

CertifHy Stakeholder Platform 1st Plenary Session

WG3 “GO Commercialisation and use”

Date: 20/11/2017

Location 56-60 Avenue de la Toison d’Or, Brussels

Minutes of Meeting (MoM)

| CertifHy consortium members | Participants |
|---|--|
| <ul style="list-style-type: none"> - Wouter Vanhoudt (WV) - Joel Neave (JN) (Morning session) | <ul style="list-style-type: none"> - Oliver Germeroth - Bischoff & Ditze Energy GmbH - Mandy Trachsel - Bischoff & Ditze Energy GmbH - Jonas Cautaearts - Colruyt - Louis Ludo de Sweron - Colruyt - Helmut Morsi - DG MOVE - Jan Cihlar - Ecofys - Steven Vanholme - EKOenergy - Hans VanderSyppe - Engie Electrabel - Roger Ruetze - Enovos - Marieke Reijalt - European Hydrogen Association - EHA - Nicolas Gielis - Fluxys - Raphael de Winter - Fluxys - Daneel Geysen - Group Machiels - Yves Tielemans - Group Machiels - Valentine Willmann - European Association on Hydrogen and Electromobility -HYER - Jan Willem Langeraar - HYGRO - Yasushi Ohnuma - Japan Petroleum Energy Centre - Observing member - Yuya Inagaiki Ministry of Economy Trade and Industry - METI - Observing Member - Natsuki Kariya - Mizuho Information and Research institute - Observing Member - Geert Tjarks - National Organisation on Hydrogen and Fuel Cell Technology - NOW - Fabian Benschop - PitPoint - Maarten Van Haute - Q8 - Mirte Van Geenen - RECS International - Fabien Heurtaux - Renault - Despoina Chatzikyriakou - Toyota Motors Europe - Rudolf Zauner - Verbund AG - Paul Arents - Vlaamse Vervoermaatschappij VVM de Lijn - Isabel François - WaterstofNet |

| Item | Objectives |
|--|---|
| 1. Morning session | <ol style="list-style-type: none"> 1. Round table introduction of participants 2. Present WG2 work programme and timeline |
| Points of discussion | |
| <i>Round table introduction of participants</i> | |
| <ul style="list-style-type: none"> - Wouter Vanhoudt, CertifHy WG3 coordinator, welcomes the participants. - The participants present themselves and their motivation to participate to WG3. - The main reasons for contributing to WG3 are the following: <ul style="list-style-type: none"> o Understanding what value green H2 GO's can have; o Spotting of trading and business opportunities; o Having a system that ensures the hydrogen consumption by their products; | |

- Understanding how to green gas grids;
- Provide input for national discussions.

WG3 work programme and timeline

- WG3's core objective is to provide user-input to define the scheme.
- A key question is on the different configurations of use of the GOs:
 - Who can use them?
 - How can they be used by different account holders?
 - What information must be provided to the end-users?
- WV presented the proposed work programme and timelines for meetings and webinars (*see presentation slides*).

Questions regarding the WG work programme and timeline

- Several participants asked questions on how the GO scheme works and on the definition of green hydrogen which was achieved in CertifHy phase 1.
- It was noted that for Automotive, the “well to tank” scope to be the most interesting.

Presentation of the role of the Working group chair and co-chair

- The chair and co-chair validate the WG minutes of meetings and agendas drafted by the Working Group coordinator.
- The chair and co-chair sit on the Steering Group where they represent the position of Working Group 3.
- The Steering Group endorses the results of the project at each key milestone.

Introducing the chair and co-chair candidates

- Candidates for chair and co-chair were presented.
 - They are Isabel François (WaterstofNet) and Maarten Van Haute (Q8).
- Elections took place immediately following the presentation of the candidates.

| Item | Objectives |
|-----------------------------|---|
| 2. Afternoon session | 1. Essential requirements for determining H2 quantity, carbon intensity, and renewable share 2. Options for addressing “residual mix issue” and information to be collected during the pilot for evaluating these options 3. Discussion of GO use cases |

Points of discussion

Essential requirements for determining H2 quantity, carbon intensity, and renewable share

- These will mainly be provided by ISO 14040 *Environmental management -- Life cycle assessment -- Principles and framework*.
- On electricity input: electrolyzers have half hourly meters; this operational constraint should be taken into account. It could also be feasible to track based on this metering the RE and GHG of the electricity mix at that moment, however this would require a real time GO system for electricity that does not exist yet.

“Residual mix issue” - Application of GOs to hydrogen from non-participating sources

- Application of GOs to hydrogen from non-participating sources can lead to a loss of accountability for the supply/use of high carbon H2.
- This issue and possible ways to address it will be evaluated based on information collected during pilot operation of the scheme. To that end, information on the physical origin of hydrogen covered by a GO will need to be collected.

Carbon intensity threshold for “Green Hydrogen”

- Various participants pointed out that they expect users to want hydrogen with zero CO2 intensity.

- A participant noted that only one good product (GO) should be defined, such that people are not lost with all the different labels.
 - o Indeed, business will look at the carbon footprint by looking at the CO₂ content of the GO. However, private consumers will not care. They will just want to have one label that everybody else uses.
- A participant pointed out that the GO certificate should not be too complicated for the user, he should not be thinking about it, it should be straightforward to him.
- A participant pointed out that an FCVs using H₂ at the threshold will emit more CO₂ per km than some plug-in hybrids. People may then not see the point of FCVs.
- Comments from the coordinator:
 - o Electricity from wind or solar energy (based on GOs if the electrolyser is not directly connected to a wind or solar power plant) is assumed, by convention, to have a zero-carbon footprint. Therefore, hydrogen produced from this energy source will be considered to a zero-carbon footprint as well.
 - o To be able to declare that electricity input has been renewable, GOs must be cancelled: current European Directives do not foresee other possibilities.
 - o Nonetheless, hydrogen from biomass also needs to be considered, keeping in mind that exploitation of locally available waste and biomass is one of the pillars of the energy transition.
 - o Because some biomass based pathways can have a rather large LCA carbon footprint (as experienced with biofuels), a carbon intensity limit was set for ensuring that CertifHy Green GOs are only issued for product from pathways with low emissions compared to the benchmark. The limit of 36.4 gCO₂equ/MJ of H₂ (LHV), defined following the requirement specified by the RED for biofuels (60% below benchmark by 2018), is quite demanding and ensures, when applying the sustainability requirements of the RED for biomass for biofuels, that CertifHy GOs will only be issued for bio-based hydrogen production pathways that truly contribute to the transition to a sustainable low carbon energy system.
 - o Thus, the CertifHy Green H₂ definition includes both sustainable bio-based and wind/PV based hydrogen in a single category, since there is no reason to favour one over the other.
 - o This definition is not intended to encourage the production of Green H₂ “at the threshold” where zero carbon hydrogen would be mixed with higher carbon intensity product. This can be excluded by the requirement that each type of energy used to produce a given hydrogen production batch must have a single origin (as reflected by a GO). Clarity and transparency on the origin of the energy is a key objective of GOs.

GO use cases for mobility applications

- Presentation of the different ways GOs can be used for providing Green H₂ to the end-user for mobility applications.
- The hypothesis that dispensing of green H₂ could be activated by a button on the dispenser virtually allocating green hydrogen to the end-user (at a different price) based on GOs cancelled by the station operator raises discussions on whether or not this would be accepted by the end-user. Such a device could also be used to differentiate the two products (Low-C and Green H₂).