Master’s Thesis

Expansion of *pyGreta* to Biomass energy

Background
As a part of the research project ETSAP-Deutschland, the further development and use of pyGRETA\(^a\) is planned. *pyGRETA* is a tool written completely in python to generate renewable time-series and maps for potential for user-defined regions within the globe.

pyGRETA is currently developed for the technologies PV, CSP, Wind Onshore and Wind Offshore, all of which take input from historical weather datasets. To expand the tool to calculate potential of biomass at high resolution, new data sources have to be explored and a new infrastructure has to be developed.

Goals
Within this Master’s thesis:
- Literature review will be done to get the process of evaluation for the Potential of Biomass.
- A search for high resolution of data sources that serve as input to the tool will be conducted.
- A first approach towards integrating the biomass energy into the pyGRETA will be suggested.

Learning outcomes
By completing this thesis, you will
- obtain knowledge regarding the global biomass energy potential
- get an exposure on modelling and geo-referencing in the field of energy systems
- get familiar with the workflow of the research project ETSAP-Deutschland

Requirements
- Basic understanding of the renewable energies
- Knowledge of Python and pandas
- Knowledge of GIS/geo-referencing tools is preferred (not mandatory)
- Please attach your CV and grade report to your application

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\(^a\) [https://github.com/tum-ens/pyGRETA](https://github.com/tum-ens/pyGRETA)