

1. Introduction

The European Energy Exchange (EEX) welcomes the market consultation launched by H2Global and the German Ministry of Economic Affairs and Climate Action (BMWK) and is happy to provide feedback to HINT.CO's commercial model and the draft term sheet. It is of particular importance as it defines the overall standards for ammonia, methanol and e-kerosine and will ultimately be the basis for the development of standardized trading products. From EEX's perspective the proposed term sheet is very supportive for the ramp up of markets as it defines clear-cut standards that allow for the development of commodity markets based on them.

In the following statement, EEX gives an overview on a potential market design compatible with the H2Global scheme and provides detailed feedback on the draft term sheet.

About EEX

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 (GO) on behalf of the French State, as well as Auctions for Guarantees of Origin. EEX Group provides further services to GO-registries via Grexel. EEX is the largest electricity exchange, the second largest CO₂ exchange and third largest gas exchange in the world.

2. EEX's stake in ramping up hydrogen markets

Transparent and liquid liberalized hydrogen markets including markets for hydrogen derivatives and PtX-products connect producers and consumers under non-discriminatory conditions. In the medium to long term, they will provide income for hydrogen producers beyond support schemes and tools to hedge price risks. Trading markets will connect market players from different sectors and numerous production facilities world-wide.

As energy exchange experienced in the development of trading markets, it is EEX's aim to establish trading markets for hydrogen and for hydrogen derivatives from the very beginning. For hydrogen produced in the EU and transported within the future hydrogen grid, EEX looks at setting up cluster or island markets on the level of a hydrogen cluster or Important Project of Common European Interest. These clusters will be physically connected step by step with the uptake of the European Hydrogen Backbone and they can be connected virtually before that through adequate trading instruments.

Imported hydrogen, hydrogen derivatives and PtX-products transported off grid can be integrated in these markets or traded separately on dedicated markets. This will be subject to further development. For ammonia, for instance, EEX expects that it will be consumed and traded mostly as ammonia in the early years of the market ramp up. With increasing hydrogen grids comes increasing need to fill the grid and keep pressure stable. Then, it can be expected that more and more imported ammonia will be cracked to transform it to hydrogen.

Given the needs - through the mass balance system - for a life-cycle tracking and reporting of CO₂-emissions associated to the green ammonia and PtX-production and transportation, EEX aims at starting a dedicated market model for imports. According to this, sellers are responsible for the reporting and transport plus covering the associated costs until delivery on one predefined point of delivery, e.g. a port.¹ At these delivery points, the buyer takes over responsibility for transporting the fuel to the actual point of consumption including the reporting. To meet the requirement to reduce CO₂ emissions at least by 70% the fuel must reach a European port with enough buffer to be further transported on shore by the buyer. To allow for functioning trading, reporting requirements must be straight forward and standardized. As such, this market model is highly compatible with the proposed term-sheet.

¹ Also other, central delivery points such as a central hydrogen clusters, inland ports or storage capacity could per se be delivery points.

EEX aims at starting with auctions for the respective hydrogen sales agreements (HSA) for each fuel and for each possible delivery port including the facilitation of physical delivery. Auctions are suitable as liquidity is bundled. In case, an HSA-buyer fails in off taking, additional residual auctions can take place.

3. Considerations on HINT.CO and draft term sheet

3.1. EEX comments on HINT.CO's commercial model

EEX welcomes the lean set up of HINT.CO and the expressed willingness to outsource as many operations and risks to market parties as possible. Only through the clear involvement of the market, H2Global's goal to reach market ramp-up can be achieved.

EEX is aiming at providing an open market model where commercial sellers and producers of ammonia, methanol and e-kerosine can become active.

3.2. EEX comments the draft term sheet

The proposed term sheet for hydrogen purchase agreements (HPA) does set the framework also for the ability to effectively trade HSA. Therefore, it is of the utmost importance to set appropriate conditions in the HPA-term sheets.

EEX considers the draft term sheet for HPA as presented as being mostly adequate with a view to later standardization and tradability of HSA. It allows for the establishment of markets for HSA according to the market model presented under 2. of this statement. In the following, EEX would like to give indication on how the term sheet can be improved further.

#	Topic	Key term	Explanation
1	Background	<ul style="list-style-type: none"> <li data-bbox="598 443 1233 477">- <u>1. Paragraph: HSA as standardized products</u> <p data-bbox="646 533 1445 712">For the avoidance of doubt, it should be made clear that HSA may be concluded through standardized products on organized markets. This ensures market ramp up is done effectively.</p> <ul style="list-style-type: none"> <li data-bbox="598 768 951 801">- <u>3. Paragraph: Products</u> <p data-bbox="646 857 1445 1395">EEX is fully in line with the proposal to start the tender process with (green) ammonia, e-methanol and e-kerosine. However, to ensure openness for market development it also needs to be possible to include further hydrogen derivatives or pure hydrogen. Specifically, the latter is key as pure hydrogen could become the lead market at a later stage bundling liquidity and connecting effectively hydrogen and hydrogen derivatives produced outside the EU with a European hydrogen market. If it is wanted to procure other forms of hydrogen derivatives or even pure hydrogen at a later time point, the term sheet needs to be extended respectively.</p>	

<p>6</p>	<p>Port of Delivery / Delivery point</p>	<p>EEX very much welcomes the proposal to conduct transfer of title and risks at the flange of the port. This will facilitate the establishment of standardized HSA products.</p> <p>For the sake of clarity and to support the development of liquid markets, EEX prefers to rule out changes of the delivery port as proposed in the term sheet completely - or limit them to 18 months before start of delivery and latest before the first auction in ammonia, e-methanol or e-kerosine auction for HSA on the market. Once HSA become traded on trading platforms, such changes would not be possible for exchange traded HSAs given the standardized nature of it. Allowing changes of the delivery port for HSA concluded outside the market would lead to an unlevel playing field with respect to product standards and liquidity would be split up. Through this, market development would be slowed down and costs of trading for buyers and sellers would be higher compared to a more liquid market.</p>
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7	Delivery Schedule	<p>EEX would like to comment on delivery schedule conditions:</p> <p>a) and b): EEX welcomes the proposal to spread delivery amounts evenly over the year. The exact amount of delivery time points needs to be determined according to the needs and feedback of producers and consumers of the respective fuel. With a view to enable the establishment of transparent exchange markets, it is necessary to determine those time points up front equally and uniformly for all deliveries of a fuel. To allow both, standardization of the delivery but also adequate flexibility for the seller, the seller should have the option between a uniformly and equally delivery of the annual amount in 12 monthly products (12 equal slots), 4 quarterly products (4 equal slots) or even 1 yearly product.</p>
8	Handling of the product	<p>EEX welcomes the proposed conditions to handle the products. In order to support sellers with selling any product where the buyer fails in taking off, trading platforms could offer spot market auctions shortly after the predefined delivery date.</p>
9	Dispatch of Product to HSA Customer	<p>EEX welcomes the proposal to grant HSA-buyers with the responsibility to handle the products behind the port. Besides the definition of clear-cut product standards, this also facilitates the handling of the certification of the renewable attributes within the mass balance system.</p>

<p>13</p>	<p>Additional Product Specification</p>	<p>As rightly stated, emission savings must be at least 70% over the entire life cycle. To allow for further transport emissions on shore until the actual point of consumption (end-customer), emission reduction at the point of delivery at a port must provide enough buffer to not exceed 70% at the point of the end-customer. Emission savings at the flange of the port shall have fixed values or a fixed range of values with an emission-reduction buffer to reach end-customer at all delivery points in Belgium, Germany and The Netherlands. This supports the development of standardized and comparable products. EEX considers a buffer of 5% sufficient, i.e. ammonia, e-methanol or e-kerosine must reach European ports with an emission reduction of at least 75%.</p>
<p>16</p>	<p>Reporting</p>	<p>EEX acknowledges the need for reliable certification. Large scale market ramp up, however, requires a high degree of standardization. That said, reporting should be done in a standardized and easily handable manner, ideally in the form one standardized certificate.</p>
<p>17</p>	<p>Contract Price and payment</p>	<p>EEX welcomes the proposed approach to cover certain service charges associated to the physical delivery through HINT.CO. This supports the development of a European market like the hub-model in natural gas markets. If implemented quickly it may help to establish Europe as the central global hub for green hydrogen trading.</p>

<p>20</p>	<p>Contractual penalty</p>	<p>Failure to deliver may be lifted through a common storage obligation imposed on sellers and/or in cooperation with a dedicated service provider comparable to a Market Area Manager as common in natural gas markets.</p> <p>Once liquidity has picked up in ammonia, methanol and e-kerosine markets, central clearing and securisation through a clearing house will become an option to manage delivery risk.</p>
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