

METIS in a nutshell

Information about the project
and the model history

The METIS project history

METIS 1 (2015-2019)

- Power and gas system/market modelling
- First delivery and training of METIS to the EC
- Publication of the METIS database and documentation



METIS 2 (2018-2022)

- Integration of transmission and distribution grid modules
- 2050 scenario development and assessment
- Web-based results sharing
- Assistance to Impact Assistance for Fit-for-55 Package



METIS 3 (2020-2024)

- Integrated multi-energy, multi-sector modelling (power, gas, hydrogen), incl. enhanced demand side representation
- Pathway modelling towards 2050
- NUTS1 granularity



The main deliverables of the METIS projects

1 The METIS tool

| Delivered to DG ENER and the JRC

2 Comprehensive documentation and database

| Open-book approach

↳ html documentation

↳ Publication of underlying assumptions and scenarios

↳ Publication of 10+ technical notes

3 METIS studies

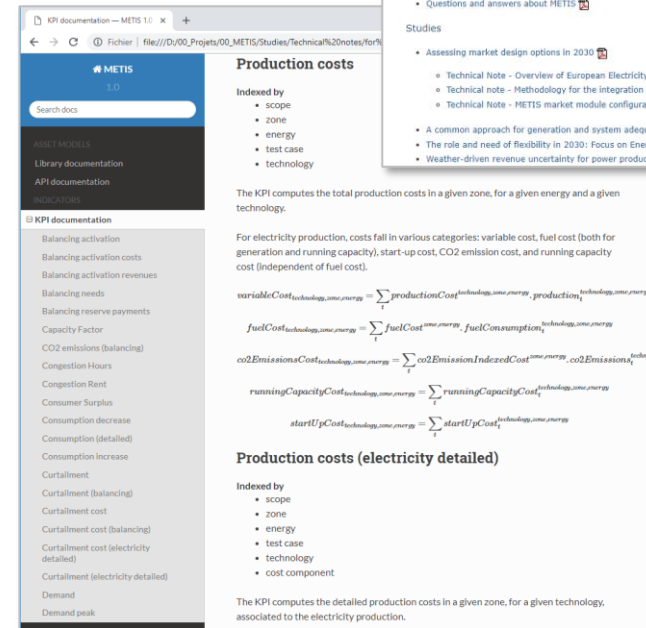
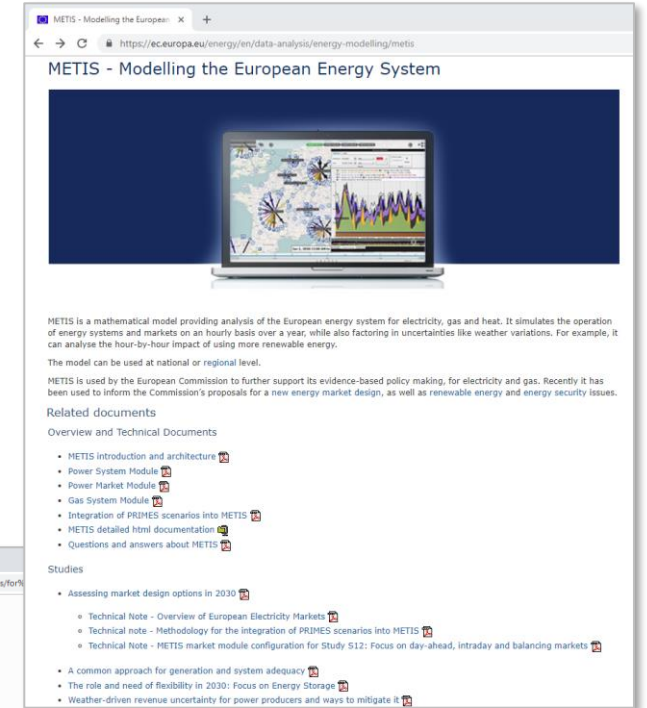
| Nearly 20 studies published by the METIS consortia

| Several studies published by the JRC using METIS

| More studies to be published shortly

All information is available at

https://energy.ec.europa.eu/data-and-analysis/energy-modelling/metis_en

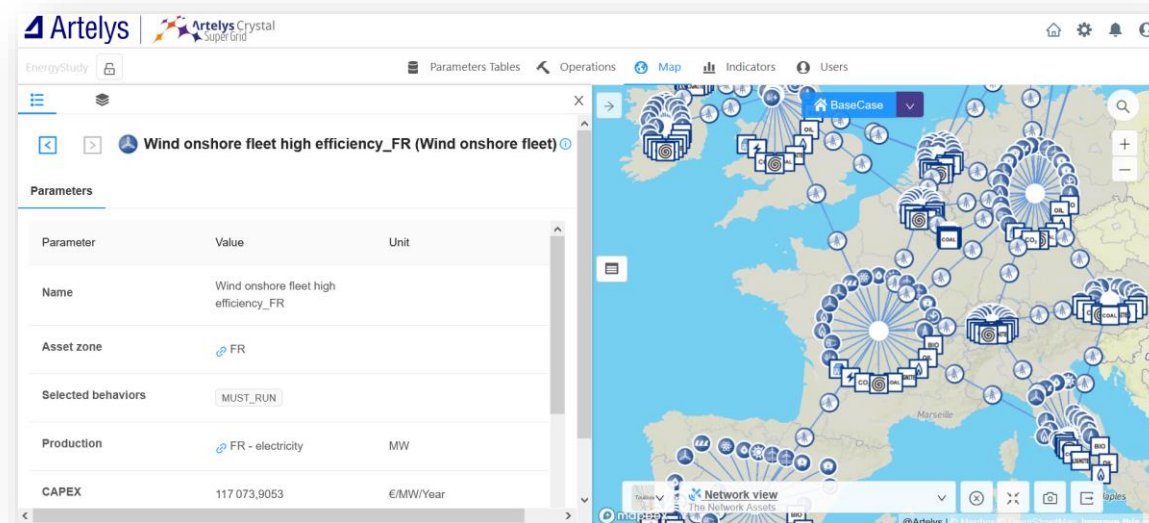


The METIS tool in a nutshell

- 4 METIS software features (status quo)
 - | Covers **electricity, gas, hydrogen** and heat
 - | Includes **EU27 + neighbours**
 - | Focus on a **given year** based on **exogenous** capacity mix and yearly demand
 - | Joint **capacity expansion and dispatch** optimisation
 - | **Hourly** granularity, covering an **entire year**
 - | Covers **distribution and transmission** grids
 - | Large set of pre-defined **KPIs**
 - | Configurable reporting **tables and graphs**
 - | Hosted on a **server** and accessible via the **web-browser**

METIS builds upon the *Artelys Crystal Super Grid* platform

<https://www.artelys.com/crystal/super-grid/>



The benefits of METIS

- ▴ METIS is an EU energy system model with that allows to address several questions
 - | **System adequacy** assessments, **market design** analyses, etc.
 - | **Cost-benefit analysis** of infrastructure projects (e.g. gas and electricity interconnectors, gas storage assets, RES) and risk assessment
 - | Assessment of the potential **role of a technology** (e.g. assessment of benefits of hybrid heat pumps or electrolysers in a low carbon future) or the optimal mix of a given technology portfolio (e.g. flexibility solutions for RES integration)
 - | Building of **scenario trajectories from 2020 to 2030, 2040 and 2050** (compliant with a given carbon budget)

Interested in additional information?

Contact us!

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And check out the METIS website!

https://energy.ec.europa.eu/data-and-analysis/energy-modelling/metis_en