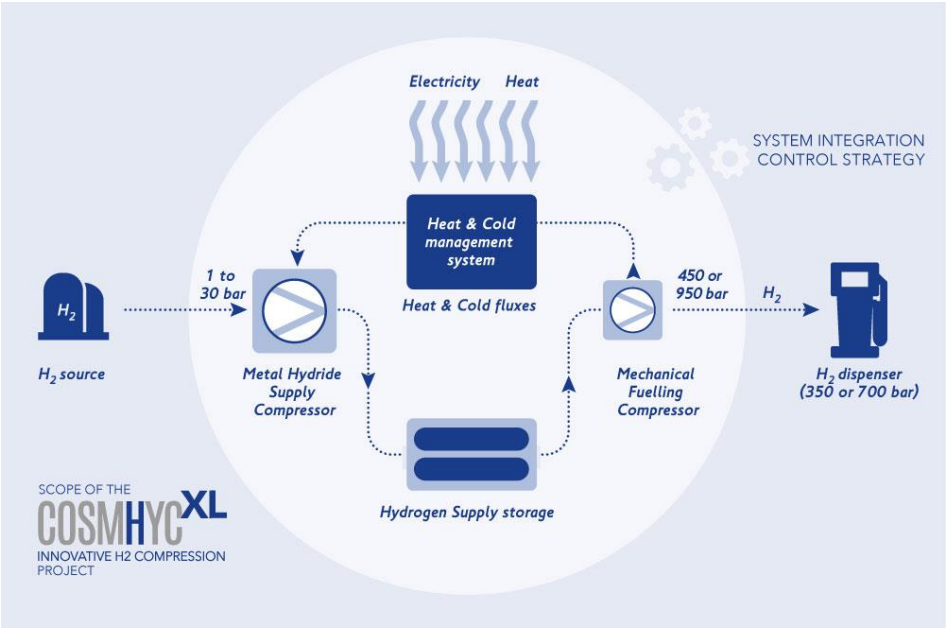
Press Release 1 – 12th of February 2021

COSMHYC DEMO H2 Compression Project Launched!

On the second of February 2021, COSMHYC DEMO project held its official Kick-Off meeting. COSMHYC DEMO is the third project of the FCH JU funded COSMHYC project series, which is developing an innovative compression solution for Hydrogen Refuelling Stations (HRS). The COSMHYC compression solution will now be demonstrated in a real-life HRS to be installed by CCTVI (Communauté de Communes Touraine Vallée de l'Indre, a grouping of municipalities in the French Touraine Vallée de l'Indre area) in the direct vicinity of the city of Tours. The HRS is a central part of the project HYSOPARC (implemented by project partner CCTVI) which is building up the infrastructure for H2 mobility in the region. It will supply green hydrogen to a fleet of passenger vehicles, utility vehicles, and a fuel cell garbage truck from the local municipality.

The COSMHYC Compression Solution – ready for real-life validation

The COSMHYC compressor combines the advantages of mechanical and metal hydride compression technologies, increasing the energy efficiency, whilst lowering maintenance costs and noise levels. COSMHYC DEMO is the third project of the COSMHYC series. In the projects COSMHYC (start 2017) and COSMHYC XL (start 2019), the consortium first developed and tested the compression concept, then scaled it up for heavy duty applications, enabling higher flow rates and daily capacities. Now, in the third project the system is brought to action in an HRS servicing a fleet of Fuel Cell Electric Vehicles (FCEV) and compressing up to 200kg of hydrogen per day. Being a dual-pressure HRS, servicing 350 bar (e.g. utility vehicles, busses) as well as 700bar (e.g. passenger cars) vehicles, the compression solution's flexibility will be showcased.



Picture: The Compression Solution to be demonstrated in COSMHYC DEMO

Importance of effective HRS compression

Hydrogen mobility is gaining unprecedented momentum. Although the number of HRS is increasing, the development of an effective and comprehensive refuelling infrastructure remains a major challenge for the deployment of FCEVs. The compressor is the most challenging component in an HRS in terms of costs and reliability. The COSMHYC series is addressing this need with its innovative solution. COSMHYC DEMO will make the last step by demonstrating the compressor's maturity for commercial application.

From concept to reality with joined efforts

COSMHYC DEMO is run by a European consortium of leading research institutions, industry players and the local authority district of the future HRS site. The European Institute for Energy Research (EIFER) coordinates the project. It also assesses the techno economic performance of the hybrid compressor. The components will be manufactured and integrated into the HRS by the industrial partners: The French SMEs MAHYTEC and EIFHYTEC develop and manufacture the thermochemical compressor. Paired with the Danish company Nel's adapted mechanical compressor, the COSMHYC DEMO hybrid solution combines the advantages of both technologies. The Communauté de Communes Touraine Vallée de l'Indre (CCTVI), an association of 22 French municipalities with 52'000 inhabitants, provides the HRS site in the HYSOPARC area and will operate the HRS to refuel their fleet of vehicles, including the garbage truck. Long term goals of the project are to foster the uptake of H2 mobility and prepare the market entry of the COSMHYC compressor. To that end, the German technology transfer centre Steinbeis Europa Zentrum (SEZ) completes the project consortium with their expertise.

About the project

COSMHYC DEMO is a Horizon 2020 – FCH 2 JU funded project, coordinated by the European Institute For Energy Research (EIFER) which aims to demonstrate the maturity of an innovative hydrogen compression technology by installing it into an HRS in Tours, France. With a budget of 3.7 M € the six consortium partners are working on improving this essential step of the refuelling process. Cost reductions and improvements of the compression efficiency of are crucial for the success of hydrogen mobility and topics directly addressed by this technology. The project started in 2021 with a foreseen duration of 3 years. More details on the COSMHYC series: www.cosmhyc.eu. Regular updates and news on twitter (@cosmhyc_fch) and LinkedIn (COSMHYC/XL).

Contact:
COSMHYC DEMO Communication & Dissemination Office
Leilah Maier, Steinbeis Europa Zentrum
E-Mail: leilah.maier@steinbeis-europa.de
Phone: +49 (0)721 935 19114
Please feel free to contact us for further information.