



HSE Sustainable Development Report **2018/19**

1 Introduction

This Sustainability Report¹ details progress towards improving energy consumption, related reduction in carbon emissions, water consumption and waste management. These are key areas against which the government wishes to measure public bodies' environmental performance.

HSE seeks to comply with all applicable legal and other relevant requirements that relate to our environmental aspects, including official codes of practice.

HSE is committed to the continuous improvement of environmental performance and to the prevention of pollution from the activities we undertake by:

- implementing energy-saving technologies and initiatives;
- adopting strategies to minimise the environmental impacts of business travel;
- using utilities in a responsible and economic way to minimise negative impacts on the environment;
- managing waste according to our duty of care, minimising volumes going to landfill, by reuse and recycling wherever possible;
- purchasing supplies wherever possible which are recycled and recyclable, and whose production and use minimises the consumption of natural resources;
- conserving resources by ensuring that buildings and fittings are properly maintained and reflect appropriate eco guidance;
- communicating our environmental aims and performance to appropriate people working for or on behalf of the organisation;
- using contractors/suppliers who perform the services in accordance with the government's environmental policy, demonstrating commitment to the continuous improvement of environmental performance and the management and prevention of pollution from the activities they undertake;
- setting objectives and targets, reviewing them each year according to the commitments for Greening Government Operations and Procurement;
- operating an Environmental Management System at the HSE Science and Research Centre in Buxton.

2 Exceptional factors

HSE includes a large, mobile workforce that undertakes planned and reactive interventions including inspection, investigation and enforcement activity across Britain, which involves a significant amount of business travel.

The HSE Science and Research Centre in Buxton carries out a diverse range of scientific activities in response to external customer requirements or as part of the investigation of UK workplace incidents. The volume and nature of the work undertaken is therefore variable and the consequential inherent resource consumption is equally so. For this reason, the Buxton site was exempted from the GGC targets in 2012/13, although it is still required to report its environmental impact.

1 The Sustainability Report has been prepared in accordance with guidelines laid down by HM Treasury in 'Public sector annual report – sustainability reporting'.

3 Sustainable procurement

Our sourcing of materials and assets complies with Government Buying Standards (GBS).

We continue to assess our key suppliers' corporate environmental, social and economic responsibilities to manage supply chain risks, including sustainability. The last exercise indicated that our key suppliers have sustainable development policies and management systems in place (including environmental and corporate responsibility targets).

4 Increasing commercial opportunities for small and medium enterprises (SMEs)

HSE continues to encourage participation in any new commercial opportunities from the SME market.

5 Summary of performance against Greening Government Commitment targets

This section provides a summary of performance for 2018/19 against the Greening Government Commitments compared to the baseline year (2009/10) and the target (where appropriate), to be reached by 2020.

		<i>Government reduction target to 2020</i>	<i>HSE reduction at 31 March 2019</i>
	Greenhouse gas emissions	32%	41%
	Waste	Continue to reduce ²	52%
	Water	Continue to improve ³	38%
	Paper	50% ⁴	43%
	Domestic flights	30%	36%

2 2009/10 baseline at 596.78 tonnes. 2018/19 outturn 287.54 tonnes.

3 2009/10 baseline 48 758 litres. 2018/19 usage 30 009 litres. Consumption has increased from 2017/18 (28 446 litres) due to a water leak at our Buxton site.

4 Baseline for paper set in 2011/12 at 26 924. 2018/19 usage 15 450; 2017/18 consumption is considered to be abnormally low as a result of the introduction of new printing strategy associated reduction in stock levels held.

6 Greenhouse gas (GHG) emissions

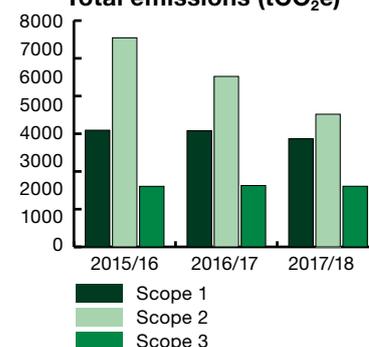
Greenhouse gas 2018/19 2017/18 2016/17

Greenhouse gas	2018/19	2017/18	2016/17
Scope 1 Emissions			
Gas	2 398	2 548	2 557
Fugitive emissions	139	139	139
HSE & HSL owned vehicles	332	392	398
Total scope 1 (tCO₂e)	2 869	3 079	3 094
Scope 2 Emissions			
Electricity: brown	2	2	1
Electricity: green ⁵	3 516	4 519 ⁶	5 542
Electricity: CHP	0	0	0
Total scope 2 (tCO₂e)	3 518	4 521⁶	5 543
Scope 3 Emissions			
Grey fleet	906	909	955
Car hire	200 ⁷	206	186
Air	320	338	289
Rail	182	174	176
Total scope 3 (tCO₂e)	1 608	1 627	1 606
Total scope 1, 2 & 3 emissions			
Total emissions (tCO₂e)	7 995	10 546	9 156
Related energy consumption (KWh)			
Scope 1			
Gas (KWh)	13 030 433	13 849 043	13 896 081
Scope 2 (KWh)			
Electricity: brown	3 586	3 370	2 620
Electricity: green	11 446 941	11 760 440	12 335 028
Electricity: CHP	0	0	0
Total electricity (KWh)	11 450 527	11 763 810	12 337 288

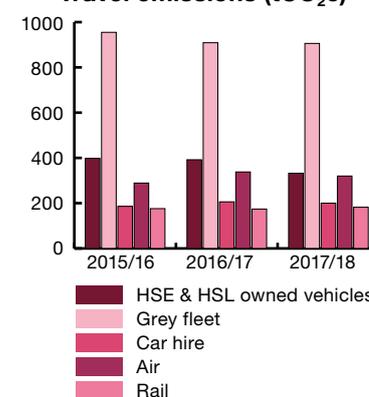
Non-financial indicators (tCO₂e)

Related energy consumption (KWh)

Total emissions (tCO₂e)



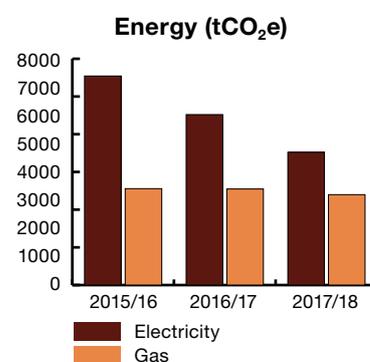
Travel emissions (tCO₂e)



- The significant reduction in CO₂ emissions over the last three years is primarily a result of the decarbonisation of UK electricity and the consequential significant changes in the conversion factors applied each year.
- Please note that this value differs from that in the sustainability report for 2017/18. The value in the 2017/18 sustainability report was incorrect due to the application of an incorrect conversion factor.
- Car hire emissions and cost have been estimated due to the provider being unable to supply an accurate figure.

Greenhouse gas 2018/19 2017/18 2016/17

Financial indicators (£)		2018/19	2017/18	2016/17
Scope 1 & 2 (£)				
Gas		352 998	349 858	369 236
Electricity		1 368 778	1 339 724	1 373 438
HSE & HSL owned vehicles		272 309	304 284	286 721
Carbon reduction commitment allowances		71 000	137 780	133 630
Total scope 1 & 2 (£)		2 065 085	2 131 646	2 163 025
Scope 3 (£)				
Grey fleet		1 279 888	1 291 226	1 347 870
Car hire		200 000 ⁸	207 437	208 894
Air/rail		2 279 020	1 896 205	1 987 570
Total scope 3 (£)		3 758 908	3 394 868	3 544 334
Performance				
Travel normalisation per FTE (tCO ₂ e)		0.80	0.72	0.77
Elec normalisation per FTE (KWh)		2 843 ⁹	4 213	4 300
Gas normalisation per FTE (KWh)		3 236 ⁹	4 960	4 843
Travel normalisation per FTE £		1 682	1 325	1 468
Elec normalisation per FTE £		340 ⁹	480	479
Gas normalisation per FTE £		88 ⁹	125	128
Elec normalisation KWh per net internal area (m ²)		184	182	190
Gas normalisation KWh per net internal area (m ²)		210	214	214



8 Car hire emissions and cost have been estimated due to the provider being unable to supply an accurate figure.

9 Substantial reductions in gas and electricity normalisation are due to increased utilisation of space in HSE's Merseyside headquarters, housing more tenants than in previous years.

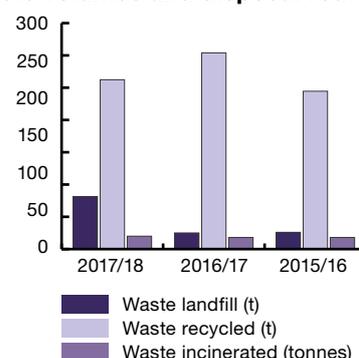
Actions taken by HSE to reduce greenhouse gas emissions include the following:

- LED lighting has been installed in properties in Aberdeen and Basingstoke, which is predicted to save 359 tonnes of carbon emissions over a five-year period.
- Air conditioning inspections have been completed where appropriate as required under the EU Energy Performance of Buildings Directive (EPBDD).
- To promote and assist in the reduction of greenhouse gases, environmental issues and campaigns such as government sustainability targets, Earth Hour and HSE's car-sharing scheme are communicated to staff via HSE's internal magazine and regular eBulletins.
- Crown Commercial Services negotiated with electricity framework suppliers (British Gas and EDF) all electricity supplied by them to HSE since 1 April 2014 is 'green' (ie from renewable and low-carbon sources supported by appropriate levy exemption certificates).
- We successfully negotiated with the landlord of HSE's Bootle headquarters to install a new upgraded and virtualised Building Management System (BMS) in February 2014. Seventeen servers have been reduced to five, giving more resilience with reduced power usage. The new system is saving approximately £18k per year in energy costs.
- Combined Heat and Power (CHP) plant and voltage optimisation system was installed in HSE's Bootle headquarters by Honeywell FM to reduce electrical consumption as part of an invest to save project. The project is guaranteed by Honeywell to deliver £53k savings per annum and has been running for 6 years.
- Voltage optimisation equipment in Redgrave Court was installed in 2011 to reduce the supplied voltage that we use, with the added benefit of extending the life of equipment. Effectively, this is a saving of 2-3% per annum.
- We continue to work with Sopra Steria, HSE's primary IT contractor, moving a significant amount of HSE's IT infrastructure to a more virtualised platform, reducing the number of physical servers on that platform by 30% and upgrading the infrastructure to more energy efficient devices. All PCs that have been replaced use between 70-150 watts, with Dell Wyse class cloud client that use only 9 watts – this is approximately a 90% saving.

7 Waste minimisation and management

	2018/19	2017/18	2016/17	
Non-financial indicator	Waste to landfill (tonnes (t))	26	24.05	81.45
	Waste recycled/reused (t)	244.54	303.88	262.24
	Waste incinerated (t)	18	18	20
	Total waste (t) ¹⁰	288.54	345.93	365.67
	Waste normalisation per FTE (t)	0.07	0.12	0.13

Waste volumes and disposal routes (t)



Financial indicators

Waste removal is one of a number of services provided by the landlord's FM contractors at both of HSE's PFI sites in Redgrave Court and Buxton. We are therefore unable to provide valid costs as this service is not separately itemised.

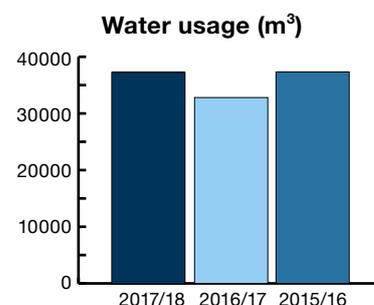
Actions taken by HSE to reduce waste include the following:

- We have continued to work with our facilities management providers to increase the number of items that can be recycled, for example:
 - providing more recycling containers for plastic, glass, aluminium, batteries, electrical and electronic equipment waste (WEEE), fluorescent lamps and cardboard waste. This has resulted in a reduction in the amount of waste placed in the general waste bins and the subsequent reduction of daily collections.
- Paper used is 100% recycled from a closed loop system.
- All printers are set to a default to double-sided printing.
- We will be working with our primary IT contractor, Sopra Steria, to reduce the environmental impacts of our e-waste (retired and redundant ICT equipment). Sopra Steria have selected an e-waste processing partner with an outstanding environmental track record and audited environmental systems in place. Together, they will ensure that any HSE equipment that can be reused will be securely data erased, refurbished and put back to work; and what cannot be reused will be recycled to the highest standards, harvesting parts for their reuse if salvageable and materials that can be used in other products in future.
- Sopra Steria is helping HSE examine how we can support Digital Inclusion by identifying potential projects for our retired and redundant kit.

¹⁰ Total waste will tend to fluctuate considerably from year to year due to the functions taking place at the HSE Science and Research Centre in Buxton.

8 Finite resource consumption

		2018/19	2017/18	2016/17
Non-financial indicators(m ³)	Water consumption (supplied)	37 835	32 810	37 330
Water normalisation (m ³) per FTE		9	12	13
Financial indicators (£)	Water supply costs	183 510	171 129	174 185
	Paper costs ¹¹	37 372	46 750 ¹²	43 963



The above water usage and costs include offices, warehouse and laboratories. They include water used at the Buxton laboratory site, where the demand-led experimental activities can cause the consumption to fluctuate depending on the specific nature work carried out during the year. They also include an element of estimated consumption due to supply metering problems.

At HSE’s HQ building, initiatives to reduce water consumption include use of grey water for toilet flushing and conversion of taps to infrared sensors, which reduces the amount of time the water is running unused.

Report on office water use against best practice benchmarks, ie:

- ≥ 6 m³ water consumption per FTE poor practice;
- 4m³ to 6m³ per FTE good practice;
- ≤ 4 m³ per FTE best practice, and % offices meeting best/good/poor practice benchmark.

Of the four offices in scope (excluding warehouse and the HSE Science and Research Centre in Buxton), one office with a water meter has achieved good practice benchmark during 2018/19;

The remaining three HSE offices with a water meter (excluding warehouse and the HSE Science and Research Centre in Buxton) are operating in the poor practice benchmark during 2018/19.

11 Paper usage fluctuates depending on publishing needs each year.

12 Paper costs for 2017/18 were wrongly calculated and therefore this figure differs from that previously reported (£53 271).

9 Biodiversity Adaptation Plan – the HSE Science and Research Centre at Buxton

HSE has liaised in the past with Derbyshire Wildlife Trust and the University of Sheffield to review the ecological and nature management of the site. The Buxton site provides a habitat for a number of nationally and regionally rare species of flora. HSE has undertaken all of its business activities to date without adverse impact on any of these sensitive species.

About 45% of Buxton's 220 hectare estate is pasture and meadow land leased to a local sheep farmer, who manages it in accordance with Defra's 'Environmental Stewardship' scheme. The activities undertaken to promote biodiversity on the estate include:

- not making hay before certain dates to allow the seeds of wild flowers and grasses to set;
- not cutting grass in certain areas to improve habitats for small mammals, invertebrates and birds;
- restrictions on the use of fertilisers, herbicides and supplementary feeding;
- not ploughing the land or cultivating crops;
- maintaining a range of sward heights during the growing season to allow plants to flower and to provide a more varied habitat;
- light grazing of sheep to restrict growth of rank vegetation and woody species;
- monitoring and controlling spread of vigorous non-native species;
- leaving any felled trees or branches left in-situ to provide shelter and overwintering sites for insects.

Fauna on the Buxton site include badgers, foxes, hares, pine martens, visiting red deer and birds typical of the area such as lapwings. Bats are also frequent visitors to the site.

An environmental risk assessment on the potential impacts of climate change on the estate showed one of the greatest risks to biodiversity to be prolonged periods of hot and dry weather increasing the risk of wildfires spread by grass and trees. To reduce the risk of grass/wildfires on site, fire breaks are maintained around vulnerable test areas and fire-fighting equipment (beaters and hydrants) are located where there is a fire risk, with robust emergency procedures in place.

Other climate change impacts that could occur on-site include localised flooding and extreme winds, but effects on biodiversity would be shortlived and control measures not practicable.

HSE supports a long-term Anglo-American collaborative research project examining the impact of climate change on flora. Since 1989, a small area of species-rich grassland (less than 1 hectare) has been used to carry out climate change experiments, using various techniques to subject plants to predicted conditions 50 years from now to see how fast ecosystems will change as climate changes. Conditions include higher temperatures, severe drought, and floods, improving the understanding of the underlying mechanisms of resistant-high species in diversity grasslands.