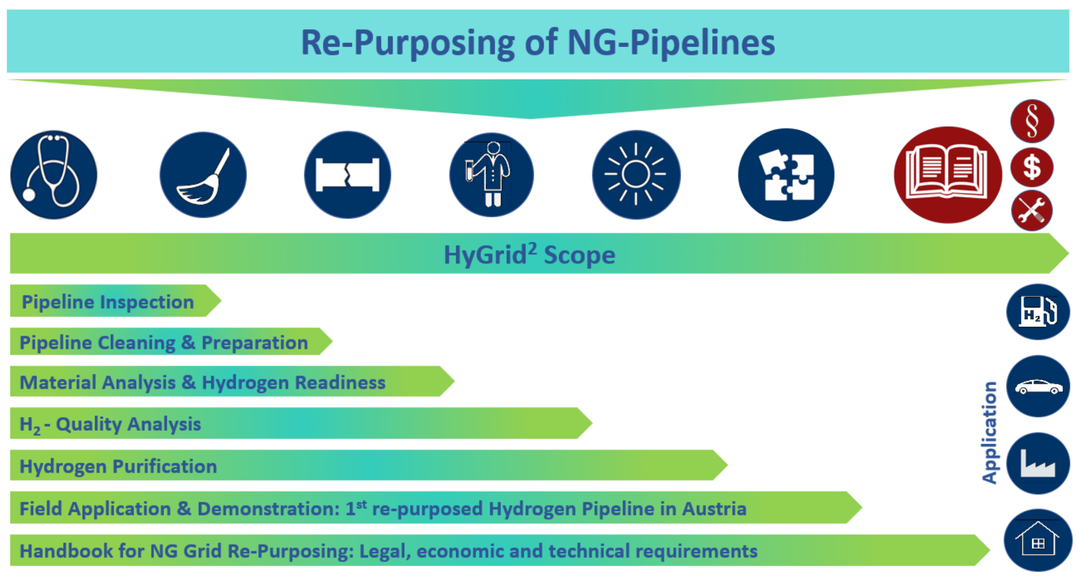
HyGrid²

Re-Use of Natural Gas Grids for 100% Hydrogen

An independent and renewable energy supply for Europe is of intrinsic geopolitical importance. On the one hand to achieve the climate targets set by 2040 and on the other hand to ensure a reliable energy supply for industry, mobility and households: Green hydrogen is the key to achieving both 100% sustainability and energy independence. The H_2 distribution via hydrogen pipelines is a strategic core element. The European Hydrogen Backbone Initiative has developed an implementation concept for hydrogen pipeline infrastructure that largely focuses on repurposed natural gas pipelines.



Goals and innovation:

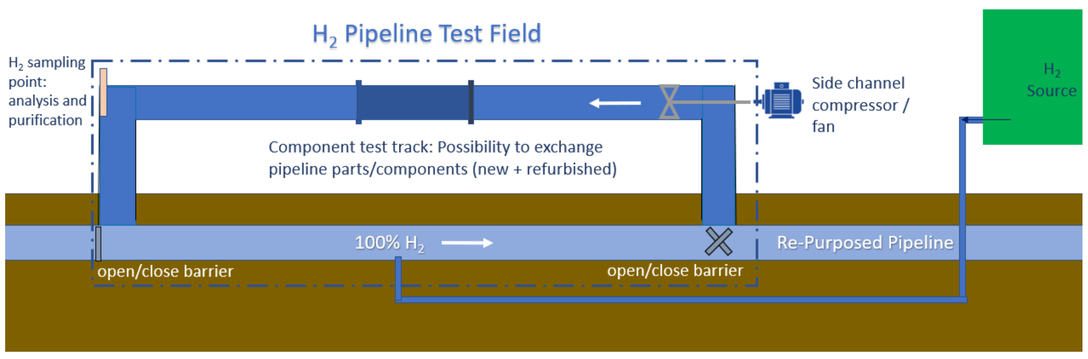
HyGrid² takes an important step to enable the transport of pure hydrogen in used natural gas infrastructure in Austria. In doing so, open questions are answered that currently prevent a reallocation. The areas:

(1) inspection and cleaning of the pipelines,
(2) quality of transported hydrogen,
(3) application-oriented purification and
(4) H_2 compatibility of the individual components and materials used

are addressed methodically and the framework conditions specific to Austria are considered (e.g. odorization).

A handbook for the successful conversion of natural gas pipelines is being developed and will serve as a guide to speed up further conversions. The manual will cover the technical, economic and legal framework and contain the current state of science as well as the regulatory requirements and organizational processes.

For the first time in Austria, an existing natural gas pipeline will be repurposed to transport 100% hydrogen and the infrastructure of the Mellach gas power plant will be expanded into a demonstration plant. It serves as a test field for identifying critical points and developing countermeasures. In the field test, findings are evaluated and the results of laboratory tests are validated under real conditions.



Project coordinator: Energienetze Steiermark GmbH

Project manager: Stefan Fink (s.fink@e-netze.at)

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