



EUROPEAN COMMISSION

MEMO

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Questions and answers (Q&A)

The second Innovation Fund auction for RFNBO hydrogen production

About the auction

Why was an auction instrument chosen to provide a subsidy to hydrogen projects?

An auction is a process in which goods or services are offered for bidding. In the case of a subsidy scheme, what is auctioned is not the product itself, but rather a subsidy for a specific activity or product. In essence, bidders requiring the lowest public subsidy for an auctioned activity or product will win the subsidy.

Launched on 23 November 2023 and closed on 8 February 2024, the pilot Innovation Fund auction ([IF23 Auction](#)) was the first EU-wide auction to allocate EU funding for the production of renewable hydrogen categorised as Renewable Fuel of Non-Biological Origin (RFNBO). In the auction, project developers were able to participate and submit a fixed-premium bid (payment in €/kg of produced RFNBO hydrogen) to receive support for their production.

Why a second auction to support RFNBO Hydrogen?

The IF23 Auction received 132 [applications](#), requesting total support of more than 15 times the available budget of EUR 800 million. The continued support for renewable hydrogen production responds to the commitments made within the European Hydrogen Bank communication, the RePowerEU Plan and [announcements made by the Commission](#).

What is the timeline expected for this new auction?

The preparation for this auction began in May 2024 with the publishing of draft Terms and Conditions (T&Cs). For the purpose of gathering feedback, the draft T&Cs were discussed in a public consultation with stakeholders until June 2024, next to a 6-week written feedback period. As of 27 September 2024, the final T&Cs have been published, integrating the feedback received in the public consultation, as well as lessons learned from the pilot auction. The auction will open on 3 December 2024 and will close in February 2025.



What is new in this second auction compared with the previous one?

After the success of the IF23 pilot Auction and based on the feedback received during the public consultation of the draft T&Cs, some project maturity requirements will be tightened in the auction qualification criteria (i.e. assessment performed before bids get ranked) for the second round in order to ensure the best possible quality of bids.

In addition to a maximum time to entry into operation of 5 years (unchanged from the pilot auction), applicants must now reach an intermediate milestone of financial close within 2.5 years. Failing to do so will terminate the support contract and cause the call of the completion guarantee by the European Commission. This commitment will need to be supported by Heads of Terms with main renewable electricity suppliers and hydrogen off-takers, and by presenting a feasibility study for the project. The required Completion Guarantee has been increased to 8% of the requested grant amount (compared with the 4% in the pilot auction). Finally, projects will have to compete under a reduced ceiling price, which is set at EUR 4/kg of RFNBO hydrogen (EUR 4.5 in the pilot auction).

To facilitate a contribution by this auction to the objectives of the Net Zero Industry Act (NZIA), resilience requirements have been added to auction qualifications. Notably, projects will be evaluated on a new criterion: 'Achieving security of supply of essential goods and contribution to Europe's industrial leadership and competitiveness'. This will be a pass/fail assessment.

With the resilience requirements, the Commission will also ensure that support is geared towards risk-proof hydrogen production in Europe, notably when it comes to safety and cyber-security.

Which projects are eligible for support in this auction?

RFNBO hydrogen producers located in any EEA country can be supported by the auction. For the maritime topic, only projects with a majority of their supply directed to off-takers in the maritime sector will be eligible.

Why a dedicated 'maritime' topic?

After its revision in 2023, the ETS Directive was extended to cover maritime transport – applying to ships that have gross tonnage above 5,000. . As part of that revision, it was established that 20 million allowances will be deployed by the Innovation Fund (IF) by 2030 to support the decarbonisation of the maritime sector through dedicated topics and by supporting technology solutions such as sustainable alternative fuels.

Based on this, and on the participation in the pilot IF23 Auction of projects aiming at supplying the maritime sector, the Commission decided to organize a dedicated topic for the maritime sector in the IF24 Auction. This decision is also aligned with other policy objectives, like the 'FuelEU Maritime' Regulation, which seeks 80% reduction in greenhouse gas (GHG) emissions intensity for maritime fuels by 2050 and sets target of 1% blending RFNBO for bunker fuels by 2031.



Why are there new resilience criteria and what do they consist of?

To facilitate a contribution of this EU auction to the objectives of the Net Zero Industry Act (NZIA), resilience requirements are added to auction qualifications criteria.

First and foremost, a **criterion: 'Achieving security of supply of essential goods and contribution to Europe's industrial leadership and competitiveness'** will be evaluated as part of qualification criteria (i.e. pass/fail assessment). To fulfil it, projects have to contribute to a diversified supply chain and avoid building dependency on a single third country which may threaten the European security of supply of electrolyzers.

Commission's analysis indicates there is a significant risk of increased and irreversible dependency of the EU on imports of electrolyzers originating in China, which may threaten the EU's security of supply. Consequently, **projects have to limit the sourcing of electrolyser stacks** which were assembled, contain cells manufactured or received surface treatment in China **to not more than 25%** (in MWe) to fulfil this criterion.

There needs to be enough evidence in the application to underpin the claims. Compliance with the claims made at application will be monitored during project's implementation. Penalties (reduction of grant or even termination) apply in case the claims were not fulfilled.

In addition, at the project's entry into operation, projects must demonstrate compliance with **safety standard ISO 22734:2019** for 'Hydrogen generators using water electrolysis — Industrial, commercial, and residential applications' and deliver a **cybersecurity plan** outlining how, in order to ensure the security of the installation, the operational control of the installation remains within an entity established in the EEA and the data are stored within the EEA. Further, at the bidding stage, projects will need to submit an **electrolyser procurement strategy**, which will enable the EC to monitor: the origin of purchased equipment, the critical raw materials intensity, recycling strategies in place, standards that equipment complies with and whether original equipment manufacturers receive foreign financial contributions.

Finally, throughout the project monitoring period, existing mechanisms that already protect European industry from unfair competition, such as the EU's Foreign Subsidies Regulation or the possibility of EU trade defence investigations, are in place and can be deployed if the relevant conditions are met.

What type of information will be shared publicly from this auction?

The Terms and Conditions state that only the information that projects consent to shared will be made public to fulfil the call objective of price discovery and contribute to market formation:

- For selected projects: at least identified bid price, total volume, electrolyser capacity. The Commission will also consider to considering also publishing information about the intended origin of the electrolyser.
- For non-selected projects: anonymised bid price, total volume and capacity
- For all bidders: anonymised and aggregated off-take prices.



The Commission may decide to publish additional data and analysis as long as anonymisation can be guaranteed.

The Commission is also considering the possibility that projects that want to benefit from the Auctions-as-a-Service scheme will need to accept that all of their information is transferred to the Member States (MS) participating in the Auctions-as-a-Service, regardless of being awarded.

Why is an auction mechanism chosen to complement the regular Innovation Fund grants?

Auctions allow for funding to be allocated to technologies in an economically efficient way and allow projects to move from first- or second-of-a-kind demonstration projects to broader commercial roll-out. The auction therefore contributes to the objectives of the revised ETS Directive 2003/874 to support the scaling up of innovative technologies. The revised ETS Directive enables the use of competitive bidding to award support from the Innovation Fund and to cover up to 100% of relevant costs (as opposed to 60% under the regular Innovation Fund grants).

The key advantages of using an auction as a financing instrument for technologies like renewable hydrogen production that are moving towards market roll-out are:

- 1) It provides cost-efficient support allocated through a market-based instrument.
- 2) The technology and project development risks are carried by the project promoter (who is best placed to address them), as payments are based only on delivered volumes of the supported good, meaning there are no payments before a project's entry into operation.
- 3) Auctions allow for price discovery and market formation in the EU: competitive auctions, with a simple and transparent set-up, reveal private costs and create valuable and comparable price points that can help to kick-start a European hydrogen market.
- 4) Auctions have a lower administrative burden for applicants than other grant processes. Less documentation is required, and the evaluation timeline is shorter.

What is Auctions-as-a-Service (AaaS)?

Auctions-as-a-Service is a way for EEA Member States to use the Innovation Fund hydrogen auction to allocate *additional national* funds to projects that could not be awarded under the Innovation Fund budget. It is an offer from the Commission to Member States to make use of the auction scheme that was designed to be compatible with the Climate, Energy and Environmental Aid Guidelines (CEEAG) and to streamline the process of notifying State aid with the help of Commission templates.

Auctions-as-a-Service can play a significant role in the nascent hydrogen market. For new markets, it is crucial to prevent market fragmentation with different national support schemes and the resulting divergent price signals. Project developers can also benefit from a single set of rules for winning a subsidy across Europe, rather than having to apply to various funding schemes with different application procedures and timelines. The service can also save the administrative costs of developing several support schemes in different Member States and bring such subsidies to the market earlier, when they are most needed.



For the pilot IF23 Auction, Germany was the first Member State to participate in AaaS by making EUR 350 million available from its national budget, in addition to the EUR 800 million Innovation Fund budget.

Why do we have these non-cumulation rules?

Section 4 (“Rules for cumulation of support under the auction with other public support”) of the auction T&Cs outlines the cumulation rules of the auction. Cumulation with other forms of State aid for the same project (i.e. the H2 producer) is generally excluded with a few exceptions such as State aid in the form of levy reductions of levies financing energy and environmental policy objectives under 403 of the CEEAG.

These rules have been designed in close collaboration with DG COMP. During the public consultation on the design of the pilot auction, out of the 258 written contributions received, 170 respondents did not object to the suggested approach for cumulation rules. During the public consultation on the second auction, out of the 136 written contributions, less than half (63) commented some concerns with cumulation rules, mostly requesting higher degrees of flexibility. During these consultations, MS with few existing support mechanisms for hydrogen production argued for no cumulation at all, whereas project developers of projects that have previously received subsidies but have still not managed to reach FID and projects from MS with a lot of fiscal space argued for cumulation.

Some projects may have received subsidies in the past, but have still not managed to reach FID. For those projects that require an additional top-up on existing funding sources the regular Innovation Fund call, as well as resources such as RRF resources, Modernisation Fund resources or national funding programs remain open.

State of play on the Innovation Fund (all past calls for proposals)

What is the current state of awards and disbursements of the IF?

The legal basis of Innovation Fund was established in 2019 and the first call for proposals was launched in 2020. So far, more than 100 projects have signed grant agreements worth approximately EUR 6.5 billion from 3 large-scale (LSC) and 3 small-scale calls (SSC) for proposals. A 2023 combined call including small, medium, and large scale as well as pilot project and manufacturing of component topics, closed in April 2024 and received 337 applications from 27 countries. The Evaluation of these proposals should be finalised in Q4 of 2024.

Innovation Fund projects under the regular grants have up to 4 years to reach financial close, which is followed by the construction period before entry into operation.

Projects selected in the pilot auction will have a maximum of 5 years to reach entry into operation. Support from the IF is provided for a maximum period of 10 years, and disbursements only occur after entry into operation.

Is there a pre-allocation of funding per Member State?

Innovation Fund support is allocated on the basis of excellence and through competitive calls for proposals (regular grants or auctions) following the application of award criteria as described in the [Delegated Regulation](#), Financing Decision and respective call texts. The



projects that score the highest in the evaluation process within the available topic budget are selected, regardless of their sector or location.

The legal basis of the Innovation Fund allows for the possibility to use a specific award criterion to ensure geographical balance. However, Innovation Fund funded projects are now located in 24 Member States and it is not deemed necessary at this stage to resort to a specific award criterion considering that the overall balance is improving with each call, notably with the most recent 3 LSC and 3 SSC results.

Currently, there are two major initiatives to support Member States under the Innovation Fund with the development of a national pipeline of high-quality innovative projects and thus improve the geographical balance:

- 1) The latest revision of the ETS Directive introduced 'Technical Assistance for Member States with low effective participation' – aiming to increase the overall quality of Innovation Fund applications from countries with lower participation levels.
- 2) Training sessions are held for all Member States, National Contact Points or Innovation Fund Expert Group representatives on award criteria, outreach and communication, and more. The training started in Q2 2024, complemented by support on outreach and communication at national level.

Links to broader political priorities

How is this auction call contributing to wider EU policy objectives?

The IF auctions are a pillar of the European Hydrogen Bank. The objective of the EU Hydrogen Bank is to close the investment gap and connect future supply of renewable hydrogen with our goal of 20 million tonnes of renewable hydrogen deployed in Europe by 2030. It will facilitate both renewable hydrogen production within the EU and imports, contributing to the REPowerEU objectives and to the transition to climate neutrality. It further supports the objectives of the Green Deal Industrial Plan and the Net Zero Industry Act.

The scaling up of electrolyser manufacturing for renewable hydrogen production will contribute to the competitiveness and resilience of European industry, including steel and fertiliser production and the shipping industry. Scaling up the European hydrogen market will also allow European companies to play a leading role in the emerging global hydrogen market, which offers new growth opportunities and quality job creation. The Hydrogen Bank Communication accompanied the legislative proposal for the Net-Zero Industrial Act.

Does this auction call support projects involving natural gas?

No, only the production of renewable hydrogen of non-biological origin (RFNBO Hydrogen) as defined in the Renewable Energy Directive and its Delegated Acts is eligible for payments. Payments are made based on verified and certified produced volumes of RFNBO hydrogen.



Does the Commission influence the selection process?

The Commission does not influence the selection process. The Commission designs the method for selecting projects, as described in the Delegated Regulation, the Financing Decision and the call texts. The evaluations themselves are organised and managed by CINEA, the executive agency responsible for implementing the Fund. The ranking list is drawn up exclusively on the basis of the bidding price (auctions) and scores (regular grants) obtained by projects in the context of the evaluation.

Is it possible to learn more about all of the grants already awarded under the Innovation Fund?

Yes, this information is available in the [public dashboard](#) developed by CINEA for all projects that have signed a grant agreement.

For More Information

[Results of the pilot IF23 Auction](#)

[Joint EU-Germany statement on Germany's participation in the European Hydrogen Bank "Auctions-as-a-Service" scheme](#)

[Commission launches first European Hydrogen Bank auction with €800 million of subsidies for renewable hydrogen production](#)

[Innovation Fund dashboard](#)



Results of the IF 23 Auction

Was the first EU-wide pilot auction for renewable hydrogen production a success?

Yes. The auction attracted 132 bidders from 17 different EEA countries. All bids taken together would provide a total planned electrolyser capacity of 8.35 gigawatts (GWe). Over the span of ten years, this would lead to a total production volume of 8.8 million tonnes of renewable hydrogen. On a yearly basis, this would cover almost 10% of the EU's REPowerEU ambition for domestic renewable hydrogen production in 2030. The price level of bids received was competitive when compared to other internationally available subsidies.

With this auction, the Commission has successfully implemented a new funding instrument under the Innovation Fund, which can serve as a blueprint for other technologies moving from first- and second-of-a-kind stage demonstrations to broader commercial roll-out.

Where did the received bids come from?

	# of bids
Spain	46
Germany	22
Norway	14
Netherlands	7
Portugal	7
Austria	5
Denmark	5
Finland	5
France	5
Belgium	3
Lithuania	3
Greece	2
Italy	2
Poland	2
Sweden	2
Bulgaria	1
Estonia	1

How many projects were selected, how big are they and how much hydrogen will they produce? What level of carbon abatement can be expected from these preselected projects?



Seven bids were selected for grant agreement signature, covering 1.5GWe of electrolyser capacity

Project acronym	Project Coordinator	Project location	Bid price (EUR/kg)	Bid volume (kt H2/10years)	Bid capacity (MWe)	Expected GHG abatement (ktCO2/10years) *	Total requested funding (EUR) **
eNRG Lahti	Nordic Ren-Gas Oy	Finland	0.37	122	90	836	€ 45,228,375
EI Alamillo H2	Benbros Energy S.L.	Spain	0.38	65	60	443	€ 24,605,819
Grey2Green-II	Petrogal S.A.	Portugal	0.39	216	200	1477	€ 84,227,910
HYSENCIA	Angus	Spain	0.48	17	35	115	€ 8,104,918
SKIGA	Skiga	Norway	0.48	169	117	1159	€ 81,317,443
Catalina	Renato Ptx Holdco	Spain	0.48	480	500	3284	€ 230,463,819
MP2X	Madoquapower 2x	Portugal	0.48	511	500	3494	€ 245,178,772
			Ø 0.44 €	Σ 1580 kt_H2	Σ 1502 MWe	Σ 10 808 kt_CO2	Σ 719,127,056 €

* Calculated vs. the [2021-2025 ETS benchmark](#) of 6.84 t_CO2e/t_H2. Not taking into account additional carbon abatement due substitution effects in the H2 end use application (i.e. conservative estimate).

** Remaining budget will accrue back to the Innovation Fund.

Why were only EUR 719,127,056 awarded? What happens to the remainder?

The next ranked project ("marginal bid") did not fit the EUR 800 million IF budget and was therefore excluded. The budget remainder of EUR 80 million accrues back to the Innovation Fund and will flow into the budget of future auction rounds.

Given that supporting price discovery and market formation was a key objective of this auction, what did we learn?

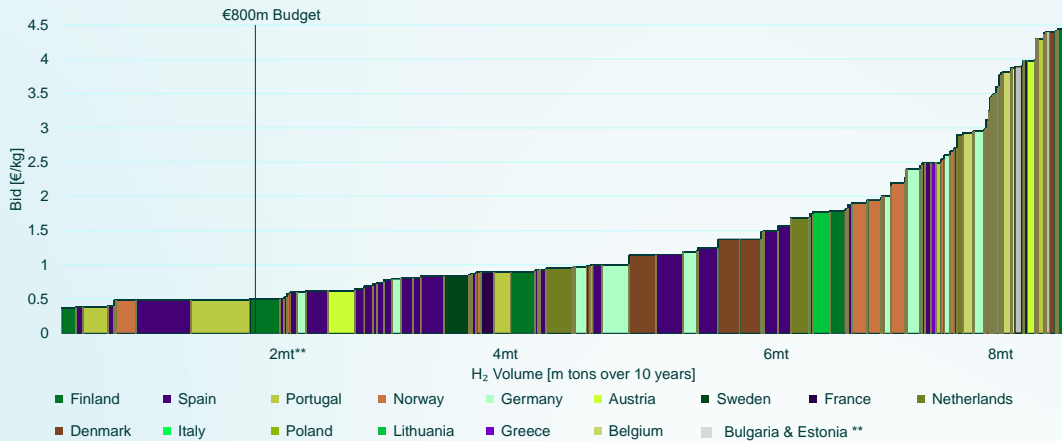
A key objective of the auction, besides supporting the production of RFNBO hydrogen, is to contribute to price discovery and market formation. Hydrogen is not yet a traded commodity with a liquid market. It is mostly traded over the counter (OTC) with regionally differentiated prices.

The Commission has published a set of detailed data and analyses on the results of Innovation Fund hydrogen pilot auction, including the bid curve (see below) to increase transparency and contribute to market intelligence.

These and other insights from the pilot auction will inform the next auction round and can be used for the broader objectives of the EU Hydrogen Bank.



Budget oversubscribed 15x. Bids are well distributed in size and price, resulting in a continuous bid curve



* Bid curve includes 130 bids (i.e. including 13 bids found inadmissible or ineligible, as well as bids not passing or not being evaluated on qualification criteria due to cascade approach – see call text).
 ** Estonia and Bulgaria aggregated for anonymisation reasons, as only 1 bid per country.

What type of off-takers did we see across the submitted bids?

At the time of bidding into the auction, projects were not required to provide signed off-take contracts. However, they had to provide pre-contractual agreements such as memoranda of understanding or letters of intent with expected off-takers for at least 60% of their production volumes.

For projects with a primary off-taker in industry, the top 10 off-take subsectors were:

- Methanol production
- Fertilizer production
- Refining
- Injection into gas/H₂ pipeline
- Steel
- Chemicals
- Ammonia production
- Glass
- Electricity or heat generation
- Industrial gases

For projects with a primary off-taker in mobility, the top 10 off-take subsectors were:

- Hydrogen refuelling stations
- Logistics incl. food logistics
- Maritime
- Methanol production
- Heavy duty trucking
- Hydrogen as fuel (unspecified)
- Bus transport
- Aviation



- Ground transport (unspecified)
- Methane production

Where do the electrolyzers come from?

At the time of bidding, projects were not required to provide signed contracts with electrolyser manufacturers. However, they had to provide memoranda of understanding or letters of intent with expected electrolyser manufacturers.

Around half of all projects intend to procure European electrolyzers. Around a quarter of producers intend to procure from outside the EU, with another quarter intending to procure from both EU and non-EU sources.