



HYDROGEN CONCEPTS IN URBAN DISTRICTS

THE SUPPLY OF TOMORROW, ALREADY THOUGHT TODAY

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Decentralized generation, storage and use of hydrogen are the trend. Sensibly applied hydrogen technologies improve the integration of renewable energies by enabling the fluctuating flows to be shifted over time or used in other sectors (mobility, heat, production).

Due to the large number of existing technologies and possible applications, it is not easy to identify the best concept for one's own supply situation in technical, economic and ecological terms. Fraunhofer UMSICHT supports you in evaluating the technologies and application scenarios that come into question for you and in designing them in a customized way.

Keywords

- Technology scouting
- Scenarios
- Technical and legal framework
- Simulation and optimization
- Hydrogen concepts
- Hydrogen production, storage and use
- Local supply concepts
- Technology evaluation

Industries

- Public utility companies, energy suppliers
- Real estate industry
- Developers of residential districts
- Developers of industrial estates
- Communities



- 1 Sustainable district systems and system solutions reduce the greenhouse gas emissions of cities.
- 2 We work with you to develop solutions for the use of hydrogen in your quarter.

Our service

We develop for you innovative, economical and sustainable hydrogen concepts for residential and commercial areas.

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

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

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 get an evaluated overview of different technologies for decentralized hydrogen production, storage and use as well as their application.

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 quarter 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