Plan Overview

A Data Management Plan created using DMPonline

Title: TPM – MSc Optimizing Hybrid Energy System Components at The Green Village

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Template: TU Delft Data Management Plan template (2021)

Project abstract:

This research investigates the influence of integrating wind and solar energy sources on the sizing and performance of hybrid energy systems, considering various self-sufficiency ratios. The study employs optimization techniques implemented with Python to determine the optimal sizing of system components. It explores the techno-economic implications of incorporating wind generation technologies into photovoltaic-based hydrogen energy systems and analyzes the impact of solar and wind energy availability variations on component sizing.

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TPM – MSc Optimizing Hybrid Energy System Components at The Green Village

0. Administrative questions

1. Name of data management support staff consulted during the preparation of this plan.

My faculty (TPM) data steward, Nicolas Dintzner, has reviewed this DMP on 24-4-2024.

2. Date of consultation with support staff.

2024-04-24

I. Data description and collection or re-use of existing data

3. Provide a general description of the type of data you will be working with, including any re-used data:

Type of data	File format(s)	How will data be collected (for re-used data: source and terms of use)?	Purpose of processing	Storage location	Who will have access to the data
Energy consumption (and generation if applicable) of eight buildings located at The Green Village. Unit: kWh. Frequency: 1 minute. Historical data: 2021 - present.	.csv files	Re-use of existing data gathered by The Green Village. Data available under a Data Exchange Agreement (DEA).	To be able to optimize the energy storage within a hybrid energy system for households with regards to their energy consumption.	OneDrive provided by TU Delft	Kenan Salkovic, as well as (external) supervisors Özge Okur, Na Li and Joep van der Weijden
Python script for analysing energy consumption	.py file	Python script will be developed as part of Thesis.	To be able to optimize the energy storage within a hybrid energy system for households with regards to their energy consumption.	OneDrive provided by TU Delft	Kenan Salkovic, as well as (external) supervisors Özge Okur, Na Li and Joep van der Weijden
Ouput of Python script, provided by different input scenarios (various self sufficiency ratios).	.csv files	Python script will be developed as part of Thesis.	To be able to optimize the energy storage within a hybrid energy system for households with regards to their energy consumption.	OneDrive provided by TU Delft	Kenan Salkovic, as well as (external) supervisors Özge Okur, Na Li and Joep van der Weijden

4. How much data storage will you require during the project lifetime?

- < 250 GB

II. Documentation and data quality

5. What documentation will accompany data?

- README file or other documentation explaining how data is organised

III. Storage and backup during research process

6. Where will the data (and code, if applicable) be stored and backed-up during the project lifetime?

- OneDrive

IV. Legal and ethical requirements, codes of conduct

7. Does your research involve human subjects or 3rd party datasets collected from human participants?

- Yes

8A. Will you work with personal data? (information about an identified or identifiable natural person)

If you are not sure which option to select, first ask your Faculty Data Steward for advice. You can also check with the privacy website . If you would like to contact the privacy team: privacy-tud@tudelft.nl, please bring your DMP.

- Yes

8B. Will you work with any other types of confidential or classified data or code as listed below? (tick all that apply)

If you are not sure which option to select, ask your Faculty Data Steward for advice.

- No, I will not work with any confidential or classified data/code

9. How will ownership of the data and intellectual property rights to the data be managed?

For projects involving commercially-sensitive research or research involving third parties, seek advice of your Faculty Contract Manager when answering this question. If this is not the case, you can use the example below.

Research is an internal MSc Thesis within the TU Delft. Datasets regarding energy consumption and generation will not be made publicly available.

10. Which personal data will you process? Tick all that apply

- Other types of personal data - please explain below

Personal data in the form of energy consumption and generation of the inhabitants of further specified locations at The Green Village.

11. Please list the categories of data subjects

The inhabitants of The Green Village.

12. Will you be sharing personal data with individuals/organisations outside of the EEA (European Economic Area)?

- No

15. What is the legal ground for personal data processing?

- Other - please explain and contact the privacy team (privacy-tud@tudelft.nl). If you have already contacted the privacy team and received their advice, please record their advice below

The Green Village collects information based on legitimate interest (as per TU Delft advice). The households are informed that the data will be shared for scientific work within TUD.

18. Does the processing of the personal data result in a high risk to the data subjects?

If the processing of the personal data results in a high risk to the data subjects, it is required to perform a Data Protection Impact Assessment (DPIA). In order to determine if there is a high risk for the data subjects, please check if any of the options below that are applicable to the processing of the personal data during your research (check all that apply).
If two or more of the options listed below apply, you will have to complete the DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to receive support with DPIA.
If only one of the options listed below applies, your project might need a DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to get advice as to whether DPIA is necessary.
If you have any additional comments, please add them in the box below.

- Systematic monitoring

19. Did the privacy team advise you to perform a DPIA?

- No

22. What will happen with personal research data after the end of the research project?

- Anonymised or aggregated data will be shared with others
- Personal research data will be destroyed after the end of the research project

Python script for analysis will be shared in 4TU.ResearchData. No personal data will be made publicly available. Toy input will be shared in order to make the Python script reproducable.

V. Data sharing and long-term preservation

27. Apart from personal data mentioned in question 22, will any other data be publicly shared?

- All other non-personal data (and code) underlying published articles / reports / theses

29. How will you share research data (and code), including the one mentioned in question 22?

- All anonymised or aggregated data, and/or all other non-personal data will be uploaded to 4TU.ResearchData with public access

License used will be MIT.

30. How much of your data will be shared in a research data repository?

- < 100 GB

31. When will the data (or code) be shared?

- As soon as corresponding results (papers, theses, reports) are published

32. Under what licence will be the data/code released?

- MIT License

VI. Data management responsibilities and resources

33. Is TU Delft the lead institution for this project?

- Yes, leading the collaboration - please provide details of the type of collaboration and the involved parties below

Other involved party is The Green Village. TU Delft and The Green Village share an overarching Data Exchange Agreement.

34. If you leave TU Delft (or are unavailable), who is going to be responsible for the data resulting from this project?

Thesis supervisors Özge Okur (O.Okur-1@tudelft.nl) and Na Li (N.Li-2@tudelft.nl).

35. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

NA