Environmental sustainability and research and innovation practice

A report reviewing the landscape of the UK research and innovation sector

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Executive summary

This landscape review was commissioned to support the Concordat for the Environmental Sustainability of Research and Innovation Practice, published in 2024. The concordat set out a shared ambition for embedding environmental sustainability into the way research and innovation (R&I) is conducted across the UK. Understanding the sector's starting point is critical to measuring progress.

This report highlights that the R&I sector is highly complex and difficult to define, but for the purposes of this review the focus has been on higher education institutes, research organisations, and funding organisations. While there is an abundance of sustainability league tables, accreditation schemes, and reporting frameworks, the report reveals that none of these provide comprehensive coverage of the R&I sector. Most focus on specific sub-sectors or thematic areas, leaving gaps in understanding the environmental impact of R&I practice. Data is in places inconsistent and incomplete, making sector-wide analysis a challenge.

The review also explored data in the context of the concordat priorities and the analysis in the report shows that most organisations in the sector have published environmental strategies and net-zero commitments, however very few explicitly address the sustainability of research and innovation activities themselves. Reporting of environmental impacts is uneven: around half of the organisations reviewed disclose scope 1 and 2 emissions, and fewer report scope 3, which is essential for capturing the full footprint of R&I activities.

Overall, the report concludes that the sector shows strategic ambition on environmental sustainability, but there is significant opportunity for organisations to share specific ambitions and progress on sustainable R&I practice. Monitoring the sector's progress, the datasets reviewed in this report and any emerging data will be vital for assessing the concordat's success and driving meaningful, measurable change.

1. Introduction

The Concordat for the Environmental Sustainability of Research and Innovation Practice[1] was published in April 2024. The aim of the concordat is to help embed environmental sustainability into the way that research and innovation (R&I) is practiced within the UK. The concordat recognises the need to ensure R&I continues to play a critical part in understanding how our planet is changing, while providing a framework to help the R&I sector to act responsibly to protect and promote the environment through its activities.

For the purposes of the development of the concordat, the focus within the R&I sector has been higher education institutes (HEIs), research organisations (ROs) and organisations funding R&I, but it should be acknowledged that there is complexity and blurring of lines between these categories and these are not hard boundaries. Although it has not been the focus of the concordat to date, the concordat recognises that there are other organisations that carry out research and innovation (sometimes referred to corporately as 'research and development' or R&D) which also make up the R&I sector. Outside of ROs, other businesses carrying out R&I/R&D will not be included in the research carried out for this report.

While the concordat has already been published at time of researching this report, and it is gaining signatories and supporters, the purpose of this report is to explore the state of the R&I sector in the early days of the concordat. This report establishes the current position of the sector, considers the overall aims and priority areas of the concordat, and aims to capture relevant insight and future opportunities that will help colleagues to assess progress of delivery and success of the concordat over time.

Understanding the success and impact of the concordat will largely rely on qualitative research, although some quantitative metrics can be gathered. During the development of the concordat, initial observations showed that data on the footprint of the observed R&I sector is patchy and at this time it would be impossible to accurately determine the entire scale of the problems being addressed across the sector. By generating a report within 18 months of the concordat's initiation, the aim is to capture a snapshot of the current environmental sustainability landscape of research and innovation practice using the data that is available, and in a way that it can be used as a benchmark in future when looking back.

1. https://wellcome.org/about-us/positions-and-statements/environmental-sustainability-concordat

2. Methodology

2.2. Aim

This landscape report aims to address the following questions:

2.2.1. What evidence can be found to support the concordat priority on leadership and policy?

a. What insight do existing sustainability league tables, accreditation programmes and reporting frameworks offer to help us understand the current picture of the environmental sustainability of research and innovation organisations, their activities and the sector as a whole?

b. To what extent are organisations across the UK R&I sector who carry out or fund R&I activities currently publishing their environmental sustainability, net zero or climate change strategies and commitments, and are already playing a role in addressing environmental sustainability, including reaching net zero by 2050 (or 2045 in Scotland)?

2.2.2. What evidence can be found within organisations' published strategies and commitments to show that they are committed to addressing the sustainability of R&I activities and practice, at an organisation-wide strategic level and considering the concordat priorities on infrastructure, travel and procurement?

2.2.3. What evidence can be found to support the concordat priorities related to reporting, to show how extensive the reporting of environmental sustainability impacts across the sector is?

a. Is reporting limited to Scope 1 and 2 emissions or are many organisations including scope 3 emissions too (and is scope 3 just limited to travel emissions or more extensive)?

b. How are organisations considering carbon offsetting?

2.2.4. What opportunities or challenges can be observed that could affect the extent to which we can understand the R&I sector's environmental footprint, the environmental impact of R&I practice or the success of the concordat?

As this report aims to baseline the current landscape, it does not cover changes that have already occurred because of the concordat, nor comment on the progress of the concordat to date. That will be covered in a separate evaluation report in future.

2.3. Data

2.3.1. Existing datasets

At the time of writing there are no existing reports or datasets that cover the entire R&I sector with regards to environmental sustainability. However there are some existing datasets and relevant information that focus on parts of the sector. These will be explored and the findings drawn upon to inform a more complete understanding. These wide-reaching data sets are largely, but not exclusively, limited to higher education providers and public sector organisations and include league tables, collated datasets of reported performance data, and sustainability-related accreditation programmes.

2.3.2. Sampling approach to research

This report seeks to provide an overview of the UK R&I sector and to offer insight into key objective indicators, including the presence of relevant accreditation programmes, published strategic documents, and published carbon emissions data. For the purposes of this analysis, two samples have been selected.

Sample A: 380 organisations across the UK R&I sector, including 160 Higher Education Institutions (HEIs), 188 Research Organisations (ROs) that are eligible for government R&I funding, and 26 organisations that fund research and innovation—spanning government, charitable, and independent bodies.

Sample B: approximately 25% of sample A. After balancing for UK representation, different scales of research activity (based on research income) and thematic focus (relevant for organisations other than universities), this sample was randomly selected. Sample B enables closer examination of representative organisations and to address more qualitative questions, such as the extent to which strategic documents reference sustainability and R&I practice.

2.3.3. A note on defining “the UK R&I sector”

The concept of the “R&I sector” is subject to varying interpretations, but is broader than Sample A. The Office for Students (OfS) register currently lists 428 Higher Education Providers (HEPs). Many HEPs not included in the samples for this research are small, specialist institutions or colleges with degree-awarding powers. While there is no comprehensive register of all R&I funders, it is recognised that numerous charities and organisations provide such funding as part of their broader mission. Most of these entities are relatively small funders of research and innovation activities and have therefore not been included in the samples.

A report by the House of Commons in 2023 indicated that the public sector funded £12.8 billion and performed £3.4 billion of R&D[2], accounting for 24% of UK Research and Development (R&D) spending. Most of the Government R&D funding is provided through the Department of Science, Innovation and Technology (DSIT). The 7 other departments that have significant budgets to fund R&D are the Ministry of Defence (MOD), the Department for Health and Social Care (DHSC), the Department for Energy Security and Net Zero (DESNZ), The Foreign, Commonwealth and Development Office (FCDO), the Department for Environment, Food and Rural Affairs (DEFRA), the Department for Business and Trade (DBT) and the Department for Transport (DfT)[3].

2. https://researchbriefings.files.parliament.uk/documents/SN04223/SN04223.pdf
3. Research and development expenditure by the UK government - Office for National Statistics

3. Findings

3.1. University League Tables

This report considers 3 annually produced league tables, all of which include criteria on sustainability and are targeted at HEIs. Table 1 below contains a summary of the 3 leagues.

League table name	Summary	Methodology used
People & Planet university league[4]	Independent league table of UK universities ranked by environmental & ethical performance	Information is taken from the public domain on several sustainability areas: Policy/ Strategy, Staffing, Environmental Auditing & Management Systems, Ethical Investment and Banking, Ethical Careers and Recruitment, Managing Carbon, Workers Rights, Sustainable Food, Staff and Student Engagement, Education for Sustainable Development, Energy Sources, Waste and Recycling, Carbon Reduction, and Water Reduction
QS (Quacquarelli Symonds) World University Sustainability Rankings[5]	QS Sustainability Rankings assesses 700 universities around the world to determine their environmental and social impact.	QS evaluate institutional impact across eight sustainability categories (or indicators) to capture university performance. Indicators are split into environmental sustainability measures (including sustainable institutions, sustainable education and sustainability research) and social impact measures.
Times Higher Education (THE) Impact Rankings (climate action)[6]	THE 'climate action impact' category ranks universities from 130 countries or territories based on their progress towards the UN Sustainable Development Goals (SDGs).	THE ranking relies on the United Nations Sustainable Development Goals (UN-SDGs) with the aim to recognise efforts in addressing climate-related hazards, reducing greenhouse gas emissions and enhancing adaptive capacity through robust research and effective campus policies.

***Table 1:** Summary of sustainability league tables*

People and Planet reveal in their 2024 league that 100% of the 149 universities that they included were found to publish an environmental policy, however 50% of those institutions subsequently received a 0 score for their sustainability strategy for not setting "SMART targets for a minimum of 5 key environmental sustainability areas" (noting that a strategy that had not been reviewed in the last 5 years also scored 0). Filtering by carbon management success gives more indication of organisation environmental performance. In 2024/25, no institutions received a 100% score for carbon management. However, 71% of the institutions scored full marks for publicly stating a carbon reduction target for scopes 1&2 (that aligns with net zero by 2050) and 75% received full marks for having a reporting mechanism connected to a carbon management plan. 60% of institutions also received full marks for reporting scope 3 emissions to the Higher Education Statistics Authority (HESA), although People and Planet do not comment on how extensive the scope 3 reporting was.

4. University League | People & Planet
5. QS Sustainability University Rankings 2025 | Top Universities
6. University Impact Rankings for UN SDG 13: climate action | Times Higher Education (THE)

Organisations do not submit data to People and Planet for the league. The data comprises 55% public information that People and Planet have found on organisation's websites and 45% from data published in the annual HESA Estates Management Record (EMR). Since 2011 People and Planet have however operated an appeals process to give every HEI in the league an opportunity to correct inaccuracies. This recognises the potential challenges associated with this method and attempts to improve the rigor and transparency of the rankings. Over time with the implementation of the concordat, we could expect to see an increased number of organisations scoring higher on strategy and carbon management and we could also expect improvements in water, waste and renewable energy sources, although it would not be possible to directly link any of these to the concordat.

The Quacquarelli Symonds (QS) league looks at social and environmental sustainability and divides them clearly into several sections, so it is possible to filter the data and rankings by environmental impact and more specifically the environmental sustainability of the university. In their 2024 league, they reported 52 of the 98 UK universities assessed in their league scored over 50% for environmental sustainability, with only 15 universities scoring less than 20% in this section. While QS include a sub-category called 'environmental research', it is focused solely on researching sustainability topics, it does not consider if the research has been practiced sustainably. Like People and Planet's league, QS's scores include criteria on having climate strategies, commitments and targets but the data does not contain a breakdown to criteria level. Despite some of these similarities, when comparing the lists of UK universities in the sustainability league tables, the rank order that the HEIs sit in (even when considering the environmental elements alone) is quite different and none of the league tables in themselves could be used as a league to show performance environmental sustainability of research practice. Furthermore, these fundamental differences highlight that there are challenges in defining what it is to be a 'sustainable' and an 'environmentally sustainable' organisation.

The Times Higher Education (THE) Sustainability Impact Ranking relies solely on looking at universities progress against the United Nations Sustainable Development Goals (UN-SDGs). This is not only a very broad set of indicators, drawing in social sustainability and international development too, but the inherent subjective nature of how progress against the goals is measured makes it difficult to measure an organisation's progress with regards to its environmental sustainability. The approach of THE to allow organisations to choose which SDG goals they want to submit as evidence also lacks consistency. Overall, drawing any conclusions from THE impact ranking with regards to the concordat is challenging.

In future, data from the People and Planet and QS league tables would provide useful metrics to explore when considering the progress of the concordat. For QS, it would be interesting to see if the number of UK organisations included have increased or risen the rankings on a global scale and for both, to see how the distribution of UK organisations and the status they are awarded changes. As these league tables are already well established, recognised and span across the HE sector, it should also be explored if there are opportunities in the future to work with the organisers of the leagues to encourage the future capture of extra data that would provide greater insight related to the concordat priorities, and sustainable research practice.

3.2. Sustainability accreditation programmes and standards

Organisations carrying out sustainable research benefit from having the opportunity to follow many accreditation programmes and standards to assist with planning and implementing environmental sustainability measures. However many do not cut across all areas of practice, and most programmes are focussed on specific areas, from sustainable labs through to sustainable infrastructure. Table 2 provides an overview of the key sustainability-related programmes and standards; this is not an exhaustive list, recognising that other smaller or more focussed programmes exist, including similar programmes designed within organisations for internal use by their departments.

Accreditation programmes and standards	Overview	Focus area
BREEAM[7]	Science-based suite of validation and certification systems for a sustainable built environment. The suite comprises of six technical standards which apply to the different stages of a building or project's life cycle.	Sustainable infrastructure
BS8903[8]	A British Standard and comprehensive framework to help management to implement sustainable procurement processes across all supply chains.	Sustainable procurement
Green DiSC[9]	An open access and free certification scheme for institutions aiming to mitigate the environmental impacts of their computational research. Organisations are awarded three levels of certification: bronze, silver or gold level.	Sustainable computing
Green Impact Laboratory Accreditation[10]	Programme providing (wet) research laboratories with a standardised certificate to demonstrate their commitment to, and progress in embedding sustainability in their research practices.	Sustainable laboratories
ISO Global standards[11]	An international set of standards that provides frameworks for organisations to control and improve their environmental performance • ISO14001 (environmental management) • ISO50001 (energy management) • ISO14044 and ISO14040 (life cycle assessment) • ISO14064-1 and ISO14067 (greenhouse gases) • ISO20400 (sustainable procurement)	Focus areas specific to each ISO as detailed.
Laboratory Efficiency Assessment Framework (LEAF)[12]	A framework of actions which laboratory users can take to save plastics, water, energy and other resources. Laboratories are awarded three levels of certification: bronze, silver or gold. Some impacts can also be measured in carbon and financial terms, using inbuilt calculators.	Sustainable laboratories
My Green Lab Certification (MGL)[13]	A framework to assess performance across 14 categories, including waste, energy, and purchasing. Labs can earn five levels of certification: bronze, silver, gold, platinum, and green.	Sustainable laboratories

7. https://breeam.com/standards
8. BS8903
9. https://www.software.ac.uk/GreenDiSC
10. Green Impact Laboratory Accreditation | Green Impact | Students Organising for Sustainability
11. ISO Global standards
12. LEAF - Laboratory Efficiency Assessment Framework | Sustainable UCL - UCL – University College London
13. Accelerating Sustainability in Scientific Research | My Green Lab

Accreditation programmes and standards	Overview	Focus area
PAS2030[14]	A British Standards Institute (BSI) standard that specifies the requirements for installing energy efficiency measures in existing buildings in the UK. The standards originated for domestic retrofit, but application has been broadened to include commercial buildings. PAS 2030 certification is a mandatory requirement for contractors working on government-funded schemes.	Sustainable infrastructure
SKA rating[15]	An environmental assessment methodology and benchmarking tool for non-domestic buildings, aimed at helping landlords and tenants assess fit-out projects against a set of sustainability good practice criteria. The standard was originally set up by RICS but is now an independent company	Sustainable infrastructure

Table 2: Summary of key accreditation programmes and standards

3.2.1. Sustainable labs programmes

The 3 sustainable labs programmes identified in this research have several similarities but also some distinct differences. While their UK-level data is not published or easily available, it was possible to obtain some data from the programmes directly for the purposes of this report.

As of 2024, LEAF report that 1794 laboratories in the UK held medals with LEAF; 48% had achieved bronze, 33% silver and 19% gold. Figure 1 shows how LEAF have seen a positive progression of laboratories moving up the medals over the last 5 years. These laboratories are from 59 UK organisations that are registered on the programme (46 universities,

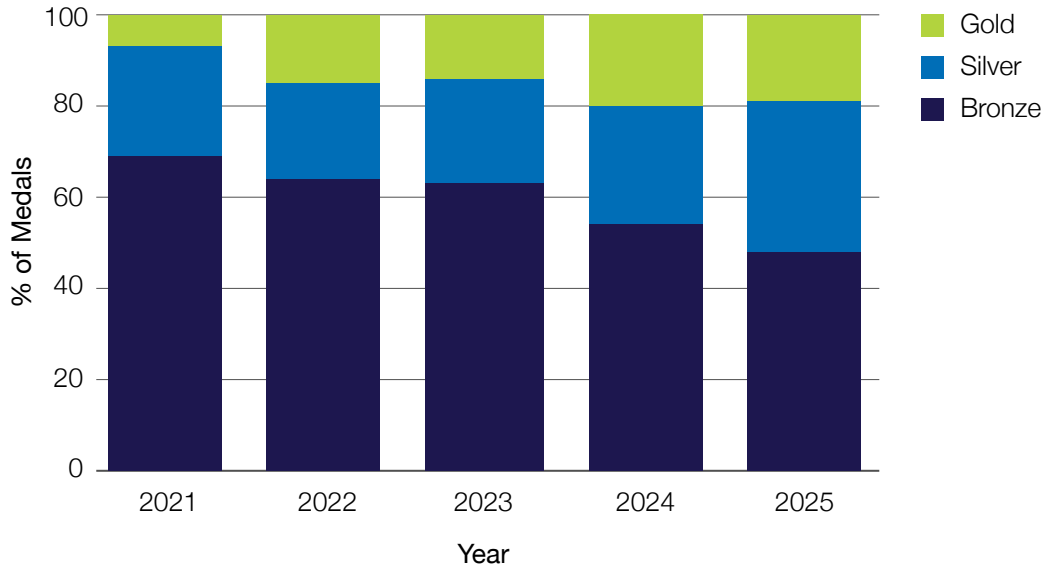

Figure 1: graph to show progressions of medal status in LEAF accredited labs from 2021-2025

14. PAS 2030:2023 Energy Efficiency in Existing Dwellings | BSI
15. https://skarating.org/

11 research institutes and 2 funders). My Green Lab (MGL) report that they have 295 laboratories from 86 organisations in the UK (18 HEIs and 68 commercial organisations) registered for their certification programme, indicating that MGL have more of a focus on commercial laboratories. It was not possible to obtain the MGL data on the breakdown of medals, but future concordat reports may want to explore if this data could be made available. Green Impact Laboratory Accreditation (GILA)[16] is a new programme, only launched in 2025. Future progress reports may benefit from investigating GILA sign-up data when their programme is more mature.

All these accreditation programmes examine a range of laboratory matters including energy use, equipment (e.g. freezers & ventilation), consumables, waste/recycling, water, and procurement. Accreditation is at laboratory level, not organisation level and participation and medal levels achieved can vary within organisations from laboratory to laboratory. The focus of the programmes is to look at what researchers can do to optimise laboratory operations through their actions, rather than redesigning laboratories or making high-cost changes. The topics the programmes cover, and their researcher level approach aligns well with the priorities of the concordat and guidance in the concordat for researchers and innovators.

There are some limitations of looking at these accreditation programmes in relation to the concordat. The programmes mainly focus on wet laboratories, but across the R&I sector there are many other types of research laboratories in operation that would find these accreditation programmes are not relevant to all their activities. It would therefore be unreasonable to expect all laboratories across the UK to sign up. Collectively the data shows there are over 2,089 laboratories signed up to sustainable labs programmes in the UK from 145 organisations. While it is useful to understand how many organisations are represented, the data does not indicate the scale of how many laboratories there are in the UK that could potentially sign up. Also, laboratories will vary significantly in size and activity. It should also be noted that while these schemes are open to organisations across the UK, LEAF is limited to publicly funded organisations and there are financial costs for all the programmes. Nevertheless, the collective data from these sustainable laboratory programmes is a useful gauge of current take up of sustainable laboratory programmes in the UK. It is something that should be revisited in future concordat evaluations to show sector progress through increased numbers of organisations and laboratories signing up and by observing the trends of laboratories transitioning up through the medal systems.

While the concordat does not require signatories to sign up to accreditation programmes, it is hoped that implementation of the concordat will encourage greater uptake. In addition to this, at the same time as the publication of the concordat, two UK funding organisations (Wellcome Trust and Cancer Research UK) announced new sustainability policies which sought to drive uptake of "green lab accreditations", which further reinforces the messages in the concordat. The impact of these policies and any other funders who have followed suit with similar actions should be explored in future evaluation reports. In the concordat guidance annex, the suggested enablers for delivery include to "seek and follow accredited environmental sustainability standards and programmes" and for researchers and innovators to "follow guidance on how to efficiently use the infrastructure provided and guidance related to accredited sustainability programmes being followed, to aid R&I activities to be practiced in an environmentally sustainable way".

3.2.2. Sustainable computing

Computing is increasingly becoming an essential component of modern R&I practice, but it comes with significant, and not always well-understood, environmental impacts. Green DiSC is a relatively new sustainability accreditation programme, hosted by the University of Edinburgh's Software Sustainability Institute (SSI) and developed by a leading academic at the University of Cambridge. It aims to empower researchers to reduce the carbon footprint of research projects involving large amounts of data and computing power. Using a similar approach to the sustainable laboratories programmes, Green

16. https://greenimpact.nus.org.uk/green-impact-laboratory-accreditation

DiSC operates a medal certification system, though in contrast it is open access, has no financial costs associated, it separates activity from group or researcher level and contains facility targeted actions. In June 2024, Green DiSC launched its bronze criteria and in its first accreditation, 6 research groups from across Europe become the first recipients of a Green DiSC certification, having completed the bronze criteria. There are currently 43 central teams and 65 research groups registered. It would be useful to future concordat evaluations to revisit Green DiSC certification data and explore updates from the programme on future rounds of certification.

3.2.3. Sustainable infrastructure and procurement standards

As outlined in table 2, there are several accreditation standards that look at sustainable infrastructure and sustainable procurement practices. These do not have a specific focus on research practice, but the broad areas they cover do cross over with areas that are of interest to those practicing research and innovation. There is no central database which record the uptake of these schemes, therefore it has not been possible to include any statistics on these in this report. However, they are still of note in the context of the concordat and will be referred to later in this document as sample B is examined. While they do not provide sector-wide data, these standards are helpful tools available to concordat signatories to assist with delivering the concordat; individual organisations following these standards may also refer to them in their own annual concordat reporting.

4. Sustainability reporting frameworks and reporting requirements

4.1. Sustainability reporting requirements

A requirement of the concordat is transparency in public reporting to hold organisations accountable for their environmental sustainability efforts, including reporting of progress towards meeting net-zero targets. Research found that existing sustainability reporting varies by nation in the UK, but also by type of organisation and sub-sector. Table 3 summarises some key relevant sustainability reporting mechanisms and frameworks.

Reporting mechanisms and frameworks	Overview	Reporting Requirements	Related regions
Climate-related Financial Disclosures (CFD)[17]	UK Companies Act legislation to publicly disclose on climate change related risks and opportunities.	UK Public Interest Entities (PIEs) with more than 500 employees	UK
Corporate Sustainability Reporting Directive (CSRD)[18]	EU legislation that requires companies to report on how they impact the environment and society.	Voluntary for UK companies	UK and European Union (EU)
Department for Education, Climate Action Plan (CAP)[19]	The Department for Education (DfE) in their sustainability and climate change strategy for education[20] require all education settings to have nominated a sustainability lead and put in place a climate action plan by 2025.	Non-statutory guidance for all education settings (including Higher education settings) in England	England
Estates Management Record (EMR)[21]	Reporting framework for HE estates and environmental data. Managed by the Higher Education Statistics Agency (HESA) with UK wide datasets published annually.	The EMR return is optional for HE providers in England, Scotland and Northern Ireland. It is mandatory in Wales	UK
Greenhouse Gas Protocol (GHGP)[22]	The GHGP is the most well-used international measuring and reporting framework for greenhouse gas emissions.	International framework (many reporting requirements are based around the GHGP)	International

17. Climate-related Financial Disclosures (CFD)
18. Corporate Sustainability Reporting Directive (CSRD)
19. Department for Education, Climate Action Plan (CAP)
20. sustainability and climate change strategy for education
21. Estates Management Record (EMR)
22. Greenhouse Gas Protocol (GHGP)

Reporting mechanisms and frameworks	Overview	Reporting Requirements	Related regions
Greening Government Commitments (GGC) framework 2021 – 2025[23]	Government requirement to report progress against a set of sustainability requirements and targets.	Mandatory to UK government departments and their agencies	UK
HM Treasury's Government Financial Reporting[24]	HM Treasury requires all central government departments and public bodies to undertake extensive sustainability reporting in line with the government's Financial Reporting manual (FReM).	Mandatory for UK central government and publicly funded organisations (does not apply to Local govt, Higher Education, NHS Trusts, and Clinical Commissioning Groups).	UK
International Financial Reporting Standards (IFRS)[25]	A set of accounting rules required to support financial reporting. Sustainability reporting involves the International Sustainability Standards Board (ISSB)'s global standards for disclosing sustainability-related financial information. • IFRS S1: Sets general requirements for disclosing all sustainability-related risks and opportunities. • IFRS S2: Provides specific requirements for climate-related disclosures, incorporating elements from the Task Force on Climate-related Financial Disclosures (TCFD).	Mandatory for publicly listed companies. Most other companies in the UK, (except charities) including unlisted companies, can choose to prepare their accounts under IFRS.	UK
Public Bodies Climate Change Duties Reporting[26]	Annual requirement for Scottish colleges and universities to report their GHG emissions to the Scottish Government.	Mandatory for Scottish public bodies (including HEIs) since 2015/16	Scotland only
Public Procurement Notice (PPN) 06/21[27]	Requirement from UK government cabinet office for suppliers to provide carbon reduction plans on government contracts	Mandatory for all government contracts >£5million per annum and across the NHS supply chain.	UK

23. Greening Government Commitments (GGC) framework 2021 – 2025
24. HM Treasury's Government Financial Reporting
25. International Financial Reporting Standards (IFRS)
26. Public Bodies Climate Change Duties Reporting
27. Procurement Policy Note 06/21

Reporting mechanisms and frameworks	Overview	Reporting Requirements	Related regions
Standardised Carbon Emissions Framework (SCEF)[28]	A framework based on GHGP to assist Further Education (FE) and Higher Education (HE) with emissions reporting	A voluntary guidance document for the HE and FE sector	UK and Ireland.
Streamlined Energy Carbon Reporting (SECR)[29]	The SECR framework simplifies the carbon and energy reporting requirements for businesses. They are required to report on their energy consumption and emissions in their organisation's annual reports.	Mandatory for businesses in the UK. Voluntary for universities (where other reporting isn't taking place) and colleges	UK
Sustainability Leadership Scorecard (SLS)[30]	Sustainability Leadership Scorecard (SLS) is to measure the sustainability performance within higher and further education institutions to provide a sustainability performance benchmark service.	Voluntary programme only for HE & FE institutions	UK and Ireland
Task Force on Climate related Financial Disclosure (TCFD)[31]	A framework for organisations to disclose climate-related risks and opportunities, largely reported using an organisation's existing reporting processes.	Voluntary for most organisations. Since 2023 it has been mandatory for public bodies (as part of FReM)	UK

***Table 3:** Summary of key sustainability reporting mechanisms and frameworks*

28. Standardised Carbon Emissions Framework (SCEF)
29. Streamline Energy Carbon Reporting (SECR)
30. Sustainability Leadership Scorecard (SLS)
31. Task Force on Climate related Financial Disclosure (TCFD)

4.1.1. Higher education sector sustainability data reporting

JISC, through HESA, annually publish an environmental dataset EMR[32] which includes data returned by HE providers on the size of sites and resource consumption. Data is collected on scope 1, 2 and 3 carbon emissions, water consumption, and waste.

The EMR is currently the only national dataset that collects and publishes environmental data on HE institutions. Other datasets, including some of the sustainability league tables, draw on the EMR data as part of their data collection. Participation is limited to UK Higher Education providers and the most recent figures published by HESA highlight that in 2023-24 of the 303 registered HE providers in the UK, only 142 returned the EMR (47%). In 2022, The Association for Directors of Estates (AUDE) published a statement to calling for a leaner EMR data collection and to update the naming and definitions of the data collection fields, but to date the recommendations they made have not been taken forwards and at this time JISC have commented that there are no immediate plans to change the EMR collection.

While full datasets are available to download from HESA, AUDE produce an annual report[33] summarising and analysing the latest EMR data. In their 2024 report they highlighted that the EMR data shows that the overall carbon emissions figure for 2022-2023 for the HE sector was 1.2MtCO_2e. The report includes an examination of the environmental data by segment: small teaching, large teaching, large research and research intensives. The data shows that the overall trends in carbon reduction are similar regardless of levels of research intensity. Travel data is reported, but it is split only between students and staff, which gives little insight into travel specifically related to research practice. Furthermore "emissions from business travel that is paid for by a third party is not included within EMR scope 3 travel emissions reporting", indicating that any travel paid for by a research funder would be excluded from the data.

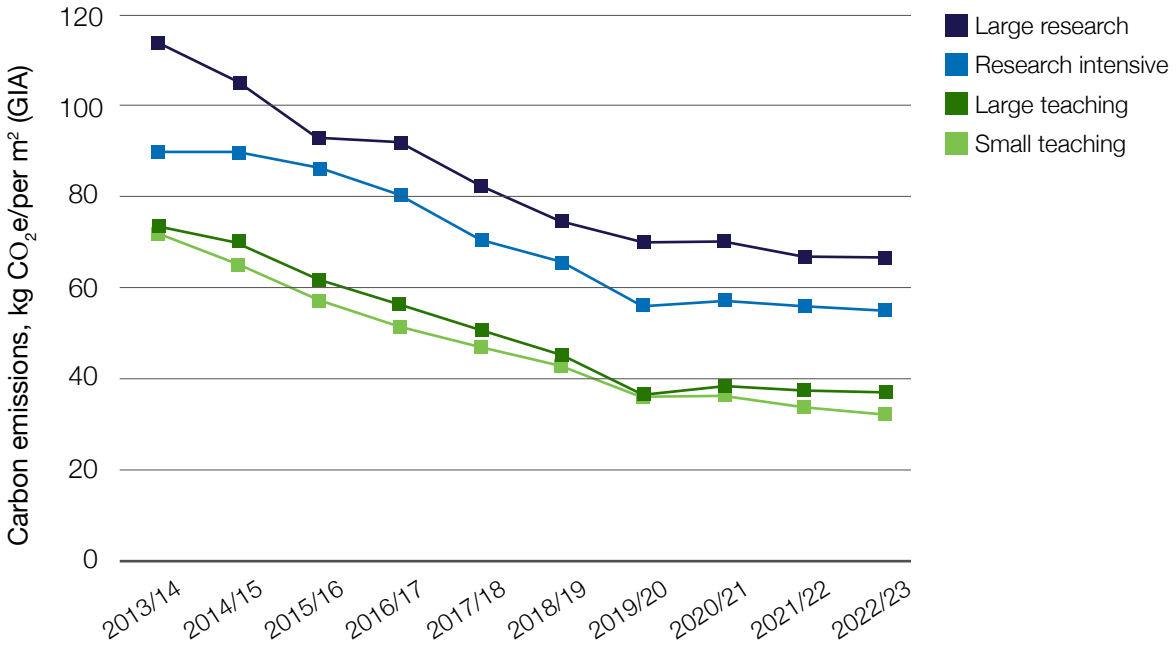

Figure 2: Graph to show carbon emissions per m² by segment from AUDE 2024 EMR report[34]

32. https://www.hesa.ac.uk/collection/c22042
33. https://www.aude.ac.uk/news-and-blogs/emr-report/
34. https://www.aude.ac.uk/news-and-blogs/emr-report/

The EMR return is optional reporting for HE providers in England, Northern Ireland and Scotland (it is mandatory only in Wales, although it is highly encouraged by the Scottish Funding Council), so not all institutions provide data. The data contained in the EMR can be useful to help understand the footprint of the HE sector and the year-on-year trends in the data can give an indication of how the HE sector is doing in addressing the environmental sustainability of its operations, despite a lag time in the data available (i.e. 2023-24 data was published July 2025). Due to the voluntary nature of the EMR, the dataset does not cover the whole UK HE sector. Nevertheless, it remains the only national dataset that HE can report to. The concordat guidance encourages use of reporting datasets such as the EMR, so from the perspective of the concordat it is an important dataset to observe and revisit in future, looking the number of organisations reporting via the EMR as well as the data they are reporting when considering the sector's progress against priority 6 on reporting.

4.1.2. UK public sector reporting

The Greening Government Commitments (GGCs)[35] are a set of actions the UK government and its partner organisations are taking to reduce their environmental impact. These commitments focus on improving the environmental performance of the government's own estate and operations, whilst promoting greater efficiency and best use of taxpayer money. The commitments include targets on greenhouse gas (GHG) emissions, waste and water consumption, as well as commitments on procurement, nature recovery, climate adaptation, and information and communication technology (ICT). Mandatory reporting requirements for in scope organisations include quarterly and annual reporting. The most recent GGCs framework covers the period from 2021 to 2025.

HM Treasury (HMT) also mandates annual sustainability reporting[36] for UK central government bodies, including departments and some arm's length bodies. The eligibility list of organisations outside of central government required to follow HMT reporting guidance and the GGCs is comparable but not identical. Categories that this reporting covers are mitigating climate change (working towards net zero by 2050), resource consumption, procurement (products and services), nature recovery and biodiversity, climate change adaptation, greening ICT, and sustainable construction. Like the GGCs, HMT requires organisations to include this sustainability reporting in their annual reports and accounts, which are signed off at minister level and published in the summer. There is no central repository of annual reports though; while departments all publish in their sections of the .gov website, arm's length bodies publish reports on their own websites so collation of data from these reports is challenging.

In 2025, a government-wide report[37] highlighted that in 2024-25 the government's overall emissions were 41% lower than the 2017-18 baseline at 1.7MtCO_2e. Also reported was that of the 23 government departments, 11 had already met or exceeded their individual overall GGC emissions targets for 2025 and 15 had integrated sustainable procurement into their policies. However, government-wide published datasets only report at a departmental level, with any public bodies they are responsible for (including those delivering R&D funding and activities) being incorporated into a headline figure. Despite the lack of organisation-level data in the government-wide reporting, the reporting frameworks are still of note. The breadth of the reporting categories aligns well with concordat priority 1 and 6. The organisations that are required to follow these government sustainability reporting requirements mean that public sector organisations are likely to already be meeting many elements of concordat priority 6 by ensuring transparent, consistent and standardised reporting.

In 2023 the Department for Education (DfE') set out non-statutory climate change requirements and guidance that education settings should create climate action plans and nominate a sustainability lead by 2025[38]. Also, through this guidance they encouraged HEIs to follow the Standardised Carbon Emissions Reporting Framework (SCEF) when reporting carbon emissions, however since 2019 the reporting of

35. Greening Government Commitments (GGCs)
36. Sustainability Reporting Guidance 2024-25 - GOV.UK
37. Greening Government Commitments April 2021 to March 2024 report - GOV.UK
38. Sustainability leadership and climate action plans in education - GOV.UK

environmental data has not been mandatory. Figures from the People and Planet League showing that all universities in their league have an environmental policy but only a proportion have a substantial climate strategy in place, indicate that the HE sector may still have some way to go before DfE's vision is met, however DfE themselves are yet to report on how and when they will assess if the education sector has met their targets or if they have plans to create any mandatory requirements. In future concordat evaluations, any update from DfE on this target may prove useful in understanding HEIs commitments to environmental sustainability at a strategic level which would contribute to understanding priority 1 of the concordat.

4.1.3. Devolved administrations reporting requirements

Despite DfE's strategy outlining requirements for education settings at a UK level, devolved UK government administrations have distinct climate change legislation, targets, and reporting requirements under the broader UK Climate Change Act 2008[39], and each devolved nation (Scotland, Wales, Northern Ireland) has set its own emission reduction targets. Therefore, regulations for HEIs carrying out sustainability reporting vary across the nations.

Scottish Government legislation requires all HEIs to submit annual carbon reporting returns aligned to national statutory climate targets. This incorporates duties to report against adaptation measures. Scottish Government legislation requires all Scottish public bodies (including Higher Education institutions) to report annually on compliance with climate change targets and duties, this includes annual carbon reporting. This requirement was established under the Climate Change (Scotland) Act 2009[40] and Climate Change Order 2015[41]. The Scottish Government produces annual Public Sector Climate Change Duties reports[42], which contain a large amount of data including scope 1, 2 and 3 emissions and procurement data, which can be filtered by type of body e.g. educational institution or National Health Service. The report is largely a complex datasheet, and the data contained in it is not provided as an analysed report and does not provide data at a level that gives any insight into the publicly funded parts of the R&I sector in Scotland.

The Welsh Government has committed to achieving carbon neutrality within the Welsh public sector (including Higher Education institutions) by 2030. Legislation requires Universities in Wales to publish a triennial report under Section 6 Biodiversity and Resilience of Ecosystems Duty of the Environment Act 2016. The Environment (Wales) Act 2016: climate change[43] places a duty on the Welsh Ministers to ensure that the net Welsh emissions account in 2050 is at least 80% lower than the baseline and to regularly report on progress towards the interim 5-year carbon budgets set within the overall target. Guidance includes specific reference to a university's research being in scope in their carbon reporting[44]. Submission of the EMR data to HESA is mandatory in Wales. Like Scotland, the Welsh Government produces an annual report on net zero[45] which shows data for scope 1, 2, and 3 emissions and can be filtered by organisation type (e.g. all universities or NHS) or down to individual organisation. The Welsh Government reported the total emissions of Welsh universities in 2023-24 as 266,000tCO_2e.

In Northern Ireland (NI), environmental reporting requirements on public bodies were introduced under the Climate Change Act (NI) 2022[46], which mandates climate change mitigation and adaptation reports every three and five years, respectively. Universities are included in the list of public bodies that the regulation relates to. Reporting on Scope 1 and 2 emissions is required, Scope 3 emissions is voluntary, but it is encouraged.

39. Climate Change Act 2008
40. S44 of the Climate Change (Scotland) Act 2009
41. Climate Change (Duties of Public Bodies; Reporting Requirements) (Scotland) Order 2015 and Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020
42. https://www.gov.scot/policies/sustainable-performance/sustainable-performance-reports/
43. Environment (Wales) Act 2016: climate change | GOV.WALES
44. Welsh Public Sector Net Zero Carbon Reporting Guide
45. https://www.gov.wales/welsh-public-sector-net-zero-reporting-interactive-dashboard
46. Public Body Reporting on Climate Change | Department of Agriculture, Environment and Rural Affairs

These mandatory requirements in Scotland, Wales and Northern Ireland, that extend to universities as well as government departments and public bodies, indicate that Scottish, Northern Irish and Welsh HEIs are at the forefront of sustainability reporting in the UK HE sector. This strongly compliments and supports a number of the aims of the concordat.

4.1.4. Research Excellence Framework evidence requirements

The Research Excellence Framework (REF) is run by Research England (part of UKRI) for the whole of the UK on behalf of the UK devolved government funding Authorities (Scottish Funding Council, Medr Wales' Commission for Tertiary Education and Research and the Department for the Economy Northern Ireland). The REF is a measure of research excellence and is used by the funding authorities to determine how much unhypothecated research funding universities receive. Any eligible university wishing to receive government research funding is required to submit evidence to the REF in relation to their research every 7 years and panels of assessors evaluate the submissions.

To date, mention of 'environment' in the REF has not meant environmental sustainability, the word is used in relation to the cultural research environment that researchers operate within. Environmental Sustainability is not currently a feature of the REF and therefore not part of the measure of research excellence, but this could potentially change in future. REF 2029 will require institutions to submit a structured statement, which will draw on outcomes-focused indicators to provide evidence of the effectiveness of their research strategies and will include indicators of excellent research culture and environment. A pilot exercise[47] was run in 2024 to explore new methods of submitting evidence of 'people, culture and environment' ahead of the REF 2029. Guidance for the pilot[48] included the submission of carbon reporting as an example of evidence of research integrity. Decisions related to outcomes of the pilot exercise, and if it will result in changes being made to the evidence collection for the REF 2029 have been delayed and are yet to be confirmed. Although at this time the REF gives no insight on the environmental sustainability of the sector, should environmental data or emissions reporting be adopted in REF guidance in any way, future evaluations of the concordat may benefit from exploring REF data.

4.2. Voluntary sustainability reporting frameworks

4.2.1. Standardised carbon emissions framework

In 2022 the Royal Anniversary Trust launched the 'Platinum Jubilee Challenge'. The challenge produced a report[49] which set out recommendations for the UK tertiary education sector to reach net zero. Recommendations in the report aimed at the UK Government include requiring publicly funded research bodies to ensure transparent principles of sustainable travel and related emissions are mandatory within research-led funding bids. Also included in the report was a baseline estimate of the carbon footprint of the UK HE sector for the 2020/2021 academic year. Across 268 HE sector institutions, the carbon footprint was estimated as a total of 15.5MtCO_2e for scope 1, 2, & 3 (excluding the investments category), with a further 37.6MtCO_2e reported in scope 3 financial investments. The data across the scopes can be seen in table 4 below. While this data was largely drawn from HESA data, this figure is significantly higher than the CO_2e emissions reported by AUDE for the same year. 268 is the number of registered HE providers that could have reported to HESA in 2020-21, noting only 141 providers submitted data that year. It is likely that the Royal Anniversary Trust report emissions figure is higher because they added in modelled data where it was absent, whereas AUDE only report the data that is captured in the 141 providers that reported to the EMR.

47. https://2029.ref.ac.uk/wp-content/uploads/2024/12/PCE-Pilot-Exercise-Assessment-framework.pdf
48. https://2029.ref.ac.uk/publication/pce-pilot-exercise-guidance/
49. Royal Anniversary Trust report

Emissions Source	HE Sector	
	$MtCO_2e$	%
Scope 1 & 2	1.5	10%
Scope 3: Supply chain	6.3	40%
Scope 3: Fuel and Energy Related Activities	0.4	2%
Scope 3: Waste and Water	0.01	0%
Scope 3: Business Travel	0.5	3%
Scope 3: Employee Commuting	0.1	1%
Scope 3: Employee Homeworking	0.2	1%
Scope 3: Student Commuting	1.0	6%
Scope 3: Student Flights	2.2	14%
Scope 3: Student Accommodation	3.4	22%
Scope 3: Finance	37.6	
Total Scope 1, 2 and 3 (excl. Finance)	**15.5**	

Table 4: Data table published in the Royal Anniversary Trust Platinum Jubilee Challenge report showing the estimated carbon footprint of the HE sector for academic year 2020-2021

The Royal Anniversary Trust report also led to the production of the Standardised Carbon Emissions Framework (SCEF)[50] for Further Education (FE) and Higher Education (HE) which was published by EAUC (The Alliance for Sustainability Leadership in Education) in January 2023. The SCEF is a HE sector led framework that was created in consultation with HE sector. The development of the framework was funded by and supported by DfE and aligns with DfE's Sustainability & Climate Change Strategy targets that are noted above.

This voluntary framework is aimed at high-level aggregated reporting to help standardise greenhouse gas (GHG) emissions reporting across the FE & HE sectors, signposting institutions to good practice, guidance and methodologies. It is based on the GHG Protocol[51] guidance with a focus on interpreting the guidance in the context and language of the FE and HE sectors. The SCEF framework itself is not a reporting tool though, HEIs using the SCEF are still expected to submit environmental data reporting through the EMR.

In the development of the concordat, it was recognised that the SCEF was of limited use to non-HE organisations and so a working group was formed to build on a copy of the SCEF and create an alternative version suited to funding organisations and ROs. This was made available as a download on the Wellcome Trust website alongside the concordat when the concordat was published. In time when the SCEF is updated this will also need updating.

While the SCEF itself provides no data on the sector, it is a useful tool to note in relation to the concordat. Within the concordat guidance on delivering priority 6, it states that performance information or environmental data that is provided for DfE, GGC or HMT sustainability reporting or following the HE SCEF (or the alternative one created for research organisations and funders) can be used to contribute to concordat reporting requirements. The concordat does not require signatories to specifically include sustainability criteria in funding decisions, however in priority 1 the concordat does commit signatories to ensure environmental sustainability is embedded into strategies, referenced in relevant R&I policies, and reflected in actions/decisions. Considering the recommendation from the Royal Anniversary Trust report and the concordat wording, future evaluations of the sector may also look for examples of funders making policy changes in relation to the sustainability of the research and innovation they fund as evidence of concordat delivery.

50. EAUC standardised carbon emissions framework
51. GHG Protocol

4.2.2. Tools and calculators to support reporting

Across the sector, several tools and calculators are starting to emerge, designed to support people and organisations working in research practice to understand the footprint of their activities, which in turn might help to calculate data for some reporting requirements. One of the first to be published for the sector is Green Algorithms[52] which has been developed to support sustainable computational science. Two further tools currently under development include TRACE[53] and Greener Clinical Trials[54]. While these calculators largely apply at a project level and do not provide collective insight on the footprint of the parts of the sector they are targeted at, monitoring the growth of the number of these tools and calculators and uptake of them could provide useful insight in future in relation to the impact of the concordat.

52. https://www.green-algorithms.org/
53. https://www.exeter.ac.uk/about/sustainability/whatwearedoing/research/trace/
54. Network Hubs :: Enabling Lower Carbon Clinical Trials (CiCT) Project

5. Research into R&I sector-wide data

So far, this report has looked at frameworks and existing datasets that address sub-sections of the R&I sector and what insight they can provide to help understand the environmental sustainability of the research and innovation sector in relation to the concordat and its priorities. As outlined in the methodology, as there are no datasets or programmes that cover the whole R&I sector, to help understand the wider sector, research was carried out to look across the sector at a high level, and then a smaller sample of organisations from across the sector were looked at in more detail.

5.1. Environmental sustainability strategic commitments

Following a sector-wide review of Sample A and information those organisations have made publicly available, it was found that 81% of the organisations researched do have published specific strategic documents or webpages outlining their environmental sustainability ambitions and commitments, a further 7% did not have specific strategic documents on environmental sustainability but did mention their environmental sustainability ambitions in their corporate strategy. Only 12% of sample B did not have anything published on their strategic environmental sustainability ambitions. This indicates that the majority of organisations across the R&I sector who carry out or fund R&I activities are currently publishing their environmental sustainability, net zero or climate change strategies and commitments.

When examining Sample B in more detail, it was found that only 6% of the organisations reviewed had substantial reference to the sustainability of research practice in their strategic documents. 12% had several references, 23% had only brief references but 60% of the sample did not reference research practice in their strategic documents at all. While some of the latter did mention sustainability, it was only in reference to the topics of the research they carry out or fund, not to how it is practiced. The research revealed that often in making references to 'sustainable research', organisations did not mean carrying out research in a sustainable way, but in fact meant sustainability is part of the topic being researched. Despite good evidence of organisations publishing their strategic sustainability commitments and ambitions, overall, this research suggests there is very little evidence across the R&I sector of organisations publishing commitments related to the environmental sustainability of research and innovation practice.

Research across Sample A reinforced similar findings to the People and Planet league's reporting on the presence of environmental policies and strategies, as it was found that the majority of HEIs have published strategic documents focussed on environmental sustainability. Looking at the rest of the sector, ROs and funding organisations follow a similar trend with just over 75% of the organisations publishing strategic commitments either standalone or through their wider corporate strategy.

During the review, it was observed that some organisations have a single all-encompassing strategy while others had a range of smaller documents covering different areas of sustainability. The names given to these documents also vary significantly. This range of strategic documents presents challenges in establishing the extent to which organisations are publishing their environmental sustainability commitments; in many cases they were not easy to find and in some cases these documents were distributed over multiple locations on the organisation's website.

While this was a qualitative, highly subjective exercise, as more organisations sign up to the concordat, it would be interesting to revisit this exercise to explore if in future, the sustainability of research practice is found to be more explicitly referenced in strategic documents across the sector.

The list of organisations included in Sample A can be found in Annex 1.

5.2. Reporting of environmental sustainability impacts

In Sample A, evidence was found of approximately half the organisations publicly reporting scope 1 & 2 carbon emissions data and slightly fewer (44%), reporting scope 3. Within scope 3, 19% of those that were found to report scope 3 just reported data related to travel, however 9% reported travel and procurement and 61% reported multiple scope 3 categories. When broken down into sub-sections, the data presented in figures 3A and 3B shows some notable differences between the subsectors showing HE more consistently reporting emissions than other parts of the sector.

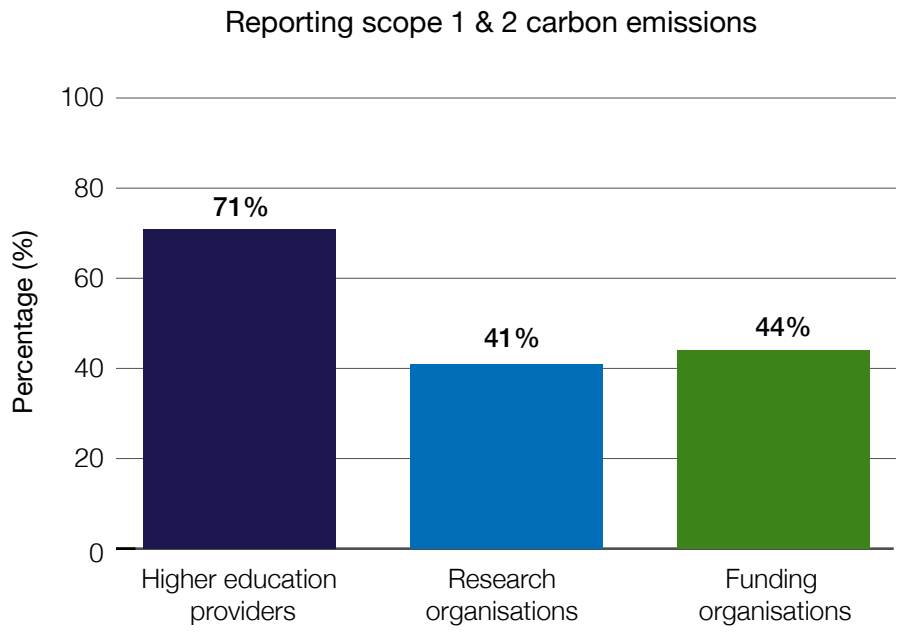

Figure 3A: *Reporting of scope 1 and 2 emissions by sub-sector*

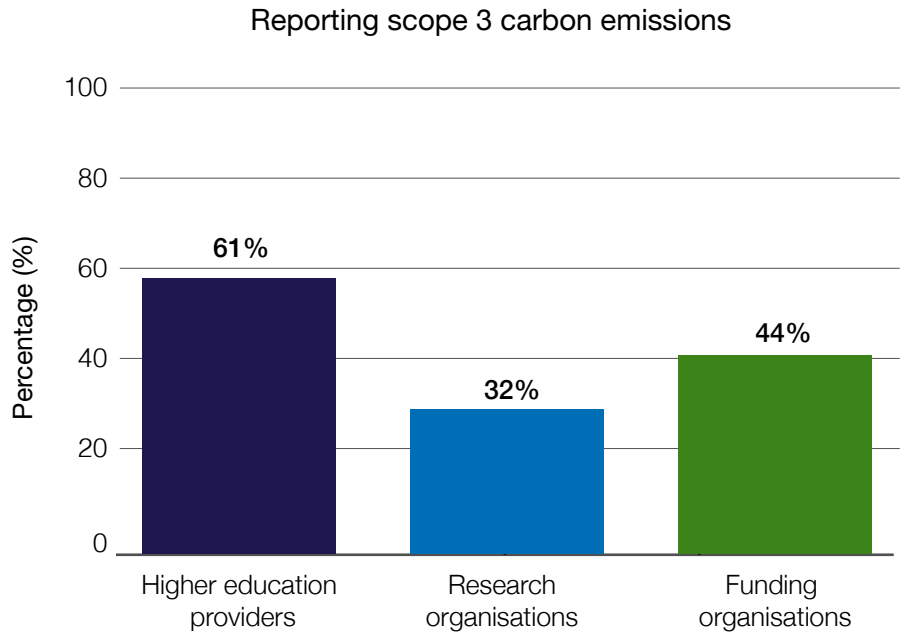

Figure 3B: *Reporting of scope 3 emissions by sub-sector*

The concordat guidance specifically notes that a reporting enabler for funders could include: "The total actual or estimated annual scope 3 impact from your funded activities (CO_2e), recorded in the scope 3 'investments' category". To help understand this, it was found that of the funders reviewed in Sample B, 11% were already reporting investments or funded projects as part of their scope 3 emissions. While reporting investments is not a requirement of the concordat and is only an enabler in the guidance, over time it would be useful to revisit this element of the research to explore if a greater number of funders are reporting the scope 3 emissions of the activities they fund.

Reflecting on some of the concordat priority areas, from the observations of organisations in sample B, the trends found are shown in figures 4A, 4B, 4C and Figure 5. For sustainable infrastructure it was also noted that 21% of the sample reported having infrastructure built to BREEAM Excellent and 26% of the sample reported following ISO14001.

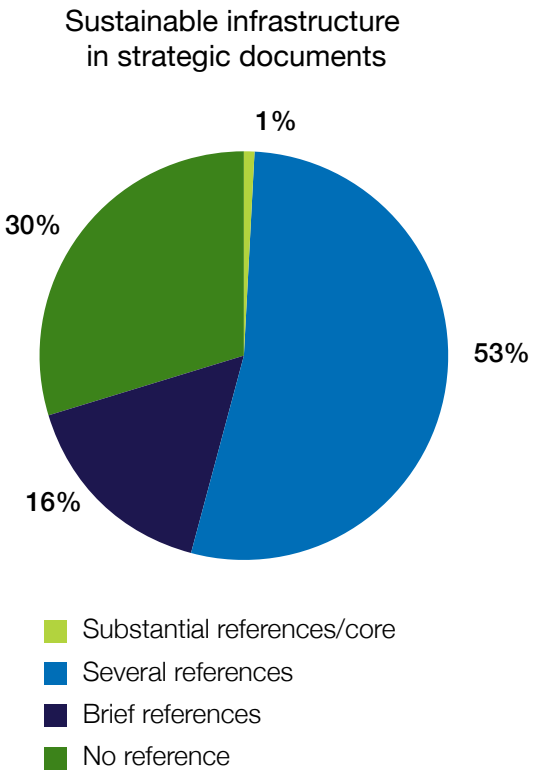

***Figure 4A:** Extent of references made to sustainable infrastructure in strategic documents*

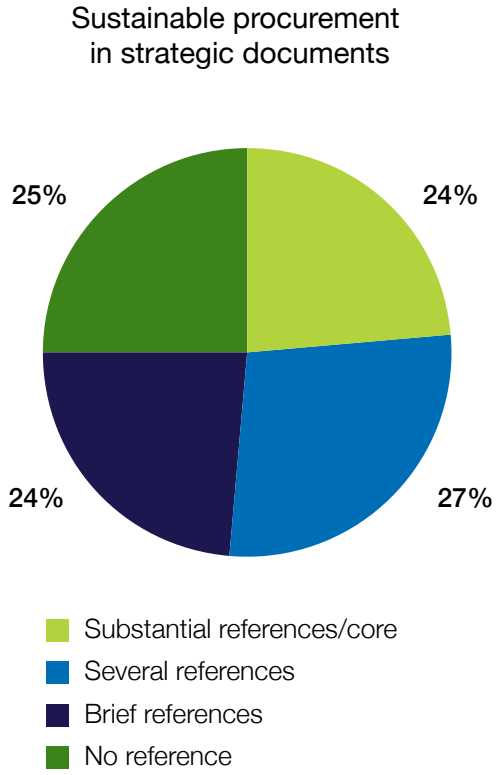

***Figure 4B:** Extent of references made to sustainable procurement in strategic documents*

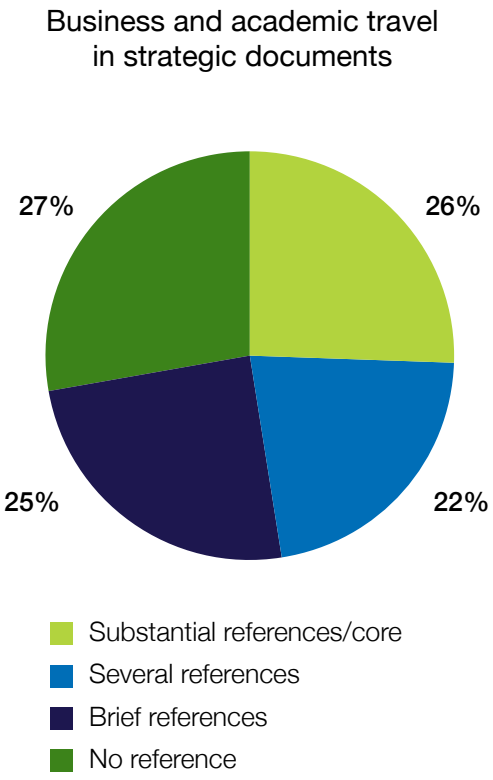

***Figure 4C:** Extent of references made to business and academic travel in strategic documents*

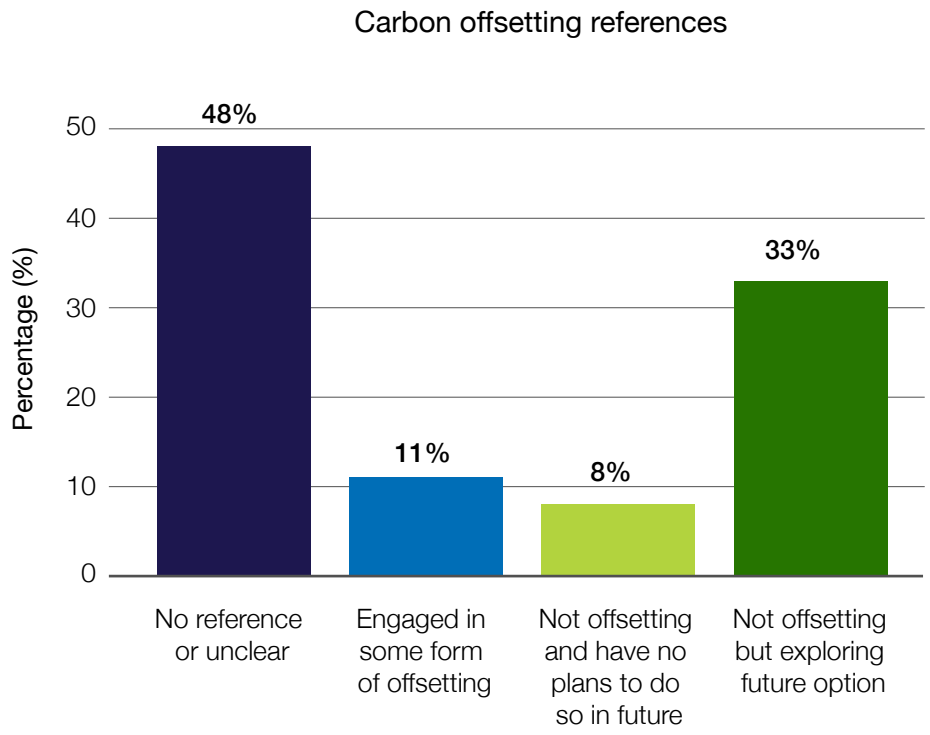

***Figure 5:** References made in the public domain to carbon offsetting*

The findings on sustainable infrastructure, procurement and travel are positive with approximately two thirds of the sector found to make reference to these sustainability areas in their strategic commitments; however this evidence is limited to organisations referencing these areas at a strategic level. While this is a good start with regards to the concordat's aims, this does not offer any clear indication of the extent to which these sustainability areas are being addressed at an operational level with regards to research and innovation practice.

The concordat commits signatories to be transparent and report any carbon offsetting as part of their environmental reporting. While the evidence from this research is inconclusive regarding the extent that organisations offset or are planning to offset carbon emissions, as it was often found to be unclear, this is likely to be something that will become a higher priority as organisations get closer to net zero targets. Future concordat evaluations may benefit from revisiting offsetting reporting to see if a greater number of organisations are making statements about offsetting their carbon or clarifying if they are reporting the offsetting of carbon as part of their carbon emissions reporting.

6. Recommendations

6.1. Recommendationsforenhancing data collection on R&I practice

This report has shown it is challenging to understand the extent to which research is practiced in an environmentally sustainable way. To assist future evaluation exercises, it should be explored by the concordat oversight group if there are opportunities to work with the owners of frameworks and organisers of the league tables to encourage the capture of data that would in time provide greater insight related to the concordat priorities and the sustainability of research and innovation practice.

6.2. Recommendations for future progress reporting or evidence collection

6.2.1. Higher Education

It is recommended that data from the following areas related to the HE sector is monitored and analysed in future concordat progress reporting:

i. People and Planet league

- to observe in the UK how the distribution of HE organisations changes
- to observe in the UK how the status which HE organisations are awarded changes and to revisit the environmental sustainability focused data to see sub-sector trends.

ii. QS league

- to observe if the number of UK organisations included have increased or risen in the rankings on a global scale
- to observe from the UK organisations how the distribution of HE organisations changes
- to observe in the UK how the status which HE organisations are awarded changes and to revisit the environmental sustainability focused data to see sub-sector trends.

iii. EMR

- to use collective EMR data published by HESA to observe HE sector progress in addressing the environmental sustainability of their operations by reducing the size of the sector's footprint
- to observe if the number of HE organisations reporting to the EMR changes over time

In addition to revisiting the above data, it is recommended that the following evaluations should be reviewed when progress reporting is carried out, should they be made available:

i. DfE climate and sustainability requirements

- When DfE review the success of their requirements for education settings to create climate action plans and nominate sustainability leads, their findings should be explored as it is likely to be insightful in understanding the HE sector in relation to the concordat commitments.

ii. REF

- Although at this time the REF gives no insight into the concordat priority areas, should environmental sustainability reporting be included in future REF guidance in any way, future evaluations of the concordat would then benefit from exploring REF data.

6.2.2. Public sector and funding organisations

It is recommended that the following data related to the public sector and/or funding organisations is monitored and analysed in future concordat progress reporting:

i. Public Sector reporting requirements

- The next GGC framework is expected to include greater requirements on public sector organisations to operate sustainably and report on their progress. Future reports should explore any additional data and any public sector wide reporting that is published.
- Future reports should review any changes to requirements from devolved public bodies on sustainability and explore any new relevant data published as a result of this.

ii. Funding organisations and policies

- future reports should explore the funders sub-sector and review if any funding organisations have made policy changes and what requirements they have set in relation to the sustainability of the research and innovation they fund.
- the extent to which funders are publicly reporting scope 3 'investments' emissions should also be revisited to explore if a greater number of funders are reporting the scope 3 emissions of the activities they fund.

6.2.3. Sector-wide

It is recommended that data from the following areas, which cut across the entire R&I sector, are monitored and analysed in future concordat progress reporting:

i. Sustainability accreditation programmes, tools and calculators

- data from sustainable laboratories accreditation programmes (LEAF, MGL and GILA) should be revisited to show sector progress through increased numbers of organisations and labs signing up and by observing the trends of labs transitioning up through the medal systems.
- data from Green DiSC certification should be revisited to explore sector progress in sustainable computing from increased numbers of organisations and research groups signing up and by observing the trends of organisations and groups transitioning up through the medal systems.
- the availability of new tools and calculators designed to help measure the footprint of research and innovation practice should be reviewed and any data on them reported.

ii. Research practice in organisational strategies

- future reporting should explore the extent to which organisations across the sector have added reference to sustainable research practices and areas related to the concordat priorities in published strategic documents.

7. Conclusions

This report has highlighted a range of supporting evidence in relation to the priorities of the concordat.

For the priority on leadership and policy, the research shows that the majority of organisations across the R&I sector who carry out or fund R&I activities are currently publishing environmental sustainability, net zero or climate change strategies and commitments and they are already playing a role in addressing environmental sustainability and net zero. The data from sustainability leagues also offers insight about the HE sector that further substantiates these findings about published strategic commitments.

The evidence showing the uptake of and accreditation levels awarded by sustainable laboratory programmes is a useful gauge to help understand the current scale of R&I organisations committed to environmentally sustainable practices in laboratories. With the collective data revealing 2089 UK laboratories currently signed up, it shows this is an area of R&I activity that is already being addressed by many. The data does however have limitations as it is not possible to determine what proportion of all UK laboratories are covered by these programmes. Also, the limited focus of these laboratory programmes that mainly addresses wet laboratories does mean the programmes are not applicable to all laboratories across the R&I sector.

With the increasing rise of computing as an important component of research and innovation activities, it is positive to see that Green Disc has already gained traction in the sector as a new sustainable accreditation programme focused on sustainable digital research. Though still in its infancy at this time, future data on the programme will be more indicative of the sector's response to sustainable computing. Other sustainability tools and programmes such as Green Algorithms, TRACE and Greener Clinical Trials, all currently in development, are also likely to in time prove to be useful in understanding where, and to what extent organisations are taking action across the sector.

The evidence found to support the sixth concordat priority on environmental impact and reporting data, shows that the extent to which the sector is reporting environmental sustainability impacts differs depending on the sub-sector being looked at. Overall, across the sector, evidence was found of approximately half of organisations publicly reporting scope 1 & 2 carbon emissions data and slightly less than half reporting scope 3. This rises to approximately two thirds when looking just at the HE sector, but scope 1 & 2 reporting drops to just over one third when looking only at ROs and funding organisations. Data from the EMR further supports this evidence of the level of reporting across the HE sub-sector.

The mandatory requirements for public sector organisations to report on sustainability, at national and devolved authority level, strongly compliments and aligns well with the concordat priorities on setting sustainability strategies and policies and on transparent reporting. In Scotland, Wales and Northern Ireland where HEIs are in scope of public sector requirements, this is an indication that Scottish, Welsh and Northern Irish HEIs should be at the forefront of HE sustainability reporting. Both the EMR and the GGCs, which provide a framework for publishing environmental data across the public sector, are useful sub-sector datasets. The year-on-year trends in both datasets offers an indication of how the HE sector and government departments are doing in addressing the environmental sustainability of their operations with the data showing that both these parts of the R&I sector have been making reductions in their environmental impacts. However, there are limitations to the GGCs in offering insight on the concordat as GGC data is not broken down to organisation level, only department, therefore it is difficult to ascertain how the data relates to specific government organisations that are carrying out or funding R&I activities.

Several challenges have been identified in understanding the sustainability of the R&I practice across the sector. A significant challenge that has been identified in understanding sustainable research practice, is that often in making references to 'sustainable research', organisations across the sector are not referring to carrying out research in a sustainable way, but in fact are referring to sustainability as the topic being researched. The QS league even includes a sub-category called 'environmental research', but it is focused solely on sustainability as a topic of research, not if any research has been practiced sustainably and so is not useful insight for the concordat. It is therefore important when exploring references to sustainable research to verify how the term is being used.

It is not just the definition of 'sustainable research' that can be challenging, the definition of sustainability is also a challenge. The concordat does include a definition of what the concordat means by environmental sustainability, but even that definition is quite broad. Some of the data explored for this report, particularly seen in the league tables, indicates there is ambiguity and difference of opinion of what an "environmentally sustainable" organisation looks like. At headline level, all the sustainability league tables cover a much wider definition of sustainability than just environmental sustainability, with all three leagues also including social sustainability criteria. Therefore, the headline outcomes of the leagues do not tell us how environmentally sustainable organisations are. While it is possible to filter the leagues' data by sub-sections to help understand environmental sustainability, despite the league tables appearing to be similar when looking at the environmental sustainability sub-sections, the positions that the HEIs sit in are noticeably different.

This report has been prepared by UKRI as a member of the concordat oversight group on behalf of the R&I sector.

The evidence shows that there are some reporting frameworks that will be helpful tools for concordat signatories to use in delivering the concordat at an individual level. However, unless the frameworks and tools start to publish sector or sub-sector wide datasets or insight that could help benchmark the sector, there is little benefit in revisiting them in future concordat reporting.

Overall, this research has identified a range of evidence that has helped create a picture of where the R&I sector is now with regards to the environmental sustainability of research and innovation practice. The evidence shows that the R&I sector is already making good progress strategically in addressing environmental sustainability challenges and reasonable progress in reporting impacts at an organisation level. However, there is significant room for improvement when it comes to seeing the extent to which organisations across the sector have plans for addressing the sustainability of research and innovation practice and reporting the environmental impacts of their R&I activities. The data presented in the report, along with the recommendations that have been outlined, will in future help us to understand the actions that the sector has taken to address the environmental impact of R&I practice and fundamentally will help draw some conclusions on the success of the concordat.

Annex 1: list of organisations included the samples in this research to represent the R&I sector

Organisation name	Sub-Sector
3PM Project Management	RO
Abertay University	HEI
Aberystwyth University	HEI
Advanced Forming Research Centre (AFRC)	RO
Advanced Manufacturing Research Centre (AMRC)	RO
Agricultural Engineering Precision Innovation Centre	RO
Agriculture and Horticulture Development Board (DEFRA sponsored)	RO
Agri-Food and Biosciences Institute (DARD)	RO
Agrimetrics	RO
Alan Turing Institute	RO
Anglia Ruskin University	HEI
Animal and Plant Health Agency (APHA)	RO
Anthony Nolan	RO
ARIA	RO
Armagh Observatory	RO
Arts Council England	RO
Arts Council Wales	RO
Arts University Bournemouth	HEI
Arts University Plymouth	HEI
Association of Medical Research Charities (AMRC)	Funder
Aston University	HEI
Atomic Weapons Establishment	RO
Babraham Institute	RO
Bangor University	HEI
Barts Charity	Funder
Bath Spa University	HEI
Beatson Institute for Cancer Research / Cancer Research Scotland Institute	RO
BirdLife International	RO

Organisation name	Sub-Sector
Birkbeck, University of London	HEI
Birmingham City University	HEI
Bishop Grosseteste University	HEI
Bournemouth University	HEI
BPP University	HEI
British Broadcasting Corporation (BBC)	RO
British Film Institute	RO
British Heart Foundation	Funder
British Institute of International and Comparative Law	RO
British Library	RO
British Museum	RO
British Neuroscience Association	RO
British Science Association	Funder
British Trust for Ornithology	RO
Brunel University London	HEI
Buckinghamshire New University	HEI
Building Research Establishment Ltd (BRE)	RO
Butterfly Conservation	RO
CAB International (CABI)	RO
Cadw	RO
Cambridge Arctic Shelf Programme	RO
Cambridge Crystallographic Data Centre	RO
Campden BRI	RO
Cancer Research UK	Funder
Canterbury Christ Church University	HEI
Cardiff Metropolitan University	HEI
Cardiff University	HEI
Cell and Gene Therapy Catapult	RO
Centre for Environment, Fisheries and Aquaculture Science (Cefas) (DEFRA)	RO
Centre for Innovation Excellence in Livestock (IUK)	RO
Chatham House (Royal Institute of International Affairs)	RO
City, University of London	HEI
Clinical Practice Research Datalink (subsidiary of MHRA)	RO

Organisation name	Sub-Sector
Compound Semiconductor Applications Catapult	RO
Connected Places Catapult	RO
Council for At Risk Academics (CARA)	RO
Coventry University	HEI
CPI	RO
Cranfield University	HEI
Daresbury Laboratory (DL)	RO
De Montfort University	HEI
Defence Science and Technology Laboratory (DSTL)	Funder
Department for the Economy - NI	Funder
Department for Transport (DfT)	Funder
Department for Environment, Food and Rural Affairs (DEFRA)	Funder
Department of Health and Social Care (DHSC)	Funder
Diamond Light Source Ltd	RO
Digital Catapult	RO
Durham University	HEI
Earlham Institute	RO
Earthwatch Institute	RO
Edge Hill University	HEI
Edinburgh Napier University	HEI
EMBL - European Molecular Biology Laboratory	RO
Energy Systems Catapult	RO
English Heritage	RO
Environment Agency	RO
European Marine Energy Centre (EMEC)	RO
European School of Economics	HEI
European Synchrotron Radiation Facility (ESRF)	RO
Falmouth University	HEI
FERA Science Ltd (linked with DEFRA)	RO
FloWave Ocean Energy Research Facility	RO
Foreign, Commonwealth & Development Office FCDO	Funder
Forest Research	RO
Fraunhofer UK Research Ltd	RO

Organisation name	Sub-Sector
Genomics England	RO
Glasgow Caledonian University	HEI
Glass Futures	RO
Goldsmiths, University of London	HEI
Guildhall School of Music and Drama	HEI
Harper Adams University	HEI
Hartpury University and Hartpury College	HEI
Health and Safety Executive	RO
Health and Safety Laboratory (HSL)	RO
Health Data Research UK (HDR UK)	RO
Heriot-Watt University	HEI
High Value Manufacturing Catapult (IUK)	RO
Historic Buildings and Monuments Commission for England	RO
Historic Environment Scotland	RO
Historic Royal Palaces	RO
HR Wallingford Group Ltd	RO
Hydrographics Office	RO
Imperial College London	HEI
Imperial War Museum	RO
Institute for Fiscal Studies	RO
Institute of Development Studies	RO
Institute of Occupational Medicine	RO
Instruct-ERIC	RO
Intellectual Property Office (IPO, part of DSIT)	RO
International Institute for Environment and Development	RO
Isaac Newton Group	RO
John Innes Centre	RO
Joint Nature Conservation Committee (JNCC)	RO
Keele University	HEI
King's College London	HEI
Kingston University	HEI
Lancaster University	HEI
Leeds Arts University	HEI

Organisation name	Sub-Sector
Leeds Beckett University	HEI
Leeds Conservatoire	HEI
Leeds Trinity University	HEI
LGC Ltd	RO
Liverpool Hope University	HEI
Liverpool John Moores University	HEI
Liverpool School of Tropical Medicine	HEI
London Business School	HEI
London Institute of Mathematical Sciences (LIMS)	RO
London Metropolitan University	HEI
London School of Hygiene and Tropical Medicine, University of London	HEI
London South Bank University	HEI
Loughborough University	HEI
Malaria Consortium (UK)	RO
Manchester Metropolitan University	HEI
Manufacturing Technology Centre (MTC)	RO
Marine Biological Association	RO
Marine Management Organisation	RO
Marine Scotland Science	RO
Medical Research Foundation	RO
Medicines and Healthcare products Regulatory Agency (subsidiary of MHRA)	RO
Medicines Discovery Catapult	RO
Medr - previously Higher Education Funding Council for Wales (HEFCW)	Funder
Microbiology Society	RO
Middlesex University	HEI
Moredun Research Institute	RO
Museum of London Archaeology	RO
National Archives	RO
National Botanical Gardens of Wales	RO
National Centre for Atmospheric Science (NCAS)	RO
National Centre for Social Research	RO
National Composites Centre	RO
National Engineering Laboratory	RO

Organisation name	Sub-Sector
National Foundation for Educational Research	RO
National Galleries of Scotland	RO
National Gallery	RO
National Innovation Centre for Ageing (NICA)	RO
National Institute for Biological Standards and Control (NIBSC)	RO
National Institute for Health and Care Research (NIHR)	RO
National Institute of Agricultural Botany	RO
National Institute of Economic and Social Research	RO
National Institute of Health and Care (NICE) Excellence	RO
National Library of Scotland	RO
National Library of Wales	RO
National Maritime Museum	RO
National Museum Wales	RO
National Museums Liverpool	RO
National Museums of Scotland	RO
National Nuclear Laboratory	RO
National Oceanography Centre	RO
National Physical Laboratory	RO
National Portrait Gallery	RO
Natural England	RO
Natural History Museum	RO
Natural Resources Wales	RO
NERC British Antarctic Survey	RO
NERC British Geological Survey	RO
Nesta	RO
Newcastle University	HEI
Newman University, Birmingham	HEI
NHS England	IRO
Northern Ireland Environment Agency	RO
Northern School of Contemporary Dance	HEI
Northumbria University	HEI
Norwich University of the Arts	HEI
Nottingham Trent University	HEI

Organisation name	Sub-Sector
Office for National Statistics (ONS)	RO
Office of Health Economics (OHE)	RO
Offshore Renewable Energy Catapult	RO
Open University	HEI
Ordnance Survey	RO
Organic Research Centre	RO
Overseas Development Institute (ODI)	RO
Oxford Brookes University	HEI
Plymouth Marine Laboratory	RO
Plymouth Marjon University	HEI
Public Health Wales	RO
Quadram Institute Bioscience	RO
Queen Margaret University	HEI
Queen Mary University of London	HEI
Queen's University Belfast	HEI
RAND Europe Community Interest Company	RO
Ravensbourne University London	HEI
Regent's University London	HEI
Richmond, The American International University in London	HEI
Robert Gordon University	HEI
Rosalind Franklin Institute	RO
Rose Bruford College	HEI
Rothamsted Research	RO
Royal Armouries	RO
Royal Astronomical Society	Funder
Royal Botanic Gardens - Edinburgh	IRO
Royal Botanic Gardens - Kew	RO
Royal College of Art	HEI
Royal College of Music	HEI
Royal Commission on the Ancient and Historical Monuments of Wales	RO
Royal Conservatoire of Scotland	HEI
Royal Geographical Society	Funder
Royal Holloway, University of London	HEI

Organisation name	Sub-Sector
Royal Northern College of Music	HEI
Royal Society for the Protection of Birds	RO
Royal Society of Edinburgh	Funder
Royal Society	Funder
Royal United Services Institute for Defence and Security Studies	RO
Satellite Applications Catapult	RO
School of Advanced Study, University of London	HEI
SCI Foundation / Unlimit Health	RO
Science and Advice for Scottish Agriculture	RO
Science Museum Group	RO
Scotland's Rural College	HEI
Scottish Association for Marine Sciences	RO
Scottish Environment Protection Agency	RO
Scottish Funding Council (SFC)	Funder
Sheffield Hallam University	HEI
Sightsavers	RO
Sir Alister Hardy Foundation for Ocean Science	RO
Sir John Soane's Museum	RO
Smith Institute	RO
SOAS, University of London	HEI
Solent University	HEI
Sport England	RO
Sports Council Wales	RO
St George's, University of London	HEI
St Mary's University, Twickenham	HEI
Staffordshire University	HEI
Swansea University	HEI
Tate	RO
Tavistock Institute of Human Relations	RO
Teesside University	HEI
The Academy of Medical Sciences	Funder
The British Academy	Funder
The Courtauld Institute of Art, University of London	HEI

Organisation name	Sub-Sector
The Faraday Institution	RO
The Francis Crick Institute	RO
The Glasgow School of Art	HEI
The Health Foundation	Funder
The Institute of Cancer Research	HEI
The James Hutton Institute	RO
The Joseph Rowntree Foundation	Funder
The Leverhulme Trust	Funder
The Liverpool Institute for Performing Arts	HEI
The London Institute of Banking and Finance	HEI
The London School of Economics and Political Science	HEI
The Met Office	RO
The National Trust	RO
The Pirbright Institute	RO
The Resolution Foundation	RO
The Royal Academy of Engineering (RAEng)	Funder
The Royal Academy of Music, University of London	HEI
The Royal Agricultural University	HEI
The Royal Central School of Speech and Drama	HEI
The Royal Veterinary College University of London	HEI
The Sainsbury Laboratory	RO
The Square Kilometre Array Organisation (SKA)	RO
The University of Law	HEI
The University of York	HEI
The Welding Institute	RO
The Wellcome Trust	Funder
Transport Research Laboratory Limited	RO
Trinity Laban Conservatoire of Music and Dance	HEI
UK Astronomy Technology Centre	RO
UK Biobank	RO
UK Centre for Ecology and Hydrology	RO
UK Clinical Research Collaboration Clinical Trials Unit Network (UKCRU CTU Network)	RO

Organisation name	Sub-Sector
UK Health Security Agency	RO
UK Research and Innovation (UKRI)	Funder
UK Space Agency	IRO
UK Trial Manager's Network (UKTMN)	RO
UKAEA (UK Atomic Energy Authority)	RO
UKCDS UK collaborative on development sciences	RO
Ulster University	HEI
Understanding Animal Research	RO
University College Birmingham	HEI
University College London	HEI
University for the Creative Arts	HEI
University of Aberdeen	HEI
University of Bath	HEI
University of Bedfordshire	HEI
University of Birmingham	HEI
University of Bolton	HEI
University of Bradford	HEI
University of Brighton	HEI
University of Bristol	HEI
University of Buckingham	HEI
University of Cambridge	HEI
University of Central Lancashire	HEI
University of Chester	HEI
University of Chichester	HEI
University of Cumbria	HEI
University of Derby	HEI
University of Dundee	HEI
University of East Anglia	HEI
University of East London	HEI
University of Edinburgh	HEI
University of Essex	HEI
University of Exeter	HEI
University of Glasgow	HEI

Organisation name	Sub-Sector
University of Gloucestershire	HEI
University of Greenwich	HEI
University of Hertfordshire	HEI
University of Huddersfield	HEI
University of Hull	HEI
University of Kent	HEI
University of Leeds	HEI
University of Leicester	HEI
University of Lincoln	HEI
University of Liverpool	HEI
University of London	HEI
University of Manchester	HEI
University of Northampton	HEI
University of Nottingham	HEI
University of Oxford	HEI
University of Plymouth	HEI
University of Portsmouth	HEI
University of Reading	HEI
University of Roehampton	HEI
University of Salford	HEI
University of Sheffield	HEI
University of South Wales	HEI
University of Southampton	HEI
University of St Andrews	HEI
University of Stirling	HEI
University of Strathclyde	HEI
University of Suffolk	HEI
University of Sunderland	HEI
University of Surrey	HEI
University of Sussex	HEI
University of the Arts London	HEI
University of the Highlands and Islands	HEI
University of the West of England	HEI

Organisation name	Sub-Sector
University of the West of Scotland	HEI
University of Wales	HEI
University of Warwick	HEI
University of West London	HEI
University of Westminster	HEI
University of Winchester	HEI
University of Wolverhampton	HEI
University of Worcester	HEI
Vaccines Manufacturing and Innovation Centre UK Ltd	RO
Veterinary Medicines Directorate (VMD)	RO
Victoria and Albert Museum	RO
Wallace Collection	RO
Warwick Manufacturing Group HVM Catapult (WMG)	RO
Wellcome Trust Sanger Institute	RO
World Conservation Monitoring Centre WCMC	RO
Worldwide Cancer Research	RO
Wrexham Glyndwr University	HEI
Writtle University College	HEI
York St John University	HEI
Young Foundation	RO
ZSL Zoological Society of London	Funder