OpenSTEF
Open Short Term Energy Forecasting
Outline

- Challenges of the grid in 2024
- OpenSTEF
- Recent developments and collaboration
Challenges on the grid
Capacity issues

Energy consumption

Energy generation

Transmission capacity
- Limited
- Congestion management
- Unavailable
How can we solve these problems?

Shave the peak if grid limitations are surpassed

Forecast of load surpassed grid limitation

Use curtailment to ‘shave the peak’

Realized load has no peak.

Thus, we need accurate forecasts
OpenSTEF

Open Short Term Energy Forecasting
What is OpenSTEF?

- Complete software stack to forecast the load on the electricity grid
- Automated machine learning pipelines:
  - Automated step-by-step process (from collecting data, to training, to forecasting) ensuring a systematic approach to making forecasts.
Methodology

Target: Load

External Predictors:
- Weather Forecasts
- Market Prices
- Typical Profiles

Derived Features:
- Lagged Load
- Lagged Load
- Derived Weather
- Calendar info

calculate
A single model is trained for all lead times

<table>
<thead>
<tr>
<th>Datetime</th>
<th>Load</th>
<th>Windspeed</th>
<th>APX</th>
<th>E1C_AMI_A</th>
<th>Load yesterday</th>
<th>Wind energy</th>
<th>Dew point</th>
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A single model is trained for all lead times
Duplicate data for every training horizon.

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Now, a forecast can be made using the trained model

```
model.predict
```

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Forecast
Feature importance plot
Community & upcoming events
Want to try OpenSTEF?

Join our workshop!

📅 **Date:** March 1, 2024
🕒 **Time:** 2:00 PM - 4:00 PM GMT+1
📍 **Location:** Virtual

What to expect:
• Introduction to OpenSTEF
• Hands-on Experience

Sign up here!
Want to know more about OpenSTEF?

- Github: https://github.com/OpenSTEF/openstef
- Website: https://openstef.energy/
- Docs: https://openstef.github.io/openstef/
- Wiki: https://wiki.lfenergy.org/display/OS/OpenSTEF
- Installation: $ pip install openstef

Do you have more questions, remarks or want to see if we can collaborate?

Jonita.ruiter@alliander.com