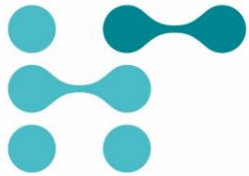


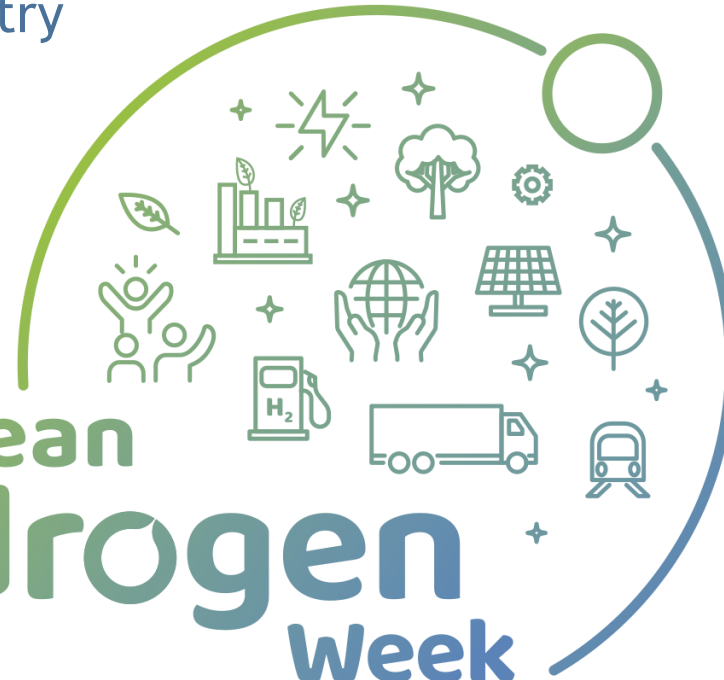
H2FUTURE

Green Hydrogen for the Steel Industry



H2FUTURE
Green Hydrogen

European
Hydrogen
Week



Robert Paulnsteiner

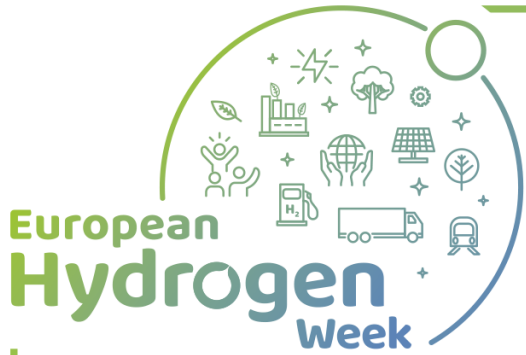
Verbund Energy4Business GmbH

<https://h2future-project.eu>

robert.paulnsteiner@verbund.com

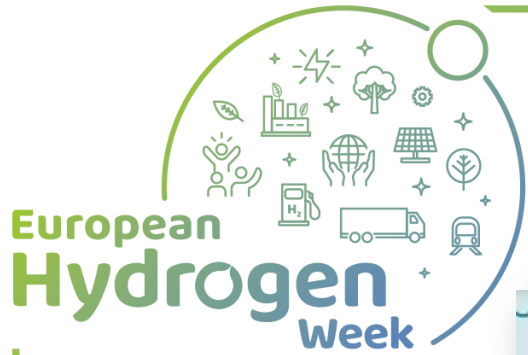
#PRD2020
#CleanHydrogen





H2FUTURE - Project Overview

- Call year: 2016
- Call topic: Call H2020-JTI-FCH-2016-1 Demonstration of large-scale rapid response electrolysis to provide grid balancing services and to supply hydrogen markets
- Project dates: January 2017 - June 2021 (4.5 years)
- % stage of implementation 01/11/2020: 80 %
- Total project budget: 18 million €
- FCH JU max. contribution: 12 million €
- Other financial contribution: none
- Partners: VERBUND Energy4Business GmbH (coordinator), voestalpine Stahl GmbH, K1 MET GmbH, Siemens, Austrian Power Grid AG, TNO

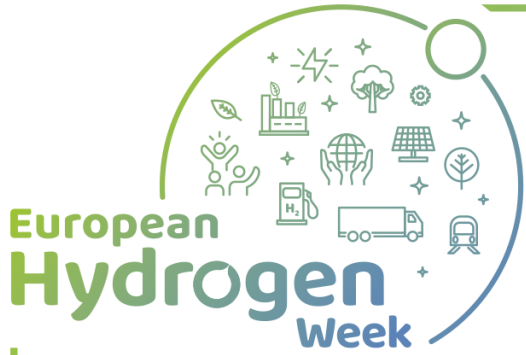


H2FUTURE - Project Partners



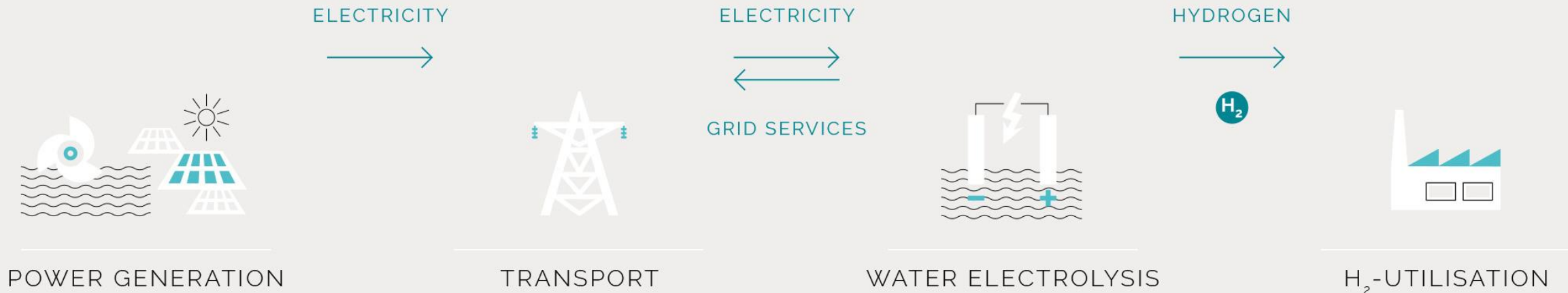
#PRD2020
#CleanHydrogen

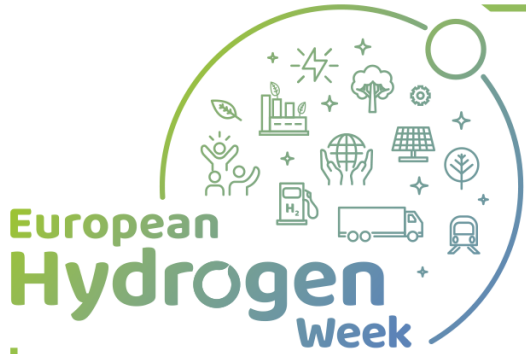




H2FUTURE Project Summary

Production of Green Hydrogen





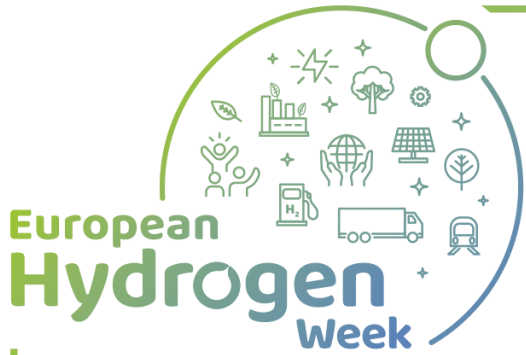
H2FUTURE Project Summary

H2FUTURE is a European flagship project for the generation of green hydrogen from electricity from renewable energy sources.

Key Objectives:

- Design and installation of a **6 MW PEM electrolyser** system at the voestalpine steel plant
- **Industrial integration** of renewable hydrogen production in the steelmaking process
- **26-month demonstration** of the electrolyser system
- **Provision of grid services** for balancing the electricity grid
- **Continued operation** after the end of the project
- **Roll-out scenarios** for replacing coal and coke by green hydrogen

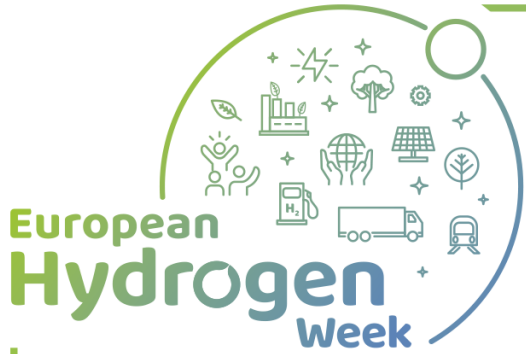




H2FUTURE Project Progress

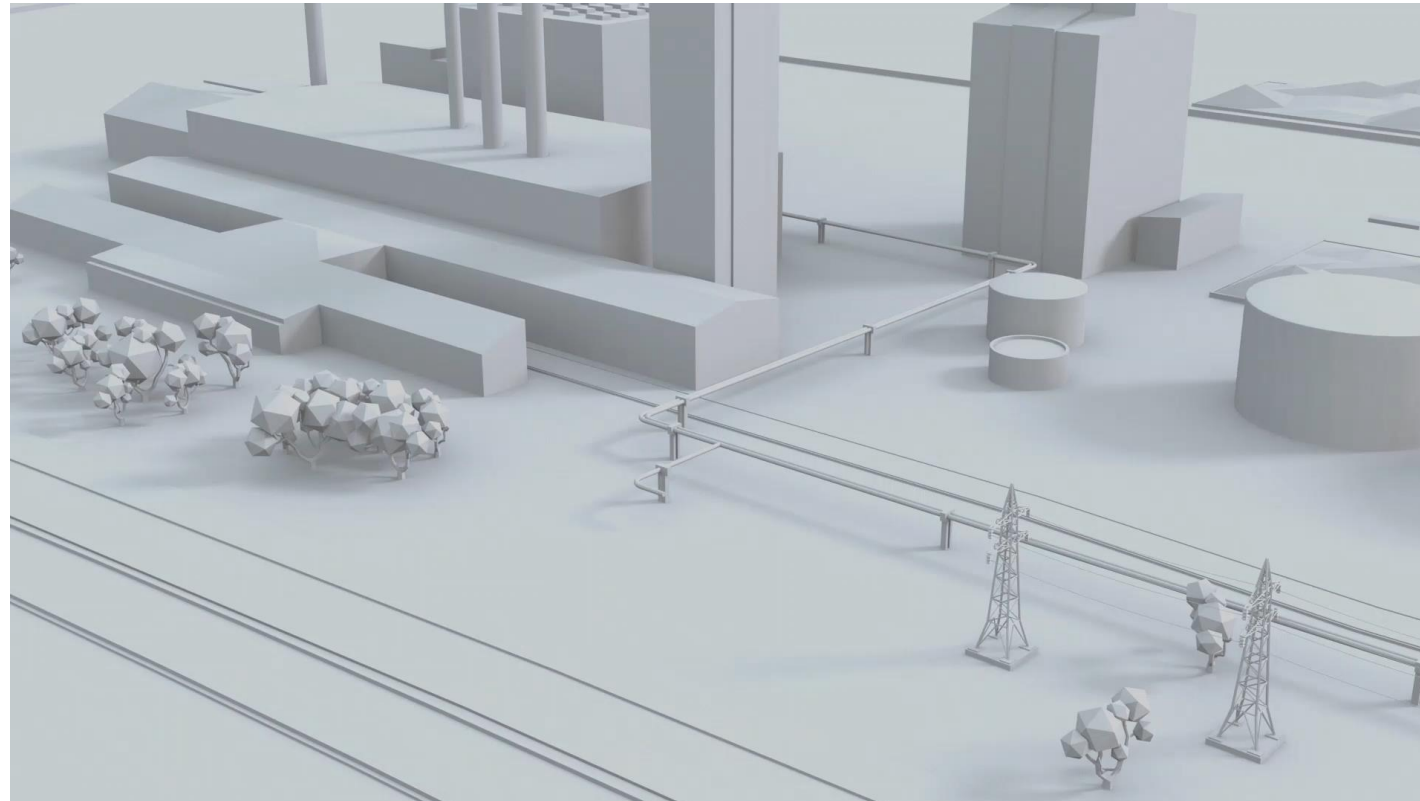
Specification - Engineering - Manufacturing





H2FUTURE Project Progress

Erection - On-Site-Integration - Start-up - Commissioning



H2FUTURE Demonstration Operation

WP8 - Pilot tests and Quasi-Commercial operation

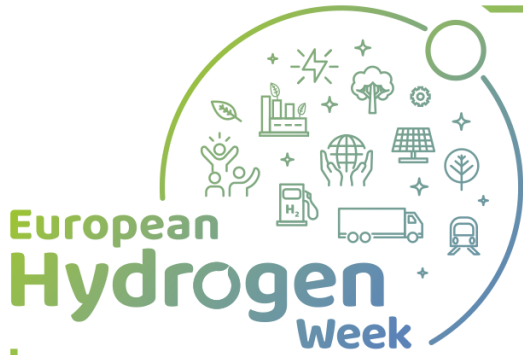
Achievement to-date

2.400 Oph



5.700 Oph





H2Future - Challenges

Producing green hydrogen for steel production process

Climate Change

- Immediate action and strategy for climate change mitigation
- Decarbonisation of industry, transport, heating/cooling sectors to meet greenhouse gas reduction targets

Sectorial Integration

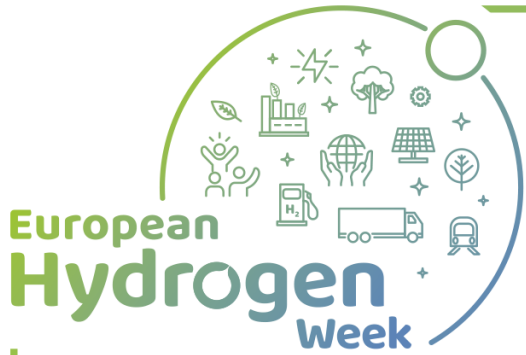
- Close cooperation across sectors (industry-energy)
- Leveraging benefits via cooperation in innovative projects
- Assessment and revision of regulations

European Competitiveness

- Creating a level playing field for European and international actors
- Early stage investments in innovative technologies and coverage of technological and economic risks

Electrification

- Increase of share of volatile renewables
- Generation/transport/storage/conversion of electricity or renewable gas across sectors
- Digitalisation supporting development of new products and services



Exploitation Plan/Expected Impact

Exploitation

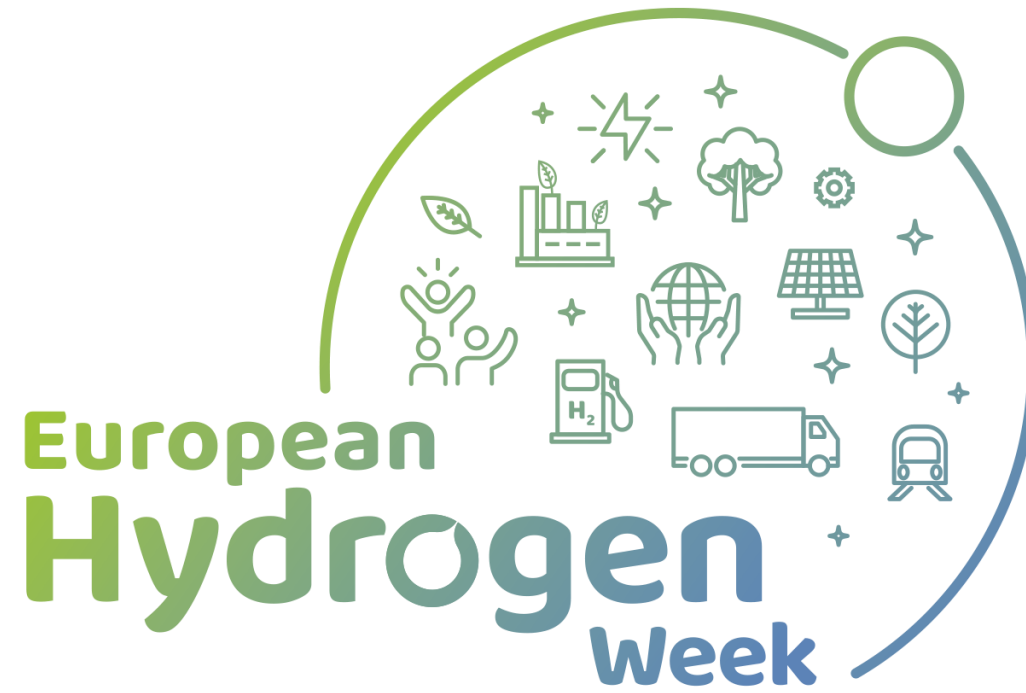
WP9 (“impacts of the project results and exploitation”) activities are targeted to exploit project results.

- Focus on steel industry (replication potential in Europe).
- Focus on fertilizer industry (replication potential in Europe).
- Development of recommendations to regulatory bodies.

Impact

Exploitation activities closely linked to WP10 (communication & dissemination). Target groups:

- Energy and environmental policy makers (national and EU).
- Steel industry community.
- Power industry and electricity sector.
- Regulatory bodies at national and EU level.



European
Hydrogen
Week

#PRD2020
#CleanHydrogen

