



Delivering the Green Hydrogen Promise

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Global
Commitment



EU Targets



PT



Regions and
Cities



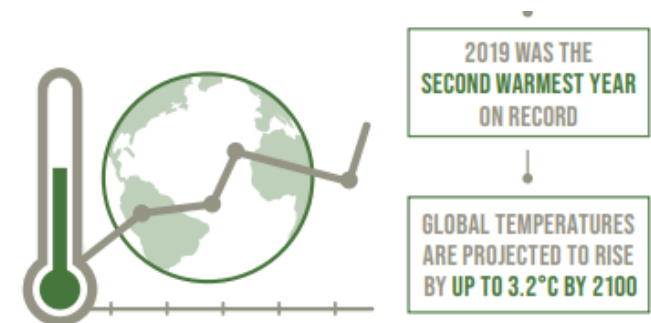
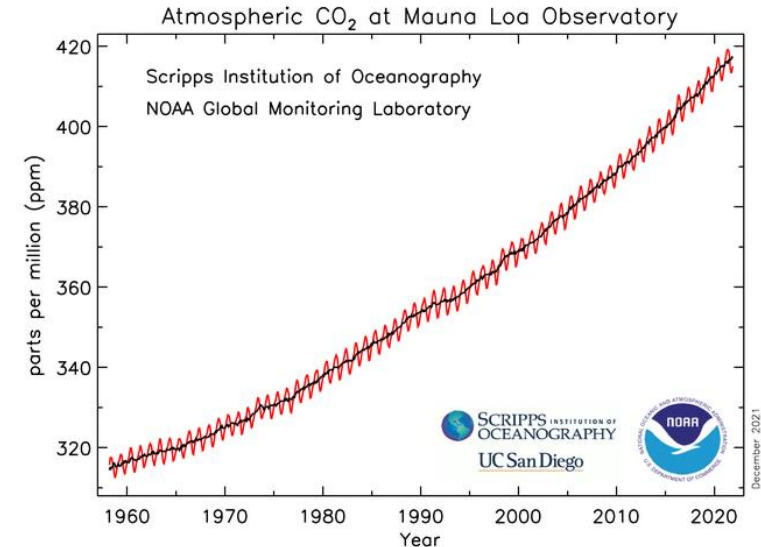
Commitment at a Global level to decarbonize Human society

From the Intergovernmental Panel on Climate Change:

- From 1880 to 2012, average global temperature increased by 0.85°C.
- 1901 to 2010, the global average sea level rose by 19 cm.
- The Arctic's sea ice extent has shrunk 1.07 million km² every decade for 40 years
- Global CO₂ emissions have increased by almost 50% since 1990

Paris Agreement (reviewed at COP26):

Limit temperature rise below 2 °C above pre-industrial levels!



EU Targets – the role of H2

Overall 2030 targets:

- **55% CO2 emission reduction target**
- 40% RES in gross final consumption of energy
- Transport fuels: 13 % reduction of the GHG intensity
- Buildings: 49% RES
- Average emissions of new cars to come down by 55% from 2030 and 100% from 2035

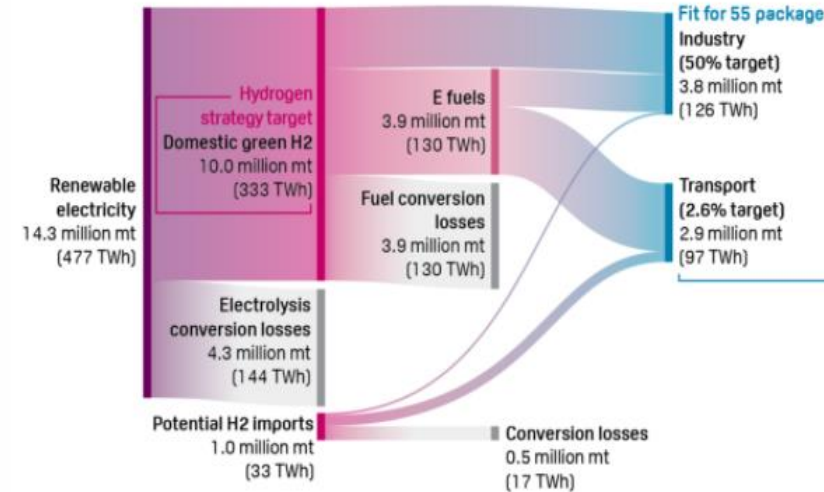
H2 Production (electrolysis, under Green Deal):

- Phase 1 (2020-2024): > **6 GW**
- Phase 2 (2025-2030): **40 GW**
- Phase 3 (2030-2050): A potential ¼ of the EU's RE production used for H2 production

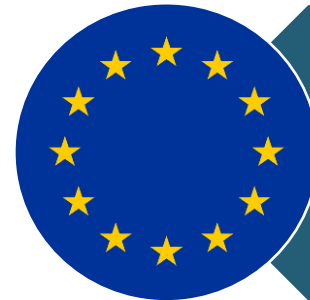
H2 demand and distribution (Fit for 55):

- 1 HRS every 150 km along the TEN-T core network and in every urban node.
- Transport sector - 2.6% for renewable fuels of non-biological origin
- Industry – 50% share of H2 consumption

2030 EU27 HYDROGEN SUPPLY FLOW, BASED ON 10 MILLION MT/YEAR PRODUCTION TARGET



Source: [SP Global](#)



1. IPCEI on Hydrogen to facilitate use of national funds
2. CEF-T – funding for HRS along the TEN-T corridors
3. Innovation Fund
4. Clean Hydrogen Partnership calls
5. Horizon Europe
6. European Clean Hydrogen Alliance - lobby activity , no direct funding

IPCEI, CEF and other EU incentives are key contributors to RH2 business development

RE POWER EU

Elimination of Europe's dependence on fossil fuels from Russia to 2030.

- **Diversification of gas supply**
- **Faster reduction of our dependence on fossil fuels**

Biomethane

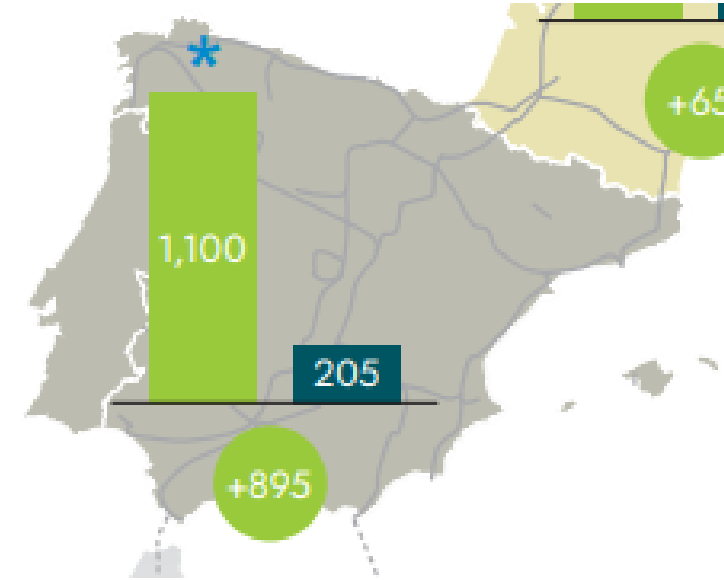
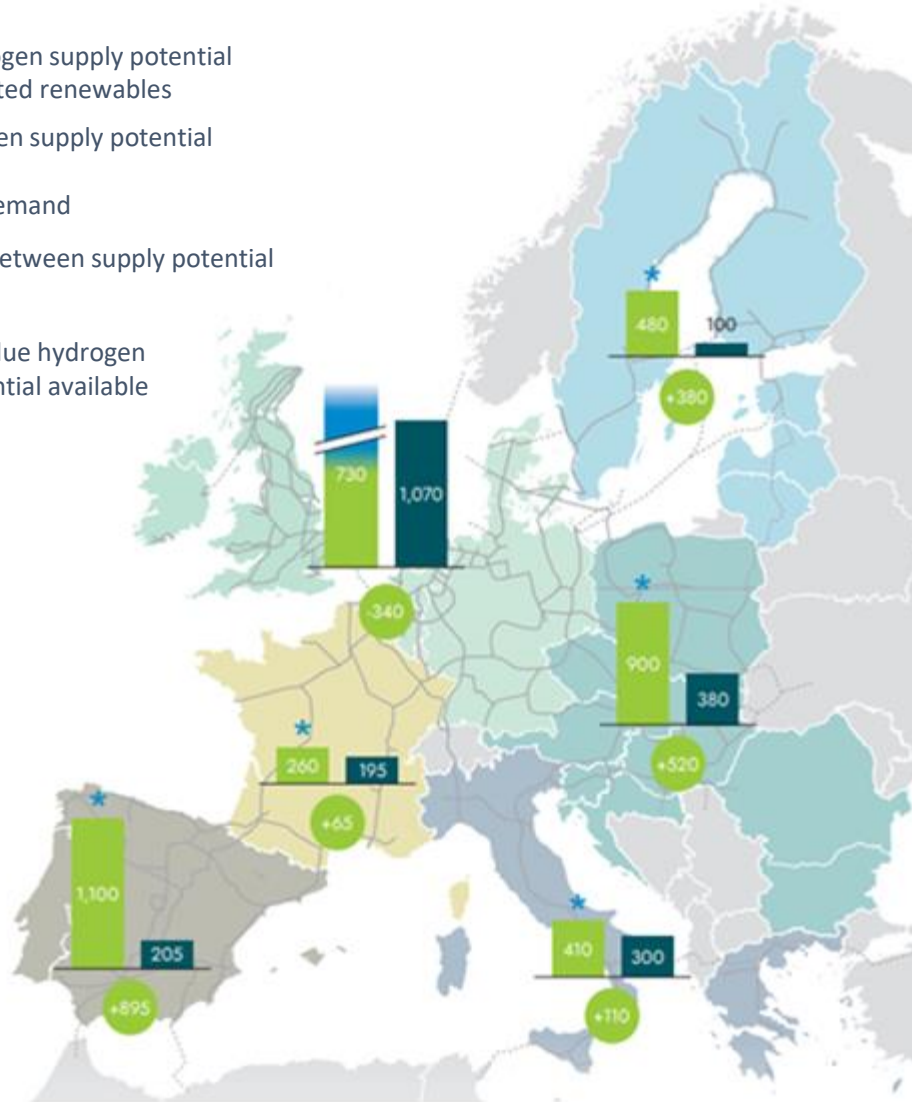
- Double FF 55 objective, 35 billion cubic metres/year in 2030
 - Production - biomass sources, agricultural waste and residues
 - Funding through member state strategic plans.

Renewable Hydrogen

- Production - FF 55 5,6 million tons (mt) , additional 15 mt objective to 2030.
 - 10 mt produced EU, 10 mt imported from diverse sources.
 - Other form of fossil free hydrogen, notably nuclear.
- Infrastructure
 - Development of integrated Gas and Hydrogen infrastructure
 - New cross border infrastructure compatible with hydrogen
 - Storage
 - Port Infrastructure
- Others
 - Mediterranean Green Hydrogen Partnerships
 - Production and Transport – EU Neighborhood
 - Establish Global European Facility
 - Access to affordable renewable hydrogen

EU/PT Hydrogen Potential

- Green hydrogen supply potential from dedicated renewables
- Blue hydrogen supply potential
- Hydrogen demand
- Difference between supply potential and demand
- ★ Additional blue hydrogen supply potential available

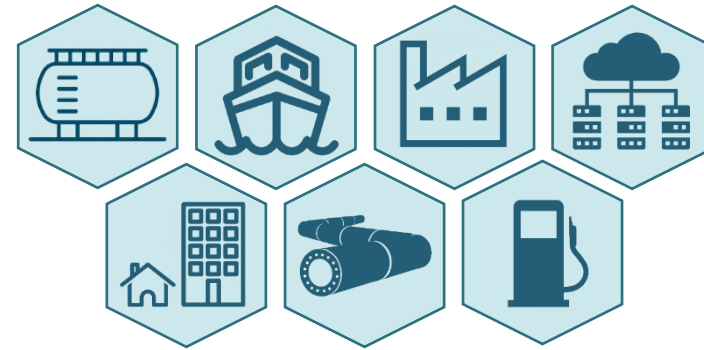


- Portugal - Greatest potential for producing Green H2 in Europe.
 - Sun, Wind, Sea, Biomass.
 - Largest photovoltaic potential in Iberia.
 - + 50% Green H2 produced from solar energy.
 - Maritime Exclusive Economic Zone
 - Production vs Consumption

Ref: "Gas for Climate: a path to 2050" EUROPEAN HYDROGEN BACKBONE - Analysing future demand, supply, and transport of hydrogen; junho 2021

Hydrogen Economy

Green Hydrogen to decarbonise sectors where electrification is not a viable option!

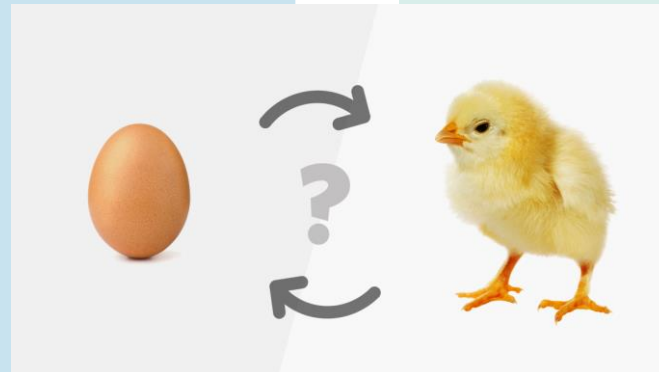


Production

- Photovoltaic
- Wind - Onshore, Offshore
- Sea - Waves and Currents
- Biomass
- Small/Medium size projects may precede Big size projects.

Stimulating production:

- Strong partnerships
- Viable/sustainable projects



Off Takers

- Sectors of the economy that use hydrogen
- Transport
- Industry
- Housing
- Electricity

Stimulating consumption

- Available equipment
- Satisfactory return on investment

Regions and Cities

Important Role

- Essential role in the implementation and development of Hydrogen as an energy vector.
- Regions have the right dimension for the development of projects and implementation of H2 Valleys
- Function as facilitator in liaising between Stakeholders.
- More agile
- In-depth knowledge:
 - Territory
 - Land Use Plans
 - Companies and Entrepreneurs
 - Communities and People
 - Territory Needs.

Regions and Cities

Hydrogen Positive Impact

Economic and Social

- Driving Innovation and Development
- Attraction of New Businesses.
- Creation of New Jobs
- Attraction of Specialised Manpower
- Improve the Image of Regions and Cities
- Increase the Quality of Life
- Boost Tourism
- Positive Impact on Health



Thank You! Muito Obrigado!

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