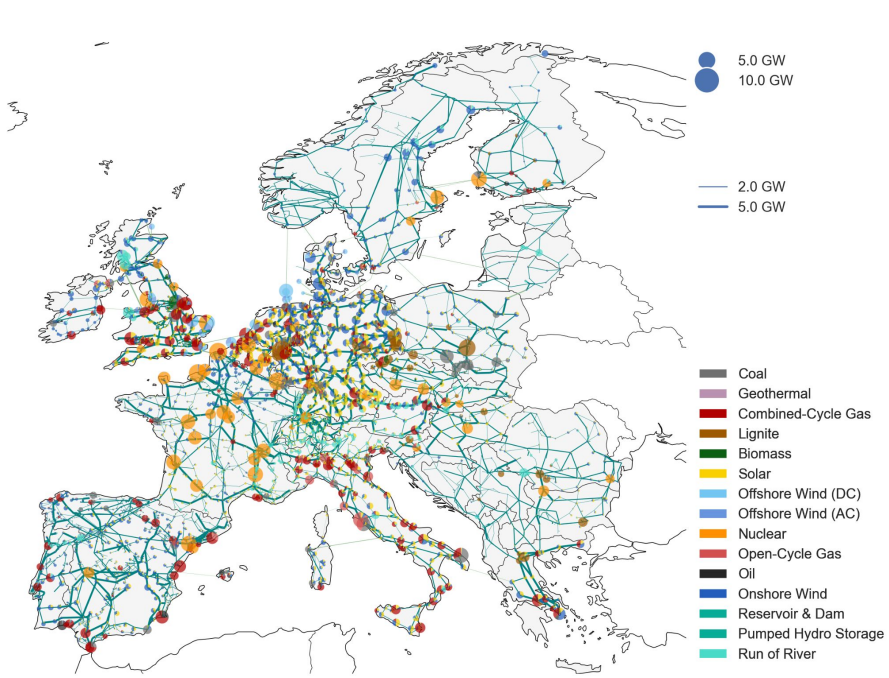
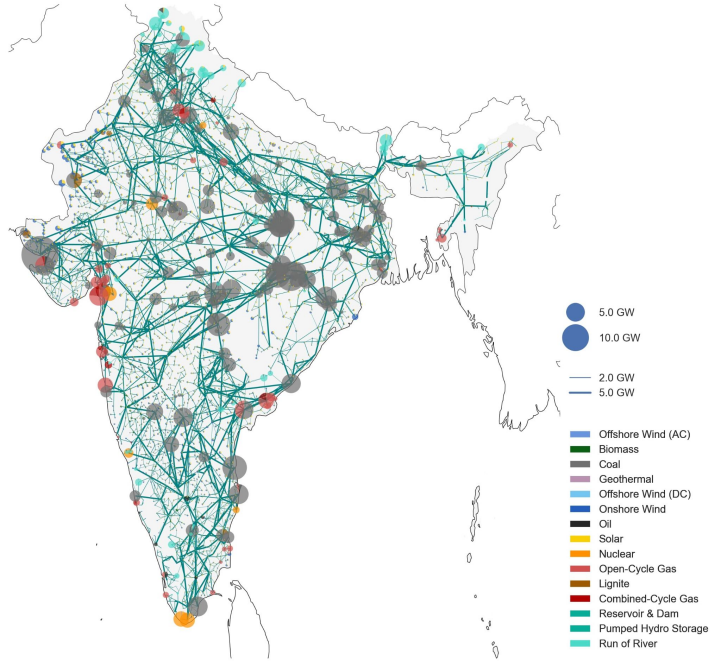
Open Energy Transition

from the creators of PyPSA meets Earth

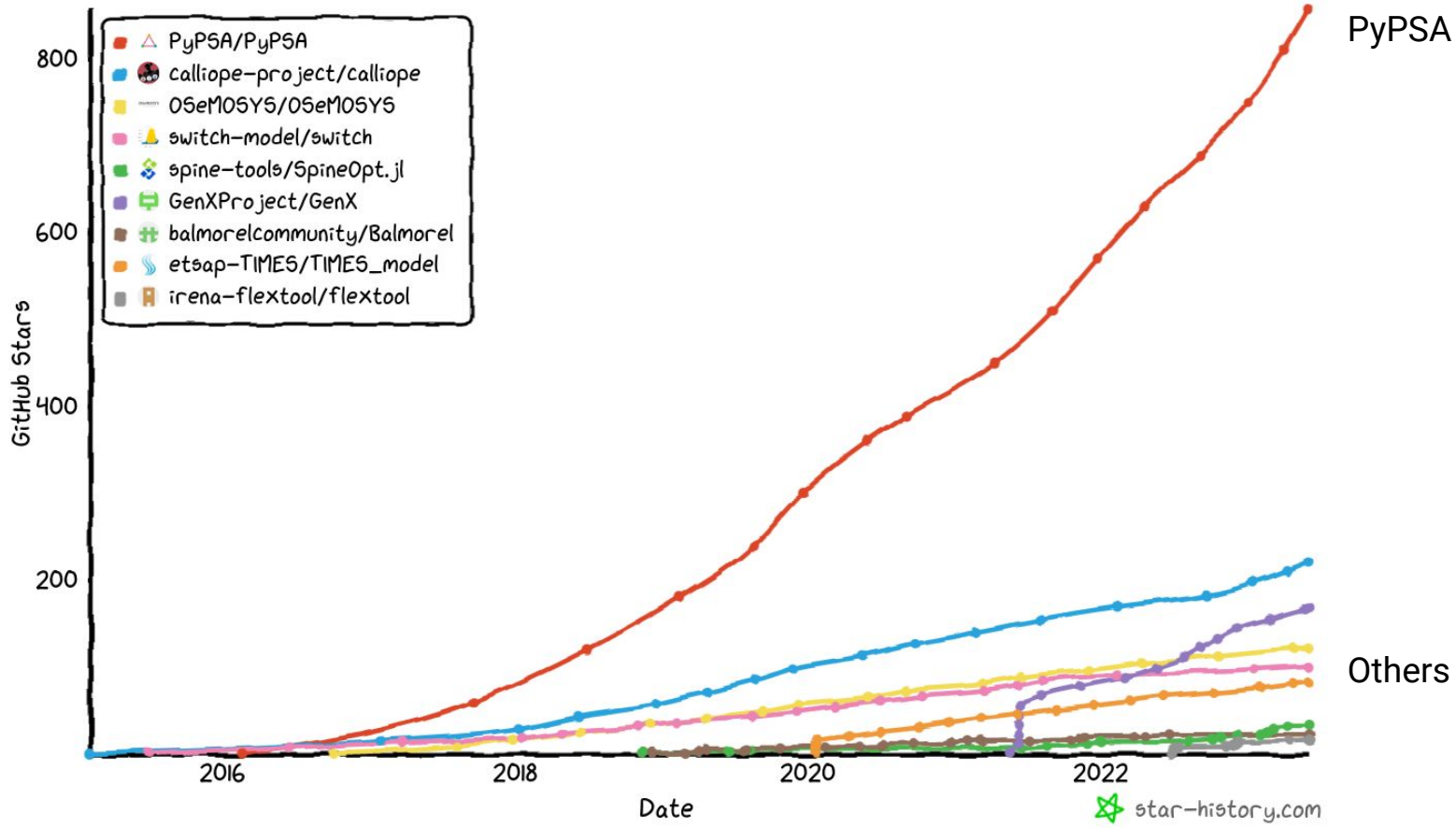




ENTSO-E exchange

Discussion Document, September 2023

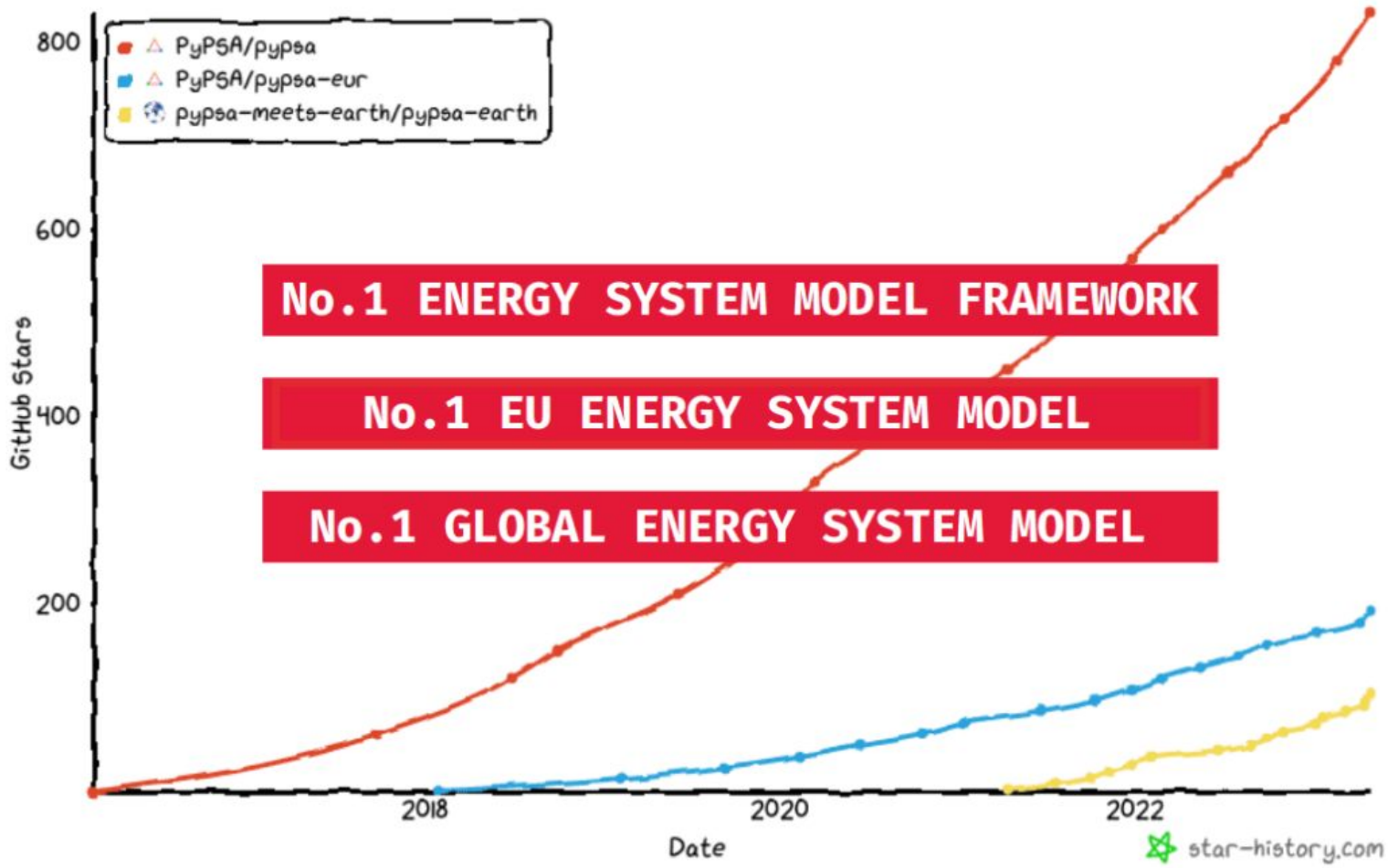
The popularity of open-source tools is exploding!



PyPSA

Others

Models build on PyPSA take a special role



Maybe you know these institutions? They (& others) use PyPSA

Problem statement: TSO's made bad experiences with open-source!

Because OS software is sometimes:

- **Less user-friendly**
- **Lacks in support**
- **Missing features**

Market opportunity: OET aims to solve existing challenges with OS software. USP: Trusted and capable of closing the gap with a global community!

PyPSA.org

Tom Brown & Co. Research Group

EU-focus

2016 - present

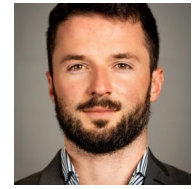
NEW

Open Energy Transition

Non-profit software company

Global-focus

2023 - present



PyPSA meets Earth

Grassroots Research Initiative

Global-focus

2021 - present

The Time is Right

Recommended by the EU

"While ENTSOG is free to select any modelling tool for the assessment of the benefits of candidate hydrogen projects, it is recommended, when possible and relevant, the use of an open source tool (for instance, PyPSA [5]) to foster transparency."

– JRC EU Commission, Harmonised system-wide cost-benefit analysis for candidate hydrogen projects, May 2023

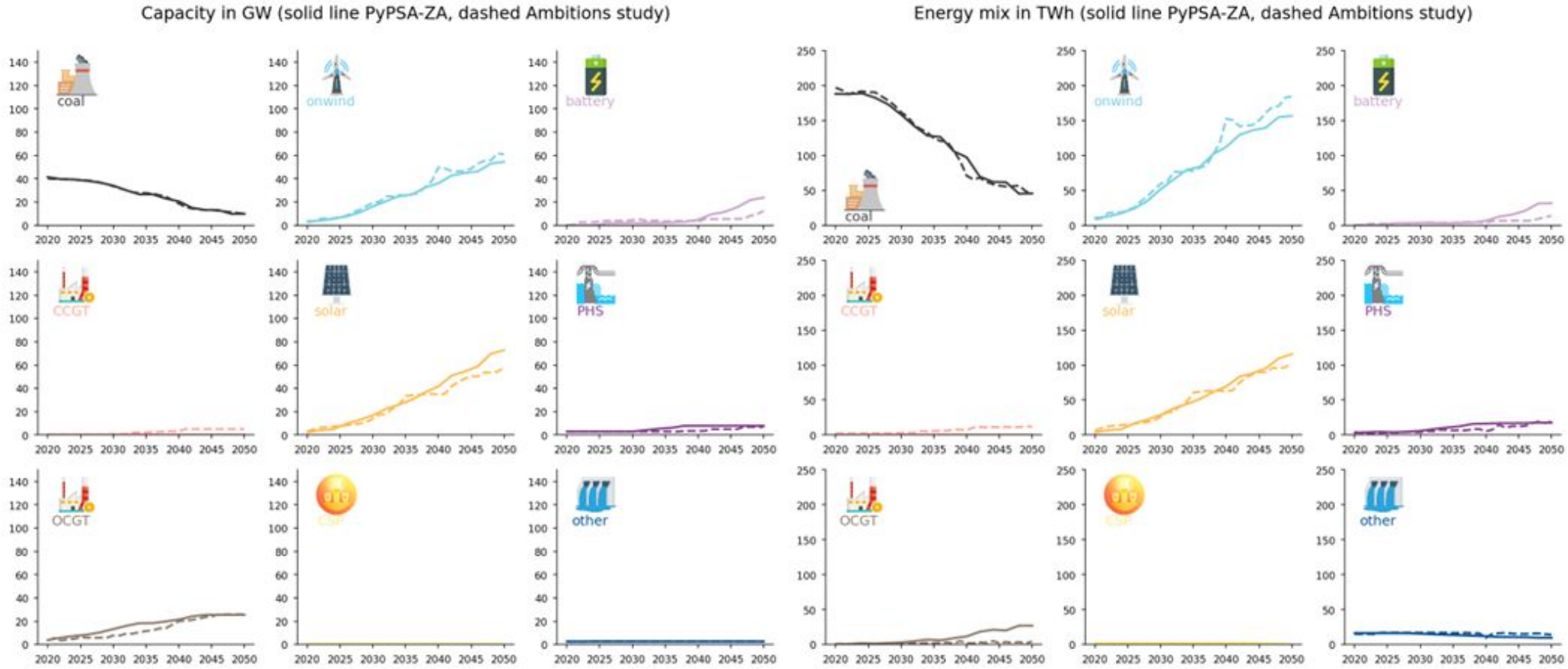
Example - Applied by the Canada's Energy Regulator

"Canada's Energy Regulator uses open-source tool PyPSA for their first long-term outlook modelling for net-zero by 2050"

– Maximilian Parzen, LinkedIn post on Canada's Energy Future 2023 which was published on June 2023

Example - Reproducing PLEXOS results

South-African consultancy used a tailored PyPSA-ZA model to demonstrate that PyPSA can replicate commercial state-of-the-art PLEXOS scenarios. Why? They believe in open-source benefits like **customization/ vendor independency** and wanted to **build trust** in open-source with this activity. **OET** can deliver that for any regions.



GUI's are in BETA/DEV - close to production

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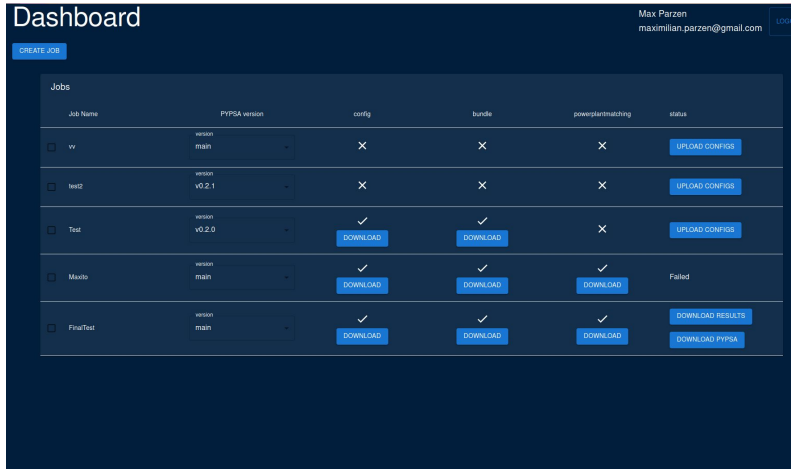
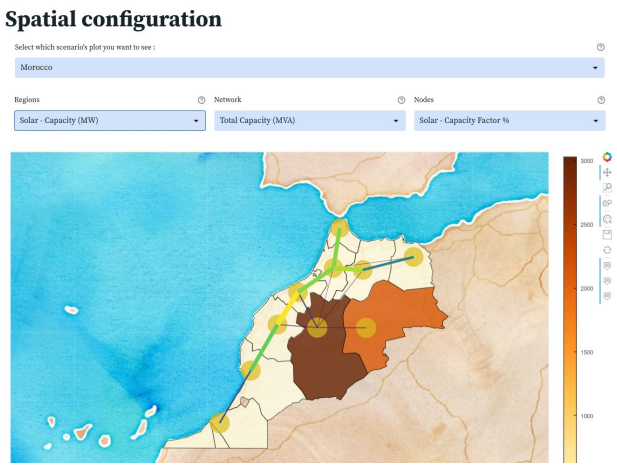
COMPUTE ENGINE

Compute any network on the Cloud or on local HPC



MAP ENGINE

Modify your energy system on a map



INSIGHTS ENGINE

Analyse fast results and make decisions

Summary

- Open solutions are already trusted by industry & research
- PyPSA is flexible+ and offers novel insights for decision-makers
- OET can help to:
  - Improving energy planning tools to close-gaps/ push innovation
  - Enabling novel energy transition insights worldwide
  - Accessing reliable support to maximise impact with software

Our Theory of Change is guiding all our activities. Visit our website for more: https://openenergytransition.org/about-us.html#theory-of-change

OUR THEORY OF CHANGE: DRIVING GLOBAL IMPACT

Open Energy Transition

from the creators of PyPSA meets Earth

At Open Energy Transition (OET), we're dedicated to accelerating the global energy transition towards 100% renewable energy. Our focus is on creating a global impact through promoting transparency, accessibility, and collaboration in energy planning. Here's our theory of change:

The Challenge

The traditional 'black-box' modelling approach in energy planning lacks transparency and slows down the global energy transition towards 100% renewable energy. Furthermore, there are challenges in getting open-source tools adopted in companies due to the lack of support and software requirement gaps.

Goal

Our goal is to address these challenges and accelerate the global energy transition towards 100% renewable energy. We aim to make energy planning more transparent, accessible, and collaborative, and to make open-source tools more adoptable for companies, thus driving a global impact.

Our Approach

- Develop, provide, and support open-source energy planning tools that are transparent, accessible, and can be improved by a broader community.
- Identify and address the software requirement gaps that hinder the adoption of open-source tools in companies.
- Provide comprehensive support contracts to ensure that the tools are maintained, improved, and that companies can focus on their work.
- Offer training to help users become independent, part of the community, and more comfortable with using open-source tools.

Outputs

- Increased number of users and downloads of the open-source tools.
- Increased number of companies adopting open-source tools for energy planning.
- Increased number of energy planning studies created using the open-source tools.

Outcomes

- More robust and sustainable energy grid.
- Increased public acceptance of system upgrades.
- Lower costs in energy infrastructure.
- Increased adoption of open-source tools in companies.

Impact

Ultimately, our work will lead to an accelerated global energy transition towards 100% renewable energy, with more companies around the world adopting open-source tools for energy planning. This is how we aim to create a global impact.