

Explanatory note on the "visionary" hydrogen (H₂) network map

In view of the growing interest in hydrogen as an energy source, the gas transmission system operators (TSOs) have come up with what could be a future picture of a hydrogen (H₂) network in Germany. The map shows a "visionary" supra-regional H₂ network that connects hydrogen production and consumption mainly by converted natural gas pipelines (over 90 percent). This H₂ network has a total length of around 5,900 km.

The network is based on a study on the regionalisation of hydrogen production and consumption by Forschungsgesellschaft für Energiewirtschaft mbH (FfE), the Energy Industry Research Association, which was commissioned by the gas TSOs. According to this study, potential domestic production of hydrogen from renewable resources will be concentrated in Mecklenburg-Western Pomerania, Brandenburg, Schleswig-Holstein, Lower Saxony and North Rhine-Westphalia. The TSOs also conducted a market survey on green gas projects currently under development which found that 31 projects, most of them hydrogen projects, were being developed in industrial centres of consumption.

The H₂ network is within reach of:

- cavern storage sites for potential use as hydrogen storage facilities to balance hydrogen production or imports and hydrogen demand
- industrial consumers such as steel producers, the chemical industry, refineries and regions affected by the coal phase-out, as well as local hydrogen networks that already exist today
- large conurbations, which can reduce carbon emissions in the heating sector by blending hydrogen into regional gas distribution grids
- approx. 80% of the vehicles on German roads and part of the non-electrified of railway lines, which could make a contribution to the energy transition in the transport sector
- regions with high volumes of renewable energy for hydrogen production
- possible import points for hydrogen

The first hydrogen projects (living labs as the nucleus of a hydrogen economy etc.) are planned for as early as 2025, and can be timed to coincide with initial steps to establish the H₂ network.

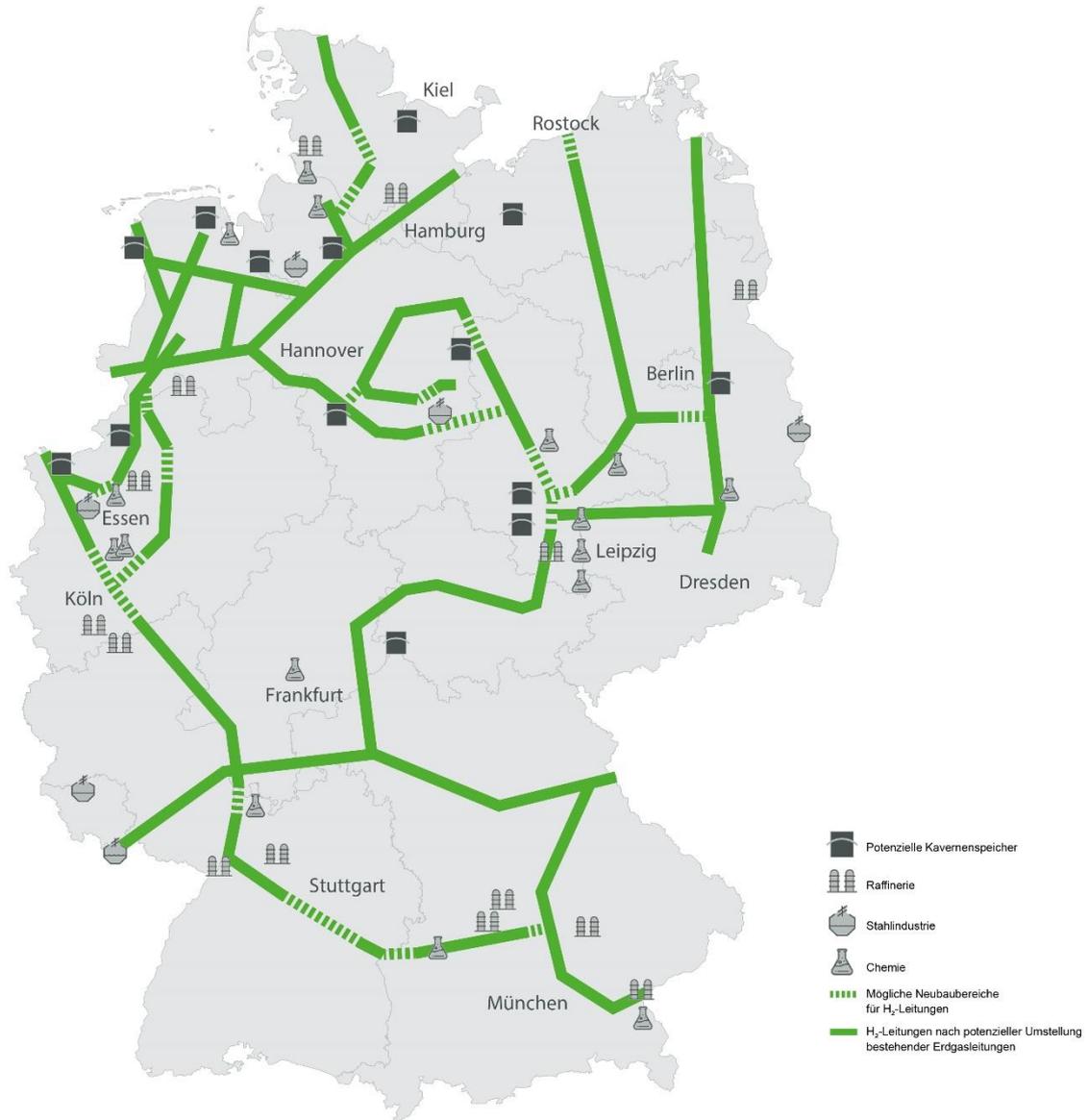
The H₂ network does not give preference to any specific technology. It can be used to transport green hydrogen from regions with large amounts of surplus electricity from renewables, e.g. in northern and eastern Germany, as well as climate-neutral hydrogen imported into Germany via pipelines or tankers.

The H₂ network will probably be developed from north to south, as the potential sources and storage sites for hydrogen are mainly located north of the Main river. The expansion towards the south will develop towards the major centres of consumption.

Connecting the H₂ network with hydrogen infrastructure in neighbouring European countries would facilitate a Europe-wide exchange of hydrogen at an early stage.

The gas TSOs will further develop this visionary H₂ network as new findings emerge.

Vision für ein H₂-Netz



Disclaimer: Bei der Karte handelt es sich um eine schematische Darstellung, die hinsichtlich der eingezeichneten Speicher und Abnehmer keinen Anspruch auf Vollständigkeit erhebt.