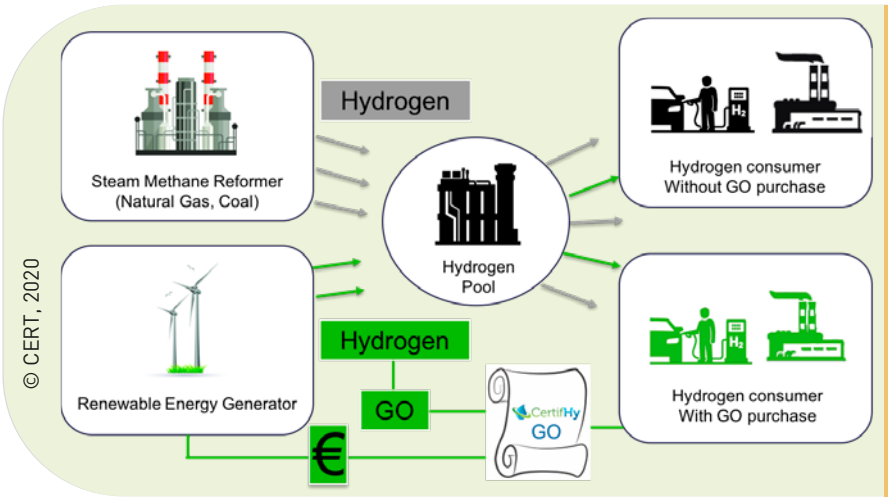
Making an impact on the clean energy transition

MARKET UPTAKE

TOWARDS A SUSTAINABLE AND CIRCULAR HYDROGEN ECONOMY



Impact analysis and action

With growing interest in hydrogen comes the need to ensure the sector's technology – and its economy – are as sustainable as possible. That means developing tailored environmental impact tools and greening everything from design to disposal.

FCH JU-funded projects have long promoted such a comprehensive approach. Providing a solid basis, FC-HYGUIDE developed guidance, training materials and courses on how to use Life Cycle Assessments (LCA) to holistically determine a hydrogen technology's environmental footprint. That initial framework is now being expanded by the SH2E project to include economic and social dimensions, while close collaboration with the European Commission's Joint Research Centre (JRC) is fostering further critical advances.

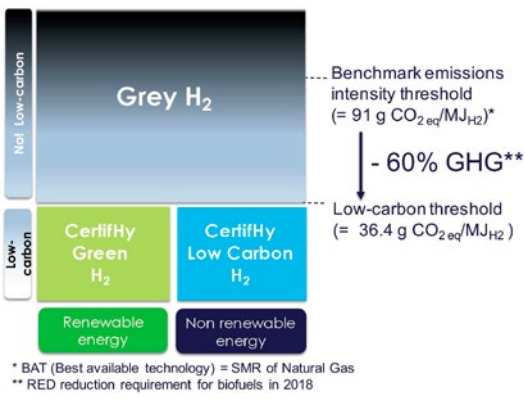
With recycling strategies, eco-design, life-cycle-thinking tools and much more, the FCH JU is boosting the sustainability and circularity of hydrogen technology, preparing the sector and its economy for a planet-friendly roll-out as part of Europe's clean energy transition.

Recycle, redesign, GO!

How best to dispose of defunct technology and bolster circularity? With their focus on recycling and dismantling strategies, as well as the recovery and reuse of resources such as platinum, this is where the HYTECHCYCLING and BEST4HY projects come in.

EGHOST, meanwhile, is working on eco-design guidelines to promote efficiency, finding ways to refurbish older technologies and include environmentally friendly design criteria early on in the development of new ones.

Advancing sustainability through truthful sourcing, CERTIFHY created the first EU-wide Guarantee of Origin (GO) scheme for green and low-carbon hydrogen. The project's current third phase includes building a market for GO trade.



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TOWARDS A SUSTAINABLE AND CIRCULAR HYDROGEN ECONOMY

TOP-NOTCH GREEN TECHNOLOGY

Hydrogen technology must deliver excellent performance on the one hand and sustainability and circularity on the other, promoting an economy that minimises environmental impact and encourages the reuse of resources.

CIRCULAR AND SUSTAINABLE

Encouraging collaboration between industry and research experts to foster the greening of hydrogen technology, from start to finish. **The goal?** To promote a sustainable and circular hydrogen economy that supports the EU's Green Deal and strategy on energy integration while contributing to the Sustainable Development Goals and Paris Agreement. **Key results?** Tools to assess the impact of hydrogen technologies; advances in recycling, dismantling and resource recovery; a hydrogen-sourcing scheme and steps to develop eco-design guidelines promoting sustainability and circularity.

KEY ACHIEVEMENTS

CERTIFHY

First EU-wide Guarantee of Origin scheme for green and low-carbon hydrogen
Pilot projects throughout Europe on **production pathways**

FC-HYGUIDE

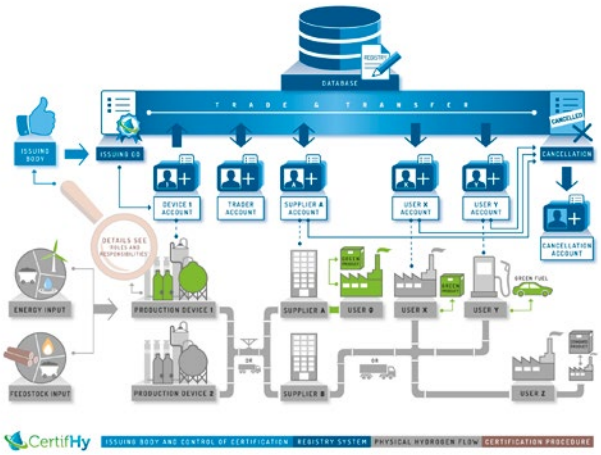
Guide and reporting template for hydrogen-specific LCAs
Life Cycle Inventory (LCI) data for hydrogen and fuel cell technologies

HYTECHCYCLING

Identification of critical materials and components in hydrogen technology products
Mapping of existing and new recycling technologies

JRC COOPERATION

Expert workshop on LCAs of hydrogen technologies
Review of LCAs for **70+** FCH JU projects



IMPACT

CERTIFHY

New & transparent clean hydrogen market
Enhanced business case for green hydrogen

FC-HYGUIDE

Tailored resources for measuring hydrogen technology's environmental footprint
Bolstered sustainability awareness through broad dissemination of materials

HYTECHCYCLING

New strategies and roadmap for recycling and dismantling
Harmonisation and regulatory proposals related to recycling and dismantling

JRC COOPERATION

Informed decision-making on sustainability due to continuous monitoring activities
Strengthened links and data sharing with the European Platform on Life Cycle Assessment

FIND OUT MORE

www.fch.europa.eu/page/fch-ju-projects
https://best4hy-project.eu/
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FUEL CELLS AND HYDROGEN JOINT UNDERTAKING

A partnership dedicated to clean energy and transport in Europe

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