

Project title

STORE&GO

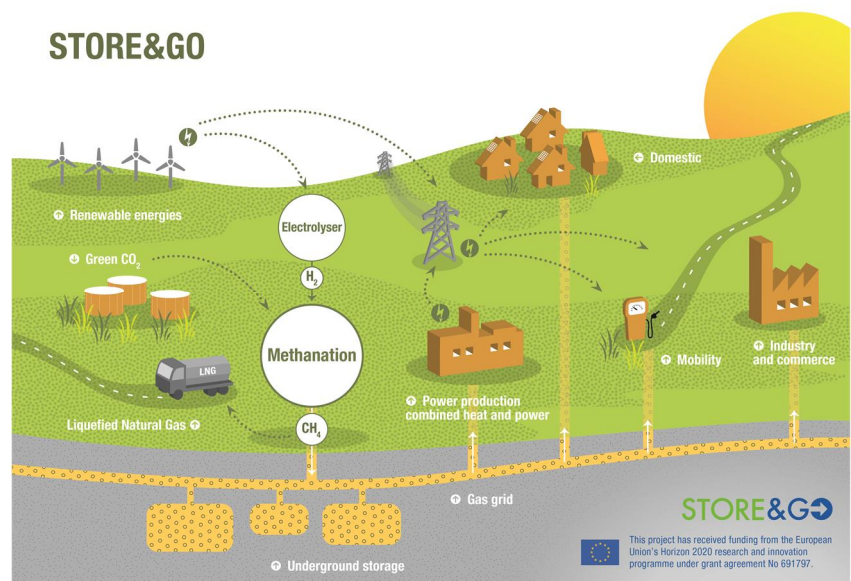
“Innovative Large Scale Energy STORAgE Technologies & Power-to-Gas Concepts after Optimisation”

Motivation

- The integration of such large amounts of renewable energy sources poses technological difficulties, as those sources – like wind and solar – are volatile and generate electricity intermittently. Thus, at times there will be a surplus of energy when there is no demand for it, and vice versa there will be at times high demand when there is not enough renewable energy available.
- Chemical energy carriers provide the highest energy density and especially gaseous fuels provide the highest storage capacities as well (caverns).
- The creation of synthetic natural gas (SNG) by Power-to-Gas technologies (PtG), i.e. electrolysis plus methanation plants provides huge potentials for shaping a secure energy supply of the future.
- While the technical feasibility has been shown in several research projects, the Horizon 2020 project STORE&GO aims to bring the technology to a level ready to be integrated in the daily operation of European energy grids.

Approach

- The project is based on the demonstration of three different Power-to-Gas concepts in Germany (Falkenhagen), Switzerland (Solothurn) and Italy (Troia), each concept involving innovative methanation technologies adapted for the respective demonstration site.
- The operation will focus on the integration of these Power-to-Gas plants into the power, heat and gas grids for further transport and distribution.
- This way, renewable methane can be fed into the existing natural gas grid in a climate-neutral way without any restrictions, and can thus be made available for a broad range of customer applications.



Goals

About 70 million industrial and private customers in Europe are currently supplied by a gas grid 2.2 million km in length. All of them being potential customers of renewable gases. In STORE&GO not only the operation of different Power-to-Gas technologies will be demonstrated, but the plant operation will be complemented by extensive research activities in technological, economic and legal areas. These activities will help to reduce barriers for the market entry and to accelerate the market uptake of Power-to-Gas energy storage technologies.

Project duration
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EU Horizon 2020 (Call LCE09)

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Project partners
27 partners

Project site
<https://www.storeandgo.info/>

Contact
Dr. Johannes Schaffert
0201-3618235
schaffert@gwi-essen.de



1	Deutscher Verein des Gas- und Wasserfaches e. V.	DVGW	Germany
2	E.ON Gas Storage GmbH	EGS	Germany
3	Regio Energie Solothurn	RES	Switzerland
4	Engineering Ingegneria Informatica SPA	ENG	Italy
5	HSR Hochschule für Technik Rapperswil	HSR	Switzerland
6	Politecnico di Torino	POLITO	Italy
7	Energieinstitut an der Johannes Kepler Universität Linz	EIL	Austria
8	Rijksuniversiteit Groningen	RUG	Netherlands
9	ATMOSTAT	ATM	France
10	Commissariat à l’Energie Atomique et aux Energie Alternatives	CEA	France
11	CLIMEWORKS	CW	Switzerland
12	DBI Gas-und Umwelttechnik GmbH	DBI	Germany
13	Studio Tecnico BFP	BFP	Italy
14	Stichting Energieonderzoek Centrum Nederland	ECN	Netherlands
15	Stichting Energy Delta Institute	EDI	Netherlands
16	Electrochaea GmbH	ELEC	Germany
17	Eidgenössische Materialprüfungs- und Forschungsanstalt	EMPA	Switzerland
18	Ecole Polytechnique Federale de Lausanne	EPFL	Switzerland
19	Stichting Energy Valley	EV	Netherlands
20	Gaswärme-Institut Essen e. V.	GWI	Germany
21	Hanzehogeschool Groningen Stichting	HANZE	Netherlands
22	IREN Energia SPA	IREN	Italy
23	Karlsruher Institut für Technologie	KIT	Germany
24	Schweizerischer Verein des Gas- und Wasserfaches	SVGW	Switzerland
25	ThyssenKrupp Industrial Solutions AG	TKIS	Germany
26	Comune di Troia	TROIA	Italy
27	HYSYTECH s.r.l.	HST	Italy