Developing the H₂ economy across EU regions. From policy to practice: barriers, challenges & success factor

Cyril HARRY
ENGIE - Head of Gas Asset Regulation & Analysis

EU H2 Valleys Days - June 17, 2024
Who, what, where and when?
H2BE offers a deal for Belgian reindustrialization

Future-proofing Belgian industrial competitiveness and generating growth for Ghent Valley (Flanders)

By 2030
€ 630 millions added value created by H2BE
€ 2,1 billion added value of local H2 economy

7,500 new jobs in H2 value chain
54,000 protected jobs for Belgium

Kickstarting H2 and CO2 value chains

To scale investments in local hydrogen infrastructure, paving the way for a future renewable-driven hydrogen

Through necessary investments in local CO2 infrastructure, co-constructing the future CO2 ecosystem across Belgian & adjacent countries industrial Valleys
H2BE offers a deal for Belgian reindustrialization

Contributing to climate neutrality

- **Carbon capture rate > 95%**
  - Bio-methane instead of natural gas could be used as an input (negative emissions) thereby avoiding stranded assets

- **Average reduction of 1.7 Mton of CO₂ per year**
  - at its offtakers within Ghent Valley
  - Representing 12% of Belgium’s ETS emission reduction target by 2030 or 2% of total Belgian emissions observed in 2022

- **A cost-competitive transition, with a CO₂ abatement cost 3 times lower** than for renewable (imported) H₂

Producing hydrogen locally in a cost-competitive way

- In 2030, the CO₂ abatement cost for low-carbon hydrogen from H2BE is approximately 3 times lower than for renewable (imported) hydrogen

- Located in the immediate vicinity of its offtakers within the Ghent Valley
NEED FOR FINANCIAL SUPPORT TOOLS FROM POLICY MAKERS (EITHER AT MEMBER-STATE OR EU LEVEL)
Urgent need for well-designed & regulated support mechanisms for low-carbon H₂ projects, in compliance with competition principles & state rules

➢ The missing building block: currently no financial support scheme for low-carbon H₂

  ▪ RED III Directive: a non-comprehensive tool for low-carbon H₂ (technologically – RNFBO – oriented, Art 22.a & 22.b not giving a clear role or room for low-carbon H₂)

  ▪ EU Decarbonization package (cf. future EU H₂ market design): a definition for low-carbon H₂ (i.e. non-renewable H₂ saving ≥ 70% of GHG emissions vs. fossil fuel comparator) and a certification scheme for H₂. Detailed methodology for GHG emissions saving calculation to be adopted within 12 months after entry into force of the package.

➢ Need for further regulatory provisions to make low-carbon H₂ projects & valleys real

---

**Diagram: Phases of H₂ Projects**

- **Kick-off**
  - Evaluation Phase
  - DG0: Feasibility
  - DG1: Concept Select
  - TODAY: Pre-FEED
  - DG2: FEED
  - DG3: Final Investment Decision
  - DG4: Construction
  - Dec 24
  - Q2 26

**Notes:**

- FEED = Front End Engineering Design (Full Project/Infrastructure Design)
- DG = Design Phase

---
Clear commitment from authorities needed to progress H2BE, *e.g.* via an expanded scope of the EU Innovation Fund (*i.e.* beyond RES H$_2$) under the banner of the EU H$_2$ Bank

---

**European Hydrogen Bank**

- **Domestic**
  - **Goal:** Support the scale-up of the domestic hydrogen production market within the EU
  - **Currently discussed option:** Supply-side auctions allocating fixed premium payments to hydrogen producers in the EU
  - **Funding source:** Innovation Fund

- **Imports**
  - **Goal:** Securing diversified imports of hydrogen (derivatives) from outside the EU
  - **Currently discussed option:** Auctions allocating fixed premium payments to international producers
  - **Funding source:** Multiple funding options currently being explored

---

**Objectives of the 1st pilot auction for RES H$_2$ production launched in Nov 23**

- **Cost-efficient way of distributing financial support**
- **Price discovery and market formation**
- **Reduced administrative burden**
- **De-risking renewable hydrogen projects and leveraging private capital**

---

Source: [https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en#overview](https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en#overview)
THANK YOU

CYRIL.HARRY@ENGIE.COM

H2BE.EU