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Introduction

EEX welcomes the Commission's initiative to publish a dedicated EU hydrogen strategy. Scaling up markets for clean hydrogen affects many dimensions that require coordinated European answers and framework conditions. We are convinced energy trading markets are enablers of a hydrogen economy helping to provide a broad access to the energy carrier to diverse actors from all sectors. In our response to DG ENER's consultation on the hydrogen strategy roadmap, we line out why we believe so. Given the complexity of the topic, EEX would welcome stakeholder involvement also in the actual EU hydrogen strategy. We are happy to provide our thoughts and are open to further involvement.

EEX is the leading energy exchange in Europe, which develops, operates and connects secure, liquid and transparent markets for energy and related products. As part of EEX Group, a group of companies serving international commodity markets, EEX offers contracts on Power, Natural Gas and Emission Allowances as well as Freight and Agricultural Products. EEX also provides registry services for White Certificates, Capacity Certificates and Guarantees of Origin (GoO) on behalf of the French State, as well as Auctions for Guarantees of Origin. EEX Group provides further services to GoO-registries via Grexel. EEX is the largest electricity exchange, the second largest CO₂ exchange and third largest gas exchange in the world.

Energy Markets are enablers of a European hydrogen economy.

At EEX we strongly believe hydrogen trading markets enable the wide-spread scale up of a European hydrogen economy through connecting diverse actors from different sectors. Today, trading participants from industry, the transport sector, renewable energy producers, utilities, gas importers and others are active on the markets of EEX Group. We connect different business interests in liquid and non-discriminatory energy markets overcoming isolated solutions and captive markets. With the right regulatory framework, hydrogen trading markets for European and globally produced clean hydrogen could become reality benefiting from the conditions set at EEX, particularly the access to the diverse field of trading participants. Please also refer to our considerations on the Strategy for Energy System Integration /Smart Sector Integration

Even further, connected energy trading markets could incentivize the European production of green hydrogen on basis of market price signals. With undistorted power prices and market-based Emission prices as connecting links to hydrogen markets, the production and use of green hydrogen, the operation of transport, heating, industry and other sectors are orchestrated. As an example, low or negative power prices in the event of high availability of renewable energy could lead to an increasing hydrogen production plus GoO issuing through electrolysis. The hydrogen will then be traded on the hydrogen or gas market, separately from GoOs which are traded on particular markets. Adequate emission prices help to reflect the competitiveness of the green hydrogen.

Hydrogen is a European chance

Scaling up markets for clean hydrogen is a huge task requiring high investment in infrastructure, production capacity as well as on side of the actual demand. Only through economies of scale these will become economically viable. Also, Europe may benefit from its well-developed existing gas transport infrastructure combined with diverse production conditions for renewable energies and its basis of potential hydrogen demand through industry and transport.

As outlined above, energy trading markets help to realize this potential. For this to happen, we consider the following dimensions relevant for the EU hydrogen strategy.

- Transport of hydrogen and infrastructure: Harmonized or coordinated EU rules for the transport of hydrogen are necessary to allow for establishing liquid trading markets for clean hydrogen enabling all producers and consumers of clean hydrogen to trade at least transaction costs. This tackles particularly the question of blending hydrogen in natural gas grids or of establishing dedicated hydrogen transport infrastructure. Regulation of any grid needs to allow non-discriminatory third-party access to ensure a broad access to the commodity and tradability.
- Certificates / GoOs: Market-based certificates or GoOs are tools to generate transparency and trust among consumers and they might be an additional source of revenues for producers as they reflect consumer's willingness to pay for the "greenness". Tradable certificates or GoOs on clean hydrogen complement liquid trading markets for hydrogen as a commodity. For liquid certificate markets to arise, harmonized European standards including rules for issuing and cancellation with mutual acceptance are key. In addition, certificates need to be internationally transferrable or even managed by a single EU-registry. Faster advancement in the hydrogen market is achievable with the separation of physical hydrogen and the attributes of the origin. Also, that means that renewable hydrogen projects can be done anywhere in Europe wherever its most cost effective. A meaningful price for clean hydrogen GoOs helps producers to reach additional market income and finance investments. This is also a question of the regulatory conditions for clean hydrogen certificates / GoOs. Beyond Europe, also globally traded hydrogen certificates / GoOs need to be developed to ensure transparency and trust. Grexel, part of EEX Group, has established the technology for CertifHy, the only European Hydrogen GoO-registry so far; together with other project partners they run the CertifHy hydrogen certification scheme. Within CertifHy, the project partners defined standards for Green and Low-Carbon Hydrogen eligible for getting a GoO, hence, the groundwork for markets for hydrogen GoOs is already concluded.
- Euro-denominated clean hydrogen: With a coordinated European approach to scale up clean
 hydrogen markets, Europe will become the center of global hydrogen trading. It is fair to say
 that this will help to strengthen the international role of the Euro. Euro-denominated clean
 hydrogen benchmarks are then just the consequence.

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