Accelerating Hydrogen Deployment – The role of the Innovation Fund Hydrogen Auctions

This newsletter summarizes the structure, implementation, and outcomes of the first and second Innovation Fund hydrogen auction rounds. In addition, it provides information on possible developments, including the planned third hydrogen auction round as well as opportunities for member states through national Auctions-as-a-Service (AaaS) and a Hydrogen Matchmaking mechanism currently under development. How small to medium companies including shipping operators in the region can tap into EU-level funding support, including advisory services available through national innovation programs is also described.

The European Union specifically aims to scale renewable hydrogen production as part of its broader climate and energy policy framework. A central instrument in this effort is the Innovation Fund, which is financed through revenues generated by the EU Emissions Trading System (EU ETS). By utilizing the revenues from emissions allowance auctions, the Innovation Fund is intended to support the commercial demonstration of innovative low-carbon technologies, including projects aimed at renewable hydrogen production.

Within this framework, the European Hydrogen Bank (EHB) has been established to address and accelerate the hydrogen uptake by providing direct financial support to hydrogen producers. A key mechanism under the EHB is competitive auctions to allocate funding in a cost-effective and transparent manner (promoting the lowest bids). These auctions provide fixed premium contracts to selected projects for the duration of ten years based on their required subsidy per kilogram of renewable hydrogen produced.

The first pilot hydrogen auction round was launched in 2023 and attracted considerable interest, with 132 bids submitted from 17 countries. The second round, for which the results was announced in May 2025, continued to demonstrate interest, with 61 bids submitted (8 for maritime topic) and a total grant request four times higher than the available budget of €1.2 billion.

For the Nordic shipping sector, the hydrogen production initiatives supported represent critical pathways for future fuel sourcing. The Nordic region benefits from relatively low hydrogen production costs (often called Levelized Costs of Hydrogen, LCOH) and an almost entirely fossil-free electricity grid. With the Nordic countries already advancing clean energy solutions, Nordic stakeholders could capitalize on hydrogen auction support through upcoming funding rounds and potentially mechanisms like Auctions-as-a-Service (AaaS) and the Hydrogen Matchmaking Platform.

As the EU ramps up its efforts to meet the 10-million-tonne hydrogen (renewable fuel of non-biological origin hydrogen) production target by 2030, Nordic participation will be key in ensuring that green hydrogen is used in an efficient way to steer our region towards for example a sustainable maritime future. From a maritime perspective the hydrogen auctions complement other policies promoting the maritime fuel transition that mainly increase the cost for fossil fuels and demand the use of low carbon fuels, by focusing on production of renewable fuels.

Design of the Innovation Fund Bank Auction System

The competitive auction mechanism established by EHB is structured to provide fixed subsidies for certified and verified renewable hydrogen production. These subsidies are awarded based on competitive bidding and are designed to bridge the cost gap between renewable and fossil-based hydrogen, thereby enhancing project bankability and encouraging market formation. The European Climate, Infrastructure and Environment Executive Agency (CINEA) is responsible for the execution and management of the auctions.

The auction design includes the following key parameters:

- **Auction type**: A static, single-stage auction using a pay-as-bid pricing model, in which each winning project is awarded its own bid price.
- **Remuneration**: Support is provided as a fixed premium (€/kg hydrogen) over a period of 10 years, paid post-delivery upon the certification and verification of renewable hydrogen volumes. No upfront payments are made prior to entry into operation.
- **Ceiling price**: A disclosed maximum price per kg of hydrogen is defined for each auction round. For the first auction in 2023, the ceiling was set at €4.50/kg and for the second auction €4.00/kg.
- **Ranking and selection**: Bids are evaluated and ranked solely based on the requested subsidies (price-only criteria). Projects are selected starting from the lowest bid until the budget is fully allocated.
- **Prequalification criteria**: Bidders must meet several eligibility conditions, including:
    - Key project permits (e.g. environmental, construction).
    - Letters of intent or memoranda regarding power purchase agreements and in case aiming for maritime off-takers hydrogen offtake agreements.
    - General financial capacity assessments.
- **Support restrictions**: No cumulation of support is permitted with other forms of state aid for the same project costs. This is to safeguard equal treatment across member states and avoid potential market distortion.
- **Delivery commitments and penalties**: Projects must commence operations within a predefined maximum realisation period and deliver agreed volumes. Awarded projects must start production within 5 years of signing their grant agreement. Non-compliance—such as excessive delays or sustained underperformance—can imply termination of support and associated penalties.

However, the auction framework allows for eventual integration with national funding schemes (for projects under the ceiling) through the AaaS platform described below.

First hydrogen auction

The inaugural round of the hydrogen auction that took place during 2023/2024 with a €800 million budget received a total of 132 bids from 17 countries, Figure 1. The first auction demonstrated a highly favourable ratio between the ceiling price of €4.50/kg and the lowest bid of €0.48/kg, resulting in the projected supply of approximately 1.6 million tonnes of hydrogen over a ten-year period. [1]

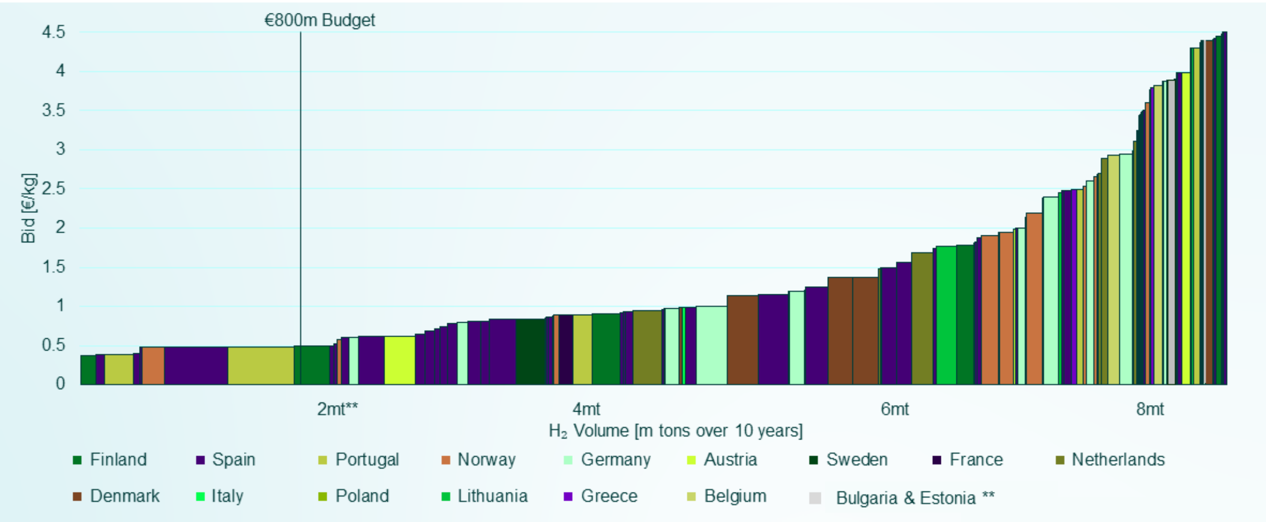

Figure 1. Bids during the first hydrogen auction also including the low number of bids found inadmissible or ineligible as well as bids falling on qualification criteria [1].

Second hydrogen auction

The second auction had an available budget of €1.2 billion including a dedicated budget of €200 million towards producers aiming for maritime off-takers. In total 61 bids were received, from 11 countries, whereof 8 bids with off-take in the maritime sector. The total requested grant support amounted to €4.8 billion—four times the available budget. While this figure reflects continued strong interest, it represents a decline in relative oversubscription compared to the first auction. The bids received can be seen in Figure 2. In total 15 hydrogen projects from five countries (Spain, Finland, Germany, Netherlands, and Norway) have been selected whereof three of them under the Maritime topic (all three Norwegian). In total, the projects will receive €992 million in EU funding of which €97 million for the maritime related projects. Support levels vary from €0.2 – 0.6/kg for the non-maritime and between €0.45 – 1.88/kg for the maritime related projects [2]. The Grant Agreements are expected to be signed by September/October 2025.

Due to the significant risk of increasing dependency on Chinese imports of electrolysers and following the Net Zero Industry Act (NZIA) aiming for significant domestic production of net-zero technologies, a specific resilience criterion was introduced in the second round of the hydrogen auction, capping the share of electrolyser sourcing from China to maximum 25% [3].

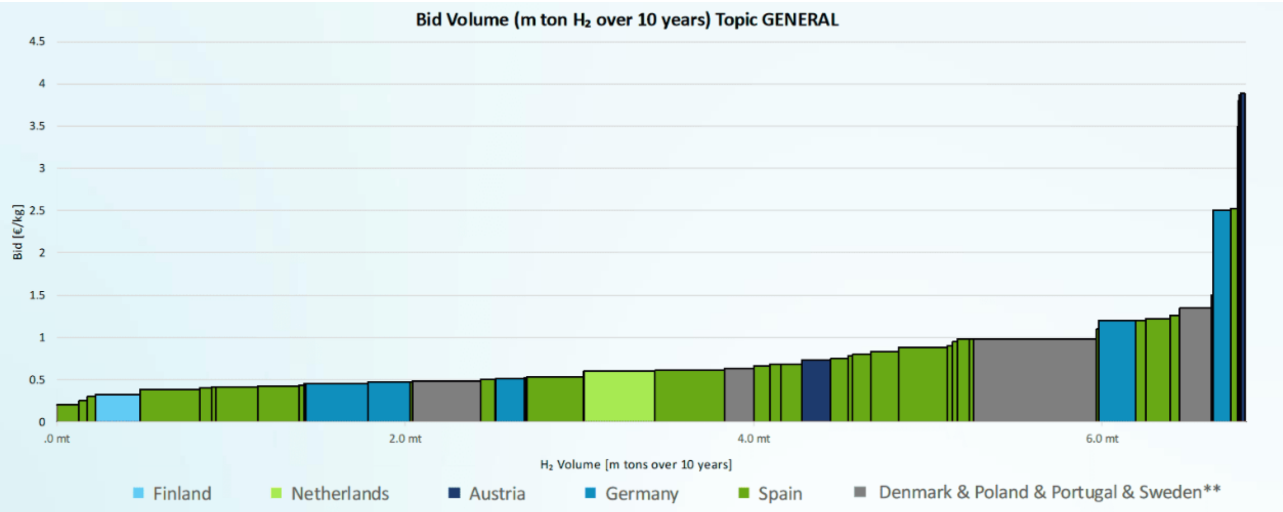

Figure 2. Bids during the second hydrogen auction also including the bids found inadmissible or ineligible as well as bids falling on qualification criteria [2].

Planning for the third hydrogen auction

A third auction, scheduled for launch in the third quarter of 2025, will feature a budget of up to €1 billion and promote the use of the AaaS platform (see below), e.g., by facilitating the use of unspent EU funds [4].

Auctions-as-a-Service (AaaS)

AaaS is an initiative under the European Commission's Innovation Fund designed to streamline the allocation of financial support for renewable hydrogen production projects across the European Economic Area (EEA). This mechanism allows EEA countries to utilize the EU-wide auction platform to distribute their national funds efficiently, promoting the development of a unified European hydrogen market [4], [5].

The AaaS process involves several key steps:

1. Commitment of National Funds: Participating countries allocate a portion of their national budgets for hydrogen production support and notify the European Commission of their intent to participate.
2. Auction Participation: The Commission, through CINEA, conducts the auction, assessing bids based on the required public subsidy per kilogram of hydrogen produced.
3. Awarding of Grants: Bids are ranked, and support is granted starting from the lowest subsidy requirements until the available budget is exhausted.
4. National Allocation: After the auction budget is allocated, remaining projects can be funded using the national budgets of participating countries.

The AaaS initiative addresses potential market fragmentation by providing a standardized platform for funding allocation, thereby reducing national administrative burdens. For example, the European Commission has approved the €400 million Spanish state aid scheme within the AaaS mechanism which will lead to an additional 345 MW of installed capacity and production of 221 000 tonnes of renewable hydrogen in Spain [8]. Thus, more actors applying for projects in Spain may receive funding. Germany aimed for allocating €350 million from its national budget to the Innovation Fund's auction as part of the AaaS mechanism to support additional renewable hydrogen projects within its territory, during the first round of the hydrogen auction [6]. However, this initiative was not realized a Germany found the Commission specification too stringent and no additional funding was supplied for Germany [7].

Levelised Cost of Hydrogen (LCOH)
To get a better understanding on production cost levels for hydrogen and how this varies between EU countries, the organisation European Hydrogen Observatory under European Commission has launched the service *Levelised Cost of Hydrogen Calculator*. The calculator aims to give expected current costs of multi-MW state-of-the art electrolysis system and latest available annual electricity costs (default values for average electricity cost or for specific sources or your own input values can be used). The average Levelized Cost of Hydrogen (LCOH) of European countries (assuming an average national electricity cost) have a considerable variation in which Cyprus is an outlier, see Figure 3. Poland and United Kingdom have high relative costs while the Nordic countries and the Iberian Peninsula enjoys the lowest costs [9]. National differences in electricity prices may influence the ranking.

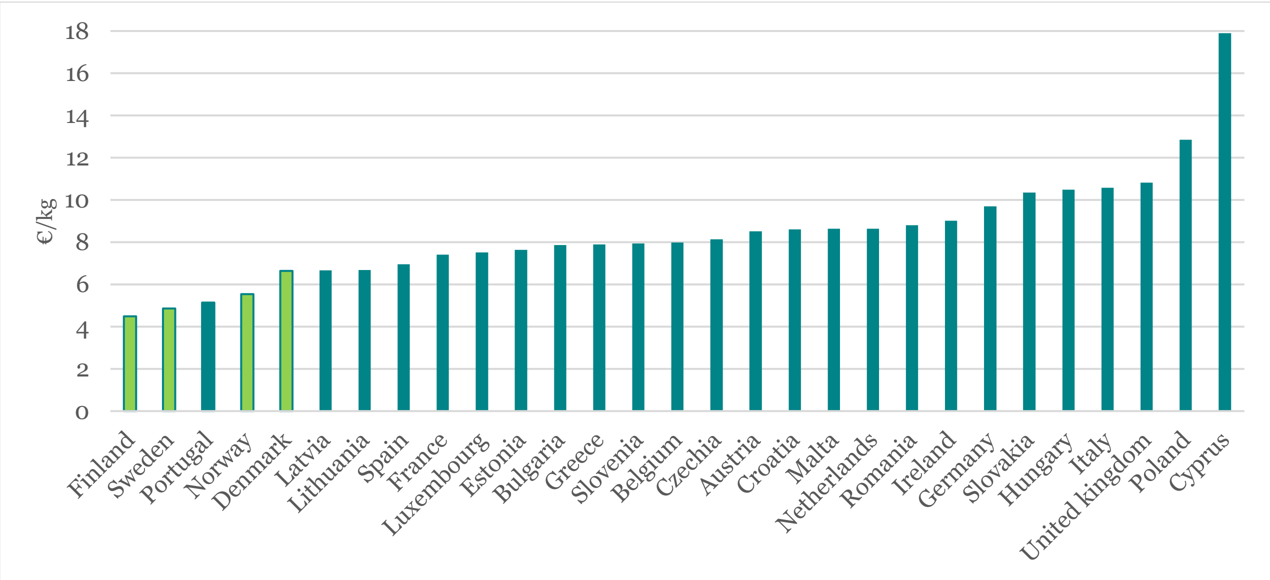

Figure 3. Levelized Cost of Hydrogen (LCOH) of European countries [9]. All estimates are made with default values for each country within the calculator such as average Swedish electricity costs of €17/MWh and Grid fee €11/MWh.

Matchmaking mechanism under development
The European Commission are also developing a matchmaking mechanism for connecting buyers and suppliers, to be launched in September 2025. It will cover renewable and low-carbon hydrogen and derivatives such as ammonia and methanol. It will build upon an existing platform for EU-wide gas demand pooling and joint purchases. However, the mechanism will be tailored to the hydrogen market. [10]

The mechanism and the actor behind it will:

- Collect hydrogen demand request from consumers and offers from producers while organizing call for interest.
- Aggregate demand and match consumption with supply.
- Provide information on available financing solutions.
- Collect and use market data to support the development of infrastructure.

Support available related to auctions and Innovation Fund etc.
In Sweden, small to medium companies can receive support and advice with EU financing. The program is called EU SME Support and was created by the Swedish Agency for Economic and Regional Growth, Vinnova and the Swedish Energy Agency where RISE coordinates 20 advisors including IVL Swedish Environmental Research Institute, Invest in Skåne and LTU Business among others. More specifically, EU SME Support provides individual advice for applications, help and support regarding agreements, administration and reporting to the EU. SME Support cannot assist with writing the applications. No similar support is available for large companies. More information available at eusme.se/eu-sme-support-in-english/

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