

Energy Data Centre: 2025 Review

Catherine Jones and Peter Holt

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Introduction from the EDC Lead

Welcome to the Energy Data Centre's 2025 annual review. We have had an interesting and varied year supporting the energy research community.

Our major technical development release was new functionality bringing together an introductory guide to an energy topic together with interactive content from the Energy Data Centre collection. This gives a focused way of exploring a topic, managed by the EDC team. We are committed to developing our portal to enable the best use of the content.

We were pleased to welcome two new staff members to the team in 2025, Oliver Brough as a graduate Data Steward and Vivek Mistry as a graduate Research Software Engineer. They bring new perspectives and enable the EDC team to do more.

We continue to support UK Energy Research Centre (UKERC, <https://ukerc.ac.uk>) researchers with data management planning and we tracked research data outcomes of phase 4 together with starting the data management processes for UKERC 2024-2029. Outcomes of both phases of UKERC can be seen in the Explore|Collections tab in the [EDC portal](#)

We were pleased to collaborate with our colleagues in the Scientific Computing Department, the Digital Curation Centre and IceBreakerOne on the **Data Infrastructure for National Infrastructures** project funded by the Department of Science, Innovation and Technology which ran from Summer 2024 to March 2025. In 2025 we finalised our reports on “Reviewing the energy semantic artefacts landscape” and “Developing a specification for a FAIR enabled API for the EDC”.

We continued to interact with a wide range of people, the queries received in our helpdesk covered academics, local interest groups and local government. We spoke at a variety of conferences and meetings for data stewards and digital preservation specialists, sharing both our expertise and experiences but also keeping up to date with best practice.

We look forward to 2026, where we can continue to develop our portal, support our UKERC colleagues and continue to make accessible, for the long-term, energy information.



Catherine Jones,
Energy Data Centre Lead

About the Energy Data Centre

The Energy Data Centre is a capability of the UK Energy Research Centre (<https://ukerc.ac.uk>) and is managed and developed by a team based in the Energy Research Unit, in the Technology Department of Science and Technology Facilities Council part of UK Research and Innovation(UKRI).

The Energy Data Centre provides access, through a discovery portal to information on funded projects, research data and grey literature relevant to the energy community and in addition provides data management expertise and support to UKERC researchers.

For the UKERC 2024-2029 phase, the EDC has identified the following aims for the service and this report details progress on these.



Continuing service development and maintenance



Enabling FAIR data



Focusing on Environmental sustainability



Preserving energy knowledge through building a grey literature collection

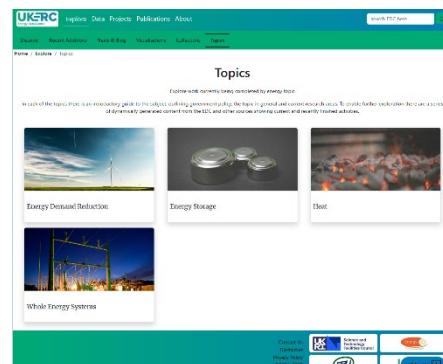


Contributing to UKRI Digital Research Infrastructure

We were pleased to welcome two new staff members to the team in 2025, Oliver Brough as a graduate Data Steward and Vivek Mistry as a graduate Research Software Engineer.

Portal developments

The major development for our production portal was the release of the Topics functionality. This brings together an introductory guide on a topic, together with live information held in the Energy Data Centre's portal and relevant UK Government Areas of Research Interest



We also changed the source of our UKRI funded grants information in line with the changes to UKRI services. While this hasn't affected the current service, it does give the opportunity in 2026 to widen the UKRI grants considered for the portal content.

We have also been preparing for a technical refresh of the portal. The current service uses old technology which is reliable but impedes the ability to move the service on and is not as environmentally friendly as other technical infrastructure approaches.

On the policy front, we have reviewed our preservation policy and created a new preservation strategy which more clearly defines the activities that we will undertake to ensure the usability of the content we hold. While we do not currently have plans to seek CoreTrustSeal certification, we undertook an internal assessment review using the CoreTrustSeal criteria to identify areas for improvement. The main policy and process focus for 2026 is to improve the recording of workflows.

We have improved our workflows and internal processes regarding checksum generation for our grey literature collection.

We have reviewed the possibilities of making more efficient our classification processes through use of automated suggestion services.

Content developments

We continued to add content of all types to the service. Datasets came from the UKERC community, grey literature mainly from the UKERC community and other energy consortia and projects came from UKRI and the Energy Network Association portals.

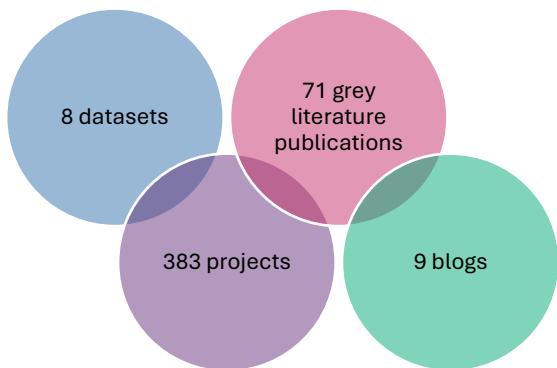


Figure 1 Content added in 2025

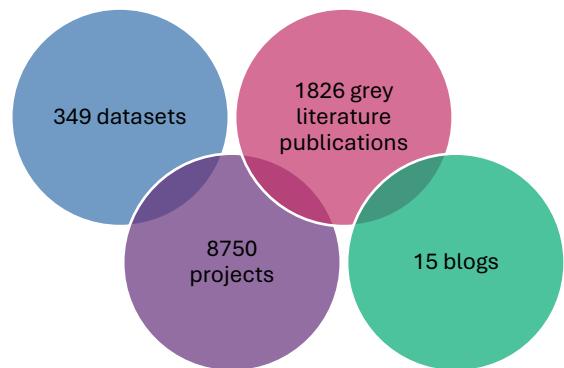


Figure 2 Overall content figures at the end of 2025

Following the expansion of the data steward team there has been a focus on data quality and consistency and approximately 800 records have been checked and updated to ensure that they have abstracts and no unusual characters. We are now in the process of reviewing our people and organisation records so that we can use, where possible, global external unique identifiers for them, according to FAIR expectations.

In line with our Grey Literature goal, we undertook a gap analysis to identify priority areas for collection, we will be focusing on large scale, multi-institutional energy centres and projects in the short term.

We have transferred the management of the DOIs we issue from a subset of STFC's prefix to our own prefix, this will enable us in future to make impact tracking more effective.

The data steward team also reviewed the emerging FAIR data automated checker tools to establish which was the best fit for the EDC. F-UJI (<https://www.f-iji.net/>) was the recommendation. The report also discussed how would we display the results so that they were meaningful for our users if we were to use a checker as part of the data ingest process. We have also used this activity to identify requirements for our technical refresh project.

We continue to review the most effective ways of identifying use and re-use of our content, which is becoming more difficult in open repositories due to web scraping and AI bots.

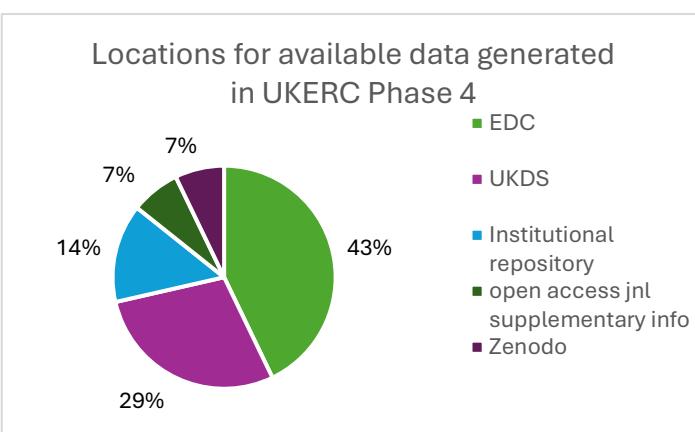
The content held in the EDC is actively managed and the metadata quality regularly reviewed in line with our collection management and cataloguing policies.

Data management activities

The Energy Data Centre team continued to support the UKERC research community, both with the plans created in UKERC Phase 4 and with the data management planning process for UKERC 2024-2029.

The team are prototyping the Data Steward Wizard which is an online tool used by other communities to make the recording of data management planning easier and more automated. This will launch in Spring 2026.

Updated guides on a variety of data management topics were launched on the portal in spring 2025.



The EDC continues to track and record the availability of data resulting from UKERC Phase 4 and this chart shows the locations of available data.

A higher proportion of data from UKERC Phase 4 is discoverable and accessible. All the outputs from UKERC Phase 4 can be

discovered from the Collections Page in the EDC Portal.

External Projects and the wider community

Data Infrastructure for National Infrastructures

This £1.2M STFC-led study was funded by the Department of Science, Innovation and Technology to support their aim to improve data sharing in energy, transport and water research communities to contribute to the UK Government's goal of increased growth. The study as a whole undertook a literature review, case studies by domain academics, community workshops, interviews with key stakeholders and some technical exploration to amass an evidence base of the need and to create a vision for a future DINI service. The EDC team used the experience and practical examples gained from the Energy Data Centre to support this project as one of the partners.

The EDC Lead was part of the management team and an editor of the final report, contributing to setting the direction and creating the overall recommendations. The EDC team undertook two pieces of technical work to support data sharing. The first was to review the landscape for energy ontologies. Using ontologies, and thus defined terms, to describe research data contributes to the discovery, location and potential re-use of research data enhancing the value gained from the investment. As energy is such a multidisciplinary area, there are a wide range of general and specialised ontologies the EDC team's knowledge of the domain, and practical experience in adding subject terms played a crucial role in this study and concluded that the widespread adoption of an existing ontology would be very productive.

The second technical activity was to define the requirements for a FAIR (Findable, Accessible, Interoperable and Reusable) API to enable machine access to the content held in the EDC. This is needed both to support the application of FAIR principles but also to increase the usage of the EDC and the data contained within it. The study created a draft specification and demonstrated the challenges of implementing machine readable FAIR metrics and repository trustworthiness. Peter Holt, the EDC Technical Lead spoke about this work as part of the STFC Open Science talk series.

These activities are on the cutting edge of FAIR data research and will improve the EDC for our community going forward. They have also provided tangible evidence of the role of data stewardship to DSIT.

The DINI study and its vision for future national data sharing infrastructure for energy, transport and water research domains has since received very positive feedback from DSIT's Head of Data Sharing and Technology who commissioned the work.

Working groups and community support

Members of the team contributed to the following international working groups.



- Force 11 Working Group on Preserving Executable Research Content
- Digital Preservation Coalition Working Group on Carbon Footprint Calculations
- Digital Preservation Coalition Python Study Group Program mentor

External meetings



Members of the team spoke and presented posters at the International Digital Curation Conference, The Hague February 2025; the Data Sharing Working Group led by Sarah Haye, June 2025 and the Career and Skills for Data-driven Research network+ (CASDAR), September 2025 launch on data management and FAIR data topics.

The EDC also responded to the UKRI data policy consultation, with Catherine Jones, EDC Lead talking on a panel for the UKRI consultation meeting and attending the a NERC consultation meeting. Catherine Jones, EDC Lead also contributed to the UKRI consultation on Data Management Plans.

STFC focused

The EDC team strengthened local communities by collaborating with the STFC's Open Science data stewards in a preservation game workshop. Preservation games are one approach to training researchers about the importance of metadata and recording provenance and the EDC will be building on this in 2026 as part of their training and outreach aims.



Original model and instructions and Original and model built from the instructions

Conclusion

The EDC service continues to grow and develop, supporting the energy research community. We continue as a team to seek to adopt good practice and to share our experiences with our peers in the data steward and research software engineering communities.

In 2026 our priorities will be on the technical refresh project, to put the infrastructure in a good position and to continue adding, managing and preserving content for the wider energy research community.