









Session 1: METIS in a nutshell

METIS 1 – Dissemination event

METIS 1 – PROJECT OBJECTIVES



Initial mission (in 2015)

- Call for Tenders ENER/C2/2014-639
- Provide stronger analytical capabilities to EC
- Increase transparency
- Offer a platform for coordination of related analyses across EU

The METIS project

Consortium: 4 Artelys | OPTIMIZATION SOLUTIONS







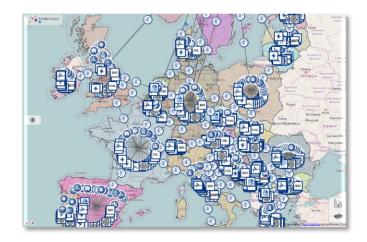
Project duration: 2015-2018

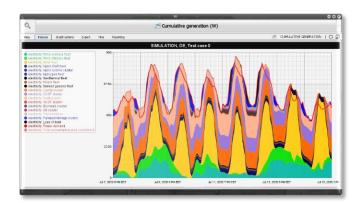
Budget: 3.0 M€

METIS 1 – PROJECT OBJECTIVES

■ METIS software features

- l Covers electricity, gas and heat sectors
- Includes EU28 + neighbours
- I Focus on a given year based on exogenous capacity mix and yearly demand
- I Detailed analysis on an hourly level
- I 60+ KPIs and detailed results
- Configurable reporting tables and graphs







A FLEXIBLE AND TRANSPARENT TOOL

Type of user	Typical questions	User needs
Policy- makers & analysts	 What is the impact of a power/gas supply disruption? What are the benefits of new infrastructure projects? What is the impact of new flexible power usages? 	 Easy-to-use graphical interface Intuitive study process Modify key data and launch simulation Have access to detailed results
Developers	 Develop models for specific flexible usages Build a new scenario Refine the model on the biomass sector 	 Ensure full transparency Advanced API to access/modify detailed data/constraints Publish releases for analysts

- METIS is used by a community of modellers
 - I EC staff
 - I JRC (more than 10 users)
 - I Member States (Belgium, Federal Planning Bureau)
 - I Consortium members
- Presentation of tool, data, results at workshops and conferences
 - I ENTSOs, MSs, academic conferences
- ▲ Around 40 reports & technical notes

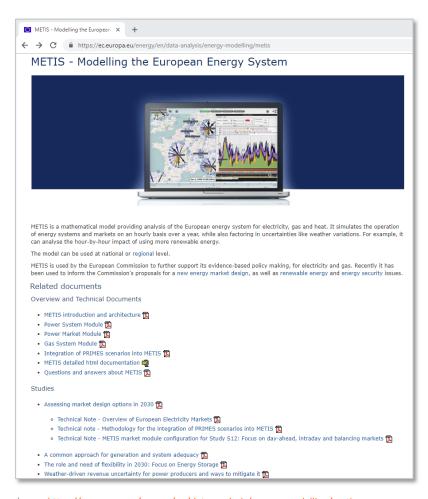


METIS 1 – MAIN DELIVERABLES

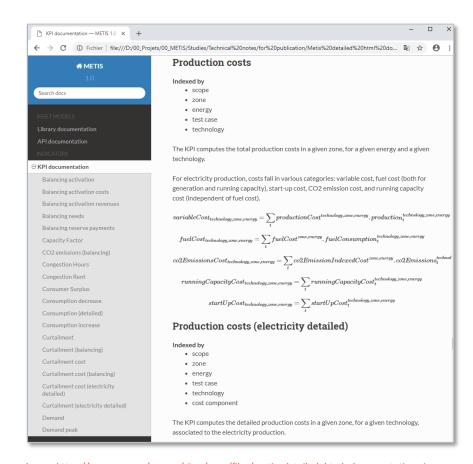
	Module	Studies
Power systems	Power system module (TN1 + TN6)	S4 – Generation and system adequacy analysis S2 – Assessing TYNDP 2014 PCI list (power) S7 – The role and need of flexibility in 2030 S7b – Flexibility in 2030: focus on storage S11 – Effects of high RES shares on power systems
Power markets	Power market and stochasticity module (TN2 + TN3)	S12 - Assessing market design options in 2030 S16 – Weather-driven revenue uncertainty for producers S18 – Simulating electricity market bidding and price caps
Gas system and markets	Gas module (TN 7)	S5 – Impacts of PCIs on gas security of supply
Heat	Heat module (TN 8)	S6 – System benefits of decentralised heat pumps S9 – Cost-efficient district heating development
Synergies between energy vectors	Demand module (TN 8)	S13 – Electric vehicles: power system impacts and RES integration S8 – The role and potential of power-to-X in 2050 S1 – Synergies between energy networks S14 – Market revenues and producer risks
Other documentation	Technical Notes 4 + 5	Overview of European Electricity Markets METIS introduction and architecture
	html documentation	Description of all assets, KPIs, behaviours etc.



△ METIS website



▲ html documentation



https://ec.europa.eu/energy/sites/ener/files/metis_detailed_html_documentation.zip

https://ec.europa.eu/energy/en/data-analysis/energy-modelling/metis

- Project duration: 2018-2021
- Integration of distribution and transmission grid modelling
 - → Dedicated data collection
 - → Flow-based *vs* NTC
 - → Grid model to assess the impacts of local flexibility solutions
- Includes **six studies** to test the model development, assess market design features and the future role and magnitude of flexibility measures
- Develop a web-based version of METIS to visualise assumptions and results











Thank you for your attention!

Contact

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Interested in further information?

https://ec.europa.eu/energy/en/data-analysis/energy-modelling/metis

