



Sustainability report

Environmental Sustainability

Sustainability is an essential characteristic within the strategic objectives, operations and policy making of Forest Research. The implementation of a systematic approach to environmental management via ISO 14001 demonstrates Forest Research's commitment to contributing to the environmental pillar of sustainability.

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) for our built estate which is externally certified to ISO 14001:2015 standard.

Our operational activities are managed in accordance with the UK Forestry Standard (UKFS) and UK Woodland Assurance Standard (UKWAS) and certified by both the Forestry Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC).

Forest Research maintains an EMS to deliver on the commitments within its environmental policy and manage its significant environmental aspects through implementing an environmental management programme (based on the greening government commitments). Our Senior Management Team, in demonstrating its commitment to environmental sustainability and leading by example.

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 to 2025, with 2017 to 2018 being the baseline year against which we will target further improvements. (The base line year data is included in the tables as a benchmark, but not reflected in the associated graphs.) 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 Forest Research, it 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.

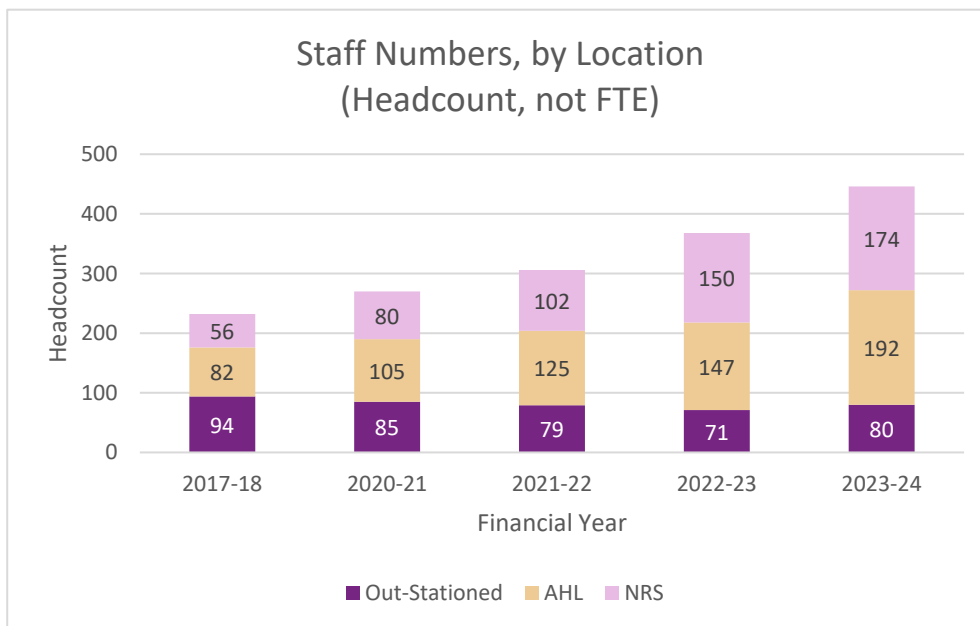
Our sustainability performance update for this year follows the GGC Framework and is set out within the environmental sustainability performance evaluation sections of this report. The consumption figures included in Tables 1 to 8 must be viewed in the context of Forest Research’s changing operating environment and the substantial increase in our on-premises business activities (particularly related to Tree Health and Inventory, Forecasting and Operational Support). Two factors should be noted:

- Increasing staff numbers as the business expands to deliver our additional research contracts.
- The construction and design of the Holt Phase 2 Laboratory should be considered.

The last year has been one of unprecedented growth for Forest Research and we have increased our staff-count in 2023 to 2024 to 406 (by about 10% 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.

Figure 1 shows the increased staff numbers and their main office locations. These factors impact on our overall energy consumption and travel figures.

Figure 1 Staff Numbers, by Location



Greenhouse gas emissions (Scopes 1 to 3)

The total gross greenhouse gas (GHG) emissions associated with our built estate, bought energy, business travel activities and fugitive emissions (F-Gas) for 2023 to 2024 was 951 tonnes CO₂e.

Figures 2 and 3 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.

Figure 2 FR Corporate GHG Emissions (gross)

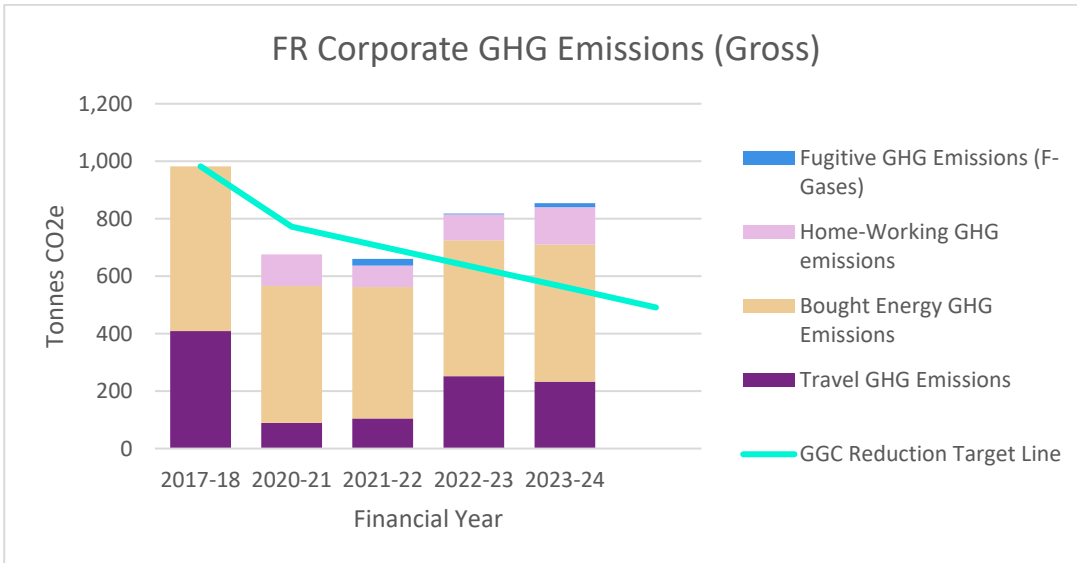
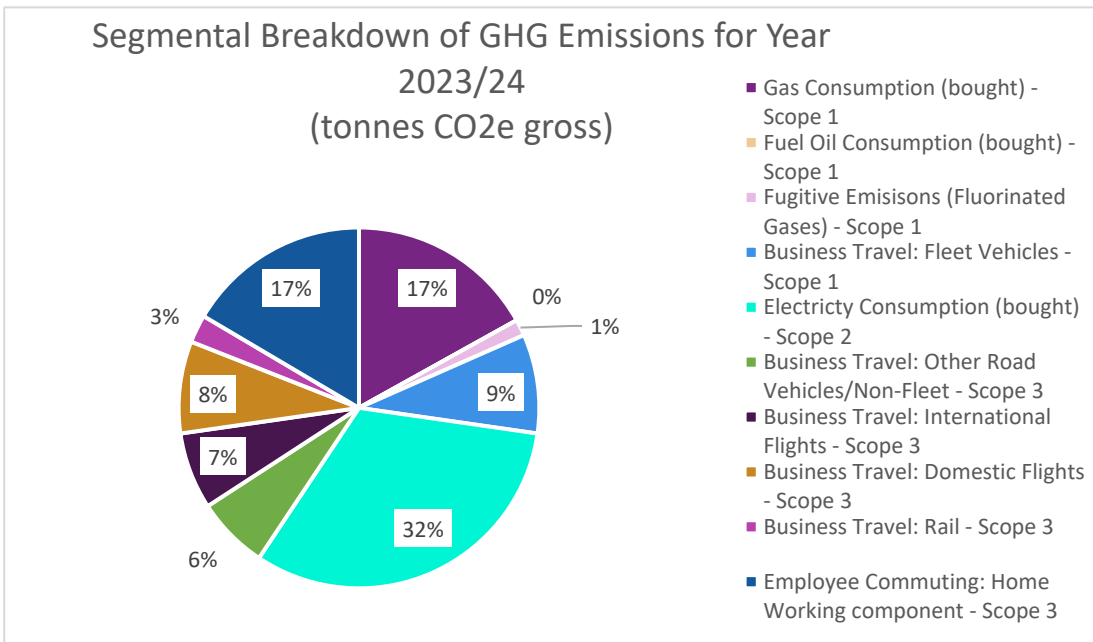


Figure 3 Segmental Breakdown of GHG Emissions for 2023 to 2024 (Tonnes CO₂e gross)



Our environmental performance with respect to fugitive emissions, energy use, business travel, waste arising, water consumption and paper use are detailed below.

Scope 1 (Direct) - Fugitive Emissions

Considering the impact of fugitive gases (F-gases) on climate change and in compliance with legal requirements to reduce this impact, Forest Research has targeted the replacement of equipment containing fluorinated refrigerant gases with a 'very high' global warming potential in excess of 2,500 CO₂e before the 2030 phase out period.

Table 1 provides information on environmental performance measurement for fugitive emissions.

Table 1 Fugitive Emissions

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Refrigeration and air conditioning topped up - Scope 1	Carbon Dioxide equivalent (CO ₂ e) in tonnes	14	3	23	-	-

Scope 2 (Energy Indirect)

Energy Bought and Consumed

Table 2 provides information on environmental performance measurement for energy bought and consumed (after deducting supplies to tenants and including home working).

Table 2 Energy Bought and Consumed

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Electricity - Scope 2 & 3	kWh	1,489,981	1,314,507	1,180,249	981,523	1,101,095
	£	443,553	288,754	197,396	147,613	151,061
	Location-based GHG Emissions in tonnes CO ₂ e	335	277	272	253	528
	Market-based GHG Emissions through use of REGO-certified renewable tariffs in tonnes CO ₂ e	25	24	5	94	-
Gas – Scope 1	kWh	714,662	1,547,913	1,414,920	1,665,175	1,355,120
	£	51,608	66,037	46,736	46,507	39,818
	GHG Emissions in tonnes CO ₂ e	130	283	258.7	306	246
Oil Bought - Scope 1	kWh	Unavailable	10,630	-	-	6,426
	£	Unavailable	1,248	-	-	328
	GHG Emissions in tonnes CO ₂ e	Unavailable	3	-	-	2

Energy Generated from Renewables

Using energy generated from renewables 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' 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.

We are in the fourth 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.

Table 3 provides information on environmental performance measurement for energy generated from renewables.

Table 3 Energy from Renewables

Area	Units	2023-2024	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Total Generated from Solar PV	kWh	Unavailable	42,915	43,674	42,156	24,115
GHG Emission avoided Scopes 2 and 3	GHG Emissions in tonnes CO ₂ e	Unavailable	9	11.5	10	8

Business Travel

Business travel accounts for one-third of our total GHG emissions. Figures 4 and 5 provide some analyses of the mode and impacts over time of Forest Research business travel.

Figure 4 Business Travel (km), by Mode and Year

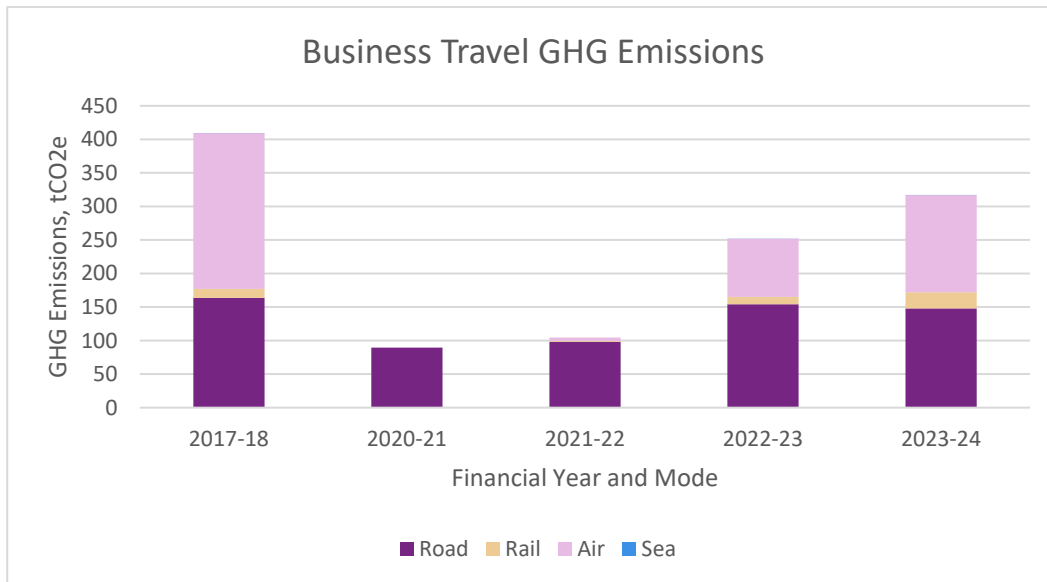
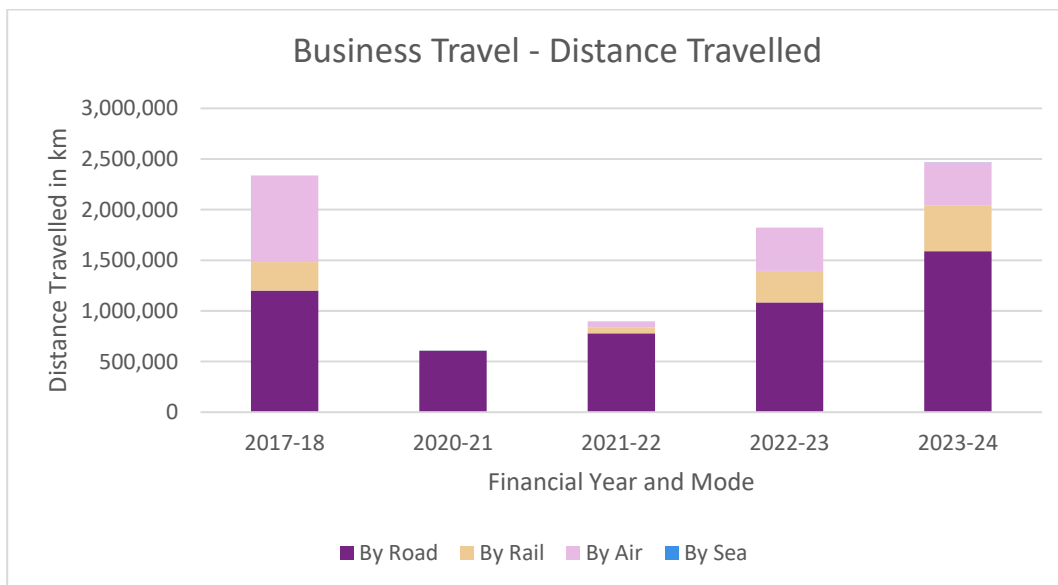


Figure 5 Total GHG Emissions, by Mode and Year



Forest Research’s greenhouse gas emissions from its business travel comes from its owned and leased fleet, non-fleet and public transport.

Owned and leased fleet (Scope 1)

Our current fleet comprises of 17 cars (53% of which are ultra-low emission vehicles, or ‘ULEV’) and 28 vans (which are currently all diesel-fuelled). We exceeded the GGC target of 25% of the car fleet to be ULEV by the end of 2022.

Table 4 provides information on environmental performance measurement for Travel on Official Business (Scope 1).

Table 4 Travel on Official Business (Scope 1)

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Owned Fleet/Leased Vehicles - Scope 1	km	709,202	750,567	575,549	541,623	869,758
Fleet Vehicles (standard fuels)	km	564,138	674,441	491,598	-	-
Fleet vehicles (ultra-low emission)		145,064	76,126	83,951	-	-
Fleet Vehicles (zero emission)		-	-	-	-	-
Owned Fleet/Leased Vehicles - Scope 1	GHG Emissions in tonnes CO₂e	85	95.6	70.8	79	116
Fleet Vehicles (standard fuels)	GHG Emissions in tonnes CO ₂ e	67	92.3	67.3	-	-
Fleet Vehicles (ultra-low emission)		18	3.4	3.5	-	-
Fleet Vehicles (zero emission)		-	-	-	-	-

Non-fleet and public transport (Scope 3)

Table 5 provides information on environmental performance measurements for Travel on Official Business (Scope 3).

Table 5a Travel on Official Business (Scope 3)

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Air Travel (domestic)	km	189,157	169,399	35,244	-	-
Air Travel (international)		239,195	254,708	22,185	-	-
Rail Travel (domestic)		448,773	310,613	-	-	-
Rail Travel (international)		-	-	-	-	-
All Other Travel		891,640	338,538	263,530	66,645	1,473,152

Table 5b Travel on Official Business (Scope 3)

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Owned Fleet/Leased Vehicles	£	Unavailable ¹	Unavailable ¹	152,919	143,905	288,150
Fleet Vehicles (standard fuels)	£	Unavailable ¹	Unavailable ¹	152,919	-	-
Fleet vehicles (ultra-low emission)		Unavailable ¹	Unavailable ¹	-	-	-
Fleet Vehicles (zero emission)		-	-	-	-	-
Fleet Vehicles (standard fuels)		Unavailable ¹	Unavailable ¹	-	-	-
Air Travel (domestic)		79,240	27,184	-	-	-
Air Travel (international)		66,493	27,547	-	-	-
Rail Travel (domestic)		23,550	58,316	-	-	-
Rail Travel (international)		-	-	-	-	-
All Other Travel		£	64,372	71,954	-	-
Air Travel (domestic)	GHG Emissions in tonnes CO ₂ e	79.2	41.6	8.6	-	-
Air Travel (international)		66.5	45	3.9	-	-
Rail Travel (domestic)		23.5	11	-	-	-
Rail Travel (international)		-	-	-	-	-
All Other Travel		64.4	58.7	30	10	295

¹ Data for business travel on vehicles is unavailable as it cannot be segmented nor is it fully assured

Our business travel is increasing as we return to the post-covid world and continue with international collaborations and more in-person meetings. The increase should also be viewed against the substantial rise in staff numbers as shown in Figure 1.

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. In addition to the Forest Research Travel Principles, the FC Travel and Expense and FC Low Emission Travel Policies provide information on sustainable travel hierarchy. 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.

This year we have substantially increased our on-site provision of electric vehicle charging points, with seven twin-pods at AH and three at NRS (two 7kW twin chargers and one 22kW twin charger). Also, NRS boasts six Pod Point electric vehicle chargers available in the main car park for staff and visitor use only.

Waste Minimisation and Management

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.

Substantial development works are ongoing on both main sites but we are unable to get 2023 to 2024 recycled or disposal data of any waste due to ITC (a contractor) undergoing liquidation. Waste totals will be reported for the contracts in the 2024 to 2025 reporting cycle.

All of our Information Technology (IT) equipment is disposed of responsibly through Waste Electrical and Electronic Equipment Directive compliant organisations. During Year 2023 to 2024 Forest Research did not recycle or dispose of any IT waste: we have prioritised the refurbishment and reuse of equipment wherever feasible. The implementation of reuse schemes across FR estate is an agenda during Forest Research's 'Site and Environment' periodic meetings.

Table 6 provides information on environmental performance measurement for waste.

Table 6a Waste

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Waste Minimisation and Management (Non-Sewage)						
Total Waste Arising	Tonnes	175	119	76	84	72
Waste to landfill	Tonnes	1	1.02	1.29	1	12
Waste re-used or recycled		167	111	68.50	81	60
Waste incinerated with energy recovery		3	4.7	0.06	2	-
Waste incinerated without energy recovery		2	-	-	-	-
Total Hazardous Waste		2	1.8	6.5	-	-
Total Waste Arising	£	115,593	64,125	33,012	32,447	22,948
Waste to Landfill	£	6,356	5,188	1,209	3,983	5,563
Waste re-used or recycled		57,111	40,722	23,446	26,616	17,385
Waste incinerated with energy recovery		6,472	3,865	4,861	1,848	-
Waste incinerated without energy recovery		18,592	-	-	-	-
Total Hazardous Waste		27,062	14,350	3,496	-	-

Table 6b Waste

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Waste Minimisation and Management (Sewage)						
Waste re-used or recycled	Tonnes	531	669	451	548	109
Waste re-used or recycled	£	15,024	18,454	14,426	12,782	2,040
Waste recycled, re-used and recovered (externally)	Tonnes	-	-	-	-	-
Waste recycled, re-used and recovered (externally)	£	-	-	-	-	-
Construction Waste Arising from Projects Over 300k						
Waste re-used or recycled	Tonnes	Unavailable	unavailable	-	-	-

Paper use

Table 7 provides information on environmental performance measurement for waste. There has been progressive reduction on paper use against the 2017 to 2018 baseline.

Table 7 Paper use

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Printing and Photocopying Paper Purchased	A4 reams (equivalent)	295	288	200	280	940

Finite Resource Consumption – Water Consumption

We are committed to continually improving our consumption of water and we will investigate and implement alternative water supply systems for the intensive nurseries, e.g. via rainwater harvesting, borehole or store-well systems (non-office activities). Table 8 provides information on environmental performance measurement for water use.

Table 8 Water

Area	Units	2023-24	2022-23	2021-22	2020-21	2017-18 GGC Baseline
Scope 2 - Water purchased from a third-party supplier	m ³	10,313	13,358	7,146	11,626	13,725
Scope 2 - Water purchased from a third-party supplier	£	30,995	30,384	11,249	16,946	18,329
Scope 1 - Water from sources owned or controlled by FR	m ³	-	-	-	-	-
Scope 1 - Water from sources owned or controlled by FR	£	-	-	-	-	-

Sustainable Procurement

Sustainability remains embedded into our procurement practices, through observance of the Government Buying Standards and our own developed comprehensive Environmental Procurement Procedures. The selection of contractors is done according to Government Procurement Standards and Requirements, and we will ensure that sustainable procurement is accounted for when buying goods and services. Forest Research acknowledges that its purchased goods, works and services account for substantial Scope 3 'upstream' emissions (quantification methodology currently in development via FC/FE) and also have a significant influence on Scopes 1 and 2 emissions caused by on-site energy use.

Nature recovery and biodiversity action planning

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

Climate Change Adaptation

The impact of a changing climate is visible across the globe and to this end, in line with the GGCs, Forest Research is positioned in the near future to develop and implement a Climate Change Adaptation Strategy to enable it to adapt to the effects of our changing climate.

Environmental Impacts from ICT and Digital

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.

Forest Research 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 and carbon footprint). 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 modified based on user need.

All IT equipment is procured through existing government frameworks, which ensures compliance with all ethical and environmental standards. Sustainable Construction

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.

Task Force on Climate Related Financial Disclosures

This is the first year that Forest Research has reported on climate-related financial disclosures consistent with HM Treasury's Task Force on Climate-Related Financial Disclosures (TCFD) aligned disclosure application guidance which interprets and adapts the framework for the UK public sector.

We can confirm that Forest Research has complied with the TCFD recommendations and recommended disclosures around:

- governance (all recommended disclosures) – for details of how we are managing our compliance see our Governance Statement pages 46 to 53 and Performance Report pages 12 to 27;
- metrics and targets (disclosures (b)) are included in the tables and graphs of this report.

This is in line with the central government's TCFD-aligned disclosure implementation timetable.

Recognising the urgent nature of responding to the climate crisis, and the impact this could have on our organisation, we are committed to maturing and enhancing our climate risk disclosures. As such, Forest Research plans to make disclosures for Strategy, Risk Management and Metrics and Targets disclosures (a) and (c) in future reporting periods in line with the central government implementation timetable.



Professor James Pendlebury

Chief Executive and Accounting Officer

06 November 2024