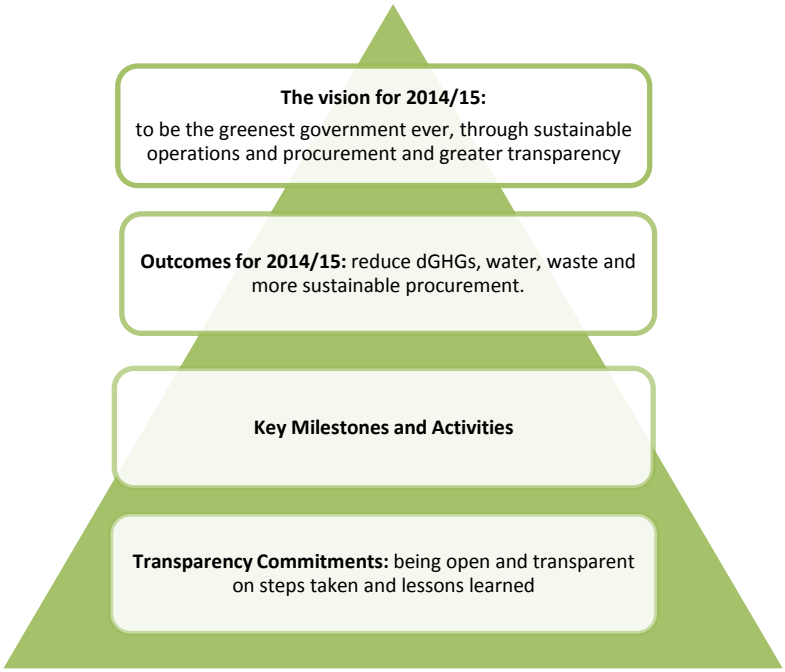
4. Ensure government buys more sustainable and efficient products and engages with its suppliers to understand and reduce the impacts of its supply chain

10 For non-office water use departments will be expected to set their own water reduction targets, focusing firstly on areas which are subject to water stress. As the HPA's main sites are primarily laboratory-focused, office targets alone will not be sufficient.

a) Embed the Government Buying Standards in departmental and centralised procurement contracts, within the context of Government's overarching priorities of value for money and streamlining procurement processes

b) Improve and publish data on our supply chain impacts, initially focusing on carbon, but also water and waste – setting detailed baselines for reducing these impacts.

DH subsequently made available some very useful draft guidance[11] which set the initiative in context with the government's vision, and this was later consolidated into Cabinet Office guidance.[12]



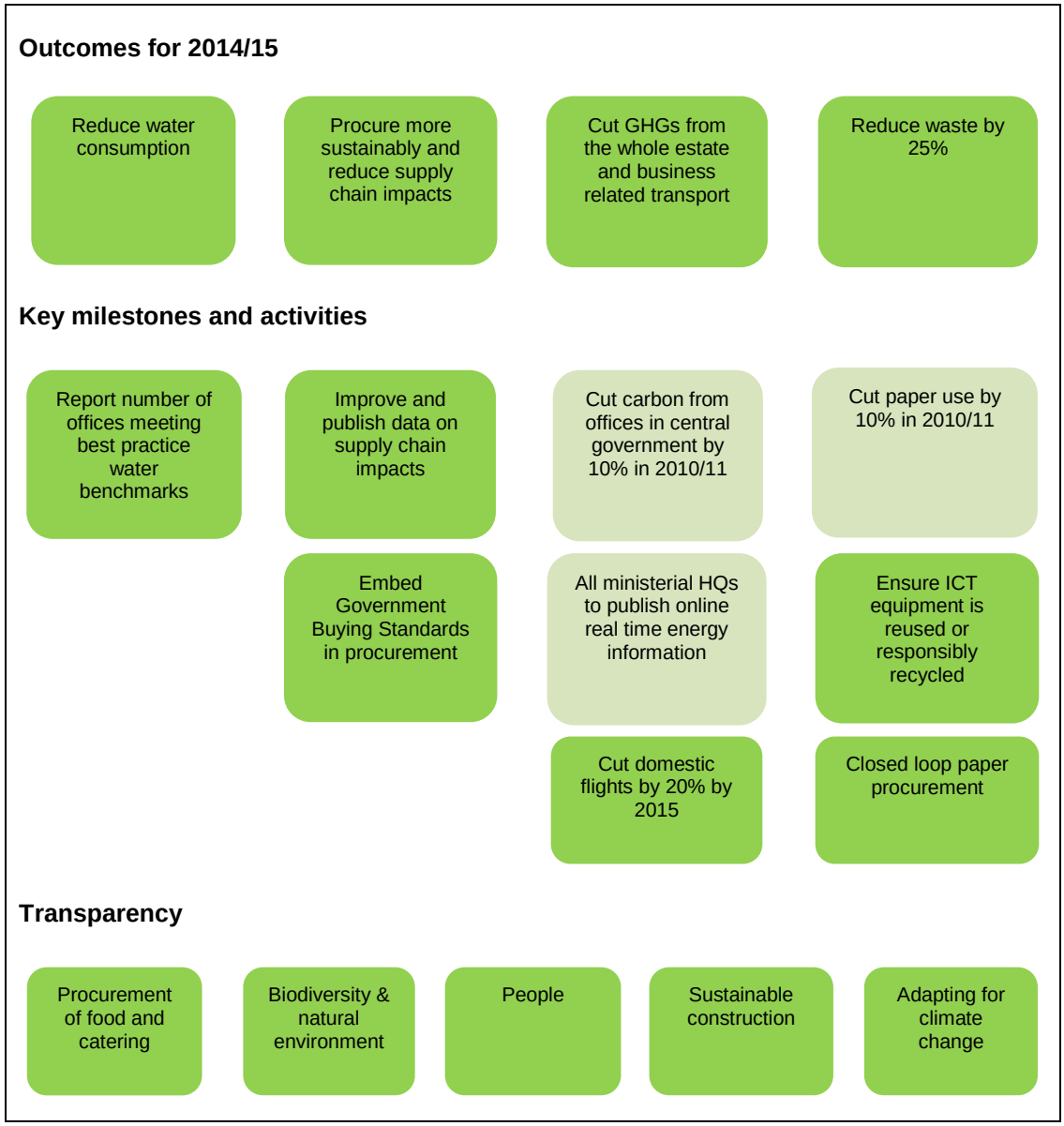
Overall governance will be the responsibility of a ministerial group and programme board, supported by the Greening Government Implementation Unit in the Cabinet Office, which will be responsible for performance management of the Greening Government Commitments. Permanent Secretaries and Chief Executives will be responsible for delivery of the Greening Government Commitments, and for compliance with performance management and reporting requirements within their organisations. Delivery of the Greening Government Commitments should be incorporated into their

11 Department of Health: "Greening Government Commitments – Draft Guidance v10" (4 May 2011)

12 This includes the document *"Greening Government Commitments – guidance on measurement and reporting"* (Cabinet Office, 14 June 2011). See Cabinet Office resource library at: http://www.cabinetoffice.gov.uk/resource-library/green-government

performance objectives and cascaded into the performance objectives of appropriate staff.

The scope, definitions and reporting requirements for each of these commitments is illustrated in the following diagram.



In its 2012 report[13] the government announced good progress against these targets, indicating a 12% reduction in carbon emissions across the government estate in 2011-12; a 24% reduction in paper consumption in one

13 The Greening Government Commitments. Annual report on government departments' progress against 2015 targets in 2011/12. (Published in December 2012 by DEFRA.)

year – exceeding the target of a 10% cut. There was a 36% reduction in the number of domestic flights taken by government employees – which significantly exceeded the 20% target set for 2015. Progress had also been made in reducing water use and overall waste, and ensuring government departments buy more sustainable products and services, although a good deal of work remained to be done in these areas. Significantly, the achievements outlined in this report also represented substantial financial savings. Carbon reduction figures for 2011-12 added up to an estimated £40 million saving across Government against the 2009-10 baseline, and reductions to Government waste were estimated to have saved almost £4.7m more in landfill and transportation costs.

The Carbon Reduction Commitment Energy Efficiency Scheme

The government's Carbon Reduction commitment Energy Efficiency Scheme is a mandatory scheme designed to improve the energy efficiency of organisations and to drive down carbon emissions in both the public and the private sector. It is divided into a number of phases and participation is mandatory if the necessary qualifying criteria are met. The initial phase of the CRC scheme was based on the usage of electricity in the qualifying year of 2008; all organisations with at least one meter settled on the half-hourly market and using at least 6,000 MWh of electricity through these meters, or through dynamic supplies, became mandatory members of the scheme.

Reporting for 2012/13 was based on the use of electricity and the use of gas for heating purposes. While this may change in the future, at present the scheme does not take account of gas used for other purposes, or of other elements which are part of the Greening Government initiative, such as waste and water management. The Health Protection Agency met the criteria for Phase 1 and had been required to purchase carbon allowances based on its use of gas and electricity from 2011/12 onwards. The qualifying period for Phase 2 ended on 31 March 2013 and as the HPA ceased to exist on that date, only the legacy payment for the 2012/13 year remained extant.

PHE as a newly created body from 1 April 2013 did not exist during the qualifying period for Phase 2 of the Scheme. The Environment Agency has therefore agreed that PHE will not be required to become part of the CRC scheme until Phase 3 begins in 2019. We will therefore review our energy usage (and any other qualifying criteria) in 2018/19, to determine whether we qualify to become a member of this mandatory scheme at that time. Notwithstanding this, we will continue to gather data and work to further reduce our carbon footprint, minimising our energy consumption and the associated emissions wherever we can.

Although not a member of the CRCEE scheme, PHE had inherited an obligation to purchase and surrender carbon allowances for the energy used (and thus, the carbon emitted) by the HPA in 2012/13. Financial provision was made for this prior to transfer into PHE, and a formal 'order' placed (i.e. a commitment made) to purchase allowances in the early summer of 2013.




PHE was therefore committed to purchase 25,534 carbon allowances for the HPA at a cost of £12 per tonne, a total commitment of £306,408. These allowances were paid for in August, for surrender in October, in line with the requirements of the scheme.

Our annual report on our Carbon Reduction Commitment footprint to the Environment Agency for the emissions during 2012/13 by the former HPA is shown below.

CRC annual report for the former HPA 2012/13

Annual report summary	
Date Created	05 June 2013

Your details
Phase: 1
Reporting Year: 2012/2013
CRC reference number: CRC5544885
Addressee: Dr Tony Sannia Health Protection Agency

Total Participant Electricity and Gas Supplies (this excludes supplies of gas to an EU ETS installation and CCA facility and supplies of electricity to a CCA facility)				
Fuel source	Actual supply	Estimated supply	Measurement unit	Calculated emissions (tonnes of CO2)
Electricity	29,645,219	54,127	kWh	16,070
Gas	21,301,544	27,504,804	kWh	9,464

Emissions for annual reporting year 2012/2013
Total CRC Emissions (tonnes of CO2): 25,534

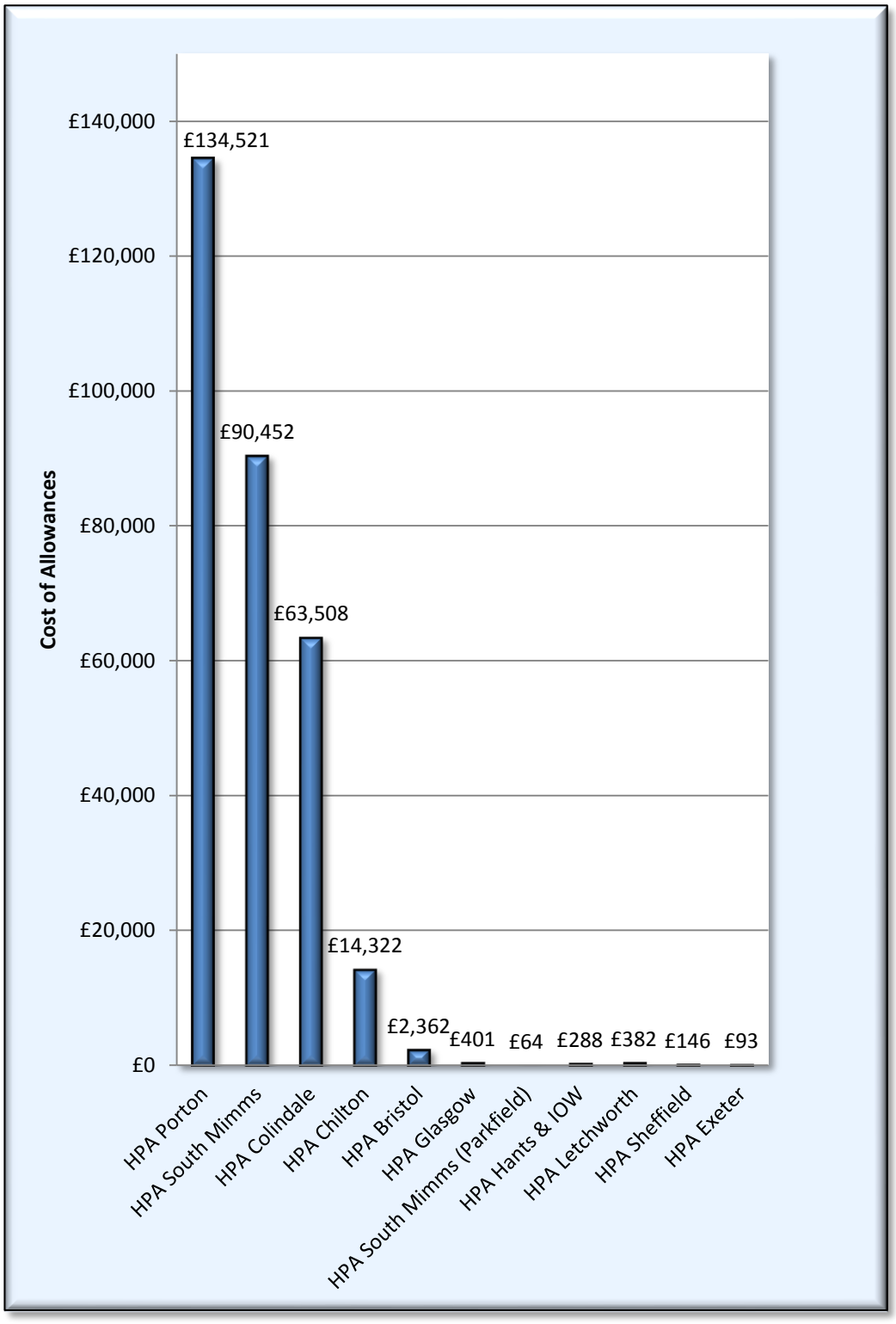
SGU emissions	
SGU name	SGU emissions (tonnes of CO2)
Health Protection Agency	25,534

Early action metrics	
Emissions covered by carbon trust standard or equivalent	
Emissions (tonnes of CO2)	Scheme
0	None
Emissions covered by voluntary AMR - percentage: 47	

Turnover/ expenditure for report year		
Renewable energy data		
Type	Kilowatt Hours	Tonnes of CO2

Corporate responsibility responses	
Type	Answer
Discloses long term reduction targets	Yes
Discloses performance against long term reduction targets	Yes
Names director responsible for energy use	Yes
Engages employees in reduction of energy use	Yes
Report comments:	

The total Carbon Reduction Commitment Energy Efficiency Scheme obligations inherited by PHE can be broken down according to the premises from which the emissions arose. These are shown in the graph below, with costs assigned by location at £12 per tonne of CO_2 equivalent.



Cost of the CRCEE commitment (carbon tax), by premises

HM Treasury reporting on sustainability & environmental management

All organisations required to produce an annual report and accounts under the government's Financial Reporting Model (FReM) have been obliged since 2012 to include a full report on their carbon emissions in their annual report. PHE will not need to do so until the end of its first year of operations, but the HPA was required to lay a report before Parliament for the financial year of 2012/13 and therefore was obliged to make a report on its sustainable development activities and its carbon footprint.

As a precursor organisation of PHE, the HPA had agreed a number of targets to reduce carbon emissions from its estate. These included utility use, business travel, water consumption and the reduction of waste sent to landfill. Work was also underway to reduce carbon emissions arising from the organisation's supply chain. Monitoring processes were implemented to allow management to evaluate and develop reduction strategies. This approach led to a further reduction in carbon emissions for the year 2012/13, although the complex circumstances of the change in the nature of the business (and its transfer into PHE) has made it difficult to fully evaluate this.

The usual government parameters of measuring growth (or a reduction) in the business are based entirely on turnover. This is inappropriate for a public sector organisation, particularly as we do not exist just to make and sell products and sell our services. Moreover, much of our income is generated from third parties, so central government funding also cannot be easily tied to such formulae. In addition, a continuing programme to realise greater efficiencies and reduce costs has led to higher workloads and increased activity in some areas, without a concomitant increase in funding streams.

Greenhouse gas emissions

We set a target to reduce our carbon emissions by 15% (to 27,681 tCO2e) by March 2015, and by 34% (to 24,102 tCO2e) by March 2020, compared to 2007/08 baseline levels, in line with the Government's 'Greening Government' initiative.

Preliminary analysis indicated that the HPA's carbon emissions were 33,116 tCO2e. This meant the agency was well placed to meet government requirements, with good progress towards the agreed targets.

The main direct impacts for the agency were its electricity and gas consumption. Through its carbon reduction delivery plan, the agency introduced a number of strategies to help reduce its carbon burden.

The agency continued to engage staff through its mandatory e-learning programme on sustainability and carbon management. This training ensured that staff were aware of the need to minimise their carbon footprint, and act in a sustainable manner that took account of their impact on the environment.

Work to strengthen green procurement initiatives continued in line with central government initiatives, including future use of the 'CAESER' software tool with suppliers. This helped to ensure a robust approach to sustainability through the supply chain. The agency continued to embed sustainability into contracts, which helped to highlight risks to the agency arising from procurement.

The organisation was fully committed to sustainable development in all its activities. In line with the commitments made in the environmental policy, the carbon reduction delivery plan set out the organisation's aims for future work. A number of capital projects intended to improve the efficiency of the organisation's future energy usage began at our major owned sites, and sub-metering of utility supplies was introduced so that greater local control could be achieved.



The organisation owned seven of the premises it occupied and had a direct relationship with the utility provider at a further four. These buildings were taken into account in the Government's Carbon Reduction Commitment Energy Efficiency scheme reporting boundary. The agency also had shared facilities embedded in government-owned property (including hospitals) and in other tenanted accommodation. There was no direct relationship with the utility provider in these premises and no sub-metering was undertaken. To avoid double-accounting for the related carbon emissions, these were identified separately for reporting purposes.

GREENHOUSE GAS EMISSIONS		2010/11	2011/12	2012/13
Non-Financial Indicators (tCO2)	Total Gross Emissions, Scope 1+2	33,250	27,978	27,700
	Total Gross Emissions for Scope 1+2 (non-reportable sites)	2,456	2,211	1,882
	Total Net Emissions for Scope 1+2 (i.e. less reductions - e.g. green tariffs)	35,589	30,189	29,434
	Gross Emissions Scope 3 (Business Travel)	2,828	1,965	1,399
	Other Scope 3 emissions measured	1,151	1,858	2,283
Related Energy Consumption (kWh)	Electricity Non-Renewable (reportable sites)	33,182,260	31,924,147	31,973,871
	Electricity Non-Renewable (non-reportable sites)	4,596,875	3,678,655	2,520,302
	Gas (reportable sites)	55,235,365	42,833,004	49,036,466
	Gas (non-reportable sites)	4,848,910	2,235,629	2,282,275
	Gas Oil (reportable sites)	3,697,017	4,458,416	4,112,196
	Gas Oil (non-reportable sites)	1,723,496	2,025,354	898,155
	Steam (reportable sites)	584,699	1,414,208	907,778
Financial Indicators (£)	Expenditure on Electricity	4,267,111	3,098,230	3,058,306
	Expenditure on Gas	1,211,828	1,212,274	2,034,140
	Expenditure on Gas Oil	284,730	392,612	357,763
	CRC license expenditure from 2011	345,000	345,000	300,300
	Official business travel expenditure	2,607,503	2,107,234	2,386,525

The organisation had no properties within SSSI or AONB boundaries. The organisation had an active programme to reduce paper usage, in line with government targets. There were several dedicated working groups tasked with reducing paper usage in their areas. The move to multi-function devices for printing was well received across the business. Signage and good communication about minimising printing also helped to reduce paper usage over the year.

A third-party provider continued to be engaged to recycle and reuse, wherever possible, all redundant ICT equipment. Approximately 13 tonnes of ICT waste was processed in this manner. This approach continued to be an effective method of disposal for this waste stream and supported government policy in this area.

Steps were taken to reduce domestic air travel by members of staff, with a revised Sustainable Travel Policy to provide advice and guidance. A number of further local initiatives were introduced to monitor business travel.

In preparation for the transition to Public Health England, the agency helped to shape the sustainability agenda for the new organisation by developing its sustainability policies, strategies and management arrangements.

Water consumption

We set a target to reduce our water consumption by 10% compared to a 2007/08 baseline, (to 202,503 m^3) by 2015 and by 25% by 2020, in line with the Government's Greening Government initiative. The trend was positive, with a number of projects identified to further reduce the organisation's water consumption.

A number of the organisation's sites had a mixture of office and non-office facilities, and it was therefore not possible to split the two categories into any viable dataset. The financial cost shown below relates to the water that was directly supplied to those sites which were within the reporting boundary. The organisation's major impacts in terms of water consumption were through its main centres, where a large number of laboratories were housed.




Water that was consumed at offices and laboratories embedded in tenanted accommodation was estimated using the Carbon Trust's benchmarking algorithm.

FINITE RESOURCES CONSUMPTION – WATER			2010/11	2011/12	2012/13
Non-Financial Indicators m^3	Water consumption	Supplied (reportable)	242,948	222066	219,943
		Supplied (non-reportable)	11,123	6,612	9,414
		Abstracted	0	0	0
Financial indicators £	Water supply costs		179,611	201,929	201,545

The water supply to the organisation's main sites was monitored and measured, and therefore the pattern of daily usage was known. Senior managers used this information to further develop strategies that helped towards meeting water reduction targets. Water at one of the main sites is supplied by a third party and was abstracted by them from a borehole on their site.

Waste

We set a landfill waste reduction target of 20% (to 505 tonnes) by 2015 compared to 2007/08 figures, and to reduce this by 25% by 2020, in line with the Government's Greening Government initiative. Preliminary analysis indicated a 14% reduction of waste going to landfill over the last year. Waste data for earlier years have been recalculated using the current DEFRA formula.

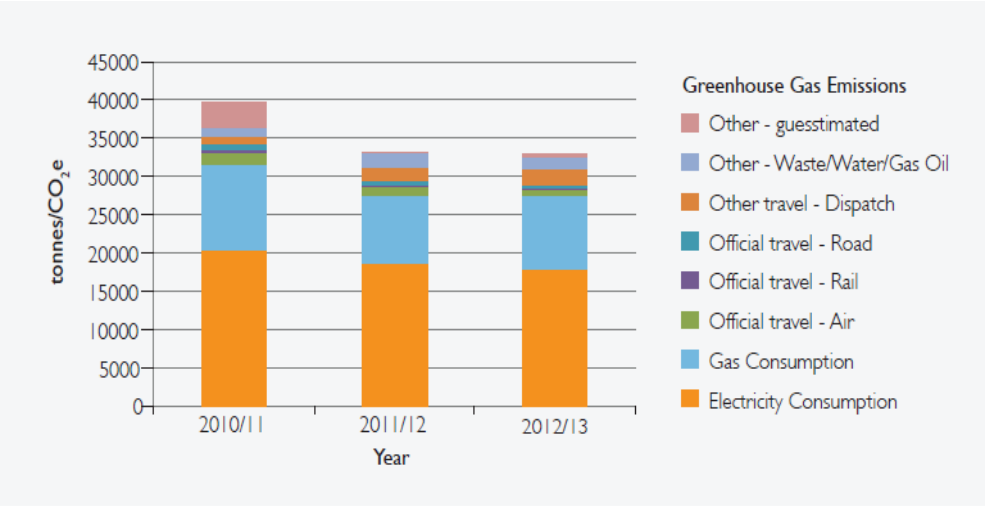
The organisation had an aggressive programme in place to reduce, wherever practicable, its waste to landfill and to increase its level of recycling. The trend was very positive with a number of projects being implemented to divert waste from landfill to other waste streams, principally to energy from waste. This reduced the landfill disposal dramatically, with significant social, financial and environmental benefits for the agency.

Due to the nature of the work carried out at the majority of the organisation's sites, a significant quantity of hazardous waste was produced and a number

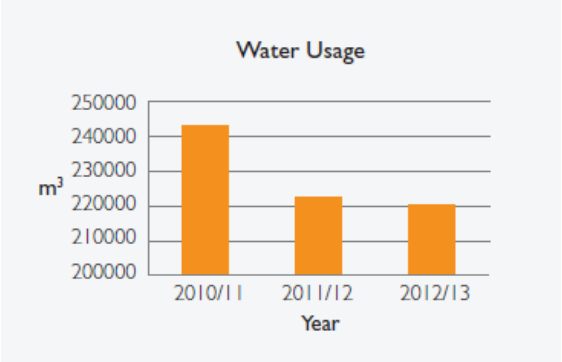
of controls were in place to manage this. The majority of this waste was sent for incineration, in compliance with government guidelines.

WASTE			2010/11	2011/12	2012/13
Non-Financial Indicators (tonnes)	Total Waste (Minimum Requirement)		1,373	1,049	1,574
	Hazardous Waste	Total	445	299	405
	Non-Hazardous Waste	Landfill	375	112	96
		Reused/Recycled	444	436	831
		Incinerated/Energy from Waste	109	202	242
Financial indicators £	Total Disposal Cost (Minimum requirement)		456,199	334,623	407,279
	Hazardous Waste – Total Disposal Cost		348,365	277,698	244,442
	Non-Hazardous Waste – Total Disposal Cost	Landfill	44,732	30,426	33,782
		Reused/Recycled	49,460	51,600	68,176
		Incinerated/Energy from Waste	13,642	46,529	60,879

A new generic waste monitoring system was introduced in 2011/12 to try to harmonise the various systems in use. A number of additional initiatives were in place to reduce waste at all locations covering both offices and laboratories. Contractors working at the organisation's sites were informed of the requirement to reduce their waste wherever possible, in line with the organisation's waste policy and the associated management arrangements



Greenhouse gas emissions from the inherited HPA estate over the last three years



Water usage over the last three years

Waste sent to landfill over the last three years

Reporting to the Department of Health

Since 2007/08 all central government departments and their Executive Agencies, Non-Departmental Public Bodies and Arm's Length Bodies have had to report on their carbon emissions annually as part of the Sustainable Operations on the Government Estate (SOGE) initiative.

In 2010, the government reviewed this initiative and developed another reporting strategy which is known as the 'Greening Government Commitment'. Though very similar, this initiative set new carbon reduction targets for the public sector. Public Health England is therefore required to report quarterly to the Department of Health on its associated sustainability work and thus, report its carbon emissions in a slightly different format to that used for other purposes.

As a consequence, as an Executive Agency of the Department of Health, Public Health England is legally bound to report on its carbon emissions (in a set format) every quarter, which meets the requirements as set out in the 2010 Greening Government Commitment initiative; an example of this report is given below. This report is combined with other reporting by DH and allows the Department for the Environment, Food and Rural Affairs to benchmark across all appropriate government departments. (It should be noted that the NHS do not report into DH for GGC reporting.)

PHE has a specific methodology for collating carbon emissions data from across the estate, which has been approved by DH and DEFRA. We collect data from all of our owned sites via their Facilities Management teams, who have a bespoke *pro forma* to fill out on a quarterly basis.

Carbon emissions for our rented or leased premises, which are not reported elsewhere, were estimated using an algorithm that was developed by the Building Research Establishment and DEFRA. This methodology provides agreed formulae for estimating the electricity, gas and water usage from an occupied facility. It therefore allows us to estimate with a reasonable degree of accuracy, what the emissions from the estate are likely to be. Where possible, we will seek to install meters, or sub-meters, but often this is in the control of the landlord and difficult to achieve in practice. Carbon emissions relating to much of the estate in PHE (where we are tenants) are already reported via their respective landlord or agent. By not reporting this independently ourselves, we will help to reduce the amount of double accounting from across the public sector, which DEFRA has identified as a significant issue. Nevertheless, an awareness of the carbon emissions for this part of our estate is an essential element of our total carbon footprint as

an organisation. We will therefore continue to collect these data separately, so we can more fully understand the environmental impact of our business.

Data for the owned estate or where we have a direct relationship with the utility provider is derived from analysing the monthly (or in some cases quarterly) energy invoices. At the larger sites, utility meter readings are gathered regularly by nominated members of staff so that a correlation of readings and bills can be undertaken before sending the data to DH. This provides both a higher assurance that data relating to our energy usage is accurate, and provides an assurance that our energy bills are correct. This has been accepted by Internal Audit as an appropriate means of ensuring that our declaration to the Environment Agency for our purchase of carbon allowances under the Carbon Reduction Commitment (in respect of some parts of PHE's inherited estate) is also correct.

Building emissions for Q1 and Q2 of 2013/14

1 GREENHOUSE GAS ANALYSIS

1.1 EMISSIONS FROM BUILDINGS

		kWh Estate	CO_2e factor	tonnes CO_2e	Notes
TOTAL FROM ESTATE		40,179,571		14917.26	
PURCHASED ENERGY	Mains Standard Grid Electricity (Scope 2+3)	12,421,121	0.4836	6006.48	90547 kWh's per quarter estimated usage from
	Mains Green Tariff Electricity (Scope 2+3)	12,257,393	0.4836	5927.31	100% Green Energy from GPS contract
	CHP Bought Electricity (Good Qual) (Scope 2+3)	0	0.4836	0.00	
	CHP Bought Electricity (Other) (Scope 2+3)	0	0.4836	0.00	
	Natural Gas (Scope 1)	13,756,472	0.1840	2531.74	64637 kWh's per quarter estimated usage from
	Gas Oil (Scope 1)	1,340,280	0.2718	364.23	
	LPG (Scope 1)	0	0.2145	0.00	
	Solid Fossil Fuels (Scope 1)	0	0.3400	0.00	
	Solid Fuels (Biomass) (Scope 1)	0	0.0000	0.00	
	District Heating (Scope 2+3)	0	0.2278	0.00	
	Heat from renewable sources (Scope 2)	0	0.0000	0.00	
	Heat from non renewable sources (excluding WDHS) (Scope 2) (please specify, incl. CO2e factor and notes)	404,305	0.0000	87.50	Estimated steam imported to Bristol Laboratory
	Heat from WDHS (Scope 2)	0	0.2656	0.00	
	Other (please specify, incl. CO2e factor and notes)	0	0.0000	0.00	
SELF GENERATED ENERGY (Scope 1)	Electricity from renewable sources	0	0.0000	0.00	
	Heat from renewable sources	0	0.0000	0.00	
	Solar water heating	0	0.0000	0.00	
	Other (please specify, incl. CO2e factor and notes)	0	0.0000	0.00	
	CHP1 Electricity	0	0.0000	0.00	
	CHP1 Heat	0	0.0000	0.00	
	CHP2 Electricity	0	0.0000	0.00	
	CHP2 Heat	0	0.0000	0.00	
	CHP3 Electricity	0	0.0000	0.00	
	CHP3 Heat	0	0.0000	0.00	

1.2 FUGITIVE EMISSIONS

	kg CO_2e	tonnes CO_2e	Enter method used for estimating emissions A or B
FUGITIVE EMISSIONS (Scope 1)	269614.00	269.61	B

Transport emissions for Q1 and Q2 of 2013/14

Information on our business travel is collated by interrogating financial data from MINT, from the *i*-Expenses system, and by using information from Redfern Travel (through whom air and rail travel must be booked).

Generally, the fleet of vehicles owned by PHE is limited and thus, there is little to report in this category. Where data do exist, it has not been possible to obtain a breakdown, so they are reported as a single category.

Our business travel using other means is more amenable to analysis and where possible, a breakdown is provided for the DH report.

1.3 EMISSIONS FROM TRANSPORT

TOTAL tCO2e FROM TRANSPORT				632
		km travelled	CO_2e factor	tonnes CO_2e
TOTAL DOMESTIC FROM FLEET (i.e. vehicles owned or leased by the department) (Scope 1)		200,921		38
FLEET	Small petrol car, up to 1.4 l	0	0.1619	0.00
	Medium petrol car, 1.4 - 2.0 l	0	0.2049	0.00
	Large petrol car, >2.0 l	0	0.2968	0.00
	Average petrol car	0	0.1981	0.00
	Small diesel car, up to 1.7 l	0	0.1405	0.00
	Medium diesel car, 1.7 - 2.0 l	0	0.1748	0.00
	Large diesel car, >2.0 l	0	0.2294	0.00
	Average diesel car	0	0.1832	0.00
	Hybrid - Medium	0	0.1147	0.00
	Hybrid - Large	0	0.2030	0.00
	LPG	0	0.2121	0.00
	Unknown - Average	200,921	0.1902	38.22
	Small petrol motorbike (mopeds/scooters up to 125cc)	0	0.0877	0.00
	Medium petrol motorbike (125-500cc)	0	0.1063	0.00
	Large petrol motorbike (over 500cc)	0	0.1397	0.00
	Average petrol motorbike (unknown engine size)	0	0.1189	0.00
	Other1 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other2 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other3 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00

TOTAL DOMESTIC FROM GREY FLEET/HIRE (i.e. employee owned or hire vehicles) (Scope 3)		**1,813,839**		**345**
NON-FLEET	Small petrol car, up to 1.4 l	0	0.1619	0.00
	Medium petrol car, 1.4 - 2.0 l	0	0.2049	0.00
	Large petrol car, >2.0 l	0	0.2968	0.00
	Average petrol car	0	0.1981	0.00
	Small diesel car, up to 1.7 l	0	0.1405	0.00
	Medium diesel car, 1.7 - 2.0 l	0	0.1748	0.00
	Large diesel car, >2.0 l	0	0.2294	0.00
	Average diesel car	0	0.1832	0.00
	Hybrid - Medium	0	0.1147	0.00
	Hybrid - Large	0	0.2030	0.00
	LPG	0	0.2121	0.00
	Unknown - Average	1,813,839	0.1902	345.05
	Small petrol motorbike (mopeds/scooters up to 125cc)	0	0.0877	0.00
	Medium petrol motorbike (125-500cc)	0	0.1063	0.00
	Large petrol motorbike (over 500cc)	0	0.1397	0.00
	Average petrol motorbike (unknown engine size)	0	0.1189	0.00
	Other1 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other2 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other3 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
TOTAL FROM DOMESTIC NON FLEET (Scope 3)		**4,612,806**		**248**
PUBLIC TRANSPORT	Domestic Flight	164,268	0.1728	28.38
	Rail - National /Average	4,420,070	0.0490	216.76
	Light Railway / Tram	31	0.0601	0.00
	London Underground	1,244	0.0636	0.08
	Taxi - Regular	6,050	0.1443	0.87
	Taxi - Black cab	577	0.1529	0.09
	Bus - Local	0	0.1232	0.00
	Bus - Transport for London	0	0.0831	0.00
	Bus - Average	20,566	0.1116	2.30
	Coach	0	0.0293	0.00
	Other1 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other2 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00
	Other3 (please specify, incl. CO2e factor and notes)	0	0.0000	0.00

TOTAL tCO2e FOR GGC REPORTING	**15818.62**

	km travelled	CO_2e factor	tonnes CO_2e
OTHER TRAVEL (Scope 3) - OPTIONAL	**3,106,196**		**351**
Short Haul International Average	831,470	0.1018	84.62
Short Haul International Economy	0	0.0970	0.00
Short Haul International Business	0	0.1455	0.00
Long Haul International Average	2,221,792	0.1198	266.13
Long Haul International Economy	0	0.0874	0.00
Long Haul International Premium Economy	0	0.1399	0.00
Long Haul International Business	0	0.2536	0.00
Long Haul International First	0	0.3498	0.00
Rail - Eurostar	52,934	0.0124	0.65

Water, waste and other emissions for Q1 and Q2 of 2013/14

Other data reported to DH include emissions from water and waste, paper usage and domestic flights.

2 WATER ANALYSIS

	m^3	FTE- Office Estate	m^3 / FTE Office estate	Total N. office buildings	N. office buildings with m^3/FTE = <4	>4 and <6	>6
Water from Office Estate	284	94.925	2.99183566	11	11	0	0
Water from Whole Estate	88,717				100%	0%	0%

3 WASTE ANALYSIS

	tonnes	% OF TOTAL
Waste recycled externally (excl. ICT waste)	106	25%
Waste reused externally (excl. ICT waste)	0	0%
ICT waste recycled externally	5	68%
ICT waste reused externally	2	32%
ICT waste - other (please describe and explain)	0	0%
Waste composted or sent to anaerobic digestion	5	1%
Waste incinerated with energy recovery	135	31%
Waste incinerated without energy recovery	152	35%
TOTAL ICT WASTE	7	2%
TOTAL WASTE *NOT* TO LANDFILL	405	94%
TOTAL WASTE SENT TO LANDFILL	24	6%
TOTAL WASTE	429	
TOTAL *LANDFILL* WASTE DEEMED HAZARDOUS (INCL. CLINICAL WASTE)	9	2%

Notes

4 PAPER ANALYSIS

A4 Reams	A3 Reams	A5 Reams	A4 Reams Equivalent
0	0	0	0

5 DOMESTIC FLIGHTS

Number of Domestic flights	216

Note: information relating to paper usage is still pending

Green procurement in PHE

Procurement in PHE is a service activity, overseen by category managers who liaise closely with operational stakeholders within their area. An important part of their role is to ensure that our purchasing activities take account of the requirements of the *Greening Government* initiative in relation to green procurement.

Sustainability is specifically mentioned in our procurement policy and we include a number of sustainability-related questions in our tender documentation. All of our tendering activity is managed through an *e*-tendering portal and all contract documentation is stored electronically, which has greatly reduced our paper usage. Templates have been introduced which include an environmental section and this has helped to further embed sustainability into our tendering processes. We ask if suppliers have an environmental management system and include further questions regarding their environmental impact in areas such as energy and water use during production, waste generation and the source of their raw materials. As part of our whole life cost analysis we take into account energy consumption and running costs, and systems that are more energy efficient will receive higher scores.

Consideration of sustainability issues is being built into the specification for all new goods and services, via the *i*-Procurement tool “Bravo Solution”. Specific questions can be asked of prospective suppliers regarding their sustainability policies, compliance with government buying standards other industry standards. For example, when purchasing fridges and freezers we ask various technical questions and score responses from perspective suppliers who must provide details of energy efficiency features of their equipment. We also ask about end-of-life schemes and disposal mechanisms.

Office supplies and equipment

The vast majority of our office supplies, including furniture, office consumables, paper and IT equipment has been sourced though suppliers working under government procurement frameworks. Paper is obtained through the government’s closed loop recycling scheme.

We also try to reuse and recycle furniture as far as practicable. However, efforts to find local organisations through which furniture can be recycled have often led to these organisations proposing charges which outweigh the benefits of disposal.

Food and catering services

Most food and catering services have been sourced though on-site suppliers under agreed contracts. As these contracts are renewed or replaced, we will discuss sustainability with providers, including use of locally sourced produce where this is practicable.

Transport (vehicles)

PHE has only a small fleet of leased vehicles and these are obtained through suppliers under framework agreements or via contracts with individual suppliers. In either case the vehicles used must offer the most cost-effective solution to the business and in determining this, sustainability considerations are taken into account.

Travel procurement

All business travel by PHE staff must be booked through Redfern Travel, an approved government supplier. Wherever possible, staff are encouraged to use public transport solutions. Redfern provide us with significant holistic data, including cost information and carbon data for all journeys.

Future developments

We are currently working with our courier suppliers to look into their carbon footprint for the work they undertake on our behalf. We are therefore encouraging those suppliers that we work with to consider their own environmental impact and will, in future, require them to provide carbon footprint data as part of their contracts.

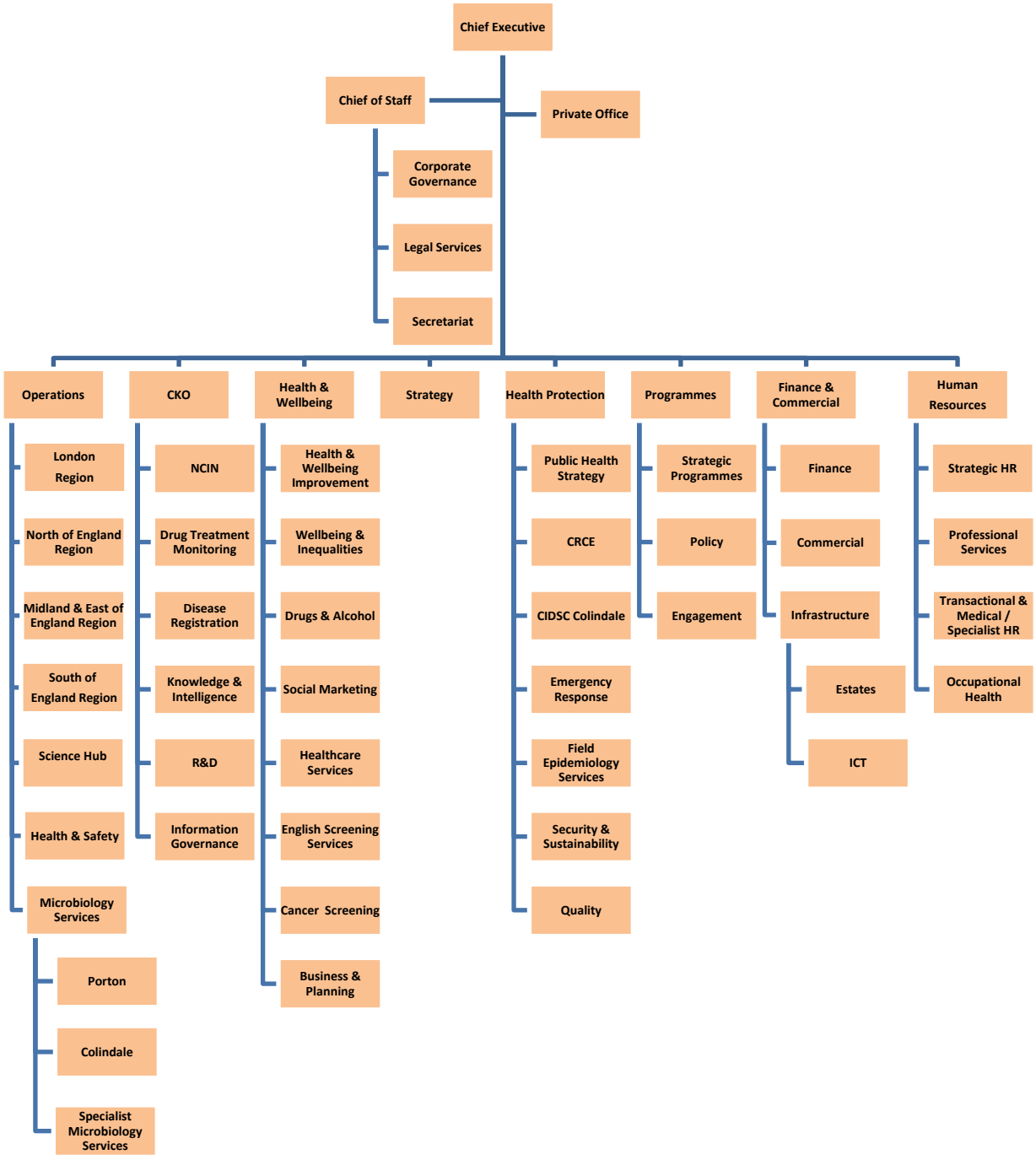
In other areas, some of our suppliers now use recycled packaging by preference and we are actively working to encourage video and teleconferencing, to reduce the need to travel.

This page is intentionally blank

Our carbon footprint in detail

Components of Public Health England

The carbon footprint of Public Health England is based on its energy consumption, its waste generation and water usage and, where data permits, on the travel footprint of its eight directorates and numerous departments. It has more than 100 premises. The corporate structure is shown below.



Informing our staff

PHE has introduced an e-learning sustainable development training package for all staff, in collaboration with our sustainability training provider, The Olive Consultancy. It takes only half an hour to complete and is mandatory at all levels, including for members of the National Executive.

The e-learning package provides staff with a sound background to sustainable development, setting it in the context of climate change and why our impact upon the environment in which we live is important. It provides information on carbon management and PHE's sustainability commitments, our plans and policies, and how staff can contribute. There are sections on energy, waste, green procurement, legislation, water and biodiversity. It concludes with a section on our travel footprint.

To support this basic package, we provide additional more specialist training through The Olive Consultancy on a broad range of related topics, including:

- Sustainable development for directors and senior managers
- Environmental awareness (accredited by the Institute Environmental Management & Assessment)
- Environmental management system implementation (ISO 14001)
- Environmental legislation
- Carbon and energy management (accredited by the Institute Environmental Management & Assessment)
- Waste awareness (certificated by the Chartered Institution of Waste Management)

Although designed for those working specifically in these areas, these courses are available to all staff in PHE who require them. We also provide supporting information for our staff via our intranet, including a sustainable development champion's handbook, guidance on sustainable conferences and events (jointly developed with the Chartered Institute for Environmental Health and the NHS Sustainable Development Unit), and details of our carbon reduction delivery plan.

PHE's overall carbon footprint

The carbon footprint for the former HPA for 2012/13 has been determined from data gathered during the year and is presented below. The carbon footprint for other parts of PHE's inherited estate has been determined using government formulae for offices, and is also shown below. These data have

then been combined and recast, to give an estimated carbon footprint for PHE for 2012/13, had the organisation been in existence for that year. This provides an indicative carbon footprint for PHE, but must be interpreted with caution. Moreover, there are no travel data for the eleven non-HPA sender organisations, so the actual footprint will be higher. A simple extrapolation based on the per capita travel footprint for HPA gives indicative levels but this too must be interpreted with caution at this time, as the nature of the business of all sender organisations is not the same.

These data will be used in the following year as a cross-check on data currently being gathered for PHE's operational activities for 2013/14, and the organisations actual carbon footprint will be re-based in 2014 to give a more accurate baseline year for the agency.

It therefore follows that the published Greening Government targets cannot easily be applied to PHE, as they were developed with an original baseline year of 2009/10, and re-based the following year. PHE will therefore strive to reduce its carbon footprint by a proportionate amount but must gather further data to establish what might be possible. More detailed targets will therefore be developed during 2013/14.

Our energy footprint

Data have been collated for the estate of the former Health Protection Agency, as given in the table on the following page. These have been reconfigured and presented according to PHE 'premises ownership' on subsequent pages, thereby allowing them to be seen in the context of the new organisation. The columns marked 'other' include estimated data for the premises which are part of PHE but were formerly part of other (non-HPA) sender organisations. These data have been calculated using DEFRA formulae for carbon emissions based on the net internal area of offices.

The travel data for the HPA on the following page cannot be treated in a similar way as there is no reliable way to determine the amount of travel undertaken by the other (non-HPA) sender organisations.

Estate emissions from the former Health Protection Agency, 2012/13

2012/13 05.07.12 v1.9	Porton	FPP	Blg 1	Beck Farm	Chilton	Glasgow	Leeds Cookridge	Cumbria	Cardiff	Colindale	MRU	South Mimms	HPS Offices	MS Labs	Bristol	Victoria	Total
	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e
Natural Gas	4434.43	8.14	8.63	0.00	396.05	4.03	29.82	0.53	1.78	1648.15	14.25	2525.14	153.37	263.44	0.16	27.49	9515.41
Gas Oil	66.71	1060.65	0.00	248.73	0.85	0.00	0.00	0.00	0.00	102.72	0.00	7.63	0.00	0.00	0.00	0.00	1487.29
Electricity	6601.36	613.64	5.12	27.57	763.08	127.21	46.58	2.00	6.67	3595.43	68.02	4387.23	568.63	1244.55	179.62	291.39	18528.11
Heat or Steam	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	166.30	0.00	166.30
Process Emissions	243.44	0.00	0.00	0.00	3.78	0.00	0.00	0.00	0.00	7.75	0.00	76.96	0.00	0.00	0.00	0.00	331.93
Water supply	28.65	11.62	0.21	0.21	1.57	0.18	0.13	0.02	0.05	16.89	0.19	15.67	0.74	2.04	0.53	0.62	79.31
Water (Waste)	56.04	20.19	0.02	0.00	2.55	0.35	0.25	0.00	0.00	33.54	0.18	22.88	1.46	3.98	1.03	0.00	142.47
Landfill Waste	2.97	0.00	0.00	0.00	2.06	6.60	0.29	0.00	0.00	0.00	0.00	8.91	0.00	0.00	4.72	0.07	25.61
Total	11433.60	1714.26	13.98	276.51	1169.93	138.37	77.07	2.55	8.50	5404.48	82.64	7044.43	724.20	1514.01	352.35	319.57	30276.43

DIVISION	Owned/ Leased Vehicle	Regular User/ Personal	Train	Hire Cars	Bus	Underground	Couriers	Air Freight	Domestic Flights	EU Flights	Outside EU Flights	Taxi	Total
	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2	tCO_2
Communications	1.13	5.92	5.55		0.01	0.03	0.08	0.00	0.51	0.00	0.00	0.10	13.31
CRCE	32.48	57.92	21.34	2.30	0.17	0.02	6.95	0.00	24.18	50.49	58.02	0.62	254.48
Finance and Resources Division	0.04	40.60	22.93	5.03	0.03	0.03	17.15	0.02	5.32	4.30	20.47	0.53	116.44
HPS Colindale	0.05	14.38	9.64		0.02	0.08	31.47	0.00	2.75	19.60	32.88	0.40	111.28
HPS National Functions & Centre	0.19	22.25	18.79	15.78	0.02	0.02	9.06	0.16	9.61	5.27	47.65	0.19	128.97
HPS Regions	0.00	134.95	42.29	0.28	0.13	0.08	12.48	0.00	1.15	0.36	4.86	0.73	197.30
Human Resources	0.00	25.44	6.81	0.64	0.32	0.03	1.94	0.00	0.00	0.00	0.00	0.07	35.25
MS Divisional Office	0.00	0.68	2.71		0.00	0.00	1.08	0.00	0.00	0.00	9.78	0.02	14.26
MS Site Operations	0.00	1.62	1.87	0.72	0.01	0.01	85.90	0.03	0.00	4.36	11.32	0.04	105.88
MS: Development and Production	1.33	0.92	2.08	2.21	0.01	0.00	77.75	0.03	0.30	1.64	5.78	0.04	92.08
MS: Microbiology Research Services	13.02	7.19	3.66	6.53	0.04	0.01	86.20	23.01	1.75	16.69	72.85	0.23	231.19
MS: Reference Microbiology	0.00	7.57	7.38	0.23	0.01	0.07	19.45	3.10	5.59	23.60	40.52	0.15	107.66
MS: Specialist Microbiology	4.06	47.38	31.13	0.26	0.13	0.07	1071.53	20.02	2.92	8.43	13.53	0.67	1,200.12
NIBSC	0.00	4.25	2.99	0.65	0.01	0.01	22.13	1.05	1.33	9.01	36.11	0.33	77.87
Public Health Strategy	0.00	0.37	4.49	1.38	0.01	0.01	5.52	0.00	9.33	12.27	152.10	0.20	185.69
R & D	0.00	1.04	1.67	0.02	0.04	0.00	1.34	0.06	1.16	2.70	1.61	0.06	9.69
Total	52.30	372.47	185.34	36.01	0.95	0.48	1,450.02	47.47	65.91	158.72	507.44	4.37	2,881.47

Estates emissions for 2012/13, recast by PHE premises owner

Director	Chief Operating Officer												
Site	Porton (Main)	Porton (FPP)	Beck Farm	Colindale	Victoria	Exeter	Fareham	Letchworth	Sheffield	Bristol	Kidderminster	Other[1]	Total
Emissions Source	tCO_2e	tCO_2e	tCO_2e	tCO2e	tCO2e	tCO2e	tCO2e	tCO2e	tCO2e	tCO2e	tCO2e	tCO_2e	tCO_2e
Natural Gas	4406.00	8.09	0.00	1637.74	27.31	0.00	5.09	5.18	4.03	0.16	5.18	381.22	6480
Gas Oil	64.81	1030.36	241.62	99.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1436.58
Emissions from Purchase of Electricity (S2)	5651.31	525.33	23.61	3077.98	249.46	8.27	4.48	16.54	12.89	153.77	16.54	1466.67	11206.85
Emissions from Transmission & Loss (S3)	483.21	44.92	2.02	263.18	21.33	0.71	0.38	1.41	1.10	13.15	1.41	125.39	958.21
Emissions from Import of Heat or Steam	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	166.30	0.00	0.00	166.3
Process Emissions (Refrigeration)	243.44	0.00	0.00	11.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	254.52
Water supply	29.00	11.77	0.21	17.09	0.63	0.03	0.02	0.03	0.02	0.53	0.02	3.94	63.29
Water (Waste)	56.72	23.01	0.42	33.44	1.23	0.05	0.04	0.05	0.03	1.04	0.05	7.70	123.78
Landfill Waste	3.13	0.00	0.00	0.00	0.07	0.04	0.03	0.04	0.02	4.97	0.04	7.05	15.39
Total	10937.61	1643.48	267.88	5140.30	300.03	9.10	10.04	23.25	18.09	339.92	23.24	1991.97	20704.92

Other: this column contains data for smaller premises which are part of a given directorate. They are listed in the pages ahead, by directorate.

Director	Health Protection					Chief Knowledge Officer									Health and Wellbeing		PHE Total
Site	Chilton	Glasgow	Leeds	Other[2]	Total	Oxford	Salisbury	Battle	Birmingham	York	Wellington House	Leicester	Other[3]	Total	Skipton House (formerly NTA)	Total	
Emissions Source	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	**tCO_2e**
Natural Gas	393.55	4.03	29.63	21.67	448.88	3.53	6.64	2.43	4.09	5.82	43.67	0.36	151.28	217.82	14.81	14.81	**7161.51**
Gas Oil	0.82	0.00	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	**1437.40**
Emissions from Purchase of Electricity (S2)	653.26	108.90	39.88	69.22	871.26	11.29	21.21	7.75	13.06	18.59	139.47	1.14	483.22	695.73	47.30	47.30	**12821.14**
Emissions from Transmission & Loss (S3)	55.86	9.31	3.41	5.92	74.5	0.97	1.81	0.66	1.12	1.59	11.93	0.10	41.36	59.54	4.04	4.04	**1096.29**
Emissions from Import of Heat or Steam	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	**166.30**
Process Emissions (Refrigeration)	3.78	0.00	0.00	0.00	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	**258.30**
Water supply	1.59	0.18	0.13	0.05	1.95	0.01	0.04	0.02	0.02	0.04	0.46	0.00	1.01	1.60	0.13	0.13	**66.97**
Water (Waste)	3.11	0.36	0.25	0.10	3.82	0.01	0.08	0.03	0.03	0.08	0.90	0.00	1.98	3.11	0.25	0.25	**130.97**
Landfill Waste	2.17	6.96	0.30	0.08	9.51	0.01	0.06	0.03	0.03	0.06	0.71	0.01	1.56	2.47	0.20	0.20	**27.56**
Total	1114.14	129.74	73.60	97.04	1414.52	15.82	29.84	10.92	18.35	26.18	197.14	1.61	680.41	980.27	66.73	66.73	**23166.43**

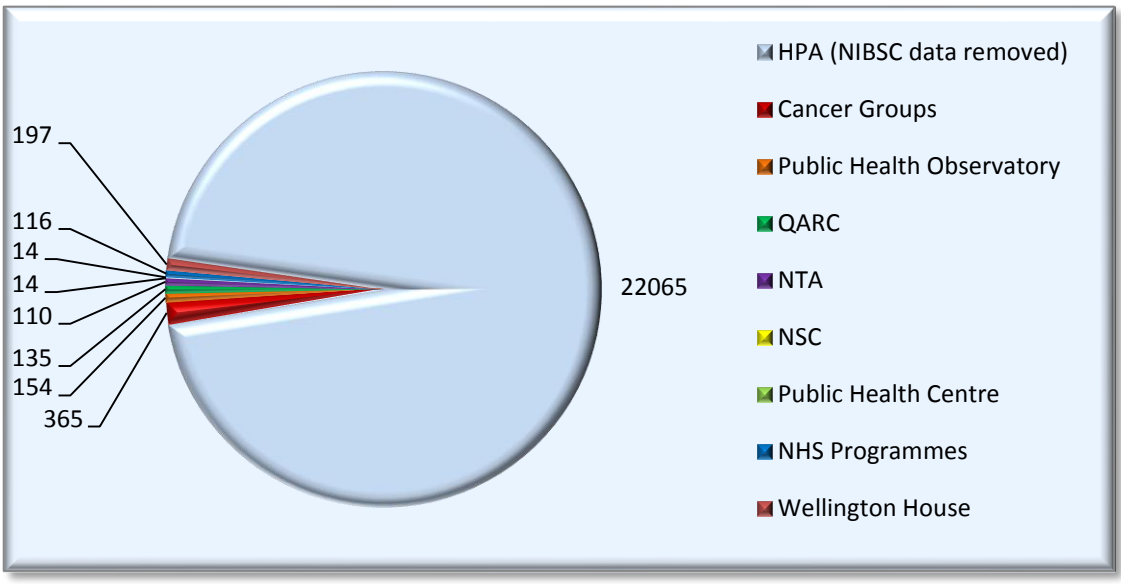
PHE premises in the above tables listed as 'Other'

COO (Other)[1]	CKO (Other)[2]	HP (Other)[3]
National Treatment Agency Leeds	Northern & Yorkshire CR (Leeds)	PHE Cumbria
National Treatment Agency Manchester	Trent CR (Sheffield)	PHE Cardiff (CRCE)
National Treatment Agency Newcastle	Cancer Intelligence Service Manchester	PHE Springfield University Hospital
PHE (Leeds) HPS	North West PHO (Liverpool)	PHE Heathrow Terminal 3
PHE (York 1) MS Lab	North East PHO (Stockton on Tees)	PHE Heathrow Terminal 4
PHE (York 2) HPS	QARC NW - (Oldham)	PHE Heathrow Terminal 5
PHE (Manchester 1) MS Lab	QARC Yorkshire - (Leeds)	
PHE (Manchester 2) MS Lab	QARC NE - (Newcastle)	
PHE (Manchester) HPS	QARC NW - (Bolton)	
PHE (Preston) FW&E	QARC NW - (Liverpool)	
PHE (Newcastle 1) MS Lab	Cancer Screening Programmes - (Sheffield)	
PHE (Newcastle 2) MS Lab	NSC North East (Newcastle)	
PHE (Newcastle 3) MS Lab	NSC North West (Wigan)	
PHE (Liverpool) HPS	ECRIS- Cambridge	
PHE (Chorley) HPS	ECRIS Norwich & Norfolk	
National Treatment Agency - Nottingham	WMCIU 1st Floor - Birmingham	
National Treatment Agency – Birmingham	WMCIU Suite 14 - Sutton Coldfield	
National Treatment Agency - Cambridge	Easter Region PHO Cambridge	
Public Health Centre	East Midlands PHO - Mansfield	
PHE Birmingham (Heartlands) MS Lab	QARC East Midlands - Nottingham	
PHE Birmingham (Goodhope) MS Lab	QARC Eastern - Histon	
PHE Cambridge (Addenbrookes) MS Lab	NSC East Midlands - Enderbry	
PHE Cambridge – HPS	NSC East of England - Cambridge	
PHE Witham – HPS	NSC West Midlands - Birmingham	
PHE Thetford – HPS	NSC Yorkshire & the Humber - Grimsby	
PHE Nottingham – HPS	Cancer Intelligence Unit - SPH (Oxford)	
PHE Leicester – HPS	South West Cancer Registry (Bristol)	
PHE Birmingham – HPS	South West PHO 1st Floor (Bristol)	
PHE Stafford – HPS	South West PHO 2nd Floor (Bristol)	
National Treatment Agency (Bristol)	QARC SW Breast, Bowel (see SWPHO data)	
PHE Porton (Building1)	QARC SW Cervical (see SWPHO data)	

COO (Other)[1]	CKO (Other)[2]	HP (Other)[3]
PHE Bristol (BRI)MS Lab	QARC South Central	
PHE Southampton MS Lab	NHS Abdominal Aortic Aneurysm Screening Programme - (Cheltenham)	
PHE Gloucester MS Lab	Diabetic Retinopathy Screening Programme - (Cheltenham)	
PHE Horsham HPS	Fetal Anomaly Screening Programme - (Exeter)	
PHE Ashford HPS	Thames Cancer Registry	
PHE Landsdown Court HPS	London Health Observatory (LHO)	
PHE Bristol HPS	QARC London	
PHE Ferndown HPS	National Cancer Intelligence Network - London	
PHE St Austell HPS	UK National Screening Committee - London	
PHE Colindale (MRU Barts)	Newborn Hearing Screening Programme & Newborn Infant Physical Examination - London	
PHE Lower Marsh (HPS)	NHS Sickle Cell and Thalassaemia Screening Programme - London	
PHE Newark Street (MS Labs)	UK Newborn Screening Programme Centre London	
	NSC London	
ECRIS = Eastern Cancer Registration & Information Service		

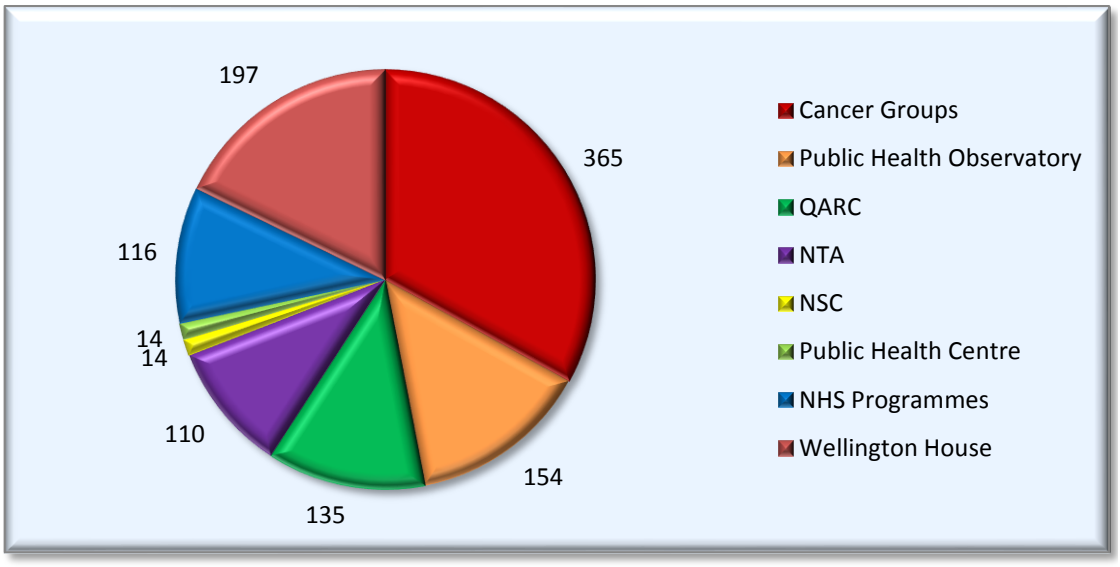
Carbon footprint of the PHE estate

The major proportion of the carbon footprint of the PHE estate comes from a single sender organisation (the former HPA), as shown below. These data exclude emissions from business travel, gas oil, imported steam and other waste as this is not calculated from the office estate. It accounts for 22,065 tonnes CO_2e out of a total PHE estate footprint of 23,166 tonnes CO_2e.



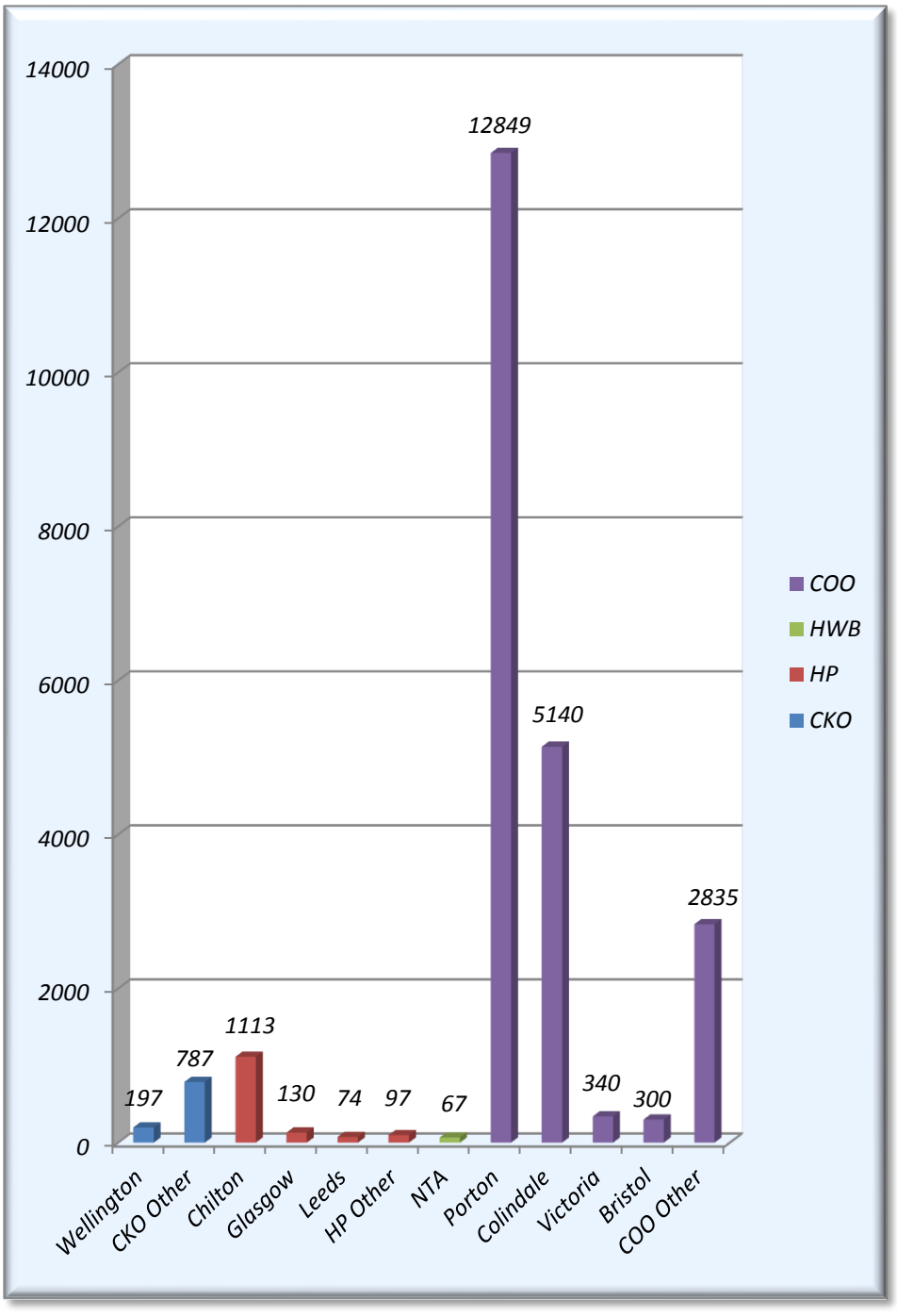
Estimated carbon footprint of PHE's inherited estate (tCO_2e)

The carbon footprint relating to the inherited estate from the non-HPA sender organisations has been further broken down, as shown below.



Estimated carbon footprint of PHE's sender bodies (HPA excluded) (tCO_2e)

When data are analysed by PHE premises owner, as might be expected, it can be seen that the operations directorate (which contains laboratories and manufacturing facilities) has the largest level of greenhouse gas emissions. The graph below shows these broken down by premises. The smaller premises are grouped as “other” for the Chief Knowledge officer, Chief Operating Officer and Health Protection directorates.



Carbon footprint due to greenhouse gas emissions, by premises

This page is intentionally blank

Our travel footprint

As PHE is a new organisation, it does not yet have an established carbon footprint for its travel and many of the sender organisations had not collected data about their travel activities. Reliable data do, however, exist for the former HPA. It is important to note that this means the data cannot be used to estimate a travel footprint for PHE (had it existed in 2012/13), as the nature of the business has changed and travel patterns for the remaining 11 sender organisations are still being established.

The data presented below therefore reflect the travel figures gathered for the former HPA, but presented in relation to the current structure of Public Health England. They do not represent the complete picture (even for the directorates represented) and it will not be possible to establish a clear travel carbon footprint for the whole of PHE until next year.

The data for carbon emissions due to our use of couriers and air freight are included as these emissions would not have arisen had it not been for our business. Together, these significantly distort the shape of the travel footprint so data are also presented with these two categories omitted, giving a clearer picture of the carbon footprint due to the business travel of our own staff.

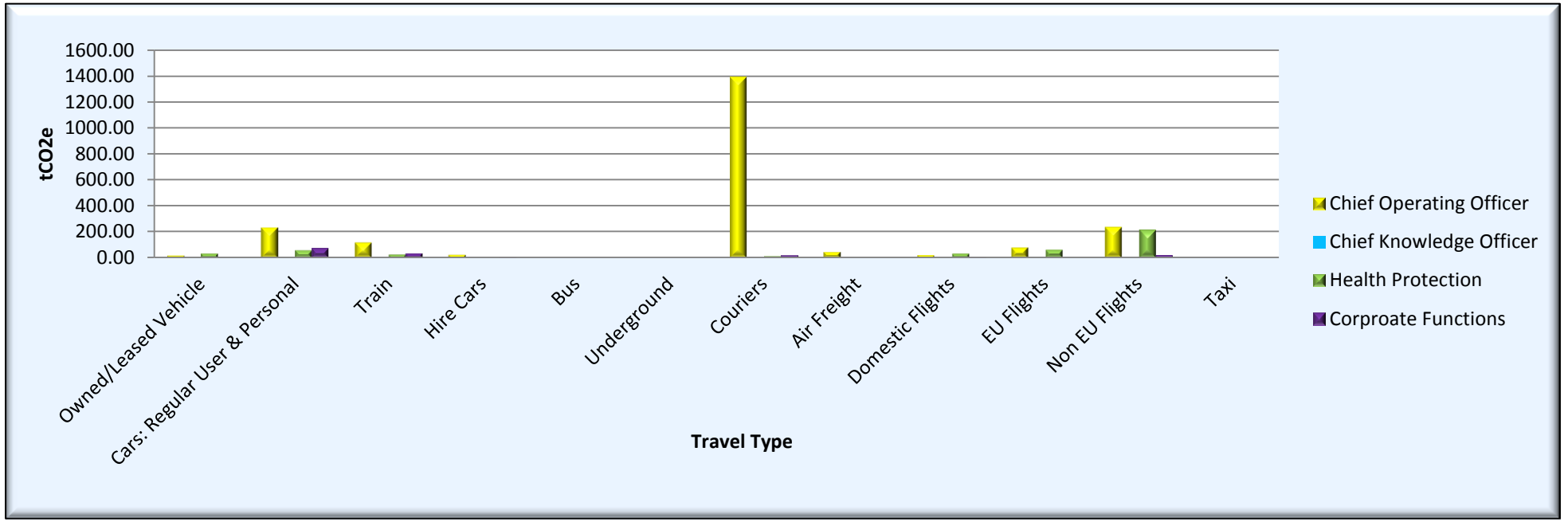
The four areas where a reasonable breakdown can be provided are:

- Operations Directorate (including the major sites at Porton and Colindale)
- Knowledge and Intelligence Directorate
- Health Protection Directorate
- Corporate functions (Human Resources, Finance and Communications)

Separate graphs are also presented for these areas, to show the relative carbon emissions generated by staff in these areas by type of travel.

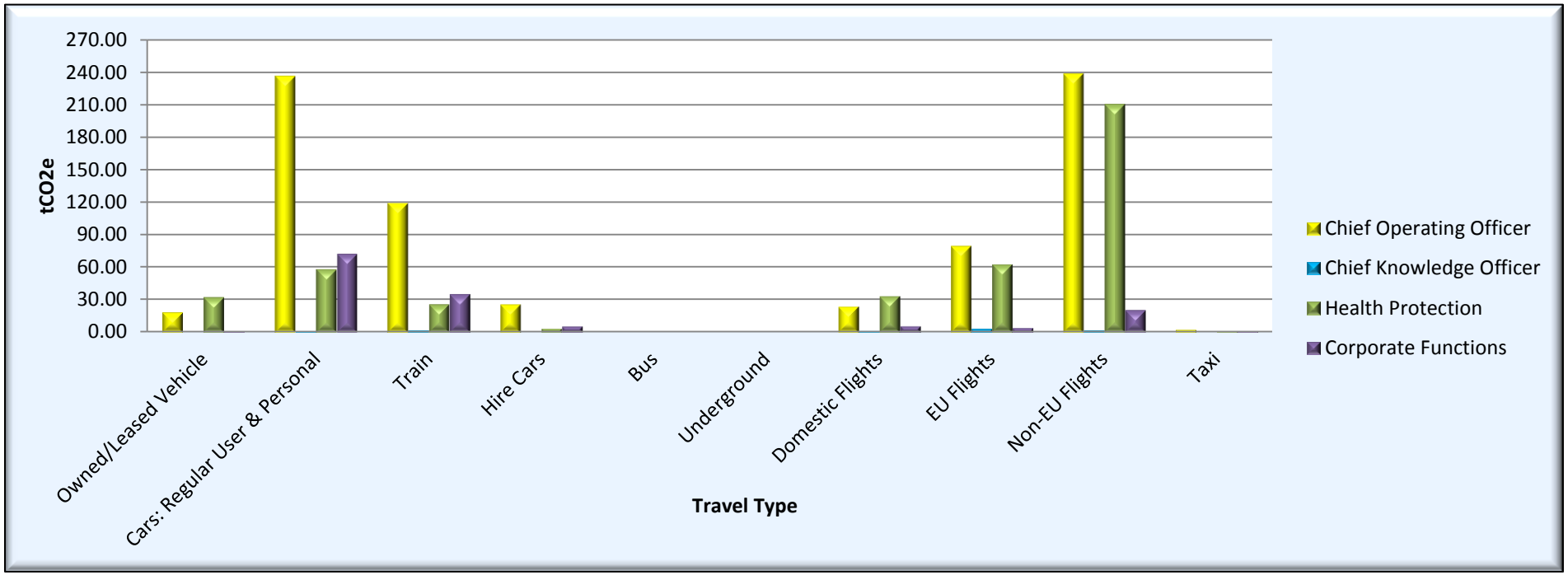
Indicative business travel 2012/13

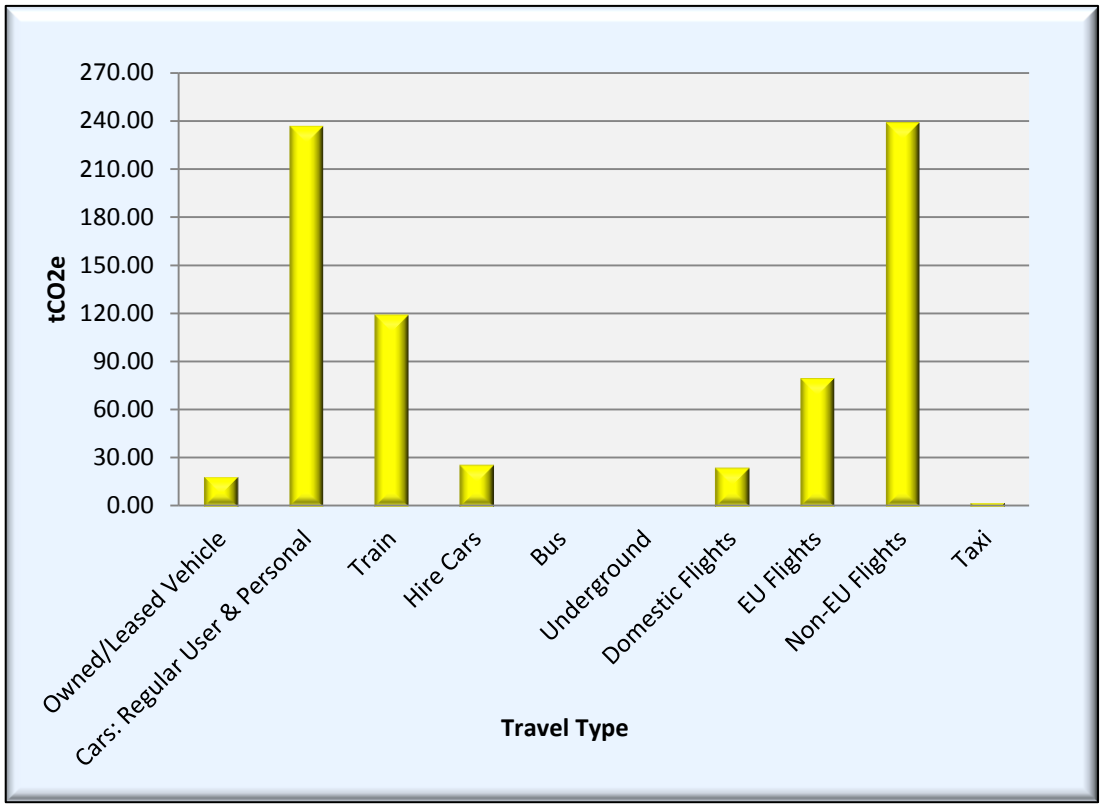
Directorate	Owned/Leased Vehicle	Cars: Regular & Personal User	Train	Hire Cars	Bus	Underground	Couriers	Air Freight	Domestic Flights	EU Flights	Non-EU Flights	Taxi	Total
Chief Operating Officer	18.65	236.94	119.55	26.00	0.36	0.34	1394.91	46.35	24.08	79.95	239.14	2.47	2188.75
Chief Knowledge Officer	0.00	1.04	1.67	0.02	0.04	0.00	1.34	0.06	1.16	2.70	1.61	0.06	9.69
Health Protection	32.48	58.29	25.84	3.67	0.18	0.03	12.46	0.00	33.51	62.76	210.12	0.81	440.16
Corporate Functions	1.17	71.95	35.29	5.67	0.35	0.09	19.17	0.02	5.83	4.30	20.47	0.69	164.99



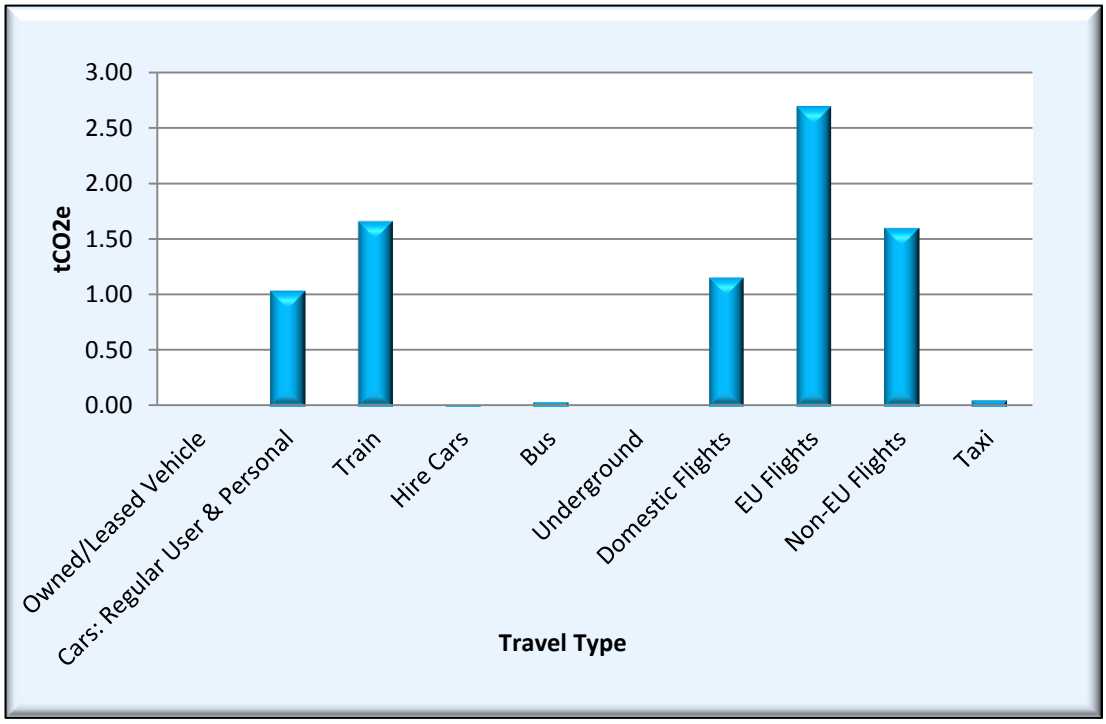
Indicative business travel 2012/13, excluding couriers and air freight

Owned/Leased Vehicle	Cars: Regular User & Personal	Train	Hire Cars	Bus	Underground	Domestic Flights	EU Flights	Non-EU Flights	Taxi
18.65	236.94	119.55	26.00	0.36	0.34	24.08	79.95	239.14	2.47
0.00	1.04	1.67	0.02	0.04	0.00	1.16	2.70	1.61	0.06
32.48	58.29	25.84	3.67	0.18	0.03	33.51	62.76	210.12	0.81
1.17	71.95	35.29	5.67	0.35	0.09	5.83	4.30	20.47	0.69

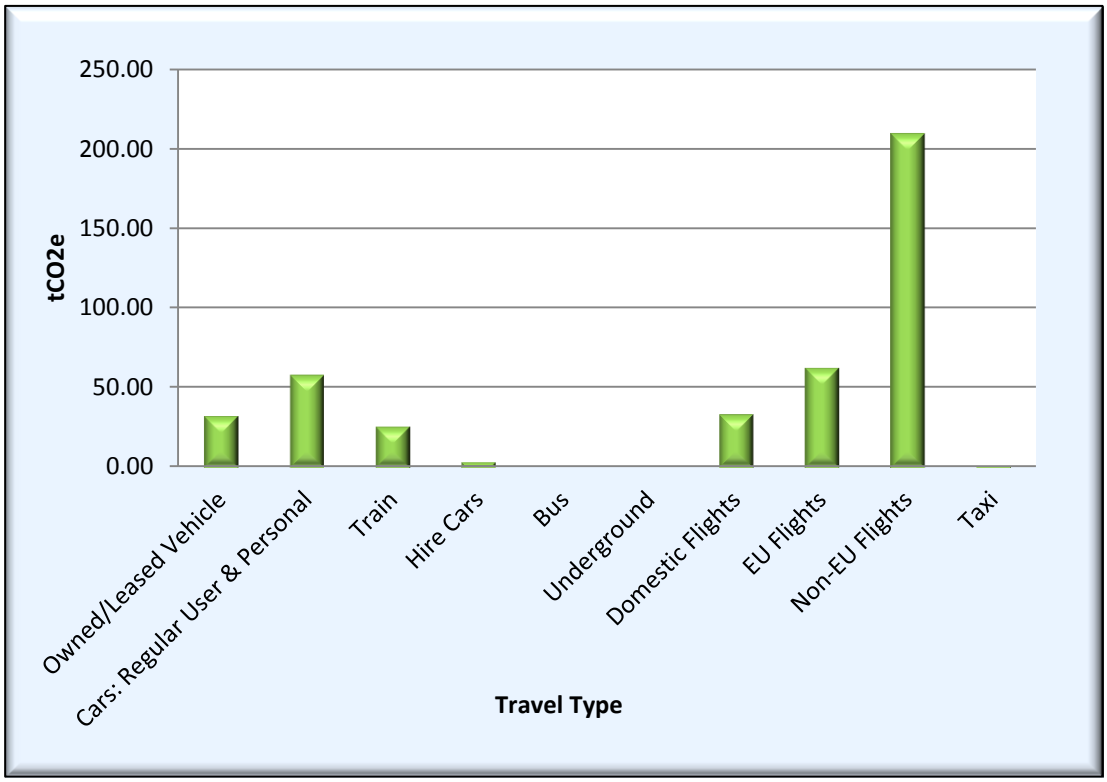




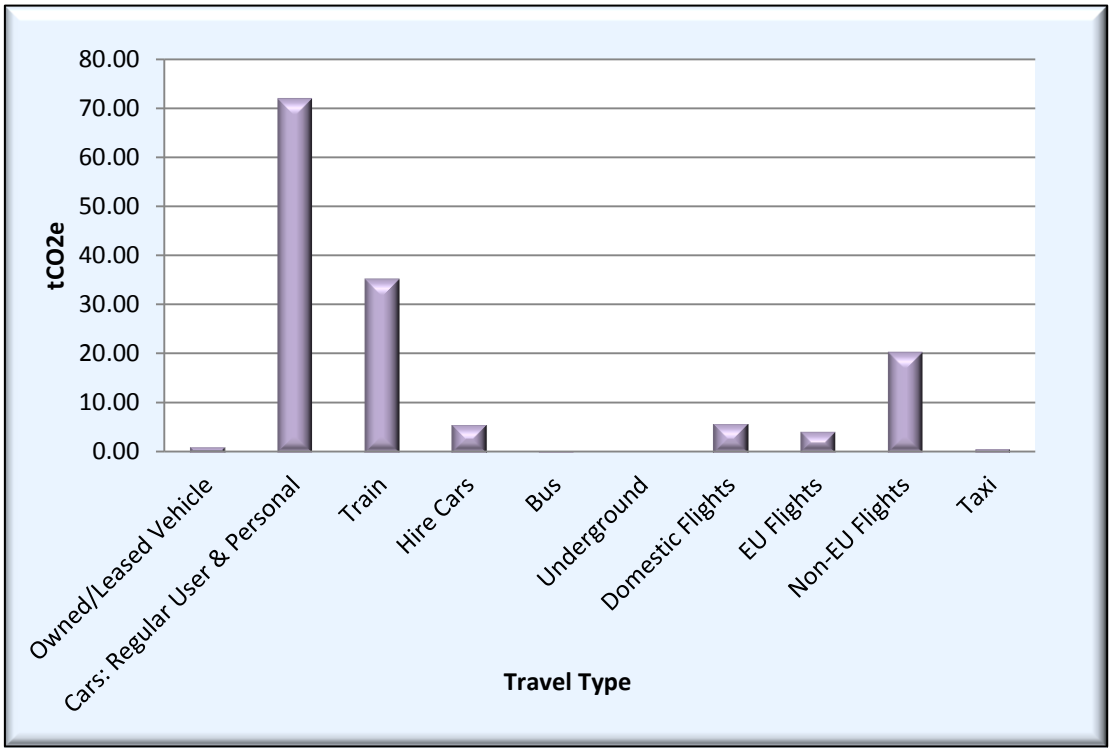
Business travel 2012/13: Operations Directorate



Business travel 2012/13: Knowledge & Intelligence Directorate



Business travel 2012/13: Health Protection Directorate



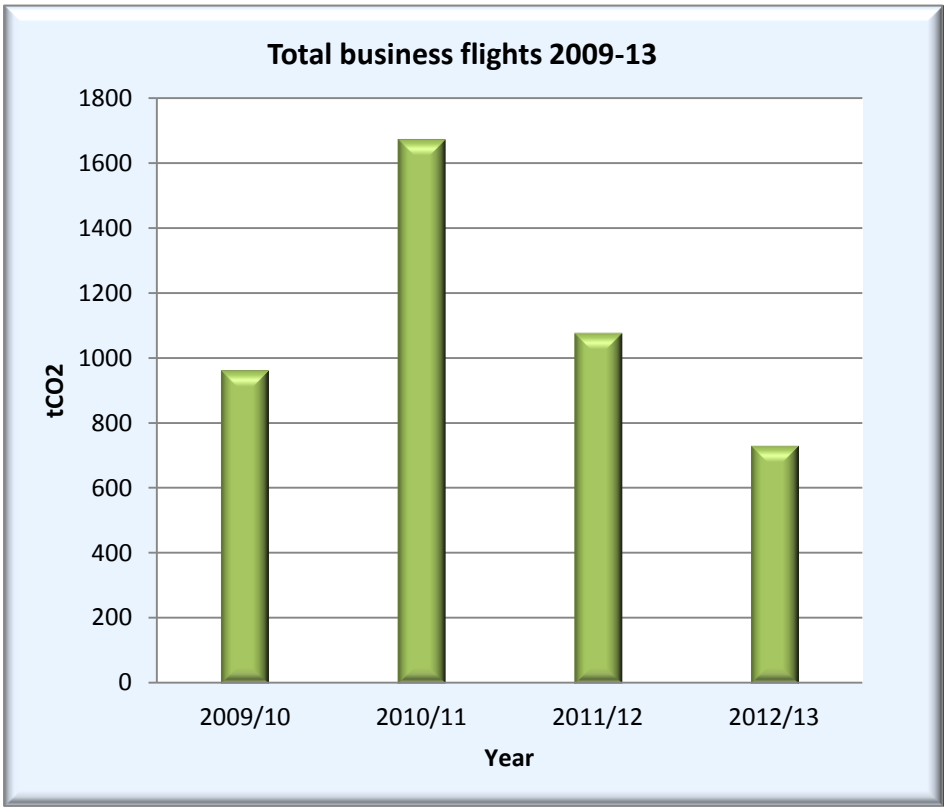
Business travel 2012/13: Corporate functions

Air travel

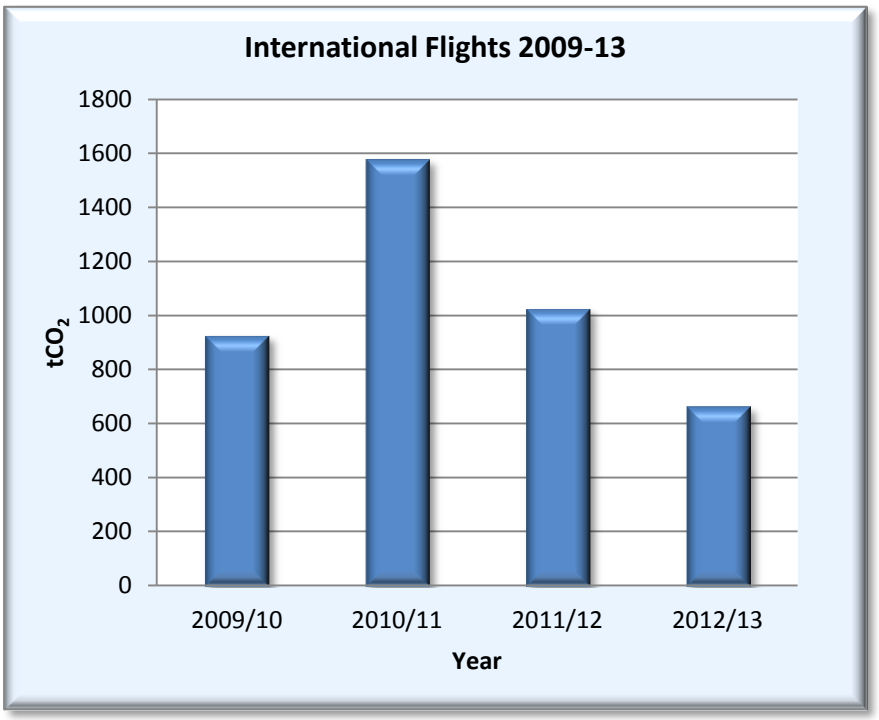
Air travel is one of the most polluting means of travel and where there are alternatives these should always be considered. Moreover, domestic air travel is a specific government target for reduction and while PHE does have offices which are widely geographically distributed, much of our travel could be undertaken by more carbon-efficient means, such as by train.

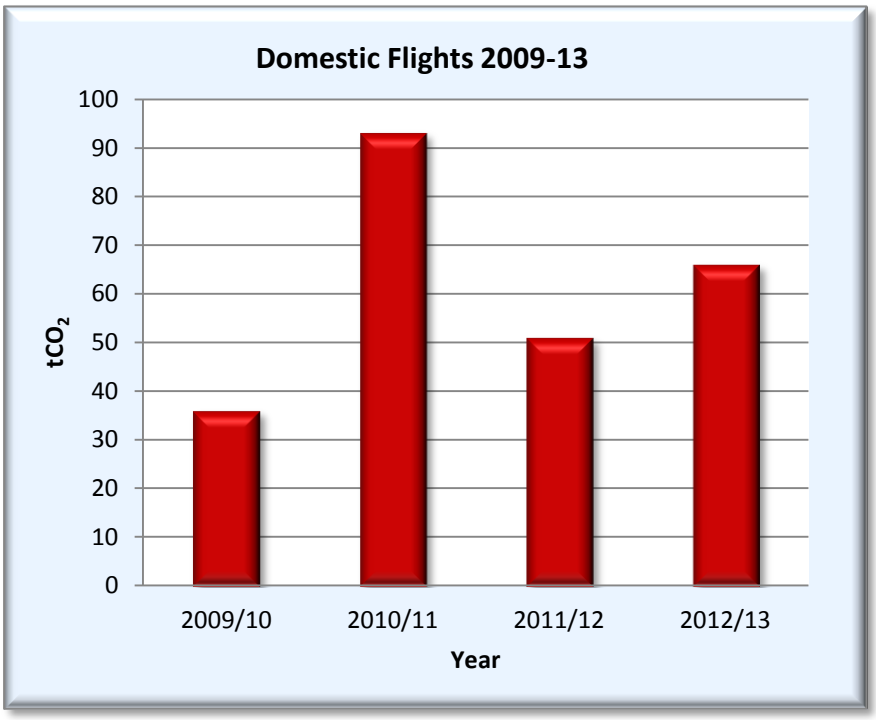
PHE acknowledges that some journeys may require air travel in order to complete a round trip within one day. However, we have a duty to minimise our domestic air travel wherever possible and this can also include western Europe. Destinations such as Paris and Brussels can be reached just as quickly by Eurostar from London, particularly when taking into account the extra time required to undergo airport check-in and security screening.

The data below relate to travel in the former HPA as there are currently no data available for other sender organisations.



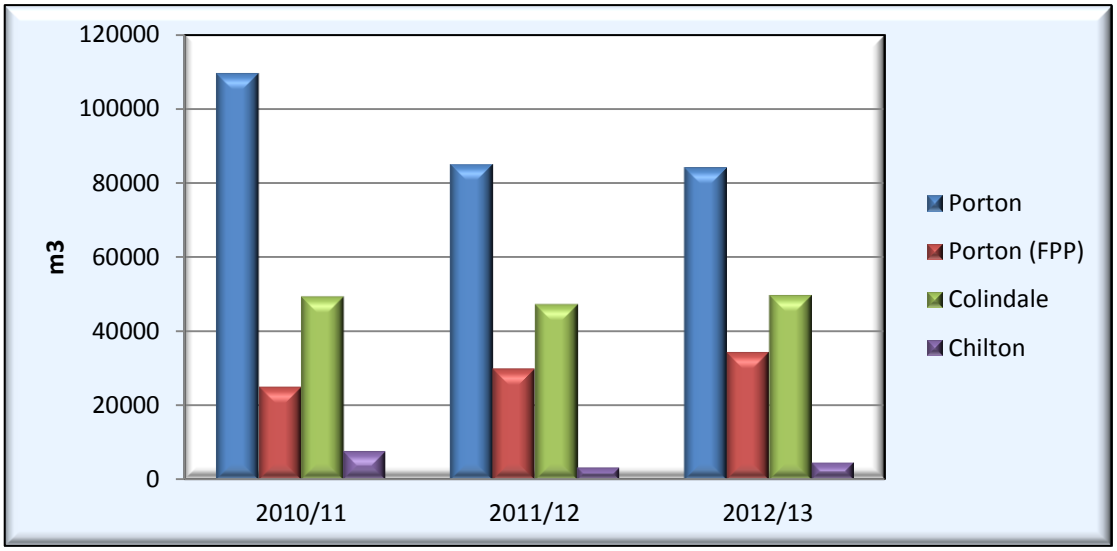
There has been a continuation of the trend of reduction in emissions due to air travel overall, although this is due to a reduction in international flights. The emissions due to domestic flights rose slightly, and we recognise that we therefore have more to do in this area.



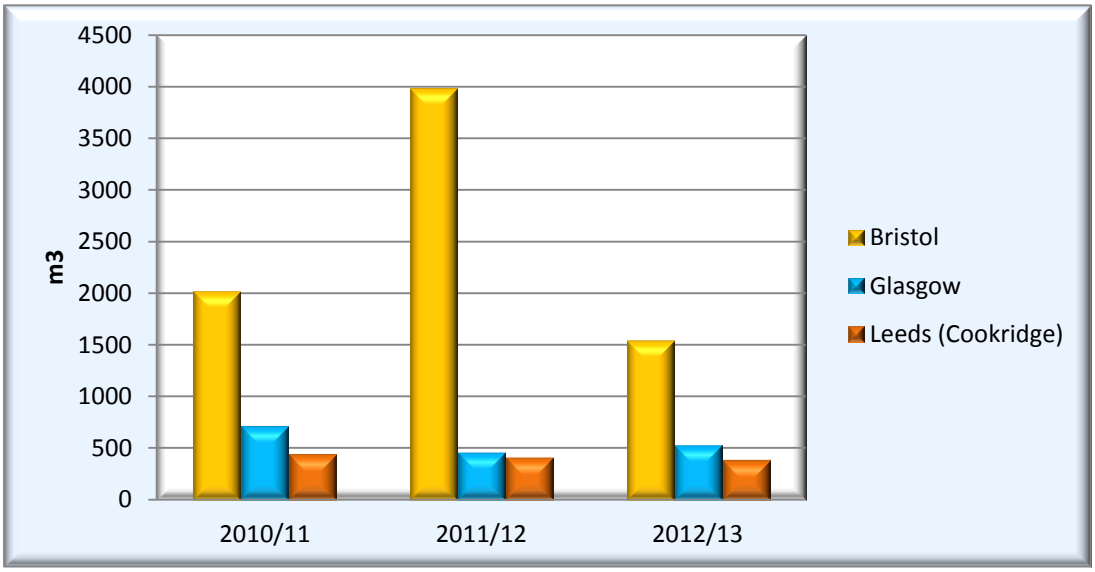


Water usage

The *greening government* targets for water are difficult to apply to much of the PHE estate as they relate to best practice for office use, and a lot of our water use relates to laboratories. As water provided to such premises is not supplied through separate ring mains to laboratories and to offices, the destination of the supply cannot be separately monitored in most instances. Historically, we have therefore set our own reduction targets for water usage, and have made significant progress with this over recent years. Usage for those owned sites where we have reliable data is shown below.



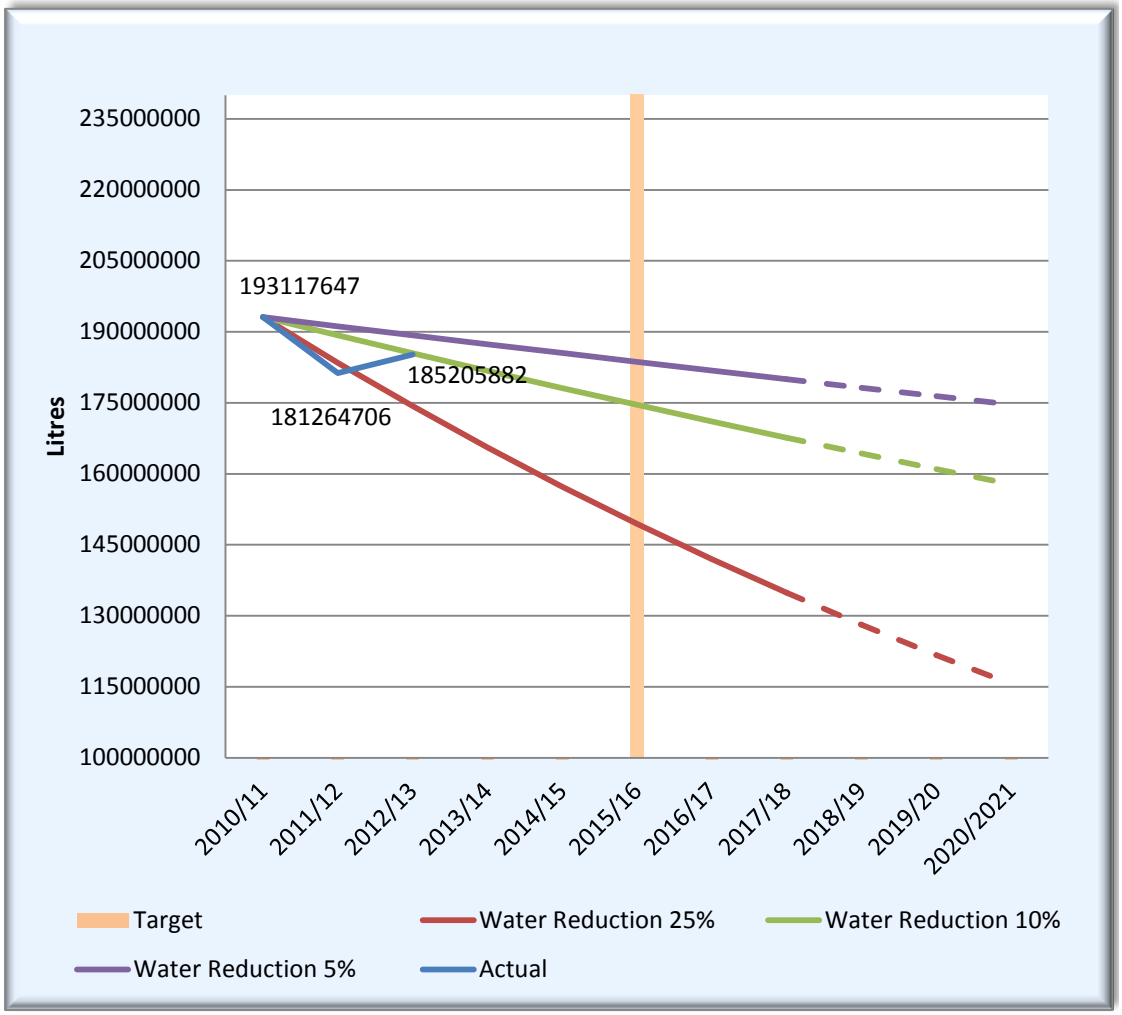
Water usage trend (larger owned sites)



Water usage trend (smaller owned sites)

The graph below illustrates our actual water usage between 2010 and 2013, based on historical data from the former HPA. The trend lines show reduction targets for 5%, 10% and 25%, from a baseline year of 2010. The figures have been corrected to remove water use at NIBSC, which was formerly part of the HPA but did not transfer to PHE. The vertical bar represents the year 2015, for which the *greening government* initiative sets specific targets for water use in an office environment.

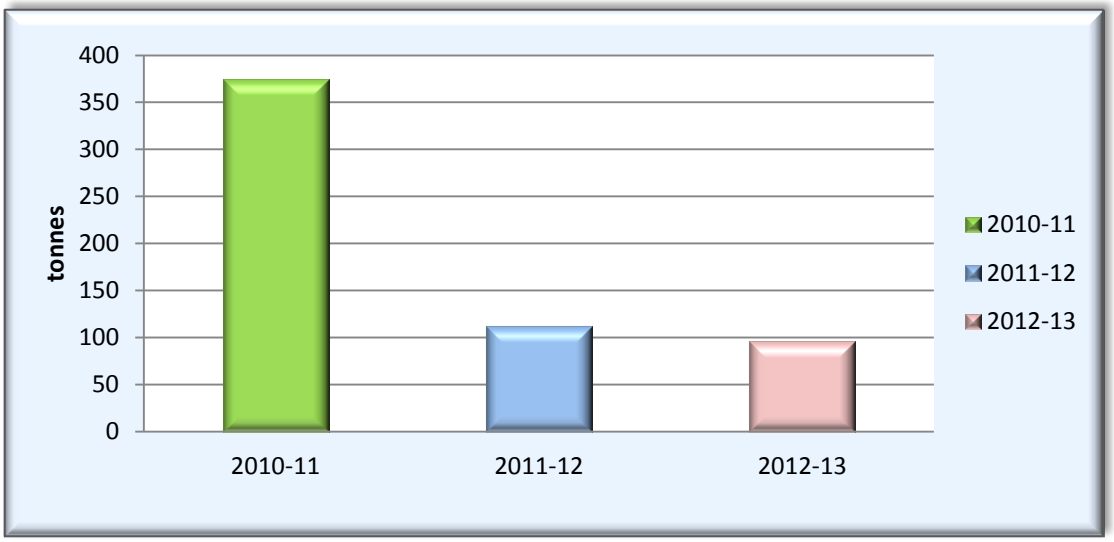
The small increase in actual usage during 2012/13 is believed to relate to an increase in manufacturing activity on the PHE Porton site, reflected in the increased consumption at the Fermentation Process Plant (FPP) in the graph above. There was also a small increase in water consumption on the Colindale site. We have not corrected these data for any change in operational activity and figures represent actual use of 193 million litres (2010/11), 181 million litres (2011/12) and 185 million litres (2012/13).



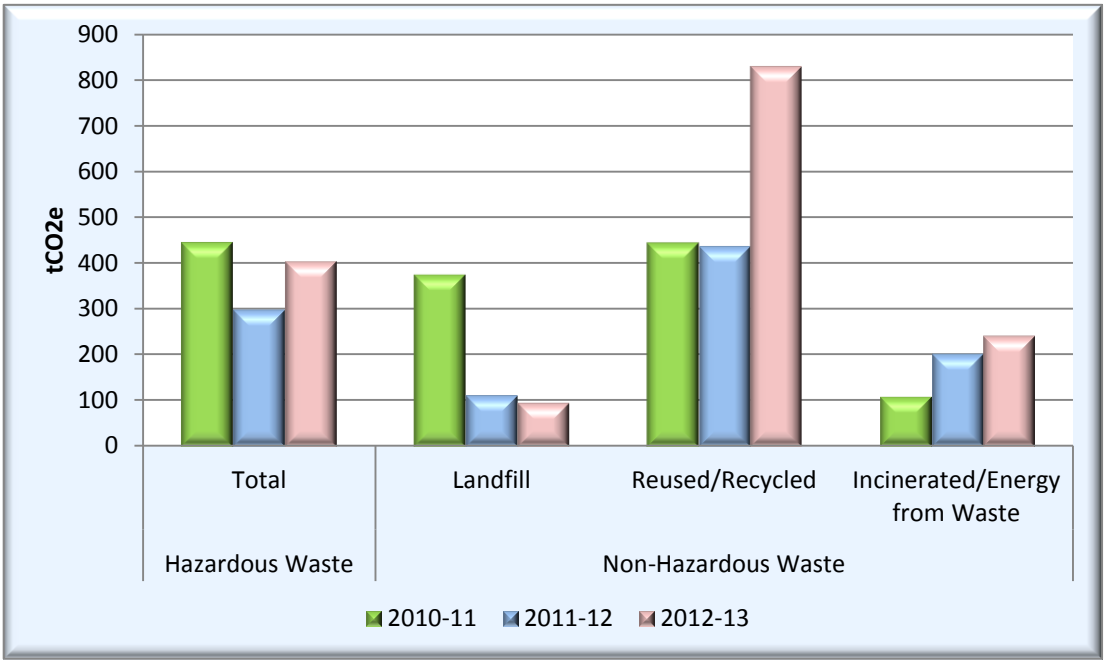
Water usage reduction targets, showing actual use for 2010-13 against 5%, 10% and 25% targets.

Waste

There has been a further slight reduction in the amount of waste sent to landfill during 2012/13, continuing the downward trend over recent years. We have continued to increase the amount of waste recycled and the amount of waste destined for “energy from waste” use and will continue to seek other ways to further reduce the total amount of waste generated by our activities.



Waste sent to landfill, 2010-13



Waste by category, 2010-13

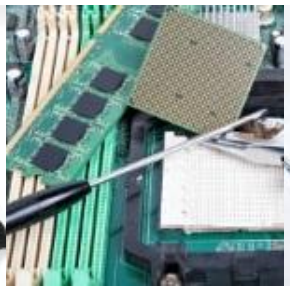
ICT waste

We are required by government to ensure that redundant ICT equipment is re-used (within government, the public sector or wider society) or responsibly recycled. Our other waste electrical and electronic equipment, when it reaches the end of its useful life, is treated in the same way. All of our waste electrical and electronic equipment was disposed of via a specialist contractor for either reuse or recycling and none was sent to landfill.

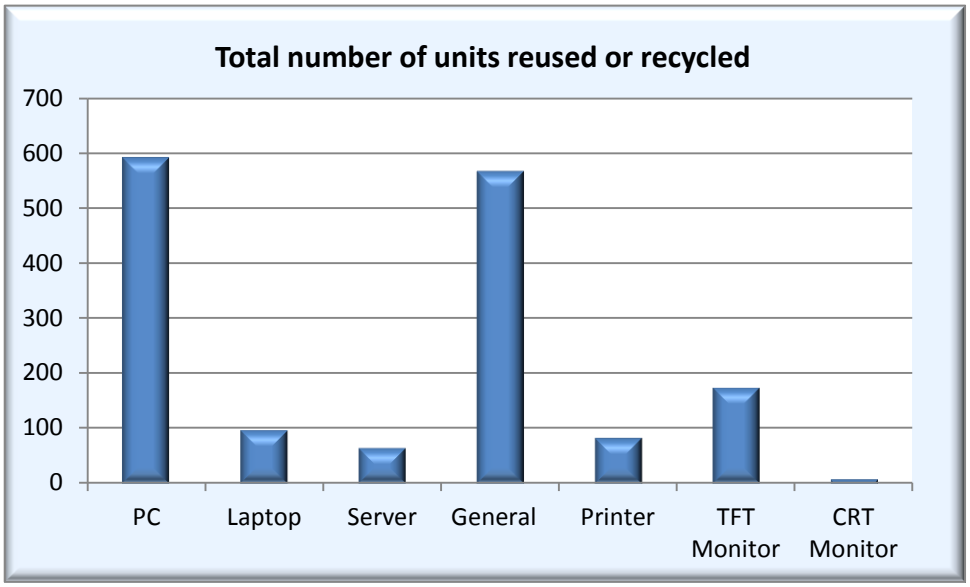
A breakdown of the ICT items disposed of in this manner in 2012/13 is given below.(Data relate to disposals by the former HPA).

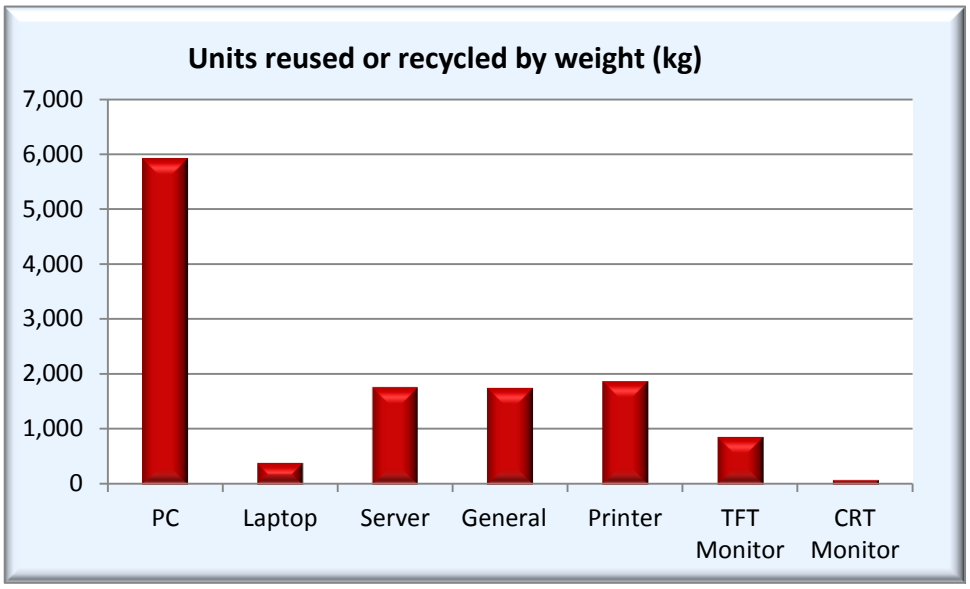
Item	Number of items reused	Weight of item reused (Kg)	Number of items recycled	Weight of items recycled (Kg)	Total Units reused or recycled	Weight reused or recycled (kg)
PC	131	1,310	462	4,620	593	5,930
Laptop	4	16	94	376	98	392
Server	24	654	41	1,117	65	1,771
General	0	0	568	1,764	568	1,764
Printer	83	1,886	0	0	83	1,886
TFT Monitor	94	470	81	405	175	875
CRT Monitor	1	11	7	80	8	91
TOTAL	337	4,347	1253	8,362	1590	12,709

Our ICT waste is disposed of by CDL Limited, via a consortium operated by University College London. CDL do not take white goods, so these are disposed of via another contractor.


Our ICT waste disposals are shown below; the graphs show the numbers and actual weight (kg), broken down by the type of equipment.

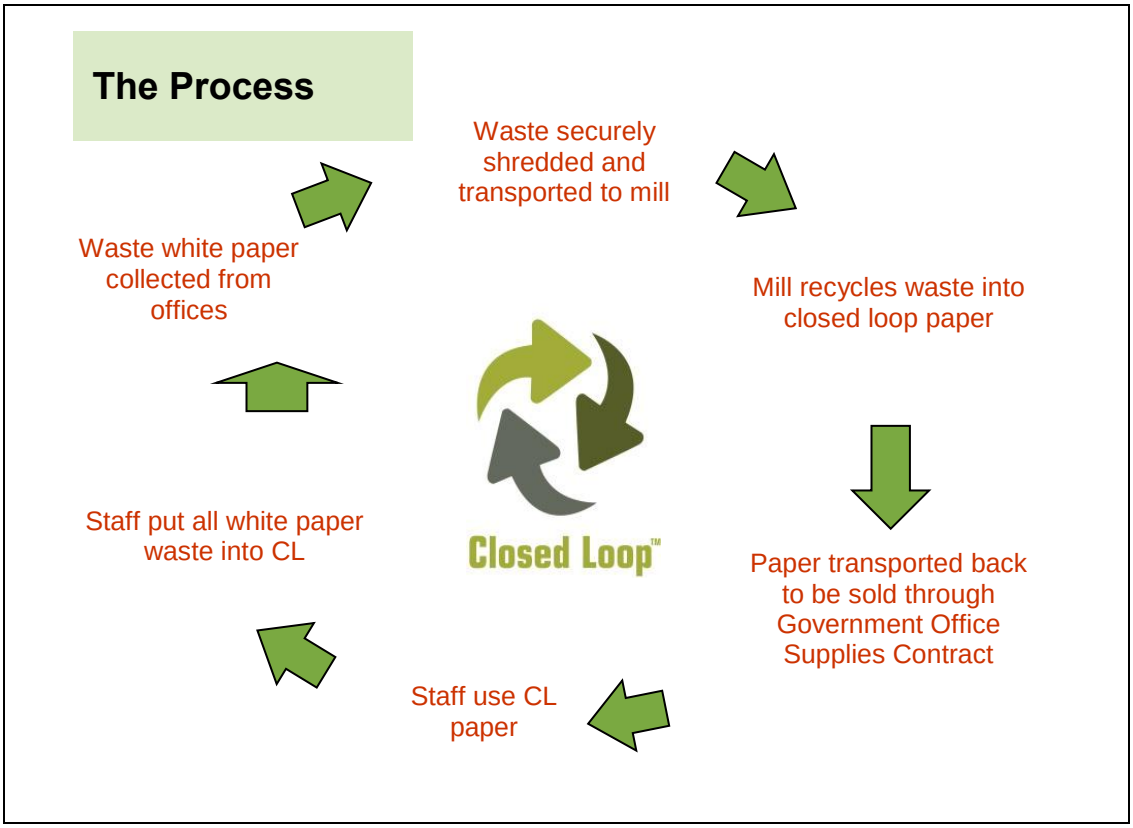







Paper usage

Paper usage is an area where government believes it can make significant savings through coordinated recycling. ‘Closed loop’ is a cross-Government initiative led by HMRC on behalf of the Government Procurement Service which aims to create both economic and environmental benefits by recycling government waste paper into paper products.



Under the ‘closed loop’ scheme, ‘white paper waste’ is securely collected and shredded. The waste is then pulped and recycled into ‘closed loop’ copier paper and provided back to Government as a competitive, quality end product.



The closed loop recycling scheme includes all of the following:

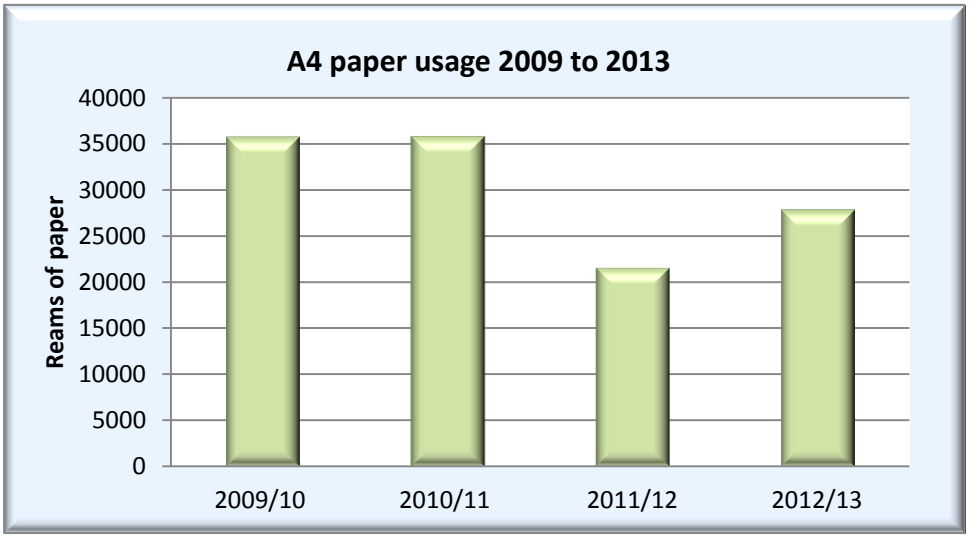
- Any type of white paper – even if it is heavily inked
- White envelopes – with or without windows
- Post it notes
- PROTECT and RESTRICTED marked office documents – white based paper only
- Office documents without protective markings – white based paper only
- Stapled or bound office documents (staples and bindings are removed during the recycling process)

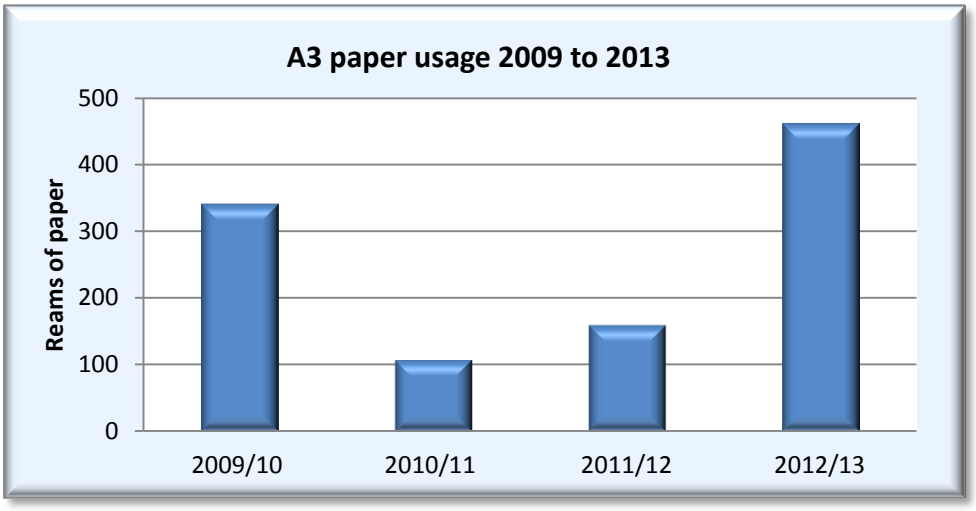
As part of its *Greening* Government initiative, there was a major drive in 2010/11 to reduce paper usage by 10% compared to the previous year. During 2009/11, the procurement contract for stationery, for the largest of PHE's sender organisations, transferred from Banner to Office Depot, making collection of data difficult. As full-year data were not available, usage had to be estimated. Moreover, this initiative started part-way through the year but obtaining reliable data remained an issue at that time. Analysis was further influenced by NIBSC (who were part of the HPA at that time) having used a different procurement contract. Nevertheless, the figures suggested that we did halt the perceived increase of previous years.

There has been a concerted move away from individual printers in PHE and wherever possible, multi-functional devices (which print, scan, copy and email) have been installed. These are set to default to double-sided, black and white printing by our IT department. Staff are encouraged not to print documents unless this is really necessary, and the roll-out of a large fleet of laptops to replace desktop computers has facilitated papers being taken to meetings electronically, rather than printed and then discarded immediately after the meeting.

PHE has several in-house newsletters for staff, and these are circulated entirely by electronic means, leading to significant paper savings.


The charts below show our estimated paper usage over the last four years. (Data relate to procurement by the former HPA.) The majority of paper used is 80 gsm and in the figures below, one ream is deemed to be 500 sheets.





Refrigerants

Refrigerant gases include some of the most damaging greenhouse gases and over recent years there has been a move to less damaging materials. Chloroflurocarbons have been banned for many years, but it is recognised that other gases are also dangerous in relation to their global warming potential and these are also being phased out.[14] For example, the EU is phasing out the use hydrochlorofluorocarbons (HCFC 22) from 2015.[15]

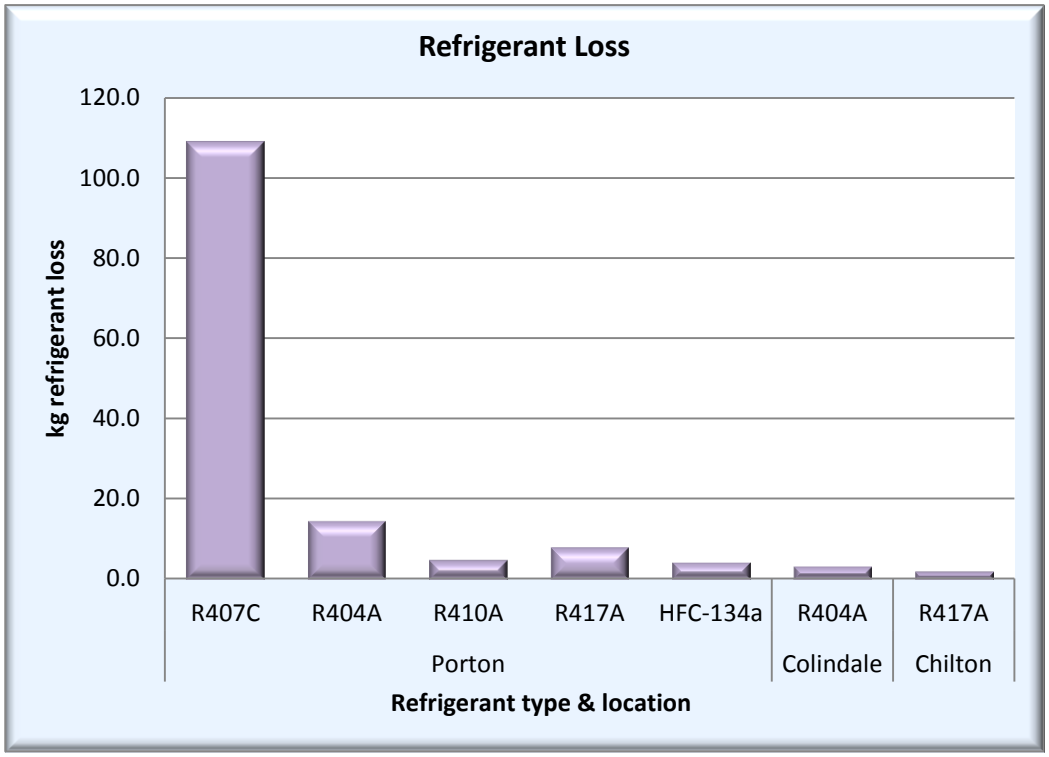
The table below shows the loss of refrigerant by type for the three largest owned sites of the PHE estate, along with their global warming potential (GWP) and tonnes CO_2 equivalent values.

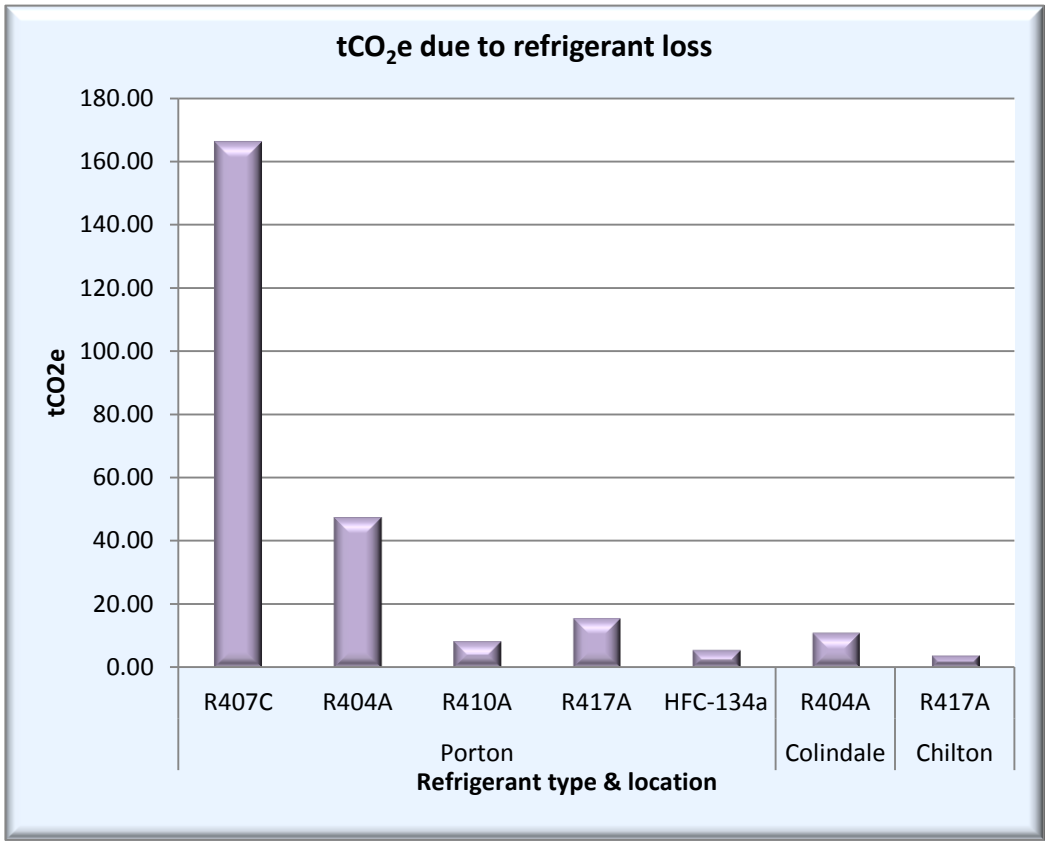
Facility / source description	Type of Refrigerant	Refrigerant Loss (kg)	GWP of refrigerant (CO_2e)	Emissions (tonnes CO_2)
Porton	R407C	109.0	1,526	166.28
	R404A	14.6	3,260	47.60
	R410A	4.9	1,725	8.45
	R417A	8.1	1,950	15.80
	HFC-134a	4.3	1,300	5.59
Colindale	R404A	3.4	3,260	11.08
Chilton	R417A	2.0	1,950	3.90

These data are illustrated overleaf.

14 Guidance on Minimising Greenhouse Gas Emissions from Refrigeration, Air-conditioning and Heat Pump Systems. Guidance: F Gas and Ozone Regulations. Information Sheet RAC 7: Alternatives (April 2012)

15 See: Refrigeration and air conditioning CFC and HCFC phase out: advice on alternatives and guidelines for users. Department of the Environment, Transport and Regions, and Department for Trade and Industry. December 2000.


Refrigerant Loss
120.0
100.0
80.0
60.0
40.0
20.0
0.0
kg refrigerant loss
R407C
R404A
R410A
R417A
HFC-134a
R404A
R417A
Porton
Colindale
Chilton
Refrigerant type & location


tCO2e due to refrigerant loss
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
tCO2e
R407C
R404A
R410A
R417A
HFC-134a
R404A
R417A
Porton
Colindale
Chilton
Refrigerant type & location

Biodiversity and wellbeing

Although PHE does not own any estate which is classified as a Site of Special Scientific Interest (SSSI) or Area of Outstanding Natural Beauty (AONB) it fully recognises the importance of biodiversity. PHE also understands the value of living sustainable lifestyles and the importance of this to health and wellbeing. Although not reported here, we have an important role in this area and such work is coordinated via our Health and Wellbeing Directorate, working with partners in local authorities and elsewhere.

We also recognise the importance of providing a sustainable work environment for our staff and ensuring (in so far as we are able) that we contribute to their health and wellbeing in the workplace.

Within these operating parameters, PHE has supported initiatives at its owned sites to promote biodiversity, albeit on a small scale. There are therefore activities relating to beekeeping, allotments, compost recycling, and the promotion of a diverse local flora and fauna where the nature of our facilities permits. We also promote green transport and encourage car sharing and cycling. Some of these activities are described below.

As NIBSC was part of the former HPA during the year in question, it is included in the reporting below. It has good examples of allotment creation and composting, including of food waste. For completeness, the NIBSC carbon footprint is also given, in relation to both energy usage and travel.

The PHE site at Colindale also has a number of biodiversity initiatives, including a staff allotment and two beehives. Again, more details are given below.




Sustainability at Porton Down

The following summary identifies the work and projects that have both progressed and been completed at the Porton site in the last year with the aim of delivering improvements towards PHE's sustainability objectives.

Reducing greenhouse gas emissions from utility usage

Sub-metering

All sub-metering equipment has been procured, including display screen equipment. This will enable energy usage in individual laboratories to be visible with overall usage for the site displayed in reception. The project has suffered delays due to the difficulties in installing WiFi, needed to enable the meters to connect with the display screens, throughout the buildings. This issue is being resolved and the equipment is expected to be installed by April 2014. Forecasted savings are as follows:

Cost of implementation (£)	Annual savings (£)	Annual savings (tCO2)
76,000	55,711	303

Boiler replacement

Following the completion of an options appraisal for the replacement of the ageing steam raising boilers on site, which included the investigation of biomass; it has been agreed that two current gas boilers will be replaced with three efficient gas boilers. These new boilers will fit within the existing footprint with minimal alterations to the building structure and pipework system. The annual maintenance costs are likely to be significantly lower and working conditions in the boiler house will improve due to reduced boiler casing heat losses. The indicative payback period is 3.5 years.

To enable suitable continuity in line with need, the replacement is programmed for summer 2014 and a specification for the boilers is being completed to enable invitations to tender.

Cost of implementation (£)	Annual savings (£)	Annual savings (tCO2)
153,000	52,734	337

Voltage optimisation

An outline business case has been completed for the installation of voltage optimisation but due to limitations in resources to manage the project, its delivery has been put back to 2014/15. By fitting voltage optimisation equipment to the six most highly loaded transformers, the forecasted savings are as follows.

Cost of implementing VO to the six most highly loaded transformers (£)	Annual savings (£)	Annual savings ($tCO_{2)}$
300,000	84,327	459

Independent cooling system for IT server room

The current configuration of the site's cooling system requires it to remain on in the winter to provide sufficient cooling to the IT server room. The installation of an independent cooling system for the server room would enable the main site system to be switched off in winter enabling significant energy savings. An outline business case has been approved and a specification for the cooling system is being completed to enable invitations to tender.

Chilled water system replacement

A programme to upgrade existing HVAC controls equipment has been rolled out in the last year; with three replacements remaining to be completed. The upgrades include changes to the existing pipework system and renewal of pipework insulation. It is anticipated that this project will deliver significant financial and carbon savings, but given the gradual roll out and current lack of sub-metering, it is not possible to quantify the exact savings.

Lighting upgrade

A programme to install LED lighting has taken place in appropriate areas of the site throughout the last year. LED fixtures that have been installed to date include within the incinerator hall, the boiler house and the main car parks, with additional external lighting replacements to be completed by December 2013. In the last year, microwave lighting controls have also been installed within the corridors of the main building. Additional opportunities to improve the energy efficiency of the lighting will continue throughout the next year.

Reducing carbon emissions from business travel

In the last year the number of hire car miles driven by PHE staff based at Porton has increased by 51% in comparison to the previous year. Taxis miles have also increased this year by 10% in comparison to last year. In line with corporate objectives to also reduce the organisation's business miles, increased effort to promote more sustainable travel arrangements both for commuting and business travel will take place in the forthcoming year.

Installation of web-casting and teleconferencing facilities

Porton already has teleconferencing facilities available in a number of its meeting rooms to enable meetings to take place without the need for travel. To provide a greater suite of remote conferencing facilities on site, a project has recently commenced to install web-casting facilities in the site's lecture theatres and videoconferencing within one of the meeting rooms. The project is expected to be completed by the end of March 2014.

Cycling to work

A number of initiatives have taken place throughout the last year to encourage staff at Porton to cycle to work. These included offering cyclists a free breakfast once per month and inviting URGE Cycles to visit in April 2013 to offer free cycle servicing to bike users in preparation for the cycling season.

The ongoing promotion to staff of the Government's Cycle to Work Scheme has resulted in 14 staff from PHE Porton taking advantage of the scheme since January 2012.

Staff travel survey

As part of PHE Porton's commitment to the Area Travel Plan a staff travel survey was undertaken in January 2013. The survey asked staff about their current commute and also about other travel modes, and tried to gain an understanding of what the determinants may be for moving to more sustainable modes of transport.

Promoting car-sharing

Given PHE Porton's rural location, car-sharing provides an important contribution to our sustainable travel objectives. PHE Porton has its own car-

sharing website to enable staff to find colleagues with whom to share their journey to work. There are currently 306 members registered on PHE Porton's site.

During National Liftshare Week (7-11 October 2013), additional promotion of car-sharing took place. Initiatives included: an exhibition stand in the staff canteen to allow staff to ask questions and register on the website; the promotion of a national prize draw for staff that registered on the website; and the handing out of car air fresheners to staff that shared their journey to work during that week.

Reducing total waste arisings

Tours of waste facilities

A number of tours were arranged in the last year to provide staff at Porton with knowledge of where the waste they generate within their labs and offices goes. These included tours around PHE Porton's own incinerator facility but also two organised trips to the material recycling and energy recovery facilities at Portsmouth, where Porton's non-hazardous waste was taken.

New signage for recycling facilities

Following informal spot checks of recycling facilities around the site it was apparent that some staff were unaware of the wide variety of materials they were able to recycle. New signage was installed above the recycling bins in the canteen to provide greater clarity to staff on what could be recycled.

Promoting sustainability

Sustainability day

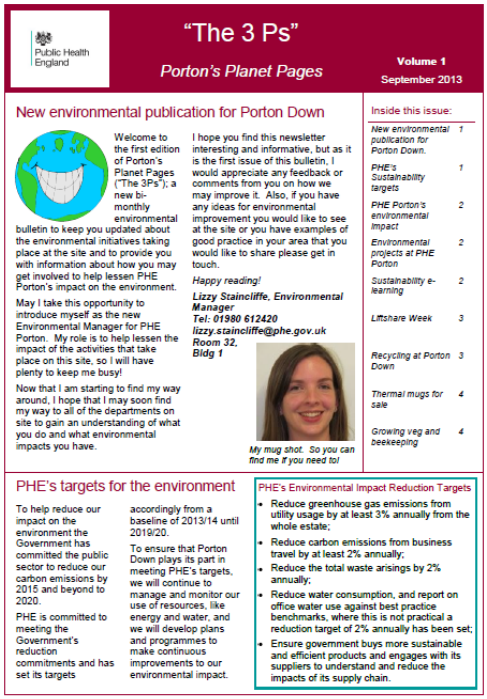
In January 2013, PHE Porton held a Sustainability Day to promote the opportunities for both the organisation and staff to reduce their environmental impact. On the day, a large exhibition was held in the staff canteen with displays from various environmental providers promoting various methods to become more sustainable. These included ideas for waste reduction, energy reduction and sustainable travel. The exhibition was complemented by informative presentations for staff by PHE's sustainability professionals.

Sustainability day 2013 at PHE Porton

Porton's Planet Pages

In September 2013, the first bi-monthly environmental bulletin, Porton's Planet Pages (The 3Ps), was published for staff at PHE Porton. The aim of the bulletin is to keep staff updated about the environmental initiatives taking place at the site and to provide them with information about how they may get involved to help lessen PHE Porton's impact on the environment.

The bulletin is emailed to all staff working at PHE Porton and also displayed on the environmental notice board on site.



Public Health England

"The 3 Ps"

Porton's Planet Pages

Volume 1
September 2013

New environmental publication for Porton Down

Welcome to the first edition of Porton's Planet Pages ("The 3Ps"); a new bi-monthly environmental bulletin to keep you updated about the environmental initiatives taking place at the site and to provide you with information about how you may get involved to help lessen PHE Porton's impact on the environment.

May I take this opportunity to introduce myself as the new Environmental Manager for PHE Porton. My role is to help lessen the impact of the activities that take place on this site, so I will have plenty to keep me busy!

Now that I am starting to find my way around, I hope that I may soon find my way to all of the departments on site to gain an understanding of what you do and what environmental impacts you have.

I hope you find this newsletter interesting and informative, but as it is the first issue of this bulletin, I would appreciate any feedback or comments from you on how we may improve it. Also, if you have any ideas for environmental improvement you would like to see at the site or you have examples of good practice in your area that you would like to share please get in touch.

Happy reading!

Lizzy Staincliffe, Environmental Manager
Tel: 01980 612420
lizzy.staincliffe@phe.gov.uk
Room 32,
Bldg 1

My mug shot. So you can find me if you need to!

Inside this issue:

PHE's targets for the environment

To help reduce our impact on the environment the Government has committed the public sector to reduce our carbon emissions by 2015 and beyond to 2020.

PHE is committed to meeting the Government's reduction commitments and has set its targets accordingly from a baseline of 2013/14 until 2019/20.

To ensure that Porton Down plays its part in meeting PHE's targets, we will continue to manage and monitor our use of resources, like energy and water, and we will develop plans and programmes to make continuous improvements to our environmental impact.

PHE's Environmental Impact Reduction Targets

- Reduce greenhouse gas emissions from utility usage by at least 3% annually from the whole estate;
- Reduce carbon emissions from business travel by at least 2% annually;
- Reduce the total waste arisings by 2% annually;
- Reduce water consumption, and report on office water use against best practice benchmarks, where this is not practical a reduction target of 2% annually has been set;
- Ensure government buys more sustainable and efficient products and engages with its suppliers to understand and reduce the impacts of its supply chain.

Environmental working group

Following a period of dormancy due to staffing changes, PHE Porton's environmental working group (EWG) is being reconstituted. The group will have cross-departmental representation and will meet bi-monthly. The purpose of the group is to establish and monitor a programme of work to enable the successful implementation of PHE's environmental policies, objectives and targets at Porton Down.

Sustainability at Colindale

In April 2013, Colindale held a ‘Sustainability Day’ to highlight ideas that could be implemented to achieve a more sustainable way of working within PHE at the Colindale site. Examples included production of bird boxes from recycled wooden pallets by the estates department and stalls run by staff to promote improved sustainability at work and home.

Sustainability day at Colindale

Biodiversity: Pam Litton

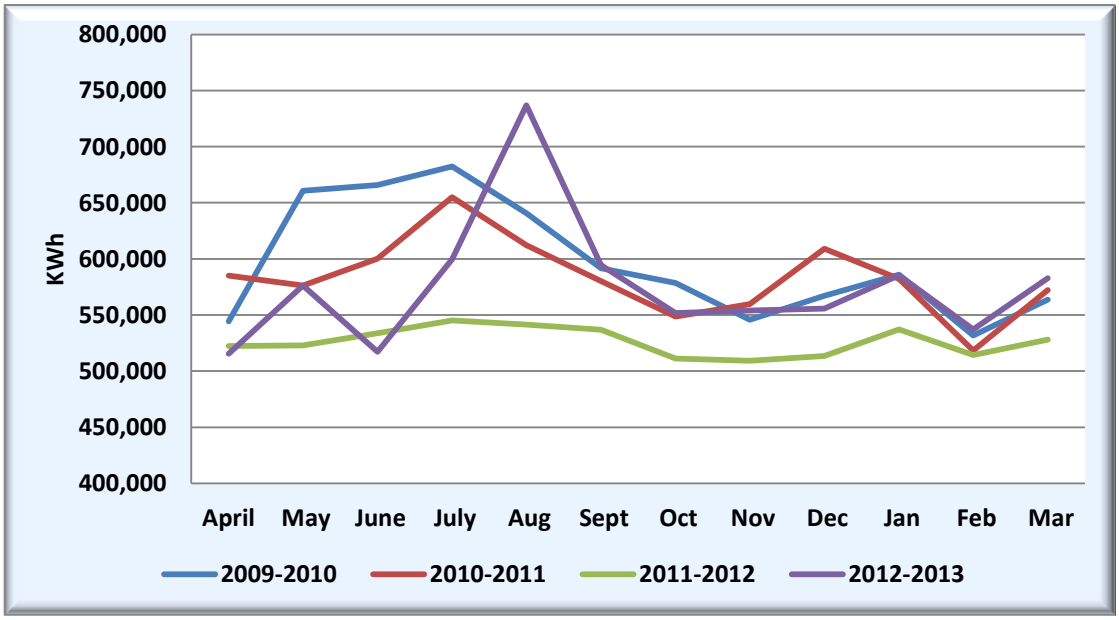
Sustainability quiz:
Brigitte Guile and Lizzy Staincliffe

Use of electricity at Colindale

Over the last year, our consumption of electricity increased. A significant factor in this was the requirement for the Colindale site to provide a 24-hour service to the London Olympics in the summer of 2012. This is shown below.

2011/12	2012/13	Variance	Variance (%)
£600,190.43	£640,434.69	£40,244	6.3
6,302,632 kWh	6,906,924 kWh	604,292 kWh	8.8

Electricity use over the last four years is shown in the graph below.



Electricity usage at Colindale

The number of cooling degree days had also increased during the summer, due to the warmer weather.

Lighting

Various lighting projects have been undertaken, as funding allowed. The carbon management programme to reduce emissions has continued, with LED lighting being installed to replace high-energy street lights on the site. A significant amount of the LED lighting in offices has been fitted with passive infra-red detectors, to reduce reliance on staff switching off lights when they are not needed.

Car park: installation of LED street lighting

Project cost	Estimated saving	CO_2 saving per year
£31,622	£3,083	13 tCO_2e

External lighting phase 1: installation of LED security and flooding

Project cost	Estimated saving	CO_2 saving per year
£5,350	£874	3 tCO_2e

Installation of T5 fittings and lighting control

Project cost	Estimated saving	CO_2 saving per year
£48,652	£6,000	29.5 tCO_2e

Corporate services: installation of a lighting control system

Project cost	Estimated saving	CO_2 saving per year
£34,950	£4,965	30 tCO_2e

Corporate services: installation of LED flat panels

Project cost	Estimated saving	CO_2 saving per year
£38,528	£3,852	12 tCO_2e

Zone A1: installation of LED flat panels

Project cost	Estimated saving	CO_2 saving per year
£28,483	£3,484	8 tCO_2e

Refrigeration controls

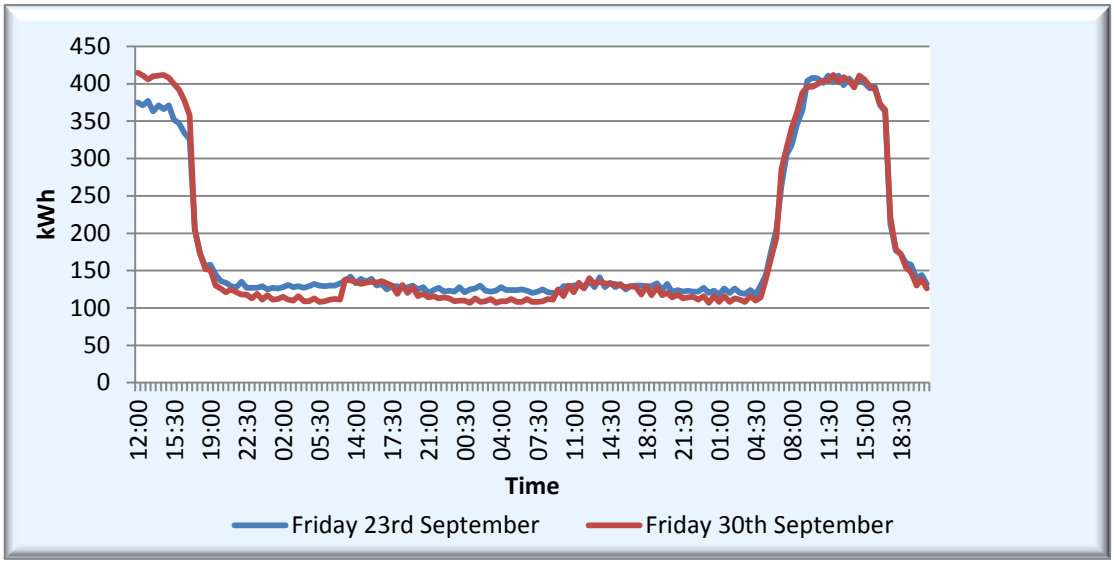
'*e*-cubes' have been installed in over 100 refrigerators and freezers at Colindale this year, which had saved an average 19% in energy consumption. It has also reduced the number of compressor starts by 80%.

A trial on (*e*-cube) endocubes took place at Colindale during September 2012. *e*-cubes were placed in two cryogenic chambers whilst two others were untouched but used for reference. Constant temperature measurements were taken of air within the chambers, product temperature and number of times that the compressor is started. Over a three week period, Cryogenic chamber 1 (with the endocube) used 39.06% less energy. Cryogenic chamber 2 used 18.9% less energy and the temperature of the product had been maintained below -80C. Cryogenic chamber 3 (which had no endocube) was monitored to determine product temperature. The product temperature did not reach -80C.

Overall, the manufacturer expects the endocube to reduce energy use by between 14 and 22%. The reduction in compressor starts is also significant as the longer on/off cycles allow the refrigerant pressures in the system to balance, so the machine starts more softly and runs more quietly. This system leads to a greater efficiency, lengthening the life of the machine.

Weekend switch-off

Colindale had a weekend switch-off in September 2012 in which staff were reminded to switch-off all non-essential equipment over the weekend. Electrical energy was measured and staff were given feedback on their efforts as shown below. There is only a small difference between the two days, but there was a lower usage of energy on the switch-off day on 30 September 2013.

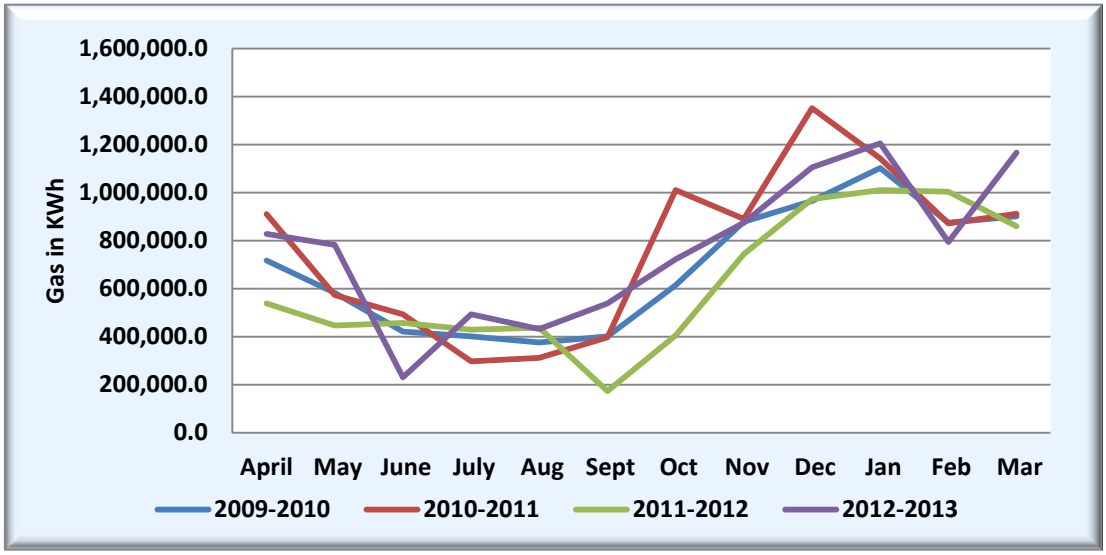


Electrical energy use during switch-off on 30 September 2012

Use of gas at Colindale

Gas consumption at Colindale for the last two years is shown below.

2011/12	2012/2013	Variance	Variance (%)
£230,054	£327,181	£97,127	29.7
7,475,454 kWh	9,167,704 kWh	756,535 kWh	28.5



Gas usage at Colindale over the last four years

Gas consumption and costs

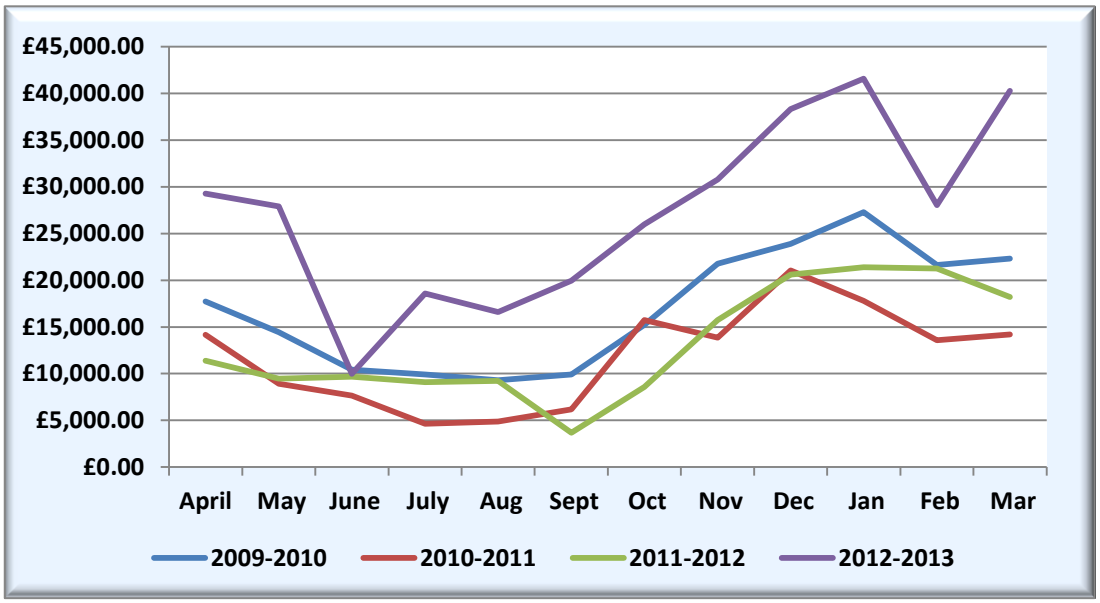
Phase 2 of the double glazing substituting single-glazing in the main refectory has been completed which will lower the heat emissions, thereby reducing reliance on gas energy for space heating.

Double glazing phase 2: refectory

Project cost	Estimated saving	CO_2 saving per year
£50,000	£1,500	10 tCO_2e

A project to install boiler economisers is currently out for tender. This project should reduce fuel costs by c. 10% and will help strengthen PHE Colindale's carbon reduction commitment.

Gas is used mainly for space heating during the winter months and to produce steam for the autoclaves all year round. During the past year, temperatures have been lower than the average so gas use would be expected to have increased.



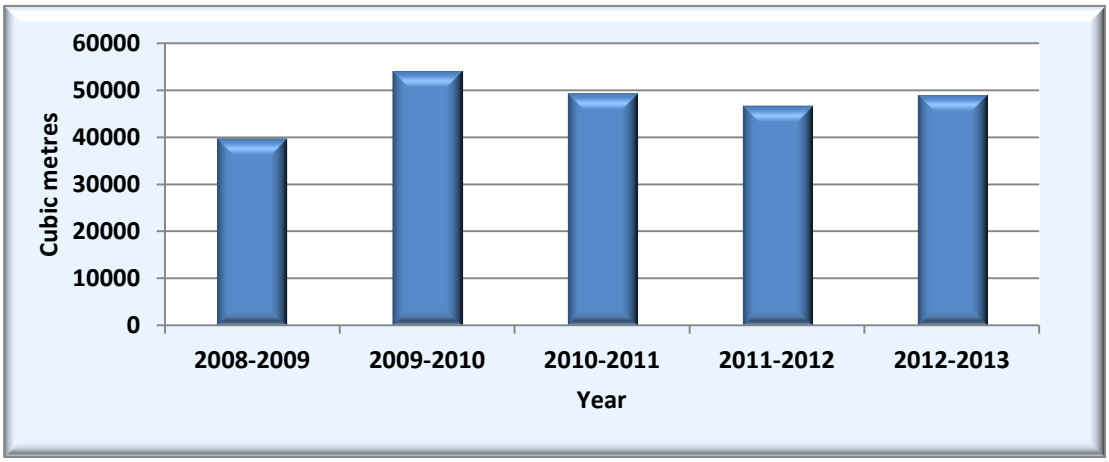
A comparison of gas costs over the past four years

The gas used for space heating is not monitored separately to gas used for steam in the autoclaves so we estimate that the gas used for space heating is about 70% of the total bill. This is based on the assumption that gas is not used for space heating during the summer months which therefore forms the baseline.

Water use at Colindale

Water at Colindale is used mainly for steam to autoclave waste, and basic utilities on the site. In processing, it is also used in media for washing and sterilizing glass laboratory equipment to be prepared for reuse. The quantity of water used on site shows a gradual upward trend. In order to reverse the trend, several projects are underway such as installing waterless urinals.

2011/12	2012/13	Variance	Variance (%)
£39,354	£45,154	£5,799	-12.9
46692 m^3	48970 m^3	2,278 m^3	4.7

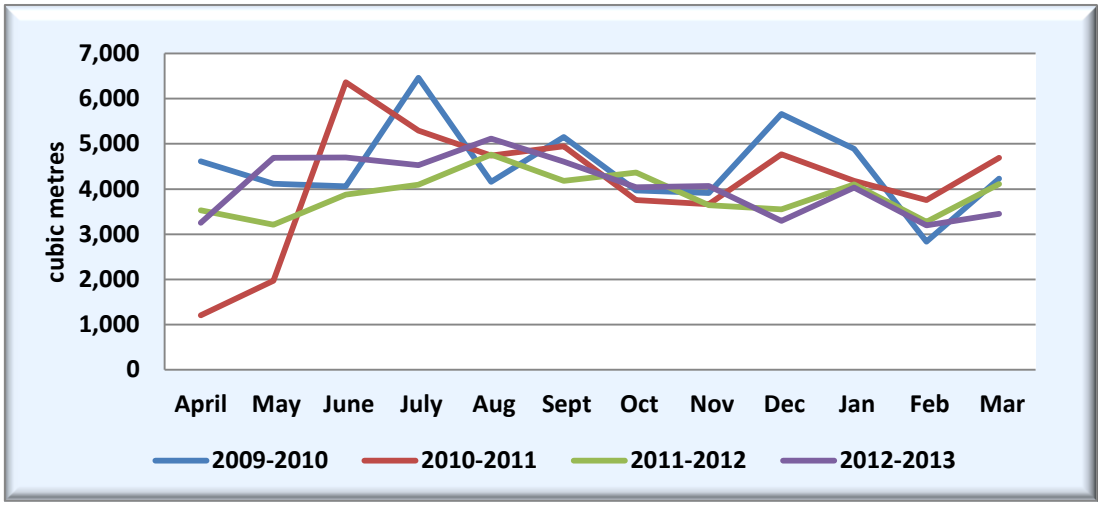


Water used in cubic metres

Water consumption and costs

Colindale has planned for installation of water-free urinals in the reception block and the IT block. Each unit will save PHE £235 per year in costs whilst overall, it saves a further 120 m^3 of water.

Water sub-meters will also be installed in high use areas, to help to identify exactly where water is used and subsequently assist in the development of action plans to reduce our impact on water resources. Water consumption over the last three years is shown below.

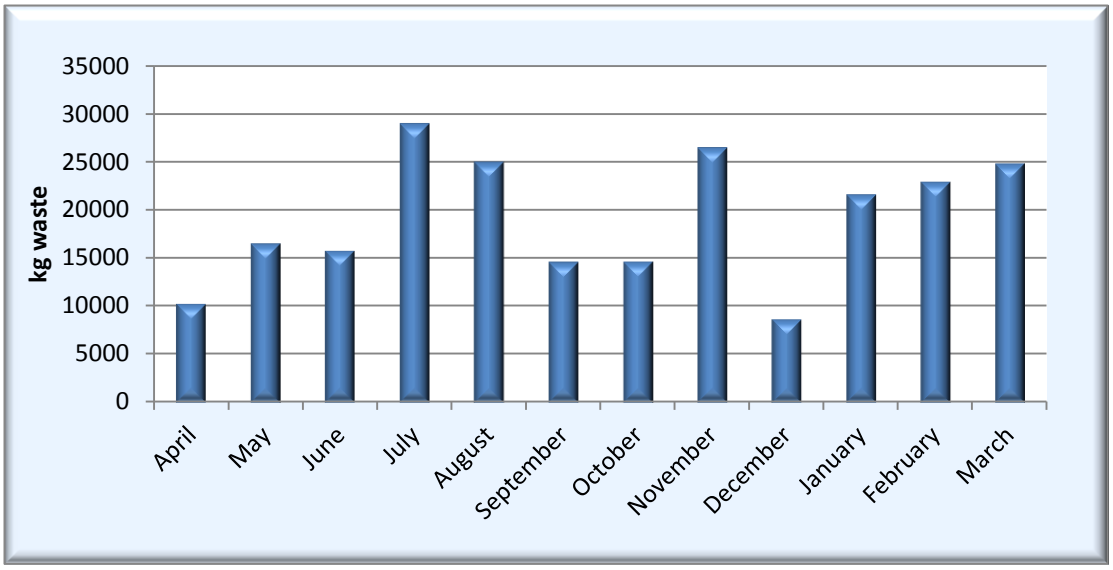


Water Consumption in (m^3)

Waste generation

In the report 'The Food We Waste'[16] The Waste and Resources Action Programme estimated that 6.7 million tonnes of food waste was produced each year in the UK from the 21 million tonnes of food purchased. This means that 32% of all food purchased was not eaten. Of the waste, 5.9 million tonnes were collected by local authorities; of this 61% or 4.1million tonnes was avoidable and could have been eaten if it was better managed. An updated dated 2009 estimated that 8.3 (±0.31) million tonnes per year of food and drink waste was generated by households in the UK.[17]

As part of the drive for health and wellbeing, PHE will be working to ensure that the sustainability objectives in the government buying standards are implemented during any purchase of kitchen equipment and food supplied to staff. This will entail counting 'food miles', identifying and promoting life cycles of food products and purchasing from ethical sources like Fair Trade material.



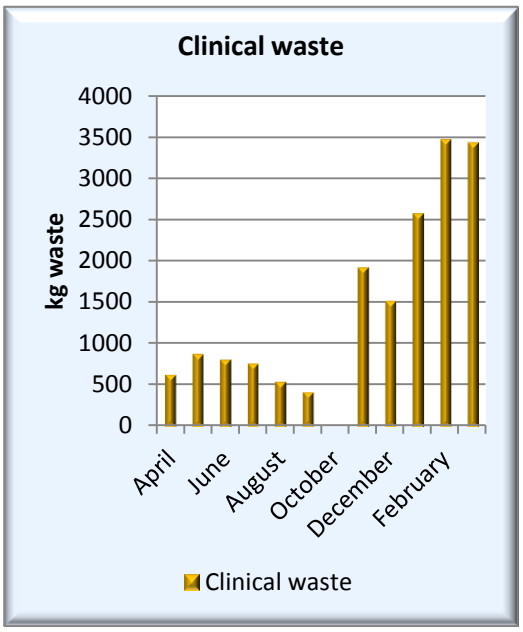
Total site waste at PHE Colindale, 2012/13

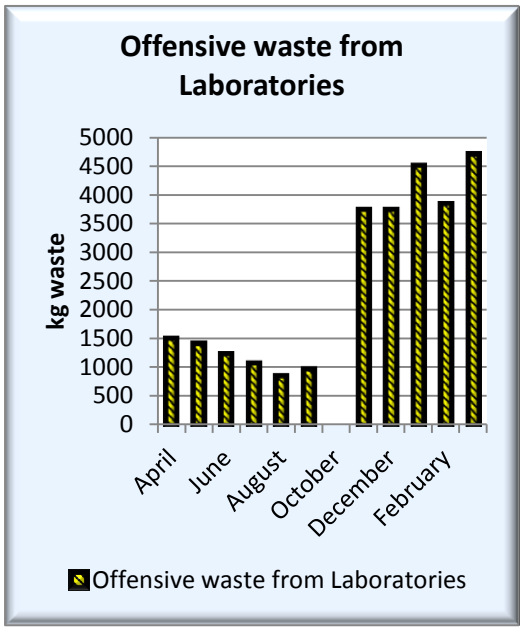
The total amount of waste produced during the past year has increased but this was due to an increase in laboratory waste rather than general waste. Laboratories are using less glassware and more disposable plastic, resulting

16 The Food We Waste. Waste & Resources Action Programme, July 2008. See: https://www.ns.is/ns/upload/files/pdf-skrar/matarskyrsla1.pdf

17 Household Food and Drink Waste in the UK. Waste & Resources Action Programme, 2008. See: http://www.wrap.org.uk/sites/files/wrap/Household%20food%20and%20drink%20waste%20in%20the%20UK%20-%20report.pdf

in larger amounts of clinical waste. At present, this cannot be reused, due to the type of plastic employed and the impact of autoclaving this waste.





Over the coming year, we will investigate use of plastic scientific equipment from our preferred suppliers which can be reclaimed following the autoclave process. In this way, it can be sent for recovery rather than incinerated for energy.

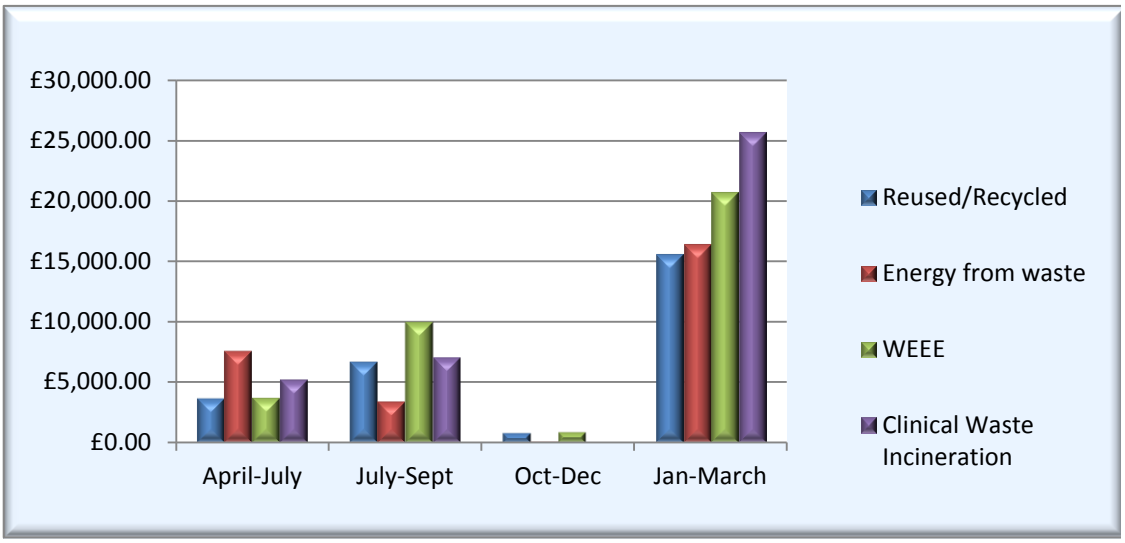
There has been a removal of waste containers under each desk within offices around site to encourage recycling. Food waste containers are going to be implemented in all 24 kitchen areas across the site, to increase the food recycling. When the actual volume of food waste is understood for the site, we will be able to implement a project to convert the ‘food waste into water’ for the allotments and divert more general waste away from incineration.

Waste consumption and costs

The cost of disposing of our waste is significant and we will continue to strive to reduce the amount of waste we produce.

Reused & recycled	Energy from waste	WEEE	Clinical Waste Incineration	Total*
£20,197	£27,187	£1,810	£78,337	£127,532

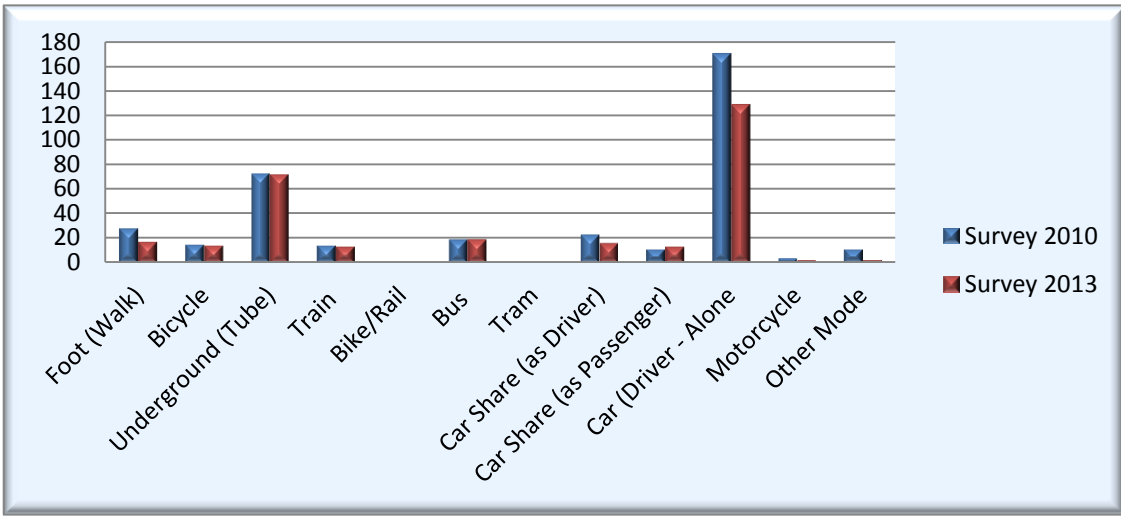
* excluding waste water, chemical waste & ICT waste



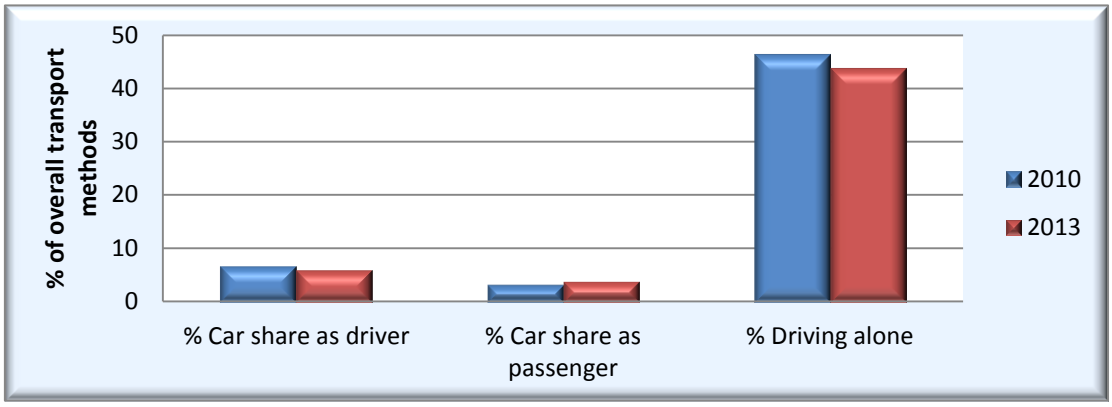
Costs for types of waste disposal

Commuter transport

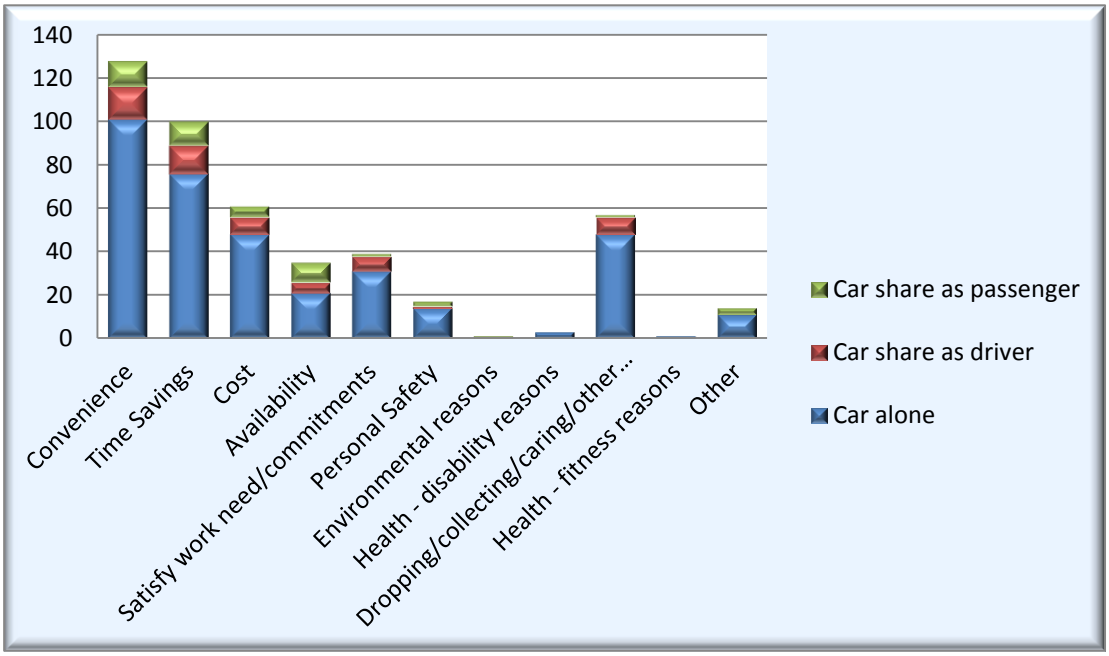
PHE Colindale has continued to run its own lift-share website and during the past year, a travel survey has been completed to determine travel habits. The survey illustrated that there was a reduction in staff commuting to Colindale in single occupancy vehicles. Those staff travelling to work in a single occupancy vehicle indicated this was mainly due to *'convenience and time savings'*. Further reasons were cost, and personal obligations such as undertaking *'the school run'*. These are shown below A comparison of the survey results from the 2010 travel survey and the January 2013 travel survey are illustrated below.



Principal means of commuter travel to PHE Colindale



Reduction in overall percentage of car usage

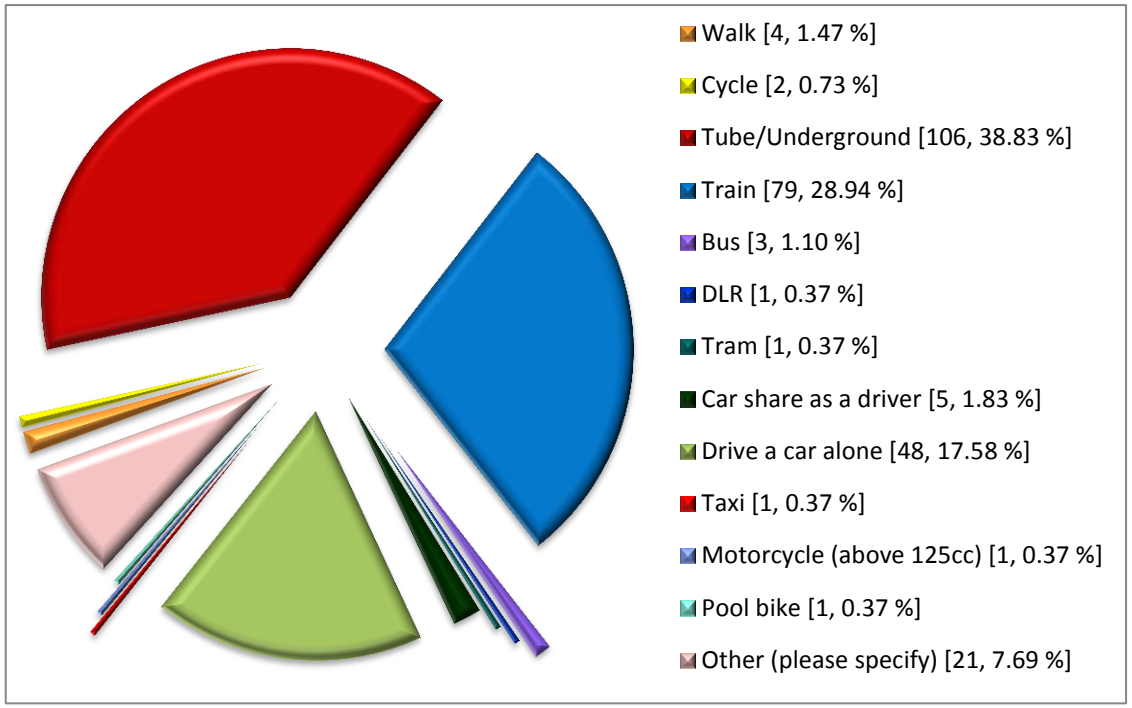


Reasons for commuting by car (2013)

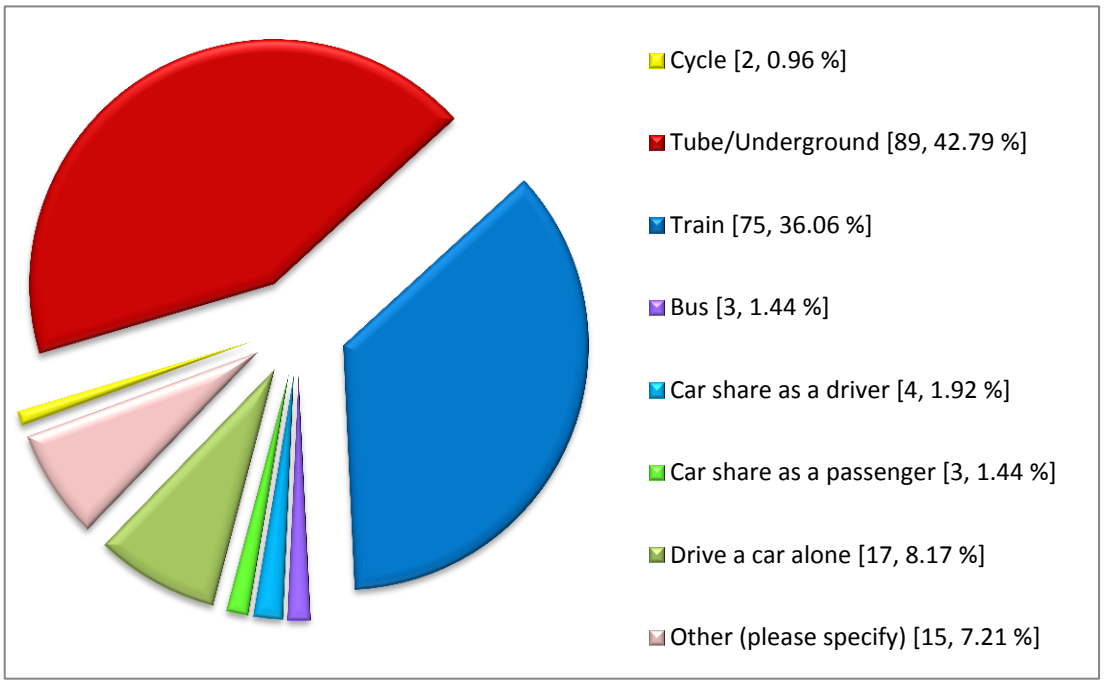
During ‘National bike week’, all cyclists were offered a token voucher at the gate house, to have a drink or a croissant as a reward for cycling to work. URGE cycles were also asked to come to the site by EMCOR to check staff bicycles to help maintain staff safety during the week.

Business travel

The travel survey also showed that 37.5% of business journeys were made between Colindale and other PHE facilities in London whilst a further 24% were to other PHE locations. The mode of business travel had become more sustainable in terms of travel mode between 2010 and 2013 and fewer people used single-occupancy vehicles for business meetings.



Main mode of business travel (2010)



Main mode of business travel (2013)

Biodiversity at Colindale

Despite having little spare space, PHE Colindale has recently created a staff allotment on the site. This was officially opened recently by Dr David Pencheon of the NHS Sustainable Development Unit.

Official 'opening' of the Colindale allotment

The Colindale allotment in the summer of 2013

Tree planting at Colindale as part of the NHS forest initiative Keith Perry (with spade) and Charles Ohai

Jo southern, Jo Lawrence and Charles Ohai discuss the NHS forest initiative with David Pencheon

Colindale also has two beehives on the site, providing a small amount of honey for sale to staff.

Paul Cosford (Director of Health Protection, right) investigates 'PHE beehives' and honey production on the Colindale site. Michael Lattimore is the beekeeper.

Future initiatives at Colindale

Although PHE Colindale has made good progress with its carbon reduction projects, business cases must support acceptable payback times, or a project may not be viable. Engineering projects that have required investment have included inverter fans to start/stop processes when required rather than having them continuing running; substituting high energy lighting for energy efficient LED lights; and gas reduction through double glazing installation.

With this in mind, further communication projects will be undertaken to encourage staff to switch-off redundant equipment. We must also ensure that our staff understand the environmental, social and economic advantages of sustainable methods of working, sustainable procurement and best practice in waste processes. This will help to consolidate the work already done to meet government's climate change commitments, our targets under the *greening government* initiative, and government buying standards. Future projects under consideration at Colindale are listed below.

Colindale 012	Solar panels
Colindale 013	Inverters to gas booster pumps
Colindale 014	Boiler economisers
Colindale 015	Water meters / sub-metering
Colindale 018	LED office lighting - phase 3 (to integrate with refurbishment)
Colindale 019	LED office lighting - phase 4 (to integrate with refurbishment)
Colindale 021	Voltage optimisation - phase 2 (further voltage reduction)
Colindale 024	BMS controls & upgrades - phase 3
Colindale 025	BMS controls & upgrades - phase 4
Colindale 030	Pipe work insulation
Colindale 032	External lighting
Colindale 033	Balancing of 3-phase electrical systems
Colindale 034	Garden & food waste composting
Colindale 034	Plant room lighting

Sustainability in CRCE

Environmental and Sustainability activities are overseen by CRCE's Environmental Working Group. This past year, the group has focused on prioritising how environmental impact is identified and has allocated resource where the greatest influence on reduction of impact is believed to be possible.

Environmental aspects and impacts in CRCE

A review of the environmental aspects and impacts registers was conducted during 2011/12. This review initiated a three year action plan to address specific areas highlighted in the review and is under the control of an Aspects and Impacts Sub-group of the CRCE Environmental Working Group. The work is closely monitored by the CRCE Environmental Working Group and progress is reported onto the CRCE Centre Management Team meetings as appropriate.

During 2012/13, actions from the three year plan included: a light-hearted competition for staff, run as part of the HPA 2012 Children in Need Day events, aimed at promoting awareness of facilities to recycle spent batteries at work and at home; staff engagement in periodic "switch off" weekends; a Centre Management Team presentation of the findings of the aspects and impacts 2011/12 review; discussions of aspect and impact ratings with departmental and section heads to ensure greater understanding of the recording and reporting process.

Further actions are planned for 2013/14 on areas such as: further improvements in the recording process for future reviews; departmental and section environmental champions; printer toner recycling; and an analysis of packaging waste to identify further opportunities for re-use or recycling.

For the distinct major areas of environmental impact, notably energy use and transport but also paper use, CRCE maintains sub-groups of its Environmental Working Group that lead on evaluating the Centre's activities, proposing and monitoring improvements in environmental performance. Within these two sub-groups, the initial focus has been on establishing a baseline of use and a means of recording ongoing use and changes. These are now in place for both aspects.

Paper use in CRCE

One of the 'Greening Government' targets set has been the reduction paper usage across all government departments. A goal of reducing paper by 10% for the financial year of 2011/12 was set based on 2009/10 paper levels. Over the past 18 - 24 months CRCE has been actively pursuing this goal. This has required in-depth investigation into bringing together the amount of paper used within CRCE since 2009/10 and determining what the level of reduction of paper was and whether a 10% reduction has been met.

The table below shows the figures obtained for the years following the baseline year including the latest year following the deadline of 2011/12. It can be observed that CRCE has further reduced the combined paper use by 19% for the financial year 2012/13 compared to the last year with the majority of this reduction from in-house printing. Additional investigations are ongoing to further reduce the levels of staff printing in CRCE as only a 30 box reduction occurred compared to 70 boxes for the previous year financial year of 2011/12.

Year	In-House Printing	CRCE Building printers	Additional building needs	Total boxes ordered	Fall from previous year (%)
2010/11	1,425 reams	2,600 reams	475 reams	4,500 reams	*3%
2011/12	1,565 reams	2,250 reams	265 reams	4,080 reams	9%
2012/13	1,000 reams	2,100 reams	215 reams	3,315 reams	19%

* = estimated

One of the findings from this work has been the reduction of types of paper bought and used within CRCE; we have moved to only two core types of paper, specific for use by the in-house printers and the CRCE building printers used by the staff.

Investment in premises and vehicles

Following previous investment in high efficiency lighting and similar, work was maintained to ensure that energy efficiency was considered specifically in all refurbishment work undertaken in 2012/13. Prioritising Chilton as the largest energy user within CRCE, voltage reduction and photovoltaic (PV) electricity capture were considered for capital investment. The Property Asset Management Board considered a proposal for PV, but the pay-back period

for the proposal was deemed too long. Further review of voltage reduction gave early indications of worthwhile savings, but as this was further investigated, the benefits were not as significant as first indicated. More work on these ideas is planned for the future and although there might be some increase in the installation costs, equipment efficiencies and carbon costs are likely to offset this.

The aforementioned investment in lighting throughout CRCE maintained sites continues and assessment of some LED lighting products has been useful in identifying that some products could introduce health risks, but careful selection of the right products can provide long term savings. Some LED products are installed and further future investment is now likely.

A delivery of improved efficiency pool vehicles was received in 2012/13.

The Royal Institute of Chartered Surveyors ‘SKA environmental assessment’ method to provide benchmark and standard for non-domestic fit-outs has been widely used to support and guide CRCE laboratory and office refurbishments. The minimum standard aimed for is ‘silver’ with some facilities exceeding this and achieving ‘gold’ ratings. CRCE continue to work with consultants Pick Everard (and through them with RICS), to achieve formal adoption of the system for laboratory refurbishments.

Training

Environmental training remains a priority at CRCE, is actively monitored and a standing agenda item at the CRCE Environmental Working Group meetings. Up to 31 March 2013 only eight CRCE staff were left to undertake the online mandatory sustainability module. These staff members, along with future refresher training, are assessed and action progressed through quarterly reports to heads of departments and sections. The administration of targeted sustainability training courses for more specialist audiences was devolved from a corporate function to division and centres during the latter part of 2012. CRCE has allocated this role to the Compliance Support Team, and this will be addressed during 2013/14.

Transport

Publication of a sustainable travel policy, which sets down clear goals and guidance with respect ensuring a ‘green’ approach to travel, has helped to re-set the focus within CRCE with respect to achieving a reduction in CO_2 emissions from transport. The importance of a pro-active approach by managers is to be the subject of a presentation at a forthcoming meeting of

the Centre Management Team. CO_2 emission data for CRCE 2011/12 has been provided and simplified to form baseline figures for pro-active monitoring. Work has also started with respect to the development of easy-to-use templates for monitoring 'travel' on a departmental basis, and recording the justification for necessary travel.

CRCE Scotland

The site's Environmental Management System continues to mature and CRCE Scotland has retained its ISO 14001 certification following successful surveillance audits during 2011/12. The significant aspects of CRCE Scotland have been reviewed and updated following building work. Targets and objectives were also reviewed and updated in July 2011 and measures identified to improve the environmental performance of the department. The following areas were identified for further attention: waste and procurement; travel; energy usage; and water usage. CRCE Scotland also undertook a space utilisation study at the start of 2012; this was carried out under the SKA environmental assessment system and we anticipate this will be rated in the near future.

National Institute of Biological Standards & Control

NIBSC carbon footprint for 2012/13

The National Institute of Biological Standards & Control (NIBSC) was a part of the Health Protection Agency during 2012/13, but on 1 April 2013, it transferred into the MHRA and not Public Health England. For completeness, the NIBSC carbon footprint for the 2012/13 reporting year is shown here.

NIBSC had some interesting sustainability projects underway during this time, and these are also reported below.

Estate-related emissions South Mimms (tCO_2e)	
Natural Gas	2525.14
Gas Oil	7.63
Electricity	4387.23
Heat or Steam	0.00
Process Emissions	76.96
Water supply	15.67
Water (Waste)	22.88
Landfill Waste	8.91
Total	**7044.43**

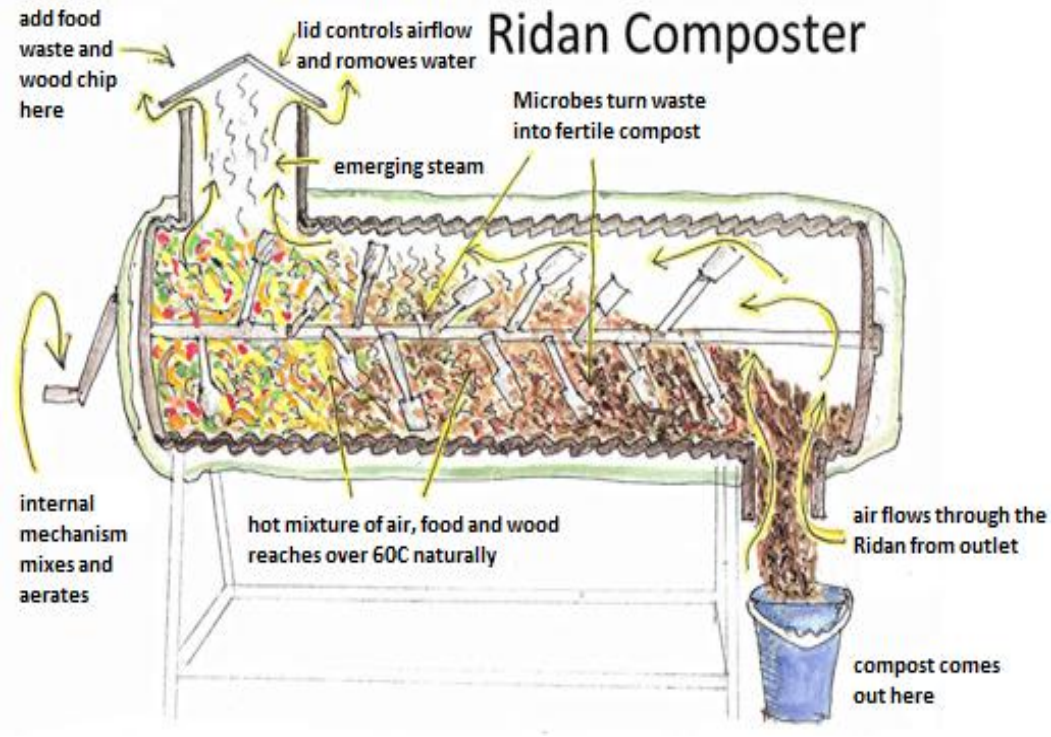
Travel-related emissions NIBSC (tCO_2e)	
Owned/leased vehicle	0.00
Regular user/personal	4.25
Train	2.99
Hire cars	0.65
Bus	0.01
Underground	0.01
Couriers	22.13
Air freight	1.05
Domestic flights	1.33
EU flights	9.01
Non-EU international flights	36.11
Taxi	0.33
Total	**77.87**

These data therefore show a total carbon footprint for NIBSC for 2012/13 of 7,122.3 tonnes CO_2e.

NIBSC commercial food composter

A commercial food composter was installed at NIBSC in November 2012. Prior to this, food waste was collected from the site by a contractor and sent via anaerobic digestion for disposal. This operation has now ceased. The new composter will save approximately £1k per annum on disposal costs and will result in a reduction of waste volumes by three tonnes per annum and a reduction in carbon of 8.33 tCO_2e. An additional welcome benefit of the installation of the composter is the production of compost for use across the site and on the recently started staff allotment. Other benefits include reduction of traffic to the site by 52 trucks per annum and the carbon footprint associated with these particular lorry movements has been eliminated.

The commercial composter (made by Ridan) is a very straightforward unit to operate. Food waste is placed in the top chimney, along with a quantity of dry material such as wood chips or sawdust, the rotating handle is then turned several times to mix and move the waste into the unit. The waste remains in the unit for approximately 2-3 weeks and works its way through to the opposite end where it is collected and put into the maturation bins alongside the composter. The waste stays in the maturation bins for several months to completely breakdown and form compost.



Schematic showing how the composter at NIBSC works

Installation of the Ridan composter at NIBSC

NIBSC allotment group

The NIBSC Allotment Group was set up in April 2012, to make better use of the grounds and to introduce a greater diversity of plants to the site. The initial group of 20 members tended the allotment during lunchtime or outside working hours. This proved to be an outstanding success which has produced lots of varieties of plants throughout the year. The allotment was divided into four beds; fruit and permanents, legumes, roots and brassicas. The beds will be rotated each year.

A wide variety of fruit and vegetables was grown. Of particular success were the lettuces, as well as herbs, peas and beans. The NIBSC-grown courgettes were particularly delicious, and we had a bumper beetroot crop. Towards the autumn of 2012 there was a good harvest of butternut squash as well as sprouts for the Christmas table! In 2013, the range of crops was expanded to include an asparagus plot. This initiative has proved to be a great way for staff to share knowledge about growing fruit and vegetables and everyone has gained a lot from the experience.

The NIBSC allotment

Sustainability in the regions

The Specialist Microbiology Services (SMS) comprises a network of laboratories located at strategic sites across England. These sites comprise front line clinical and food water and environmental microbiology laboratories as well as additional specialist laboratory services. There is one exclusively SMS managed site at Myrtle Road in Bristol with the remainder of the laboratories hosted at either NHS, other publicly funded sites, or at PHE Colindale and Porton.

Within SMS, environmental sustainability is managed by an Environmental Sustainability Group, which coordinates best practice amongst the various sites. In addition, sustainability champions promote PHE's sustainable development policies by raising awareness of mandatory training and e-learning, advocate minimising travel, encouraging switching off of electrical appliances when not in use, and sharing of best practice and learning from environmental incidents.

SMS also has an ongoing programme to further introduce environmental considerations into procurement, including transport and logistics relating to the samples and specimens submitted to our laboratories. Due to its construction, the Myrtle Road site does not benefit from modern energy efficiencies or utility management, and is coming to the end of its expected life. However short term investments have been made in installation of thermostatic radiator valves, insulating pipe-work, using lower energy fluorescent tubes, monitoring utility usage and improving the steam delivery system.