

The Future of Hydrogen

Jose M Bermudez, IEA

Webinar "The Swiss Army knife of the Circular Carbon Economy: hydrogen has the potential to Reduce, Reuse, Recycle and Remove carbon emissions"

3 June 2020

Hydrogen – A common *element* of our energy future?

- Momentum currently behind hydrogen is unprecedented, with more and more policies, projects and plans by governments & companies in all parts of the world
- Hydrogen can help overcome many difficult energy challenges
 - Integrate more renewables, including by enhancing storage options & tapping their full potential
 - Decarbonize hard-to-abate sectors such as steel, chemicals, trucks, ships & planes
 - Enhance energy security by diversifying the fuel mix & providing flexibility to balance grids
- But there are challenges: costs need to fall; infrastructure needs to be developed; cleaner hydrogen is needed; and regulatory barriers persist

Hydrogen is already part of the energy mix



Dedicated hydrogen production is concentrated in very few sectors today, and virtually all of it is produced using fossil fuels, as a result of favourable economics.

Hydrogen production with CO₂ capture is coming online



Low-carbon hydrogen from fossil fuels is produced at commercial scale today, with more plants planned. It is an opportunity to reduce emissions from refining and industry.

Renewables hydrogen opens an opportunity for trade



The declining costs of solar PV and wind could make them a low-cost source for hydrogen production in regions with favourable resource conditions.

The challenge to 2030: expand hydrogen beyond existing applications



Dependable demand from current industrial applications can boost clean hydrogen production; policies & industry targets suggest increasing use in other sectors, but ambition needs to increase.

Four key opportunities for scaling up hydrogen to 2030



The IEA's 7 key recommendations to scale up hydrogen

- 1. Establish a role for hydrogen in long-term energy strategies
- 2. Stimulate commercial demand for clean hydrogen
- 3. Address investment risks for first-movers
- 4. Support R&D to bring down costs
- 5. Eliminate unnecessary regulatory barriers and harmonise standards
- 6. Engage internationally and track progress
- 7. Focus on four key opportunities to further increase momentum over the next decade

Stay tuned for upcoming analysis – the IEA will be launching ETP 2020 in two reports, one focused on innovation in July and a second one with an assessment of cost effective technology choices to enhance energy security and reach net-zero emissions.



Thanks for your attention