



CertifHy Scheme

Dissemination level: public

Last update: 2019-03-11

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Status of this document

The CertifHy Scheme document was formally approved by the CertifHy Steering Group on 11 March 2019.

The effective date of this CertifHy Scheme document is 26 March 2019.

Change History

Version	Date	Description
0.1	09.02.2018	Very first working draft
0.2	21.02.2018	First working draft
0.3	22.03.2018	Working draft
0.4	25.01.2019	Revised working draft
0.5	14.02.2019	Revised working draft after WG1 and WG2 consultation
0.6	21.02.2019	CertifHy WG1 endorsed
1.0	11.03.2019	CertifHy Steering Group endorsed

1 Introduction

The CertifHy Scheme document governs the CertifHy Scheme - a European Certification Scheme for hydrogen fulfilling specific criteria. At this stage, this document covers Guarantees of Origin, and the framework leaves room for additional purposes.

2 Core Principles

CertifHy is based upon the following core principles:

2.1 Uniqueness

No more than one CertifHy Guarantee of Origin (GO) or any other transferable certificate with a purpose of disclosure of sustainability attributes shall be Issued and subsequently Cancelled in respect of the same unit of Output in order to avoid any potential double counting. A GO shall only be Issued in respect of Output which has not been and is not being otherwise Disclosed.

Duplication of the same GO shall be avoided over its whole life cycle.

The attributes of an amount of hydrogen can only be claimed through cancellation of the corresponding GO.

2.2 Transparency

Participation in CertifHy should be based on objective and publicly disclosed criteria so as to achieve fair and open access to CertifHy.

Access to details of CertifHy GOs should be made available to CertifHy Account Holders.

2.3 Immutability

The CertifHy GO data shall not change in any way once a CertifHy GO has been properly Issued, except to indicate that it has Expired or been Cancelled. Re-bundling and re-labelling of GOs to produce derivatives shall not be allowed.

2.4 Ownership of CertifHy GOs

The Account Holder of an Account shall be treated as the owner of the CertifHy GOs in that Account.

2.5 Operational reliability

Operational risks arising in the Issue, Transfer and Cancellation processes for CertifHy GOs should be identified and mitigated through the development of appropriate systems, controls and procedures.

Systems should be reliable and secure, and have adequate capacity.

Contingency plans and backup facilities should be established to allow for timely recovery of records and operations and completion of the transfer process.

Records which are sufficient to enable resolution of disputes relating to such matters as ownership of and eligibility for GOs should be kept of all material communications between Issuing Bodies and Account Holders regarding the registration of Production Devices and the Issue, Transfer and Cancellation of GOs.

2.6 End of life

Every CertifHy GO is subject to an ending lifetime. Details are defined in procedure 1.4.

2.7 Consumption period

Physical hydrogen consumption for which the CertifHy GOs are cancelled shall be between the beginning of the production batch, on which the CertifHy GOs are based, and the cancellation date of the GOs.

3 CertifHy Goal and Mission

CertifHy's mission is to advance and facilitate the production, procurement, and use of hydrogen fulfilling ambitious environmental criteria in order to protect the climate and improve the living conditions of humankind.

CertifHy wants to contribute to and promote an environmentally, socially and economically sustainable production of hydrogen in all uses including energy, mobility, chemical conversion, etc.

In order to achieve this, CertifHy has established a high-quality European GO scheme covering the entire upstream supply chain to the production device exit gate at defined quality and providing the framework for ensuring transparent information. It was established and is continuously reviewed and improved by means of a multi-stakeholder dialogue.

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

4 Scope and Normative References

4.1 Geographic scope

CertifHy covers the European Union plus the European Economic Area plus Switzerland. Issuing of CertifHy GOs for production devices outside this geographical scope is not possible. Cancellation of CertifHy GOs for hydrogen uses outside this geographical scope is not possible.

4.2 Technologies

The CertifHy scheme is technology neutral as long as the requirement to comply with the definitions is met.

Any technology that can provide evidence that the defined requirements for the amount of hydrogen produced are met are included in the scope of the CertifHy scheme.

In addition to designated hydrogen production technologies, the technologies producing hydrogen as by-product are included in the CertifHy scope as far as transparent and unambiguous information about the main product is included in the GO and the basis of the GHG emissions allocation complies with the principles of the CertifHy scheme.

4.3 Applications

The CertifHy Scheme shall be open to all kinds of applications including energy, mobility, chemical conversion, etc.

5 Definition of Terms

Term	Definiton
Account	An Account in the CertifHy Registry
Account Holder	A person or organisation in respect of whom an Account is maintained on the CertifHy Registry
Cancel / Cancellation	To change the status of a CertifHy GO at the request of an Account Holder to “cancelled” and to prevent it from being transferred to another Account Holder
Cancellation Statement	A non-transferable electronic receipt for providing evidence of the attributes of an amount of hydrogen at the time of Cancellation of CertifHy GOs
CertifHy	The European Hydrogen environmental GO scheme provided by the CertifHy Stakeholder Platform
CertifHy Guarantee of Origin (GO)	An electronic document which provides proof that a given quantity of hydrogen was produced by a registered production device with a specific quality and method of production and which is maintained on a CertifHy Registry
CertifHy Registry	A database operated either by the CertifHy Stakeholder Platform or by a third party on its behalf, comprising: <ul style="list-style-type: none"> a) Accounts and the GOs in those Accounts; b) details of Production Devices and information provided to the Issuing Body in connection with the registration of those Production Devices
CertifHy Stakeholder Platform	The stakeholder platform established under <i>FCH Contract 190</i> from the Fuel Cells and Hydrogen 2 Joint Undertaking
Certification Body	An approved organisation which is independent of the Registrant and whose role it is to <ul style="list-style-type: none"> a) carry out an Production Batch Audits, and b) carry out Production Device Audits
Consumption Declaration	A declaration with respect to the Inputs of a Production Device
Disclosure	The process whereby a supplier provides to its customers information about hydrogen that has been supplied to them
Expiry	The change of status of a GO to “expired” as a consequence of the passage of a given period of time since the production of the associated Hydrogen, and to prevent it from being

	transferred to another Account Holder
Hydrogen	Hydrogen having a defined purity and pressure
Input	An amount of a specific type of energy or material goods consumed by a Production Device in the production of Output
Issue / Issuing	The process of creating a CertifHy GO in an Account in the CertifHy Registry
Issue Request	A request by the operator of a Production Device to an Issuing Body for the Issue of CertifHy GOs, in respect of a particular Production Batch
Issuing Body	An organisation formally authorised by the CertifHy Stakeholder Platform to issue CertifHy GOs within a specified country or region
Output	An amount of hydrogen yielded by a Production Device in units of 1 MWh (based on the lower heating value)
Production Batch	Output produced by a specific Production Device within a specific period of time
Production Batch Audit	An independent validation of Production Batches carried out by a Certification Body
Production Device	A separately measured device or group of devices that produces an Output
Production Device Audit	An independent verification of Production Device characteristics carried out by a Certification Body
Registrant	A person or organisation in whose name a Production Device is registered in the CertifHy Registry
Subsidiary Document	A document designated as such by any provision of the CertifHy Scheme and published in accordance with the provisions thereof;

6 Roles & Responsibilities

This section sets out the roles and responsibilities of the following types of actors (see figure below).

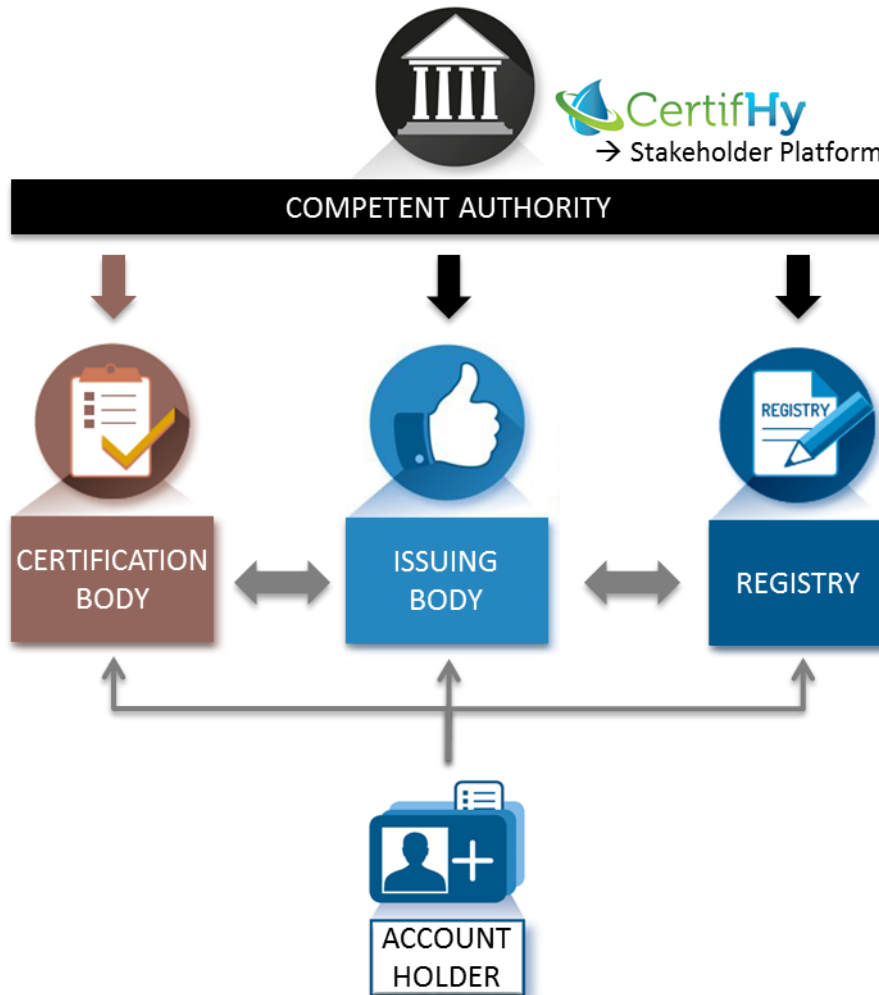


Figure: Roles in CertifHy.

6.1 CertifHy Stakeholder Platform

The CertifHy Stakeholder Platform takes the role of the Competent Authority until the time a Competent Authority or Competent Authorities is/are defined.

It is the role of the CertifHy Stakeholder Platform or a body designated by it to

- endorse the CertifHy scheme document and all subsidiary documents to it,
- decide on the approval of Certification Bodies (procedure P0.3),
- appoint Issuing Bodies.

6.2 Certification Body

It is the role of Certification Bodies to

- verify the eligibility of Production Devices through a Production Device Audit in the framework of a contract with the Registrant (procedure P0.2),
- verify the attributes of Production Batches through a Production Batch Audit in the framework of a contract with the Account Holder (procedure P1.1).

6.3 Issuing Body

An Issuing Body shall supervise the issuing, transfer and cancellation of CertifHy GOs. It is the responsibility of an Issuing Body to ensure that all aspects of the CertifHy scheme as defined in this document and all subsidiary documents to it, which are related to the issuing, transfer and cancellation of CertifHy GOs, are enforced. This includes the supervision of the operation of the CertifHy Registry.

It is the role of an Issuing Body to

- decide on the registration of Account Holders (procedure P0.1),
- decide on the registration of Production Devices (procedure P0.2),
- decide on the issuing of CertifHy GOs (procedure P1.1),
- verify and satisfy itself, that GO transfer requests by Account Holders are valid and all information on the online form for GO transfers are accurate (procedure P1.2),
- decide on the cancellation of CertifHy GOs (procedure P1.3).

6.4 Registrant / Account Holder

Registrants / Account Holders have in their Accounts of the CertifHy Registry Production Devices and / or CertifHy GOs.

It is the responsibility of the account holder to cancel GOs only against physical hydrogen consumption that he can ascertain as belonging to the specified GO system scope (see chapter 4).

Registrants / Account Holders can

- register accounts with the Issuing Body in the CertifHy Registry (procedure P0.1),
- register Production Devices with the Issuing Body in the CertifHy Registry (procedure P0.2),
- select and contract a Certification Body for the verification of the attributes of Production Batches (procedure P1.1),
- request GO issuing from the Issuing Body (procedure P1.1),
- request GO transfers from one Account to another to the Issuing Body (procedure P1.2),
- request GO cancellation to the Issuing Body (procedure P1.3).

7 GO Labels and Content

7.1 GO Labels

The CertifHy scheme includes two different GO Labels:

- CertifHy Green Hydrogen (from renewable sources and having a greenhouse gas balance below a defined threshold), and
- CertifHy Low Carbon Hydrogen (having a greenhouse gas balance below a defined threshold).

The criteria for compliance with the two products are defined in the Subsidiary Document CertifHy-SD Hydrogen Criteria.

7.2 GO Content

Each GO shall have a value of 1 MWh based on the lower heating value.

A GO shall contain the following information:

PART 1: Factual information	Comments
<ul style="list-style-type: none"> • Account number 	
<ul style="list-style-type: none"> • Identity of the Production Device <ul style="list-style-type: none"> ○ Production device identifier ○ Name ○ Location country ○ Location city ○ Commissioning date ○ Installed production capacity 	
<ul style="list-style-type: none"> • Date and time of hydrogen production: beginning and end of the production batch 	dd.mm.yyyy
<ul style="list-style-type: none"> • Fuel (or heat source) and Technology <ul style="list-style-type: none"> ○ Fuel (or heat source) code(s) (see Annex A) for up to ten fuels including respective share of total fuel input ○ Technology code (see Annex B); including main/by-product 	
<ul style="list-style-type: none"> • Financial support to hydrogen production or input fuel production <ul style="list-style-type: none"> ○ investment supported, and/or ○ production supported, and/or ○ supported scientific/demo/pilot project, or ○ unsupported, or ○ no information available 	
<ul style="list-style-type: none"> • Share of renewable energy for each input energy carrier for producing the hydrogen 	%
<ul style="list-style-type: none"> • GHG balance: <ul style="list-style-type: none"> ○ GHG emissions intensity 	g CO ₂ _{eq} /MJ _{H₂}
<ul style="list-style-type: none"> • GO identity 	ID

PART 1: Factual information	Comments
<ul style="list-style-type: none"> ○ Identifier (the unique number which has been assigned to the GO) ○ Issuing date ○ Cancellation/Expiry date 	dd.mm.yyyy
<ul style="list-style-type: none"> ● Certification Body 	Name

PART 2: Evaluation of information	Comments
<ul style="list-style-type: none"> ● CertifHy label: <ul style="list-style-type: none"> ○ CertifHy Green hydrogen ○ CertifHy Low-Carbon hydrogen 	

The Production Batch Audit Report submitted to the Issuing Body by a Certification Body according to procedure P1.1 is stored in the registry together with the CertifHy GOs covered by that Production Batch Audit Report.

7.3 Cancellation Statement

The purpose of the Cancellation Statement is to provide reliable information to final customers about the attributes of the hydrogen used associated with the cancellation.

The Issuing Body issues Cancellation Statements in respect of the cancellation of CertifHy GOs to the Account Holder from which the GOs have been cancelled in accordance with Procedure P1.3.

The Account Holder requesting a Cancellation Statement shall provide information to the Issuing Body about the characteristics of the physical supply of Hydrogen that was actually consumed by the end user.

The Cancellation Statement shall present:

- 1) a statement that it relates to the Cancellation of CertifHy GOs;
- 2) the account number, name and address of the Account Holder that made the request;
- 3) information about the beneficiary or beneficiaries of this cancellation, being
 - a) the type of the beneficiary, being either “hydrogen supplier” or “end-consumer”;
 - b) where the beneficiary is a hydrogen supplier, the identity of the energy supplier or where the beneficiary is an end-consumer, the identity of the end-consumer or end-consumer group;
 - c) the country (and, if known, the location within that country) where the hydrogen associated with the cancellation is consumed;
 - d) the purpose of the hydrogen use associated with the cancellation; and
 - e) the brand name of the product associated with this cancellation, if one has been specified in the associated cancellation request;

- 4) a statement that the environmental qualities of the associated hydrogen have been consumed and that this Cancellation Statement and these CertifHy GOs may not be transferred to any party;
- 5) the number of CertifHy GOs and the identity of each CertifHy GO to which the Cancellation Statement relates;
- 6) the date of producing the Cancellation Statement; and
- 7) the period during which the associated hydrogen has been or will be consumed.

When producing a Cancellation Statement, the Issuing Body shall record in the Registry the CertifHy GOs that are included in that Cancellation Statement, ensuring that each CertifHy GO is included in no more than one Cancellation Statement.

8 Procedures

The following procedures are defined in Subsidiary Documents:

- Procedure 0.1 | Registration of Account Holder
- Procedure 0.2 | Registration of Production Device
- Procedure 0.3 | Certification Body accreditation
- Procedure 1.1 | GO Issuing
- Procedure 1.2 | GO Transfer
- Procedure 1.3 | GO Cancellation
- Procedure 1.4 | GO Expiry

Annex A: Fuel (or heat source) codes

Level 1		Level 2		Level 3			
Code	Description	Code	Description	Code	Description	Full code	
0	Unspecified	0	Unspecified	0	Unspecified	F00000000	
1	Renewable	>0	Unspecified	0	Unspecified	F01000000<	
		1	Solid	0	Unspecified	F01010000	
				1	Municipal waste	F01010100	
				2	Industrial and commercial waste	F01010200	
				3	Wood	F01010300	
				4	Animal Fats	F01010400	
		5	Biomass from agriculture	F01010500			
		2	Liquid	0	Unspecified	F01020000	
					1	Municipal biodegradable waste	F01020100
					2	Black liquor	F01020200
					3	Pure plant oil	F01020300
					4	Waste plant oil	F01020400
					5	Refined vegetable oil	F01020500
					6	Methanol	F01020600
					7	Ammonia	F01020700
		3	Gaseous	0	Unspecified	F01030000	
					1	Landfill gas	F01030100
					2	Sewage gas	F01030200
					3	Agricultural gas	F01030300
					4	Gas from organic waste digestion	F01030400
					5	Process gas	F01030500
					4	Heat	1
		2	Geothermal	F01040200			
		3	Aerothermal	F01040300			
		4	Hydrothermal	F01040400			
		5	Process heat	F01040500			
		5	Electric	0	Unspecified	F01050000	
1	Solar				F01050100		
2	Wind				F01050200		
3	Hydro-electric installation				F01050300		
4	Marine				F01050400		
5	Thermal				F01050500		
2	Fossil	>0	Unspecified	0	Unspecified	F02000000<	
		1	Solid	0	Unspecified	F02010000	
				1	Hard coal	F02010100	
				2	Brown coal	F02010200	
				3	Peat	F02010300	
4	Municipal waste	F02010400					

Level 1		Level 2		Level 3		
Code	Description	Code	Description	Code	Description	Full code
				5	Industrial and commercial waste	F02010500
		2	Liquid	0	Unspecified	F02020000
				1	Crude oil	F02020100
				2	Natural gas liquids (NGL)	F02020200
				3	Petroleum products	F02020300
		3	Gaseous	0	Unspecified	F02030000
				1	Natural gas	F02030100
				2	Coal-derived gas	F02030200
				3	Petroleum products	F02030300
				4	Municipal gas plant	F02030400
				5	Process gas	F02030500
		4	Heat	0	Unspecified	F02040000
				1	Process heat	F02040100
		5	Electricity	0	Unspecified	F02050000
				5	Thermal	F02050500
3	Nuclear	1	Heat	1	nuclear fuel	F03010100
		2	Electricity	2	nuclear fuel	F03020200

Annex B: Technology codes

Level 1		Level 2		Level 3		Full code
Code	Description	Code	Description	Code	Description	
0	Unspecified	0	Unspecified	0	Unspecified	T00000000
1	Water electrolysis	0	Unspecified	0	Unspecified	T01000000
		1	Low temperature	0	Unspecified	T01010000
				1	Main product	T01010100
		2	High temperature	0	Unspecified	T01020000
1	Main product			T01020100		
2	Chlor-alkali electrolysis	0	Unspecified	0	Unspecified	T02000000
				1	By-product	T02000100
3	Steam Methane Reforming	0	Unspecified	0	Unspecified	T03000000
		1	Without CCS/CCU	0	Unspecified	T03010000
				1	Main product	T03010100
		2	With CCS/CCU	0	Unspecified	T03020000
1	Main product			T03020100		
4	Partial Oxidation	0	Unspecified	0	Unspecified	T04000000
5	Autothermal reforming	0	Unspecified	0	Unspecified	T05000000
6	Methanol reforming	0	Unspecified	0	Unspecified	T06000000
7	Ammonia reforming	0	Unspecified	0	Unspecified	T07000000
8	Other	0	Unspecified	0	Unspecified	T08000000