



International Partnership
for Hydrogen and Fuel Cells
in the Economy

Switzerland Update

37th IPHE Steering Committee Meeting
26 – 27 April 2022
Virtual Meeting

Announcements / New Initiatives

Switzerland



Policies/Initiatives

- **Performance-related heavy vehicle charge:** under consultation: Prolongation of the exemption for electric drives (<https://www.fedlex.admin.ch/de/consultation-procedures/ongoing>)
- **Development of a Swiss Hydrogen Roadmap** (3 parliamentary businesses)
 - **Assessment:** (<https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20204709>)
 - **Green hydrogen strategy for Switzerland** (<https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20204406>)
 - **Hydrogen Strategy** (<https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20223376>)

Deployment Activities

- **HRS: 12 in operation** (2022.04.26)
- **Electrolysis** (run-of-river plants):
 - 2.0 MW, Run-of-river (Gösgen), in operation since June 2020, 300 t H₂/year (40 to 50 trucks)
 - 2.5 MW, Storage hydropower (Kubel), enters service in September 2022, 250 t H₂/year
 - 2.0 MW, Storage hydropower (Schiffenen), in approval/construction, enter service in 2023, 250 t H₂/year
 - 2.5 MW, Run-of-river (Eglisau-Glattfelden), announced to enter service in 2022, 350 t H₂/year
 - another 10 MW+ in conceptual phase/planning in Switzerland
 - Swiss company H2energy invests in [1 GW electrolysis in Denmark](#) (under construction)
- **Vehicles: 46 Hyundai XCIENT Fuel Cell trucks** on the road, new generation of XCIENT being introduced.
- **Power-to-Gas: 2.5 MW PEM electrolysis. operation started 2022.** Powered by waste incineration plant (15 GWh/year). CO₂ from sewage gas used for biological methanation. 18,000 MWh of renewable gas per year <https://www.powertogas.ch>
- **[Phillips 66 and H2 Energy Europe](#)** to develop hydrogen refuelling network in Germany, Austria and Denmark: **250 retail hydrogen refuelling stations** across Germany, Austria and Denmark by 2026 through a 50-50 joint venture between their subsidiaries



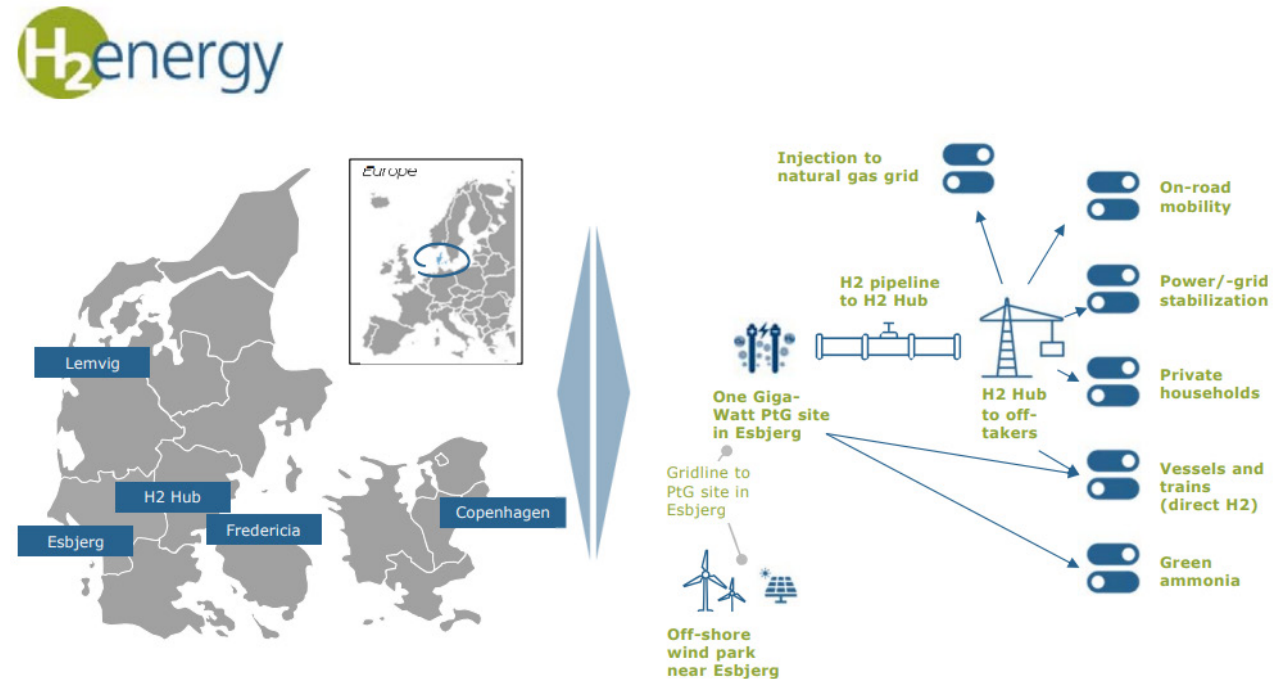
New Initiatives

Switzerland



H2 Energy

H2 Energy Europe, a joint venture of Trafigura and H2 Energy, plans to invest a billion EUR in the construction of one of Europe's largest 'Power-to-X' plant in Esbjerg. The plant will convert green electricity into hydrogen, which can be used directly by trucks and other heavy land transport. Its capacity of 1 GW of hydrogen production will make it possible to supply green hydrogen corresponding to the annual fuel consumption of more than 10,000 trucks (more than 1/3 of all trucks in Denmark).



Source: H2 Energy

Examples of Lessons Learned and Impact

Switzerland



Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
Exemption from the performance-related heavy vehicle tax for trucks with electric power train	Very helpful to close the gap between fuel cell electric trucks and conventional diesel trucks
https://h2mobilitaet.ch/en/ H2 Mobility Switzerland Association	Private collaboration: Generation of sufficient mass, information exchange
Continuous promotion of R&D (programmes) and targeted pilot projects	Solving fundamental issues (regulation, code, standards) with publicly funded projects

Switzerland – Profile April 2022



Status of Deployments

46 Trucks on the road (June 2021)
+140 (being introduced)

Couple of MW electrolysis for green
Hydrogen production either in production
or planning/construction phase
(run of river hydropower)

**10 public Hydrogen stations, 2 will open
soon (33+ until 2023)**

31 tons of H2 fuelled per station

1.3 stations per 1 Mio. capita

**Current availability of H2 at 95% ->
increase in redundancy needed (stations,
production)**

Cost of electricity!

Leading Government Initiatives

Development of National Hydrogen Strategy started
(parliamentary initiatives)

Performance-related heavy vehicle charge: Prolongation of the
exemption for electric drives

Goals or Focus Areas

Road transport (trucks)
Clean aviation (Synthetic aviation fuels)

Deployment Goals

2025: 1600 Fuel cell trucks (private initiative)
2023: national Hydrogen refuelling network (private initiative)
2050: 56 kT/a Hydrogen production (domestic) (see national
energy perspectives for details)

Funding

Overall funding for R&D and pilot:
27.93 million Swiss francs per
year (figures 2019).



Thank you



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