eGo^n - Open and cross-sectoral planning of transmission and distribution grids

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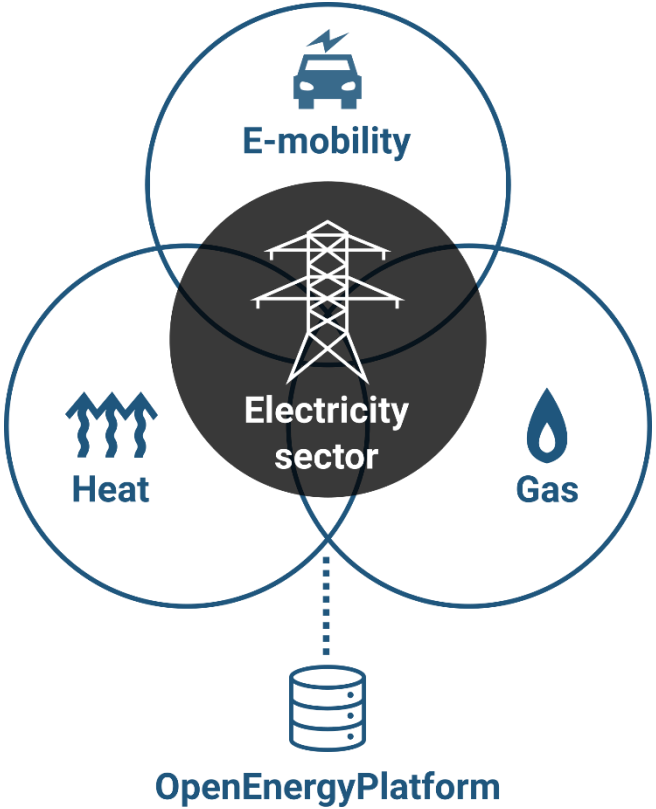
eGo^n

Open planning tool across grid levels and sectors to determine the optimal deployment and expansion of flexibility options in Germany

- Consideration of **all voltage levels** of the German **electricity grid**
- Consideration of the energy sectors **heat**, **gas** and **mobility**
- Full **open source** and **open data** approach



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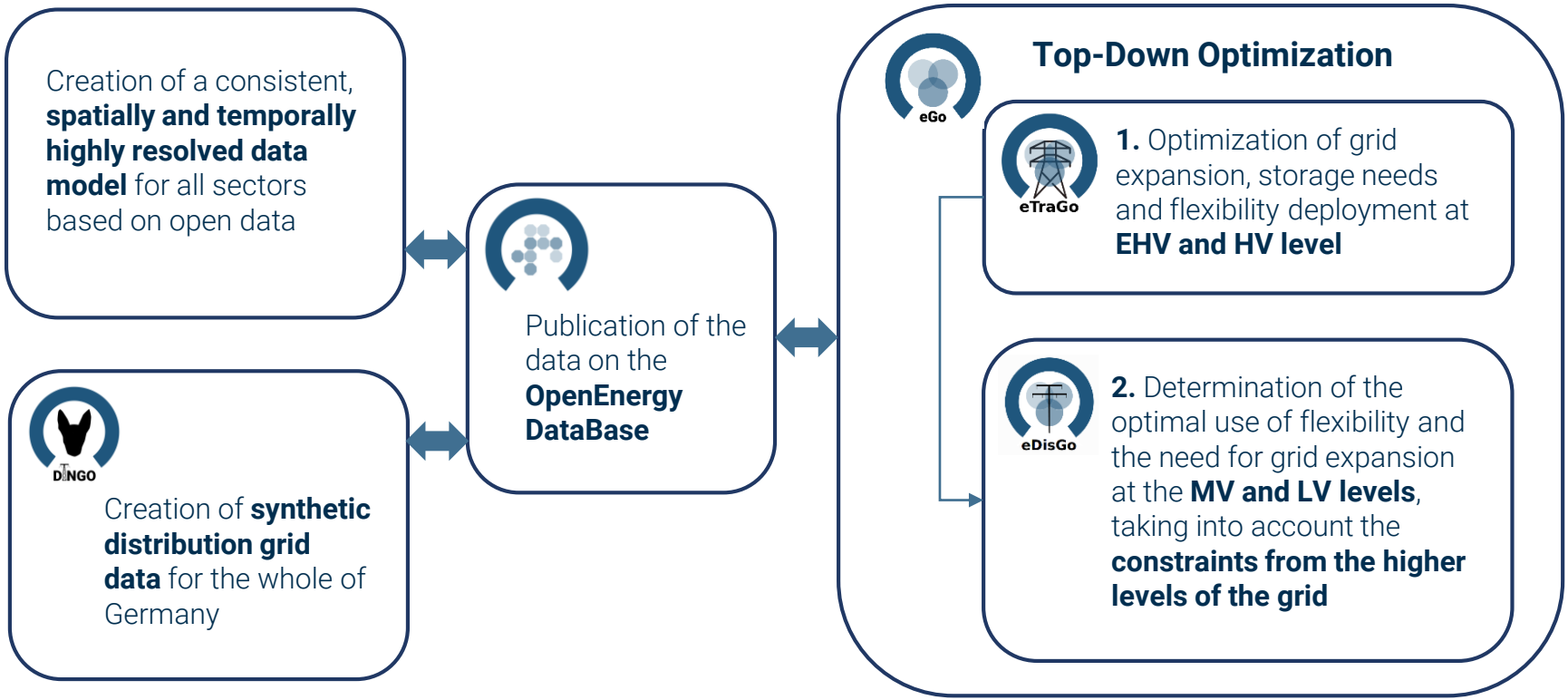
Open source and open data approach

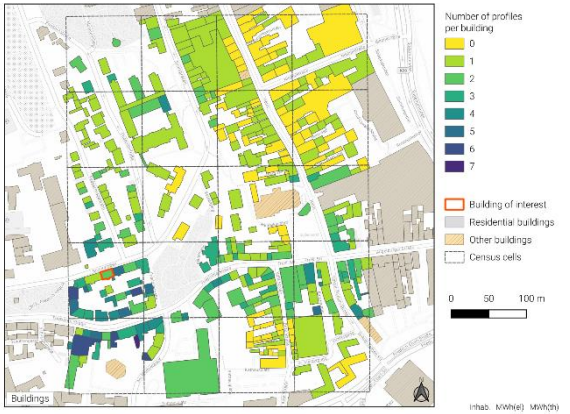


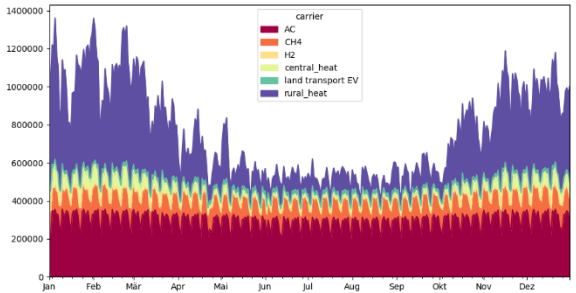
Scenarios

	eGon2035	eGon100RE
General	• Based on the **NEP (v2021) Szenario C**	• Generation of the scenario with **PyPSA-Eur-Sec**
Electricity	• **120 GW PV** and **125 GW Wind** • Representation of all voltage levels (**LV to EHV**)	• **100% RE** • Representation of all voltage levels (**LV to EHV**)
Heat	• Heat supply via **heating networks or decentralized** • Decentralized: gas heating or heat pumps	• Heat supply via **heating networks or decentralized** • Decentralized: only heat pumps
Mobility	• **15.1 Million** EVs • Heavy goods traffic with H_2	• **25.0 Million** EVs • Heavy goods traffic with H_2
Gas	• Representation of the **gas transmission system** • H_2 injection into the gas grid	• Synthetic CH_4 or biogas • **H_2 and CH_4 system** with the same topology
Flexibility	• **Storage** (battery storage, heat storage, H2 storage, gas storage) • **Charging processes** in the private sector and at the workplace • **DSM** in commerce and industry • **Curtailment** • **Power grid expansion** • **Overhead line monitoring**	

Generated data

- **Generation capacities** for heat and electricity
- **Hourly time series** per plant respectively consumer for electricity, heat, transport, gas, H_2 **consumption** as well as **flexibilities**
- **Electricity grid topologies**
  - **EHV and HV**: based on OSM data with **osmTGmod**
  - **MV and LV**: synthetic grid topologies generated with **ding0**
- Gas transmission system based on **SciGRID_gas**
- **No modeling of the heat grids**, but of the feed-in and feed-out





„Open should be the default, not the exception.“

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