

Summary Minutes Meeting 3

Working Group 1 'Standardisation, Certification, Creditability and Tradability'

07.10.2022, 2 p.m. – 3:30 p.m.

I. Background and Goal¹:

The third meeting within the framework of the working group (WG) "Standardisation, Certification, Creditability and Tradability" serves to illustrate TÜV NORD's study on "Certification and Guarantees of Origin of Imported Green Hydrogen and PtX products". The external experts Dr Jörg Aign, Samuel-Matthias Wiktor, Verena Schneider and Julia Siebert from TÜV NORD presented the results and gave extensive answers to questions from the group of donors.

II. Presentation of TÜV NORD (Samuel-Matthias Wiktor):

1. Introduction:

- The motivation of the study is that a high share of the energy needed is still going to be imported from outside the EU in the future. Therefore, global supply chains for import are necessary.
- H2Global gave four key targets for the energy transition, and sustainability is only met once these targets are achieved. However, these targets cannot be achieved simultaneously.
 - Fast market ramp-up
 - Energy independence
 - Reasonable costs
 - Climate protection
- With regards to the fast implementation of the certification system, the report dealt with the following questions:
 - What are the relevant standards and criteria?

¹ The working groups' primary goal is to provide knowledge and recommendations to the public and, within the framework of its statutory purposes, to policy makers in order to support a rapid market ramp-up of green hydrogen and its derivatives. For compliance reasons, the accumulated knowledge will be published on our website and papers will be prepared in order to place the results in a broader context.

- How can the origin be verified across the entire H2 value chain?
- How to quickly implement a certification system on an international level?

2. Overview of standards for the assessment of the green characteristics of hydrogen products:

- There are currently nine sets of standards for hydrogen certification. Some of them are under development, while others are already available for use.
- Sustainability criteria related to social, environmental, and ethical requirements are only included in standards developed by REDcert, RSB, ISCC, and TÜV NORD.
- Sustainability requirements can, on the one hand, slow down the market ramp-up and impose higher cost. On the other hand, in the long run, they accelerate the market development in exporting countries with e.g., better educated people.
- The fulfilment of sustainability requirements is not yet a given outside the EU.

3. Analysis of potential hydrogen product exporting countries:

- The five countries identified by H2Global and analysed by the study include:
 - Australia
 - Namibia
 - Columbia
 - Egypt
 - Tunisia.
- The verifiability of sustainability and environmental criteria need to be enforced and actively developed in Columbia, Egypt, and Tunisia.
- The time frame for the introduction of certification systems and a hydrogen export economy is dependent upon the fulfilment of relevant preconditions in these countries. This is particularly true because each country only meets part of the preconditions.

4. Proposal for the gradual introduction of a certification system for hydrogen products:

- TÜV NORD recommends a gradual implementation to ensure a fast ramp-up of the H2 value chain and without incentives for *offshoring* (= basing some of the processes in another country to take advantage of lower criteria and working standards). With each temporal phase the requirements along the entire value chain increase.
 - 1st step: Clean H2 Products

- Product carbon footprint calculation & Well-to-Wheel- approach
- All technologies and energy sources possible
- Compensation of greenhouse gas emissions
- 2nd step: Green H2 Products
 - Includes criteria of the Delegated Act of the Art. 27 RED II
 - Fulfilment of renewable electricity requirement with guarantees of origin
- 3rd step: Sustainable H2 Products
 - Compliance with environmental and social standards
 - Applicability to international supply chains

III. Questions and Answers:

- How can a level playing field be ensured in terms of the requirements on imported H2 versus domestically produced H2?
 - A global standard is envisioned. That would ensure a level playing field for all producing countries.
- How can products be treated equally? For example, regarding the desalination of water via renewable energies. Some countries do not have water scarcity and therefore don't require desalination plants.
 - At the end it varies in the costs of the produced products. Therefore, it is a regulatory issue to find measures to balance the costs. Probably you make it cheaper on a regulatory basis if you have a higher standard fully reached earlier than necessary or there is a need to have a cross border tax or something similar to make it more expensive to import lower standard H2 into the EU to balance the market price.
- Why is Brazil not considered in this study?
 - Brazil was not considered, because the scope of the report was only to focus on five countries.
 - This was not a country study, but a study on existing certification schemes. The countries were only considered to get a better feeling for the situation of certification and the possible implementation process in the different continents.
- Have you already thought of a check list of requirements for each of the three phases?

- In the report three phases are defined as an example. The first phase in the example is valid until the entry into force of the draft of the Delegated Act of the Renewable Energy Directive II. This first phase is expected to end at the end of 2022. The second phase is from the entry into force of the Delegated Act up to the year 2026. These are the first mover criteria with the climate neutrality by means of the product carbon footprint (PCF) calculation and the compensation with a well-to-wheel approach. From 2022 until 2027 all criteria which are named in the Delegated Act are identified in the gradual system.
- Is it possible to customize the staged approach per country? For example, one country fulfills the staged approach in the next ten years and another country in only 15 years. Or are the same criteria applicable on the same timeline for all possible producing countries?
 - The criteria behind the staged approach must be similar, otherwise it's not a standard anymore. Which country would be able at what time to meet the requirements for clean, green, or sustainable H2 requires further evaluation and was not part of the study. That would require a deep dive, among other things, into the regulatory system, governance system, and infrastructure of the country. The proposed staged approach of TÜV NORD is a qualitative, not a quantitative approach. TÜV NORD did not set a certain amount of KPIs to be monitored to reach the stages of clean, green, and sustainable H2 – that was not within the scope of the study.
- Are the mentioned criteria in the presentation auditable in practice? Can TÜV NORD audit those criteria or is something needed to be built up with bigger investments first before the auditing can begin?
 - TÜV NORD could audit the criteria. However, the question is, if the prerequisites are fulfilled to have reliable indicators that can be measured. The database needs to be reliable enough to put a stamp on it in the end. This depends on the specific country in scope – but this was not part of the conducted study. TÜV NORD figured out gaps and indicates that this staged approach is something that needs to be developed further.
- Are the relevant regulators open to accepting the proposed stage-based approach or is more discussion required? How fast is the stage-based approach implementable?



- Dr Westphal hints to the trade-off of predictability vs. stage-approach, a point often also raised by lawyers. As soon as you make stages you can't ensure how long the timeframe would be and how quickly the standards are raised. Therefore "grandfathering" as well as sunset clauses are highly important. It will take many countries decades to become exporters if a level playing field with regards to the sustainability criteria is implemented at the first stage. This is a sensitive balance to strike. Also, geopolitically we must see that there will be a huge competition both around the product but also around the technology ramp-up, which is more tangible than ever with the Inflation Reduction Act of the USA. This can push the EU a step farther away from the ramp-up because order books of electrolyser manufacturers might be filled by the USA. These kinds of considerations are extremely important.
- One thing to add from a technical standard perspective of TÜV NORD: a staged approach would be possible to implement. However, it is more of a question of political will. Is the EU and Germany willing to accept low carbon H2 instead of green H2 in the ramp-up phase? Once that question is answered, from a technical implementation perspective, there are no challenges that TÜV NORD cannot cope with when driving the stage system forward.
- For example, if a project in Australia produces H2, which standard is applicable in order to audit the produced H2 to receive grants from H2Global?
 - This is putting the finger on the wound. There is no standard out there yet that is set and that you can work towards. The challenge with green H2 standards is that currently they are all "house standards" which means that everybody can put forward a set of requirements and give a certificate that you fulfilled these requirements. The question is: what is the value of that certificate that you hold in hand? The current challenge is, that there is no commonly accepted standard out there which means there is no guarantee with any certificate that you would get a benefit to the H2 that you produce. This is the gap. We need to have a set of requirements and put them in a formal standard. Only then you would have something to work towards. This is something we all need to push towards.
- What is the timeline for this effort?



- This is a good question. TÜV NORD can't give a timeframe. There is a lot of pressure being built up in Germany and the EU and everyone understands that a common standard is needed and the basis of ramping up the H2 economy. The initial reason for TÜV NORD's staged approach was the timeline. It gives you the ability to start with what is already clear and what can be proven and verified in many countries and then it can be developed from there. It is breaking down complexity and at the same time enabling the ramp-up and the build-up of the value chain. This was the basic idea behind the stage-based approach.
- Dr Westphal agrees with TÜV NORD. It is a huge discussion in many circles, and she cannot give a timeframe either. The decision which certification scheme will be selected is a geostrategic, geoeconomic, and geotechnological issue, and not just a technical issue as it often seems to be.
- What would be the next steps for the stage-based approach?
 - Policy-makers need to decide if they want to implement the stage approach and then there must be a set of criteria that needs to be fulfilled to be able to join the mechanism. That would require a set of reliable and verifiable criteria to ensure, that the H2 traded is at least clean H2. What these criteria are is basically up to the ones defining the mechanism. TÜV NORD can just consult on it technically.
 - This study is not directed to the ongoing first auctions of H2Global. The whole project is directed towards advising the political sphere. The purpose of the H2Global Foundation is to develop ideas and suggestions for the political system on how the H2Global mechanism could be used for developing and emerging countries. Also, it's interesting to mention, that Acatech has also made a study on green transport vectors and in their chapter on certification they also came up with the same recommendation to work in stages.
- Are there thoughts of H2Global to making other calls for H2 produced in Europe or in Germany?
 - Dr Westphal cannot talk about concrete calls. The instrument of H2Global allows for double-sided bidding mechanisms globally, inside Europe, inside Germany, and between regions. It's a question of political will and a question of the grants that H2Global receives. Calls for Europe or Germany are directions where



the foundation can develop advice and find good arguments why this should be supported in the future.

- People talk a lot about voluntary schemes and compliant schemes. Is the suggested first stage of the proposed mechanism from TÜV NORD a voluntary scheme and the second stage is a compliant scheme?
 - It depends on how the mechanism is built. Stage 1 could already be a compliant scheme. TÜV NORD just recommended a staged approach. Their job was to identify how the certification can be put on a reliable, measurable, and verifiable basis. It was not their job to say if it needs to be voluntary or not. That is up to the surrounding legal and regulatory conditions which TÜV NORD is not responsible for.
- Related to the current tender of H2Global: are there already a certain set of regulations in place or are they waiting on further specifications that are eventually coming out with the Delegated Acts?
 - H2Global can't comment on the process. Everyone should consult the websites of H2Global and BMWK.

IV. Further procedure:

If there are ideas for speakers or desirable input for the upcoming session from among the participants, participants are asked to provide feedback on them to the team of H2Global Foundation.

