



**CertifHy - The first European
Guarantee of Origin for
Green & Low Carbon
Hydrogen**



Are you looking for Green and Low Carbon Hydrogen?
Are you interested in using renewable energy in your processes and
reducing your GHG footprint?

Do you have to report on your hydrogen GHG emissions as part of a CSR strategy?

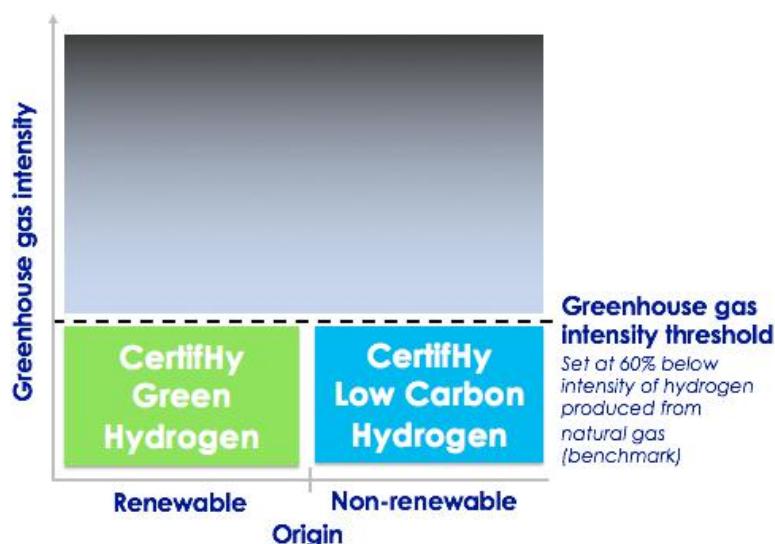
CertifHy – the 1st EU-wide Guarantee of Origin scheme for Green and Low Carbon Hydrogen – provides the solution!

What is CertifHy?

- CertifHy Guarantees of Origin allow end-users to consume Green Hydrogen or Low Carbon Hydrogen everywhere in the European Union;
- Initiated at the request of the European Commission and financed by the Fuel Cell and Hydrogen Joint Undertaking (FCH JU);
- Developed with a wide-ranging number of stakeholders through a consensus-based approach;
- CertifHy currently runs in the form of a pilot and the first batches of CertifHy Guarantees of Origin have been issued and are now available.

Green and Low Carbon Hydrogen Concepts

The CertifHy scheme considers both the origin of the hydrogen and its greenhouse gas (GHG) intensity in reference to a benchmark which is the GHG intensity production of hydrogen from natural gas.



Two labels are defined for hydrogen having a greenhouse gas intensity below benchmark by at least 60% (see figure on the left bottom):

- **CertifHy Green Hydrogen** if the hydrogen is made from renewable energy;
- **CertifHy Low Carbon Hydrogen** otherwise.

What is the CertifHy Guarantee of Origin?

A Guarantee of Origin (GO) is an electronic document that guarantees and provides information to final consumers on the origin of a product. GO schemes are in place in Europe for renewable electricity, and in some countries also for electricity from combined heat and power (CHP) plants, renewable heating & cooling as well as biomethane. It is already a legal requirement to use GOs for making a claim on the origin electricity, and this obligation is being extended by the recast Renewable Energy Directive (RED 2) to other energy carriers such as gas and hydrogen.

The CertifHy GO proves to end-users that the hydrogen is either Green Hydrogen or Low Carbon Hydrogen and provides information regarding its attributes, such as greenhouse gas intensity and plant place of production (see next page for further details regarding the information disclosed in a GO).

A CertifHy GO covers either hydrogen produced from renewable energy (bio, hydro, wind and solar) - defined as 'Green Hydrogen' - or from non-renewable low carbon energy sources (nuclear, fossil with CCS) - defined as 'Low Carbon Hydrogen'. In both cases the greenhouse gas (GHG) intensity of the hydrogen considering the whole production pathway ("well-to-gate") is below a set threshold (min. 60% below the production of hydrogen from natural gas).

The CertifHy GO Scheme in a nutshell

- CertifHy Guarantees of Origin enable **EU-wide consumption of Green and Low Carbon Hydrogen** regardless of the location; by using a GO, the corresponding quantity of hydrogen they consume acquires the properties of the hydrogen covered by the GO.
- The CertifHy GO scheme is managed and operated from a **central registry** that takes care of issuance, transfer and cancellation of a GO.
- The GO is cancelled upon use, so that it may only be used once for claiming hydrogen consumed as Green or Low Carbon Hydrogen. The provided electronic cancellation statement includes a link for on-line access to full GO content (see graph below).

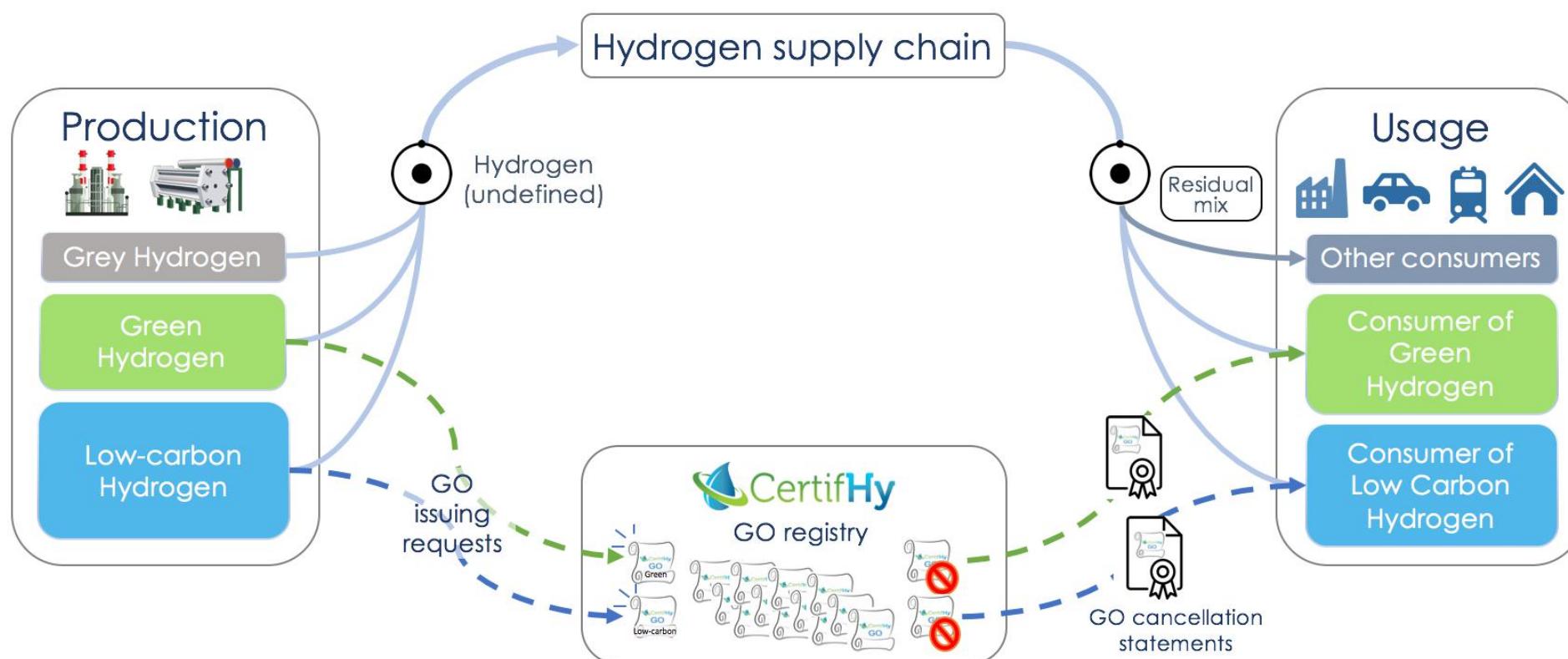
- Hydrogen that is consumed without being covered by a GO is considered to be from the “residual mix”, which is an attribute designating the combination of all the hydrogen for which *no* GOs were issued (or for which GOs were issued but not used before expiration).

CertifHy GOs disclose

- Energy source of the hydrogen
- Information on the plant which produced the hydrogen (location, start date of operation, operator...)
- Time of production of the hydrogen
- Green House Gas intensity (amount of CO2 equivalent per unit of energy) of the hydrogen
- Date of issuing of the GO



The CertifHy Process



The CertifHy Pilot

The pilot is composed of four hydrogen production plants demonstrating different hydrogen production pathways located throughout Europe.



Air Liquide

SMR Port Jerome | France

The pilot plant by Air Liquide produces Low Carbon hydrogen using steam methane reforming with a Carbon Capture unit or Green Hydrogen using BioMethane as feed gas.



Water electrolysis | Belgium

The pilot of the retailer Colruyt Group produces Green Hydrogen with electrolysis for their forklifts, heavy duty vehicles and passenger cars.



Nouryon



Chlor Alkali process | Netherlands

The pilot demonstration by Nouryon and Air Products uses a chlor alkali process to produce Green Hydrogen in Rotterdam Botlek.



uni
per

Windgas Falkenhagen | Germany

The pilot by Uniper produces Green Hydrogen from wind energy via water electrolysis, that can be fed into the natural gas grid or used as input for methanation.

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Stakeholder Platform Members



Are you interested in obtaining CertifHy guarantees of origin?

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Funded by



Project Coordinator



Consortium Partners

grexel



TNO



🌐 www.certifhy.eu

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