

Wenn Biogasanlagen mitdenken ...

Dr. Marco Selig, Annemarie Kronhardt, et al.



DataLab

since 2021



Leiter des Datenlabors am DBFZ

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DataLab

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Leiter des Datenlabors am DBFZ
und u.a.

Mitglied des BMEL ThinkTanks Digitalisierung
sowie dessen KI- & Daten-Akzelerator

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KIDA
AI for Food and Agriculture



save the date **KIDA-KON** 2024-12-02..3 at DBFZ in Leipzig

DataLabTeam



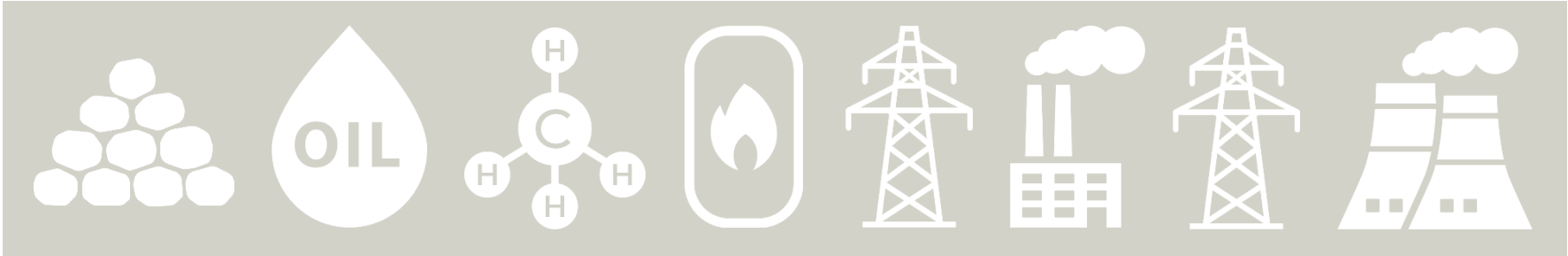
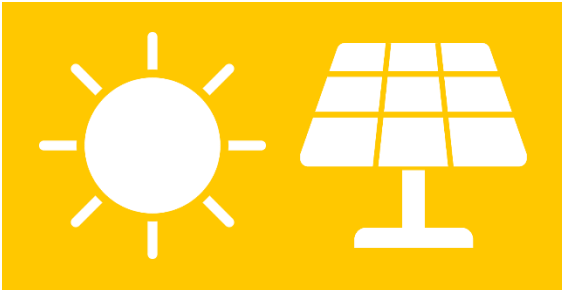
Where does my power come from?



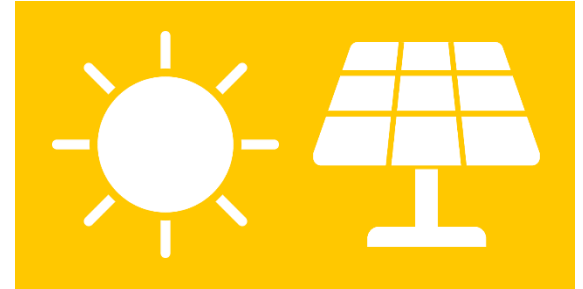
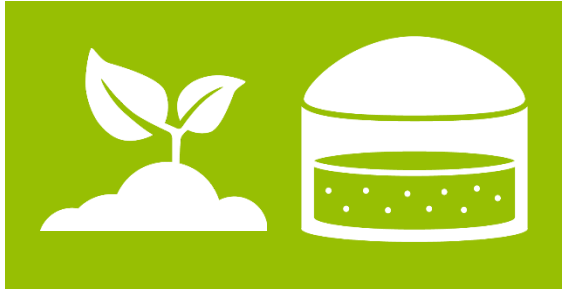
Where does my power come from?



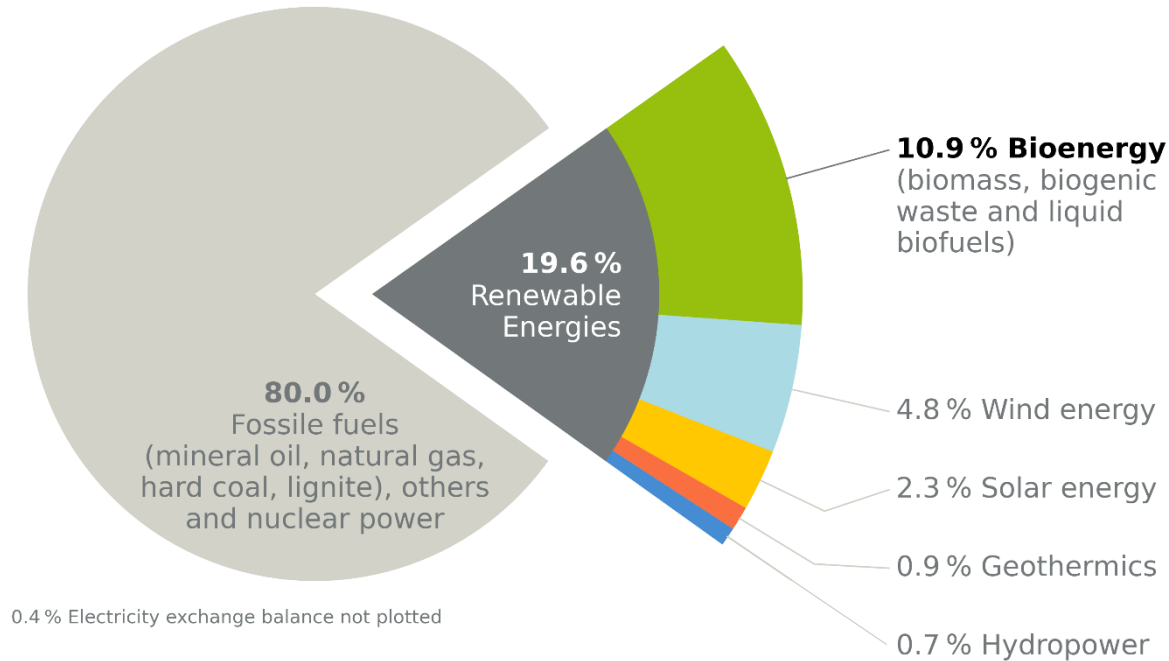
wind? solar?



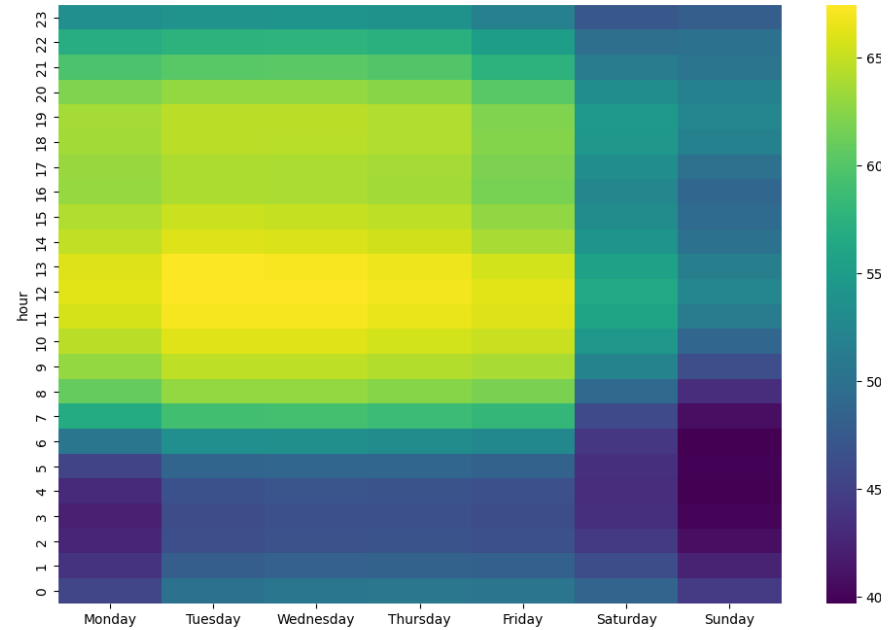
bioenergy?



primary energy consumption 2023

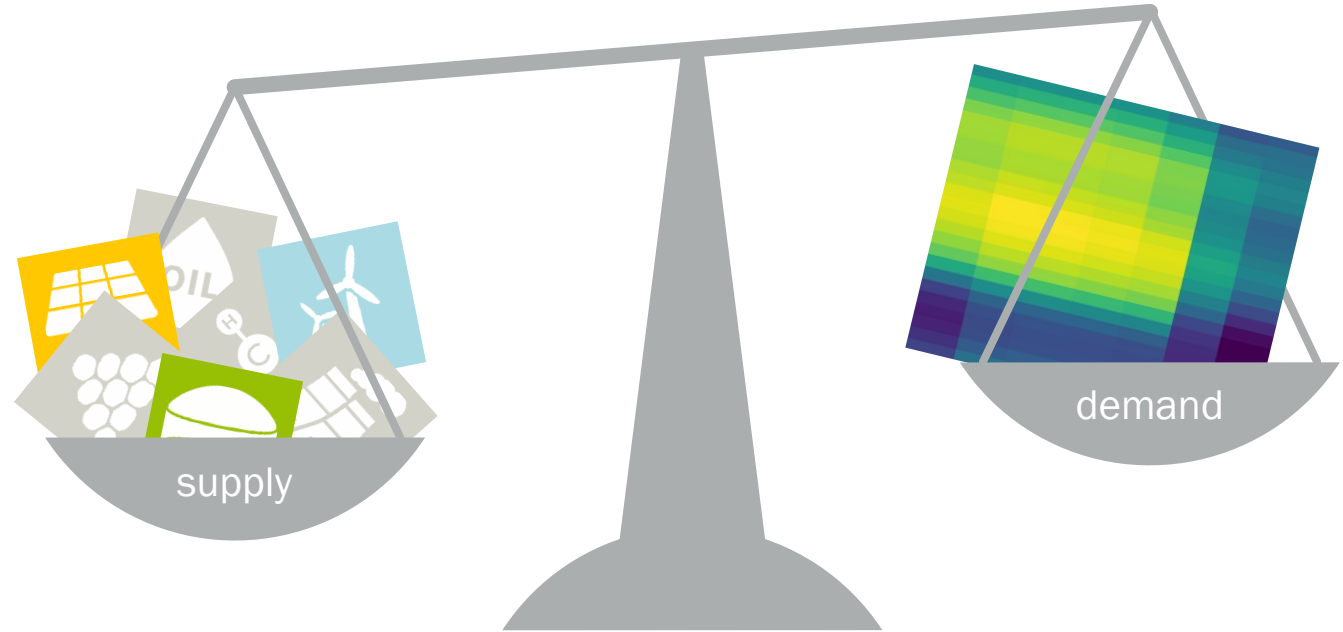


primary energy consumption



5-year-averaged energy consumption in GWh for each weekday

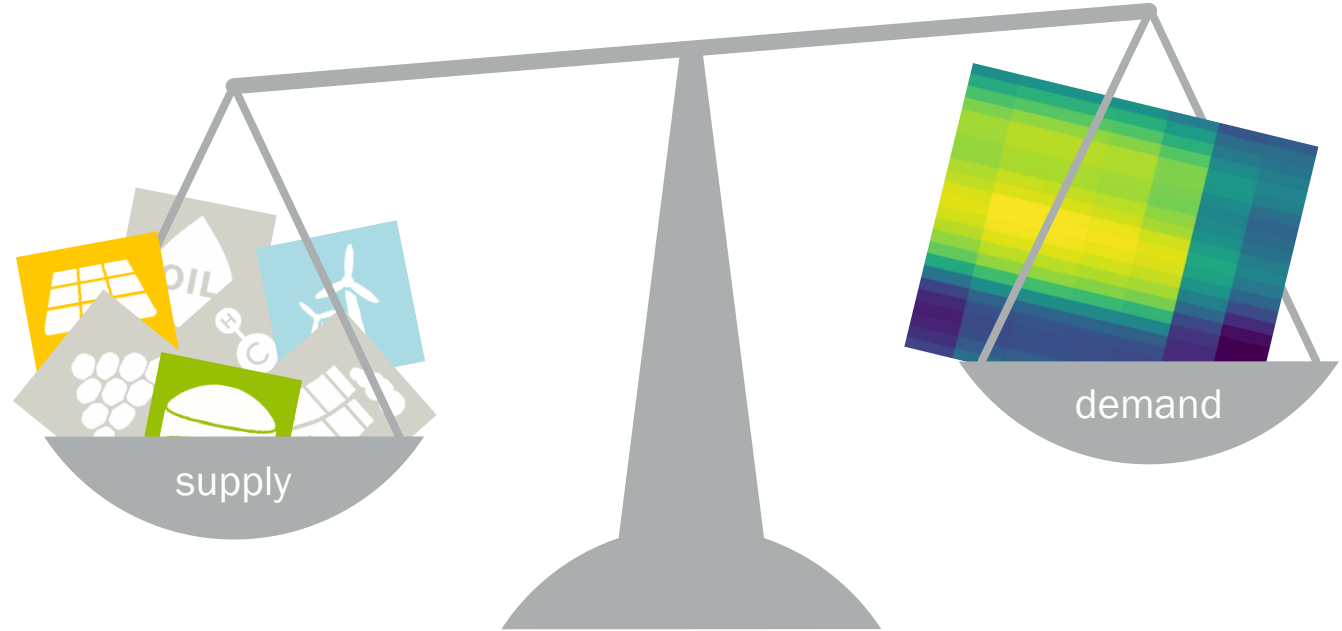
Where does my power come from?



Where does my power come from?



**flexible production of
biogas and bioenergy**



AI for sustainability



**flexible production of
biogas and bioenergy**



**model to forecast the production of
biogas with flexible feeding of a
biogas plant**

Meola et al. (2023) <https://doi.org/10.1016/j.biortech.2023.128604>

AI for sustainability



flexible production of biogas and bioenergy



model to forecast the hourly German power market price for several days

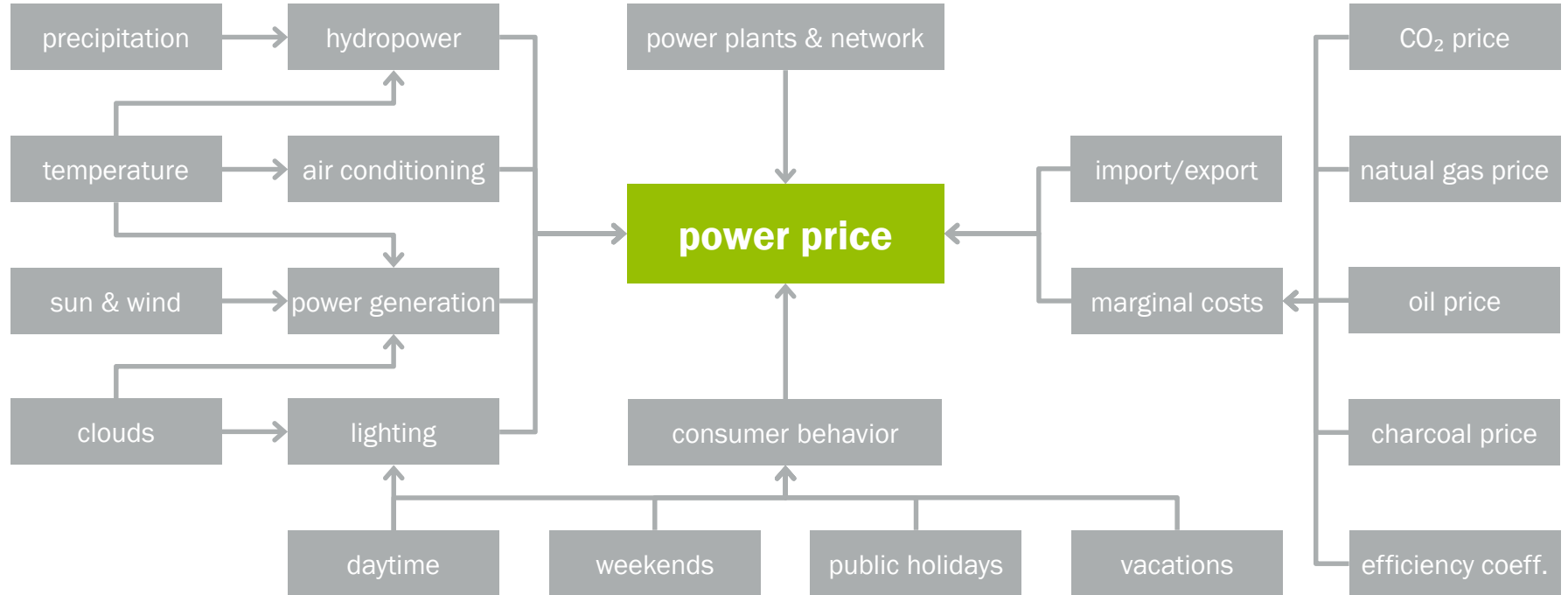
Kronhardt et. al (in prep.)



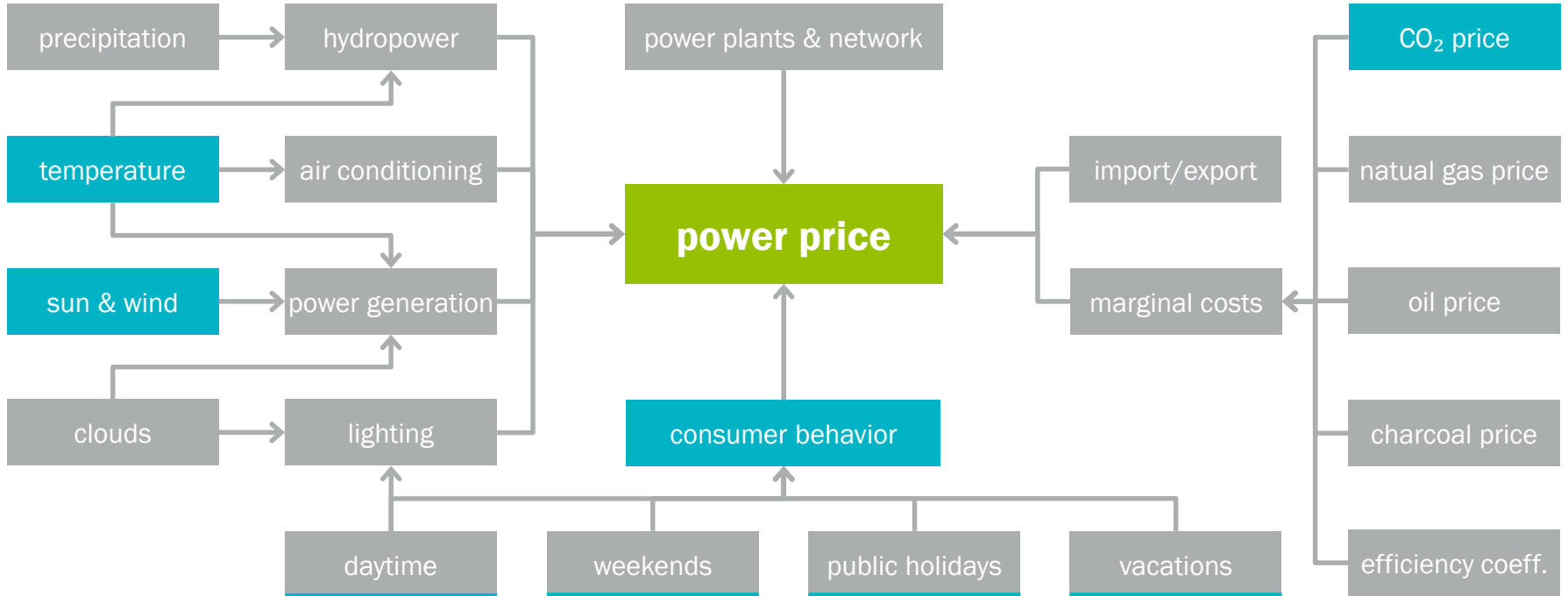
model to forecast the production of biogas with flexible feeding of a biogas plant

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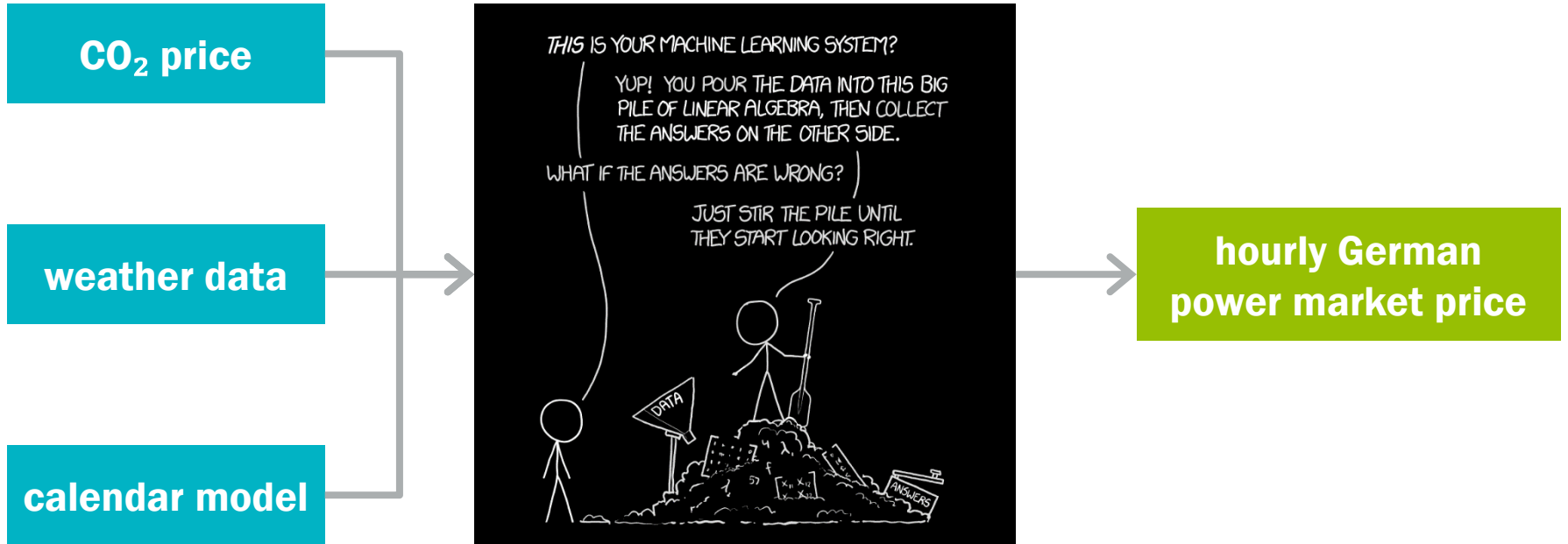
influencing factors



influencing factors



5 years of historic data

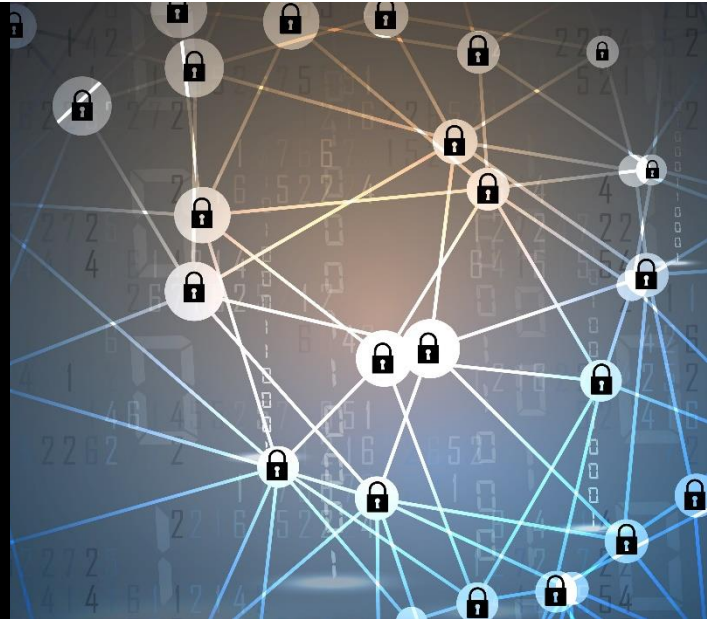


AI magic(ian)



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sustainable AI



sustainable AI



FAIR Scientific Knowledge eXchange



- FAIR principles
- BSI-konform

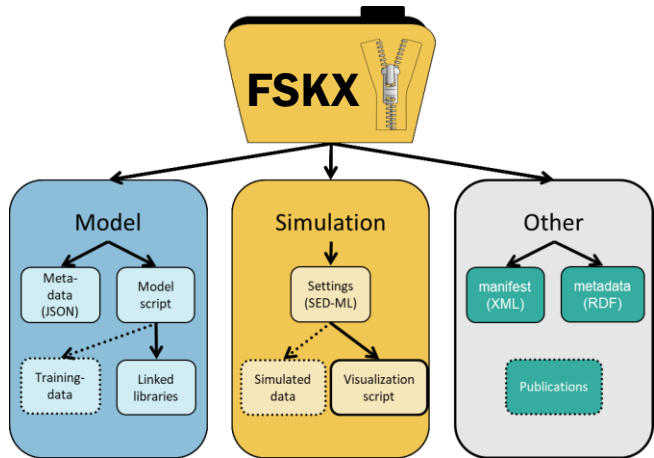


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RAKIP Initiative
risk assessment knowledge integration platform

FAIR Scientific Knowledge eXchange



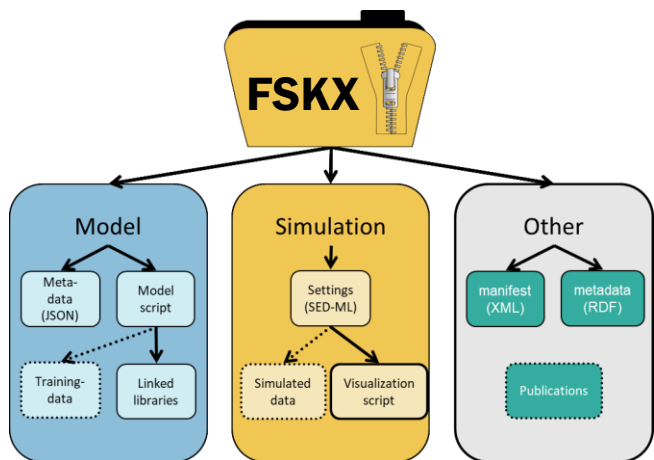
- FAIR principles
- BSI-konform
- format standard for AI models or simulations, metadata, training data, publications, ...
- KNIME (Kontanz Information Miner) extension to read, analyse, edit and run models in FSKX format

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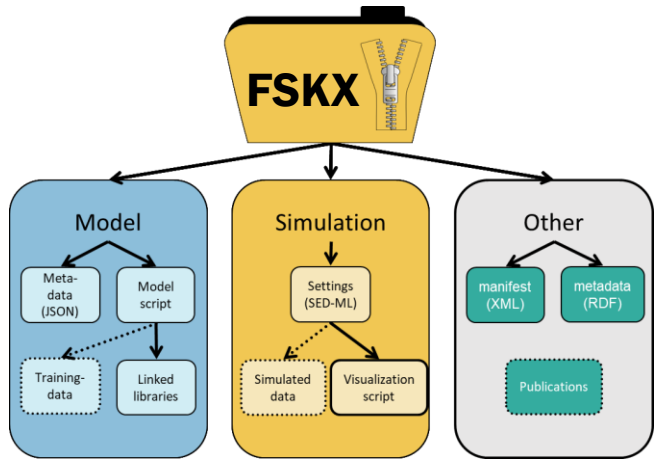
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RAKIP Initiative
risk assessment knowledge integration platform

sustainable AI for sustainability



sustainable AI for sustainability



- **forecast model for the production of biogas with flexible feeding**
- **forecast model(s) of the hourly German power market price**
- **FAIR Scientific Knowledge eXchange format for models and more**



Smart Bioenergy – Innovationen für eine nachhaltige Zukunft

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