# Solar Energy Production Correlated to Meteorological Data

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**Introduction and background:**

Photovoltaic (PV) power production predictions have gained immense popularity in recent years. Considering PV power dependency on various weather parameters, improvements in power prediction possess a massive potential for optimisation and accurate forecasting. PV plant historical data was kindly shared by Lede Energi for Skagerak Arena in Skien. Meteorological data was gathered through meteorological institute frost application programming interface (API) for Gjerpen station which is operated by NIBIO. Air temperature, global horizontal irradiance, wind speed, wind category, relative humidity, and dew point temperature variable in addition to module temperature, and clear sky parameters from pvlib package in python were subject to examination. These variables' impact was investigated on PV power output for a period from 2020 to 2021 on an hourly basis.

**Problem description and objective:**

The main objective of this study is to understand weather parameters that affect PV power production. Furthermore, proposing a model to predict power output from historical data is one of the goals. It is expected to the developed PV power prediction model will give insights into forecasting.

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