Fact Sheet: pandaProSumer

Cities TCP
Decarbonising Cities & Communities

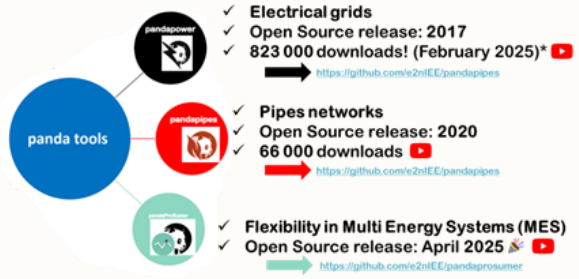
Flexibility in Multi-Energy Systems

What is pandaProSumer?

It is a Python-based tool that simulates how buildings and local energy systems **produce, use and store energy**. It supports in testing flexible and future-proof urban energy planning.

Key features at a glance

- Stand-alone tool for **prosumer modelling and simulation**
- Built on the proven **pandapower / pandapipes** frameworks
- Library of common **energy conversion and storage technologies**
- Allows **coupling** of the prosumers to pandapower and pandapips networks



Panda tools for multi-energy system modelling (University of Kassel)

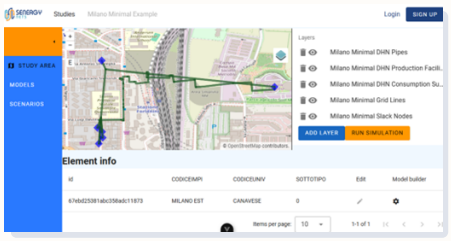
Key resource needs

Data: GIS data of energy infrastructure (pipes, networks), locations of consumers and heat producers, heat demand and temperature requirments of buildings

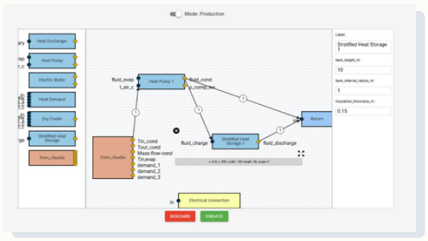
Part of the panda tool

The pandaProSumer tool is embedded in a modular platform that includes:

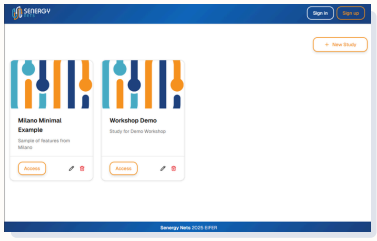
GIS-based user interface



Model builder



Simulation management



Source: EIFER

Main outcomes of the tool

pandaProSumer delivers clear performance results for different energy technologies, such as:

Component / model	Main outputs
Heat pumps	Heat output, electricity use, efficiency
CHP systems	Electricity and heat generation, fuel use, GHG emissions
PV systems	Hourly elecgricity generation
Thermal storage	Stored energy and temperature levels
Boilers and chillers	Delivered heat or cooling, energy consumption
Heat exchangers and coolers	Heat transfer and system performance

Developers: Fraunhofer Institute for Energy Economics and Energy System Technology (IEE), Kassel, and University of Kassel, European Institute for Energy Research (EIFER)

Explore more!

Curious about other models and data we work with in the Cities TCP? Explore more fact sheets via this link!

Further information

https://pandaprosumer.readthedocs.io/en/latest/

eifer
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