

Project overview

1st Workshop of the THyGA project
6th of May 2020

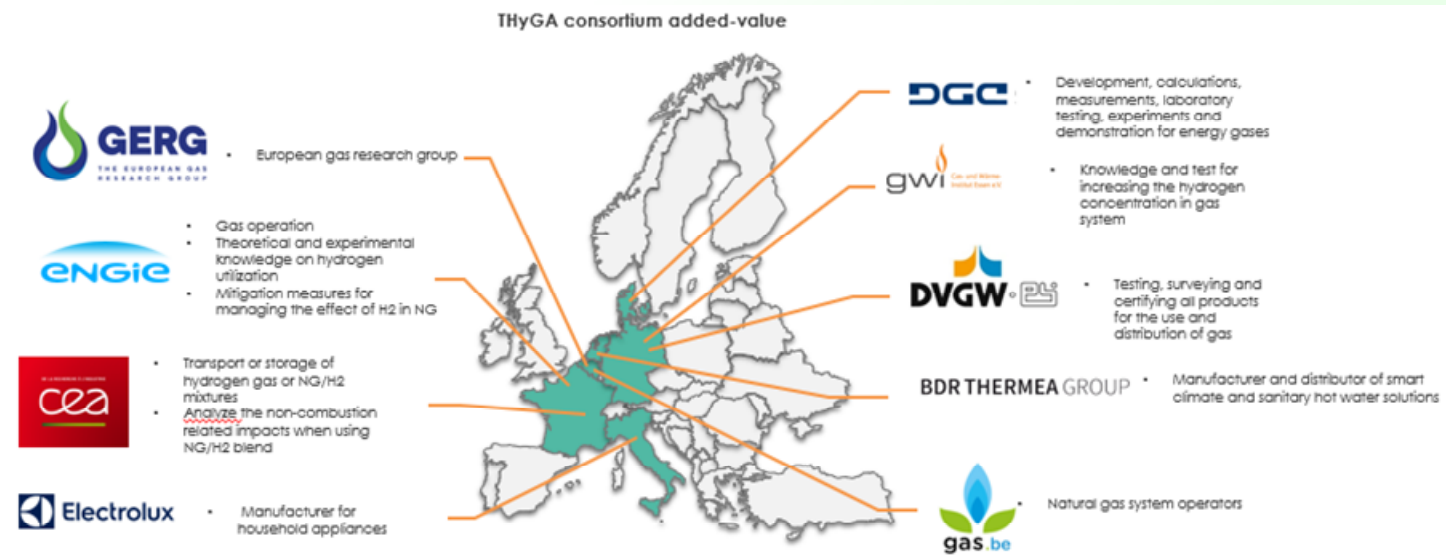
This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No. 874983. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe research.



CONSORTIUM: THYGA (TESTING HYDROGEN ADMIXTURE FOR GAS APPLICATIONS)

- The project has been created by a consortium of 9 partners to answer the Horizon 2020 call FCH-04-3-2019.
 - “Research is required to identify and verify the impacts of continuous and time-varying supplies of H₂NG blends on the combustion characteristics (flame speed and shape, temperature, emissivity, emissions) of appliances together with the potential impacts on appliance safety, efficiency, lifetime and environmental performance (e.g. NO_x emissions). Results from previous and ongoing national and EU projects should be included (...) and their transferability evaluated.”
 - Low, medium and high hydrogen concentrations in natural gas should be investigated:
 - Low = <10% Vol.
 - Medium = 10-30% Vol.
 - High = 30-60% Vol.

- Budget and scope of the WPs (WPLs) 2,5M



OBJECTIVES OF THE PROJECT (2020/2022)

- THyGA project (Testing Hydrogen Admixtures for Gas Appliances) sets out to develop and communicate a detailed understanding of the technical impact of blends of natural gas and hydrogen on end use applications, specifically in the domestic and commercial sector.
 - Screening and segmenting the portfolio of appliance technologies in the domestic and commercial sectors and assessing the impact of hydrogen admixtures.
 - Testing up to 100 commercial and residential gas appliances to provide a generic protocol that can be adapted for virtually any appliance.
- To go further, the project consortium will identify and recommend appropriate codes and standards that should be modified or adapted to answer the needs, and develop a strategy for addressing the challenges for new and existing appliances.
 - Developing a validated certification protocol for different levels of H₂ in natural gas
 - Making recommendations for manufacturers, decision makers and end-users along the gas value chain for appliance design, manufacture and certification.

WORK PACKAGES

WP2 – Status of gas utilization technologies

Segmentation and inventory of the gas utilization technologies in Europe

X

Impact of hydrogen admixture on combustion processes
Theory + past experimentations

→

Test program & Selection of the appliances to be tested

WPI – Project management

General coordination, WP coordination and relation to FCH 2 JU

WP3 – Experimental work

What happens on the field with H2 injection ?

Generic test protocol (safety, efficiency)
Tests on ~100 appliances for domestic and commercial end use (short term and long term)

WP4 – Standardization

How can we certify an appliance according to H2 rate in NG?
Overview of current framework of standards with regards to H2 injection
Development of test procedures including definition of test gases
Validation through tests

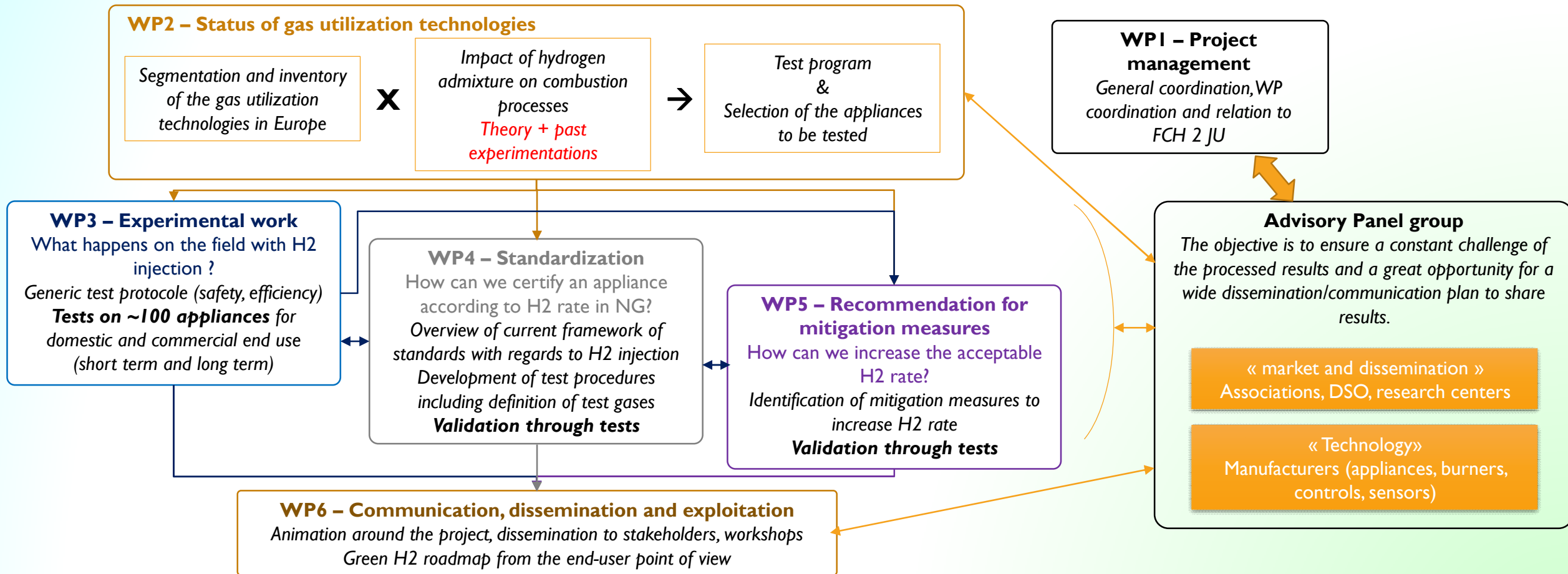
WP5 – Recommendation for mitigation measures

How can we increase the acceptable H2 rate?
Identification of mitigation measures to increase H2 rate
Validation through tests

WP6 – Communication, dissemination and exploitation

Animation around the project, dissemination to stakeholders, workshops
Green H2 roadmap from the end-user point of view

STRONG INTERACTION WITH ADVISORY PANEL



Thank you for your attention

For more information: contact_thyga@engie.com

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