



Public Health  
England

Protecting and improving the nation's health

# Public Health England's 2020 sustainable development report



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# Foreword

I am very pleased to introduce Public Health England's (PHE) seventh annual sustainable development report, describing both the internal and external work that PHE has undertaken, over the last year, in meeting its commitments to a healthy sustainable future.

Due to the dedication of PHE's members of staff, and our contractors, we continue to make continual improvement in reducing our environmental impact across PHE's estate. We continue to promote active travel through a series of health and wellbeing initiatives so that our staff understand the associated health benefits that these activities can bring.

A number of new initiatives have been undertaken this year, these include; removing, where practicable, consumer single use plastics from across our estate, and engaging with staff and suppliers to reduce our reliance on plastics in our laboratories. The embedding of the UN Sustainable Development Goals into our operations continues, engaging with our staff about what this means for them and the impacts on wider health determinants.

In the last year we have also increased our external work overseas, offering advice and help as part of our organisation's response to public health incidents and extreme events. To help reduce the carbon impact from international flights, a carbon offsetting scheme has been introduced by our Global Public Health team.

Our wider work continues to add to the scientific evidence on the health impacts of climate change and extreme events, providing useful data for local authorities and the government around the UK's National Adaptation Plan. Our associated work on cold weather and heatwave plans is also helping to save lives, providing advice to those professionals who are on the frontline ensuring better outcomes.

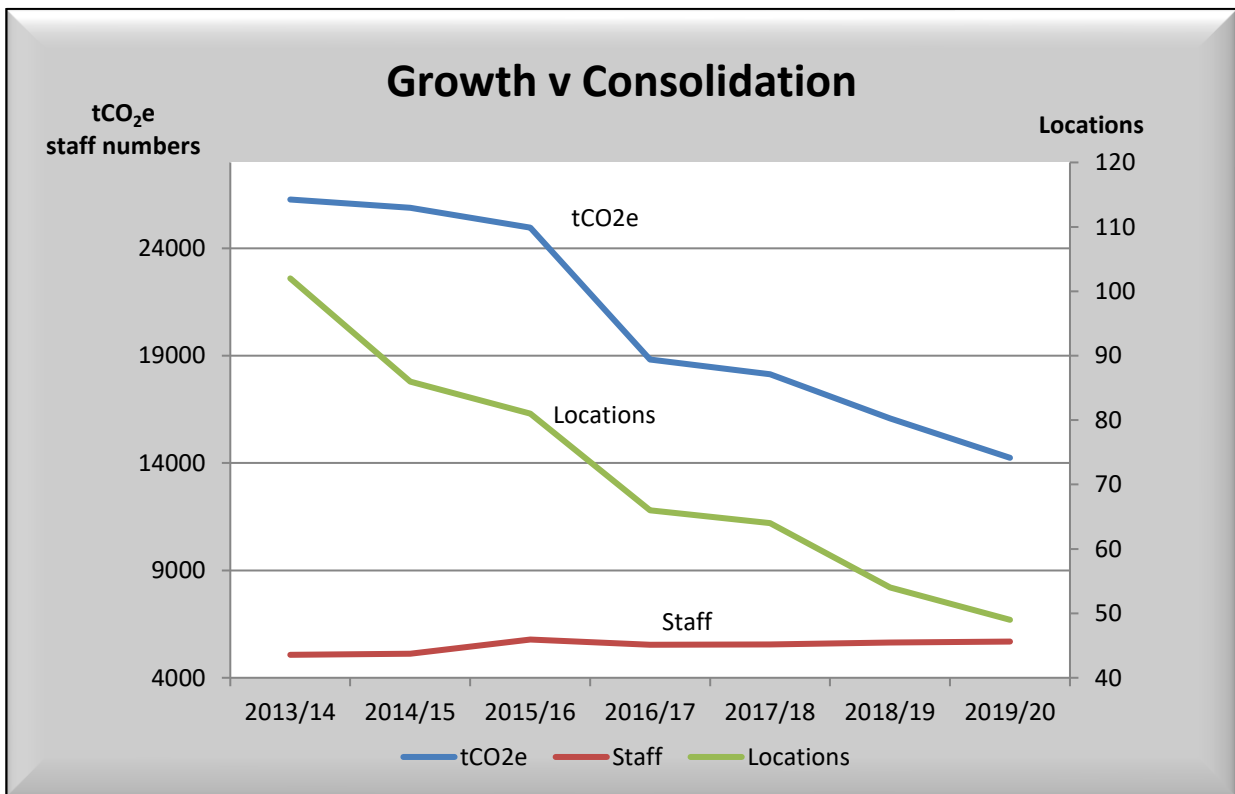
I would like to personally say a big thank you again to all our Sustainability Champions, from across PHE, who are at the forefront of helping us to embed our sustainability policies and plans, without their continued work we would struggle to see the great gains we have made to date.

Alex Sienkiewicz  
PHE Executive Lead for Sustainable Development

## PHE's 2019/20 carbon emissions

The growth versus consolidation graph, below, illustrates how PHE have continued to lower their carbon emissions, whilst staff numbers have stayed constant and our estate has been consolidated in line with our estates strategy over time.

PHE's total reportable carbon emissions for 2019/20, are 14,245 tCO<sub>2</sub>e, this is inclusive of our site at Harlow. This is compared with 16,076 tCO<sub>2</sub>e for 2018/19, and 26,274 tCO<sub>2</sub>e for 2013/14, representing a reduction of 10% on the previous year, and a 45% reduction on our baseline year overall.



## Executive summary

The pandemic, coronavirus (COVID-19), had a major impact on the nation's public health. Starting in the fourth quarter of 2019/20, PHE played a major part in advising government, and the public, about the health implications of this virus, and how to protect against catching it. When the country was put into lockdown it had a fundamental effect on the way that we, as an organisation operated. Many of our staff were told to work from home, whilst there were still many members of staff who had to come into their place of work to support the fight against the pandemic, these were unprecedented times for many people, though it did highlight that we can still do our jobs effectively, whilst working remotely, with the quarter 4 figures for this year reflecting this approach.

This 2019/20 report describes our seventh year of operation, and the work that we have undertaken embedding the various facets of sustainable development into all that we do. This helps us to reduce our environmental impact on a local, regional and global scale. Through our small determined group of Sustainability Champions, across PHE, their work continues to help meet our reduction targets and embed sustainability into the organisation's activities.

As an exemplar in the health service we believe it is important to lead by example and this report continues to give an in-depth analysis of our sustainable development work. The report also details the progress we are making on other aspects of sustainable development, especially around the UN Sustainable Development Goals and the work undertaken by our specialist teams on climate change and adaptation.

In line with PHE's, and the government's estates strategy, we continue to consolidate our dispersed estate into regional hubs. Besides helping us to work smarter, this strategy also contributes to reducing our overall carbon emissions.

The carbon data for the Harlow site will be reported separately, whilst the construction phase is underway, to better facilitate comparison with data from earlier years. PHE's total reportable carbon emissions for 2019/20, are 14,245 tCO<sub>2</sub>e, this is inclusive of our site at Harlow. This is compared with 16,076 tCO<sub>2</sub>e for 2018/19, and 26,274 tCO<sub>2</sub>e for 2013/14, representing a reduction of 10% on the previous year, and a 45% reduction on our baseline year overall.

In line with Greening Government Commitment (GGC) requirements, we are reporting on our owned estate of 86,042m<sup>2</sup>, inclusive of Harlow, and on an establishment of 5681 full time equivalent posts.

PHE's carbon footprint comprises Scope 1, 2 and 3 carbon emissions, as defined by government. It comprises data relating to our reportable (owned) estate and our non-

reportable sites (that is, those facilities where PHE is a tenant and emissions are reported separately by a landlord).

We continue to report on our carbon emissions to the Department of Health and Social Care on a quarterly basis, in line with the Greening Government Commitment. Keeping staff informed about our carbon emissions, and the associated financial cost to the organisation, is one of the many communication tools that we continue to employ.

The reportable usage of water for the estate was 113,377 m<sup>3</sup>, with a further estimated 19,200 m<sup>3</sup> being used by our non-reportable sites, due to the lack of metering. Overall, this represents a slight decrease in consumption of 0.74% from last year, we believe that this figure could have been better if it wasn't for our extra activities during the pandemic.

PHE-owned sites continue to have a mixture of office and non-office facilities making it difficult to differentiate their water usage into any meaningful datasets.

There was a 9.7% decrease in total waste, compared to the previous year. PHE's total waste figure for 2019/20 was 636 tonnes, compared to 704 tonnes in 2018/19 and 912 tonnes for our baseline year in 2013/14.

Contractors working at PHE sites are regularly reminded about their obligation to reduce their waste wherever possible, in line with PHE's waste policy and its associated management arrangements.

Due to the nature of the work carried out at a number of our sites, a significant quantity of hazardous waste is produced, with the majority of such waste being sent for incineration, in compliance with government guidelines.

We continue to work with our contractor, Computer Disposal Limited (CDL), to recycle and reuse our redundant ICT equipment. ICT waste is collected and disposed of at no cost to PHE, mostly as part of our government contract with CDL. This continues to be an effective method of disposal for this waste stream, in line with government policy. A total of 11 tonnes of ICT waste has been processed in this manner in the last financial year.

In 2019/20, PHE used 13,668 reams of A4 paper, a decrease of 12 % on the previous year's figure.

As mentioned above the COVID-19 pandemic and associated lockdown meant that a lot of our staff worked from home in the latter part of Q4, this did have quite an impact on our travel figures.

To facilitate a comparison of travel emissions across the various parts of the organisation, PHE uses the measure of tCO<sub>2</sub>e per whole time equivalent (WTE) staff.

Due to the continued growth in PHE's international work a carbon offsetting scheme has been put in place by our Global Public Health team to help offset their overseas travel.

We continue to encourage staff to use public transport wherever possible. Train use has decreased by 24%. There was also a decrease in the use of personal cars for business of 11%.

Our members of staff are encouraged to travel only when necessary and, when they must travel, to use the most sustainable modes of transport. Overall, we have seen a 22% decrease in our reportable business travel carbon emissions, when compared to the previous year.

The organisation continues to recognise that less business travel will also benefit public health by preventing air pollution, and support PHE's plans to reduce carbon and save money. PHE continues to lead on the health effects of air pollution, especially in relation to the use of diesel transport in our cities and large towns. This will help to increase the awareness of pollution and help government to develop further measures to reduce its impact upon our communities.

Sustainability is also an important factor in our purchases. Our procurement category managers ensure that all of our tender documents contain relevant questions to confirm that the successful suppliers adhere to appropriate environmental and sustainability standards. These include ensuring that our main suppliers are applying the Social Value Act 2012 and Modern Slavery Act 2015.

To help staff understand their sustainability obligations and the importance of reducing our carbon impact, we continue to promote our sustainability e-learning training course. This training is mandatory for all staff, with a refresh every 3 years. In the last year, 1,558 members of staff undertook the training.

A sustainable health system recognises that unhealthy behaviours can cause more damage to the environment than healthier ones. Driving (instead of walking or cycling), eating carbon-intensive processed foods and living in cold homes can all have adverse health effects. We work with other health-related bodies to inform the community about effective, practical actions that can be taken on a range of social determinants of health that are relevant to sustainability.

## Summary of PHE's utility and travel emissions data

The following bullet points summarise if our carbon emissions have risen or fallen, compared to the previous year:

- electricity usage was down by 8%
- gas usage was down by 14%
- water usage was down by 1%
- total waste was down by 10%
- domestic flights were down by 25%
- personal car usage was down by 11%
- train usage was down by 25%

PHE's carbon emissions data are explained in detail later in this report.



# Introduction

## PHE's ambition on sustainable development

A sustainable healthy future, depends on us all playing our part in finding a balance between our collective social, environmental and economic needs and our need for continual improvement. This includes all the various aspects of the natural and built environment, all of which are fundamental to our health, equity, and wellbeing.

Addressing these issues could not only help tackle climate change but also offers a wide range of benefits: from operating within safe financial and environmental limits, to developing life-saving resilience and life-enhancing assets. Acting in a sustainable and low carbon way is therefore critical to turning climate change from the biggest strategic health threat we face today, into the greatest opportunity for collective action and health improvement.

There are big challenges, as well as opportunities, in addressing these issues, but to move to a more sustainable future PHE must play a very distinctive role. Our future depends on us collectively embedding the principles of sustainable development into all that we do.

There is clear and widely accepted evidence that inaction is not an option. We can make a difference by fully implementing our Sustainable Development Management Plan (SDMP), provide scientific expertise on climate change, leadership for local public health systems and be an exemplar employer.

No one part of PHE has the capacity, or the expertise, to deliver this alone. However, coordinated effort across PHE will make it a leading organisation on the local, national, and global stage in advocating, aligning, and implementing the social, economic, environmental, legal, and cultural conditions for sustainable development and environmental management.

There are many opportunities for PHE to fulfil this role, including: the way we do business; our role in co-ordinating science; our contribution to policy, and through advocacy.

Principally our actions will aim to:

- reduce our risks and vulnerability (for example, extreme events and disaster reduction, improved air quality, sustainable buildings, reduced emissions and smarter ways of working)

- improve resilience and developing sustainable assets (for example, education, good housing, life-enhancing public spaces, empowered communities and vibrant cultures)
- ensure a safe, sustainable, and resilient public health and care service (for example, transformative models of prevention and care, where every opportunity, plan, policy, and contact contribute to healthy lives, healthy communities and healthy environments – now and in the future)

Our Sustainable Development Management Plan (SDMP) sets out the organisation's aims for future work to help it to operate in more sustainable ways and is aligned with, and contributes to, meeting the goals of the Sustainable Development Strategy for the Health and Care system.

PHE has an important advocacy role to play in meeting our sustainable development goals, researching and publishing the evidence base, and monitoring progress through our scientific and information functions. However, ensuring all such opportunities are exploited, and all progress monitored, depends on well-led and clear co-ordination.

We will also support the government's commitment to the UN's Sustainable Development Goals (SDGs) and its endorsement of environmental management as one of the tools we can use to ensure a better quality of life for our staff as well as the communities that we both serve and impact upon. This is clearly signalled by recognising the importance of social, alongside economic and environmental impacts, in our decision making.

Mapping work undertaken by PHE, on the SDGs, has demonstrated the links and the interdependences between the SDGs and the determinants of health and how much we lose by working in silos. A place-based approach thinks more in systems that can identify these links, therefore we should use the SDG mandate to advocate for public health approaches and to demonstrate how our work contributes to the achievement of the SDGs. We advocate using the SDG framework to shape our work – developing plans, strategies and supporting overall progress on sustainable development.

PHE continues to embed sustainability into its contracts, helping to highlight risks arising from our procurement activities. We continue to utilise the tools developed by the Government Procurement Service, ensuring we maintain a robust approach to sustainability throughout the supply chain.

This report describes the work that PHE has undertaken on sustainable development over the last year. It includes details of our ongoing commitment to reduce our carbon footprint as well as other activities where sustainability is a key driver, such as climate change and extreme events.

## Our carbon footprint

PHE has set a target to reduce its carbon emissions by 3% annually for the period to March 2020, compared to a baseline year of 2013/14, in line with the Greening Government Commitment (GGC).

To achieve this, PHE has agreed a number of carbon-related reduction targets for its estate, which include utility use, business travel, water consumption and total waste. During 2019/20, a variety of projects were undertaken to help us meet our reduction targets and where possible exceed them.

In line with PHE and government estates strategy, PHE continues with the consolidation of its estate. It has been agreed with DEFRA that PHE can report the emissions from its Harlow site separately until it becomes operational, thereby ensuring that we can continue to monitor the impact of our carbon reduction activities separately from the construction work which will take place in Harlow over the coming years. Data for the Harlow site will therefore be displayed separately from the main data, where applicable.

In this chapter we include emissions data from both PHE's reportable and its non-reportable sites. (Non-reportable sites are those offices or laboratories that are being reported separately by the premises' landlord.)

PHE owns 6 of its premises and has numerous shared facilities embedded in government-owned property (including hospitals) and in other tenanted accommodation. There is no direct relationship with the utility provider in these premises and no sub-metering has been undertaken. To avoid double accounting of carbon emissions from these properties, they have been identified separately for reporting purposes. PHE has no properties within SSSI or AONB boundaries.

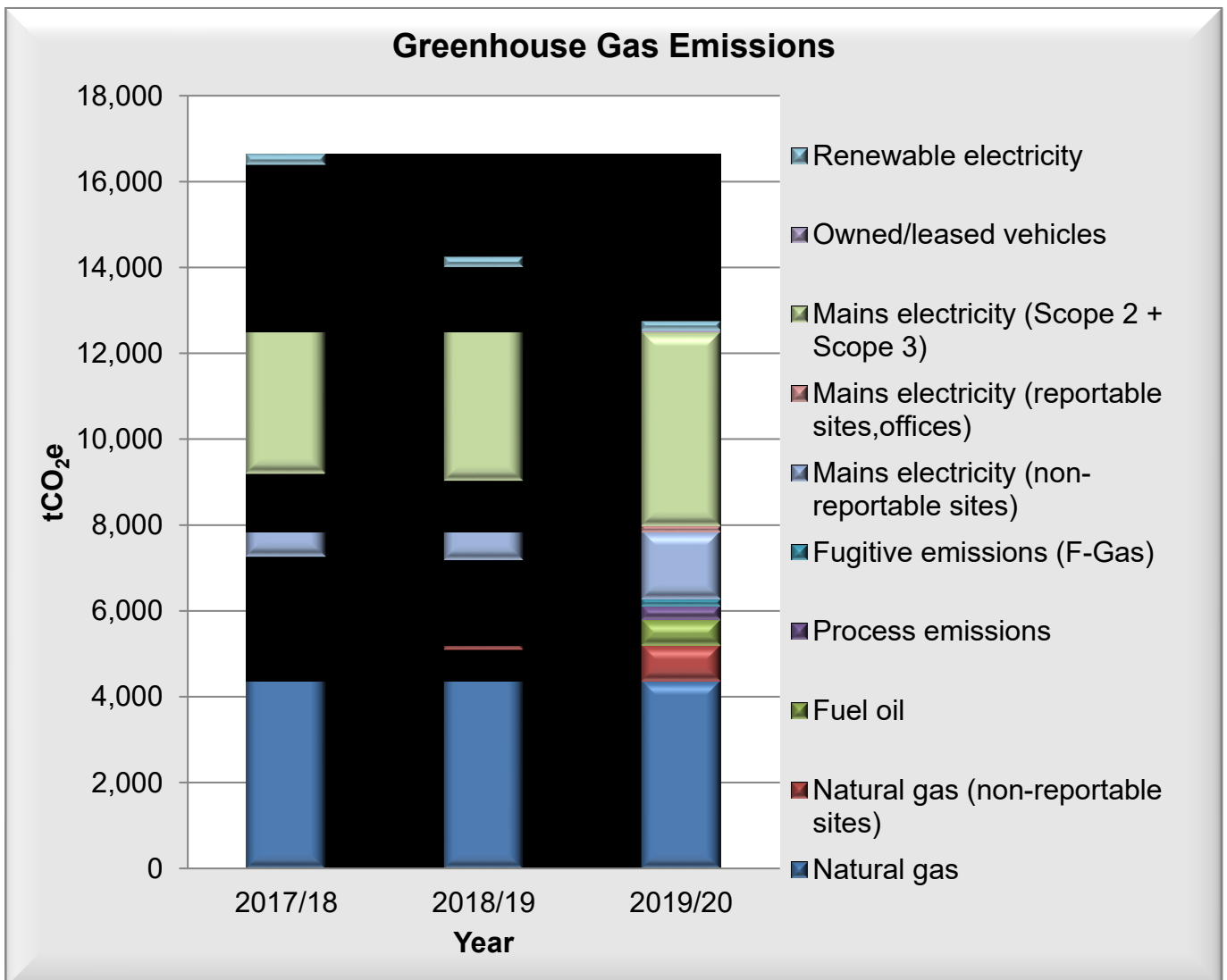
Our investment in Photovoltaics continues to help us to reduce the impact on the environment from our estate as well as our dependency on electricity from the national grid. Making use of green energy is good for the environment, helps us to reduce our costs and contributes towards the sustainable development agenda which PHE is proud to support.

## Greenhouse gas emissions

The major impact on the environment from PHE’s activities continues to come from electricity and gas consumption at its main sites at Colindale, Porton and Chilton. PHE reports its greenhouse gas emissions on a quarterly basis to the Department of Health and Social Care, which correlates data from its arms-length bodies and executive agencies, in line with the GGC guidelines.

The GGC reporting boundary requires PHE to report on its scope 1, 2 and 3 emissions for its owned estate only, as it is assumed that other parts of the estate where PHE has a presence are already reporting to their sponsoring body. This is to prevent double accounting of the data. Waste water is not reported under the GGC requirements.

Our total greenhouse gas emissions are summarised below – this data includes both reportable and non-reportable sites but excludes PHE Harlow which is reported separately.



Greenhouse gas emissions		2017/18	2018/19	2019/20
Scope 1 + 2				
Non-financial indicators (tCO <sub>2</sub> )	Natural gas	5,217	5,097	4,364
	Natural gas (non-reportable sites)	1,205	869	837
	Fuel oil	353	697	589
	Process emissions	349	315	320
	Fugitive emissions (F-Gas)	137	201	162
	Mains electricity (non-reportable sites)	1,701	1,664	1,579
	Mains electricity (reportable sites, offices)	244	189	139
	Mains electricity (Scope 2 + Scope 3)	7,103	4,909	4,501
	Owned/leased vehicles	72	61	52
	Renewable electricity	233	239	202
Related energy consumption (kWh)	Natural gas	28,330,159	27,689,273	23,736,161
	Natural gas (non-reportable sites)	6,541,778	4,723,000	4,554,395
	Fuel oil	1,279,918	2,521,975	2,292,722
	Process emissions	1,895,109	1,711,413	1,736,413
	Mains electricity (non-reportable sites)	4,425,648	5,415,882	5,694,025
	Mains electricity (reportable sites, offices)	634,648	616,520	501,915
	Mains electricity (Scope 2 + Scope 3)	18,477,807	15,980,437	16,231,516
Renewable electricity	606,319	776,848	727,769	

Related consumption (kgCO <sub>2</sub> )	Fugitive emissions (F-Gas)	137,148	201,857	161,948
Related Scope 1 travel (km)	Owned/leased vehicles	291,172	336,596	292,500
Financial indicators (£)	Natural gas	641,948	706,703	637,643
	Fuel oil	69,797	191,628	170,083
	Owned/lease vehicles (fuel/i-expenses)	21,802	22,582	21,141
		36,775	10,729	24,294
	Mains electricity (reportable)	2,086,056	2,057,335	2,238,679
	Renewable electricity	56,863	75,004	67,555
Total emissions scope 1 + 2 (tCO <sub>2</sub> )		13,475	11,471	10,126
Total gross emissions from non-reportable sites Scope 1 + 2 (tCO <sub>2</sub> )		2,906	2,533	2,416
Renewable Energy tCO <sub>2</sub>		233	239	202

## Energy consumption

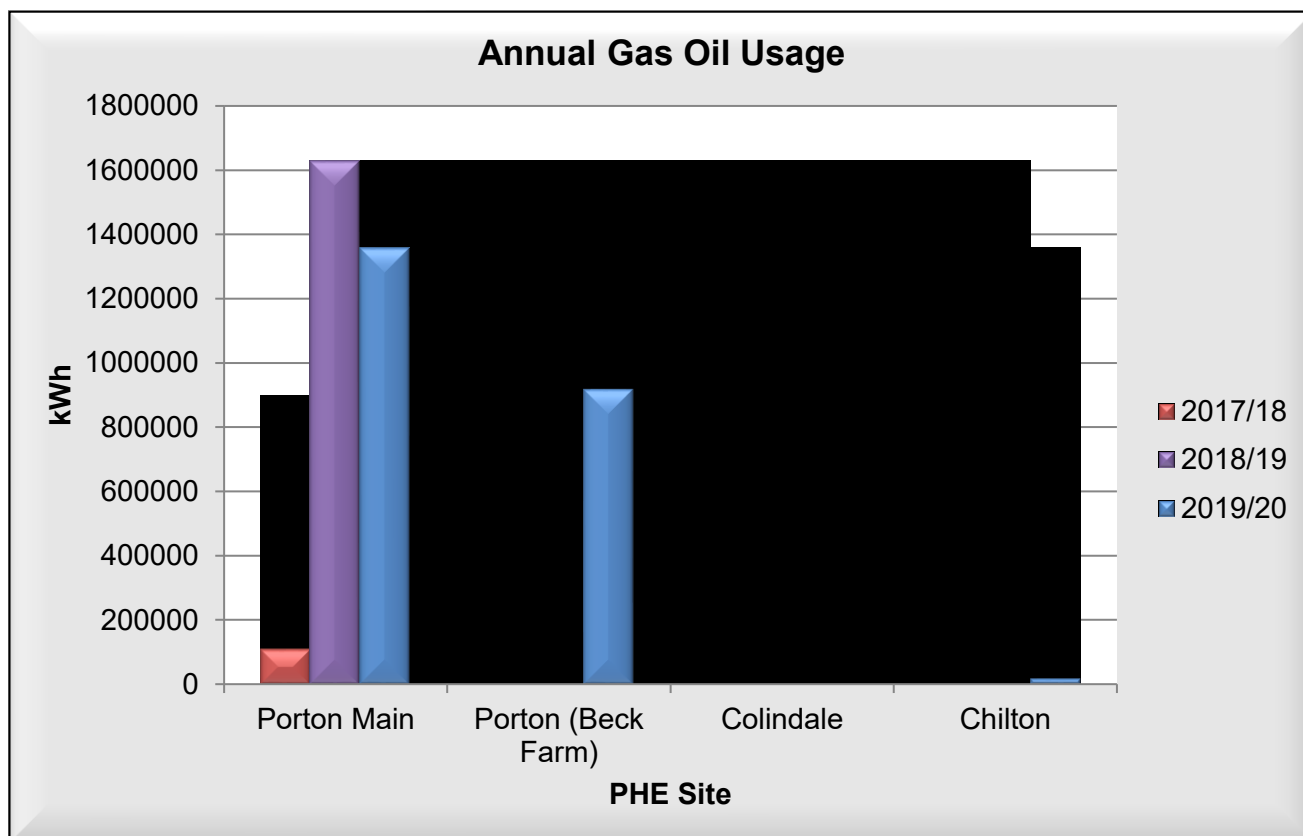
PHE's energy consumption for 2019/20 for our reportable and non-reportable estate is given below.

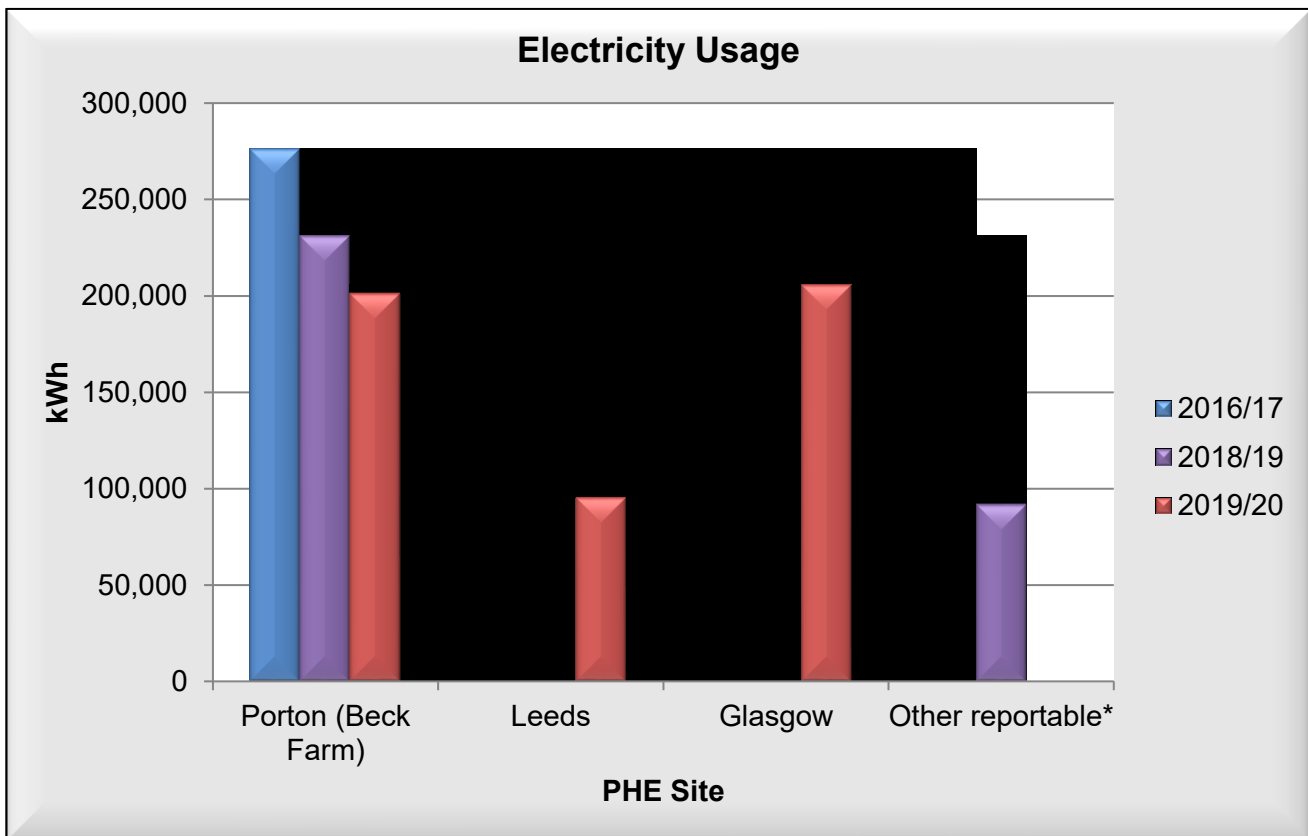
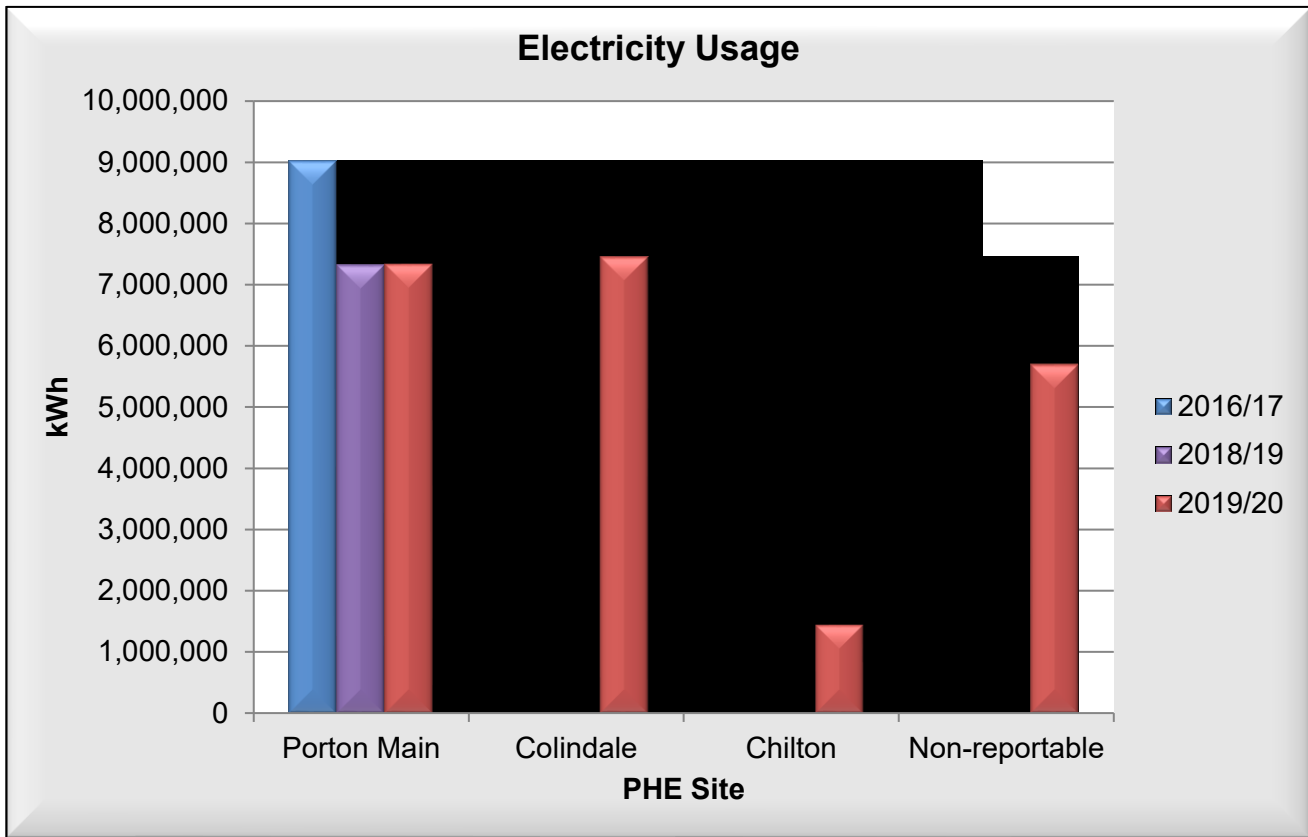
kWh	Electricity	Natural gas	Gas oil
Porton Main**	7,313,784	12,422,682	1,626,286
Porton (Beck Farm)	230,800	0	895,035
Colindale**	7,260,547	12,779,933	0
Chilton**	1,450,275	1,921,168	655
Leeds	89,940	141,756	0
Glasgow	204,098	345,049	0
Other reportable*	91,681	78,685	0
Non-reportable	5,415,882	4,723,000	0
<b>Total</b>	<b>22,057,007</b>	<b>32,412,273</b>	<b>2,521,976</b>

\* Other reportable sites are those that we occupy and pay directly to the utility provider for services

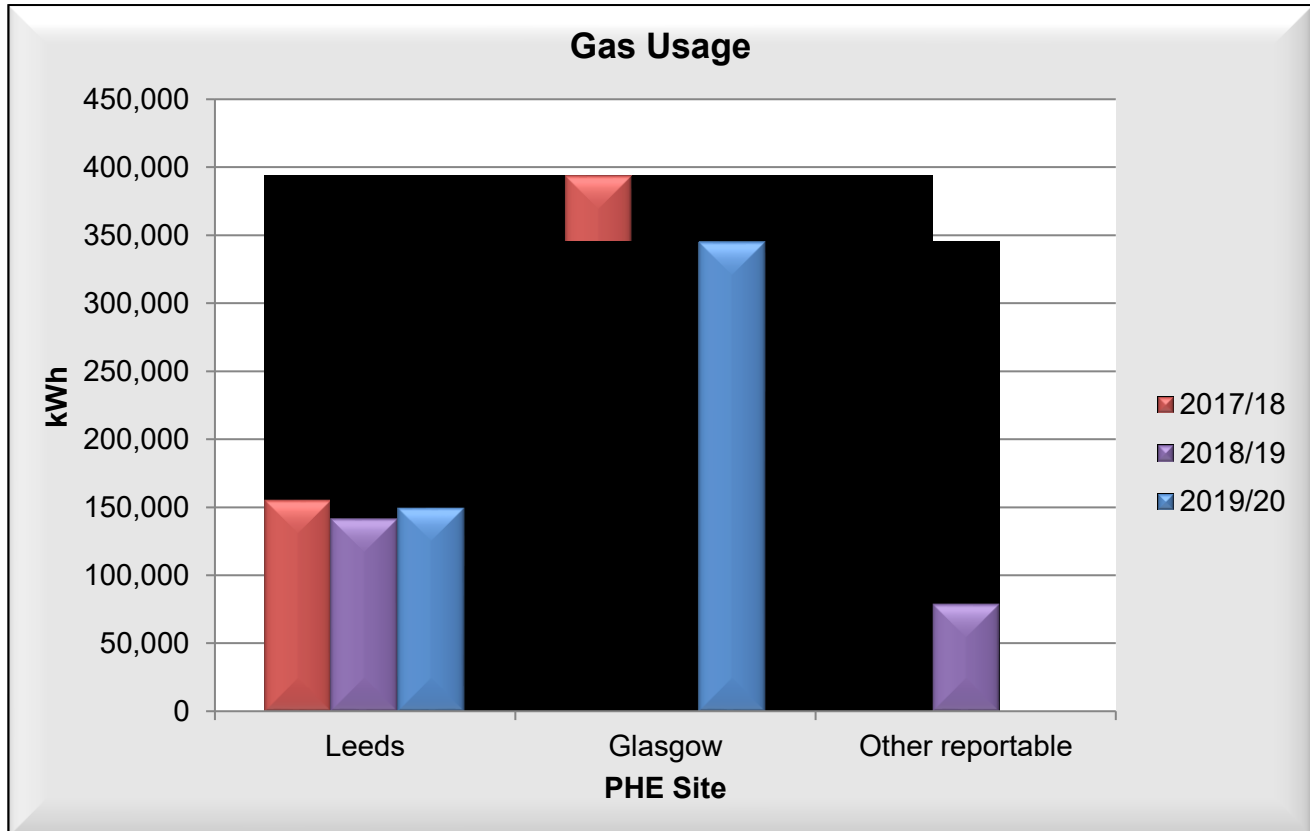
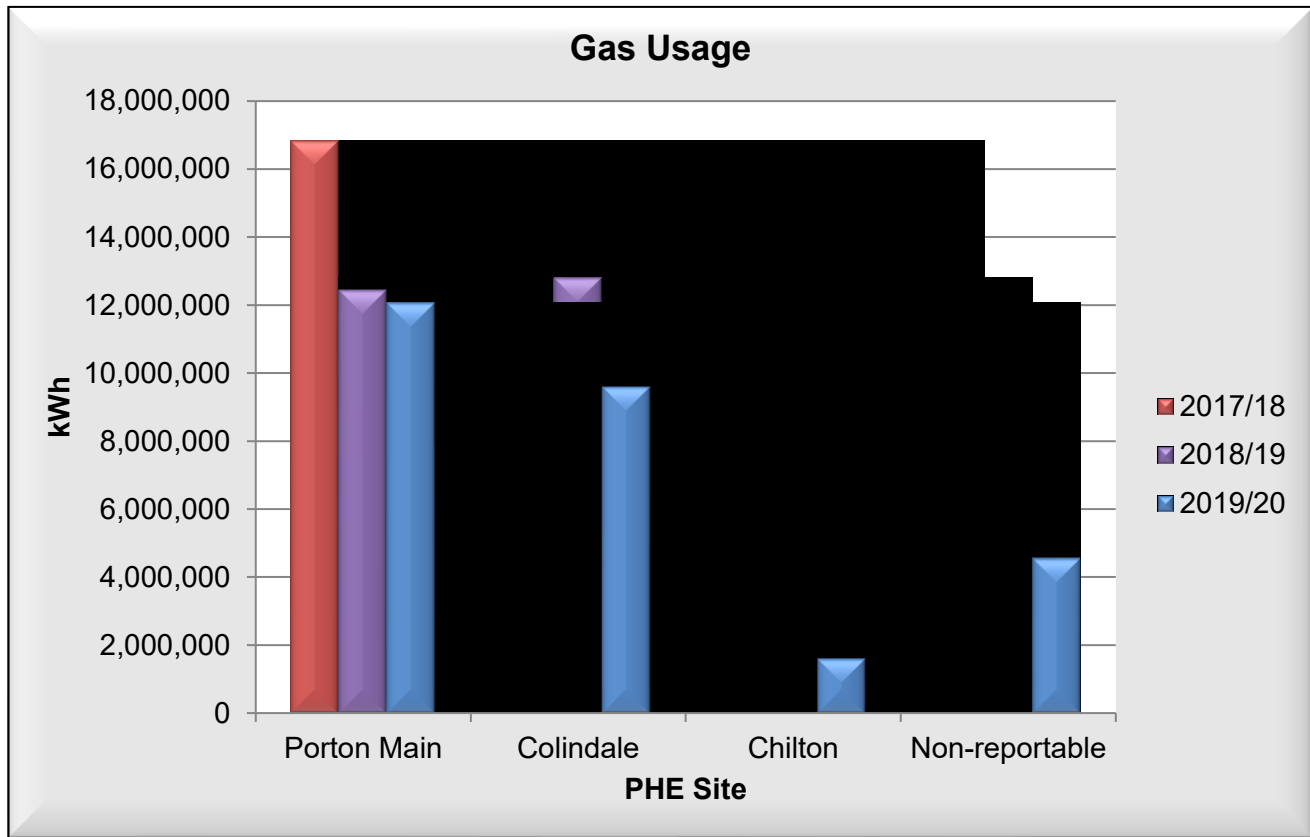
\*\*Electricity generated from their photovoltaic equipment has been taken away from the total usage figure.

The following graphs illustrate utility usage over the last 3 years.









## Carbon emissions: chief operating officer directorate

		Porton (Main)	Porton Building 1	Beck Farm	Colindale	Other**	Wellington House	Total
Emissions type	Emissions source	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e
Emissions from our properties and the operations carried out therein	Natural gas	2216.90	226.70	0.00	1762.40	433.26	108.00	4747.26
	Gas oil	348.50	0.00	235.80	0.00	0.00	0.00	584.30
	Emissions from Electricity use	2034.20	80.20	55.80	2066.70	988.21	340.30	5565.41
	Process emissions (refrigeration)	149.90	0.00	0.00	8.47	0.00	0.00	158.37
	Water supply	22.00	0.50	0.30	14.70	3.63	1.50	42.63
	Water (waste)*	43.40	0.90	0.60	28.70	7.10	2.90	83.60
	Subtotal		4814.90	308.30	292.50	3880.97	1432.20	452.70

\*Waste water is not reported as part of our Greening Government Commitment

\*\* Other reportable sites are those that we occupy and pay directly to the utility provider for services

## Carbon emissions: health improvement directorate

		Blenheim House	Other**	Skipton House	Total
Emissions type	Emissions source	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e
Emissions from our properties and the operations carried out therein	Natural gas	17.30	36.41	11.40	65.11
	Gas oil	0.00	0.00	0.00	0.00
	Emissions from electricity use	47.80	72.47	41.60	161.87
	Process emissions (refrigeration)	0.00	0.00	0.00	0.00
	Water supply	0.30	0.39	0.20	0.89
	Water (waste)*	0.50	0.86	0.30	1.66
	Subtotal		65.90	110.13	53.50

\*Waste water is not reported as part of our Greening Government Commitment

\*\* Other reportable sites are those that we occupy and pay directly to the utility provider for services

## Carbon emissions: health protection and medical directorate

		Chilton	Glasgow	Leeds	Other	Total
Emissions type	Emissions source	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e	tCO <sub>2</sub> e
Emissions from our properties and the operations carried out therein	Natural gas	294.90	62.20	27.50	9.60	394.20
	Gas oil	4.40	0.00	0.00	0.00	4.40
	Emissions from electricity use	400.10	57.00	26.40	19.20	502.70
	Process emissions (refrigeration)	3.55	0.00	0.00	0.00	3.55
	Water supply	1.80	0.10	0.10	0.03	2.03
	Water (waste)	3.60	0.20	0.20	0.05	4.05
	Subtotal	708.35	119.50	54.20	28.88	910.93

\* Waste water is not reported as part of our Greening Government Commitment

\*\* Other reportable sites are those that we occupy and pay directly to the utility provider for services

## Water consumption

PHE has set a target to reduce its water consumption by 2% annually to 2020, in line with the greening government initiative. The reportable usage of water for the estate (not including PHE Harlow) was 113,337 m<sup>3</sup>, with a further estimated 19,200 m<sup>3</sup> being used by our non-reportable sites. Data for non-reportable sites are estimated in many cases, due to the lack of metering. Overall, this represents a reduction in consumption of 1% from last year, which is disappointing, but is due in part to our COVID-19 response, which saw an increase in laboratory water use.

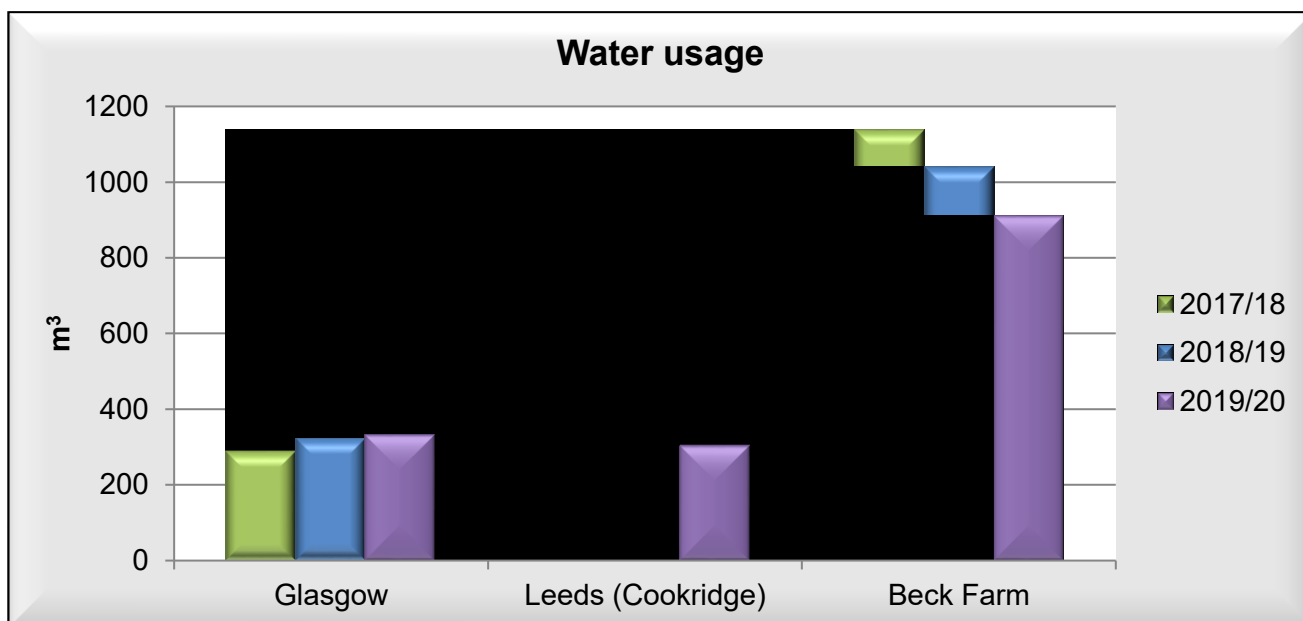
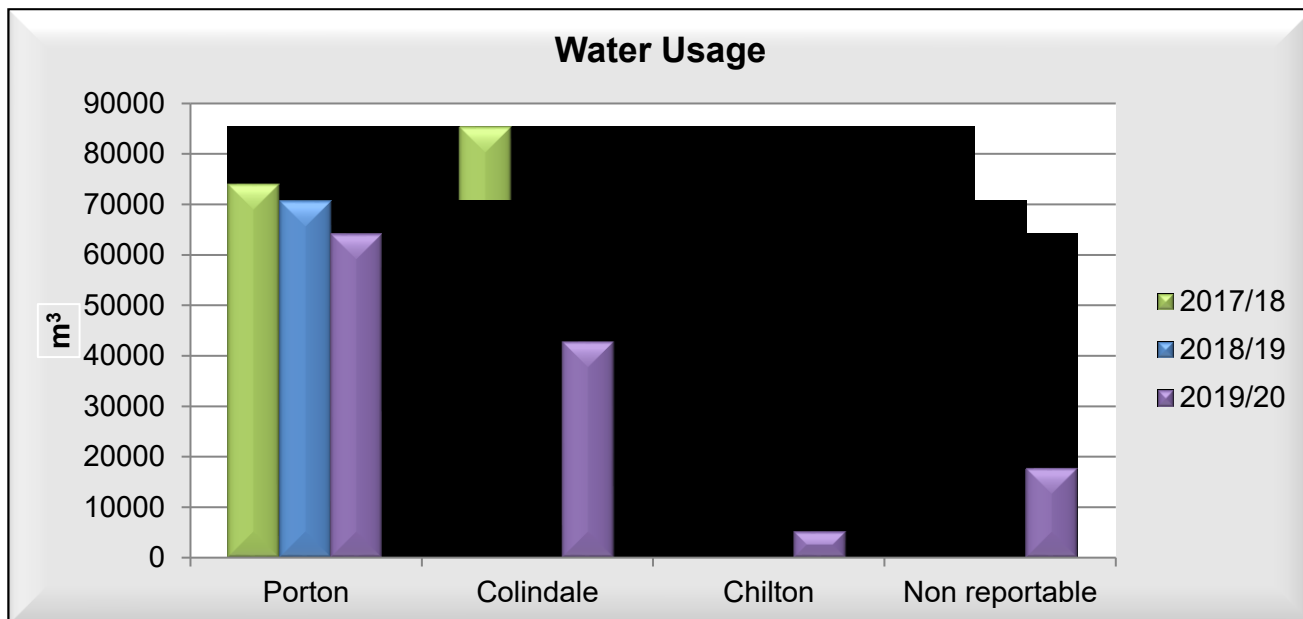
Water		2017/18	2018/19	2019/20
Scope 3 (Water)				
Non-financial indicators (m <sup>3</sup> )	Water from office estate (reportable)*	216	216	0
	Water from whole estate (reportable) [excluding office estate]	169,788	112,955	113,377
	Total for reportable estate (m <sup>3</sup> )	170,004	113,171	113,377
	Water from office estate (non-reportable)*	15,536	11,837	10,414
	Water from whole estate (non-reportable)* [excluding office estate]	5,987	8,564	8,786
	Total for non-reportable estate (m <sup>3</sup> )	21,523	20,401	19,200
Financial indicators (£)	Water supply costs**	199,079	106,751	119,187

\* Estimated usage from our non-reportable sites

\*\* Costs from our owned estate only

Water that was consumed by our offices and laboratories which are embedded in tenanted, non-reportable accommodation continues to be estimated using a recognised benchmarking algorithm.

PHE water consumption, is illustrated in the various graphs below.

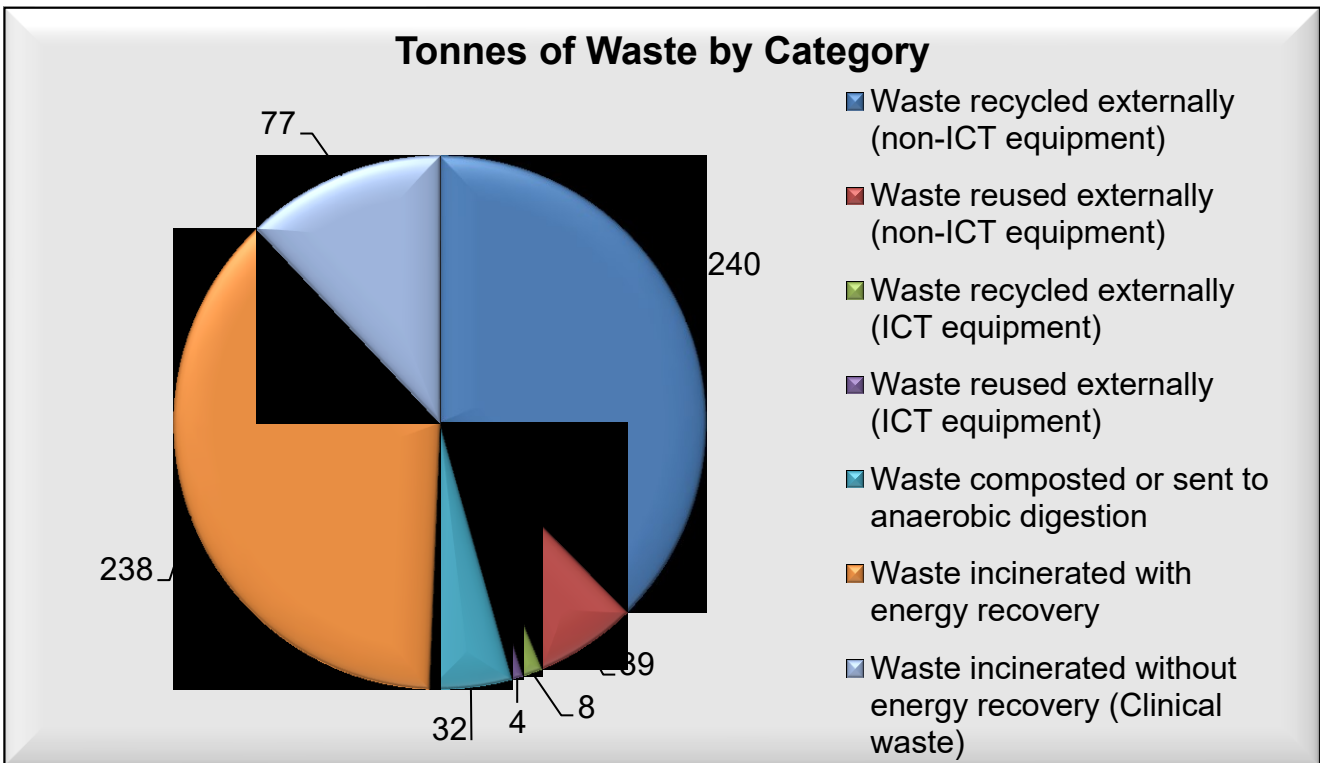
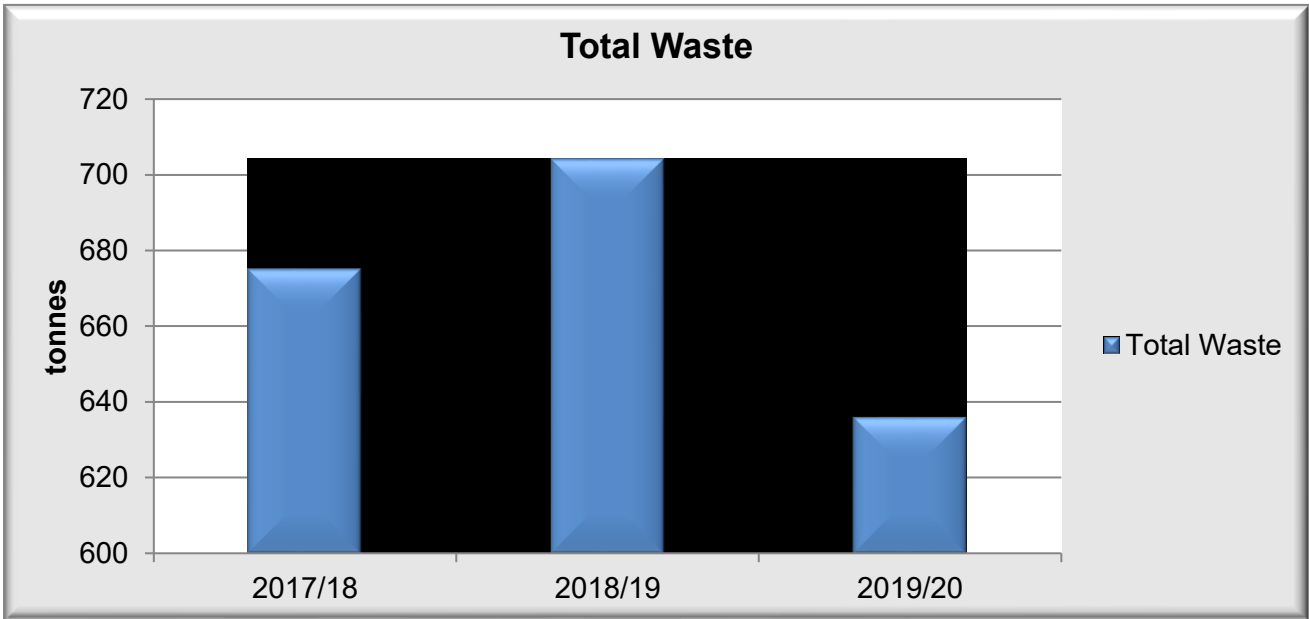


## Waste

PHE has set a total waste reduction target of 2% annually to March 2020, in line with the Greening Government initiative. PHE's total waste figure for 2019/20 was 636 tonnes, a 9.7% reduction in total waste compared with 2018/19, and a 30% reduction compared to the baseline figure of 2013/14 of 912 tonnes.

	2017/18 (tonnes)	2018/19 (tonnes)	2019/20 (tonnes)
Waste recycled externally (non-ICT equipment)	183	230	240
Waste reused externally (non-ICT equipment)	42	36	39
Waste recycled externally (ICT equipment)	10	5	8
Waste reused externally (ICT equipment)	7	12	4
Waste composted or sent to anaerobic digestion	27	20	32
Waste incinerated with energy recovery	190	194	238
Waste incinerated without energy recovery (clinical waste)	163	158	77
<b>TOTAL ICT WASTE</b>	<b>17</b>	<b>17</b>	<b>12</b>
Total waste not sent to landfill	623	654	595
Total waste sent to landfill (non-hazardous)	25	28	27
Total landfill waste deemed hazardous*	27	23	13
<b>Total waste</b>	<b>675</b>	<b>704</b>	<b>636</b>

\* Incinerator ash



PHE continues to implement its policy of reducing the amount of waste it sends to landfill and it is therefore very encouraging to see this waste stream falling in the last year. We continue to incinerate the majority of our waste via the energy from waste process. This waste stream employs energy recovery as a bi-product of the process, with only a small amount not leading to energy recovery. The hazardous incinerator ash, from the clinical waste incinerator at Porton, which is sent to a specialized landfill site for disposal, decreased last year by 10 tonnes.



We have been removing Consumer Single Use Plastics (CSUP) from our estate in line with the Governments plastics initiative, this has mostly been from our restaurant areas though we have also communicated to staff about the need to use alternatives to products that meet the criteria of a CSUP.

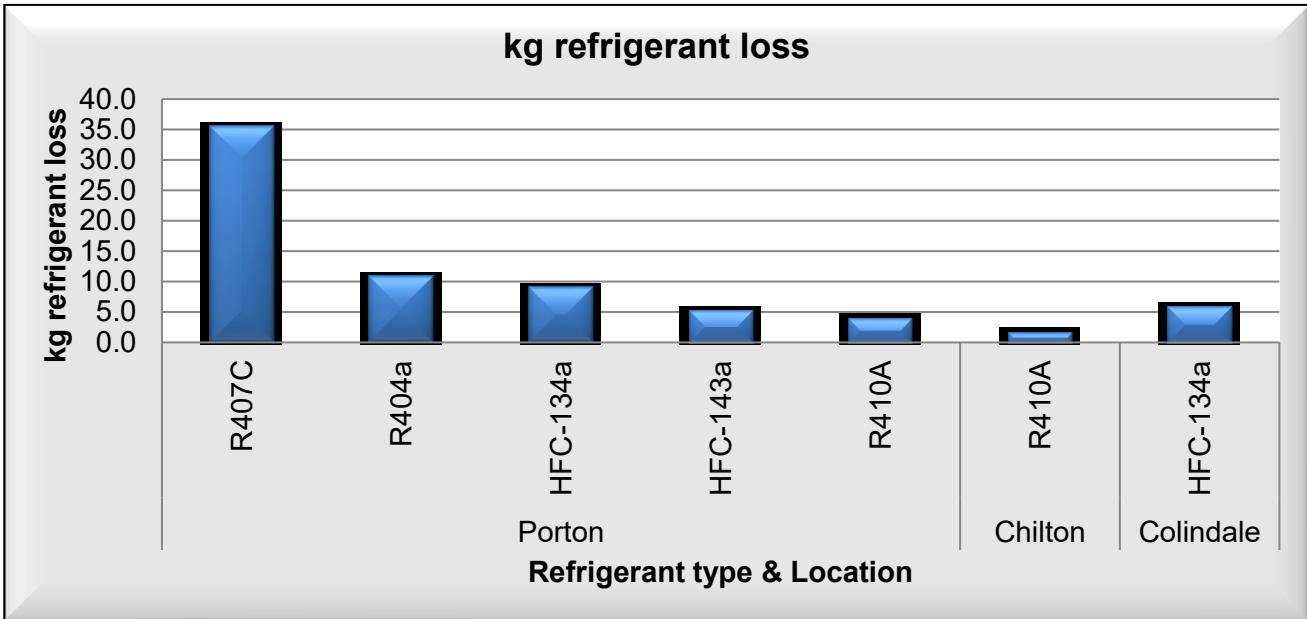
As a corporate body we decided to try and take this 1 step further, so in the last year we set up a plastic's working group to focus on what single use plastics we could eliminate from our laboratory operations. The aim is to replace, where practicable, these plastics with non-plastic alternatives; we have engaged with our laboratory managers and staff, as well as our main laboratory suppliers, to identify and help look for alternatives. This work is ongoing, though hopefully in the coming years we will have made some significant changes to the use of single use plastics in our facilities.

## Refrigerant losses

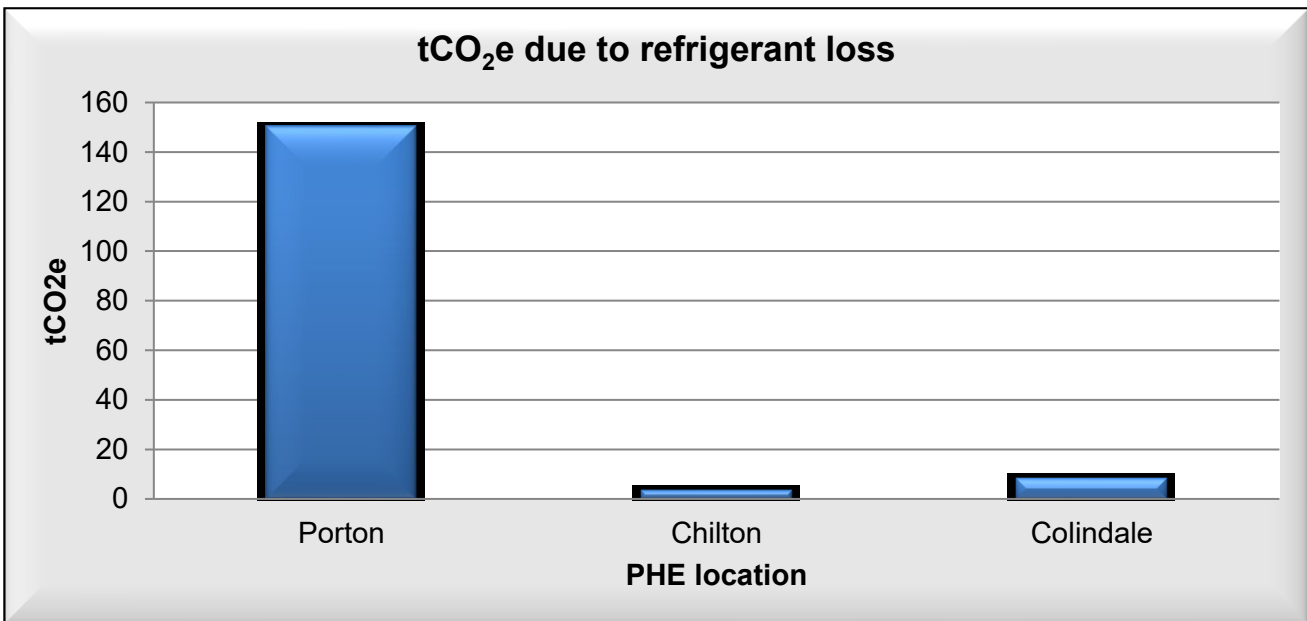
The losses of refrigerant on PHE's estate, with the associated carbon emissions, are illustrated below.

Facility / source description	Type of refrigerant	Refrigerant loss	GWP of refrigerant	CO <sub>2</sub> emissions
		kg	CO <sub>2</sub> e	tonnes CO <sub>2</sub>
Porton	R407C	10.0	1,774	17.74
	R410A	6.5	2,088	13.57
Glasgow	R410A	7.4	2,088	15.45
Chilton	R410A	2.2	2,088	4.64
Colindale	HFC-134a	7.2	1,430	10.30
	R404a	25.0	3,922	98.05
	R410a	13.0	2,088	27.14
	R407a	6.9	2,107	14.54

Due to the Global Warming Potential (GWP) of each specific gas emitted, the carbon equivalent of each kg of refrigerant gas emitted is significantly higher, see above. As refrigerants, for example R22 with less GWP, come onto the market these are being taken up across our estate replacing those that have a greater impact.



There is a legal requirement to monitor and measure the amount of refrigerants (known as F-gases) that are lost to the atmosphere from the operation of cooling and air handling systems fitted on our owned estate. At each of our properties where this type of equipment is fitted, an F-Gas log is maintained by the local estates team. This records how much of each particular gas has had to be topped up through operational losses. This information is collated and sent quarterly to DHSC as part of PHE's return under the Greening Government Commitment.



## Paper usage

PHE continues to have an active programme to reduce paper usage, in line with government targets. We can report that on average 65% of the paper used by PHE in 2019/20 comprised of recycled paper.

In 2019/20, PHE used 113,668 reams of A4 paper, 98 reams of A3 paper and 138 reams of A5 paper. Our A5 usage has decreased by some 40% and A4 by 12% respectively, with A3 decreasing by 50%, compared with the previous year. PHE's paper usage is summarised below.

Year	Ream		
	A5	A4	A3
2017/18	68	15,534	255
2018/19	231	15,590	197
2019/20	138	13,668	98
Reduction	-40%	-12%	-50%

Communication around paper usage and the need to 'think before you print' is still widely encouraged across the estate. Where possible, we have also moved to shared multi-functional devices for printing. We also continue to use 'follow-me' printing, which requires users to log in using their id cards at the printer before any printing is delivered and this, in turn, has significantly reduced waste by ensuring printing only occurs when needed.

## PHE Harlow utility usage

Construction work at our facility in Harlow has started in the last year. It is anticipated that as the various phases of the project commence the utility, water and waste usage onsite will vary dramatically. This can be seen in this year's waste data, below, where demolition waste has been added, because of this variance Harlow's data are reported separately from the rest of PHE.

Gas to the site was isolated in 2018/19. Emissions from electricity usage were down by 21% compared to last year.

Scope 1 and 2 emissions for PHE Harlow, are detailed below.

PHE Harlow greenhouse gas emissions		2017/18	2018/19	2019/20
Non-financial indicators (tCO <sub>2</sub> )	Natural gas	102	4	0
	Mains electricity	1,308	913	721
Related energy consumption (kWh)	Natural gas	555,301	19,778	0
	Mains electricity	3,401,300	2,970,770	2,601,173
Financial indicators (£)	Natural gas	117,952	2,012	0
	Mains electricity	368,081	423,658	414,554
Total gross emissions		1,410	917	721

Water (Harlow)		2017/18	2018/19	2019/20
Non-financial Indicators (m <sup>3</sup> )	Water usage	5,483	3,825	3,360
Financial Indicators (£)	Water supply costs	2,800	8,133	7,072

There has been a 12% reduction of water usage, compared to last year. As the construction work progresses onsite, it is anticipated that this will continue to fall.

Waste (Harlow)		2017/18	2018/19	2019/20
Non-financial Indicators (kgs)	Waste usage	3,288	6,210	4,292,240*
Financial Indicators (£)	Waste costs	406	906	1710**

\* Includes construction waste sent offsite

\*\* costs do not include construction waste

As shown above, the waste at the Harlow site has increased substantially, since the demolition phase of the project started this year. The site reported that some 4.5 tonnes of general waste were produced during the year, with the rest, 4,287 tonnes, being produced from the construction project. It is anticipated that a large amount of construction waste and soils produced during the redevelopment of this site will be reused or recycled during the construction phase of this project. As mentioned above, as the various phases of the project commence the waste that is produced will vary considerably.

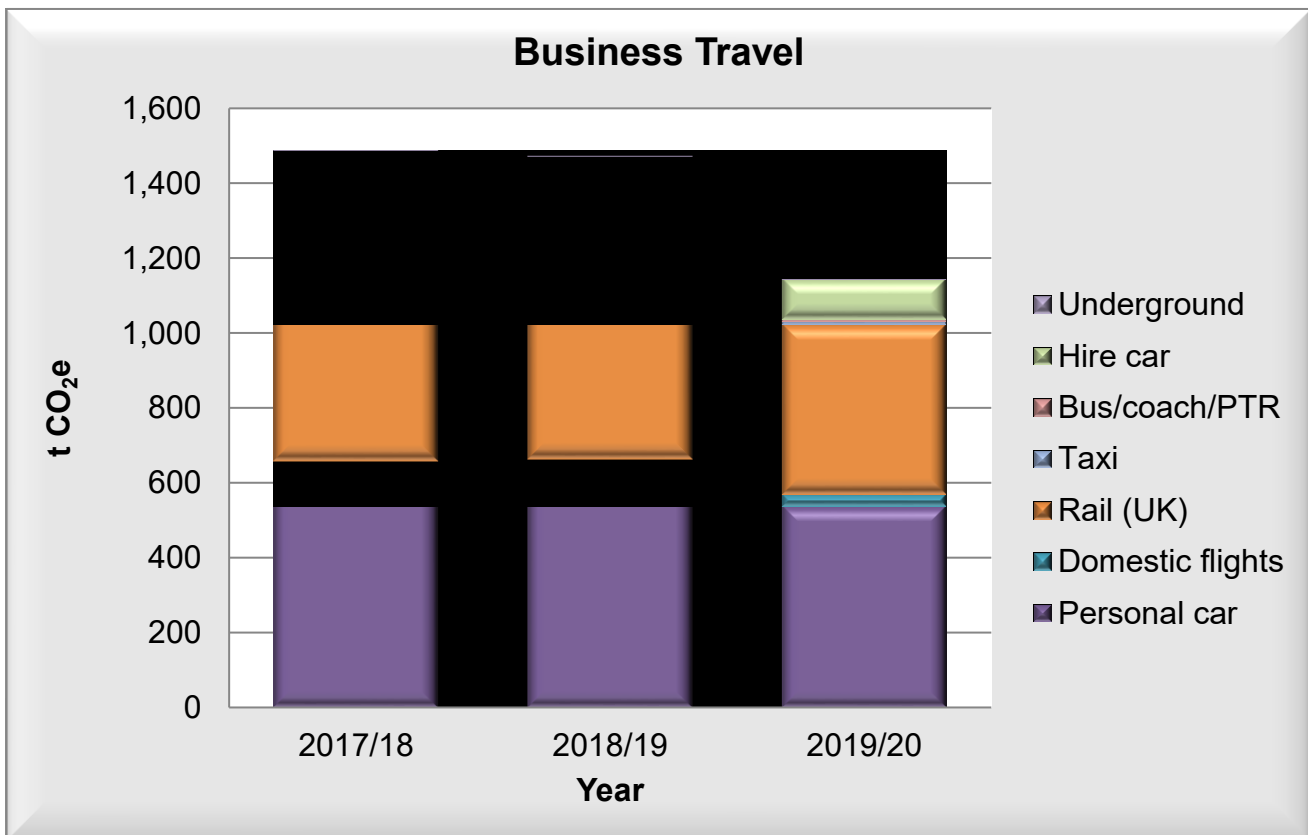
# Travel

PHE has a target to reduce business travel by at least 2% annually, relative to our baseline year of 2013/14, through to March 2020. Staff are encouraged to limit their journeys, wherever possible, and when they must travel, to use the most sustainable modes of transport.

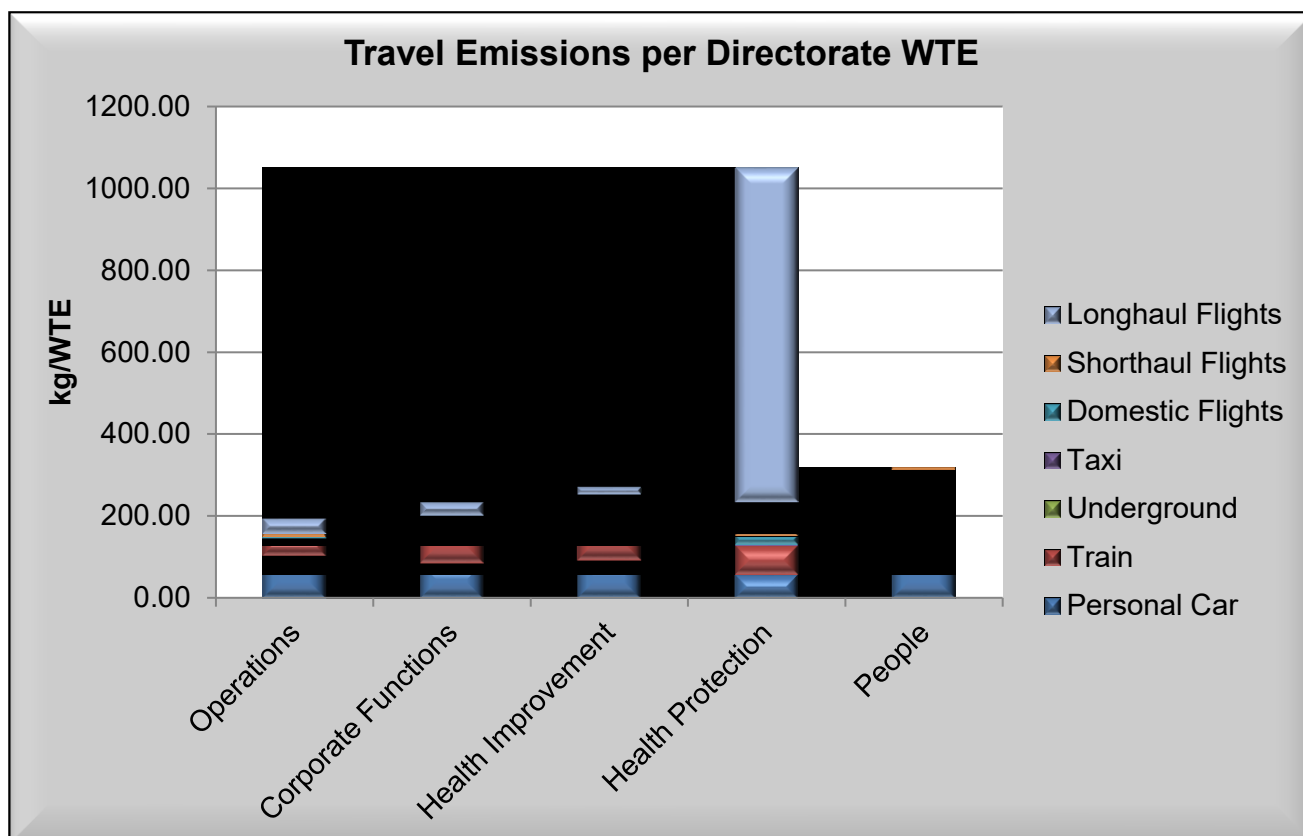
To deliver the business objectives of the organisation our members of staff need to travel. Over the last year there has been a 22% reduction in business travel emissions compared to 2018/19. The COVID-19 pandemic did play a part in the reduction of our business travel in Q4.

The Carbon impact per WTE from domestic flights has decreased by some 35% compared to last year. UK rail emissions were down by 36%, with business travel by personal car down by 12% compared to last year.

There was also a reduction in emissions per WTE by some 11% from international flights compared to the previous year.



A breakdown of the impact of the various reportable types of business travel are given in the graph above, note this does not include short or long-haul flight data as this is not reportable under government reporting requirements. Though in the spirit of transparency these data are reported in detail below.



The chart above summarises, in detail, the carbon emissions per WTE from business travel undertaken by each PHE directorate. Operational activities by the Health Protection and Medical directorate require its staff to travel extensively overseas, as illustrated above. These are discussed in more detail in the section on air travel below.

Business travel		2017/18	2018/19	2019/20
Scope 3				
Non-financial indicators (tCO <sub>2</sub> )	Personal car	619	615	537
	Domestic flights	41	50	32
	Rail (UK)	692	641	455
	Taxi	6	2	6
	Bus/coach/PTR	5	5	4
	Hire car	123	158	110
	Underground	1	0.523	0.39

	Total	1,486	1,471	1,145
Related scope 3 travel (km)	Personal car	3,392,340	3,402,269	3,031,749
	Domestic flights	286,752	316,775	238,454
	Rail (UK)	14,785,302	14,548,043	11,061,541
	Taxi	41,250	44,483	42,813
	Bus/coach/PTR1	47,734	51,985	39,893
	Hire car1	673,801	874,057	621,655
	Underground1	13,664	13,904	12,506
	Total	19,240,842	19,251,515	15,048,611
Financial indicators (£)	Personal car	925,888	964,363	861,812
	Domestic flights	57,605	58,349	43,267
	Rail (UK)	4,089,704	4,224,978	3,477,625
	Taxi	91,666	98,850	95,139
	Bus/coach/PTR	25,260	23,648	19,470
	Hire car	103,443	113,533	110,913
	Underground	62,110	63,189	56,847
	Total	5,355,676	5,546,910	4,665,073
Other business travel (km)	Short-haul international average	1,863,015	1,915,578	994,954
	Long-haul international average	7,511,569	8,231,834	7,665,793
	Rail: Eurostar	74,982	70,506	55,655
Total	Total gross emissions Scope 3 Business Travel (tCO <sub>2</sub> )	1,487	1,471	1,145
	Total Financial Cost Scope 3 Business Travel (£)	5,320,412	5,546,910	4,665,073
	Total Other Financial Cost, not covered in Scope 3 (£)	694,157	734,830	665,214



In order to facilitate a comparison of travel emissions across the various parts of the organisation, PHE uses the measure of tCO<sub>2</sub>e per whole time equivalent (WTE) staff.

The key changes to our travel footprint compared with last year were:

- emissions per WTE from UK (domestic) flights are down by 35%
- emissions per WTE from international flights are down by 11%
- emissions per WTE from train use are down by 35%
- emissions per WTE from personal car use are down by 13%
- emissions per WTE from taxi use are down by 7%
- emissions (tCO<sub>2</sub>e) from use of PHE owned/leased vehicles are down by 15%

Microsoft's Skype continues to be a well-supported tool in the initiative to minimise travel for meeting attendance. PHE recognises that less business travel will not only benefit public health by preventing air pollution, but also supports PHE's plans to reduce carbon and saves money.

Active travel initiatives across the whole of PHE are one of the ways we have been asking staff to consider whether they actually have to attend a meeting in person. If staff are travelling locally, walking or using a bicycle (where practicable) are examples of how carbon savings can be made while contributing to improving health. PHE is an advocate of active travel in the UK.

## Rail travel

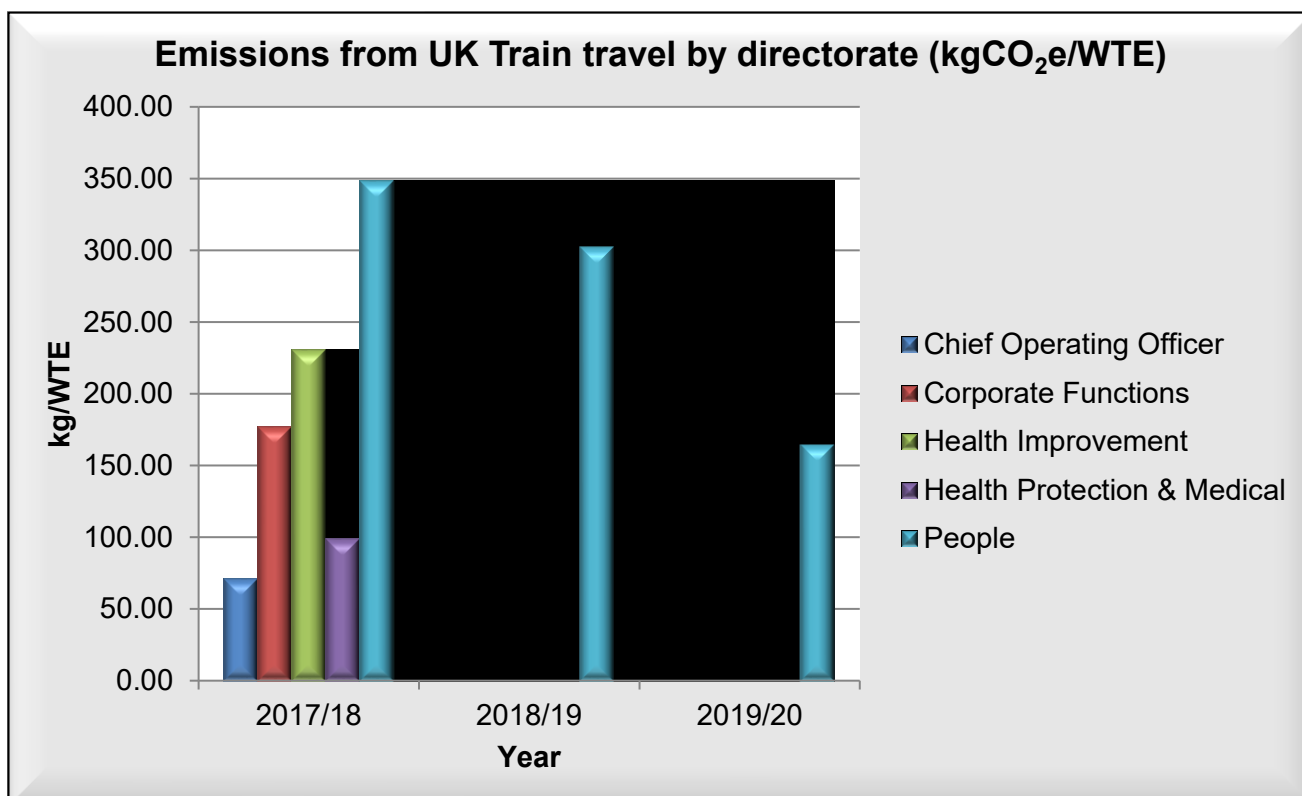
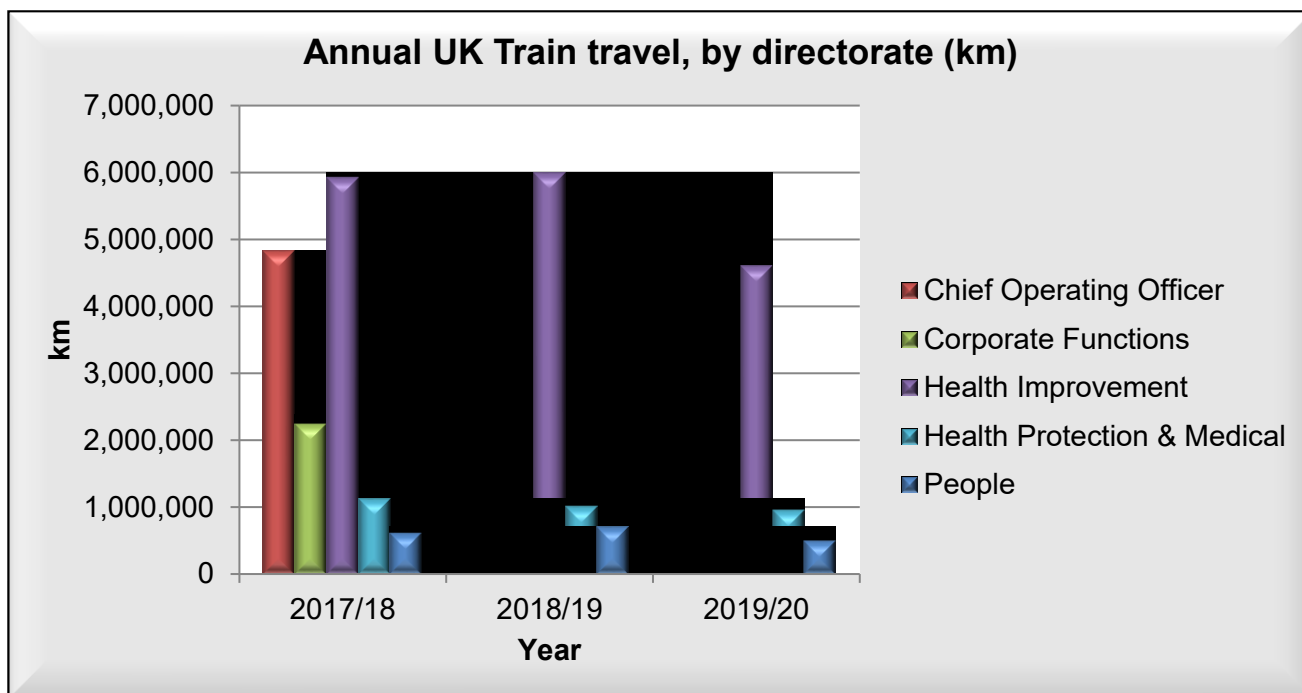
During 2019/20, PHE staff travelled 11,061,541 km by train, inclusive of i-expense claims, representing a 24% reduction on the previous year. The Health improvement directorate undertook the greatest number of journeys by rail, this is due in part to the dispersed nature of the estate from where this directorate operates. PHE's total spend on UK rail travel amounted to £3,477,625 and the following table summarises PHE's carbon footprint due to rail travel.

Directorate	Distance kms	WTE	tCO <sub>2</sub>	kgCO <sub>2</sub> /WTE
Chief operating officer	3,218,518	3094	132.44	42.81
Corporate functions	1,741,364	664	65.30	98.30
Health improvement	4,607,895	1237	189.61	153.32
Health protection and medical	952,235	558	39.18	70.25
People	492,743	123	20.28	164.85
<b>Total*</b>	<b>11,012,755</b>	<b>5,521</b>	<b>447</b>	<b>530</b>

\*Does not include i-expenses data.

Our rail travel in 2019/20 is summarised below, expressed as both distance travelled, and in terms of emissions expressed as kgCO<sub>2</sub>e per WTE.

Emissions due to rail travel are expressed as kgCO<sub>2</sub>e per WTE. It should be noted that the size of each directorate can subtly change over the year, impacting on the total emissions. However, the measure of kgCO<sub>2</sub>e per WTE normalizes a meaningful comparison and gives the following distribution.



Staff in the People directorate generated the highest emissions per person (165 kgCO<sub>2</sub>e/WTE) from train travel, this is due to the low number of staff in the directorate. This compares with members of staff from the Health improvement directorate, who generated 153 kgCO<sub>2</sub>e/WTE, down by 28% compared to last year's figures.

## Air travel

PHE fully recognises its public health commitments, not only in the UK but also internationally. Therefore, travelling by air to meet these commitments is generally unavoidable, but we also recognise the importance of minimising our air travel wherever possible, to reduce our impact from air travel.

A large proportion of our international work is undertaken due to our commitment to Global Public Health issues, our Global Public Health team are trialling a carbon offsetting scheme, to reduce their impact due to international travel. It is hoped that this scheme will be rolled out across PHE later in 2020/21.

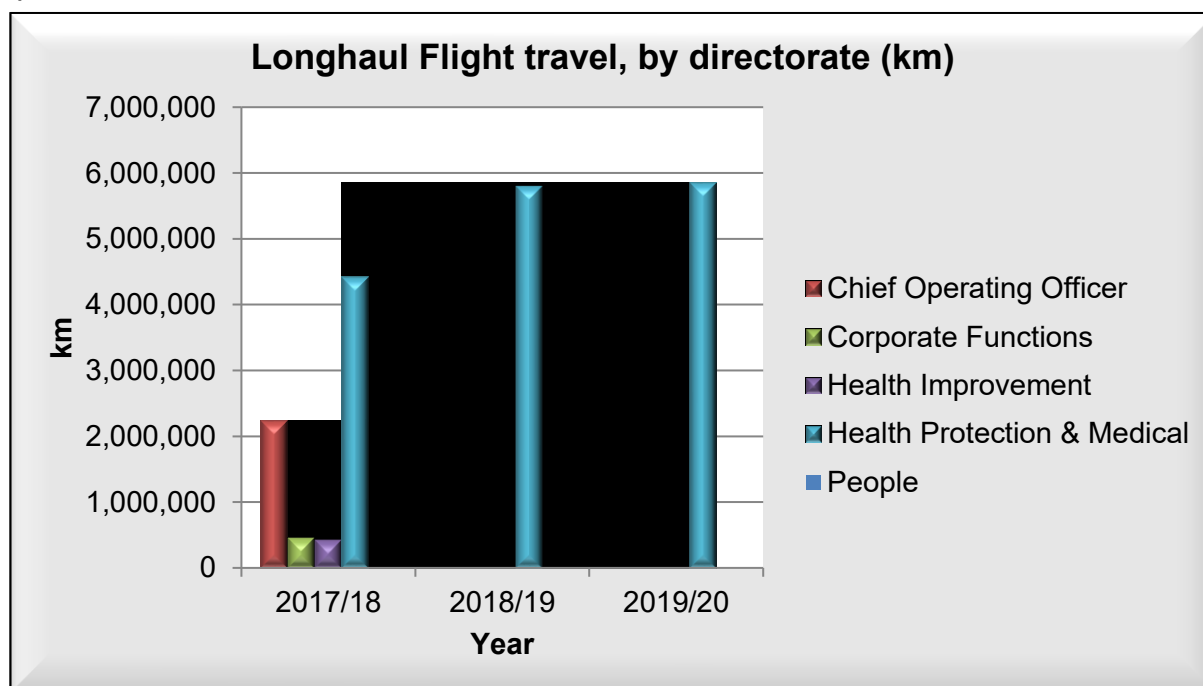
Flight data is summarised below.

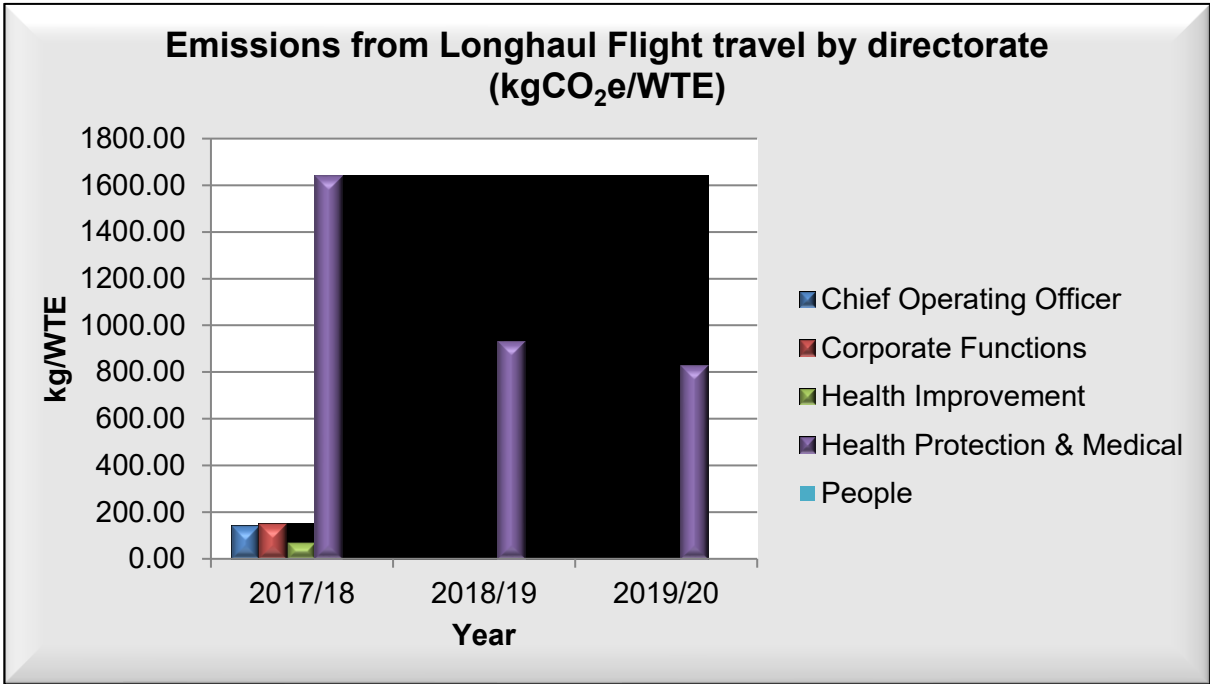
Directorate	Distance travelled (km)				
	Q1	Q2	Q3	Q4	Total
Domestic flights (<500 km)					
Chief operating officer	60,764	18,972	17,595	13,458	110,789
Corporate functions	2,083	5,135	3,444	2,389	13,051
Health improvement	3,726	749	9,661	9,317	23,453
Health protection and medical	34,839	13,466	17,068	22,521	87,894
People	831	1,526	910	0	3,267
<b>Total domestic flights</b>	<b>102,243</b>	<b>39,848</b>	<b>48,678</b>	<b>47,685</b>	<b>238,454</b>
Short-haul flights (500-3,700 km)					
Chief operating officer	142,956	106,355	49,210	184	298,705
Corporate functions	11,188	11,101	18,442	2,515	43,246
Health improvement	18,491	37,613	13,607	11,830	81,541
Health protection and medical	197,188	106,118	149,485	113,860	566,651
People	699	4,811	0	0	5,510
<b>Total short-haul flights</b>	<b>370,522</b>	<b>265,998</b>	<b>230,744</b>	<b>128,389</b>	<b>995,653</b>
Long-haul flights (>3,700 km)					

Chief operating officer	360,258	485,366	372,620	198,919	1,417,163
Corporate functions	170,585	19,059	41,874	28,524	260,042
Health improvement	151,385	59,766	21,002	15,176	247,329
Health protection and medical	1,642,832	1,509,612	1,356,860	1,212,532	5,721,836
People	0	0	0	0	0
Total long-haul flights	2,325,060	2,073,803	1,792,356	1,455,151	7,646,370
<b>TOTAL ALL FLIGHTS</b>	<b>2,797,825</b>	<b>2,379,649</b>	<b>2,071,778</b>	<b>1,631,225</b>	<b>8,880,477</b>

## Long haul flights

There was a 4.85% increase in the amount of international air travel undertaken compared to the previous year. The Health Protection and Medical directorate was the greatest user of long haul flights, as explained earlier this is mainly due to PHE’s operational commitments overseas.

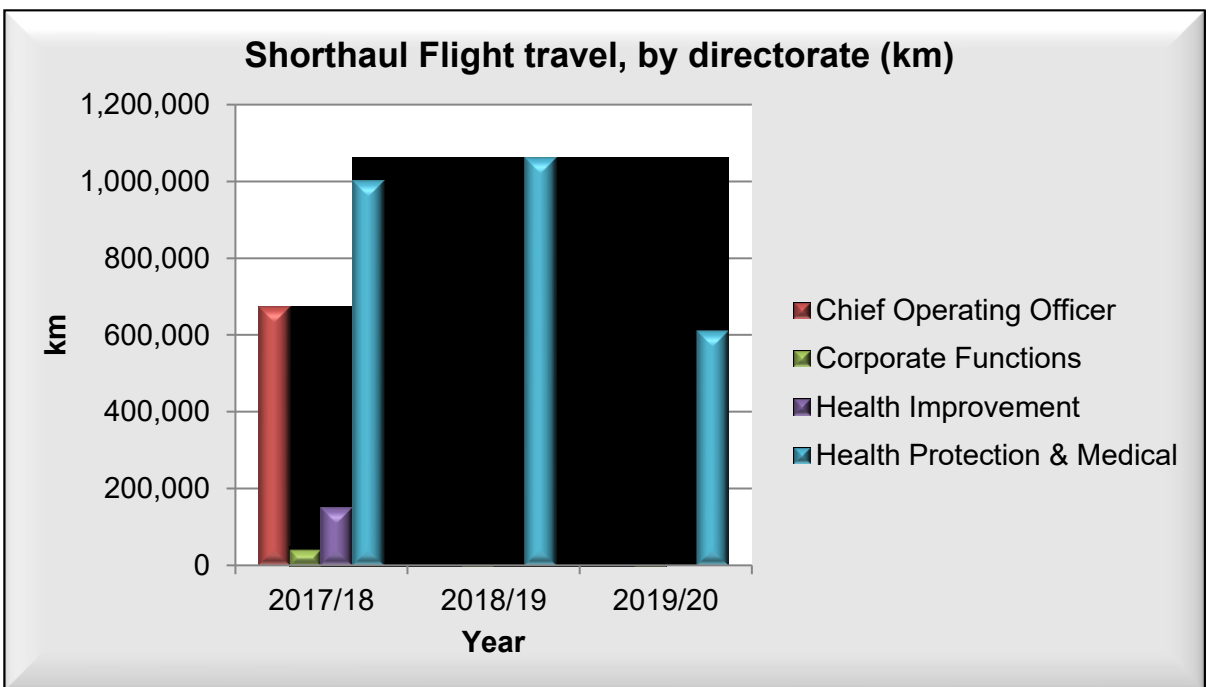




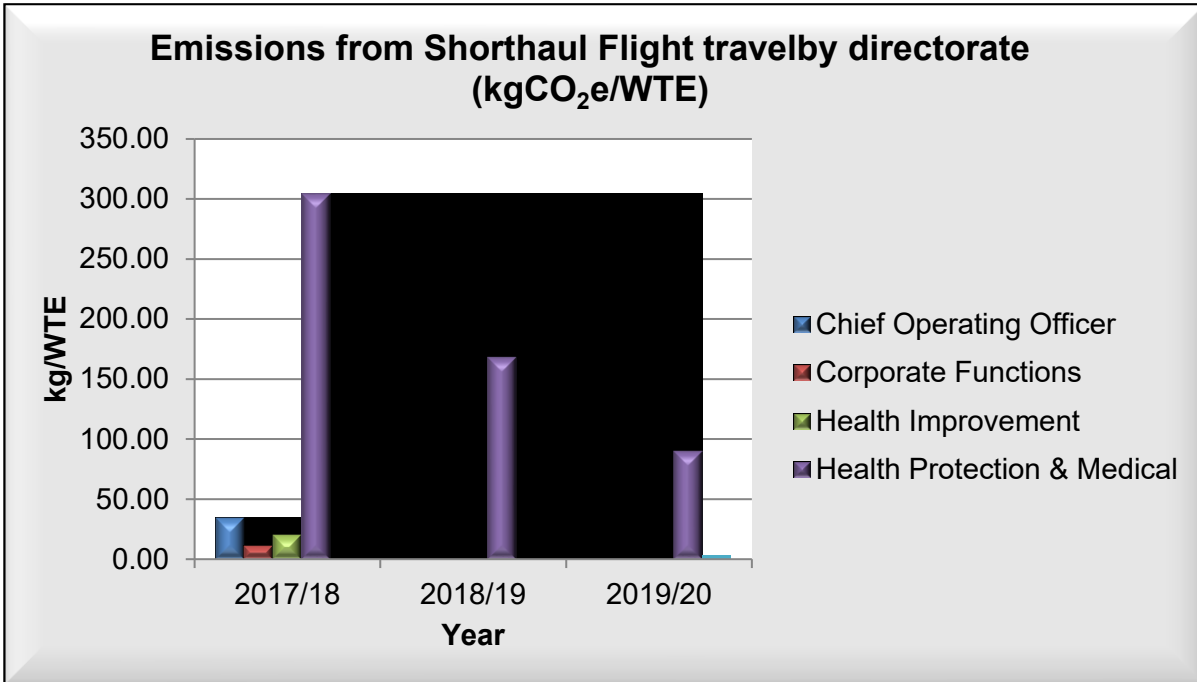
The emissions due to long haul air travel are expressed as kgCO<sub>2</sub>e per WTE. This gives the following distribution:

### Short haul flights

The distance travelled on short haul flights, between the UK and Europe, decreased by some 40% in 2019/20 compared with the previous year. The Health Protection and Medical directorate and the Chief operating officer’s directorates continued to be the greatest users of short haul air travel.

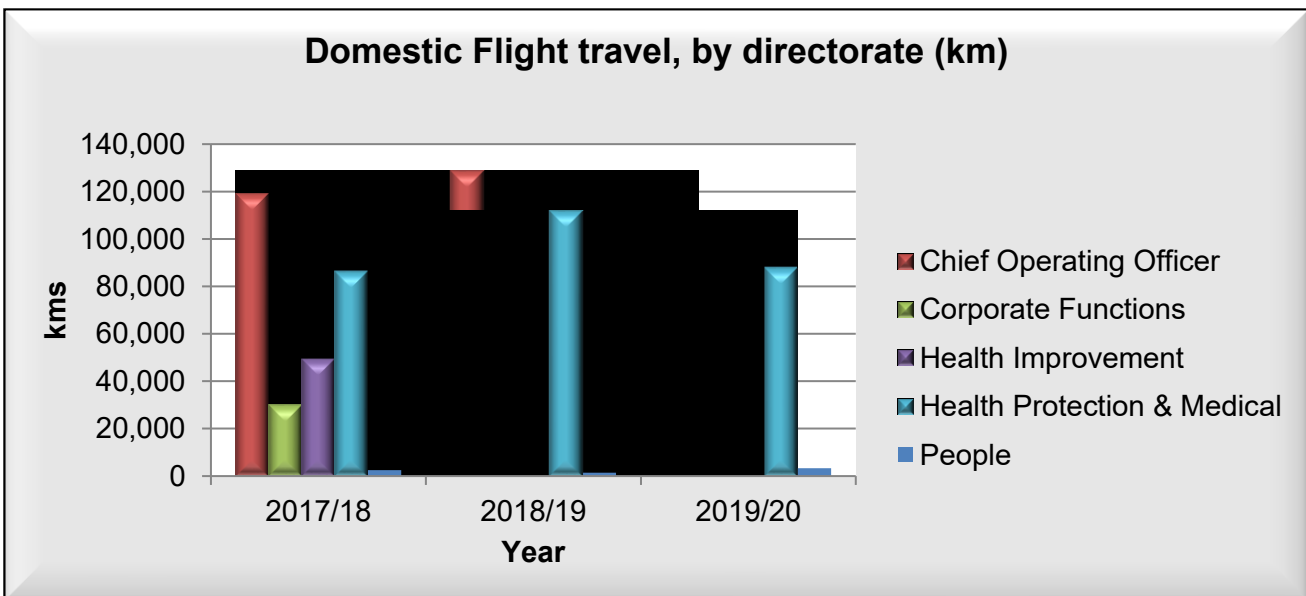


To facilitate comparison across PHE directorates the emissions due to short haul air travel are expressed as kgCO<sub>2</sub>e per WTE. This gives the following distribution:

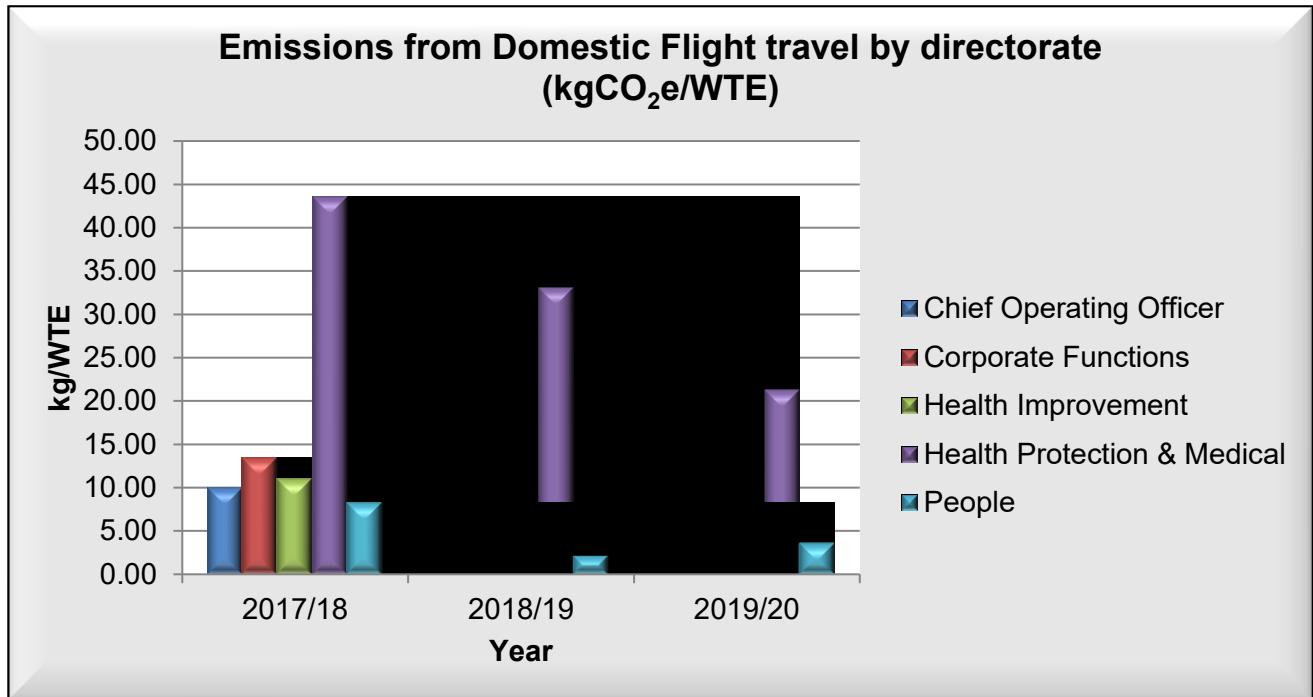


### Domestic flights

The government has indicated that air travel within the UK must be reduced significantly and this has been reflected in the latest GGC targets. Distance travelled by PHE staff using domestic air travel decreased by some 25% from the previous year.



Although there was an overall decrease in the distance travelled by domestic air travel in 2019/20 (above), when the data is calculated as kgCO<sub>2</sub>e per WTE (below); the distribution reflects the recent reorganisation of staff across PHE and clearly shows which directorate utilises this form of travel most per headcount.



## Car use for business travel

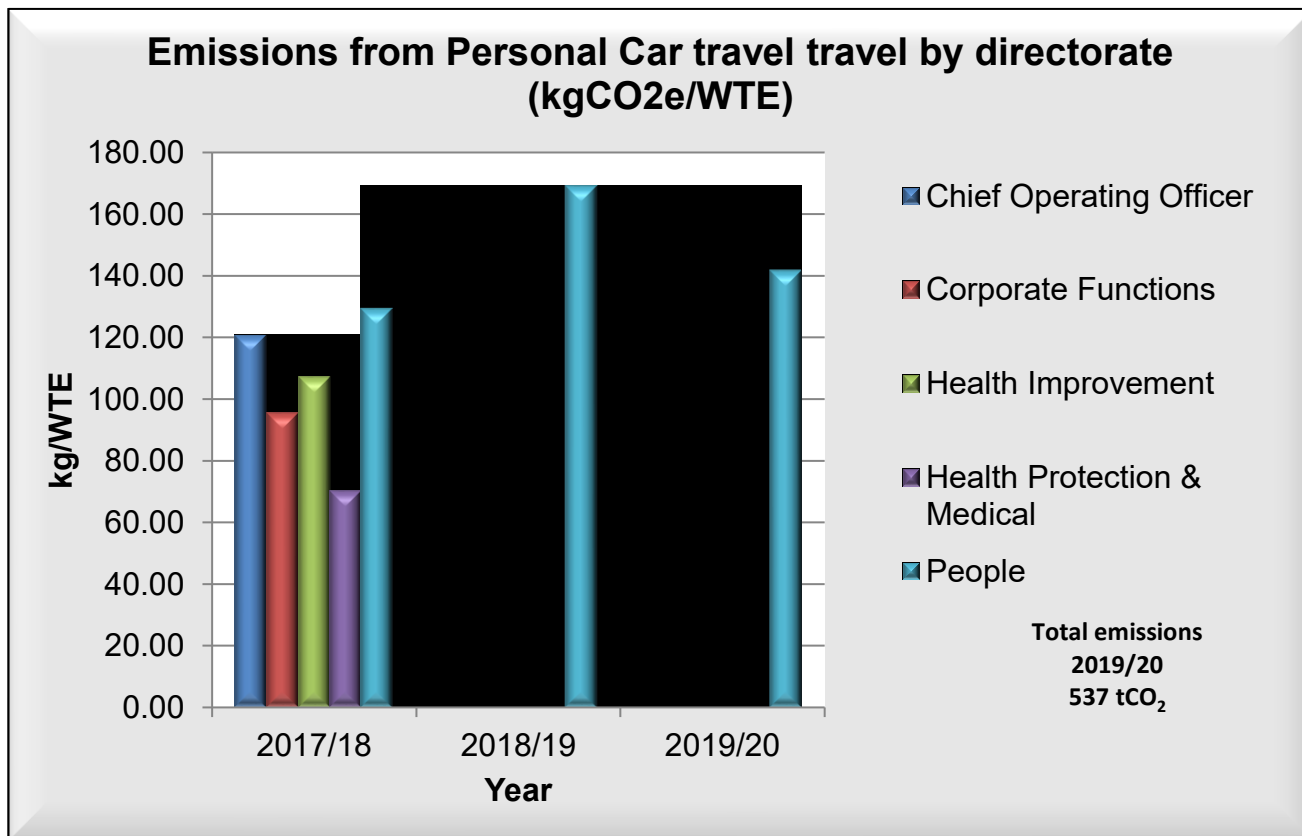
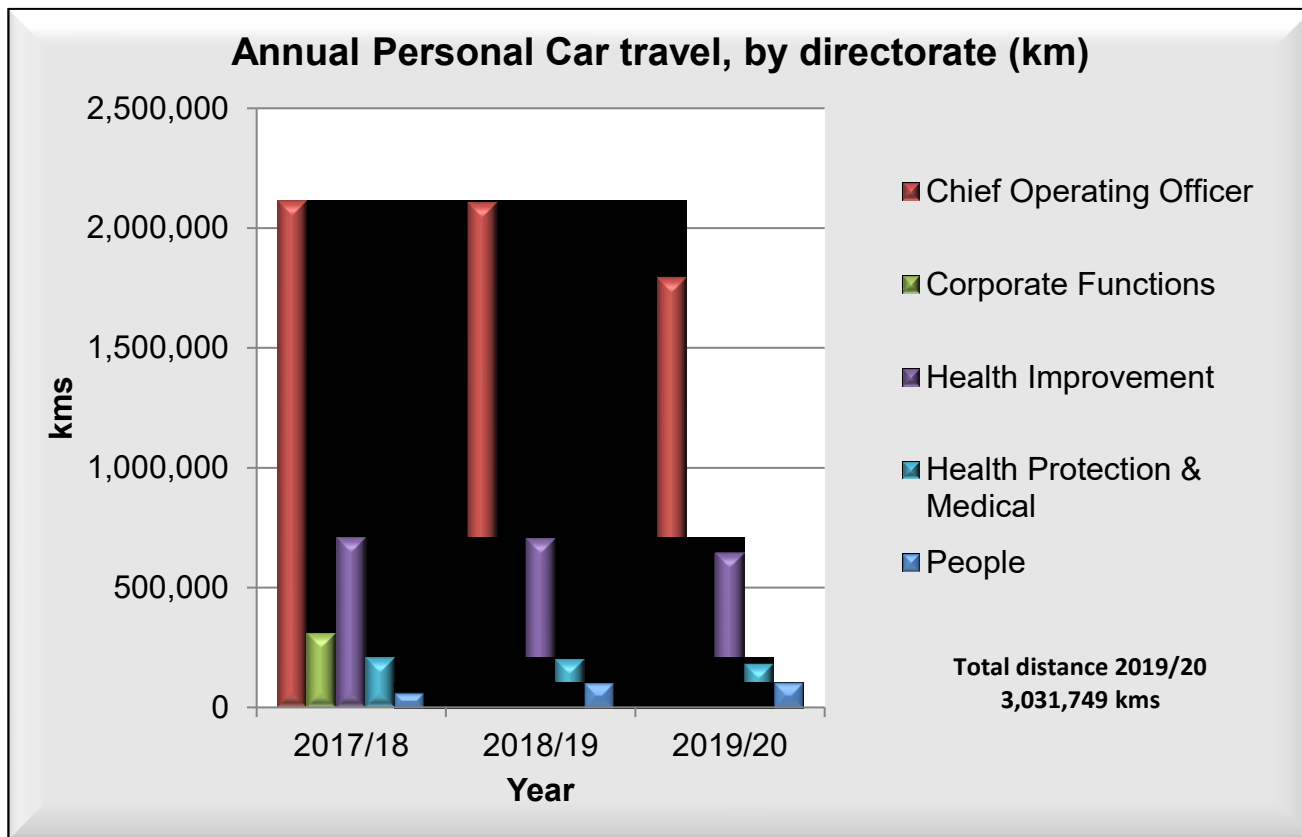
PHE continues to undertake a significant amount of business travel by car, the vast majority of it in personal cars. For 2019/20 we travelled some 3,024,682 km in our own cars at a cost of £856,858 (that is, 28p/km). The distance travelled, compared with last year, has decreased by some 11%. The method for calculating personal car travel is derived from PHE's i-expenses claims data.

Personal car use by directorate (with associated cost) is shown below:

Directorate	Distance travelled (km)				Annual total (km)	Cost £
	Q1	Q2	Q3	Q4		
Chief operating officer	394,321	458,872	529,363	408,029	1,790,586	509,108
Corporate functions	73,998	89,514	86,608	68,755	318,875	85,705
Health improvement	135,694	164,667	189,817	154,523	644,701	183,235
Health protection and medical	38,337	46,842	56,173	37,817	179,169	51,224
People	21,544	26,601	26,558	23,715	98,418	27,586
<b>Total personal car</b>	<b>663,893</b>	<b>786,497</b>	<b>888,521</b>	<b>692,839</b>	<b>3,031,749</b>	<b>856,858</b>

Business travel, by PHE staff in 2019/20, using personal cars is shown below

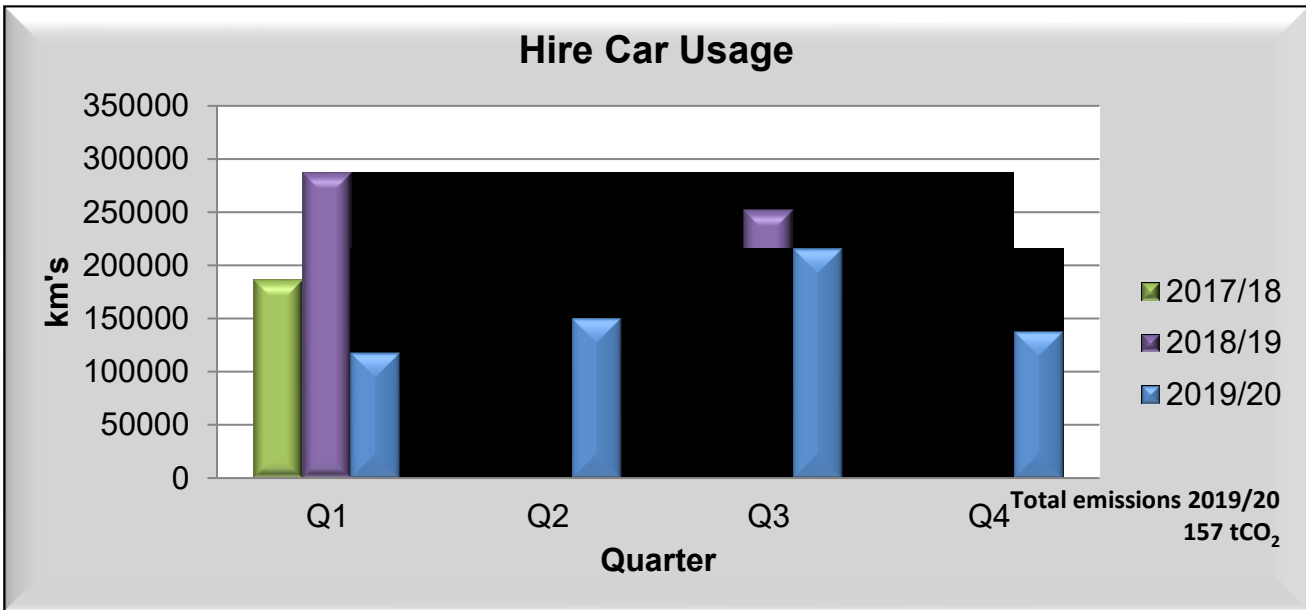




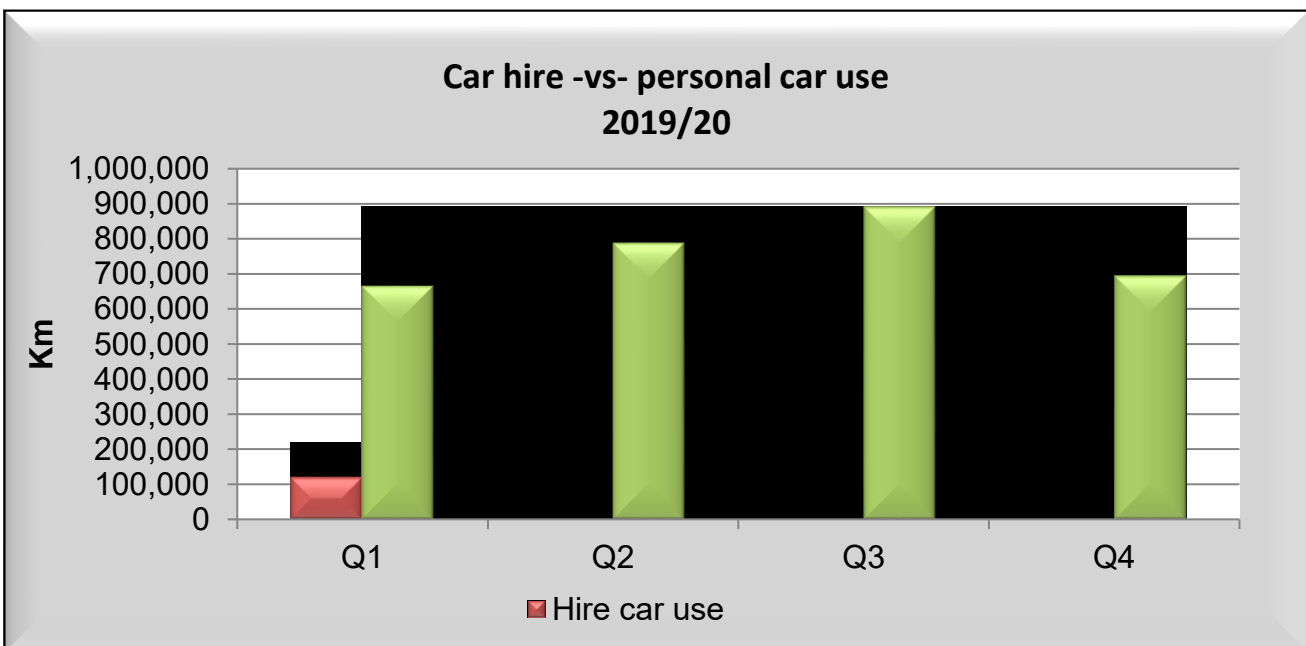
## Hire car versus personal car use

PHE continues to have a contractual arrangement with Enterprise Cars for the supply of hire cars across the country. PHE policy states that members of staff should, wherever practicable, use hire cars for journeys over 100 miles, instead of using their own vehicles, with travelling via public transport or rail being the first choice.

PHE staff using hire cars travelled a total of 621,655 km, at a cost of £110,913 (that is, 18p/km) in 2019/20, a reduction of some 29% compared with the previous year and a 3% reduction on our baseline. The cost of refuelling the hire cars was £31,028.



The trend for travel by personal car (compared with hire car) over the last year has increased and this is illustrated below in the car hire versus personal car use graph.



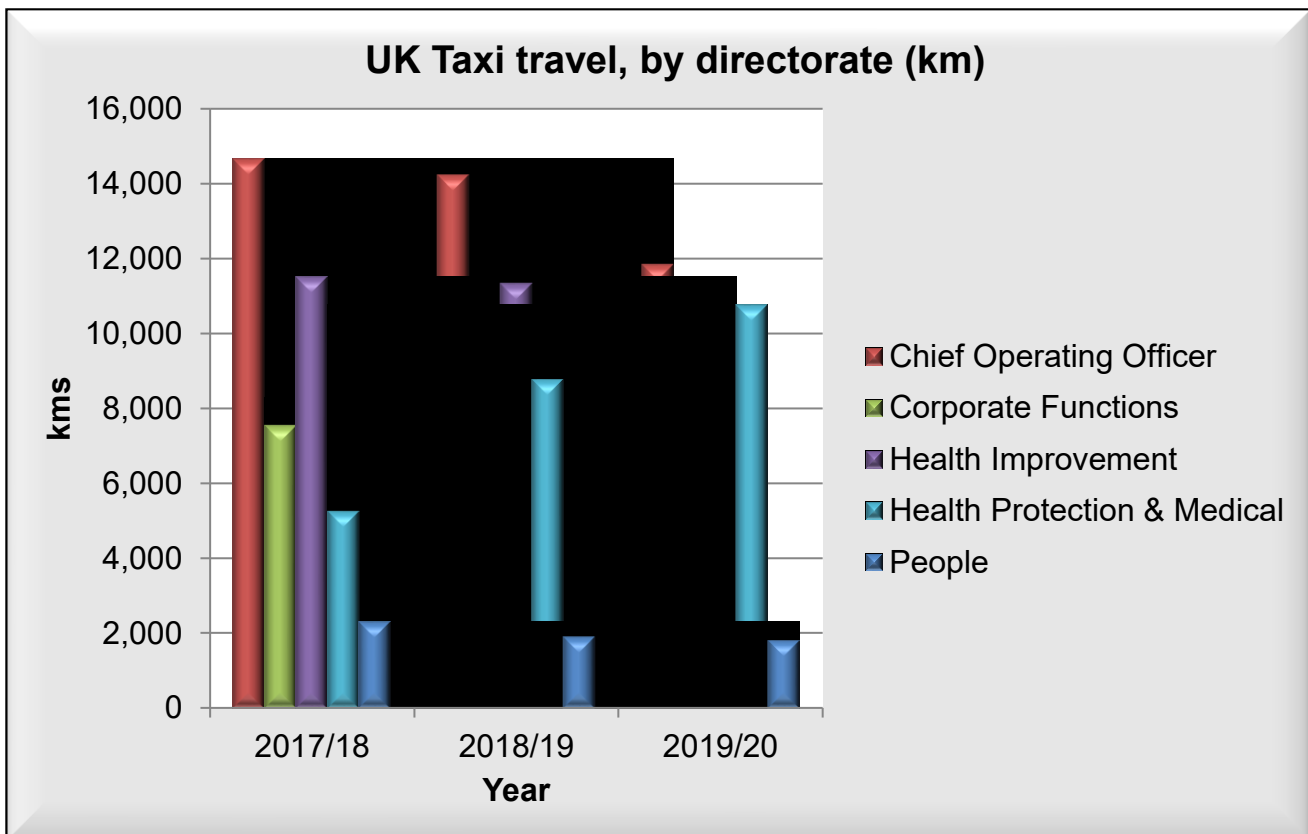
## Underground and taxi travel

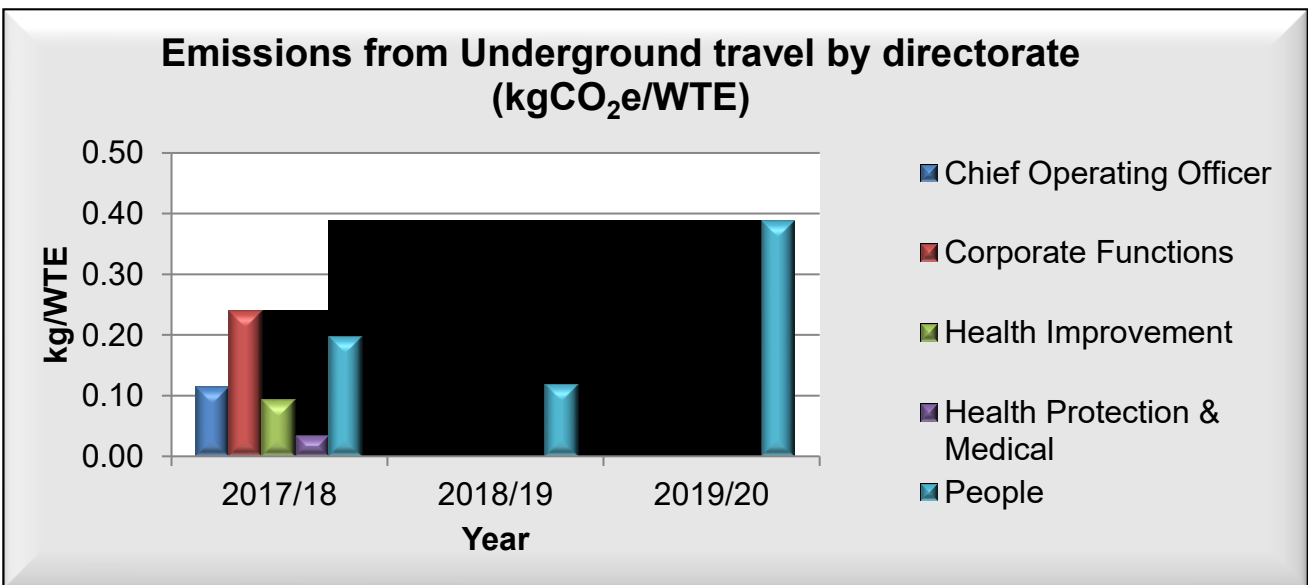
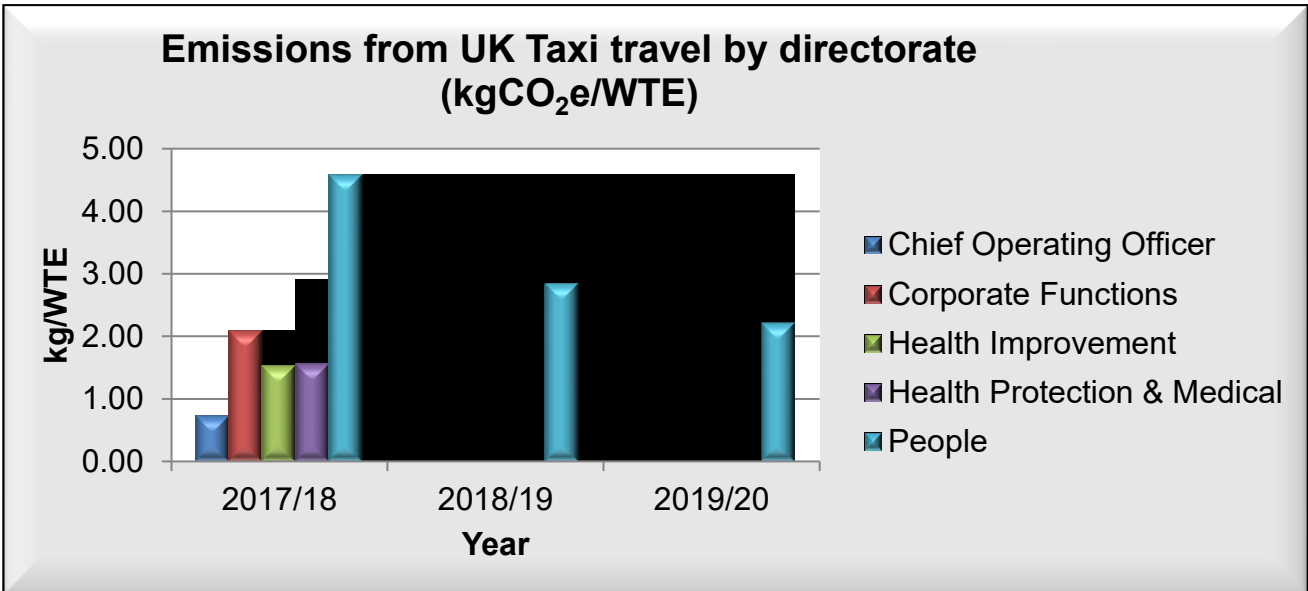
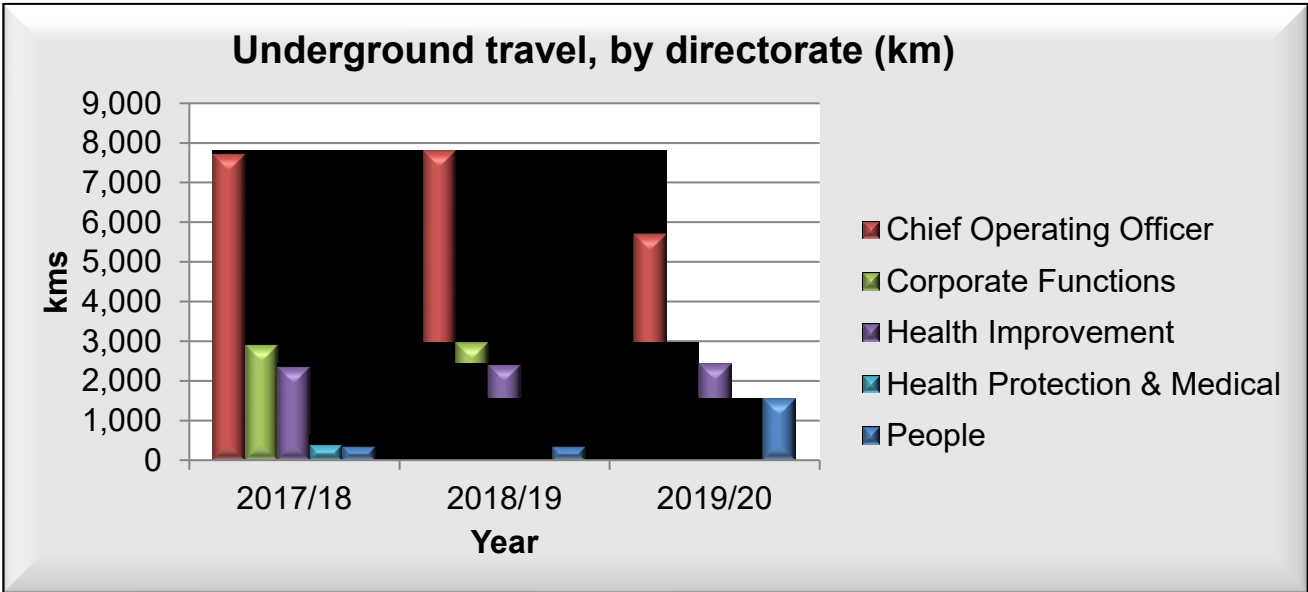
We continue to use an algorithm developed in-house for calculating distance from the cost of a taxi, bus and underground journey. This method gives us a general estimate. However, it is still difficult to distinguish journeys by bus and underground where either an Oyster or rail travel card has been used, as opposed to the purchase of specific, single transport tickets.

Emissions per WTE from our use of taxis have decreased from 9.47 kgCO<sub>2e</sub> in the previous year, to 8.79 kgCO<sub>2e</sub> this year, a reduction of 7.1%. The distance travelled this year was estimated at 42,746 km compared to 44,483 km the previous year, a decrease of 3.9%. Analysis of the data indicates that the majority of taxi journeys are undertaken outside of the capital.

The estimated distance travelled by PHE staff, using the London underground, in 2019/20 decreased from 13,902 to 12,476 km, some 10% compared to the previous year.

PHE's carbon footprint due to travel by taxi and on the London underground, by directorate, is shown below.





# Ethical and sustainable procurement

PHE's procurement department, supported by internal stakeholders, seeks to use its buying power to positively impact key public health and social agendas. This work is underpinned by the Social Value Act 2012 and the Modern Slavery Act 2015.

A corporate statement has been published on the PHE's internet and intranet supplier pages, advising suppliers that the procurement team will be working with them as part of their supplier and contract management processes in the following 4 key areas:

- economic
- employment
- environmental
- social

These categories cover areas such as:

- sustainable procurement,
- addressing health inequalities,
- equality and diversity,
- apprenticeships,
- third sector engagement,
- small and medium enterprises,
- the Modern Slavery Act and
- payment of the living wage.

All professional procurement staff successfully passed the CIPS Ethical Procurement and Supply training. Following endorsement by the chief executive of PHE's ethical commercial values, PHE has achieved the CIPS Corporate Ethics Code.

In January 2019, we hosted a supplier conference in order to raise awareness of PHE's approach to Social Value, and launched our supplier development model, which forms part of our supplier management activity focusing on the 4 key areas of economic, employment, environmental and social factors.

To support those who are completing tenders, case studies demonstrating where PHE is generating social value through activities have been completed and published on the intranet. These have also proven useful as examples to our suppliers of how social value can be considered, in particular in areas such as support for mental health.

PHE's procurement department has category managers to ensure that the most cost-effective and sustainable items and services are purchased. Environmental sustainability is therefore an important consideration with our tendering. Category managers ensure

that all of our tender documents contain relevant questions to confirm that the successful suppliers adhere to given environmental and sustainability standards, appropriate to the category of purchase.

Our tender process is managed through e-tendering and our documentation is stored electronically. We ask specific questions about a company's environmental management system, including about their impact on energy and water used for production, and their disposal of waste and the sourcing of raw materials.

The tender document can be adapted to include specific questions relevant to a particular tender. This will then be scored to ensure that the companies that take account of the importance of sustainability and environmental issues are recognised for their contribution to this important area.

PHE works closely with the Health Family and Cabinet Office to learn and share best practice. Training courses are being developed for commercial staff across PHE involved in developing specifications and managing contracts, so that our purchases can positively support PHE's social and public health agenda.

## Single Use Plastics (SUP's)

We have been working closely with colleagues from our procurement department and with other stakeholders to identify the level of single use plastics which fall into scope for removal from our office estate's waste streams. Where such plastics have been identified they have been removed wherever possible, in line with the government's ambition to remove all SUP's by 2020.

## Biodiversity and health equity

PHE fully recognises that health inequalities are systematic, avoidable and unjust differences in health and wellbeing between different groups of people. Reducing health inequalities is not only central to our mission, but also a legal requirement on behalf of the Secretary of State as part of the Health and Social Care Act 2012. While the causes of health inequalities are often deep rooted and complex, there is much that PHE can do to contribute to reductions in health inequalities.

PHE has a legal duty to have due regard to reducing health inequalities (Health and Social Care Act). We must fulfil the public sector equality duty (Equality Act 2010) in our work, which requires us to consider the needs of all individuals in our products and services. We aim to reduce inequalities through working with national and local government, the NHS, industry and the voluntary and community sector.

We also continue to have an active programme related to 'healthy people, healthy places'. A number of health and wellbeing groups have been set up to inform staff about the benefits of active lifestyles and healthy diets, and the health problems associated with smoking and excess alcohol. Mental wellbeing classes also continue to be run across the estate to help staff to cope with the stresses and strains of everyday life.

All new major build or refurbishment projects undertaken in PHE assess whether they will impact on the biodiversity of the environment.

### PHE Porton's bee colony

Earlier in the year, Dr Daniel Bailey, with the agreement of the Porton site management team, moved his Beehives to an isolated location on the north field at PHE Porton. Daniel reported that the Beehives have settled in well to their new location and have managed well through the season. They have been a source of interest to staff on site and while being mindful of COVID restrictions at least 10 staff members have visited the hive to get an insight into beekeeping and have enjoyed the experience, with visitors finding it fascinating and very peaceful, while gaining an appreciation of how environmental factors influence the colony survival and development over the season.

We also gained a bee colony as we housed a swarm from a fellow beekeeper on site who found himself lacking hive capacity. In addition, another staff member has been gaining hands-on experience with regular visits and dealing with the different situations that may arise, with a view to taking on a colony of his own in future.

The colonies have done well and have managed to obtain an excellent honey yield (43 kg,) from the Beehives, with a few staff having purchased jars and enjoyed the honey flavour. The honey from the Porton harvest has a slightly darker colour compared with

where the hives were sited before and is a result of the differences in forage between the urban and rural environment. The honey even made it onto the international scene with a recent mention on a BBC World Service radio broadcast; courtesy of my wife who was interviewed on a crowd-science programme for using honey (diluted in water) as an alternative to soap for cleansing her face. Apparently leaves the complexion feeling really smooth!



While inspecting the bees, and as a largely undisturbed area, there have been numerous wildlife sightings across the north field including; deer, buzzard, kestrel, hares, numerous species of butterflies, beetles and other insects. During the hot weather in August Daniel also managed to twice accidentally capture common lizards, which had made their way into his water bucket (drinking water for the bees), presumably also seeking a drink. On both occasions the lizards were released unharmed, but a sure sign that water attracts wildlife. Daniel stated that he will have to devise an escape route for wildlife to prevent future reoccurrences.

The hives are beginning to quieten down now as the season draws to a close but if you haven't visited the hives yet and would like to visit them or gain more experience with the Bees then please contact (Daniel Bailey) by email and he'll schedule you in for visits when activity resumes in the spring.



# Sustainability in the Places and Regions directorate

## Approaches to sustainability

The Places and Regions directorate within PHE is made up of 7 regions. These are North West, North East and Yorkshire, Midlands, East of England, London, South East and South West. Each region has a sustainability lead and has its own approach to sustainability action with an action plan, networks/groups and partnership engagement in order to ensure that this best meets local needs. Most cover both internal sustainability including procurement; workplace processes; accommodation; travel; waste and recycling, as well as external sustainability and action alongside our partners.

Although some projects and initiatives have been paused this year due to the adverse impacts of the COVID-19 pandemic on regional teams, there have been elements of the sustainability agenda that have been positively impacted as a result of COVID-19.

## Examples of sustainability networks and groups

### Northern Sustainable Development Network

This network has over 180 members drawn from various backgrounds across the North. The group has both PHE and external members and the aim is to increase awareness, promote sustainability, share best practice and progress action on sustainability causes, with a steering group in place to drive forward the network. Each region in the North also has its own local sustainability groups.

### Midlands and East virtual regional network –

This group aims to support the active local networks across Midlands and the East, sharing ideas and good practise. The main areas of activity have been mainly support for masterclasses held by the local networks.

### South Region Sustainability and Health Network –

This network continues to lead work jointly between NHS England and PHE.

South West Sustainability Group – this group has been re-established with representatives from various PHE departments. The South West also have representation on a plastics champion network.

### East of England Regional Sustainability Network –

This network launched in February 2020 and work is taking place on building active engagement into the network and identifying those responsible for sustainability across the region. The network will share best practice, understand the position across the region and develop a green plan for the region.

### Sustainability initiatives

Rollout of Microsoft Teams – A PHE-wide rollout of Microsoft Teams in summer 2020 has been long awaited by PHE regions as a result of our key stakeholders also using MS Teams. The recent rollout has significantly improved our ability to video conference and host training, webinars and conferences across regions. This has already enabled better working relationships internally and externally. In a post-COVID-19 world, MS Teams will greatly reduce the need for business travel.

### Estates

Regions are currently reviewing their estate to consider future ways of working and plan to reflect on the impact on COVID-19 in respect to more sustainable ways of working moving forward which will likely significantly reduce the amount of time that staff are in the office and most likely move away from staff working 5 days a week in the office and reducing the need to travel to London. Due to the recent expansion of staffing at a regional level as part of PHE's

### Business Travel

The biggest change in light of COVID-19 has been the majority of the PHE workforce moving to home working and a drastic reduction in business travel. Prior to COVID-19 significant work has taken place across regions to analyse and review travel data on a quarterly basis, share this with teams and encourage use of public transport as opposed to own car mileage.

Active travel is promoted across the regions to both improve health and wellbeing and our carbon emissions across PHE. Use of cars and public transport is currently affected by COVID-19. In Yorkshire and the Humber Park and Ride facilities were mapped in line with PHE office bases across the region. Travel cards and discount schemes were promoted to staff. Travel expenditure analysis in the South East and targeted supportive discussions has achieved significant reductions in travel. The South East have also been involved with drafting the region's transport strategy.

### Waste and recycling

Composting bins have been placed in some PHE regional offices to encourage composting waste where appropriate. There has also been improved signage regarding recycling in PHE offices to encourage appropriate recycling wherever appropriate.

### Procurement of office stationery

Significant work has taken place in the North East to move to more sustainable office supplies and to remove the use of single use plastics. This includes, for example, fully recycled paper, recycled pens, plastic free notebooks, recycled wallet folders.

### Comms and engagement

Promoting sustainability at internal all staff events and with local partners/stakeholders. Since COVID-19 has increased home working for the majority of the PHE workforce,

digital engagement via PHEnet, regional SharePoint sites and associated resources and correspondence has been circulated to staff around the benefits that the decreased travel has had on the environment and also tips on how to stay green at home.

### Green Impact

In March 2019, the Green Impact pilot was launched as part of the greener NHS campaign across the East of England. Green impact is a practical tool to help dental teams improve their environmental sustainability. The pilot focused on engaging practices in the East of England and Essex area but any practice in the UK can use the tool free of charge. The initial phase of the pilot finished in March 2020, however further activity is now planned for the second year.

# Sustainability in health improvement

## Sustainable development goals

Professor John Newton, Director of Health improvement has taken on the role of PHE champion for Sustainable Development Goals (SDGs). SDGs are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity ratified by the United Nations. PHE contributes to progress against many of the Targets across a range of Goals including health and wellbeing, climate change, inequality, innovation and sustainable consumption.

### PHE aims to:

- use the SDGs as a tool to drive and co-ordinate our health in all policies across government
- emphasise the importance of wider determinants of health to DHSC
- encourage the responsibility of SDGs to transfer to Cabinet Office
- move the organisation forward in delivering progress against health-related targets
- engage with local government and encourage consideration of implementing interventions in line with the SDGs using a place-based approach
- work with ONS to support a comparable approach to measurement to be able to use the data as an instrument for advocacy

PHE has mapped business plan deliverables against SDG targets to demonstrate how PHE is supporting SDGs.

### Developing research, evidence, guidance and tools

In the past year PHE provided an update to the evidence base through the publication of [Improving access to greenspace](#) which updates a report published in 2014.

In the winter of 2019, PHE launched an e-learning module titled 'Helping people living in cold homes'. This module is targeted at health, social care and other professionals who visit people at home and has been developed to help people whose health is affected by living in a cold home. It supports health and care professionals to put NICE Guidance [NG6](#) 'Excess winter deaths and illness and the health risks associated with cold homes' into practice and empowers them to direct people in cold homes to services that can help them overcome the problem.

PHE co-led the implementation of the National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) on Environmental Health (2014 -2020) to address wide range of climate risks and health outcomes across 3 themes: climate resilience; healthy sustainable cities; and public health and the natural environment (<https://www.hpru-ech.nihr.ac.uk/>). PHE has secured another 5 years of funding (2020 to

2025) for phase two of the HPRU, and Health improvement will be working closely with the HPRU over the next 5 years.

#### Research projects cut across 3 themes:

- climate impacts and monitoring
- responses and health protection, and
- interventions and interactions

These cover 10 topic areas

- indicators for tracking the impact and responses to climate change
- adaptation of housing to climate change and questions critical to health
- modelling/analysing the spread of climate sensitive diseases in Europe
- floods and coastal erosion
- heat, droughts and wildfires
- the benefits of increasing natural vegetation and water bodies in cities
- environmental and health benefits from food and agriculture policy
- threats to health from disturbance of the Earth's natural systems
- threats to our population of climate change events external to the United Kingdom (UK)
- the integrated analysis of policies for health and sustainability)

#### Work across government and across PHE

Healthy Places, on behalf of Health improvement, have engaged with other government departments on cross government programmes including active travel, cycling and walking and green social prescribing. Other areas of work include links with BEIS on fuel poverty and energy efficiency.

#### Internally, Healthy Places is a member of PHE's:

- the Climate Change and Adaptation group
- environmental Public Health Programme Board
- corporate Sustainable Development Programme Board (SDPB)

#### Our staff and ways of working

In support of PHE's commitment to reduce our overall carbon footprint, Health improvement is part of PHE's Sustainability Champions who actively monitoring and promoting sustainability programmes and activities. As a directorate we promote the use of new ways of working, including remote working and through the widespread use of Skype and equivalent platforms for virtual meetings.

# Climate change

## Introduction

PHE has been working with colleagues from the Department of Health and Social Care (DHSC), NHS England and the Sustainable Development Unit to identify high-level health objectives under the auspices of the second National Adaptation Programme (2018-2023). This activity was included in the 2019 remit letter to PHE from DHSC. The high-level objectives have been agreed across government and published in The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting.

PHE is undertaking the following processes to support its commitment in the National Adaptation Programme to develop an adverse weather and health plan:

1. Conducting a systematic literature review on interventions to reduce heat related harms to health to inform the development of the adverse weather and health plan and related climate adaptation recommendations.
2. Commissioned behavioural insights research to inform attitudes and behaviours in relation to the risks associated with heat and cold; the outputs of this are being used to support the development of tailored public messages to improve the effectiveness of the early warning systems for hot and cold weather.
3. Qualitative research has been conducted to further understand:
  - i. the impacts of hot weather events and subsequent overheating in healthcare estates in England in summer 2019
  - ii. the opportunities for and barriers to building resilience of the healthcare sector to future hot weather risks; the findings will be submitted for publication in a peer-review journal and have been used to inform operational activities in relation to COVID-19 and summer heatwave preparedness
4. Supported NHS England and Improvement “deep dive” as part of a process of assurance of the National Health Service’s compliance against the Emergency Preparedness, Resilience and Response (EPRR) core standards. The survey in 2019/2020 focussed on the effects of adverse weather (including heatwaves, cold and flooding). The findings of this process will be used to inform the development of the health system resilience elements of the PHE adverse weather and health plan.

# Sustainability at PHE Porton

## Introduction

The Porton site is a large operational site with a variety of complex and resource intensive activities. In addition to PHE's research and administration activities, the pharmaceutical activities of Porton Biopharma Limited (PBL) are located on the site and supported by PHE.

## Energy – electricity

There was a 0.3% rise in measured grid electricity used at Porton during 2019 to 2020. Usage in Q1 remained very similar to the previous year, while Q3 saw an increase in electricity use. The PhotoVoltaic (PV) array saw a drop of 3.6% in generation compared to the previous year, saving the site a total of £52,728. 2018-19 was an exceptionally good year for electricity generation, seeing the best single day's electricity generation to date, so the decrease in 2019 to 2020 was not unexpected. By the end of March 2020, over 2.2 GWh of electricity had been generated by the PV array in total since initial installation, saving a total of £199,570.90.

## Energy – gas

In 2019 to 2020 there was a 2.9% reduction in the total gas consumption of the main site. This is likely the result of repairs to the steam network in early 2019, which were anticipated will have a positive impact of the amount of gas required to generate the site's steam requirements.

## Water

Water use at Porton decreased dramatically between 2018-19 and 2019 to 2020. The water usage for the site fell by 37% in the last financial year, with the greatest reductions being seen in quarters 2 and 3, and to some extent Q4. Capital investment on the site's steam and water pipework commenced in 2019 was undertaken to reduce leaks on site and appears to have been highly successful. Despite this, PHE has continued to work with others on the Porton campus to support the development of a sustainable long-term water supply strategy in the face of increasing demand.

In January 2020, a new standard operating procedure (SOP) was introduced to make improvements to the guidance and controls of what laboratories pour to drain.

## Waste

Waste SOP training has continued throughout 2019 to 2020 on a regular basis. An updated version of the SOP was introduced in January 2020 which included the establishment of a network for reusing unwanted equipment through a variety of

avenues, including internally and donation overseas. A microscope was given to Addis Ababa University in Ethiopia via the Validate network, which will aid research into infectious diseases.

The total quantity of waste produced on site increased by 7.6 tonnes from the previous year to 428.6 tonnes, which is in line with the increase of 8 tonnes the year before that. This is still a reduction from 471 tonnes in 2015 to 2016.

## Incinerator

The site's incinerator experienced 4 environmental permit emissions breaches in 2019 to 2020. Three for hydrogen chloride (HCl) and 1 for sulphur dioxide and carbon monoxide (SO<sub>2</sub> and CO). All incidents were reported to Wiltshire Council and investigated. In all cases the causes were identified as abnormal items within the loads. Corrective and preventative actions have been put in place and regular communications with staff are produced reminding them of the correct segregation of waste.

## Travel

PHE Porton has continued to provide incentives to encourage sustainable travel to work as part of the campus' travel plan. These include offering cyclists a loyalty card for free breakfasts, which has now also been rolled out to walkers and runners.

## Wildlife and Ecology

With the rural location of PHE Porton, there is a lot of wildlife living in close proximity to our site, including deer, badgers, and a variety of birds. Due to ongoing projects, there have been bat and badger surveys undertaken in 2020. Ecologists were consulted extensively to ensure that construction methods were ecologically sound, and due to the transient nature of animals' visits to the site, there has been no conflict between wildlife and projects.

Tree works continue to be carried out on site to allow for infrastructure improvements. One large tree was also felled by strong winds at the start of the year. A new Ecological SOP is due to be published in 2020 to 2021, which will establish a regime for tree replacement on site as well as ensuring safeguarding of other ecological assets on site.



# Sustainability at PHE Colindale

## Introduction

This has been a tumultuous year for staff working in public health and at Colindale, staff have been at the forefront in testing for COVID-19. Colindale became busy with additional staff in January and February with hours of working being extended. The number of full-time equivalents (FTE), working at Colindale, increased during the year from 1053 in June 2019 to 1148 at the beginning of January 2020.

## Electric

Annually, there is a warming trend in the London, demanding further cooling for staff and technological equipment at Colindale epitomized by the number of degree days recorded locally. There have been several on-going maintenance projects to help maintain resilience of functions which also improve energy-efficiencies on site however the costs of these projects have not been divided.

They include:

- upgrading of mechanical and electrical equipment
- sustainable Lighting controls and associated works in Zone B
- steel Roof Sheeting
- upgrade of Extract Air Handling Units Zone D
- upgrade of HVAC low temperature hot water valves in Zone B
- upgrade of HVAC port valves
- upgrade of main kitchen extract canopy
- provision of new additional chiller and reconfiguration of racks and cooling aisle in the Controlled Environment Facility
- upgrade of laboratory monitoring and control equipment
- sustainable lighting, controls and associated works in zone E
- zone E roof upgrade replacement works

In addition, there have been several laboratory refurbishments with sustainable choices that include the reuse of furniture taken from the Harlow site, and a project to install 3 further electrical car charging points.

## Renewable energy

In addition to above projects we have continued to produce energy through our photovoltaic solar panels. By producing energy for site, we have been able to reduce electricity costs and air pollutants: To date we have offset reductions of 78,642 KgCO<sub>2e</sub>

## Gas

During the last quarter of 2019/20, gas usage figures rose due to our operational activities on COVID-19. Simultaneously, heating degree days were lower than usual due to a warmer winter season. Overall, the gas used for the year was 6% above the average annual gas use.

## Water

In January 2020 the main water meter into the site was changed. Overall, we would have been on track to reduce water use on site, however due to COVID-19, water use also increased during the last quarter. Water use has generally reduced annually, however, water usage increased rapidly during February and March when the COVID-19 emergency response was initiated.

## Waste

Clinical waste quantities have risen during 2019 to 2020 with the result that far more waste has been incinerated and the quantity of waste has increased overall, again due to our COVID-19 response. On a positive note, more waste is being separated and recycled, removing more food waste out of the general waste which is being sent to anaerobic digestion.

## Paper

There was a slight increase in paper used at Colindale however when compared to the number of people working on site, there was a decrease in paper used per person.

## Sustainability and health and wellbeing events

At Colindale, we held 2 events during 2019 to 2020, in May and at the end of November. We combined the winter craft event with sustainability to raise funds for support of rare dementias at the 'National Brain Appeal' and 'Crisis'

External contributors included Barnet beekeepers selling locally-produced honey; 'Starlab' exhibiting their sustainably-made laboratory consumables and 'Bouygues', PHE's new hard-services contractor speaking to staff about what they do and their sustainability credentials. 'Green Zone' were introduced to staff as EMCOR's soft-services waste contractor and North-West London Waste Association discussed food waste reduction methods with staff. Martin Farley a consultant from University College London also introduced the new 'LEAF' programme.

## Internally

PHE Colindale members of staff contributed their time and skills in producing Christmas cards, bakes, growing plants, making tote bags from recycled materials, producing chutneys from home-grown fruits and vegetables and knitting scarves. 'Project Search' volunteers helped to sell the cakes for charity.

Colindale's library team contributed with a second-hand book sale and giving information to staff on what's available in terms of information within the library on sustainability and health and wellbeing. Our stores team also held a stall to sell their stocks of laboratory consumables which were past their use-by date, for use by staff in their homes. These items would alternatively be disposed of in the general waste stream so by sale of these boxes of gloves, charities are being advantaged and PHE is reducing waste.

Events during 2019 to 2020 raised funds for several charities including: £255.00 for the 'National brain Appeal' and £255.00 for 'Crisis' however recently the Colindale Craft team has been busy sewing and donating reusable face masks for staff and selling them at £2.00 per mask. The Just-giving page raising money directly for the Trussell Trust is currently on £1767.00.

# Sustainability at PHE Chilton

## Introduction

The CRCE Sustainability Champions Group (SCG) was set up in April 2018 with the aim of monitoring and promoting sustainability issues across the various sites in Chilton, Cardiff, Leeds and Glasgow. A total of 20 Departmental Champions have volunteered to join the group. New Terms of Reference have been agreed and the group aims to meet every 2 months to help improve sustainability across the site.

## Transport

With CRCE management support, it initiated CRCE's first Travel Survey. This survey was circulated via the Select Survey questionnaire hyperlink to all CRCE staff on 17 January 2019 and closed on the 1 February 2019. It covered all sorts of routine staff commute and business travel to and from CRCE office locations, including travel for field activities and between sites. The final report provides a detailed summary of the survey's findings, covering the following topics: the daily commute; business travel; the effectiveness of Skype; improving cycle usage; working from home; increasing car sharing; improving public transport and flexible working hours.

As the first travel survey conducted by CRCE, the results of this survey create a baseline measure of the current state-of-play concerning staff travel to work. It captures and collates an overall picture of staff commute circumstances. An emerging theme is a strong need for better information about available sustainable transport options, and for sensitising staff to existing, new and emerging opportunities that help reduce both individual and corporate carbon footprints.

The baseline information provided in this report will help inform the development of metrics and targets that can be set to establish sustainability trends and viable expectations for progressive actions that can be followed up in future surveys and reviews. Therefore, it provides CRCE management with a starting point and an empirical, qualitative resource that can be used to formulate targeted plans to influence staff travel behaviour, thereby paving new viable approaches toward more environmentally sustainable travel practices.

Note that this survey was carried out before Covid-19 but will hopefully be repeated in January 2021 to give an important update on the way CRCE staff now travel.

## Management and governance

The commitment to PHE's sustainability aspirations, obligations and legal requirements is laid out in PHE's Sustainable Development Management plan. This enables the organisation to demonstrate true leadership and highlights the ambition to be an exemplar organisation with regard to sustainability in the health sector.

In 2018, operational delivery of the sustainable development agenda was devolved from PHE's Management Committee to the Sustainable Development Programme Board (SDPB). This gives a direct line of sight to executive directors, and the chief executive, for all sustainability activities in the organisation.

Sustainable Development has implications for all aspects of PHE's business. The organisation's various senior management teams therefore have a responsibility to implement the requirements of the Sustainable Development Management Plan through local business plans. Doing so will enable PHE to measure performance, help achieve a better understanding of our impact on the environment and to prioritise medium and longer-term activities.

It will also help to refine and target advice to others on matters such as climate change and the UN's Sustainable Development Goals. Plus strengthen the ways in which the organisation works across the healthcare spectrum, particularly with organisations such as the Sustainable Development Unit, which are funded by the NHS and PHE.

## Contributors to this year's report

The authors would like to personally thank the contributors below for their help on bringing this report to life.

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Ross Thompson	Environmental hazards and emergencies department
Raquel Duarte-Davidson	Principal climate change scientist
Lizzy Staincliffe	Environmental manager, PHE Porton
Andrew Tristram	Senior press officer

And a special thank you to all our sustainability champions without whose dedication a lot of the work wouldn't be undertaken.

# About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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