



Hydrogen-mobility NRW

Future fuel—100% green hydrogen mobilizes the energieland2050

The district of Steinfurt has won the Ministry of Economics NRW's contest „Model region hydrogen mobility“ and is now one of three official model regions for hydrogen mobility in NRW. Therefore, Steinfurt receives funding for the development of a detailed concept for hydrogen mobility in the region to show how it can be put into practice.

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Initial situation

District of Steinfurt—energieland2050: 20 years of energy transition at regional level

- 300 wind turbines, 21 civil wind farms with 1 TWh of energy every year
- Steinfurt already covers 70% of the district's energy demand by wind energy

Why has Steinfurt been chosen as model region for hydrogen mobility?

- For 20 years now, Steinfurt has experience with renewable energies, especially wind energy. Today, the district faces the challenge of expiring EEG support: until 2025, 150 out of 300 wind turbines in the region will be affected. Thus, new marketing strategies for renewable energies must be developed.
- Since 2014 Steinfurt has been dealing with the question of how hydrogen could be used as an energy source. Structures have been established, participants mobilized.
- Within a time frame of 9 months Steinfurt has been working on the concept for the Ministry's contest. Targets for 2023 and 2030 have been specified and serve as focus for the district's work in the coming years.

Steinfurt's hydrogen mobility concept has been divided into three areas of deeper analysis: production, storage and distribution as well as application.

Objectives—Production

- Five locations (e.g. wind farms) have been chosen for deeper analysis. The aim is to investigate the role they could potentially play in terms of production in a comprehensive and detailed hydrogen mobility concept.
- The locations will be analyzed on the basis of the factors technology, economics, mobility and byproducts.
- The analysis shall point out which factors are significant for a successful integration of the five locations in the detailed hydrogen mobility concept.

Objectives—Storage and distribution

Questions to be examined in the detailed hydrogen mobility concept concerning storage and distribution:

- What is the best location for the electrolyzers that will produce 100% green hydrogen? Close to the wind farm or close to the consumer?
- What is the most efficient distribution system? Distribution by tanker trucks or via pipelines of the existing gas network?
- What criteria must be fulfilled for a comprehensive and well functioning hydrogen network?

Objectives—Application

Potential for hydrogen mobility in the region:

- The district of Steinfurt is a rural area. Therefore, the applicability of hydrogen mobility in the field of agriculture is an important issue that needs to be considered.
- Further potential areas of application have been identified: disposal and cleaning vehicles, corporate fleets (e.g. logistics), several bus lines, a train route (Tecklenburger Nordbahn).
- Concerning these areas, Steinfurt will conduct economic analyses, develop business models and make investments.
- The political framework plays an important role regarding the concept's feasibility.

Further questions to be considered in the framework of the detailed hydrogen mobility concept:

- What new forms of cooperation could be established between urban and rural areas?
- What are suitable marketing strategies?
- How can hydrogen contribute to regional energy transition?
- What are the next steps considering a 5-year-plan?

Implementation

- A consortium consisting of the district of Steinfurt and contractors will manage the project. The consortium will work in close cooperation with more than 40 companies to conduct the analyses in different areas of expertise.
- The Ministry of Economics NRW funds 80% of the project up to a limit of 350.000€.
- The detailed concept needs to be finalised by the end of may 2020.
- After finalising the concept, one of the three contestants will be chosen to receive funding for the first steps of implementation.

