Dokumentation for Copernicus hackathon mockup

# Electricity price forecasting

The electricity price forecasting constitutes one of our main products we want to deliver to the user. The prices are forecasted using wind data and solar data from the ERA5 data set on an hourly level, see <https://cds.climate.copernicus.eu/cdsapp#!/dataset/reanalysis-era5-single-levels?tab=overview>. We have used the data to calculate electricity prices for the Europe, and made them available for some countries, using the model BALMOREL, see <http://www.balmorel.com/index.php/the-balmorel-concept>. The model is regularly used to forecast prices by companies such as HOFOR, Dansk Energi, EA energianalyse and more.

# Wind data

The mockup demonstration of wind data utilizes the UERRA, which contains surface and near surface data, more data available at <https://cds.climate.copernicus.eu/cdsapp#!/dataset/reanalysis-uerra-europe-single-levels?tab=overview>. Our intention is to make the user able to use the wind speeds maps to screen for areas with good wind speed condition. We further intend to enable the user to download hourly data using the ERA5 reanlysis data for at multitude of years.

# Wind power production

We have several demonstration of calculated power productions from wind turbines. The calculation is performed using the wind speed data retrieved from Copernicus combined with the technical data for the specific wind turbine model. The data for the wind turbines have been obtained from the open energy platform <https://openenergy-platform.org>.