FlexIQ

Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
		*Indicate: **N**(ew data) or **E**(xisting data)*	Indicate: **D**(igital) or **P**(hysical)	Indicate: **A**udiovisual **I**mages **S**ound **N**umerical **T**extual **M**odel **SO**ftware Other (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
ENWL Low Voltage Networks	(open-source) low voltage distribution network models from the UK (by Electricity North West Limited), widely used by the power systems research community	E	D	M	.dss, .txt,.csv files	<1GB	
Non-synthetic European Low Voltage test system	(open-source) low voltage distribution network models from Spain, widely used by the power systems research community	E	D	M	.dss, .json, .csv	<1GB	
Residential electricity load profiles	(previously open-sourced) load profiles from households in Flanders as well as globally (primarily UK, Ireland, Australia, and US).	E	D	N	.csv	<100GB	
Weather and renewable generation profiles	Openly accessible data on weather profiles in given areas (openmeteo) and solar pv generation profiles from pvgis	E	D	N	.csv	<1TB	
FlexSurvey	Data on Household preferences regarding flexibility provision	N	D	N/T	.dta, .xlsx	<1GB	
Literature	Academic literature, grey literature and policy documents. This literature will be consulted physically or digitally, via open access or online access through the Limo platform of KU Leuven. The online literature will be consulted in pdf format and stored via Zotero.	E	D/P	T	.pdf	<1GB	
Legislation	European primary and secondary legislation will be consulted digitally, via EUR-Lex. It will be stored via Zotero.	E	D	T	.pdf	<1GB	
Publications and presentations	These include academic papers and presentations (for internal use in the research group or for conferences and seminars) that will be produced as project deliverables and outputs of the PhDs related to the project. Academic papers will be published in .pdf format and presentations will be made in .ppt format and stored on FlexIQ internal SharePoint.	N	D	T/I	.pdf .ppt	<1GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

ENWL low voltage networks:
https://www.enwl.co.uk/globalassets/innovation/lvns/lvns-academic/lv-network-models-2.zip
https://www.enwl.co.uk/future-energy/innovation/smaller-projects/low-carbon-networks-fund/low-voltage-network-solutions/
Non-synthetic European Low Voltage test system:
https://data.mendeley.com/datasets/685vgp64sm/1
Load profiles
Flemish households: https://opendata.fluvius.be/explore/dataset/1_50-verbruiksprofielen-dm-elek-kwartierwaarden-voor-een-volledig-jaar/information/
Global data: https://www.sciencedirect.com/science/article/abs/pii/S0306261924001247
Weather
https://open-meteo.com/
Solar generation
https://joint-research-centre.ec.europa.eu/photovoltaic-geographical-information-system-pvgis_en
Publications & legislation
Multiple literature and research articles on relevant topics
EU institutional websites and EUR-lex

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- No

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- Yes (Provide PRET G-number or EC S-number below)

PRET: G-2025-9010

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- Yes

There is potential to create a flexibility product for future exploitation stemming from the software developed by the Electa research group. However, we do not foresee the TRL level reached in this project to be critical/immediately sufficient for these purposes. We will re-evaluate as the project unfolds.

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

All data generated ad-hoc for this project (i.e., not taken from another public dataset) and made available for the community, will have a dedicated DOI and will be hosted on the KU Leuven Research Data Repository. At the time being, we are not planning to generate specific ad-hoc data outside those collected through the survey by the CEDON PhD candidate.
All software we develop will have in-file (docstrings) documentation, as well as README.txt files and manuals (and/or documented example scripts / Jupyter or Pluto notebooks).
All open-source software will be hosted as repositories in the Electa institutional github account: https://github.com/Electa-Git
Machine learning models trained during the project will be hosted at http://huggingface.co/spaces/EDS-lab/ for broader dissemination.

Will a metadata standard be used to make it easier to find and reuse the data?
If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- Yes

Data Storage & Back-up during the Research Project

Where will the data be stored?

- Personal network drive (I-drive)
- OneDrive (KU Leuven)
- Sharepoint online
- Other (specify below)

For data and software, we will use personal network drives or OneDrive as appropriate (as well as github for the open-source code). Other than the for the survey, we expect to mostly work with open datasets. Additional backup copies will be created on local network attached storage (NAS).
We will use Sharepoint online for project presentations
We will also use Zotero for literature.

How will the data be backed up?

- Personal back-ups I make (specify below)
- Standard back-up provided by KU Leuven ICTS for my storage solution

Personal back-ups for Zotero.
For other, a combination of standard KUL ICT and additional backups in a NAS system or equivalent (see previous question).

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

We will follow KUL standards, guidelines, and rules. Other than the survey, however, the data collected are not sensitive.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

Zotero storage space $20 per year + a one time cost to procure a NAS system or equivalent for local storage is foreseen during the project.

Data Preservation after the end of the Research Project

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- All data will be preserved for 10 years according to KU Leuven RDM policy

Where will these data be archived (stored and curated for the long-term)?

- KU Leuven RDR

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

We do not foresee extra costs

Data Sharing and Reuse

Will the data (or part of the data) be made available for reuse after/during the project?
Please explain per dataset or data type which data will be made available.

- Yes, as restricted data (upon approval, or institutional access only)

The above applies to the survey data. All other data is already open.

If access is restricted, please specify who will be able to access the data and under what conditions.

N/A

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party,

legal restrictions)?

Please explain per dataset or data type where appropriate.

- No

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- KU Leuven RDR (Research Data Repository)

When will the data be made available?

- Upon publication of research results

Which data usage licenses are you going to provide?

If none, please explain why.

- CC-BY 4.0 (data)
- MIT licence (code)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- Yes, a PID will be added upon deposit in a data repository

What are the expected costs for data sharing? How will these costs be covered?

NA

Responsibilities

Who will manage data documentation and metadata during the research project?

By research group:

- Dirk Van Hertem, Md Umar Hashmi
- Hussain Kazmi, Ada Canaydin, Talia Qaiser
- Guido Pepermans, Simon De Jaeger
- Sara Garsia

Who will manage data storage and backup during the research project?

As above

Who will manage data preservation and sharing?

As above

Who will update and implement this DMP?

As above + Marta Vanin until at least June 2025.