

An initiative funded by the FCH 2 JU



#PRD2020
#CleanHydrogen



Study on accelerating the deployment of
Guarantees of Origin Schemes for Hydrogen
and for the design of a Voluntary Scheme for
compliance with RED II targets

Call for tenders no. FCH / OP / CONTRACT NO. 278

- CertifHy 3 -

November 2020, Brussels, Belgium



We need a “data sheet” for Hydrogen to enable customer choice, just like car industry has standardised data sheets..

Criteria	Car X	Car Y
#Seats	4	5
CO2	95 gr CO2 / 100 km	110 gr CO2 / 100 km
Color	Green	Green (RAL 6002)
Consumption	4 l / 100 km	30 miles / gallon

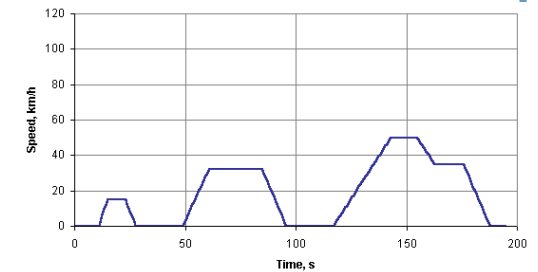


Figure 1. ECE 15 Cycle

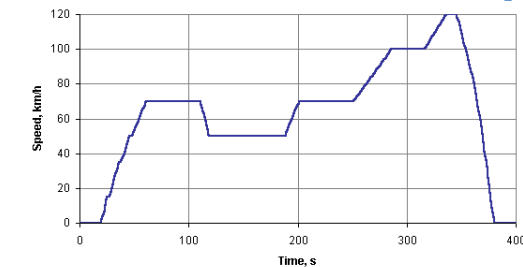


Figure 2. EUDC Cycle

Source: Hincio analysis, drivemag.com, dieselnet.com

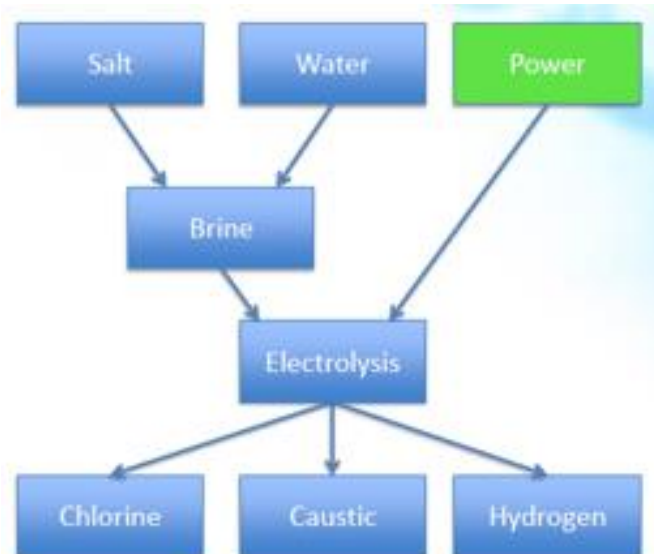
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CertifHy has developed a data sheet for Hydrogen & methodology to measure GHG footprint for e.g. Chloralkali electrolysis

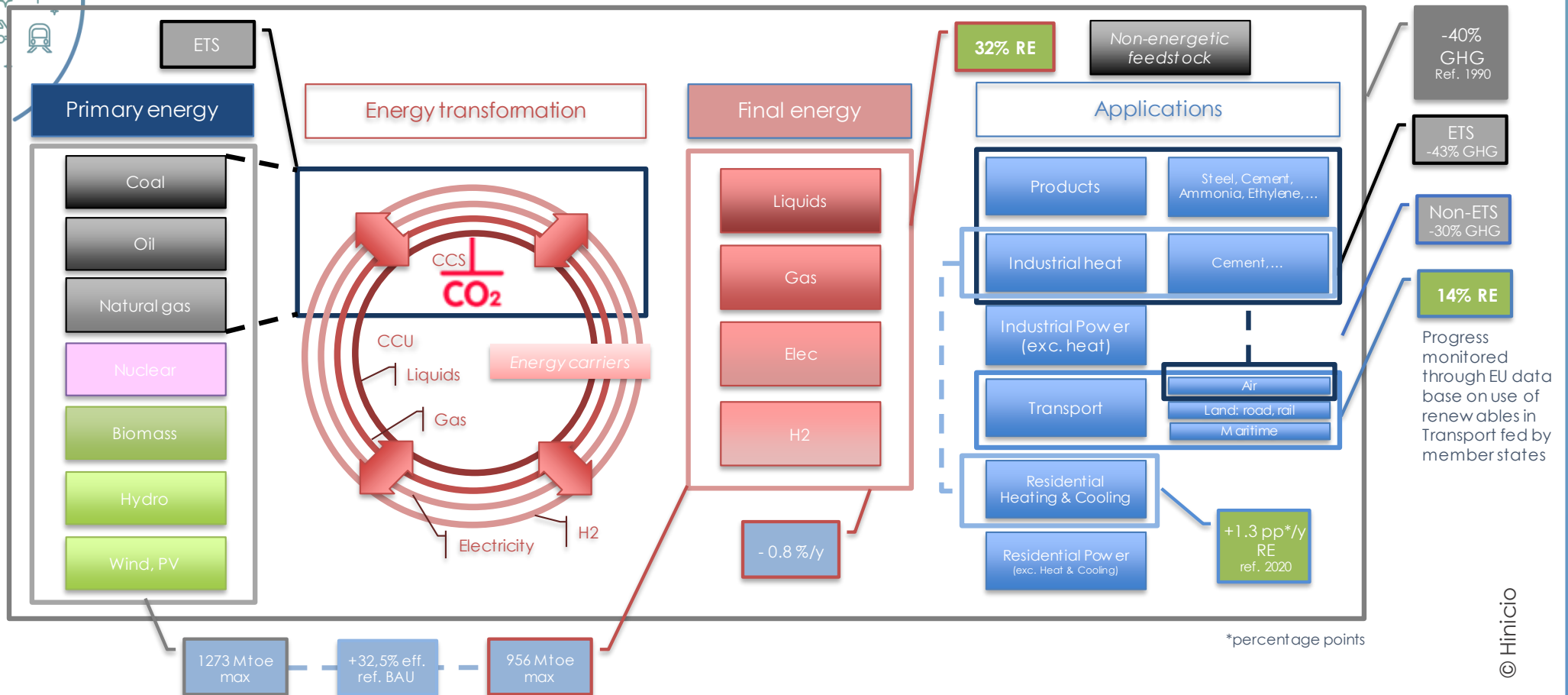
PART 1: Factual information	Comments
<ul style="list-style-type: none"> Account number 	
<ul style="list-style-type: none"> Identity of the Production Device <ul style="list-style-type: none"> Production device identifier Name Location country Location city Commissioning date Installed production capacity 	
<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 _{2eq} /MJ _{H2}
<ul style="list-style-type: none"> GO identity <ul style="list-style-type: none"> Identifier (the unique number which has been assigned to the GO) 	ID
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Issuing date Cancellation/Expiry date 	dd.mm.yyyy
<ul style="list-style-type: none"> Certification Body 	Name



Example: coal based electricity: x GHG / MWh

Allocation method	% of GHG from Power allocated to H2	% of GHG from Power allocated to Cl	% ...to Caustic
Mass based allocation			
Energy based allocation			
Value based allocation (EUROSTAT prices averaged)			
Mole based allocation			
Bench mark based (against ODC process, producing Chlorine but no H2)			

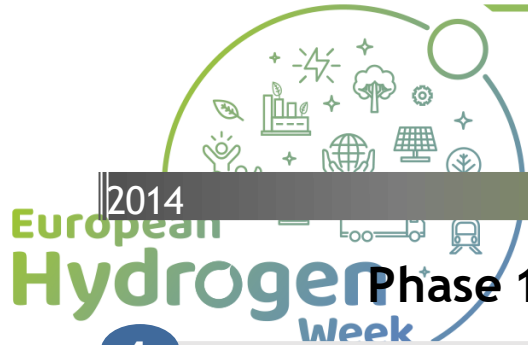
Implementation of Climate and energy targets



Decarbonisation is progressively achieved by:

1. Switching end uses to an energy carrier that is “easy” to decarbonise: (i) electricity, (ii) hydrogen
2. Decarbonising all energy carriers, starting with the easier ones

CertifHy aims to develop the 1st European-wide Green and Low Carbon hydrogen GO scheme



2014 2016 2017 2018/9 2020s..

Phase 1

- 1 Define a widely acceptable definition of green hydrogen
- 2 Determine how to design and implement a robust EU wide GO scheme

Affiliated partners:

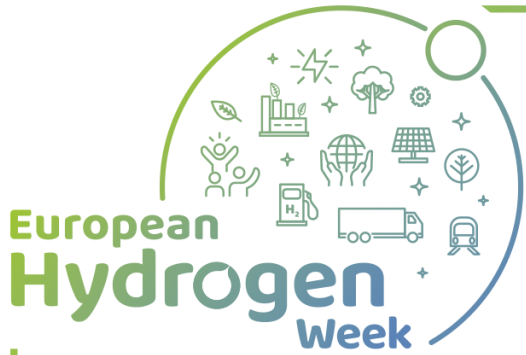


Phase 2

- 1 Set-up a hydrogen GO Stakeholder platform
- 2 Finalise the scheme design ensuring it can be the main route to guarantee the origin of green & low carbon hydrogen across EU Member States
- 3 Run a pilot scheme to test the proposed design
- 4 Identify actions which need to be undertaken after the completion of the study to achieve an EU wide deployment of the scheme

Phase 3

- 1 Prepare EU wide deployment: Implement Scheme:
 - Gas Scheme Group of AIB
 - Voluntary Issuing Body
 - Expand Stakeholder Forum with WG on Issuing Bodies
 - Build Market
- 2 Expand from GOs to RFNBO certification



CertifHy will continuously work on understanding market needs & investigate downstream H2 uses (e.g. PtL) as well as other uses of GOs

RECS
INTERNATIONAL

Energy Attribute Certificates- First Climate sources ...

European Federation
of Energy Traders

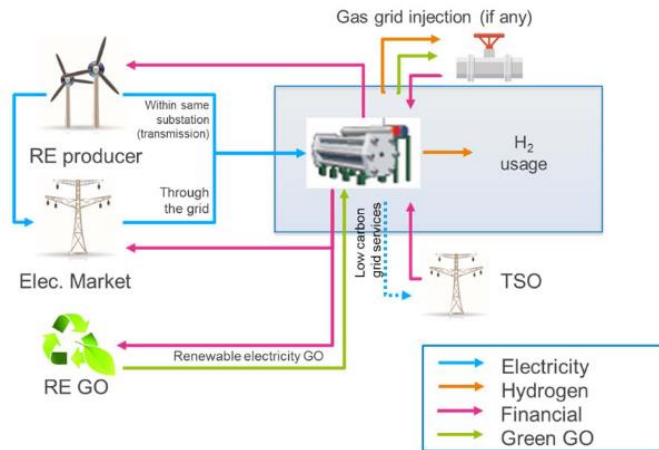
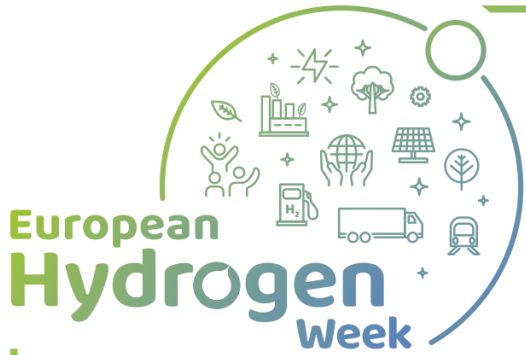
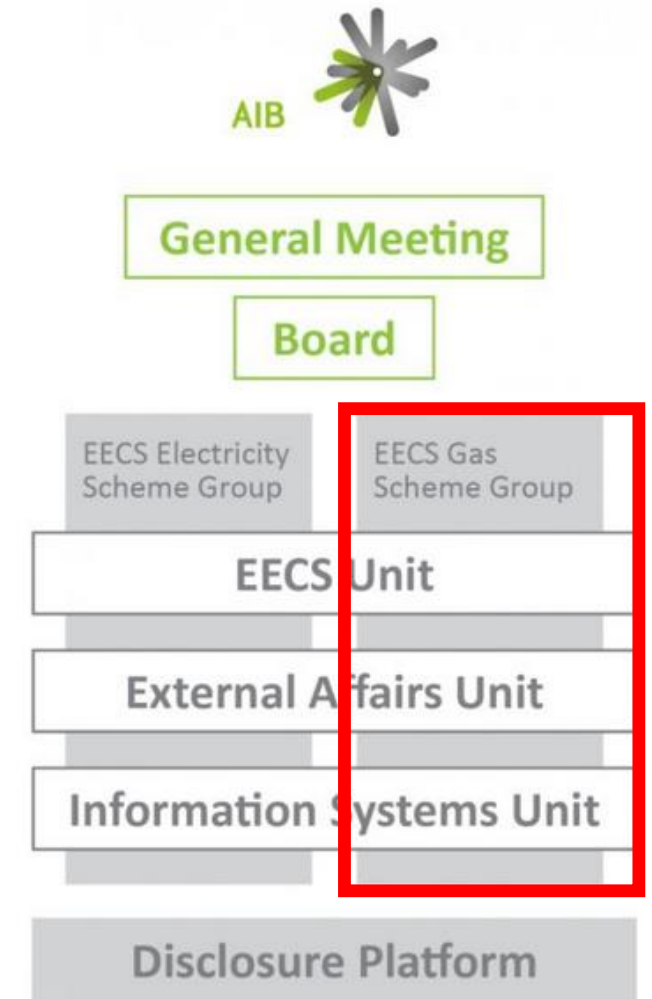
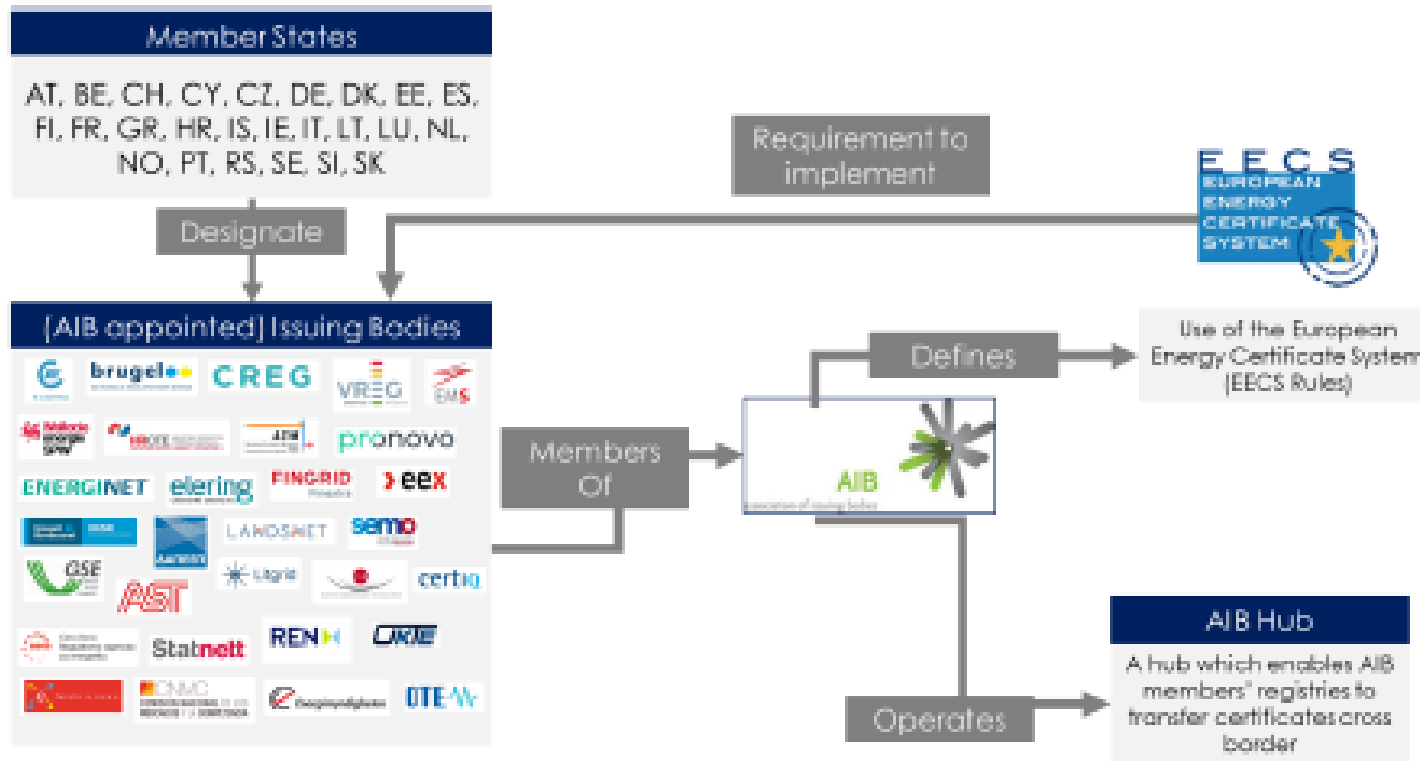


Figure 8: Policy landscape of potential other uses of H₂ GOs



Phase 1 (2020-2021): Implement CertifHy Scheme within AIB Gas Scheme

RED2, CEN Standard and AIB (through its governance) maximizes harmonized GO implementation





Phase 1 (2020-2021): The AIB's Hydrogen Scheme will be piloted in 4 MS, feedback will be done through PENTA.

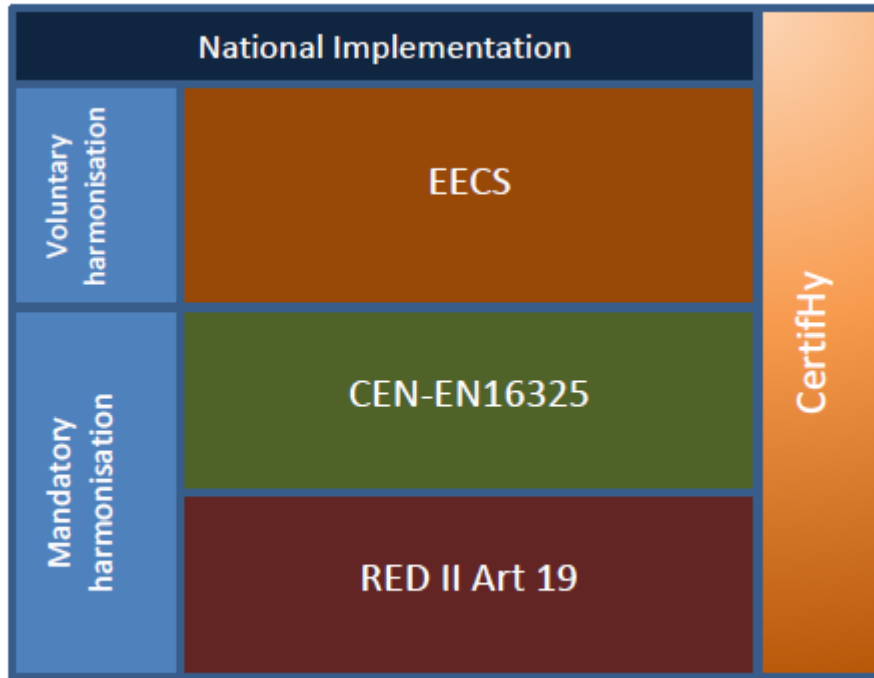
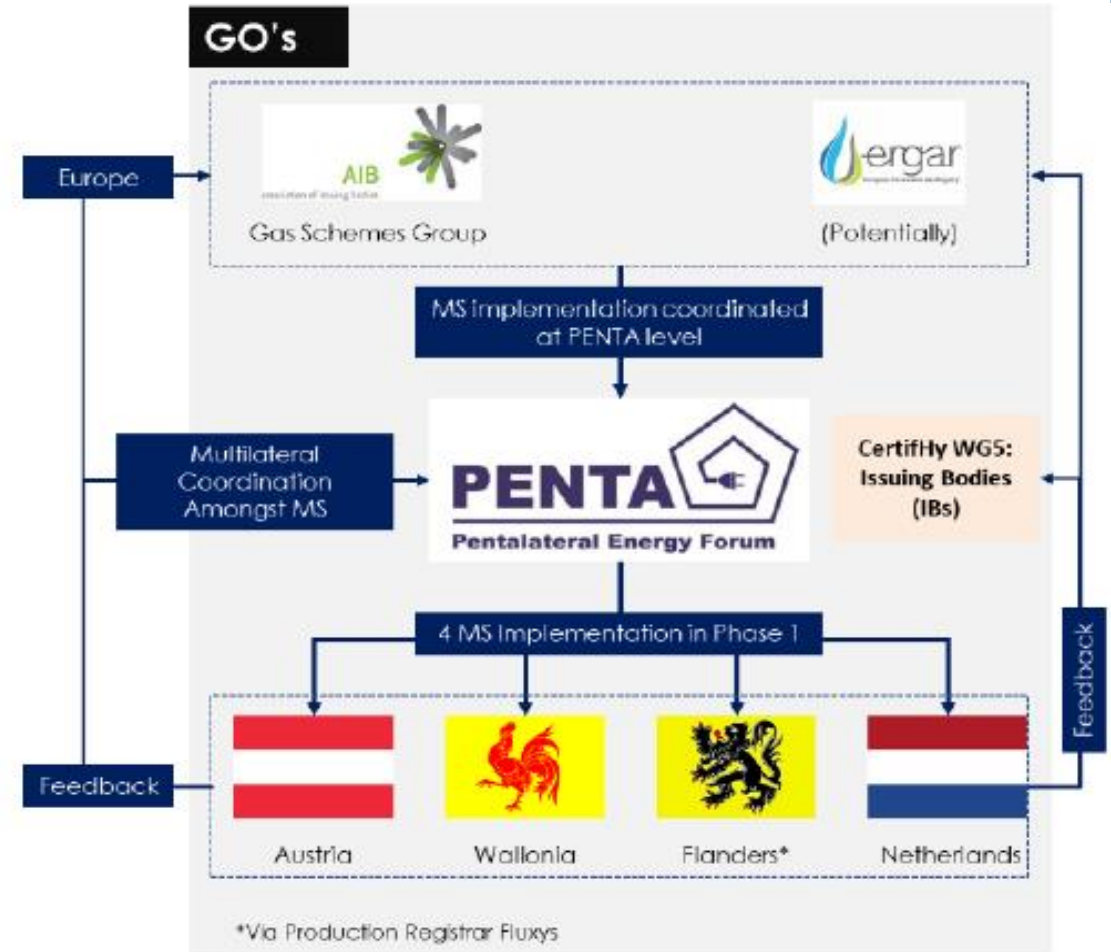
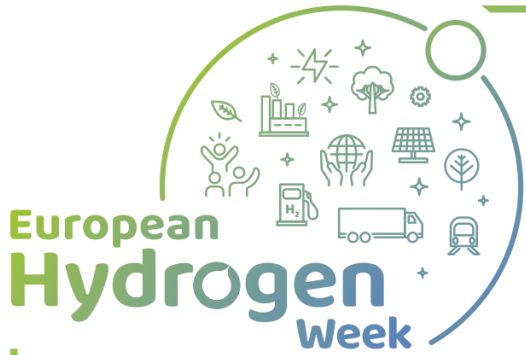


Figure 9: Certification Stack



At int'l level: collaboration with CEM/IPHE TF H2 certification, Capacity building with Morocco, Dii Desert Group and H2 Chile Association



Phase 2 (2021-2023): from GO towards RFNBO certification

Out of scope

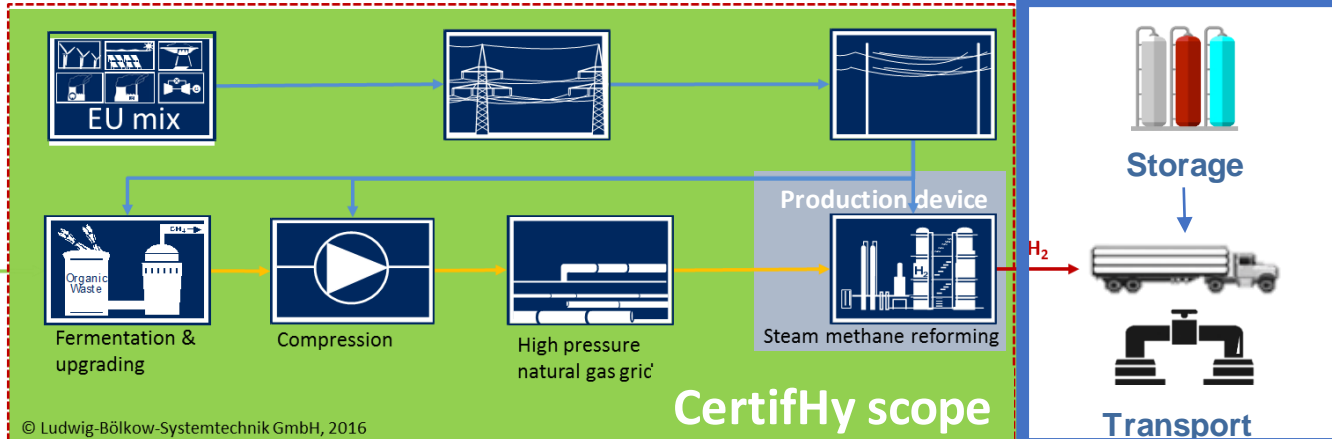


Construction material (e.g. steel)



Manufacture

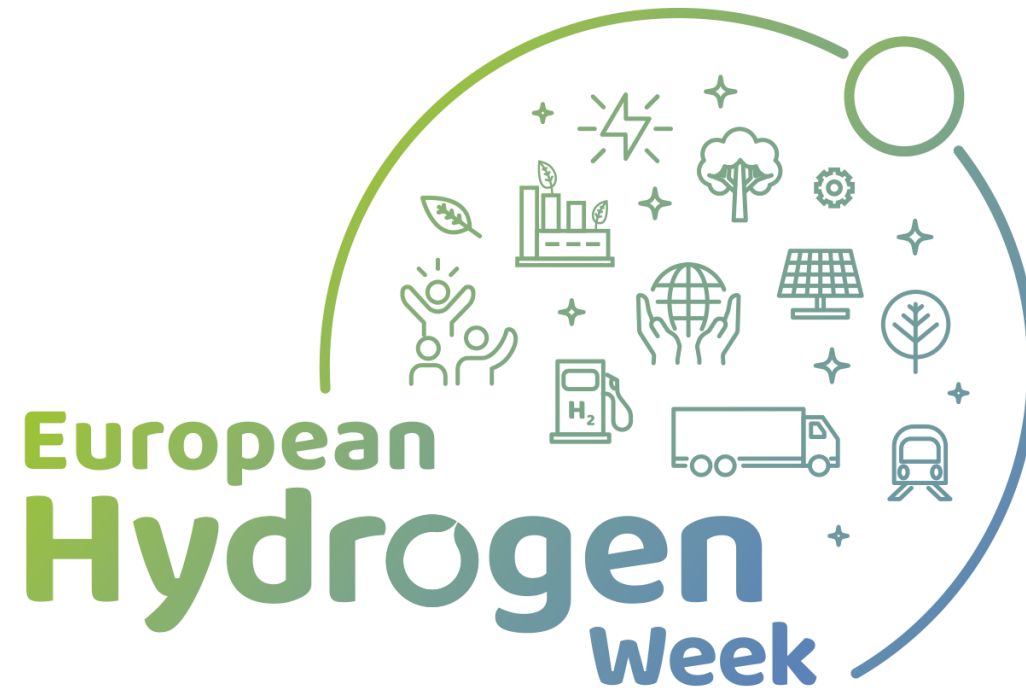
GO scope



Application	Labelling: consumer disclosure	Transport sector	
Legal background	Labelling RED II Art 19	RED II - Art 25	Mass Balance (RED I Art 18 and RED II Art 30)
Mode of delivery	Book & claim	Mass Balancing	
Organization	Issuing Bodies by Government mandate	Voluntary Scheme recognized by EC	RFNBO: non- existent (yet)
Applied scheme	CertifHy GO Scheme (in process)	RFNBO: non- existent (yet)	RFNBO: non- existent (yet)
Document type	GoO Guarantee of Origin	PoS Proof of Sustainability	PoO Proof of Origin
Value	End Consumer disclosure: i.e. CSR/ Marketing	RED II: 14% Renewable Fuel in Transport obligation on Fuel Suppliers	

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European
Hydrogen
Week

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