

Specifying a FAIR-enabled API for the Energy Data Centre

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The UK Energy Research Centre (www.ukerc.ac.uk) undertakes “*Independent whole systems research for a sustainable energy future*” and was formed in 2004. The Energy Data Centre is a capability of UKERC and provides a discovery portal and data management expertise for researchers funded through UKERC. Current key priorities for the EDC are:



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



Enabling FAIR Data

Ensuring that research data held in the Energy Data Centre is Findable, Accessible, Interoperable and Reuseable is a key priority.

The EDC team worked on an action plan to enhance the FAIRness of the service as part of the FAIR-IMPACT project and as a result out policies have been updated and a statement of adherence to the FAIR principle is available on our website. We also experimented with F-UJI which is an automated tool for checking if a dataset is FAIR.

The next stage is to work on making the service as accessible for machines as it is for humans. The DINI project has given us an opportunity to specify an API to enable machine access which has FAIR considerations at the heart of the design.

FAIR API

How can we demonstrate the API is FAIR?

- Use Open API standard
- Terms of Service and licenses
- Good documentation

FAIR Repository

How can we demonstrate the Repository is Trustworthy?

- Be certified: this is on the EDC service development Roadmap
- Enable metadata about the repository itself to be interrogated so that the service using the API can decide.

Request URL

<http://172.16.103.75:5000/trust/>

Server response

Code Details

200

Response body

```
[
  {
    "URL": "ukerc.rl.ac.uk",
    "Country": "UK",
    "Language": "EN",
    "Contact": "edcmanager@stfc.ac.uk",
    "Description": "The Energy Data Centre holds research data, metadata only records for data; grey literature and information on funded projects in the energy research field. It is a capability of the UK Energy Research Centre and is funded by UKRI. UKERC's vision is \"Independent whole systems research for a sustainable energy future\" and the EDC's vision within that is \"access to energy information now, and for the future \",
    \"Metadata\": \"Dublin Core\",
    \"Preservation\": \"https://ukerc.rl.ac.uk/cgi-bin/aboutPolicyPrespolicy.pl \"
  }
]
```



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FAIR Data

How can we demonstrate that a dataset is FAIR?

- Use the F-UJI tool to generate FAIR data metrics and make these retrievable through an API
- Consider the best way to summarise these to make them useful

Request URL

<http://172.16.103.75:5000/fairdatasets/ebf7ef0f-1133-4aba-9907-10c4257f103f>

Server response

Code Details

200

Response body

```
{
  "scoretotal": "{\\A\\": 3, \\F\\": 7, \\I\\": 4, \\R\\": 10, \\A1\\": 3, \\F1\\": 2, \\F2\\": 2, \\F3\\": 1, \\F4\\": 2, \\I1\\": 2, \\I2\\": 1, \\I3\\": 1, \\R1\\": 4, \\R1.1\\": 2, \\R1.2\\": 2, \\R1.3\\": 2, \\FAIR\\": 24}",
  "scoreearned": "{\\A\\": 1, \\F\\": 5, \\I\\": 1, \\R\\": 3, \\A1\\": 1, \\F1\\": 2, \\F2\\": 2, \\F3\\": 0, \\F4\\": 1, \\I1\\": 1, \\I2\\": 0, \\I3\\": 0, \\R1\\": 1, \\R1.1\\": 0, \\R1.2\\": 1, \\R1.3\\": 1, \\FAIR\\": 10}",
  "statustotal": "{\\A1\\": 3, \\F1\\": 2, \\F2\\": 1, \\F3\\": 1, \\F4\\": 1, \\I1\\": 1, \\I2\\": 1, \\I3\\": 1, \\R1\\": 1, \\R1.1\\": 1, \\R1.2\\": 1, \\R1.3\\": 2, \\A\\": 3, \\F\\": 5, \\I\\": 3, \\R\\": 5, \\FAIR\\": 16}",
  "maturity": "{\\A\\": 1, \\F\\": 2, \\I\\": 1, \\R\\": 1, \\A1\\": 1, \\F1\\": 3, \\F2\\": 3, \\F3\\": 0, \\F4\\": 2, \\I1\\": 3, \\I2\\": 1, \\I3\\": 0, \\R1\\": 1, \\R1.1\\": 0, \\R1.2\\": 2, \\R1.3\\": 1, \\FAIR\\": 1.25}",
  "scorepercent": "{\\A\\": 33.33, \\F\\": 71.43, \\I\\": 25, \\R\\": 30, \\A1\\": 33.33, \\F1\\": 10, \\F2\\": 100, \\F3\\": 0, \\F4\\": 50, \\I1\\": 50, \\I2\\": 0, \\I3\\": 0, \\R1\\": 25, \\R1.1\\": 0, \\R1.2\\": 50, \\R1.3\\": 50, \\FAIR\\": 41.67}",
  "dataid": "ebf7ef0f-1133-4aba-9907-10c4257f103f",
  "statuspassed": "{\\A1\\": 1, \\F1\\": 2, \\F2\\": 1, \\F3\\": 0, \\F4\\": 0, \\I1\\": 1, \\I2\\": 1, \\I3\\": 0, \\R1\\": 1, \\R1.1\\": 0, \\R1.2\\": 1, \\R1.3\\": 1, \\A\\": 1, \\F\\": 3, \\I\\": 3, \\R\\": 3, \\FAIR\\": 9}"
}
```



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Example call showing F-UJI scores for a dataset

UKERC
Energy Data Centre

Access to energy information now and for the future