



CertifHy

*Introduction to the Hydrogen CertifHy
scheme and CertifHy Stakeholder
platform*

An initiative funded by the FCH 2 JU



CertifHy's mission is to advance and facilitate the production, procurement and use of non-renewable, renewable and low carbon hydrogen, fulfilling ambitious environmental criteria as well as decarbonization objectives, in order to protect the climate and improve the living conditions of humankind.

CertifHy contributes to and promotes the sustainable production of hydrogen for all types of uses including energy, transportation, chemical conversion, heating and power generation, hence providing environmental, social and economic benefits.

CertifHy has developed high-quality hydrogen certification schemes addressing consumer disclosure (from well to gate) as well as RED II target compliance (from well to wheel).

CertifHy ensures that the certification schemes meet a high standard of quality and provides the adequate framework for guaranteeing transparent information about the origin and environmental attributes of hydrogen.

CertifHy created a stakeholder platform where producers, consumers, traders, issuing bodies, regulators and H2 focused institutions act together towards a common understanding of the concept of non-renewable, renewable and low carbon hydrogen and contribute to the continuous development of the CertifHy schemes.

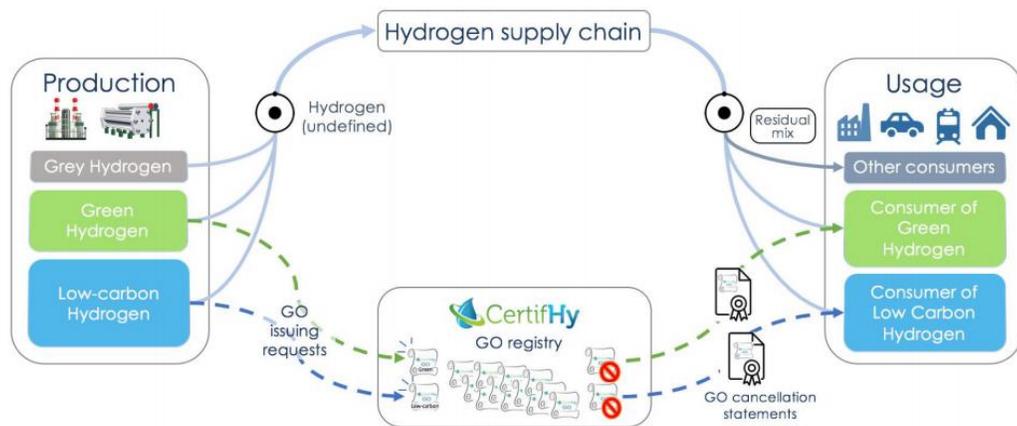
Openness, reliability, integrity, quality and transparency are core principles of the CertifHy schemes and are fundamental for CertifHy's relationship with its stakeholders.



CertifHy has established a system of electronic certificates, called Guarantee of Origin (GO) certificates.

CertifHy GOs enable EU-wide consumption of non-renewable and renewable hydrogen regardless of the location; by using a GO, the corresponding quantity of hydrogen consumed acquires the properties of the hydrogen covered by the GO.

A GO is an electronic document providing proof that a given quantity of hydrogen is produced by a registered production device with a specific quality and method of production. The GO certificates are maintained in a CertifHy Registry, a central database that will manage the GOs' life cycle for every account holder .



The CertifHy Registry generates unique GOs for each registered production device and tracks them during their life cycle, so that double use within the registry is excluded. The CertifHy Registry is fraud-resistant and can provide reports for different kind of purposes (for the account holder itself, for competent bodies, for European and national statistics, for the registry administrator, etc.).

GO schemes are typically in Europe, however CertifHy's objective is to go beyond Europe's borders in the future.

Content of a GO

CertifHy GOs provide information about

- GO identity : unique ID number, date of issuing, cancellation date
- Information on the plant which produced the hydrogen (location, start date of operation, operator...)
- Time of production of the hydrogen
- Energy source of the hydrogen (fuel or heat) and technology
- Whether the hydrogen production has received financial support or not
- Share of renewable energy
- Greenhouse Gas intensity (amount of CO2 equivalent per unit of energy) of the hydrogen

The full content of a GO is defined in the CertifHy scheme which can be found here:

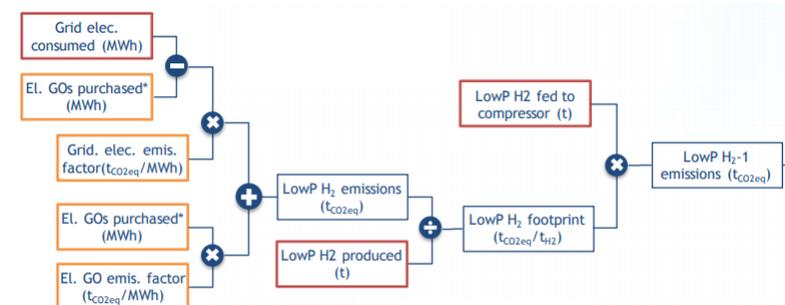
https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_Scheme-Document_V1-0_2019-03_11_endorsed.pdf

Focus: GHG calculation and allocation

Our GHG calculation is based on a methodology developed by CertifHy in collaboration with its stakeholders:

The greenhouse gas (GHG) intensity as established in the GO is based on CO2 emissions of the whole production pathway (“well-to-gate”) to produce hydrogen with a purity of at least 99.9%vol and a gauge pressure of at least 3 MPa. The “Well-to-gate” pathway means CO2 emissions from exploration to the production process, including transportation until the production process.

For each production pathway (electrolysis, SMR + CCU, chlor alkali, etc.), CertifHy performs a case study and develops a dedicated GHG allocation method which is then used as part of the CertifHy scheme.



* for greening grid electricity

Example of H2 product carbon footprint calculation diagram

A label adds new information to a GO to further inform the consumer about specific independent criteria. GO and labels are different. A GO is the identity card of the molecule, a label is a « flag » added on the GO and refers to different criteria. Labels can be added either to a GO issued under a National Scheme or under the CertifHy scheme.

The CertifHy scheme includes two different GO Labels :

- CertifHy Green Hydrogen



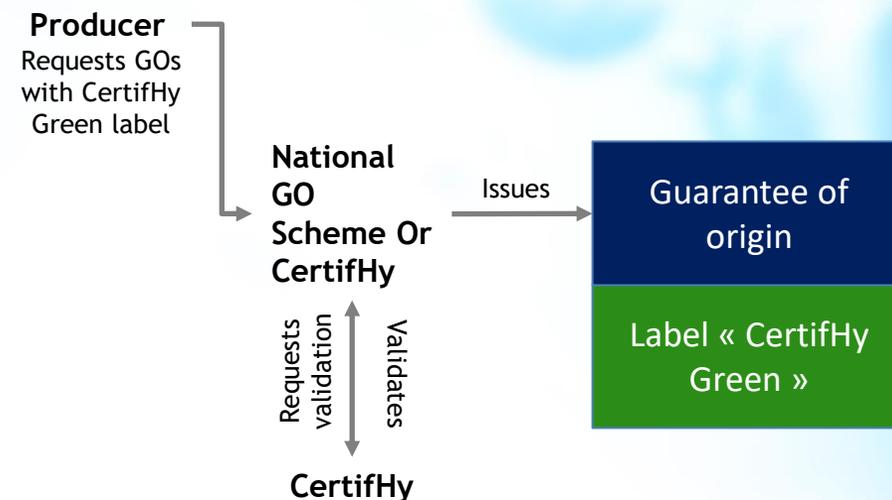
Originating from renewable sources (defined in art 2 of the Renewable Energy Directive II) and having a greenhouse gas balance below a defined threshold, which is min. 60% below the production of hydrogen through steam reforming of natural gas (benchmark process with a current GHG footprint of 91 gCO₂eq/MJ). This GHG intensity will be regularly re-assessed, as the emission reduction % targets are due to increase over time).

- CertifHy Low Carbon Hydrogen



Originating from non-renewable origin, nuclear or fossil energy using carbon capture and storage (CCS) and potentially carbon capture and utilization (CCU) which is yet to be defined by European Law and having a greenhouse gas balance below a defined threshold , which is min. 60% below the production of hydrogen through steam reforming of natural gas (benchmark process with a current GHG footprint of 91 gCO₂eq/MJ. This GHG intensity will be regularly re-assessed, as the emission reduction % targets are due to increase over time).

Use case



Certificate content



Driven by its energy policy objectives, the EU is looking at cost efficient ways to achieve 55% cuts in greenhouse gas (GHG) emissions in 2030 compared to 1990 levels.

Hydrogen can play a significant role in contributing to this decarbonisation objectives as there is a significant potential and demand for renewable and low-carbon hydrogen in several sectors, including transport and refining as well as in the steel, chemicals and other industries.

In order to facilitate the development of the renewable and low carbon hydrogen market, a reliable and efficient Guarantees of Origin (GOs) system is required.

The advantages of GOs for renewable and low carbon hydrogen are detailed here below.

ECONOMIC

MARKETING

**REGULATORY
COMPLIANCE**

ECONOMIC

- **Create new business model through product differentiation**

GOs provide product differentiation which will allow producers and consumers to improve their competitiveness and enhance their sustainability practices.

The credibility of the CertifHy scheme will allow producers to sell hydrogen with confidence while meeting consumer's requirements.

https://www.certifhy.eu/images/180612-CertifHy_Webinar.final.pdf (see slide 23)

- **Increase liquidity and transparency thanks to a globalized European market**

CertifHy aims at facilitating the creation of an EU-wide system. There is only one unique EU registry for CertifHy GOs to facilitate cross border trades at lower costs. CertifHy is compliant with AIB's EECS (European Energy Certificate System) scheme and therefore be in line with the entire H2 EU GO market. This will contribute to the growth of the hydrogen market, to its liquidity and transparency.

- **Standardized solution recognized between the market players, easy to trade**

CertifHy is compliant with AIB's EECS as well as the CEN EN16325 standard applicable to all GOs in Europe. Therefore, CertifHy GOs are comparable to other EU H2 GOs issued under a national scheme.

MARKETING

- **Provide trust to end consumers**
The CertifHy GO scheme provides a reliable and transparent instrument that gives trust to the consumer about the quality and origin of the product he is buying.
- **Allow consumers to transfer value towards the production method they want to support**
The CertifHy GO scheme provides a reliable and transparent instrument fostering consumers empowerment as they can set specific criteria on the hydrogen they want to purchase (localisation, energy source, production pathway, CO2 footprint, etc.).
- **Use of renewable or low carbon H2 independent from the location**
The GO system decouples the green attribute from the physical flow of the product and makes renewable and low carbon hydrogen available EU-wide independently from its production sites.
https://www.certifhy.eu/images/180612-CertifHy_Webinar.final.pdf (slide 22)
- **Increase the role of hydrogen in the energy transition**
A well established and transparent market of renewable and non-renewable hydrogen will be a facilitator for Europe's energy transition and will 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, by increasing energy diversity enhancing renewable energy demand and supply.
- **Measure impact of CO2 emissions**
By identifying and quantifying CO2 emissions, CertifHy GOs helps to point out excessive energy usage or inefficiencies. Managing the carbon footprint contributes to sustainability objectives but can also lead to costs savings.

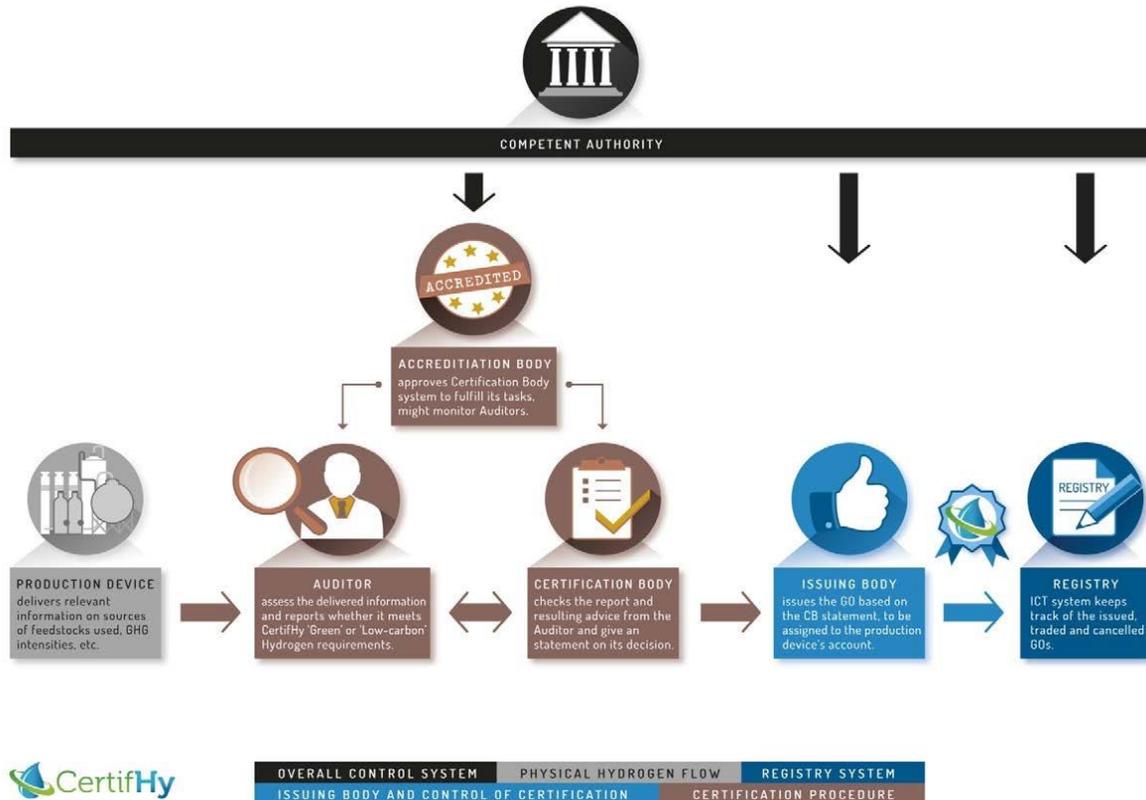
REGULATORY COMPLIANCE

- Consumers disclosure

Art. 19 from RES Directive 2018/2001/EC (REDII) defines GOs as the instrument for disclosing product origin to end-users. It empowers consumers to make informed choices based on transparent and reliable information, and thus to buy renewable or low carbon hydrogen in full transparency.

The main provisions of Article 19:

- Define and limit the purpose of a GO
- Set out the conditions under which they are issued
- Specify the conditions for using a GO
- Set out the conditions for appointing supervisory bodies for national GO systems
- Lay down basic ground rules for the supervisory body
- Specify the content of the GO
- Enables GOs to be used for energy source disclosure
- Define the impact of purchasing and selling GOs of the supplied energy mix
- Lay down the conditions under which a Member State may refuse a GO
- Provide the Commission with the power to require a member State to recognise a GO where a reported breach of such conditions has been successfully challenged
- Enables Member States to define how GOs are used for the disclosure purposes of the Internal Electricity Markets Directive (2019/944/EC).



Our GO scheme grants a tradable value to renewable and non-renewable hydrogen. It is therefore essential that the GO scheme is reliable, accurate and verifiable. Controlling the information and the accuracy of the GO is of critical importance. As described in the chart here below, controls will be carried out by different actors, such as the Certification and Issuing Bodies.

Control of the system : in order to have a well establish system, Auditors ensure that the producers (Production Devices) comply with the GO Scheme requirements. The Auditors are part of a Certification Body, which has a relevant accreditation to perform this activity.

The Accreditation Body controls the quality assurance system of the Certification Body. It increases trust in conformity assessment by ensuring that Certification Bodies have the technical capacity to perform their duties.

Any Accreditation Body in Europe - member of the International Accreditation Forum - is allowed to accredit Certification Bodies.

GO Lifecycle :

- the issuance of GOs are under the responsibility of the Issuing Body, this entity is under direct control of the Competent Authority.
- Transfer/trade and cancellation of hydrogen GO are performed by the Account Holder in the CertifHy Registry, after review by the Issuing Body.

Roles and responsibilities for key actors involved in a National GO scheme

Stakeholder	Definition	Tasks and roles
Competent Authority	In relation to the exercise or discharge of any legislative, governmental, regulatory or administrative function, the body duly authorised under the laws and regulations of the EU to exercise or discharge that function	Managing entity. Governance
Accreditation Body	Entity accepted by the Competent Authority to assess and accredit the Certification Body	Accreditation
Auditor	Person who is appointed by a certification body in order to assess the production or conversion against the requirements of the GO scheme	Assessment of GO compliance
Certification Body	Entity entitled to act as an environmental verifier or environmental verification organisation and approved by an accreditation body	Certification of GO compliance
Issuing Body	Entity responsible for registering entities, in case of a Production Device, the registration is based on an auditor assessment. Additionally, the entity is responsible for issuing GO	GO issuance
Registry administrator	Entity appointed by the Competent Authority and/or Issuing Body to operate and maintain the registry	Registration transactions

Covered by CertifHy



& Stakeholder platform

Certification Bodies



& more soon

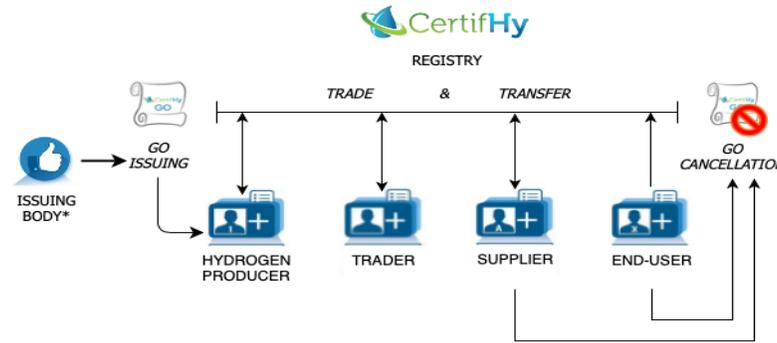


Certification process - Life cycle of a GO

Issuance, trade & transfer, use & cancellation

Following the audit of the hydrogen production plants, production batches of renewable or low carbon hydrogen will be certified and GOs will be issued. The life cycle of a GO will encompass three phases: issuance, transfer & trade and use & cancellation.

To manage the issue, transfer and cancellation of GOs, each production unit or supplier holding GOs must have an account in the CertifHy Registry.



Issuance of GOs

Account Holders of the CertifHy scheme can register production batches and request GO issuing from the Issuing Body.

Subject to the track-record of the Account Holder, Production Device and previous GO issuances, a Production Batch Audit is required which is done by an approved Certification Body of the Account Holder's choice.

The Issuing Body gives then clearance (or not) and a GO is issued in the Registry.

Detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P1.1_GO-Issuing_V1-0_2019-03-11_endorsed.pdf

Trade & transfer

A GO can be transferred from one Account Holder to another, independently of the physical energy flow to which it corresponded originally.

Transfers or trades can occur either within the country of origin or across countries in Europe which form a part the EU-wide scheme.

Transfers are initiated by the GO owner, they are subject to review by the Issuing Body and have to be committed by the receiving Account Holder through an acknowledgement of receipt.

The owner of the GO can trade or transfer a GO until expiry time is reached.

Detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P1.3_GO-Cancellation_V1-0_2019-03-11_endorsed.pdf

Use & cancellation

The GO is cancelled upon use in the Registry, either when hydrogen is consumed or converted into another energy carrier, so that it may only be used once for making a claim on the hydrogen consumed.

A GO cancellation is triggered by the GO owner through a cancellation request, including information about the claim for which the GO is being used.

The cancelled GO is then stored in a Cancellation Account for traceability.

The owner of the GO can cancel a GO until expiry time is reached.

Detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P1.3_GO-Cancellation_V1-0_2019-03-11_endorsed.pdf

Expiry

A GO automatically expires 12 months after the end of the production period.

Expired GOs can neither be transferred nor cancelled anymore.

Detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P1.4_GO-Expiry_V1-0_2019-03-11_endorsed.pdf

Transaction Fee	Amount (€, excl. taxes)	
Account Opening	600€ / account	
Membership fee	300€ / account / year	
Production device registration (***)	< 1MW	500€ / production device
	> 1MW	1 500€ / production device
	> 20MW	2 500€ / production device
GO Issuance (****)	0,05€ / MWh (with a minimum of 200€)	

Price Notification Body (*)	Water electrolysis	Chloralkali electrolysis	SMR without CCS	SMR with CCS	Pyrolysis	Other processes (**)
Plant Audit	4 900 €	5 600 €	5 775 €	6 650 €	7 350 €	9 450 €
GO batch verification	3 150 €	3 850 €	4 725 €	5 600 €	5 600 €	6 300 €

(*) Without taxes and without travel time and travel costs (based on experience is from 2 to 4 k€).

(**) technology is part of a large production site without separate measurements (dedicated production device)

(***) While PD registration efforts are rather independent of plant size, the cost differentiation is deliberate in order to avoid market distortions to the detriment of distributed generation, i.e. supporting a more level-playing field also for small holders and systems

(****) Transfer and cancellation fees included

➤ Scheme documents

❖ General information

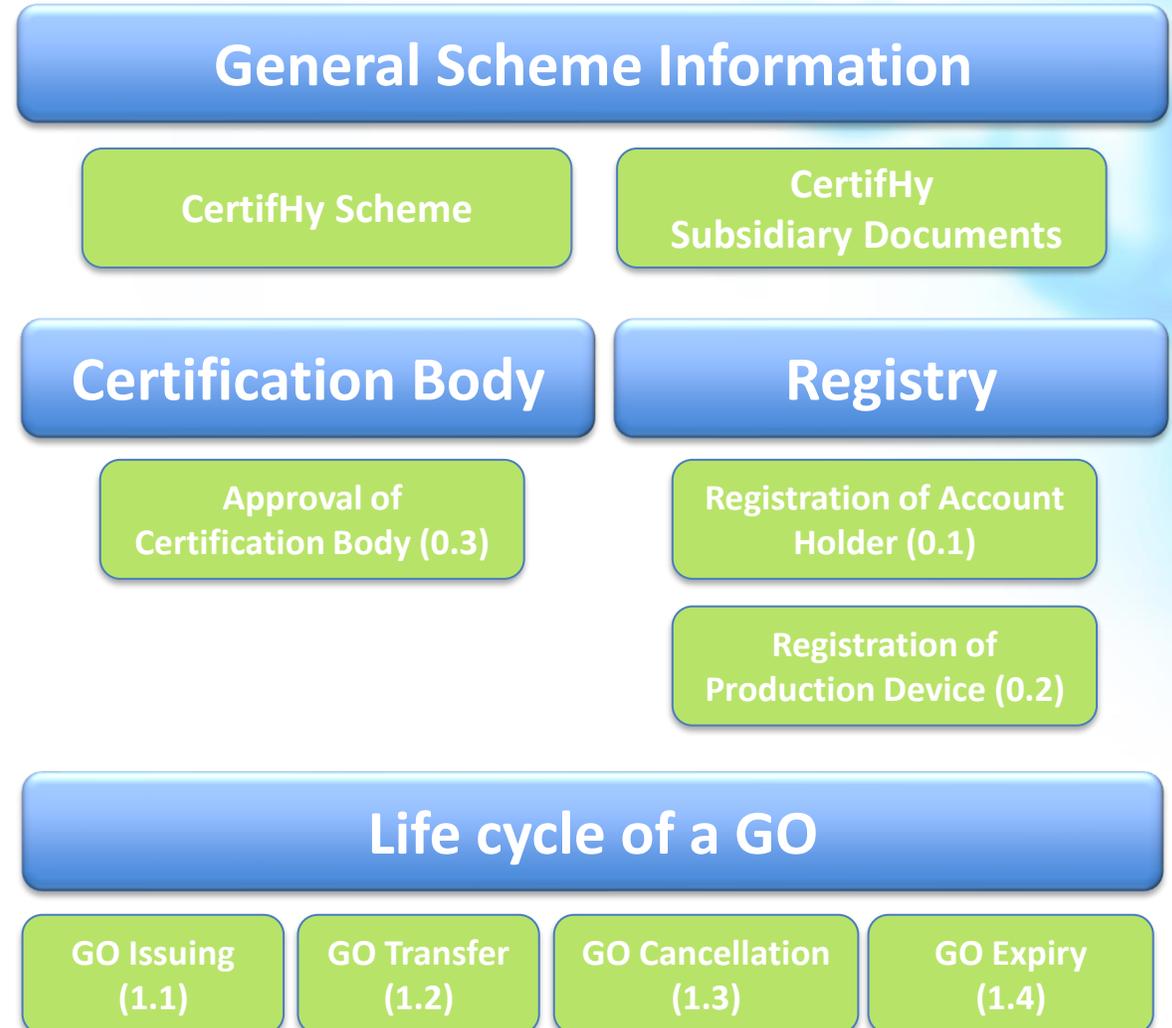
- [CertifHy Scheme](#) - march 2019
- [CertifHy-SD Hydrogen Criteria](#) - march 2019

❖ Steps of certification

- [Procedure 0.1 Registration of Account Holder](#) - march 2019
- [Procedure 0.2 Registration of Production Device](#) - march 2019
- [Procedure 0.3 Approval of Certification Body](#) - march 2019

❖ Life cycle of a GO

- [Procedure 1.1 GO Issuing](#) - march 2019
- [Procedure 1.2 GO Transfer](#) - march 2019
- [Procedure 1.3 GO Cancellation](#) - march 2019
- [Procedure 1.4 GO Expiry](#) - march 2019



How to become certified ? Registration as an account Holder

To make use of the scheme, organisations and individuals are required to register with CertifHy. A GO can only be issued within an Account on the CertifHy Registry and thus, a successful registration of Account Holders is compulsory. Further information can be found in the CertifHy Procedure Document 0.1 “Registration of Account Holder” ([Link](#)).

1. Request for Account Holder registration

In order to be registered as an Account Holder, the applicant has to submit a request for Account Holder registration to the Issuing Body (Grexel). The registration procedure is described on the Grexel website “How to Open a CertifHy Account in CMO.grexel” where the application form is available ([Link](#)).

2. Issuing Body review and verification

The Issuing Body (Grexel) reviews the documents of the applicant and is the body in charge of clearing the registration into the Registry of CertifHy.

Note: If further clarification is required, the Issuing Body (Grexel) shall request supporting evidence and additional information from the applicant. If no further clarification is needed, the Issuing Body will either give clearance or dismisses the registration of the applicant.

After successful application and registration into the Registry, the Account Holder can start using the account.

How to become certified ?

Registration of a new Production Device (1 / 2)

To register a Production Device, the Account Holder has to provide the relevant information to the Issuing Body (Grexel) who will perform an initial review and either gives clearance and await Production Device Audit results or dismiss and deny the registration of the Production Device. Further information can be found in the CertifHy Procedure Document 0.2 “Registration of Production Device” ([Link](#)).

In order to register the Production Device, the applicant has to:

1. Request for registration of the Production Device

The Account Holder requests the registration of the Production Device to the Issuing Body (Grexel). To register a Production Device the Operator has to provide relevant information to the Issuing Body (Grexel), who will perform an initial review.

Documents required:

- Registration form (available upon request to Grexel)
- Description and evidence regarding the operation of the Production Device

Note: The Issuing Body (Grexel) can ask the applicant to rework the application documents

2. Select a Certification Body

Upon clearance from initial review, it is up to the Account Holder to select and contract an approved Certification Body who will perform the Production Device Audit at the production site. Currently, TÜV SÜD is the CertifHy-approved Certification Body but trainings will be provided to future Certification Bodies between 2021 and 2023.

The Account Holder has to do so in order to initiate the auditing process. For further inquiries, please contact Michael Landspersky from TÜV SÜD.

The Issuing Body (Grexel) will verify the information provided by the Certification Body. If the Issuing Body (Grexel) is satisfied, it invites the applicant to proceed with the Production Device Audit which will be performed by the Certification Body.

3. Production Device Audit

The Audit will be performed by the Certification Body selected and contracted by the Account Holder.

Note: The Certification Body defines and reviews the necessary documents. Therefore, these can be requested from the Certification Body.

After completion of the audit, the Certification Body will submit the Audit Report to the Issuing Body (Grexel).

4. Review of Audit Report

The Production Device Audit Report will be reviewed by the Issuing Body (Grexel).

Upon inspection of the documents the Issuing Body (Grexel) will either clear the Production Device, claim rework of the application and further inspections of the Production Device where needed, or dismiss and deny the registration.

5. Production Device registration

Upon clearance by the Issuing Body (Grexel), the Production Device is registered into the CertifHy Registry.

Note: The earliest date of registration that can be requested by an applicant must be no earlier than 12 months prior to the date on which the Production Device registration application is received by the Issuing Body (Grexel).

Account Holders duly authorized to represent Production Devices can register Production Batches and request GO issuing from the Issuing Body (Grexel). Further information can be found in the CertifHy Procedure Document 1.1 “GO Issuing” ([Link](#)).

1. Registration of Production Batches and Request for GO issuing

In order to issue CertifHy GOs, the Account Holder must fill in a CertifHy Issuing Request which has to be sent to the Issuing Body (Grexel) (see slide 20 of this presentation).

This requires information and evidence provided in the course of Batch Production Audits. This is done by an CertifHy-approved Certification Body contracted by the Account Holder (see next step).

Note: The maximum Production Batch period to register for GO issuing is twelve months.

2. Contract a Certification Body

Before starting the production Batch Audit, it is up to the Account Holder to contract a CertifHy approved Certification Body who will perform the Production Batch Audit. Currently, TÜV SÜD is the CertifHy-approved Certification Body but training will be provided to future Certification Bodies between 2021 and 2023.

The Issuing Body (Grexel) will verify the information provided by the Certification Body. If the Issuing Body (Grexel) is satisfied, it invites the applicant to proceed with the Production Batch Audit, which will be performed by the Certification Body.

3. Production Batch Audit

The Audit will be performed by the Certification Body contracted by the Account Holder. After completion of the audit, the Certification Body will submit the Audit Report to the Issuing Body (Grexel).

4. Review of Audit Report

The Production Batch Audit Report will be reviewed by the Issuing Body (Grexel).

5. GO Issuing

Upon clearance, the GO(s) will be issued in the Registry and the Account Holder becomes the owner of the GO(s).

How to become certified ?

For producers (1 / 2)

The advantage of CertifHy GOs for producers are economical. GOs will create demand for renewable and low carbon hydrogen, that will become higher value products. Because GOs have a monetary value, they will generate an additional income for producers.

To make CertifHy GOs available for trade and end-use, **being registered as Account Holder** in the CertifHy Registry is compulsory. Account Holders are therefore required to submit their application including complementary documents and evidence to the Issuing Body. Based on the completeness and accuracy of the submitted application documents, the Issuing Body will either give clearance or ask the applicant to rework the application documents or dismisses the registration of the applicant to become an Account Holder in the CertifHy Registry.

After successful application and registration into the Registry, the Account Holder can start using his account.

See also the detailed procedure :

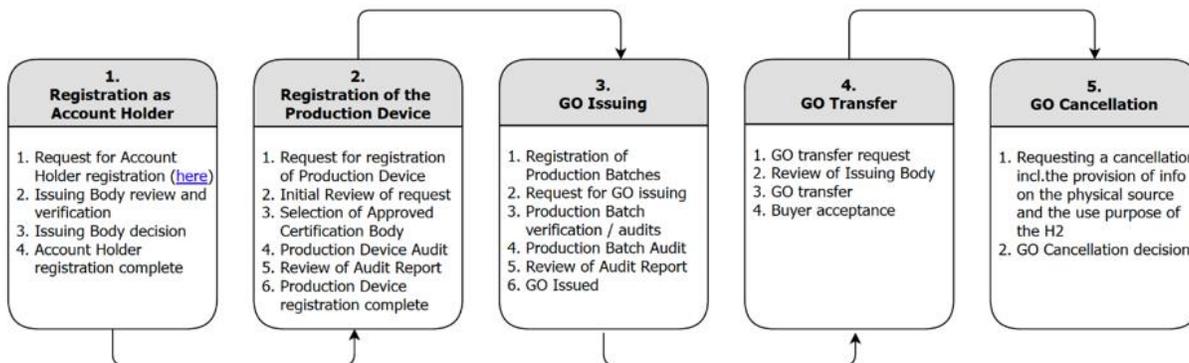
https://www.certifyhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P0.1_Registration-of-Account-Holder_V1-0_2019-03-11_endorsed.pdf

Producers must also **register their Production Device** in the CertifHy Registry.

The review of the provided information about the Production Device is performed by the Issuing Body. In case of clearance, a Certification Body, selected by the producer, will perform a Production Device Audit at the production site and determine the renewable energy content and GHG emissions. The Issuing Body will review and approve the Certification and Audit Report. Once the registration is done, any major changes of the Production Device should be notified to the Issuing Body. The Issuing Body may request refresh Audits at any time.

See also the detailed procedure :

https://www.certifyhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P0.2_Registration-of-Production-Device_V1-0_2019-03-11_endorsed.pdf



Please contact

- **CMO.grexel** to become a CertifHy Account Holder, more information available on **Grexel website**
- **TÜV SÜD** (michael.landspersky@tuvsud.com) for Production Device audits

Do not hesitate to **send us a message** in case of any other question.

How to become certified ?

For producers (2 / 2)

In order to issue CertifHy GOs, you must fill in a CertifHy Issuing Request with the following information in the CertifHy Registry (Grexel) when logged in as an Account Holder:

Name of requesting Account holder: _____

Name of Production Device: _____

Start date of production batch		
End date of production batch		
Fuel (or heat source)	Name	e.g. Electricity, Hydro, Unspecified
	Code	01050300
	Name	-
	Code	-
Share of renewable energy [%]		
GHG emission intensity [g CO2e / MWhH2]		
Amount [MWhH2]		
Amount of renewable energy consumed in the production of H2 [MWh]		

By signing this request, I confirm authenticity of data and the following:

- I am authorized to request issuing CertifHy GOs
- An approved issuing request done before production batch audit shall result to 90% of the produced amount to be issued. The rest shall only be issued after the production batch audit
- Certificates of production, other certifications or other documents that track the origin of produced hydrogen for any disclosure purposes are not issued for the same hydrogen for which the guarantees of origin are issued.
- The Cancellation Statements of Guarantees of Origins cancelled for the production of hydrogen are attached with this document and cover all the requested production amounts
- Possible observations from plant audits are considered, fulfilled and details provided alongside this Issuing Request



CertifHy Green



CertifHy Low-Carbon

How to become certified ?

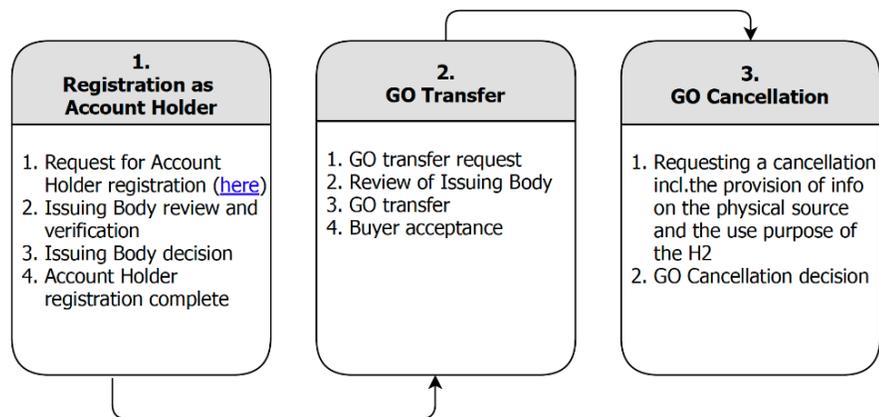
Registration steps for consumers

The advantages of CertifHy GOs for consumers are first, the trust provided about the quality of the product bought, secondly the possibility to consume renewable or low carbon hydrogen regardless of the geographical location as a GO can be transferred independently of the physical hydrogen flow to which it corresponds originally.

Consumers should be **registered as Account Holder** in the CertifHy Registry in order to acquire, transfer or cancel GOs.

See also the detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P0.1_Registration-of-Account-Holder_V1-0_2019-03-11_endorsed.pdf



Please contact

- **CMO.grexel** to become a CertifHy Account Holder, more information available on [Grexel website](#)

Do not hesitate to [send us a message](#) in case of any other question.

How to become certified ?

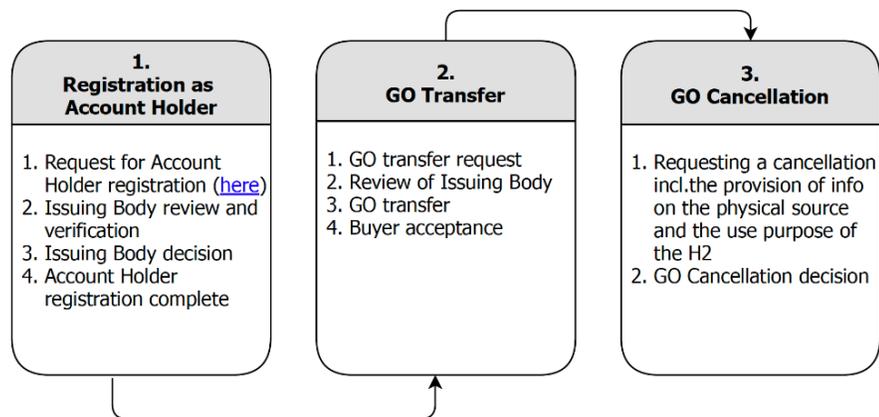
Registration steps for traders and brokers

CertifHy opens new business opportunities for traders and brokers in various sectors that include industry, transport, heating and cooling thanks to product differentiation, either through renewable and low carbon hydrogen GOs, either through more specialised labels.

Traders and brokers should be **registered as Account Holder** in the CertifHy Registry in order to acquire, transfer or cancel GOs on behalf of their clients.

See detailed procedure :

https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P0.1_Registration-of-Account-Holder_V1-0_2019-03-11_endorsed.pdf



Please contact

- **CMO.grexel** to become a CertifHy Account Holder, more information available on [Grexel website](#)

Do not hesitate to [send us a message](#) in case of any other question.

How to become certified ?

References



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.



Chlor Alkali process | Netherlands

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



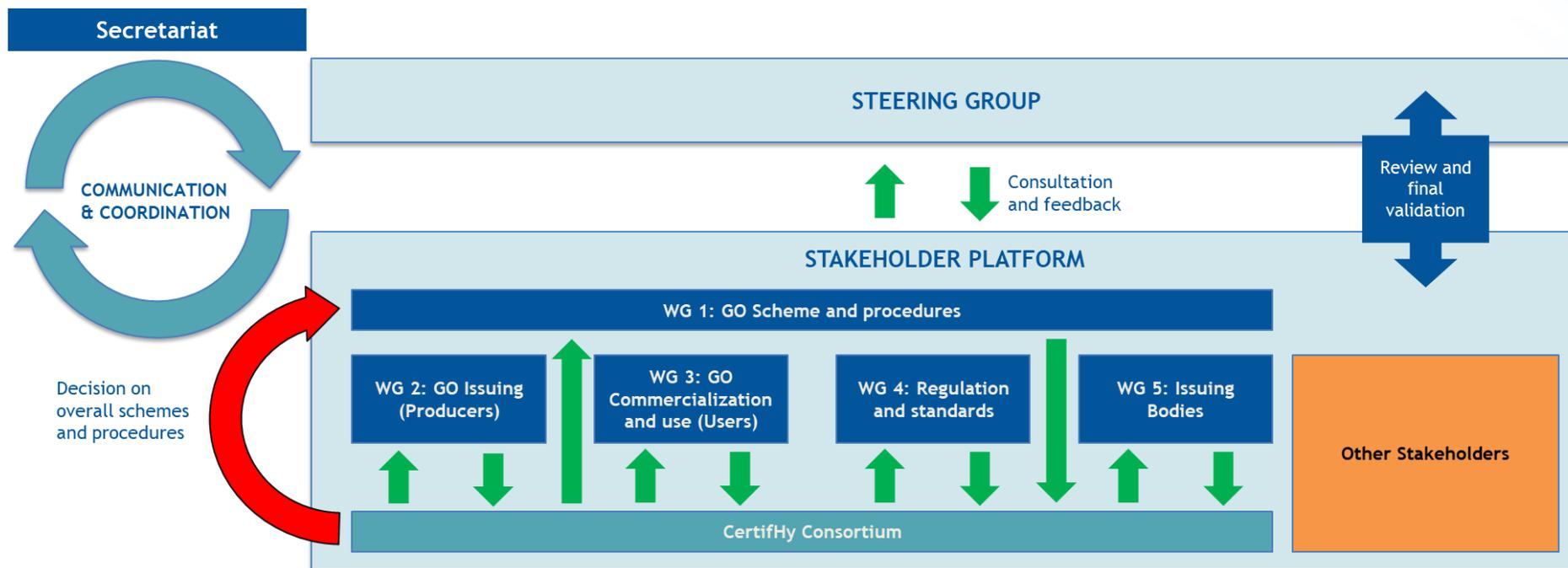
Windgas Falkenhagen | Germany

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.

CertifHy has been initiated at the request of the European Commission and is financed by the Fuel Cell and Hydrogen Joint Undertaking (FCH JU).

CertifHy is conducted by the CertifHy Consortium which is led by HINICIO and composed of GREXEL, Ludwig Bölkow Systemtechnik (LBST), AIB (Association of Issuing Bodies), CEA (Commissariat à l'énergie atomique et aux énergies alternatives) and TÜV SÜD.

The consortium CertifHy has established a highly inclusive and successful governance structure consisting of the following bodies: the Stakeholder Platform, the Steering Group, 5 Working Groups and a Secretariat.



Stakeholder platform members



Funded by



Project Coordinator



Consortium members





About us

Project team



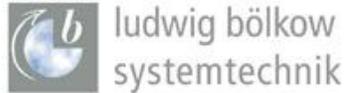
Hinicio is a strategy consulting firm focused on sustainable energy, covering renewable energy technologies, fuel cells and hydrogen, smart energy storage, energy efficiency and clean transport technologies. Hinicio is built with a multinational team of engineers, economists, environmentalists and policy experts in sustainable energy, active in Europe and Latin America. The company is headquartered in Brussels.

<http://www.hinicio.com/>



Grexel is the leading European energy certification service provider. Customers are authorities and other organizations who facilitate energy certification and energy certificate markets. Grexel provides services to help their customers to create rules and processes and equip them with a central registry system, the heart of every environmental commodity market. Issuing bodies in 10 countries rely on Grexel's technology 365x24. The transaction volume in registries provided by us is over one billion MWhs a year with over 30 % of RES-e production of Europe is issued in registries provided .

<http://www.grexel.com/>



Ludwig-Bölkow-Systemtechnik GmbH (LBST) is an expert consultant for sustainable energy and mobility. Focus areas include renewables, energy storage, hydrogen and fuel cells, infrastructure modelling, fuels and drives, and sustainability analysis. With its expertise bridging technologies, markets, and policy LBST supports international clients from industry, finance, politics, and non-governmental organisations in strategy, feasibility, and market assessments. Its cutting edge competence is based on over three decades of continuous experience, and on the interdisciplinary team of leading experts.

<http://www.lbst.de>



AIB represents European certificate system administrators, and is the leading enabler of international energy certificate schemes throughout Europe, and in particular those relating to guarantees of origin under Directives 2009/28/EC and 2012/28/EC. The AIB has developed, uses and promotes a standardised system: the European Energy Certificate System - EECs – which ensures the reliable operation of international certificate schemes. These schemes satisfy the criteria of objectivity, non-discrimination, transparency and cost effectiveness in order to facilitate the international exchange of certificates. In order to further facilitate the international exchange between of energy certificates, the AIB operates an inter-registry telecommunications Hub. The AIB also provides a knowledge centre for energy certificate authorities across Europe, providing and sharing advice and guidance.

<http://www.aib-net.org>



TÜV SÜD is one of the world's leading technical service providers of testing, inspection, certification and training solutions with the strategic business segments industry, mobility and certification. The experts of TÜV SÜD Industrie Service boast longstanding experience in safety of fuel cell engineering and hydrogen technology (e.g. filling stations). The group Carbon Management Service (CMS) has more than ten years of experience in the area of greenhouse gases, renewable energy and certification.

http://www.tuv-sud.com/home_com



French Alternatives Energies and Atomic Energy Commission

The CEA is a key player in research, development and innovation in four main areas: defense and security, low carbon energies (nuclear and renewable), technological research for industry, fundamental research in the physical sciences and life sciences.

<https://www.cea.fr/english>

STAKEHOLDER PLATFORM

The Stakeholder Platform is composed of organisations represented by individual members (+800 early March 2019) interested in renewable and/or low carbon hydrogen Guarantees of Origin (GO) in Europe who have voluntarily adhered to the platform. It is open to all interested stakeholders that represent companies and are based in EU (or they are observers).

The Stakeholder Platform act as a governance framework.

The Stakeholder Platform has brought together a large number and wide range of stakeholders that have allowed for stakeholder views and interests to be considered in the elaboration of the CertifHy Scheme. It has functioned as a forum for discussion and as a channel through which CertifHy has been shaped.

List of the Stakeholder Platform members :

<https://www.certifyhy.eu/contributors/stakeholder-platform-members.html>

Governance rules

https://www.certifyhy.eu/images/180118_SP_Governance_Rules_Draft.V.2.1_CL.pdf

Subscribe to the Stakeholder Platform :

https://docs.google.com/forms/d/e/1FAIpQLSf0DGhKZ52X9DZHfG-BqB9jwCOtDRAWi_H6_92kHLjRQWKgg/viewform

WORKING GROUPS

Working Groups are the operational units of the Stakeholder Platform. Their role is to provide input to the current project for the development of a Europe-wide renewable and low carbon hydrogen GO scheme.

There are constituted of representative of all actors across the GO value Chain.

The 5 Working Groups (WGs) are :

- WG1 : GO Schemes and procedures
- WG2 : GO issuing (producers)
- WG 3: GO commercialization and trade (users)
- WG 4 : Regulatory framework
- WG 5 : Issuing Bodies

STEERING GROUP

The Steering Group is the Platform's decision-making and conflict resolution body. It is consulted on key issues and is providing advice on how to resolve these.

It consists of :

- A platform college, constituted by the Chair and co-Chair for each Working Group
- An institutional college with representatives of the FCH 2 JU and the European Commission ("the Observers")

Where am I allowed to issue, trade and cancel CertifHy GOs?

Currently, CertifHy GOs can be issued, traded and cancelled anywhere in Europe with the ambition to make the scheme available outside of the EU in the future.

Can I use CertifHy GOs in a Member State where there is a National GO Scheme?

CertifHy GOs are Non-Governmental Certificates. Member States may wish to develop their own Hydrogen GO registry and Issuing Body and only accept GOs issued under art. 19 of RED II for disclosure purposes, in which case CertifHy GOs cannot be used. CertifHy advises to use National GO Schemes where available. However, CertifHy GOs may contain further information (such as CO2 emissions) for which an Independent Criteria Scheme (ICS) will be available in case a market participant wishes to add data to a GO issued under a National GO Scheme.

How to calculate and allocate CO2 emissions of my hydrogen production?

CertifHy developed CO2 emissions allocation methods in collaboration with its Stakeholder platform for several production pathways. Please contact us at certifhy@hinicio.com in case you need to address a new production pathway which will be studied (study budget to be discussed based on complexity).

When does a CertifHy GO expire?

A CertifHy GO expires automatically 12 months after the end of the production period for the related production batch.

How can I issue CertifHy GO and at what cost?

CertifHy GOs can be issued after registration as an Account Holder and registration of your Production Devices on CMO.Grexel. For more information, please see the section “How to become certified?” and our price list.

How can I transfer or receive CertifHy GO?

CertifHy GOs can be traded and cancelled after registration as an Account Holder on CMO.Grexel. For more information, please see the section “How to become certified?”.

Does CertifHy address emissions from “Well to Wheel”?

No, CertifHy GOs cover origin, like electricity GOs, as well as greenhouse gas intensity, including all upstream emissions up to the point of production (“from well to gate”). For applications such as mobility, also the greenhouse gas emissions related to hydrogen transport and dispensing need to be considered. In this case, hydrogen suppliers use i) CertifHy to demonstrate the environmental qualities of hydrogen production together with ii) other systems (such as CO₂ offsetting) for covering emissions downstream of production.

Does CertifHy oblige Member States to use the CertifHy Issuing Body and Registry?

No, CertifHy’s aim is in the first place to create a European scheme: i.e. to have GOs throughout Europe with the same data fields, procedures, quality assurance, etc. to ensure harmonisation i) enabling cross border trade of GOs and ii) creating customer confidence. We understand and acknowledge that MSs may wish to develop their own Hydrogen GO registry and Issuing Body. CertifHy is offering the possibility for MSs to take advantage of a European solution for their national stakeholders.

Are CertifHy’s definitions of “CertifHy Green” and “CertifHy Low Carbon” binding?

No, CertifHy’s objective is to make a robust tracing and tracking system for hydrogen production with regard to various parameters: production technology, place of production, energy sources used, financial support received, etc. Moreover, to satisfy the need for market liquidity expressed by industry we developed two labels: “CertifHy Green” and “CertifHy Low Carbon”. These labels do not have to be followed and policy makers / traders / NGOs could develop their own labels (e.g. limiting supported production plants, certain electricity generation technologies, GHG emission thresholds, or including other criteria they deem relevant e.g. having local assets, etc.): CertifHy can ensure the robust tracking of any pre-identified feature or characteristic regarding production (well-to-gate), chain of custody (e.g. in application of mass balance requirements), and use (e.g. in relation to sector specific targets).

Is CertifHy a temporary project or an existing scheme?

Currently, CertifHy is still a project, financed by the European Commission and run by a consortium of consultants, research institutes, a notification body and ICT providers. Nonetheless, in 2021 CertifHy intends to become a legal entity as a next step in order to allow binding commitments with regard to compliance and continuity of services. Moreover, CertifHy is an observer within AIB (Association of Issuing Bodies, managing the Renewable Electricity and Gas GO Schemes in Europe), a first step towards full membership, which will ultimately allow CertifHy to issue AIB recognized GOs as a Voluntary Scheme.



An initiative funded by the FCH 2 JU



For questions, please contact
certifhy@hinicio.com