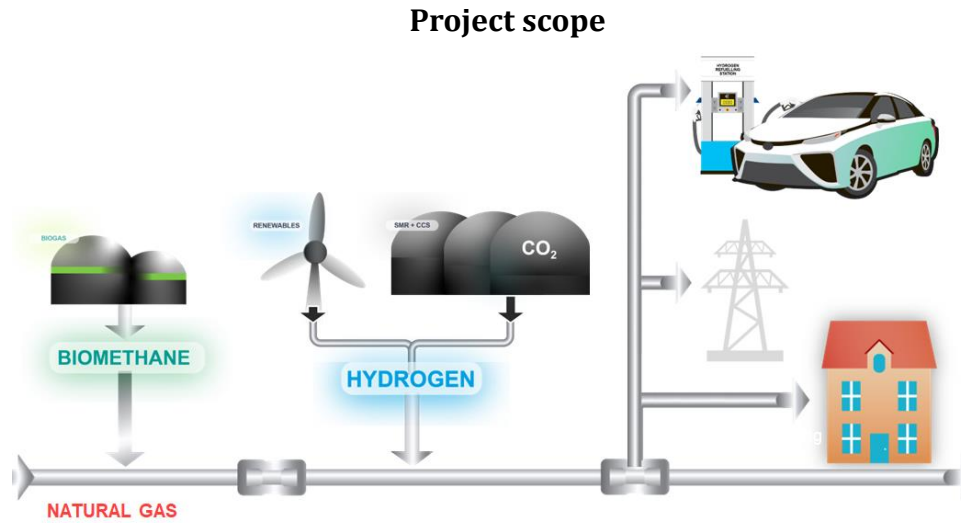


Project in bird's view

- **Aim:** To provide the primary standards, test facilities, validated methods and good practice for the gas industry
- Project duration: June 2021 – May 2024
- Coordinator: NPL, EMPIR funded
- Considering: H2 and renewable natural gas and blends thereof, CO2
- 4 fields of research: flow metering, gas composition, physical properties & leak monitoring
- Gas grid, appliances incl. mobility, power, heating

Technical work packages

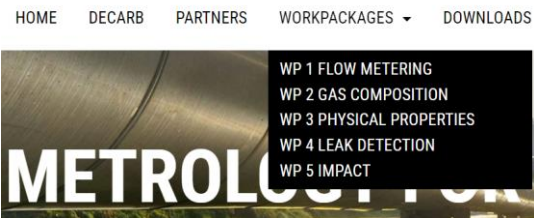
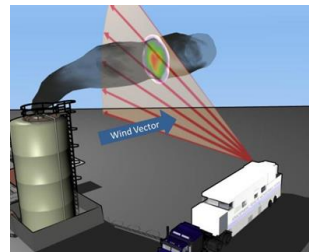
	Flow metering	Gas composition	Physical properties	Leak monitoring
Biomethane	-	Proficiency testing schemes for EN 16723-1	-	-
Hydrogen enriched natural gas	Ability to measure flow 20% H ₂ in natural gas	Process GC modifications and new online methods to monitoring blending	Determining physical properties (e.g. calorific value) from gas composition	New portable monitors to distinguish between H ₂ and natural gas leaks
100% hydrogen grids	Ability to measure 100% H ₂ in new gas grids	Purity analysis to meet ISO 14687 Grade A	-	Validation of leak detectors for hydrogen at pipelines
CCUS	Ability to measure CO ₂ in CCS processes	Purity analysis of CO ₂ in CCS processes	Determining phase changes (affecting compressibility and flow metering)	Monitoring CO ₂ plumes above CCS underground storage sites



Project scope

Achievements & highlights (selection)

- Reports & papers published on:
 - operating conditions of European gas grids,
 - hydrogen and CO₂ as primary reference material (PRM) in gas grids
 - standards for QA of hydrogen, CCUS
 - maximum admissible leaks in H₂ and H₂NG pipelines
 - Sampling methods for renewable gases and related gases: challenges and current limitations.
- The 1st new high priority PRMs for CCUS; binary and multi-component mixtures [gas comp.]
- The 1st Hydrogen for Heat PRM produced covering 2 standards for 100% H₂ boilers [gas comp.]
- Developed and demonstrated NPL DIAL from CO₂ emission plume detection [gas detect.]
- Drone leak detection testing in preparation [gas detect.]
- Core of Internet of Things device developed



EMPIR DECARB website

Visit www.decarbgrid.eu to learn more about the project including the latest deliverables.



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Project partners

