# Stakeholder Consultation on the new Innovation Fund auction on industrial process heat decarbonization

Fields marked with \* are mandatory.

### **1** Introduction

In February 2025, the European Commission announced in the <u>Communication on the Clean Industrial</u> <u>Deal: A joint roadmap for competitiveness and decarbonization</u> a new auction to promote the decarbonization of key industrial processes, drawing on the experience of the hydrogen auctions of the <u>Inno</u> <u>vation Fund</u>. It is proposed to allocate the **budget of up to EUR 1 billion** through fixed-premium auctions in support of projects that **decarbonise industrial process heat** through innovative electrification technologies such as heat pumps, electric boilers, resistance heating, induction heating, plasma heating and other solutions as well as renewable heat solutions (solar thermal and geothermal). First ideas for the auction scope and design were presented and discussed with stakeholders during a Workshop on 16 April 2025. As a follow-up, the European Commission is inviting all interested stakeholders to provide feedback on the **proposed design elements** of the new auction by participating in the following survey. Your participation will help to ensure that the later draft **Terms and Conditions** are attractive and workable for project developers. The auction is scheduled to open in December 2025.

A discussion paper about the proposed auction can be found <u>here</u> and the presentation from the Stakeholder Workshop <u>here</u>.

The Survey should take approx. 15 minutes. Thank you very much for your contribution!

### 2 About you

\*2.1 Please provide your full name

Petteri Haveri

### \*2.2 Please provide your e-mail address

petteri.haveri@energia.fi

### \*2.3 Please indicate your job position

Economist

### 2.4 Please provide the name of the organisation or company you represent (if any)

Finnish Energy

2.5 Which type of organisation / company do you represent (if any)?

- Potential participant in the industrial heat auction, i.e. an industrial company using industrial process heat
- Company providing electrified industrial process heat technologies such as heat pumps, electric boilers, electric furnaces or direct renewable heat solutions
- Bank / financial institution
- Business Association
- Academia, think tank, policy consulting
- Public administration
- Other

I accept the personal data protection provisions.

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### 3 Scope of the auction

3.1 The **proposed scope of the new auction** to be organised under the Innovation Fund is direct electrification of heat and use of direct renewable energy of heat (i.e. solar & geothermal). Do you agree with the proposed scope of the auction or do you think some options are missing?

- Yes, I agree with the proposed scope
- No, I do not agree with the proposed scope
- Yes, I agree but some options are missing

3.2 Are there options that are missing from the auctions scope in your view? (if yes, please specify)

It should be ensured that technologies with integrated electricity and storage are included within the scope of the auction. This means for instance technologies that are provided by companies such as PolarNightEnergy or Elstor. These solutions have integrated electricity-based heat generation and storage under the same device and hence it may not fall directly under the scope described within the proposal. These technologies do however produce process heat or steam by electricity which is the target of the auction and at the same time provide flexibility.

Additionally, it should be ensured that various heat pump solutions and other such technologies benefitting waste heat sources are also included within the auction. For example, mechanical vapor recompression, which recycles waste heat to improve efficiency and reduces the need for more primary production of steam and hence electrify part of the process.

3.3 **How long** should the fixed premium support be provided, counting from the date of the project's entry into operation?

- 3 years
- 9 5 years
- 7 years

3.4 The bid in the auction can cover the entire funding gap between the project's costs (CAPEX, OPEX, DEVEX...) and market revenues of the project. Do you think that beyond the installation costs of the heating solution (CAPEX) and the electricity consumption (OPEX), it should be possible to **include other costs in the bidding price of the auction**?

yes

🔘 no

3.4.1 In your view, costs for which other options should be included in the bidding price of the auction, beyond installation costs (multiple choice)?

- Electricity grid connection
- Thermal storage
- Electricity storage
- Other investments in demand-side flexibility
- Costs for heat distribution
- Other costs

Please specify which options for investments in demand-side flexibility should be covered

Please specify

As the support will be of the type fixed premium in EUR / Joules heat provided into the industrial process, we find little reason to restrict such costs, which are integral for the project to meet heat demand, to be included in the bidding process.

## 4 Key design elements of the auction

4.1 The auction design could include minimum requirements with regard to the size of the projects. In your view, what would be an **appropriate minimum size of the installation** - as an eligibility criteria to participate in the auction?

- Expressed in thermal capacity: > 5 MW up to 20 MW
- Expressed in thermal capacity: > 20 MW
- Expressed in thermal capacity, but with a different threshold
- Expressed in EUR of CAPEX: > EUR 7.5 Million up to EUR 20 Million
- Expressed in EUR of CAPEX: > EUR 20 Million
- Expressed in EUR of CAPEX, but with a different threshold
- The threshold should be expressed in a different way (neither in MW or EUR of CAPEX)
- There should be no minimum requirement on the project size.

### Please specify the threshold you would suggest, expressed in EUR of CAPEX

CAPEX is the clearest option. The threshold should be 5 MEUR.

4.2 What conditions should be put in place to facilitate the **participation of SMEs and mid-caps** (multiple choice)?

- Low thresholds for the size of eligible projects
- Technical assistance during the application
- Fast evaluation procedure and short waiting times after the auction closes
- I Higher payment frequency to reduce liquidity costs during the project implementation phase
- Others

4.3 The pilot auction will have a budget of up to EUR 1 billion, which could be split into two **separate auction baskets**. Do you agree with creating separate baskets?

- yes
- 🔘 no

4.3.1 If yes, what would be your preferred way to create baskets?

- A carbon abatement cost threshold expressed in EUR/tCO2 (i.e. one basket for low abatement costs and one for high)
- A heat temperature threshold expressed in °C (i.e. one basket for low temperature heat projects and one for high)
- Steam vs. non-steam
- Continuous vs. non-continuous production processes
- Other

Please specify the threshold you would suggest in °C

As the processes needed for high temperatures are probably more Capex-intensive and may require novel solutions, we consider it rationale to have separate baskets for medium and high temperature solutions.

4.4 After the grant signature, what would be a realistic maximum **time to Financial Close** for projects bidding in the pilot auction?

- 1 year
- 2 years
- 3 years or more

4.5 After the grant signature, what would be a realistic maximum **time to Entry into Operation** for projects bidding in the pilot auction?

2 years

- 3 years
- 4 years
- 5 years or more

4.6 In order to sign the Grant Agreement, a **completion guarantee** will likely be required to make sure that projects are delivered on time. Which arrangement do you consider feasible for bidders in the pilot auction?

- Completion guarantee equal to 4% of the grant to be awarded
- Completion guarantee equal to 8% of the grant to be awarded
- Other solution

4.7 Do you see any difficulties in **measuring and verifying the amount of produced** / **consumed process heat** by the company implementing the project?

- Yes
- No

4.7.1 Which difficulties do you see for the company measuring the amount of produced/consumed electrified process heat (multiple choice)?

- Availability of adequate metering systems
- Heat losses / position of the metering device
- Certification to verify the amount of the produced/consumed electrified heat by a third party (i.e. an independent auditor)
- Others

Please specify

We don't expect difficulties as such in technically metering the heat. However, the heat may be partly used otherwise then in the process (for example waste heat from the process or heat generation can be used to heat the factory hall, or part of the process heat will be re-used instead of wasting it. These heat sources and needs should be included in the calculation of total heat generated

### 5 Additional requirements / safeguards

5.1 Should there be minimum requirements with regard to the **minimum temperatures of heat** or **minimu m energy efficiency of the equipment** used in the industrial heat project (e.g. for heat pumps, boilers, etc.)?

- yes
- o no

5.2 Is there today a situation of **EU's dependency of supply** from any single third country for **equipment** /**components** in the scope of this new auction?

- Yes, there is dependency on certain equipment/components
- No, there is no dependency or risk of it

5.3 The electricity mix is in many EU countries not yet fully decarbonized. Should there be additional requirements / safeguards to address the **risk of indirect emissions** outweighing direct emission abatement?

- Yes, there should be additional safeguards / requirements to address indirect emissions
- No, there should be no requirements/safeguards, the grid will progressively decarbonise driven by the Emission Trading System (ETS).
- 5.3.1 Which of the following safeguards / requirements should be included (multiple choice)?
  - Demand-side flexibility solutions should be a mandatory part of the project
  - Projects need renewable PPAs with an annual volume corresponding to the project's electricity consumption.
  - Projects need to have renewable PPAs with hourly geographical and temporal correlation.
  - Projects need to be directly connected to a/several renewable energy assets covering all electricity needs ("island solution").

- Projects should limit the number of hours in which the project can operate to avoid consumption in peak hours.
- None of the above
- 5.3.2 Should certain projects be exempted from additional safeguards / requirements?
  - Yes, certain projects should be exempted.
  - No, the additional conditions should apply to all projects.

Please specify

- No additional conditions for projects located in bidding zones in which the grid GHG intensity is lower than the emissions from a fossil boiler / fossil heating solution.
- No additional conditions for projects located in bidding zones with emissions lower than 18 gCO2eq/MJ or a renewables share of >90%.
- Other

**5.4 Consumption of electricity at peak hours** can increase electricity system costs and power sector emissions. Whilst the ETS reflects increased emissions in the price, should this also be taken into account actively in the auction design?

- No, this problem is adequately addressed by the ETS price signal.
- Yes, there should be a hard limit on the number of full load hours that bidders can consume from the grid (avoiding peak consumption hours with highest prices and emissions).
- Yes, whilst there should be no hard limit on the number of hours that bidders consume electricity from the grid, the subsidy payments under the auction should be limited.

5.5 If requirements on demand-side flexibility are included in the auction design, should they differentiate between Member States?

- No, there is no need to mandate flexibility requirements/incentives, this is addressed by the ETS price signal.
- No, flexibility requirements should not be Member State specific, based on the emission intensity of the national grid.
- Yes, flexibility requirements should be Member State specific, based on the emission intensity of the national grid.

5.6 Are you aware of **national funding programmes** currently available to support the electrification of heat, uptake of direct renewable heat or heat storage?

- Yes
- 🔘 No

5.6.1 Please indicate name of the programme(s) and the country it operates in and specify whether it targets CAPEX, OPEX or both

Both RRF funding and national energy support have been provided to certain projects. They targeted CAPEX. The support mechanisms no more take applications though some projects will still receive the support payments

### **6 General comments**

6.1 If you wish you can provide any additional comments on the scope and key design parameters of the proposed auction in this section:

General comments:

For European competitiveness only the most competitive projects should be supported. There must be no geographical consideration.

The support must be of the type of EUR / heat. It is easiest to measure and compare. EUR/tCO2 would be open for interpretations and creative accounting. EUR/tCO2 would benefit the brownfield project over the greenfield projects. EU ETS already incentives most CO2-intensive processes to change sources of process heating.

Using waste heat must be possible to include into the calculation of support. This will improve cost-efficiency and energy efficiency.

It's important to enable novel business models in the auction. Energy as a Service (EaaS) model has proved to be a functional business model for meeting industrial heat demand with electricity.

EaaS model allows customers to outsource their energy needs—for instance heating and steam production or energy efficiency upgrades—to a service provider who installs, owns, operates, and maintains the energy systems. Customers pay a recurring fee based on performance or consumption, avoiding upfront capital costs while benefiting from optimized, sustainable energy solutions.

Unlike a leasing model where the customer typically pays to use specific energy equipment over time and may handle operations or maintenance, the EaaS model delivers a complete, outcome-based solution— covering design, installation, ownership, operation, and maintenance—while charging based on energy performance or usage rather than just equipment rental. EaaS shifts more responsibility and risk to the provider, offering a more integrated and service-focused approach than traditional leasing.

For industrial companies, the additional benefits are that:

- Shifts from capex to opex: no upfront investment from the industrial user. Frees up capital for their core business investments.

- Service payments are predictable and often tied to performance metrics or savings achieved.

- Lower risks from energy markets

- Keeps financial figures healthier. EaaS-companies can afford longer payback times for investments than industrial companies making more investments financially feasible with lower subsidies.

EaaS-suppliers are specified on providing energy solutions for industry and can leverage their existing skills

in optimizing the energy production from electricity in various markets including different reserve markets. This brings efficiency benefits as the industrial companies can focus on their core expertise. This is particularly important in electrification investments as electricity markets are more complex and industrial companies may lack knowledge on operating new kinds of production assets. EaaS-companies are key enablers of electrification of industries in Europe and they need to be equally included in the scope of decarbonization bank.

Comments related to specific questions:

### Q 3.3.

The fixed premium support should provide for long-lasting decarbonizing investments. Also, investments with payback time of 2-3 years should be beneficial also without the support. However, monitoring and reporting create costs for companies. Hence, we propose considering 5 years.

### Q 4.4., 4.5.

Especially in greenfield projects there may occur delays related to permitting and possible appeals. Hence, the requirement needs to enable managing this kind of delay which the project developer has little influence. At least for the greenfield projects the time limit for entry into operation needs to be long (5 years) or include flexibility for managing delays.

### Q 4.6.

high completion guarantees may be burdensome especially for smaller companies

### Question 5.1.

Possibly, minimum temperature would ensure that the primary use will be industrial process. Projects energy efficiency should be a competitive advantage in the bidding process as such. Please also see the notes for Questions 3.2 and 4.7.

### Q 5.3.

In many regions in Europe electricity generation causes high emissions and investments into new generation are lagging behind. For not to induce higher emissions in electricity generation there could be safeguards for bidding areas with high emissions factors. In these regions possible safeguard could be a requirement to purchase clean electricity (renewable, nuclear) with PPA-agreement

### Q 5.4., 5.5.

These kinds of requirements would complicate operations and verification processes. Instead of commercially running the process as smartly as possible, the focus would be on metering and verification. We'd expect that the most competitive processes include storage and demand flexibility and there's no need to include additional requirements.

Thank you very much for your participation in this Survey! We highly appreciate your contribution.

### Contact

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