

# Transparency for Energy Transition: Unlocking the Value of Open Energy Data

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August 22, 2024

## 1 Introduction

The National Research Data Infrastructure for Energy (NFDI4Energy) project aims to revolutionize energy research through enhanced data sharing, co-simulation and collaboration. Sharing energy data is crucial for enhancing the quality of scientific research and fostering interdisciplinary collaboration, which are essential for effectively managing the complexities of energy systems and supporting the energy transition. Additionally, opening up energy models and data to non-experts is vital for informed public engagement, policy-making, and increasing the adoption of renewable energy solutions. The challenge within this ambition is to cultivate meaningful participation and interaction among users on the developed research platform by implementing effective incentive mechanisms, as scientists often face a lack of such incentives for data sharing and access [1]. These incentives can vary widely, ranging from passive incentives like formal citations or co-authorship to active incentives reducing the workload within research data management, like data retrieval and access.

This thesis should lay a meaningful foundation by a structured investigation into the incentivization employed by successful open data platforms, such as evaluated in [2], guided by the seven-step method for reviewing software artifacts from practice as proposed by Gnewuch et al [3]. This methodology will enable a comprehensive evaluation of user engagement strategies and their applicability to the energy research domain.

### 1.1 Objectives

- Conduct a systematic review of existing research collaboration platforms, focusing on the methods they use to incentivize user participation and feedback, utilizing the seven-step method developed by Gnewuch et al.
- Analyze the strengths and weaknesses of these platforms' engagement strategies, identifying best practices that could be adopted or adapted by NFDI4Energy.
- Document, classify (e.g. active/passive) and rate identified incentive and feedback mechanisms, providing a detailed assessment of their effectiveness and potential for implementation within energy research platforms.

### 1.2 Requirements

Candidates should possess:

- Strong analytical and research skills.
- An interest for user engagement strategies.
- Proficiency in qualitative and quantitative analysis.
- A proactive and innovative mindset.

### 1.3 Formalities

- The thesis can be undertaken in German or English.
- Interested candidates should submit a brief letter of motivation, a CV, and a current grade transcript.
- The project is ready to commence immediately.

### References

- [1] Carol Tenopir et al. “Data Sharing by Scientists: Practices and Perceptions”. In: *PLOS ONE* 6.6 (June 2011), pp. 1–21. DOI: [10.1371/journal.pone.0021101](https://doi.org/10.1371/journal.pone.0021101). URL: <https://doi.org/10.1371/journal.pone.0021101>.
- [2] Annika Schneider and Christoph Goebel. *Designing a Digital Platform for Energy Systems Research – Insights from User Interviews*. Feb. 2024. DOI: [10.5281/zenodo.10623237](https://doi.org/10.5281/zenodo.10623237). URL: <https://doi.org/10.5281/zenodo.10623237>.
- [3] Ulrich Gnewuch and Alexander Maedche. “Toward a Method for Reviewing Software Artifacts from Practice”. In: *The Transdisciplinary Reach of Design Science Research*. Ed. by Andreas Drechsler, Aurna Gerber, and Alan Hevner. Cham: Springer International Publishing, 2022, pp. 337–350. ISBN: 978-3-031-06516-3.