The Hydrogen for Europe project

A research-based project aimed at assessing how hydrogen can contribute to achieving net-zero emissions in the European energy system

Hydrogen for Europe is a new research study that comprehensively looks at the EU energy system and quantifies the economic and environmental value of hydrogen in the energy transition.

The study develops a silo-breaking approach to the energy transition in order to objectively assess:

- How hydrogen can contribute to the European energy transition
- What decisions and pathways help to benefit from learning effects, bring down technology cost, and avoid stranded assets
- What is needed to ensure a fair regulatory framework that would allow hydrogen and other renewable and low-carbon technologies to be part of the solution
- Assessment of hydrogen import potential

Scientific approach to the analysis

- Quantitative exercise based on two state-of-the-art models, MIRET-EU and eTransport, validated through peer-reviewed research and in use by institutions like IEA
- Combination of different optimization techniques to capture dynamic considerations and pathways
- Two first-class research centres, IFPEN and SINTEF, to lead the model development and analysis

Comprehensive analysis with a complete scope

- Exhaustive geographical and temporal coverage: up to 2050 in 27 European countries
- Holistic representation of the energy sectors (gas, electricity), end uses (transport, building, industry) and their interfaces
- Cost-optimal decarbonization pathways for each country considering endogenous features on a dynamic framework

Alignment with EU policy framework

- The study's calendar and modelling framework are aligned the European Green Deal agenda. The results should inform the current debate and reflection by industries and policy makers
- Climate-neutrality, cost efficiency technology neutrality, energy security, competition: the study aligns with all EU pillars and targets

Partners

Consortium

Deloitte. IFP Energies nouvelles SINTEF

Advisory Committee

42 Members from academia, regulators, industry, trade & finance, and others

Progress overview

HYDROGEN FOR EUROPE

January 2020
Project launch

Inception framework
January-May 2020
Research questions are confirmed. Main analytical scenarios are defined to frame the quantitative analysis of research questions. Modelling framework and main technical assumptions are set up.

Advisory Group
April 2020
First meeting of Advisory Group to gather feedback and input/information from other industries and stakeholders (policy makers, researchers, consumers, …) during the inception stage

Data collection and energy system modelling
February-September 2020
Data is collected, checked and calibrated for the whole European scope, for all technologies and sectors. Models are up and running.

Import representation
July-September 2020
Extension of the study's scope to include the potential from importing renewable and low-carbon hydrogen in Europe

Current activities
Model linking, model runs and result analysis

Expected delivery date
early 2021