Chair of Renewable and Sustainable Energy Systems
Department of Electrical and Computer Engineering
Technical University of Munich

TUM

Topic Description
Master's Thesis / IDP / Research Internship (Forschungspraxis)

Global Potential of Renewable Energies

Background

In order to make Germany climate-neutral by 2050, the power, transport and heating sectors require low emissions solutions. Renewable energies such as solar, wind, biomass and hydropower will make a big contribution. For this reason, we are developing an opensource tool, called pyGRETA[1], which estimates the global potentials and generates time series of renewable energies worldwide. The knowledge about the estimated global potentials help to understand and support the transformation to become climate-neutral by 2050.

Source: www.wartsila.com

What are the goals of the work?

One goal is to extend our existing tool pyGRETA to further renewable energies such as hydro or biomass. For instance, hydro energy has huge potentials on a global scale and helps to balance the power system. These outputs can be used as inputs to our optimization model urbs to optimize energy systems worldwide. Another goal is to introduce a database which manages all input and output data efficiently.

What should you bring with you?

- Interest in renewable energy technologies
- Knowledge of Python; GIS/geo-referencing tools is preferred (not mandatory)
- Please attach your CV and grade report to your application

Contact

Patrick Buchenberg M.Sc.
Start: as soon as possible
Lichtenbergstr. 4a, 85748 Garching b. München, Raum 2018
Telefon +49 (0) 89 289-52748, E-Mail patrick.buchenberg@tum.de

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[1] www.github.com/tum-ens/pyGRETA