International Partnership
for Hydrogen and Fuel Cells
in the Economy

Country Update: Austria

30th IPHE Steering Committee Meeting

Pretoria, South Africa

6 December 2018

Country Update: Austria

The Linz Energy Council is declaring the "European Hydrogen Initiative"

The Signatories of this initiative, gathered in Linz, Austria, on the 17th and 18th of September 2018, collectively aim to maximise the great potentials of sustainable hydrogen technology for the decarbonisation of multiple sectors, the energy system and for the long-term energy security of the EU.

Country Update: Austria

Signing institutions, states and provinces:

Country Update: Austria

H2FUTURE

Project Overview

Project Partners:

- VERBUND Solutions GmbH
- voestalpine Stahl GmbH
- Siemens AG
- K1-MET GmbH
- Austrian Power Grid AG (APG)
- Energy research centre of the NL

Project Budget: 18 million EUR
Total Funding: 12 million EUR (FCH JU)
Project Duration: 4.5 years (January 2017)

Country Update: Austria

H2FUTURE

- With a capacity of **6 MW** and a production of **1,200 m^3** of **green H_2** per hour, H2FUTURE is currently the world's largest and most advanced H_2 pilot facility using **PEM electrolysis** technology for producing green H_2 from **renewable electricity.**
- The fundamental goal of H2FUTURE is to demonstrate that an **industrially integrated PEM electrolyser** is able to produce green H_2 and supply **grid services** at the same time.
- In this way, the potential for **decarbonizing** the **steelmaking** process **replacing carbon** by green hydrogen can be examined and the basis for further **upscaling** to **industrial dimensions** and in the long run for **decarbonizing the economy** is created.
- H2FUTURE will also address **regulatory challenges** that need to be solved to create a sustainable environment for European industry players.

Country Update: Austria

R&D-funding for FCH-technologies in "Mobility of the Future": 17,1 M€

1. Call (2012/13): 20 project proposals submitted, 11 projects selected with 7.7 M€ funding - **4 FCH-projects** funded with **3.0 M€**

2. Call (2013/14): 24 project proposals submitted, 13 projects selected with 6.4 M€ funding - **3 FCH-projects** funded with **2.7 M€**

3. Call (2014/15): 18 project proposals submitted, 6 projects selected with 6.6 M€ funding - **3 FCH-projects** funded with **5.2 M€**

4. Call (2015/16): 17 project proposals submitted, 11 projects selected with 4.7 M€ funding - **5 FCH-projects** funded with **2.1 M€**

5. Call (2016/17): 21 project proposals submitted, 7 projects selected with 6.0 M€ funding - **1 FCH-projects** funded with **1.4 M€**

6. Call (2018): 12 project proposals submitted, 6 projects selected with 4.2 M€ funding - **4 FCH-projects** funded with **2,7 M€** (including 2 rail and one multimodal FCH-project) and 1 additional FCH-project on reserve list

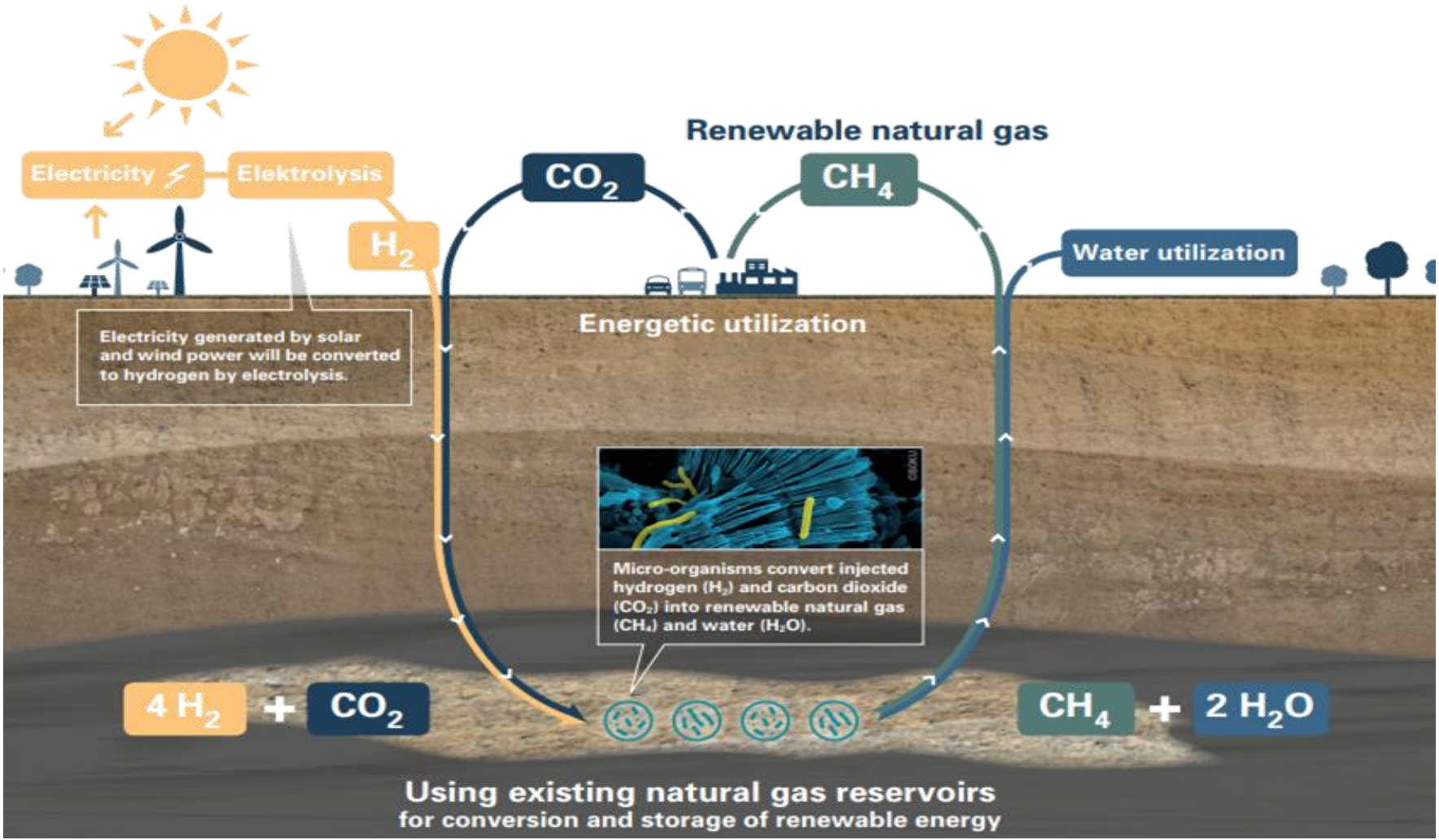
Country Update: Austria

Energy Model Region "WIVA P&G": Total Budget: 125 Mio. Euro
Funding: 50%

1. **Green energy**
   a. Production of green H_2 via electrolysis
   b. Storage, distribution and utilization of renewable energy
2. **Green industry**
   a. Optimization of industrial processes
   b. Lowering emissions in the industrial sector
   c. Usage of hydrogen in different processes
3. **Green mobility**
   a. New approaches for transport and logistics sector
   b. Lower CO_2 emissions (well-to-wheel) & local zero-emissions
   c. Higher efficiencies
   d. Lower costs for fuel cells
   e. Utilization of fuel cells in newly developed vehicles and applications

Country Update: Austria

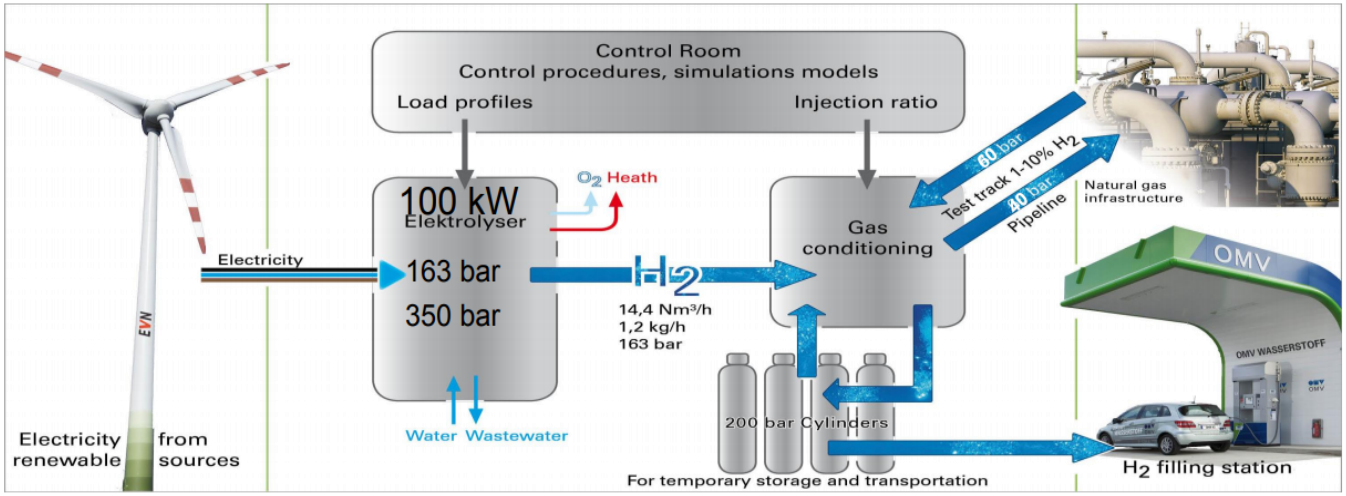
WIVA - Exemplary project: Underground Sun.Conversion (RAG)



Country Update: Austria

WIVA - Exemplary project: Wind2Hydrogen (OMV)

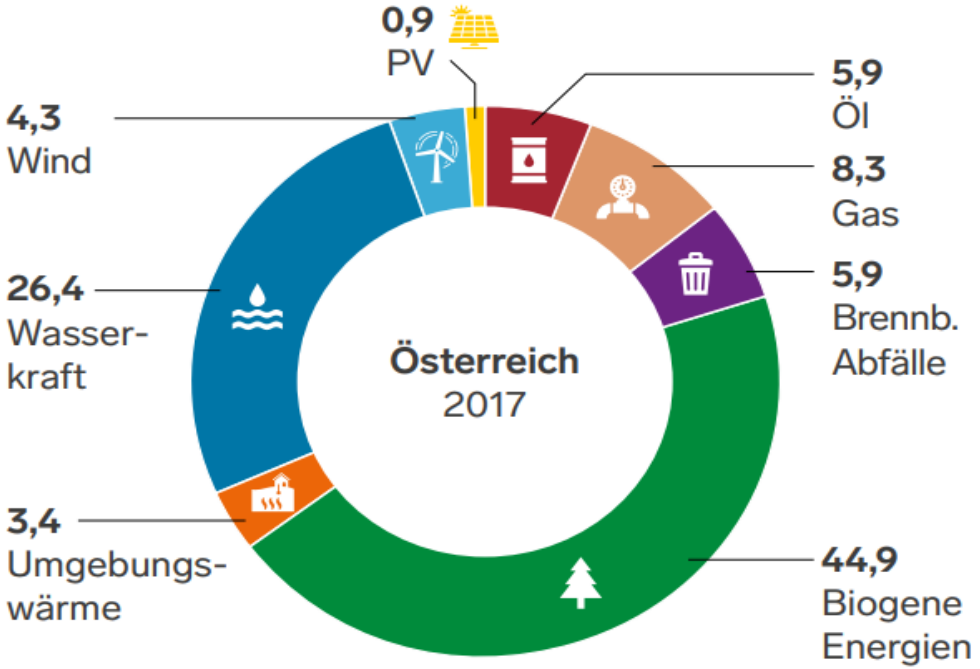
P2G coupling the **electricity** and **gas grid**. An Austrian consortium is generating green hydrogen by a **new flexible, cost-effective and efficient, high-pressure electrolyser** feeding H_2 into the natural-gas grid and **refueling vehicles**. Investigation covers **base load operation**, operation as a function of the **price** of **electricity**, accommodating **surplus power**, supplying **grid services** and providing **operating reserve**.



Country Update: Austria

Austria as potenial Hydrogen Valley in the heart of Europe

- Bridging many neighbouring countries including eastern Europe
- Strong energy sector and vehicle industry
- High share in renewable energy sources (only 14 % fossil, in transport 2nd in Europe, 100 % renewable electricity. Europe 42 % fossil, 28 % renewables)



Country Update: Austria

Potential future focus of IPHE in relation to other FCH-initiatives and -organisations:

MI/CEM, HEM, HC, IEA, Hydrogen Challenge, Hydrogen Valleys,…

IPHE is a unique organisation:

- blending vision for elaborated strategies and authority for policy making with sound technical and scientific expertise.
- linking hydrogen and fuel cells in concrete business cases (e.g. FCVs).
- focussing on synergies by transnational cooperation as hydrogen valleys in just one country will not lead us to the necessary worldwide fundamental change in the transport and energy system.