

NERC Carbon Report 2023-24

In line with the UK Research and Innovation (UKRI) [Environmental Sustainability Strategy](#), the Natural Environment Research Council (NERC) is committed to achieving net zero operational carbon emissions by 2040. With growing efforts to improve the transparency of carbon mitigation performance, NERC is certified and audited by the Carbon Trust's [Route to Net Zero Standard](#) and sets out below its current carbon performance.



Image: Route to Net Zero Standard. Credit: Carbon Trust

How do we collect data?

The data reporting comprises the operations of NERC's Head Office (HO) and its two funded research centres, including the [British Geological Survey](#) (BGS) and the [British Antarctic Survey](#) (BAS). NERC applies a different approach of data reporting from UKRI, which encompasses its owned and directly funded aircraft operated by the [National Centre for Atmospheric Science](#) (NCAS) and the Royal Research Ships (RRS) operated by the [National Oceanography Centre](#) (NOC) and BAS. NERC reports three scopes of carbon emissions at a global scale, which is illustrated by the figure below. Due to the significant scale, NERC reports the indirect emissions from its chartered aircraft and ships, business travel and direct fuel use in Antarctic construction. Other Scope 3 emissions such as purchased goods and services, waste disposal and water management are not currently reported within the carbon footprint. The reported carbon emissions apply grid and non-radiative forcing carbon conversion factors.

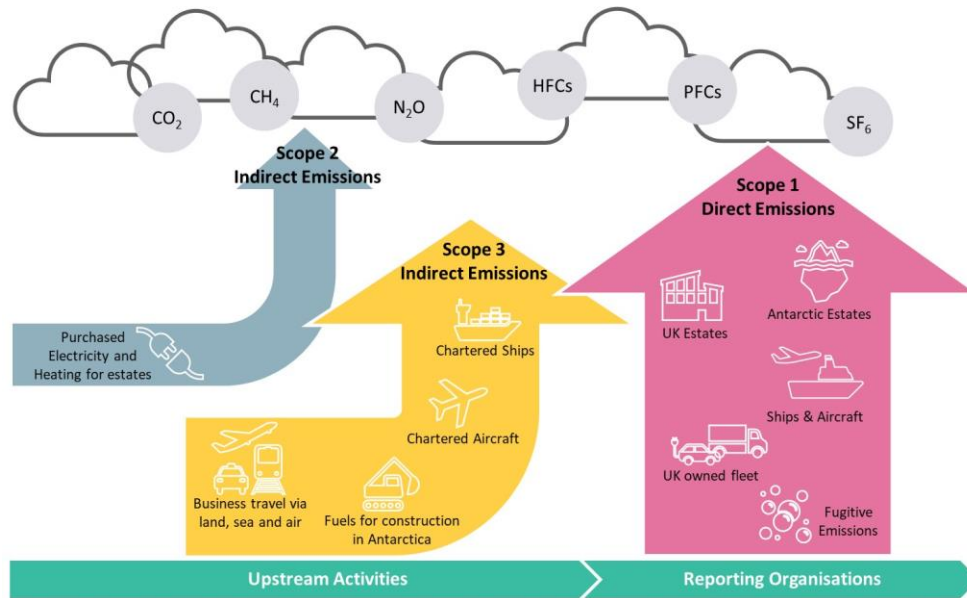


Fig. 1. Three scopes of data reporting on global carbon emissions



Image: BAS's Rothera Research Station in Antarctica. Credit: BAS



Image: RRS Sir David Attenborough (SDA) on its ice trials to Antarctica. Credit: BAS



Image: NCAS's aircraft funded by NERC. Credit: NCAS

What did our carbon performance look like in 2023-24?

In 2023-24, the carbon footprint of NERC was 41,224 tCO₂e, and the emissions were split into three scopes as shown in Table 1. In addition, since NERC was undertaking trials of biofuels within the reporting year including hydrotreated vegetable oil (HVO) and sustainable aviation fuel (SAF), the direct carbon impact of burning these carbon neutral biofuels was 6,337 tCO₂e. This is reported for transparency and is considered outside of the three reporting scopes. NERC is working to develop a better understanding of its wider scope 3 emissions to improve data reporting and target further carbon reductions.

Table 1. Three scopes of reportable carbon emissions in 2023-24

Category	Definition	Emissions (tCO2e)	Percentage (%)
Scope 1	Direct emissions from owned or controlled estates, ships, aircraft and UK fleet	35,156	85.3%
Scope 2	Indirect emissions from the generation of purchased electricity used for estates	1,149	2.8%
Scope 3	Indirect emissions from business travel, construction and chartered ships and aircraft	4,920	11.9%
Total	Reportable carbon emissions at a global scale	41,224	100%

Our carbon emissions are divided into five major categories as set out in the pie chart below. Three research ships are the largest source of operational reportable carbon emissions, which include the RRS SDA, RRS James Cook and RRS Discovery. They contributed 72.0% of our total carbon footprint in 2023-24. Hence, NERC is collaborating with a range of stakeholders to drive carbon transition on ships.

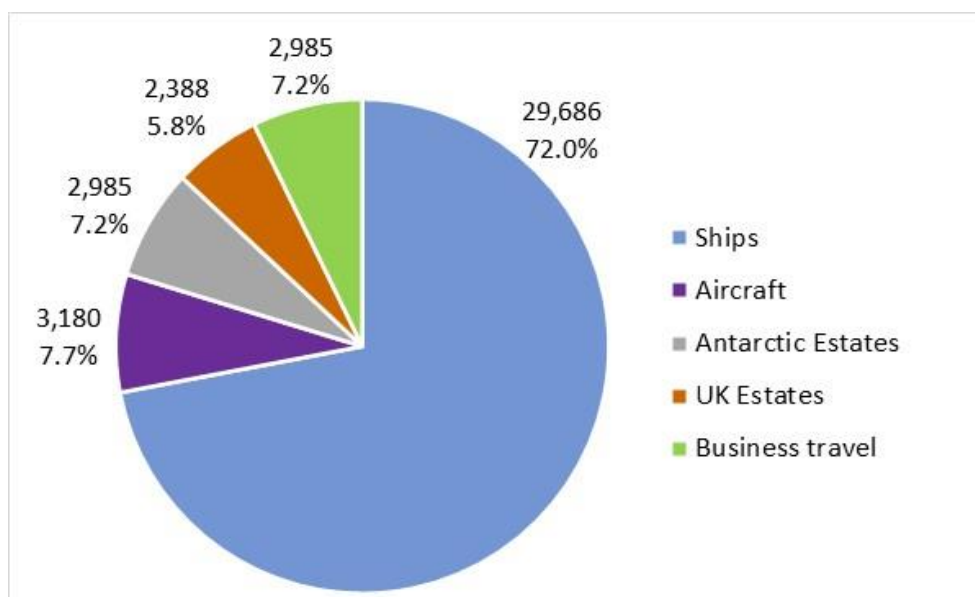


Fig. 2. Reportable carbon emissions (tCO2e) by sources

Our carbon emissions can be further split by organisational units as the following pie chart shows. In 2023-24, the major contributor was BAS, which emitted 22,978 tCO2e through the operation of its RRS SDA and Antarctic estates. NOC was another key source, whose carbon footprint was 14,575 tCO2e contributed by two ships.

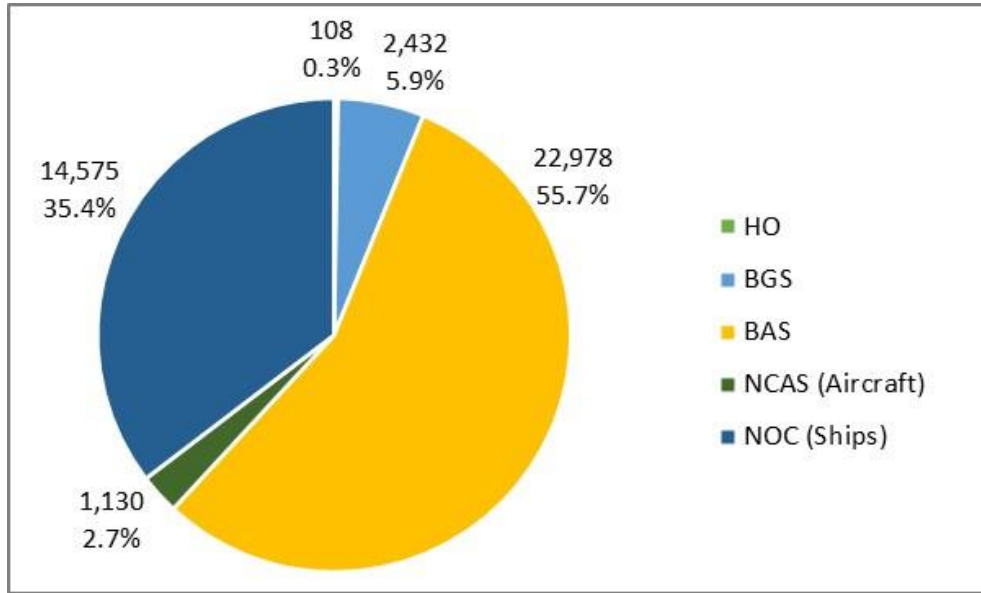


Fig. 3. Reportable carbon emissions (tCO2e) from operational units

What was our Carbon reduction against the baseline year?

NERC is driving forward its Carbon Pathway Programme with noticeable carbon mitigation. In 2017-18, the total carbon emissions were 50,697 tCO2e. Compared to the baseline, NERC generated 41,224 tCO2e in 2023-24, with an 18.7% decline. NERC will update its carbon footprint annually on this page as aligned with its reporting requirements.



Fig. 4. Yearly carbon emissions (tCO2e) by sources from 2017-18 to 2023-24

Key projects delivered in 2023-24

In 2023-24, NERC was delivering key projects in its carbon roadmap to cut emissions from major sources. Highlights include:

- Trials of HVO on ships and SAF on aircraft
- Installation of a new solar electricity energy storage plant at Bird Island Research Station in South Georgia
- Ground-source heat pump installation at BGS Keyworth
- Creation of a Climate for Change programme to support staff to consider the carbon impact of their activities at work
- Initiation of a Carbon Advisory Framework to ensure that we consider the carbon impact of more of our future activities

In 2024-25, NERC will continue to deliver a range of projects through its Carbon Pathway Programme to facilitate decarbonisation.



Image: Installation of heat pumps at BGS Keyworth. Credit: BGS

Further information

For more detailed information or enquiries, please email responsibility@nerc.ukri.org.