

Energy Planning Application: Planning the energy supply system of the future

Target group:

- Energy system planners employed at the end user site
- Energy system planners for consulting
- NGOs for green transition

Decentral renewable technologies promise sustainable energy supply for local energy system operators. Thus, it becomes increasingly attractive to invest into more **self-supply** and **autonomy**, reducing the energy inflows from central grids. Both can be supported by implementing **sector-coupled energy systems**. To determine **optimal investment options** into power generation and storage assets, a tool is needed to guide the user in modelling the future representation of the system, solve complex optimization tasks and facilitate the analysis of different investment scenarios.

To address these needs, the **Energy Planning Application (EPA)** was developed by Intracom Telecom: It allows end-users to define their energy systems via a **graphical user interface**, which guides the user through system design, data input, simulation and analysis of optimization results, which include **optimal capacities and dispatch plan of assets** at that project site, among others **economical and technical information**. The Multi-Vector Simulator (MVS), an open-source optimization tool developed by the Reiner Lemoine Institute, serves as its backbone.

KEY FEATURES



Evaluation of the current energy system's operation and performance, to determine its costs, efficiency and renewable share. Planning future investments into power generation or storage assets to achieve least-cost supply of electricity.



Planning the integration of emerging technologies also helps to meet sustainability goals and decrease adverse climate effects, e.g. through high renewable energy shares or electric mobility.

KEY BENEFITS



Quick pre-feasibility analysis:

Provided with the system parameters, potential investment options can be explored with low effort. Capacity estimation: Trajectory of future assets capacities, necessary for sales inquiries.



Avoiding costs: Internalizing the pre-feasibility analysis - the decision process within a company to invest into future supply options is sped up, while costs otherwise necessary to pay for an external review are skipped.



Low-effort and low-cost

Pre-feasibility analysis of investment options for complex sector-coupled energy systems, through an intuitive modelling application.



Determine your CO2 reduction potential and possible renewable share of your energy island.



E - L A N D



Interested in our Energy Planning Application Tool?

You can join our community platform and find out more:

<https://e-land-h2020.tribe.so/>

Effective Technologies for Business Success:

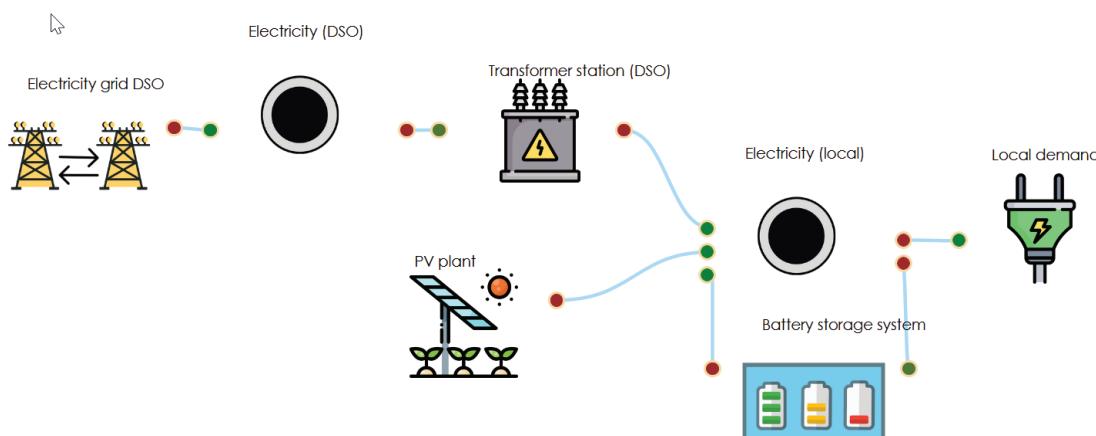


Investment decisions towards an efficient energy-island

REQUIREMENTS

Basic Energy planning knowledge	✓	Data describing local energy systems	Demand profiles Current generation capacities Energy supply costs	Data describing future potential investments	Asset Type Technical parameters or expected performance data Investment and operation costs
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The Energy Planning Application



The Energy Planning Application (EPA) provides an intuitive **user interface** for the **optimization of multi-vector local energy systems**. The sector-coupled energy systems may include the energy carriers electricity, heat, gas or others. The energy system assets as well as their topology can be defined in an interactive **drag-and-drop interface**. Provided with all **simulation inputs**, namely technological, cost and timeseries data,

the energy system then can be optimized. The objective is to **minimize the annual energy supply costs** of the system by optimizing each asset's capacity and dispatch. Finally, an evaluation of the technical and economical **performance** of the optimal system is performed and **visualised** in the user interface.



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