Chair of Renewable and Sustainable Energy Systems
School of Engineering and Design
Technical University of Munich

Topic Description
Research Internship / IDP

# Improving Performance of Python Package for Energy System Data

## Background

The energy system in Germany consists of a large number of distributed facilities, including millions of PV plants, wind turbines, and biomass plants. To understand and manage this system efficiently, accurate and reliable information about all facilities is essential. In Germany, the Marktstammdatenregister (MaStR) serves as a central registry for units of the energy system. To simplify the access to this dataset, we have created the python package 'open-mastr'. With more than 1k downloads per month, this software is now frequently used within the german energy research and industry sector.

## What are the goals of the work?

The goal of this work is to investigate changes to the software that enhance the performance of the data reading and writing operations. Therefore, a small subset of the MaStR registry should be used as a performance benchmark. This benchmark is then used to test your own implementations and different frameworks (polars, duckdb, …) for the parsing of the raw data and the data export. In a final step, the methods that perform best should be integrated into the existing python package.

## What should you bring with you?

– Profound knowledge of python
– Prior works with data packages in python (pandas, polars, etc.) are a benefit
– Please attach your CV and grade report to your application

## Contact

Prof. Dr. Thomas Hamacher, Florian Kotthoff M.Sc.
Beginn: June 2024 or later
Lichtenbergstr. 4a, 85748 Garching b. München

E-Mail florian.kotthoff@offis.de