

What is CertifHy?

The CertifHy Consortium is developing the first EU-wide Guarantees of Origin Scheme (GO) for Premium Hydrogen including a definition for green and low-carbon hydrogen, a detailed proposal for a GO system and a roadmap for implementation.

Funded by



Project coordinator



Consortium Partners

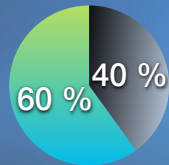


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Why a GO for Premium Hydrogen?

Global demand for hydrogen is foreseen to reach 50 Million tons by 2025 mainly used in industry and transport. It is predicted to grow by 3,5% per year. Today most hydrogen is produced from fossil resources. For hydrogen to become a climate-friendly alternative to fossil fuels, it is necessary to ensure minimal impact on natural resources in the whole life cycle. It is expected that 50-60% of all hydrogen for the growing market of transportation will originate from renewable or low-carbon sources by 2030.



- Grey Hydrogen
- Premium Hydrogen

A new market for Premium Hydrogen in mobility

Advantages of the first GO scheme for Premium Hydrogen:

- EU-wide transferability of Premium Hydrogen;
- EU-wide consumption of Premium Hydrogen;
- Transparency & consumer empowerment;
- Improving the business case and
- Creating market pull for Premium Hydrogen.



For further information visit

www.certifhy.eu
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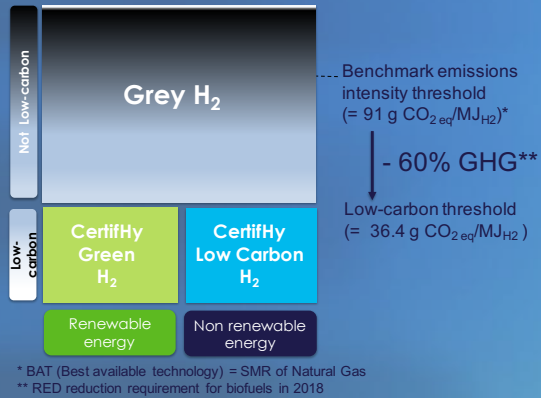
CertifHy 1st EU-wide Guarantee of Origin for Premium Hydrogen



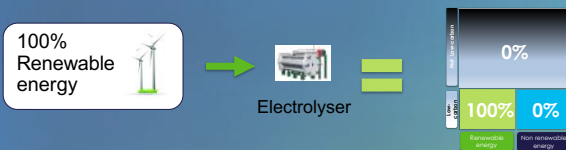
What is Premium Hydrogen?

Today, over 95% of all hydrogen is generated from fossil fuels, in CO₂-intensive processes. Premium Hydrogen is hydrogen produced with low carbon emissions and includes CertifHy Green Hydrogen and CertifHy Low Carbon Hydrogen. CertifHy Green Hydrogen refers to hydrogen generated by renewable energy with carbon emissions 60% below the benchmark emissions intensity threshold (= GHG emissions of the hydrogen produced by steam reforming of natural gas representing 95% of current merchant market). CertifHy Low Carbon Hydrogen is hydrogen created by non-renewable energy with emissions below the same threshold.

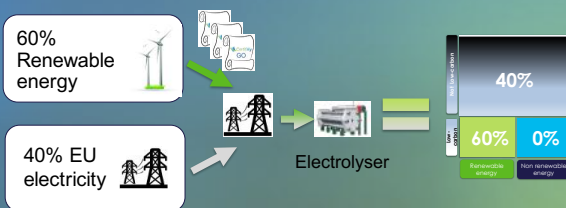
Definition of Premium Hydrogen



Example 1: 100% CertifHy Green Hydrogen



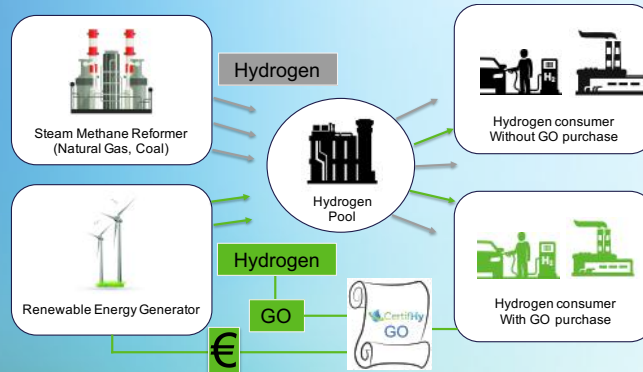
Example 2: 60% CertifHy Green Hydrogen



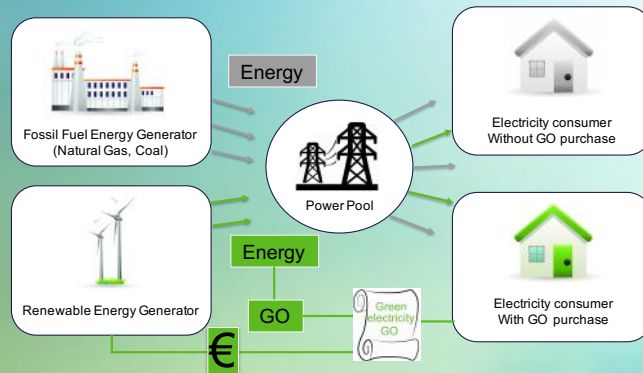
The 1st EU-wide Guarantee of Origin scheme for hydrogen

A Guarantee of Origin (GO) labels the origin of a product and provides information to customers on the source of their products. It operates as a tracking system ensuring the quality of a product such as hydrogen or electricity. The proposed Premium Hydrogen GO system, similar to the existing green electricity GO scheme, decouples the green attribute from the physical flow of the product and makes Premium Hydrogen available EU-wide, independently from its production sites (see graphs below). The GO scheme for Premium Hydrogen includes the GO governance; eligibility and registration of production plants; the GO and information content; issuance, transferability and cancellation; the registry system and trading platform.

Premium Hydrogen GO scheme



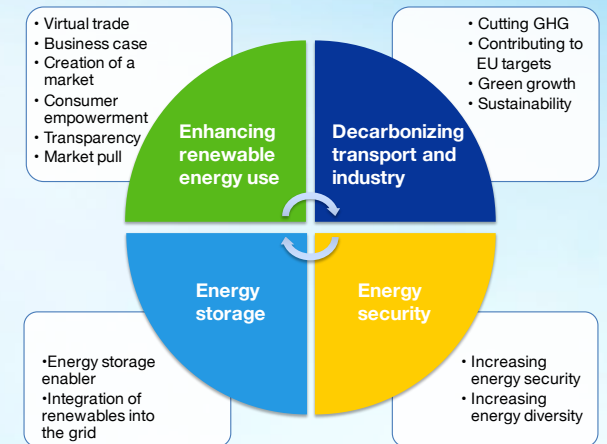
Green electricity GO scheme



Benefits of CertifHy

Premium Hydrogen can help Europe become the number one in renewables and reach EU targets of cutting 80-95% of greenhouse gas emissions (GHG) by 2050. Premium Hydrogen GOs will boost demand and supply of Premium Hydrogen, enhance renewable energy use, decarbonize transport and industry, facilitate energy storage and energy security.

Benefits of a EU-wide GO for Premium Hydrogen



Roadmap for Implementation

Extract of the roadmap for implementing CertifHy

		2016	2017	2018	2019	2020
Strengthening Momentum	Supervisory Board	[Timeline bar]				
	Legal safeguard	[Timeline bar]				
	Buy-in for EU scheme	[Timeline bar]				
GO Infrastructure	Issuing body	[Timeline bar]				
	Settle GO information	[Timeline bar]				
	ICT platform	[Timeline bar]				
Gain experience	Pilots with GO scheme	[Timeline bar]				

CertifHy for Policy makers

Energy Transition

A well established and transparent market of green and low-carbon hydrogen can be a facilitator for Europe's energy transition and help Europe become the number one in renewable energies by:

- Contributing to reach EU targets of cutting 80-95% of greenhouse gas emissions (GHG) by 2050;
- Enhancing renewable energy demand and supply;
- Increasing energy security and energy diversity;
- Facilitating the further integration of renewables into the grid by energy storage;
- Offering visibility on the quantity and quality of the Green Hydrogen market and
- Fostering green growth and sustainability.

Decarbonizing industry and transport

Premium Hydrogen helps to reduce carbon emissions in a wide range of energy-intensive industries and sectors that are otherwise difficult to decarbonize.

- Premium Hydrogen could contribute to the decarbonization of at least 60% of the transport sector by 2050.
- Decarbonizing traditional fuels such as diesel and gasoline in refineries by the use of Premium Hydrogen instead of the GHG intensive hydrogen they currently use.
- Premium Hydrogen can lead the way to further decarbonize other industries (e.g. steel manufacturing, ammonia, chemical industry, etc.)

Consumer centric

A GO for Premium Hydrogen puts the consumers in the centre who are a key driving force in bringing about energy transition in the EU, and which is a key objective of the Energy Union:

- It offers transparency that is leading to consumer empowerment.
- EU-wide GO trade of Premium Hydrogen provides Premium Hydrogen EU-wide, also in areas where it is not produced.

CertifHy for Hydrogen Producers

New market for Premium Hydrogen

Premium Hydrogen GOs will boost demand and supply of green hydrogen throughout Europe.

- Producers can generate new value streams and reach a larger pool of customers because the proposed book and claim system decouples the green attribute from the physical flow of the product.
- A Premium Hydrogen GO contributes to market pull and market growth due to an increased availability of hydrogen and transparency of the hydrogen market.

Optimization of green hydrogen supply chains and assets

- Convenient EU-wide supply of green and low-carbon hydrogen through the trade of GOs.
- Decoupling the molecule from its green nature enables further optimization of Premium Hydrogen production sites. GOs can satisfy customer demands without the need for a new infrastructure.

Credible system

- Producers can sell Premium Hydrogen with confidence to their consumers by having a robust scheme available to prove the claim of their products.
- Producers can match customers' requirements with products that are supported by CertifHy.

CertifHy for Hydrogen Users

Easy access to Premium Hydrogen

- A well-established and transparent EU-wide Guarantee of Origin (GO) system for Premium Hydrogen offers easy, flexible and EU-wide access to green and low-carbon hydrogen. The proposed book and claim system decouples the green attribute from the physical flow of the product and makes Premium Hydrogen available EU-wide independently from its production sites.
- With the growth of the demand for green hydrogen, producers can optimize their production methods leading to lower prices and increased availability.

Transparency

- The GO scheme provides a reliable and transparent instrument that gives certainty to the consumer about the quality of the product he is buying.
- This allows consumers empowerment as they can choose freely the carbon intensity mix they require.

Enhancing market competitiveness

- GOs are an additional option for users to procure Premium Hydrogen enhancing the availability of competitive products.
- CertifHy Premium Hydrogen GOs help to decarbonize energy-intensive industries that have otherwise limited possibilities to decrease their carbon emissions.
- Green hydrogen GOs provide users with the opportunity to enhance their sustainability practices and improve their market position.

CertifHy for Service Providers

New business and sectors

- Premium Hydrogen Guarantee of Origins (GOs) can be new products next to green electricity and biogas GOs. This allows access to new sectors such as transportation, industrial, heating etc.
- From the initial demand of Premium Hydrogen for the energy and transport sector, CertifHy can reach other industrial sectors willing to decarbonize (e.g. refineries, steel manufacturers, chemical industries, etc.).

Innovation

The CertifHy GO can serve as an example for other GO schemes as it takes into account both renewable and GHG emissions, similar to the ongoing discussions to include GHG emissions in the existing green electricity GO.

Synergies with other GO and certification schemes

CertifHy aims to connect with other GO schemes, providing strong synergies and new business opportunities. For instance, renewable electricity can be used to produce Premium Hydrogen which can later be used in refineries that profit from lowering their carbon footprint.

Key elements of the CertifHy GO scheme

