

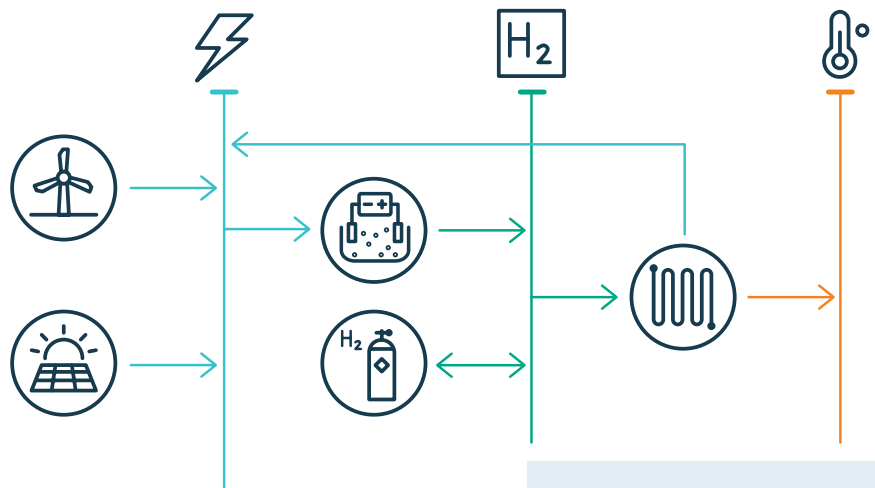
Evaluation of hydrogen concepts for local energy systems

The supply of tomorrow already thought today

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The decentralized production, storage and use of hydrogen is currently receiving a lot of media attention. But to what extent can local energy systems, such as districts, benefit from regional hydrogen strategies?

Targeted use of hydrogen technologies can optimize the use of renewable energies by enabling the storage and use of variably generated electricity in other areas such as mobility, heating and production. However, for successful implementation in local energy systems, the economic viability and technical feasibility must be carefully examined in order to avoid problems during implementation or excessive costs.



Evaluation by Fraunhofer UMSICHT

We support you in assessing whether it makes sense to integrate hydrogen into your local energy system. We examine regional initiatives, analyze the potential of renewable energies and determine the necessary hydrogen requirements together with you. We evaluate technological approaches from different perspectives and help you make a decision. We also support you in the further development of your energy system – with and without hydrogen.

Industrial sectors

- Public utility companies, energy suppliers
- Real estate industry
- District developers
- Commercial and industrial companies
- Communities
- Engineering offices

Our service

We evaluate for you whether and which hydrogen concepts are suitable for your application.

We evaluate technological solutions for you from various perspectives, including technical functionality, economic efficiency, environmental impact and system utility.

We identify the suitability of hydrogen in your application the technologies that make sense for you and determine their optimal dimensioning in your application context.

We support you both in terms of short-term investment decisions and in the preparation of strategic development lines or business models.

We give you a compilation on the relevant technical, economic, ecological and legal-regulatory framework

We support you with our structured results and elaborations for internal and external communication.

Your benefit

▶ You will receive an evaluated overview of the suitability of hydrogen technologies in your application in order to avoid long-term bad investments.

▶ You receive a manufacturer-independent evaluation of the technologies. We recommend what you need.

▶ You will be supported in the decision-making process in order to design customized energy supply concepts for your residential or commercial district from an ecological or economic point of view.

▶ You will receive valuable advice for the strategic development of new business units and models as well as orientation in the new market environment.

▶ You can quickly assess information and identify and target any hurdles in advance.

▶ You have less effort using the information internally and externally and can rely on our experience.

Examples

- Concept development for a photovoltaic battery electrolyzer system for generation of green hydrogen, including optimized operational management
- System optimization of design and operation of a hydrogen production in future production and energy processes for decarbonization
- Identification, characterization and classification of potential industrial producers and consumers of hydrogen in metropolitan areas
- Development of strategy toolbox for the evaluation of hydrogen options in the district heating supply
- Concept development for the application and dimensioning of hydrogen technologies in an industrial park
- Interdisciplinary evaluation power-to-x paths to establish new business models and realization projects
- Evaluation of hydrogen solutions for the energy supply and energy infrastructure of a commercial and industrial area and comparison with alternative climate-neutral concepts

Keywords

- Technology scouting
- Scenarios
- Technical and legal framework
- Simulation and optimization
- Hydrogen concepts
- Hydrogen production, storage and use
- Local supply concepts
- Technology evaluation
- Districts
- Potential analysis
- Local energy systems

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