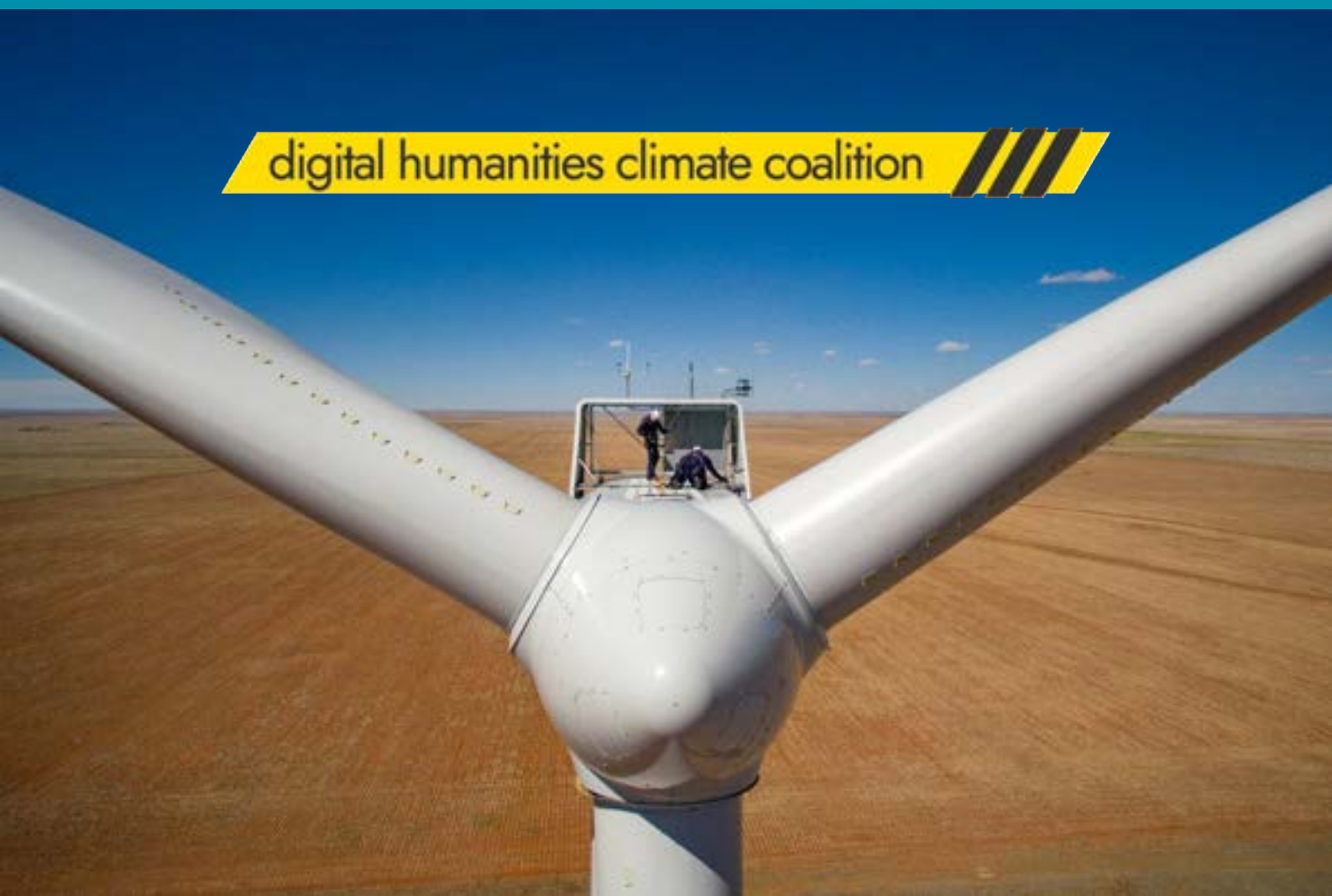
Interpreting UKRI Environmental Sustainability Guidance for the Digital Humanities



digital humanities climate coalition

Interpreting UKRI Environmental Sustainability Guidance for the Digital Humanities

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Funders justifiably set expectations around research practice. This extends to how research impacts wider society and the environment. UK Research and Innovation (UKRI) have published a sustainability strategy and is a signatory of a cross-sector environmental sustainability concordat, and in December 2024, the AHRC Research Funding Guide was updated to include a statement on environmental responsibility. It reads:

> The UK research and innovation (R&I) sector have co-developed a voluntary environmental sustainability concordat. The concordat supports the government ambition to achieve net zero by 2050 and aligns with UKRI's aims as both funder and deliverer of research and innovation. Organisations can show their support for the concordat at two levels: as a signatory or as a supporter. The AHRC research community are encouraged to show their support for the concordat and carry out research in an environmentally sustainable way. The UKRI Environmental Sustainability Strategy 2020 -2025 sets out UKRI's ambition to be a leader in environmental sustainability for the sector. UKRI has set the ambitious goal to for UKRI to be 'net zero' a decade earlier, by 2040 at the latest. Carbon offsets are not considered to be a direct research cost and will not therefore be funded on grants - further information can be found on the UKRI website. Public funds should be deployed with due consideration to value for money, environmental impact, welfare and business needs across all activities. Consideration to the environmental impact of travel should be in line with the research organisation's institutional policy.

For net zero goals to be achieved, researchers will need to play their part. However, as yet funders do not provide resources detailing how researchers can make changes to their research practices in support of environmental and ecological sustainability.

Aimed primarily at Digital Humanities researchers and research offices, this document explores the policy resources underpinning the AHRC statement. It offers a series of interpretations of existing guidance on research practice and points to advice on how to operationalise sustainable practice in Digital Humanities research. Our interpretations draw on the Digital Humanities Climate Coalition Toolkit, an extensive and evolving resource that provides guidance on making research practices more environmentally responsible.

Despite a long history of climate policy at the international level, environmental policy around research is relatively new. At the same time, attention has started to turn to the connections between climate change and an increasingly technologically reliant world. While many view technological development as a source of potential solutions to environmental challenges, it is increasingly understood that the environmental cost of technology is significant.

A timeline of climate and research policy

1998 **The Intergovernmental Panel on Climate Change** (IPCC) established to provide governments with scientific assessments of climate change

2007 The IPCC shares the Nobel Peace Prize with Al Gore

2010 **The OECD Recommendation on Information and Communication Technologies Report** links ICT to environment sustainability, arguing that we need to understand and act on the positive and negative relationships between the two

2015 **Paris Climate Agreement**: 174 countries and the EU agreed to limit global warming to well below 2° Celsius, and to pursue efforts to limit it to below 1.5°

2019 Many UK universities and other organisations issue **climate emergency declarations**

2020 **UKRI Environmental Sustainability Strategy**

2021 **UKRI Net Zero Digital Research Infrastructure Scoping Project**

2024 UK research and innovation (R&I) sector co-develop an **environmental sustainability concordat**, coordinated by Wellcome, UKRI, and other funders

Heidelberg Agreement on Environmental Sustainability in Research Funding

Good estimates are very hard to come by, but it is possible that digital technology may currently make up about 3-5% of our global carbon emissions.[1] Carbon emissions associated with digital technology are also projected to grow significantly. The use of digital technologies in research contributes to these emissions in various ways, from our everyday working practices to our use of high-performance computing research facilities. Research funding bodies like UKRI place the onus on researchers to understand and evaluate the environmental cost and sustainability of their own digital projects.

[1] Freitag et al. (2021) estimated that 2020 global emissions from Information Communication Technology (ICT) could be around 2.1%–3.9%. The same paper also estimated that if ICT emissions were to remain stable, and global emissions to decrease in line with 1.5 degrees, by 2024 ICT would be accounting for about 4.4% of the global carbon footprint. However, neither of these assumptions is a good reflection of the past five years: it is definitely time for a thorough reassessment. For further context, IEA (2025) estimates that electricity consumed by data centres in 2024 was 1.5% of global electricity consumption.

UKRI has published a number of policies around sustainable research. Few directly address digital sustainability. Nevertheless, as this document lays out, these can still be used as a basis for developing research practices around digital sustainability.

UKRI Environmental Sustainability Strategy

For example, UKRI's Environmental Sustainability Strategy was published in 2020. The document sets out a five-year plan on how UKRI intends to lead by example in environmental sustainability. The most notable output of this strategy is the UKRI's commitment to **reach net zero by 2040.** And whilst this commitment is restricted to UKRI operations, a funder commitment of this nature provides justification for researchers to act on environmental sustainability, including in their use of digital technologies.

UKRI Environmental Strategy		
Wording	Interpretation	Toolkit
In year 1 and year 2 UKRI intends to "understand the energy consumption and modes of operation for all UKRI-owned or majority-funded data centres" (p. 14).	UKRI are here setting an example for their researchers by interrogating the infrastructures that support research. UKRI are demonstrating that the first step is identify and measure the problem.	The DHCC Toolkit provides guidance on methods for measuring the carbon footprint of computationally intensive research.
"We will review and amend the UKRI grant and training terms and conditions to reflect our environmental sustainability ambition" (p. 13).	Here UKRI indicates the intention to change the process of applying for grants to align with sustainability goals. We can expect this to be an evolving process.	The DHCC Toolkit includes specific guidance on grant writing.
"We will work with UKRI employees to establish and communicate environmental sustainability guidelines to help us embed this strategy into our day-to-day roles" (p. 12).	Here the UKRI demonstrate a commitment to adapt their working practices to engage with environmentally sustainability.	The DHCC Toolkit contains guidance on day-to-day working practices, as well as on advocating for those changes to be made within your institution.

Responsible Innovation

UKRI's Environmental Strategy falls under the umbrella of 'Responsible Innovation', which is understood to mean the careful consideration of, and action to address, the potential impacts of introducing a new product, service, process or business model. UKRI policy on innovation can often seem more relevant to scientist and engineers than researchers in the Digital Humanities. For example, existing guidance foregrounds EPSRC's *Anticipate, Reflect, Engage, Act (AREA)* framework as a model for responsible innovation. However, innovation is at the heart of all research, and even the AREA framework can be usefully used to drive environmentally responsible innovation in the Digital Humanities.

EPSRC Anticipate, Reflect, Engage, Act Framework		
Wording	Interpretation	Toolkit
"Responsible research and innovation acknowledges that innovation can raise questions and dilemmas, is often ambiguous in terms of purposes and motivations and unpredictable in terms of impacts, beneficial or otherwise."	Innovation is not just about products but also the environment in which products are produced: to innovate responsibly is to consider impact broadly.	The DHCC Toolkit includes guidance on reducing the environmental impact of the research processes such as emails and videoconferencing. Responsible innovation can also be the basis for advocacy within your institution to cultivate environmentally sustainable working cultures.
"We expect our research community to [..] reflect on their own personal and collective motivations"	Responsible innovation is often framed in relation to external impacts but it is also about your identity as a researcher. If you became a researcher to pursue knowledge, do you really want this to risk threatening human life?	The *Digital Humanities and the Climate Crisis: A Manifesto* (2021) – a document connected to the DHCC Toolkit – takes a confident and critical stance on the relationship between digital technologies and the material and the particular environmental responsibility that Digital Humanities researchers have. It is a framework for honouring your responsibility to the environment.
"We expect our research community to [..] enter into dialogue with the public and other stakeholders"	Public engagement is part of our remit as researchers, this includes communicating your work in responsible innovation.	The DHCC toolkit includes a growing number of case studies of how researchers have communicated, raised awareness of, and advocated for environmentally responsibility.

Ethical Research and Innovation

UKRI use a variety of mechanisms to recognise and reward high-quality research. This includes ethical research and innovation. UKRI guidance – which links outwards to a range of documents – provides plenty of scope for researchers to develop innovative research that embeds digital sustainability grounded in ethical good practice.

UKRI Ethical Research and Innovation Resource			
Document	Wording	Interpretation	Toolkit
UKRI position statement on funding ethical research	"The research and innovation community should seek, where possible, to enhance environmental sustainability through innovation and the adoption of environmentally sustainable research practices."	Innovation should not come at the expense of environmentally sustainable research practice.	The DHCC Toolkit contains guidance on how to counter discourses of techno-optimism and techno-solutionism that create pressures to prioritise innovation at the expense of environmental responsibility, as well as lots of information about how to work sustainably
UKRI Policy on the governance of good research practice	"Research misconduct can take many forms, including [..] not observing legal, ethical and other requirements for [..] the protection of the environment"	Ignoring environmental protections is a form of misconduct.	The DHCC Toolkit provides guidance on how to confront greenwashing and discourses of delay, practices that can be interpreted as not observing ethical responsibilities for the protection of the environment.
ESRC framework for research ethics	"Researchers, ROs and RECs should consider ethics issues throughout the lifecycle"	The lifecycle of a research project extends beyond the end of the project.	The DHCC Toolkit provides various points of entry for those thinking about the environmental impact of a project after completion, including decisions around data archiving, sustainable web development, and procurement decisions.

Ethical Research and Innovation: 'Roles and Responsibilities'	"Ensuring research is conducted ethically is a collective responsibility"	Humans live interdependent lives. Consider your responsibility to share your knowledge and experience with digital sustainability with colleagues and partners.	Find your collaborators, help people learn, and acknowledge what you don't know. You could even use your research to get involved in the work of organisations like the DHCC.

An Example UKRI Funding Call

Whilst funding guidance is relatively consistent across the UKRI research councils, subtle changes can create opportunities to embed digital sustainability in your response. The UKRI Digital Research Technical Professional Skills Network Plus funding call – a recent cross-council call of interest to digital humanities researchers – included sections on data management, responsible innovation, environmental sustainability, ethics and responsible research and innovation (RRI), and resource and cost justification. We use this call as an example of how to interpret a funding call in relation to digital sustainability.

UKRI Digital Research Technical Professional Skills NetworkPlus 'What we're looking for'			
Section	Wording	Interpretation	Toolkit
Data Management	"[You] must adhere to UKRI open research policy"	When writing your funding bid, consider the impact of any resources you publish to the web, whether (dynamic) websites, data, code, or software.	The DHCC toolkit includes guidance on various 'lean' computational practices, including minifying website design, compressing images, reducing client side features, and minimal data publication.
Responsible innovation	"We are fully committed to develop and promote responsible research and innovation [..] through the way in which research and innovation is conducted and facilities are managed."	Foregrounding responsible research design that includes environmental responsibility is encouraged.	Strengthen your bid by showing how sustainability considerations and monitoring are embedded into project processes and activities. Even training an AI can be done responsibly, and the DHCC Toolkit contains advice on limiting the environmental impact of maximal computing computing activites.

Environmental Sustainability	'We expect you to embed careful consideration of environmental sustainability at all stages of the research and innovation process and throughout the lifetime of your NetworkPlus"	The call is looking for projects that enable UKRI to meet the ambitions of its environmental sustainability strategy.	Be bold and design your response around environmental action. The DHCC includes guidance on how to develop research questions that support environmental action.

When applying for funding, look out for guidance that indicates which parts of your application are asking you to justify your project design with respect to environmental sustainability and responsible innovation. In the UKRI Digital Research Technical Professional Skills Network Plus funding call, two sections provided opportunities to tease out how your project will meet these responsibilities.

UKRI Digital Research Technical Professional Skills NetworkPlus 'How to Apply'			
Application Section	Quote	Interpretation	Toolkit
Ethics and responsible research innovation (RRI)	"All awardees expect to adhere to the UKRI responsible innovation policies and guidance"	The funder is encouraging you to use this section of you application to explain how you will balance innovation with societal and environmental impacts.	Innovative approaches to sustainable innovation are possible. The DHCC Toolkit provides guidance on how to frame responsible research as innovation.
Ethics and responsible research innovation (RRI)	"If you are collecting or using data, identify [..] any legal and ethical considerations of collecting, releasing or storing the data"	Legal and ethical considerations can include the Paris Climate Agreement and UKRI's Environmental Sustainability Strategy. It can also refer to your own moral standards.	Be bold and hold yourself to high standards: join the DHCC mailing list to receive invites to our monthly DHCC Community Calls where you can ask the community for advice on how they do it.

Resources and cost justification	"cost"	Costs can be both financial and ecological. Both can be outlined in this section.	Consider measuring the carbon emissions and environmental impact of your research: see the 'Grant Writing' section of the DHCC Toolkit for guidance.
Resources and cost justification	"Justify the application's more costly resources, in particular [..] significant travel for field work or collaboration"	There is an environmental cost to travel. Justifying your travel decisions – including the travel you choose not to make – with regards to environmental considerations is an appropriate use of this section of the proposal.	The DHCC Toolkit includes guidance on balancing travel with career stage and opportunity costs, benchmarking face-to-face work against online meetings, and ways to make the most out of unavoidable carbon intensive travel.

Using this Briefing Note in a Funding Application

We interpret the increasing emphasis on environmental responsibility in UKRI policy and funding guidance as a call to action. We hope it inspires digital humanities researchers seeking AHRC funding to embed environmental responsibility into their research design.

Researchers who have referred to this briefing note in developing their project design may optionally include following wording in their funding application:

> "This project aligns with the Digital Humanities Climate Coalition's 2025 recommendations on embedding environmental sustainability and climate justice into project design."

The DHCC is developing a checklist for researchers to use during project design, and an accompanying accreditation system to support researchers using DHCC guidance in achieving successful funding applications.

If you are interested in contributing to work, contact us via cdcs.ed.ac.uk/digital-humanities-climate-coalition.

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