ELEXIA

elexia-project.eu

Making energy supply cleaner, more competitive, and secure.

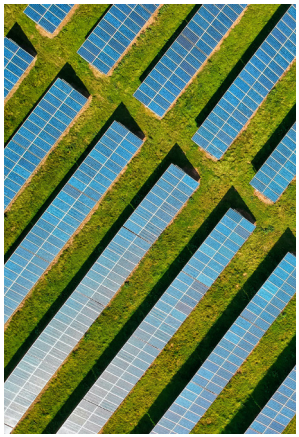
22 Partners
8 Countries
9.5M Funding
48 Months

High-quality new knowledge effectively diffused through open science

20-25% cut in energy demand

45-55% reduction in energy system emissions

Project

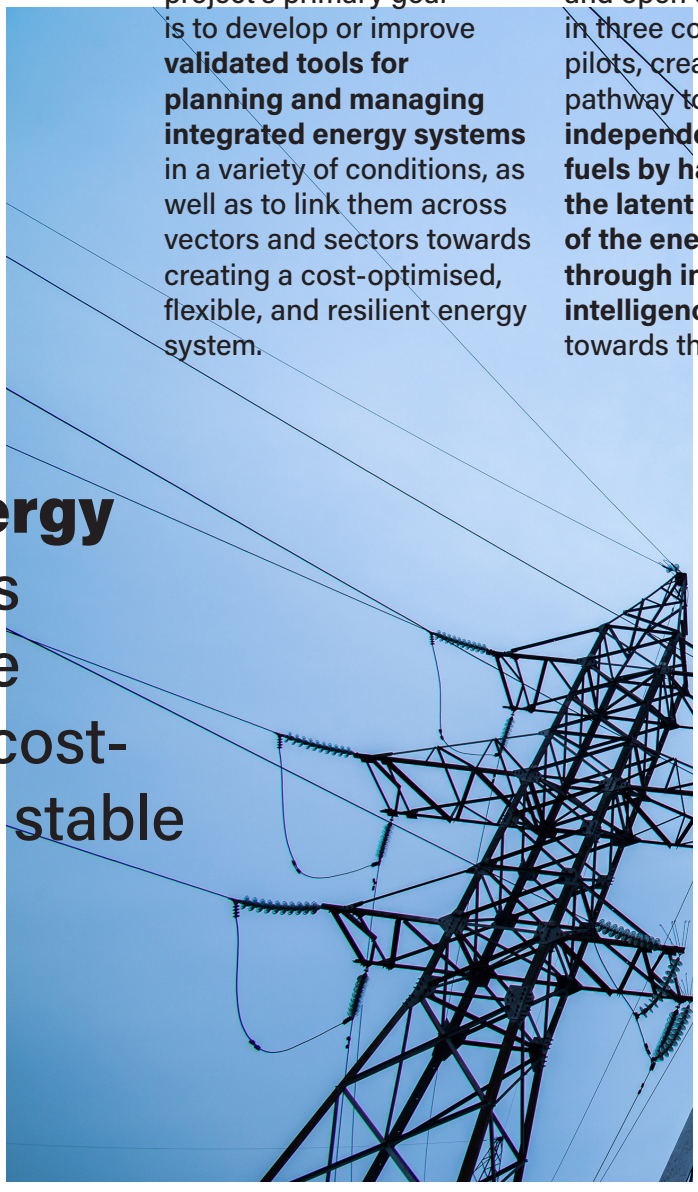


Demonstration of a **digitised en system** integration across secto enhancing flexibility and resilien towards an efficient, sustainable optimised, affordable, secure, ar energy supply.

Innovation-based growth
through R&I investments

ELEXIA aims to integrate energy systems and facilitate the shift towards digital transition. The project's primary goal is to develop or improve **validated tools for planning and managing integrated energy systems** in a variety of conditions, as well as to link them across vectors and sectors towards creating a cost-optimised, flexible, and resilient energy system.

The project will demonstrate the use of planning and operational tools in a one-stop-shop, modular and open digital platform in three complementary pilots, creating a concrete pathway to **achieving independence from fossil fuels by harnessing the latent flexibility of the energy system through integration, data intelligence, and planning**, towards the 2050 EU goals.



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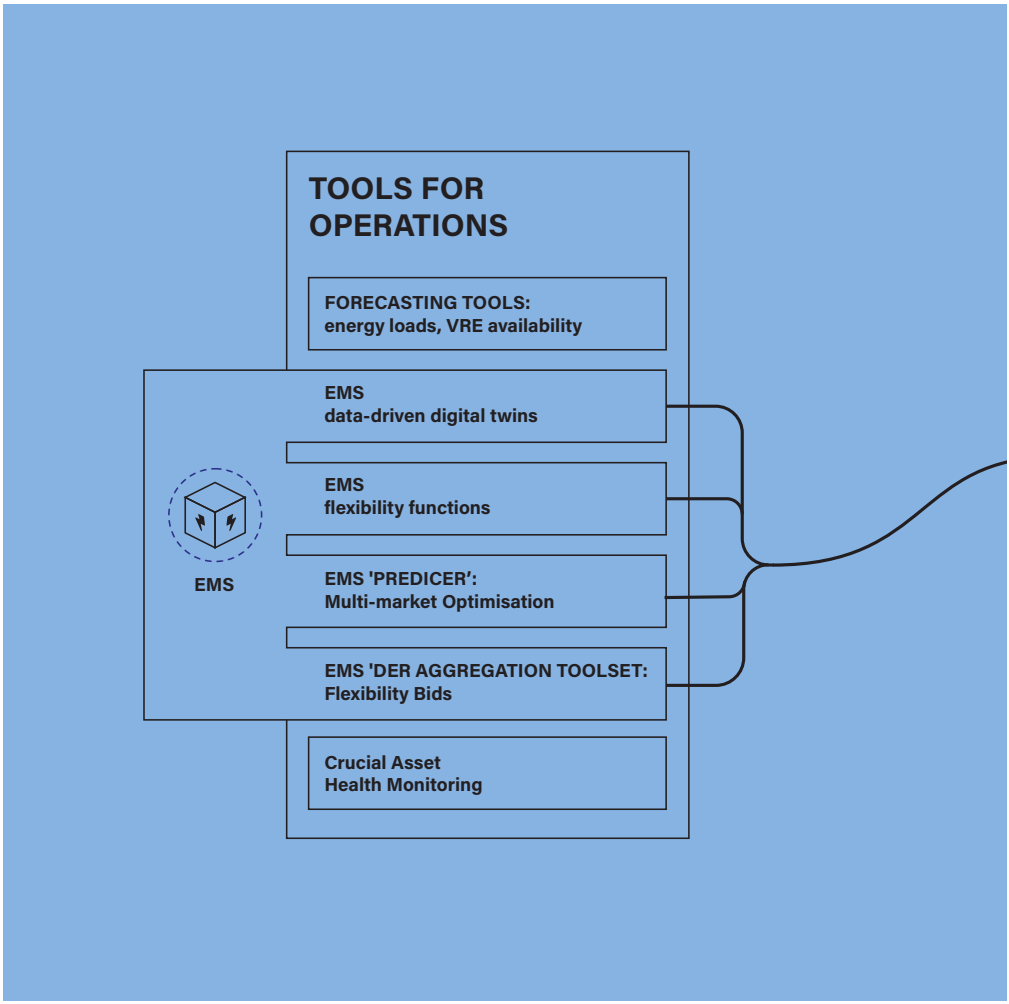
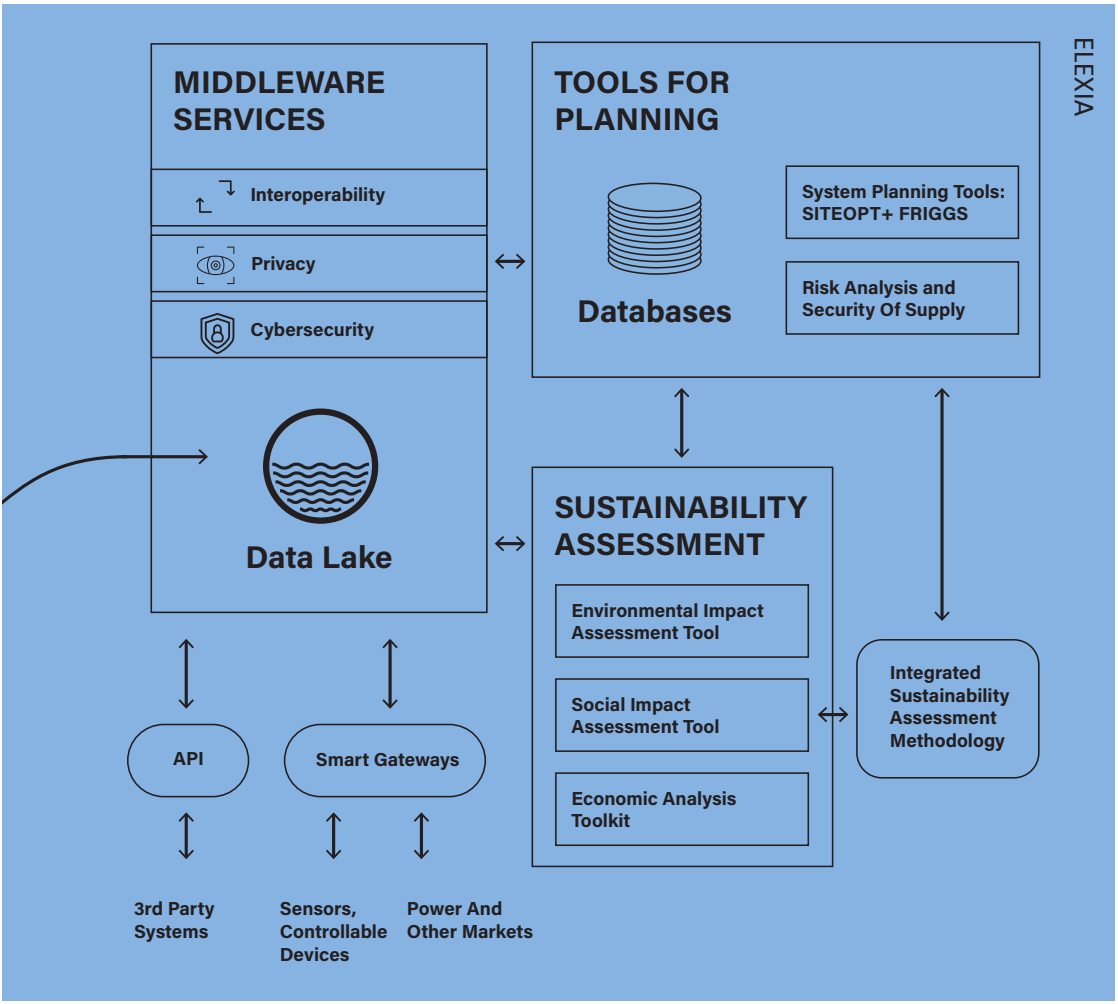


Technology

ELEXIA will deliver various tools and systems to manage cost-effective sector integration at two levels: **planning and operations.**



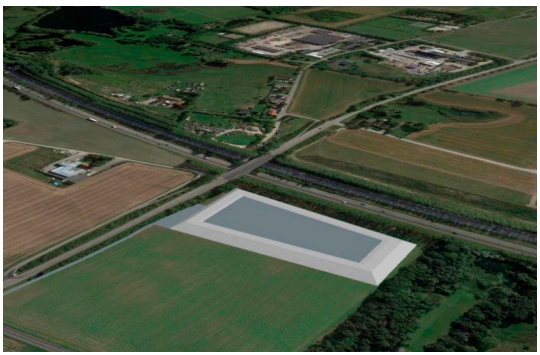
The solution proposed by ELEXIA focuses on using a digital service platform with a data lake, where **data and tools can communicate.**

Among the operational tools, there are several **energy management systems and forecasting tools**. Planning is not under constant time constraints and, as a result, does not require real-time data flows. The planning phase will include competent, future-proof tools, considering all relevant uncertainties with high-quality data, and stress the usability and user-friendliness of the platform.

At the end of the project, ELEXIA will have a system of tools, approachable in one open and modular Digital Services Platform.

Pilots

The project will be demonstrated in three complementary pilots, carefully selected to cover all challenges linked to energy system integration.



Høje-Taastrup Municipality
Denmark

Tackle the challenge of integrating the local heating and cooling networks with the regional system, while increasing the energy share of renewable sources through:

- Holistic optimisation of the multi-energy system considering local resources and market participation
- Large-scale PTES thermal storage for regional and local flexibility services
- Operational optimisation for a shopping mall
- Sector coupling through the water-energy nexus
- Citizen involvement

Port of Sines
Portugal

Aid the decarbonization of Portugal's busiest port through:

- Optimisation and centralised management of the port's electrical grid and related sectors
- Flexibility from port loads
- Sector coupling and port digitisation
- Port operators and citizens' involvement

Dokken Area in Bergen
Norway

Assist Dokken in achieving transformation to a zero-emission and sustainable area by:

- Holistic optimisation of all energy grids and related sectors
- Decentralised energy storage
- Flexibility services
- Sector coupling
- Involvement of citizens

Contact

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Partners

Affiliated Entities

Associated Partner

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