

Forest Research
Sustainability report 2022-2023

Sustainability Report

Sustainability is an essential characteristic within the strategic objectives, operations and policy making of Forest Research. As a business, we seek to reduce our environmental impact wherever possible and embed our commitment to the environment within our core business processes. We maintain a formal environmental management system (EMS) which is certified to ISO14001:2015 by LRQA. To support the Defra Climate Change Adaptation Strategy, our EMS represents the mechanism by which we measure and improve our environmental performance in terms of energy use, business travel, waste arising, water consumption and management of hazardous materials.

We report our environmental performance against the HMT Sustainability Reporting Guidance, which incorporates the Greening Government Commitments (GGC) Framework for 2021-25, with 2017-18 being the baseline year against which we will target further improvements. We continue to make good progress in terms of reducing our net carbon emissions in line with the GGC targets and the UK Carbon Budget Orders.

Environmental Management is a key commitment for FR and is a standing item at the Site and Environment Management Committee meetings and is subject to regular Top Management review. As an organisation we monitor environmental performance as part of our day-to-day activities and emphasise the need to embed this in our operational planning. The change in working practices since the Covid-19 pandemic continues to have a significant impact on the way that we conduct our business, most notably in the adoption of hybrid working models and the substantially increased use of IT systems to connect, meet and work remotely, thus considerably reducing the need to travel.

The consumption figures included in the table on pages 27 to 30 must be viewed in the context of FR's changing operating environment and the substantial increase in our on-premises business activities (particularly Tree Health and IFOS). In addition to the expected post-Covid return to normal working activities, three factors should be noted:

- changing conditions as we emerge for the Covid-19 pandemic and adapt to the new hybrid working model, noticeable in the sustained levels of homeworking.
- consideration should also be taken of the increase in our built estate, with the full year use of Alice Holt Laboratories and the new wing under construction at Northern Research Station.
- increasing staff numbers as the business expands to deliver our additional research contracts.

The last year has been one of unprecedented growth for FR. We have increased our staff-count to 368 (308 FTE) by c.20% within 12 months. We have also invested substantially in new laboratory and office space and have increased our occupied floor area from about 6,400 m² in 2021 to 8,600 m² in 2023, i.e. by around one-third.

Travel restrictions have continued to ease which has seen an increase in Year-on-Year general consumption trends across all categories. Please note that we are now reporting travel in km rather than miles, in accordance with HMT requirements, and the historical comparison data presented in the charts below has been amended accordingly. Within this year we have seen the reintroduction of international travel, and use of the preferred method of domestic travel by rail has also increased. However, the expectation is that we will be able to sustain some of the reductions in travel from the pre-Covid period as we embrace the remote working and IT communication improvements. Despite the increase in our business activities and staff numbers, staff travel on official business remains lower than pre Covid-19 years and will continue to be closely monitored.

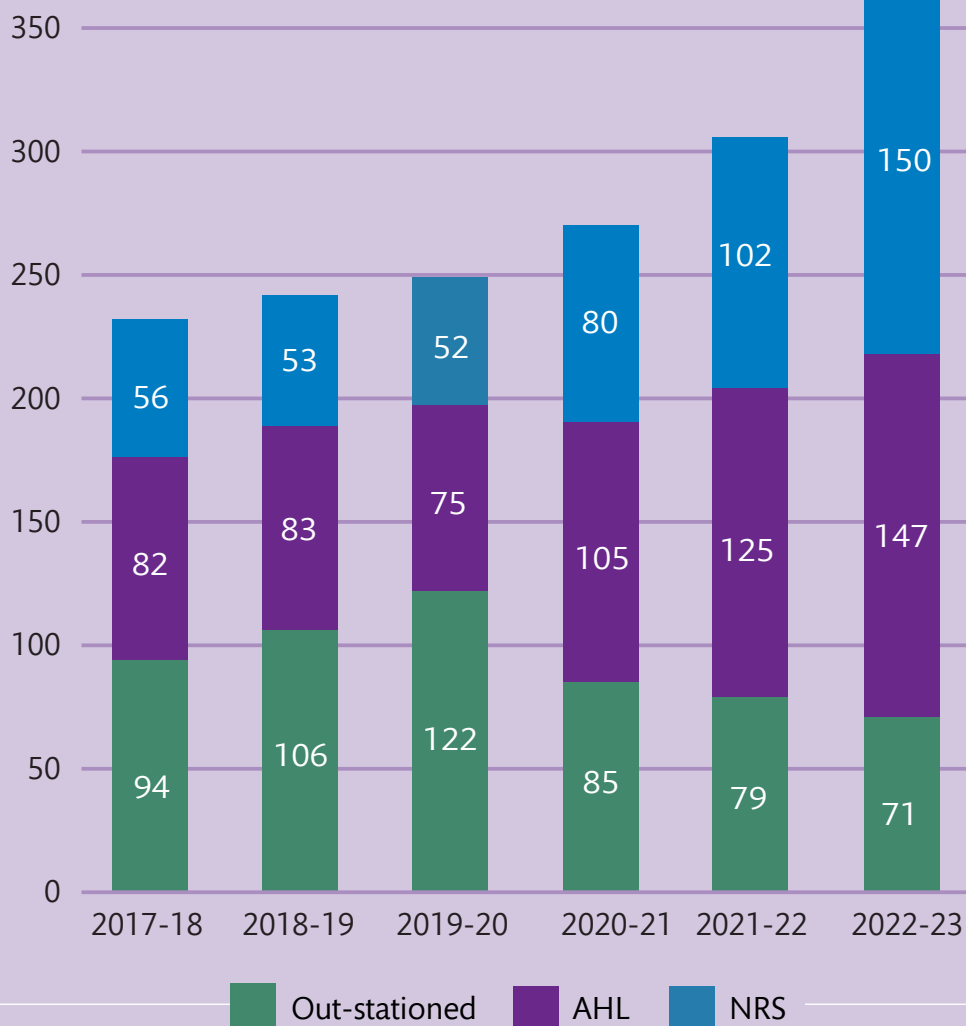
We are in the third year of our substantial estates improvement programme in our main office

sites. One of the key aims of this project is to reduce our environmental impact within our built estate. Investment decisions, both in the long-term building fabric and the construction processes and practices, have been driven by the principles of environmental sustainability in order to improve thermal efficiency and enable the future transition to lower-carbon heating systems. We will continue, in conjunction with the Forestry Commission and Defra sustainability leaders, to search out and adopt new practices that will allow us to achieve longer-term environmental benefits in the way we operate.

Our investment in our ICT capability continues to provide the organisation with a strong platform to conduct business remotely for many areas of our work. This approach is now embedded in our operations for senior management and colleagues throughout the business. Our staff are more aware of actions that will enhance our environmental management capacity, support recycling initiatives, turn off unused lighting and are energy aware.

Staff numbers, by location (head count, not FTE)

The chart shows the increased staff numbers and their main office location. These factors impact on our overall energy consumption and travel figures.



This year we have substantially increased our on-site provision of electric vehicle charging points, with seven twin-pods at AH and one at NRS (with three more now scheduled). Our current fleet comprises of 15 cars (53% of which are ultra-low emission vehicles, or 'ULEV') and 31 vans (which are currently all petrol or diesel-fuelled). We exceeded the GGC target of 25% of the car fleet to be ULEV by the end of 2022.

Since 2020, we have transferred almost all of our electricity supplies to '100% Clean Renewable' tariffs via EDF Energy. We continue to report the 'gross' greenhouse gas (GHG) emissions associated with our electricity consumption, based on grid average conversion factors, since the avoided emissions are claimed elsewhere within the UK's carbon-budget accounting process. However, we have estimated our avoided GHG emissions associated with the purchase of electricity from REGO-certified, fully renewable sources to be 253 tonnes of CO₂ equivalents.

We will be renewing our energy supply contracts in the next 12 months and the procurement exercise will ensure that we continue to deliver on the environmental considerations for the new contract.

Sustainability remains embedded into our procurement practices, through observance of the Government Buying Standards and our own *Environmental Procurement Procedures*.

As FR does not hold or manage any significant natural capital or areas of undeveloped land, we do not publish Nature Recovery or Biodiversity Action plans.

FR continues to review our Information and Communications Technology (ICT) and digital estate with the intention that with each new infrastructure upgrade and refinement, we continue to improve performance and efficiency of our systems. While we do not currently actively monitor the environmental impacts from our systems, this is an ambition of ours moving forward. FR operates a hybrid-Cloud infrastructure, which has already led to a significant reduction in our hardware footprint since devolution.

Where possible, our services are virtualised or delivered from the Cloud, reducing our dependency on hardware as much as possible and all that entails (such as a reduction in on-premises electricity usage, carbon footprint etc.). Within the year we have completed the move of our data centre to the Cloud, this will see a reduction in our demand for air conditioning and lighting. All of our end-user devices have variable power plans, which can be selected or tweaked based on user need. All IT equipment is procured through existing government frameworks, which ensures compliance with all ethical and environmental standards.

All of our Information Technology (IT) equipment is disposed of responsibly through Waste Electrical and Electronic Equipment Directive (WEEE) compliant organisations. However, during 2022-23 FR did not recycle or dispose of any ICT waste: we have prioritised the refurbishment and re-use of equipment wherever feasible.

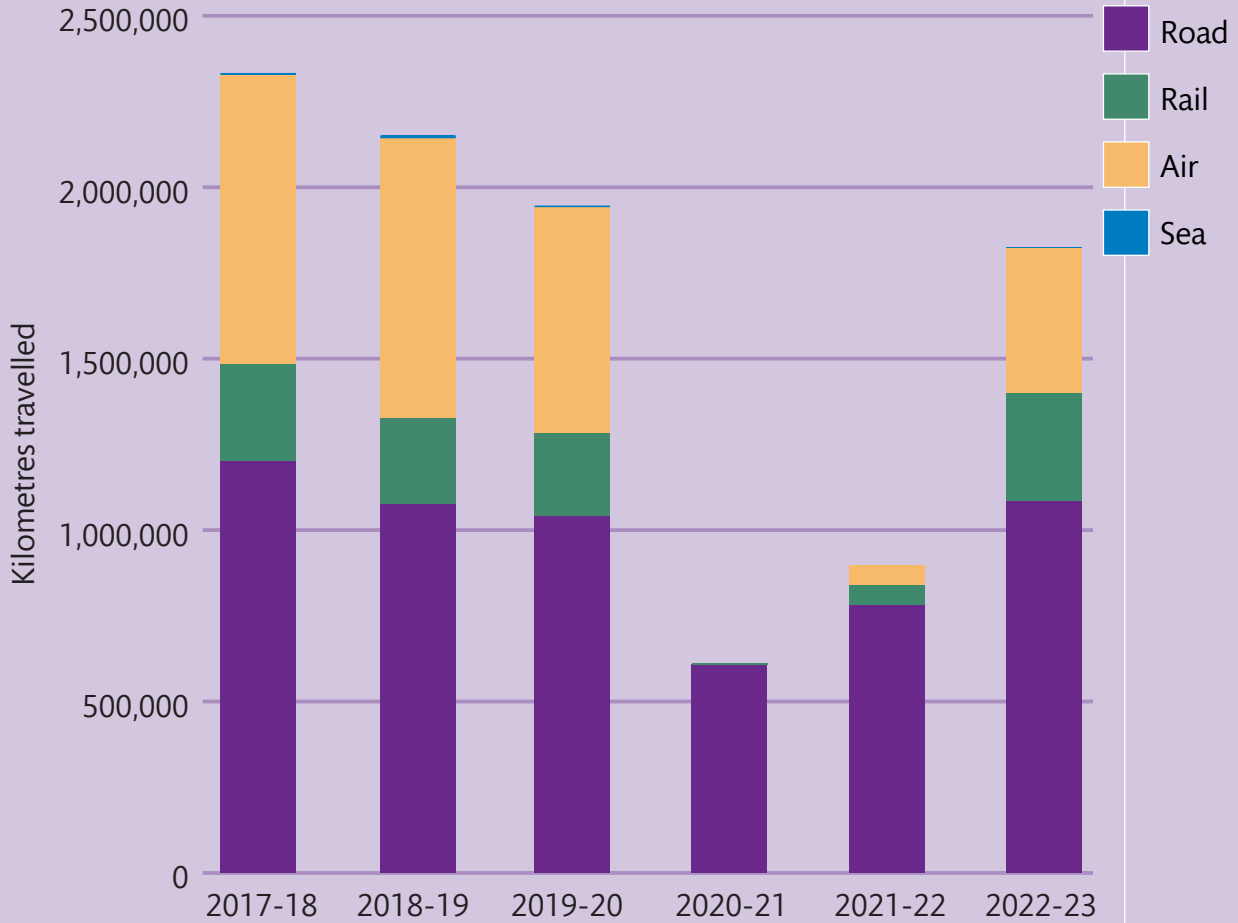
Additionally, since 2019 we have mostly phased-out consumer single-use plastics (CSUP) in accordance with the Crown Commercial Services instruction *Removing Consumer Single Use Plastics* (July 2018). We have re-instated the use of glass milk bottles, following a temporary move to plastic sachets as a Covid-19 hygiene measure, and are using-up some final, residual supplies of plastic cups.

Total gross greenhouse gas (GHG) emissions associated with our built estate bought energy, fugitive F-Gas emissions and our business travel activities for 2022-23 were 725 tonnes CO₂e. See the chart below for a segmental breakdown of the various sources of these emissions.

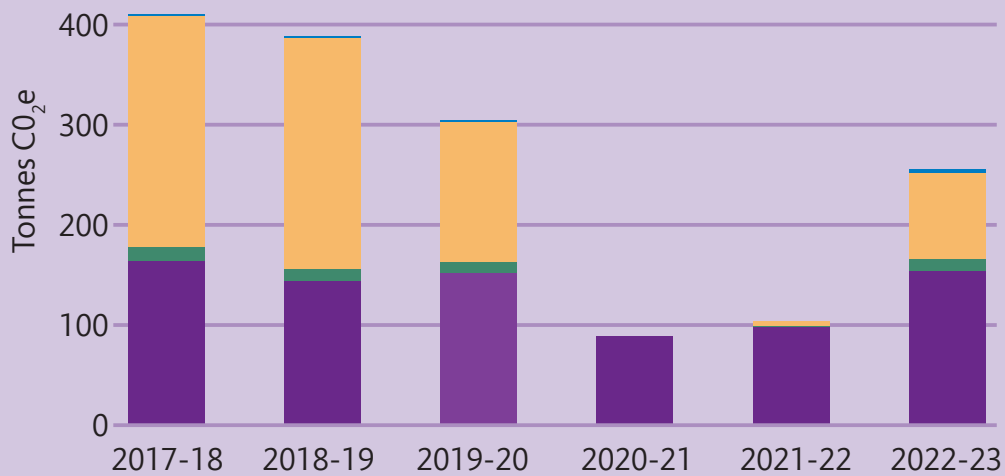
The following two charts provide analysis of our total corporate carbon emissions, firstly by sector of our business and then as a segmental breakdown of the various individual sources of these emissions.

Business travel (km), by mode and year

These charts provide some analysis of the impacts over time of the business travel.



Travel GHG emissions, by mode and year

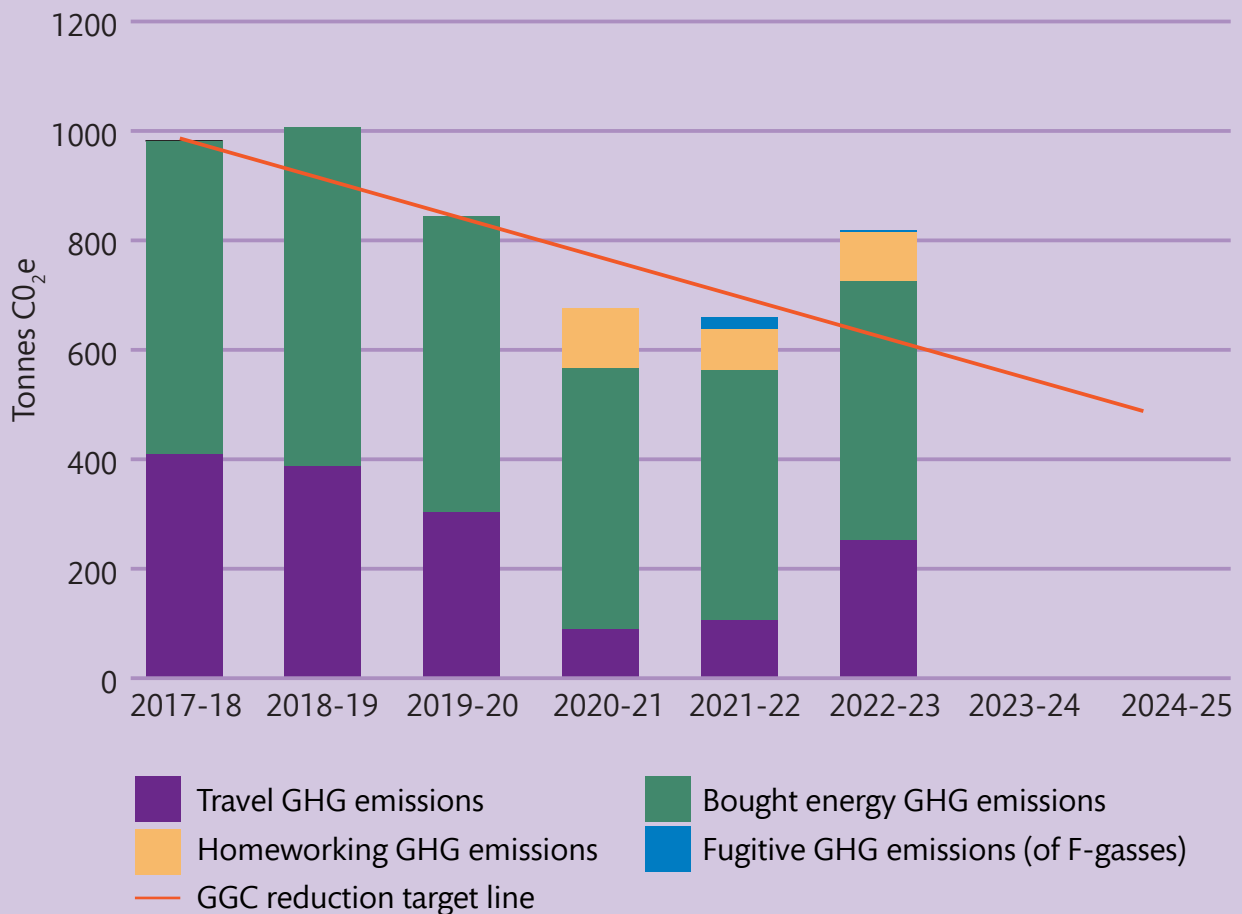


The reporting on our sustainable construction and refurbishment activities is in development and we will investigate how this can be expanded in future years if resources permit. We have developed our own, comprehensive Environmental Procurement Procedures. Building contractors are selected according to Government Procurement Standards and Requirements. Surplus furniture is transferred to a company that provides it to other users to minimise the quantity of waste or recycled materials.

Substantial development works are ongoing on both main sites and waste totals will be reported for the contracts in the 2023-24 reporting cycle.

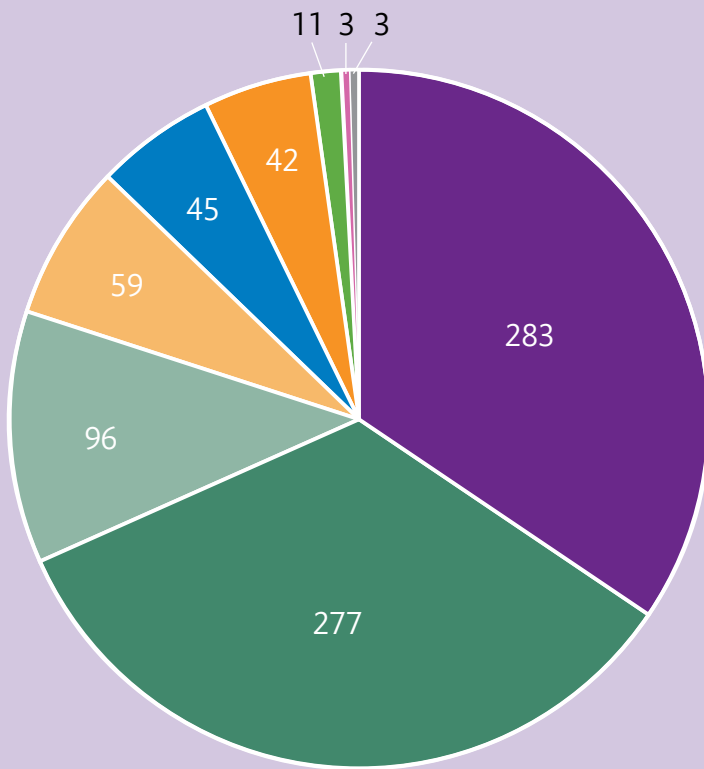
In terms of our other waste consumption, the total waste arising has increased compared to the previous year, due largely to us having discontinued on-premises composting of green, grounds-keeping waste which is now transferred to a purpose-built local facility. Tankered sewage waste has remained high during the year due to high maintenance required for a minor sewage treatment facility at Alice Holt. This is approaching the end of its expected service-life and is now scheduled for replacement. We continue to work closely with the Forestry Commission and Defra to plan for this.

FR corporate GHG emissions (gross)



Segmental breakdown of GHG emissions for FY22-23 (tonnes CO₂e gross)

CO₂



- Gas consumption (bought)
- Electricity consumption (bought)
- Business travel: fleet vehicles
- Business travel: other road vehicles
- Business travel: international flights
- Business travel: domestic flights
- Business travel: rail
- Fugitive emissions (fluorinated gasses)
- Fuel oil consumption (bought)

Performance measurement



Area	Units	2022-23	2021-22	2020-21	2019-20	2017-18 GGC baseline
Travel on official business						
Owned fleet/ leased vehicles	km	750,567	575,549	541,623	657,367	869,758
Fleet vehicles (standard fuels)	km	674,441	491,598	-	-	-
Fleet vehicles (ultra low emission)	km	76,126	83,951	-	-	-
Fleet vehicles (zero emission)	km	-	-	-	-	-
Air travel (domestic)	km	169,399	35,244	-	-	-
Air travel (international)	km	254,708	22,185	-	-	-
Rail travel (domestic)	km	310,613	-	-	-	-
Rail travel (international)	km	-	-	-	-	-
All other travel	km	338,538	263,530	66,645	1,285,660	1,473,152
Owned fleet/ leased vehicles	£		152,919	143,905	174,662	288,150
All other travel	£	185,001	59,864	10,825	164,882	199,078
Owned fleet/ leased vehicles	GHG emis in tonnes CO ₂ e scope 1	95.6	70.8	79	85	116
Fleet vehicles (standard fuels)	GHG emis in tonnes CO ₂ e scope 1	92.3	67.3	-	-	-
Fleet vehicles (ultra low emission)	GHG emis in tonnes CO ₂ e scope 1	3.4	3.5	-	-	-
Fleet vehicles (zero emission)	GHG emis in tonnes CO ₂ e scope 1	-	-	-	-	-

Area	Units	2022-23	2021-22	2020-21	2019-20	2017-18 GGC baseline
Air travel (domestic)	GHG emis in tonnes CO ₂ e scope 3	41.6	8.6	-	-	-
Air travel (international)	GHG emis in tonnes CO ₂ e scope 3	45	3.9	-	-	-
Rail travel (domestic)	GHG emis in tonnes CO ₂ e scope 3	11	-	-	-	-
Rail travel (international)	GHG emis in tonnes CO ₂ e scope 3	-	-	-	-	-
All other travel	GHG emis in tonnes CO ₂ e scope 3	58.7	30	10	161	295

Energy bought and consumed (after deducting supplies to tenants and including homeworking)

Electricity	kWh	1,314,507	1,180,249	981,523	1,051,150	1,101,095
	£	288,754	197,396	147,613	170,388	151,061
	Location based GHG emission in tonnes CO ₂ e scope 2 and 3	277	272	253	352	528
	Market based GHG emission through use of REGO-certified renewable tariffs - in tonnes CO ₂ e scope 2 and 3	24	5	94	-	-
Gas	kWh	1,547,913	1,414,920	1,665,175	1,405,452	1,355,120
	£	66,037	46,736	46,507	50,010	39,818
	GHG emission in tonnes CCO ₂ e scope 1	283	258.7	306	243	246
Oil bought	kWh	10,630	-	-	6,445	6,426
	£	1,248	-	-	375	328
	GHG emis in tonnes CO ₂ e scope 1	3	-	-	2	2

Area	Units	2022-23	2021-22	2020-21	2019-20	2017-18 GGC baseline
Energy generated from renewables						
Total generated from solar PV	kWh	42,915*	43,674	42,156	22,865	24,115
GHG emission avoided	GHG emis in tonnes CO ₂ e scope 2 and 3	9*	11.5	10	6	8
F-gas fugitive emissions						
Refrigeration and air conditioning topped up	Carbon dioxide equivalent (CO ₂ e) in tonnes	3	23	-	-	-
Waste minimisation and management (non-sewage)						
Total waste arising	Tonnes	116	76	84	67	72
Waste to landfill	Tonnes	1.02	1.29	1	2	12
Waste re-used or recycled	Tonnes	111	68.50	81	61	60
Waste incinerated with energy recovery	Tonnes	4.7	0.06	2	4	-
Waste incinerated without energy recovery	Tonnes	-	-	-	-	-
Total hazardous waste	Tonnes	1.8	6.5	-	-	-
Total waste arising	£	59,578	33,011	32,447	33,559	22,750
Waste to landfill	£	5,188	1,209	3,983	4,108	5,563
Waste re-used or recycled	£	40,722	23,446	26,616	26,810	17,385
Waste incinerated with energy recovery	£	3,865	4,861	1,848	2,641	-
Waste incinerated without energy recovery	£	-	-	-	-	-
Total hazardous waste	£	14,350	3,496	-	-	-

Area	Units	2022-23	2021-22	2020-21	2019-20	2017-18 GGC baseline
Waste minimisation and management (sewage)						
Waste re-used or recycled	Tonnes	669	451	548	712	109
Waste re-used or recycled	£	18,454	14,426	12,782	16,255	2,040
Waste minimisation and management (ICT)						
Waste re-used or recycled	Tonnes	-	-	-	-	-
Waste re-used or recycled	£	-	-	-	-	-
Waste minimisation and management (food waste)						
Waste re-used or recycled	Tonnes	-	-	-	-	-
Waste re-used or recycled	£	-	-	-	-	-
Construction waste arising from projects over 300k						
Waste re-used or recycled	Tonnes	unavailable	-	-	-	-
Paper use						
Printing and photocopying paper purchased	A4 reams (equivalent)	288	200	280	625	940
Water consumption						
Scope 2, water purchased from a third-party supplier	m ³	13,358	7,146	11,626	14,693	13,725
Scope 2, water purchased from a third-party supplier	£	30,384	11,249	16,946	22,558	18,329
Scope 1 – water from sources owned or controlled by FR	m ³	-	-	-	-	-
Scope 1 – water from sources owned or controlled by FR	£	-	-	-	-	-