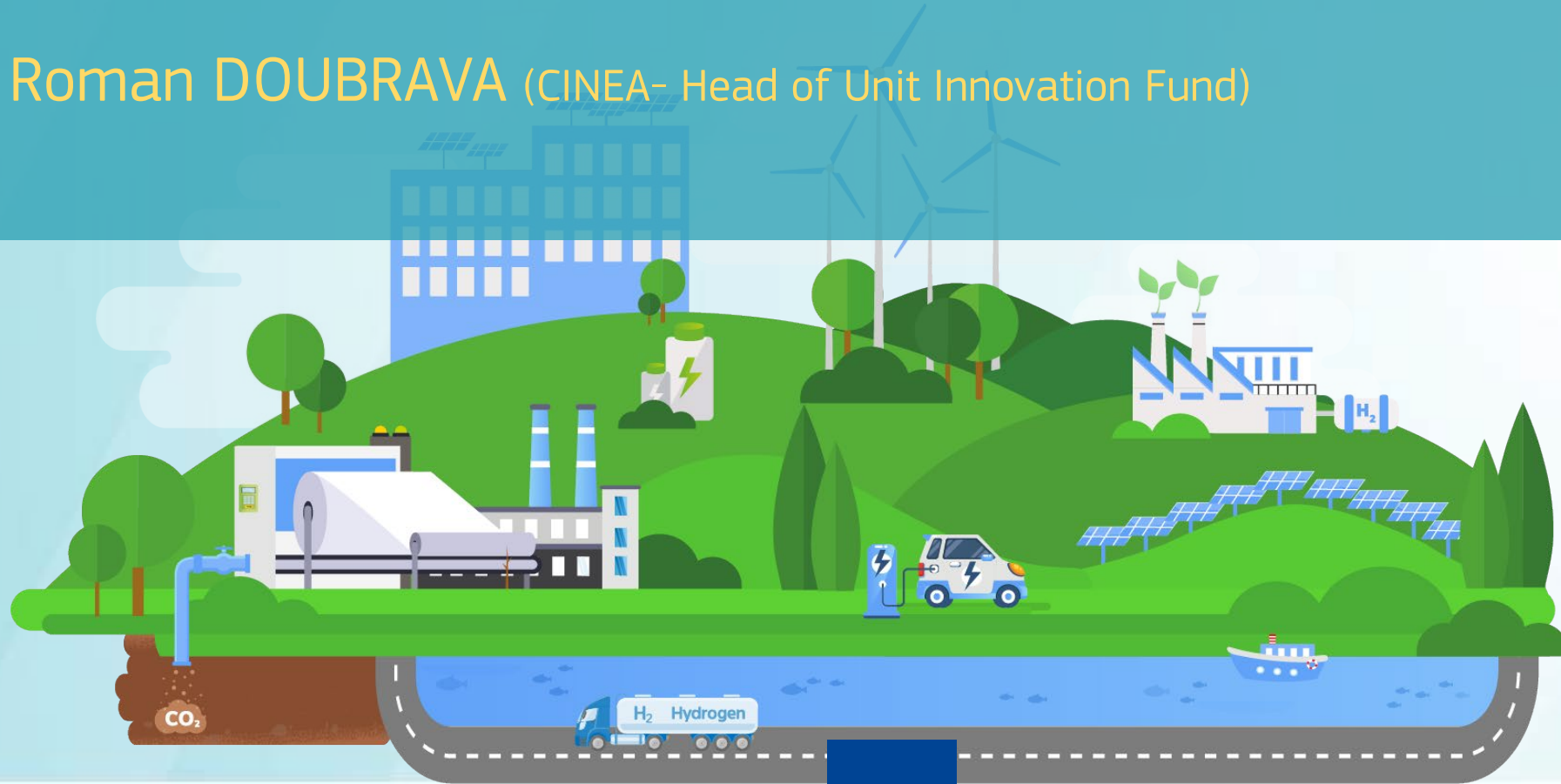




Innovation Fund

Stakeholders consultation | 13 June 2023

Roman DOUBRAVA (CINEA- Head of Unit Innovation Fund)



Innovation Fund – over EUR 3 bn already provided for low-carbon innovation projects, EUR 3 bn already committed for the 2022 calls and over EUR 4 bn (tbc) in 2023 call and H3 auction



Innovation Fund – SSC 2022 open till 19 September 2023



**Launch
Deadline
Results**

30 March 2023
19 Sept. 2023
Q1 2024



€ 100 Million for grants
+
Project Development Assistance



[Call page](#)
[CINEA website](#)

AWARD CRITERIA

Degree of innovation

GHG emission avoidance (including quality of calculations)

Project maturity

Scalability

Cost efficiency (including quality of calculations)

+ Bonus points

- **Net Carbon Removals**
- **Other GHG savings**
- **Use of electricity from additional renewable sources**























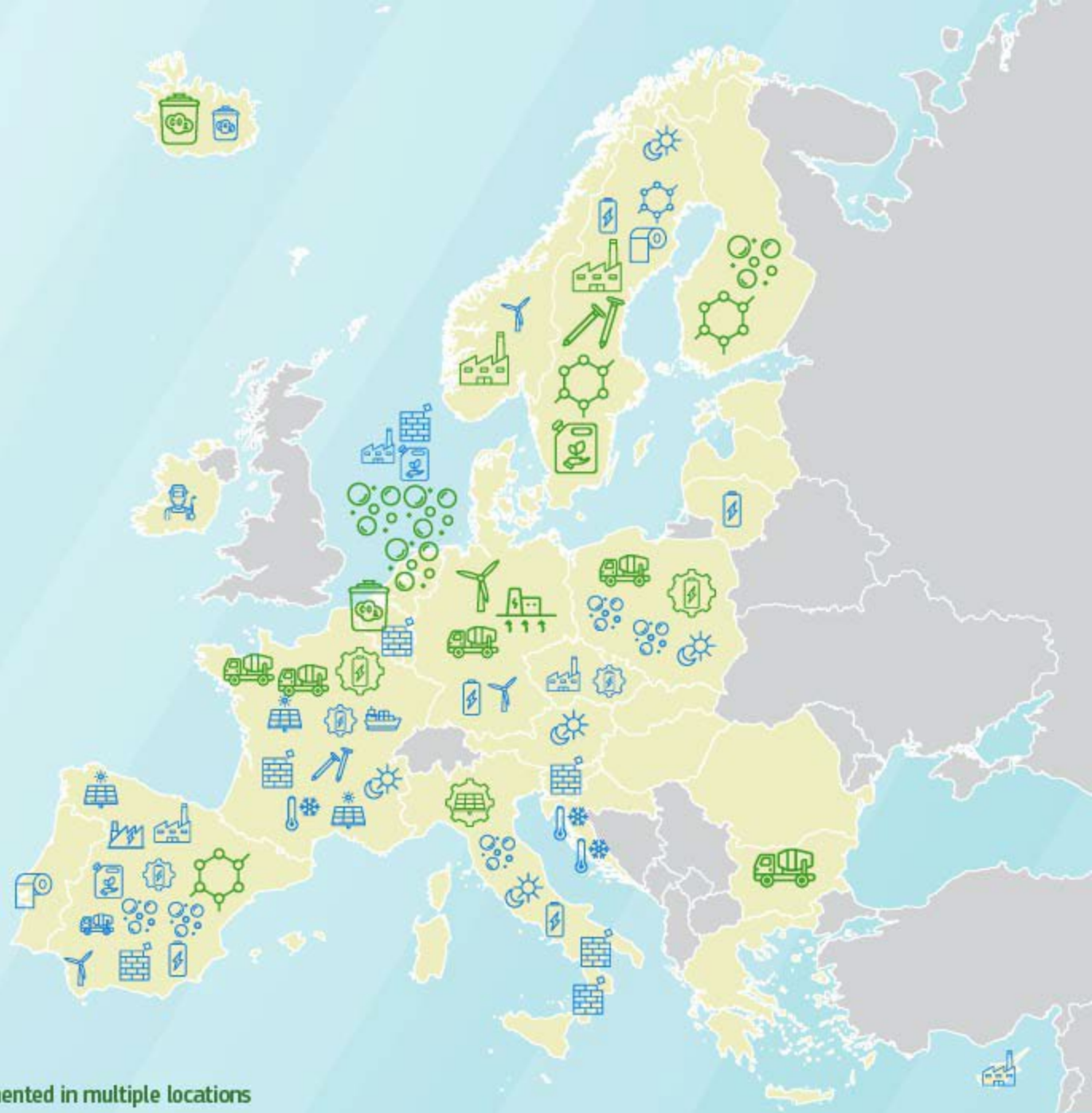
4-5 July [how-to seminar and virtual orientation session](#)

Innovation Fund project portfolio

Green: Large-scale projects (23 awarded for grant)*

Blue: Small-scale projects (46 awarded for grant)*

- | | |
|--|---|
|  Biofuels and biorefineries |  Other energy storage |
|  Chemicals |  Geothermal energy |
|  CO ₂ transport and storage |  Pulp and paper |
|  Hydrogen |  Refineries |
|  Intra-day electricity storage |  Renewable heating/cooling |
|  Iron and steel |  Solar energy |
|  Non-ferrous metals |  Wind energy |
|  Glass, ceramics and construction material |  Cement and lime |
|  Manufacturing of components for renewable energy |  Use of renewable energy outside Annex 1 |
|  Manufacturing of components for energy storage |  Other energy intensive industries |



*The number of symbols is higher than the number of projects, as some projects are implemented in multiple locations

Portfolio of 69 on-going projects

2020 LSC, 2020 SSC, 2021 LSC, 2021 SSC



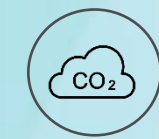
€ 3 Billion
EU contribution



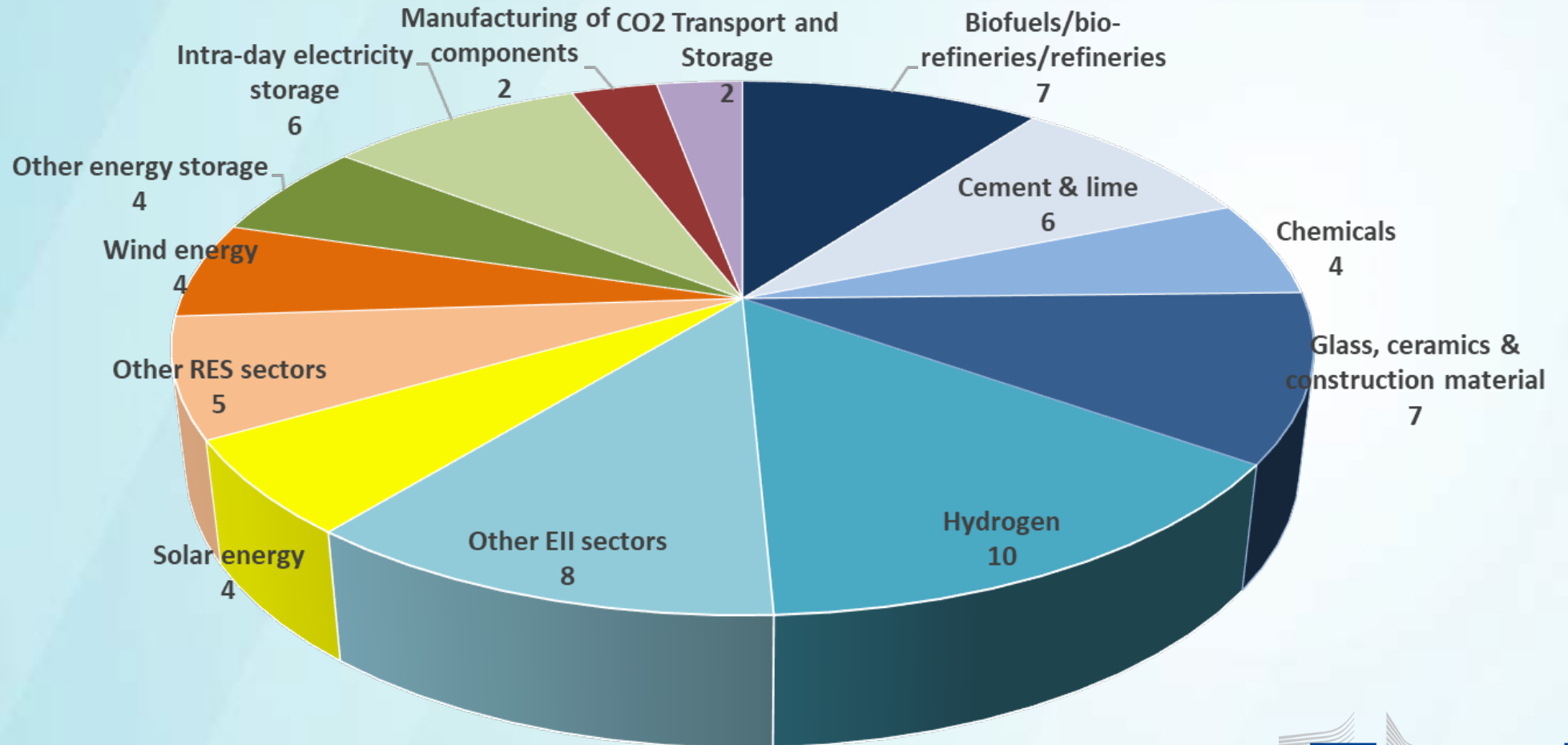
20
Countries



155
Beneficiaries



215 Mt
CO₂ eq avoided



Project fiches for on-going projects

Innovation Fund Dashboard

INNOVATION FUND
Driving clean innovative technologies towards the market

Beccs Stockholm: Bio Energy Carbon Capture and Storage by Stockholm Exergi

The Innovation Fund is 100% funded by the EU Emissions Trading System

COORDINATOR
Stockholm Exergi

LOCATION
Stockholm, Sweden

SECTOR
Bio-electricity

AMOUNT OF INNOVATION FUND GRANT
EUR 180 000 000

RELEVANT COSTS
EUR 608 863 394

CAPEX
EUR 455 661 141

TOTAL PROJECT COSTS
EUR 2 707 453 271

GHG EMISSION AVOIDANCE
7.8 Mt CO₂e

STARTING DATE
01 July 2021

PLANNED DATE OF ENTRY INTO OPERATION
Q3 2026

Project summary

The Beccs Stockholm project will create a world-class, full-scale Bio-Energy Carbon Capture and Storage (BECCS) facility at its existing heat and power biomass plant in Stockholm. The project will combine CO₂ capture with heat recovery, making the process much more energy-efficient than the process in a conventional Carbon Capture Storage (CCS) plant. It will capture and permanently store large quantities of biogenic CO₂, leading to carbon removals from the atmosphere, also called negative emissions. The Beccs Stockholm project has a potential to remove around 7.0 Mt CO₂e over the first ten years of operation. Net carbon removals are seen as an increasingly important technology-based solution to climate mitigation, indispensable to reach climate neutrality in 2050. The project will also be a catalyst for paving the way for a new market of net carbon removals. Besides the actual negative emissions achieved, Beccs Stockholm will also have a positive impact on the balance for renewable heat and electricity, resulting in additional reduction of around 0,8 Mt CO₂e over the same period.

A world-class, full-scale Bio-Energy Carbon Capture and Storage (BECCS) plant

Beccs Stockholm will make use of a novel combination of existing technologies (Hot Potassium Carbonate for CCS and bio-fueled CHP) on a new scale, to develop the first, large commercial BECCS plant in Europe. The HPC technology is well proven with multiple installations over the years. Its application with flue-gases from a bio-fueled CHP-plant is, however, not tested in full scale. Therefore, Stockholm Exergi has designed, constructed and now operates a smaller-scale R&D facility at the plant site with support from the Swedish Energy Agency with the objective to gain practical experience and results before designing the full scale plant. The Beccs Stockholm implementation will represent the first-of-a-kind global integration of CO₂ capture in an existing combined heat and power (CHP) plant that uses biomass-based fuels. By using the excess heat of the CO₂ capture facility to supply Stockholm's district heating network, the extra energy required for the CCS process (i.e. the energy penalty) will be greatly reduced. This energy penalty is normally in the range of 15-29%, of the energy produced, while Beccs Stockholm will reduce it to a mere 2%. Importantly, 90% of the CO₂ in the flue gas will be captured by use of the HPC technology. Stockholm Exergi selected this CO₂ absorption technology based on several advantages, such as its non-toxicity, the high selectivity for CO₂ and as a result high purity of captured CO₂, its low regeneration heat, and, the compact layout of the technology in comparison to other CO₂ absorption solutions, after liquefaction and buffering, the CO₂ will be transported by ship to an underground storage site in the North Sea (although being part of relevant cost-calculation, this part of the technology chain is not part of the project).

Beccs Stockholm actively supports the climate neutrality goal and multiple European strategies

The scaling up of carbon removal solutions that capture CO₂ from the atmosphere and store it for the long term is vital to achieve the EU objective of economy-wide Climate Neutrality by 2050. Beccs Stockholm will support the achievement of this climate goal by capturing and storing almost 800 000 tonnes of biogenic CO₂ per year, with the aim to further improve the technology in the future. CCS, as well as bioenergy – the building blocks of the project – are among the ten main priority actions of the European Strategic Energy Technology Plan (SET Plan) to accelerate the energy system's transformation. In particular, the SET Plan highlights

that CCS needs to become a cost-competitive technology and gain public acceptance, to be eventually commercially deployed. Beccs Stockholm will remove/avoid the emissions of 7.8 Mt CO₂e of absolute GHG emissions during its first ten years of operation. This is the equivalent to more than the 2018 GHG emissions from public electricity and heat production in Sweden. From the overall emissions removed/avoided, 90% will come from CO₂ capture and storage (removal), and 10% will be associated with renewable electricity and heat generation from a renewable source. At site-level, the project will implement solutions in line with the Circular Economy Action Plan, using locally-sourced biomass waste, as a feedstock in the electricity and heat generating plant, reusing process water to eliminate or diminish the use of fresh water, and with the opportunity to supply sustainably managed forests with fly ash coming from the co-incineration of the current biomass waste with phosphorus-rich sludge, with the potential to increase Swedish forest sequestration of carbon by 0.45 Mt CO₂e per year. In line with the EU recovery ambition, the project will also create direct jobs locally and outside Sweden, acting as a springboard for many more highly-skilled engineering, construction and operation-related jobs throughout the CCS value chain. Measures taken during the preparation phase increased the support relation with citizens, and has always been a priority. One example of this, was the launch of a public acceptance survey at an early stage in the project's planning. This is an essential prerequisite for successful implementation within the boundaries of a populated city. Stockholm Exergi, which is already active in the field, will continue its efforts to establish a market for net CO₂ removals as a novel product. This will make the net carbon removals at Beccs Stockholm profitable for a CHP plant, paving the way for other actors to join.

Strategic location to support scalability and technology transfer

The Beccs Stockholm technology can be replicated in other sites. For example, two locations have already been identified in the region where the solution could be implemented by 2030. These two sites have the potential to avoid 1.1 Mt CO₂e per year, of which 0.8 Mt from biogenic sources, thereby contributing to the necessary net carbon removals foreseen by relevant scenarios reaching climate neutrality. The solution also has the potential to be scaled up across the economy, by replicating the technology in other industries, such as the pulp and paper industry, waste incinerators and heat plants. The project overall will help to establish a new European market for net carbon removals. By contributing to the establishment of all necessary links in the CCS value chain in Northern Europe, including transport by ship of the CO₂ for storage in saline aquifers or depleted gas/oil fields in the North Sea basin, Beccs Stockholm project – are among the ten main priority actions of the European Strategic Energy Technology Plan (SET Plan) to accelerate the energy system's transformation. In particular, the SET Plan highlights

Beneficiaries and EU contribution by beneficiary country/pr...

Country	EU contribution (€)	Number of beneficiaries
Belgium	~350M	~10
France	~250M	~15
Spain	~150M	~10
Finland	~100M	~5
Italy	~100M	~10
Sweden	~100M	~25

Number of projects / EU Contribution by signature and call ...

Year	Number of projects
2021	36
2022	7

Number of projects and EU contribution by type

Type	Percentage
Large Scale Projects	18.9%
Small Scale Projects	81.1%

Project location country name

Country	Percentage
Belgium	28.4%
Sweden	26.6%
France	13.6%
Spain	10.1%
Italy	7.0%
Finland	1.8%
Others	1.8%

[Link Innovation Fund Project fiches](#)

[Link Innovation Fund Dashboard](#)

Innovation Fund Country fact-sheets:

European Commission | English | Search

European Climate Infrastructure and Environment Executive Agency

Home | About us | Programmes | Funding opportunities | Our Projects | News & Events | Publications

European Commission > ... > Programmes > Innovation Fund > Innovation Fund projects per country

Innovation Fund projects per country

Overview of the Innovation Fund awarded projects per eligible country where the projects are implemented.

Austria Overview of supported projects	Belgium Overview of supported projects	Croatia Overview of supported projects	Finland Overview of supported projects
France Overview of supported projects	Germany Overview of supported projects	Iceland Overview of supported projects	Ireland Overview of supported projects
Italy Overview of supported projects	Netherlands Overview of supported projects	Norway Overview of supported projects	Poland Overview of supported projects
Portugal Overview of supported projects	Spain Overview of supported projects	Sweden Overview of supported projects	

[Link Innovation Fund country fact-sheets](#)

European Commission

Innovation Fund Programme

Overview of awarded projects in Spain

Funded by the revenue of the EU Emissions Trading System, the Innovation Fund's goal is to help businesses investing in innovative low-carbon technologies with significant GHG emissions reduction potential. The Innovation Fund currently supports **8 projects** located in Spain, which will contribute to the decarbonisation of European industries with a total expected GHG emission reduction of **3.8 Mt CO₂ equivalent in the first 10 years of operation**. The total **Innovation Fund grant in Spain is of EUR 131.3 million**, out of the **total relevant costs of EUR 230.2 million**, as defined in Art 5 of the Delegated Regulation 2019/856 on the Innovation Fund¹.

Projects per category

Number of projects and percentage of the total

Category	Percentage	Number of Projects
Energy intensive industries (EEI)	75%	8
Renewable Energy (RES)	12%	1
Energy Storage (ES)	12%	1

Projects per sector

Number of Small and Large-Scale projects

Sector	Scale	Number of Projects
Solar energy	Small Scale	1
Refineries	Small Scale	1
Other energy storage	Small Scale	1
Hydrogen	Large Scale	2
Glass, ceramics & construction material	Small Scale	1
Chemicals	Small Scale	1
Biofuels and bio-refineries	Small Scale	1

Projects per phase²

Number of projects

Phase	Number of Projects
Preparation	7
Operation	1

Top 5 technology pathways³

Number of projects

Technology Pathway	Number of Projects
Recycling/municipal solid waste	3
Energy intensive industries New process/New product	2
Renewable energy: fuels	2
Renewable energy: electricity	1
Hydrogen production: renewable H ₂ - other technologies	1

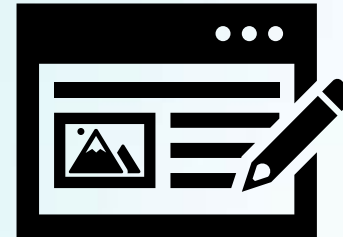
¹ OJ L 140, 28.5.2019, p. 9
² Preparation means the period before financial close is reached; construction means the period between financial close and entry into operation; operation means that the construction is finished and the project has already started production
³ Projects may employ several technological pathways, only the top 5 per country are kept in the graph.
 State of play: 06/07/2022

Further info



[DG CLIMA website](#)

[CINEA website](#)



[Project Fiches](#)

[Featured Projects](#)



[Innovation Fund
Dashboard](#)



[Country Fact-Sheet](#)



[Innovation Fund
Progress report](#)

JOIN AS PROJECT EVALUATOR



Technical experts



GHG experts



Financial experts



**Rapporteurs and
Quality checkers**

- **Individual** evaluation
 - To be organised fully remotely from your office or home at your best convenience
- **Consensus group**
 - Discussion with other fellow evaluators
 - Either in Brussels or virtually
- **Confidentiality and conflict of interest rules apply**

Check [CINEA website](#) for
the application process!

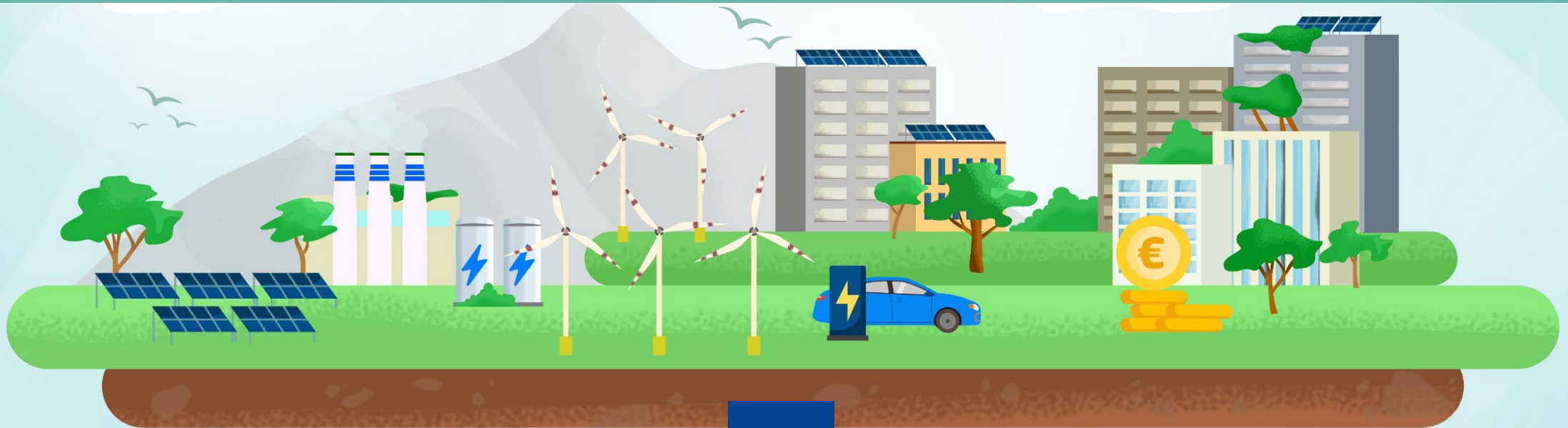


Innovation Fund

IF changes following the EU ETS Direction revision

Maria Velkova, Samuel Verschraegen

DG Climate Action



Revision of the EU ETS

- ETS revision entry into force in June 2023
- Strengthening of **ETS ambition** from -43% to **-62% by 2030** (compared to 2005)
- Strengthen **Market Stability Reserve** to ensure better market predictability
- More focused **free allocation** and progressive introduction of the **Carbon Border Adjustment Mechanism (CBAM)**
- Extension to **Maritime sector** and a **new ETS (ETS 2)** for buildings, road transport and non-ETS industry fuels

Key changes to the Innovation Fund following the ETS Directive revision

Revised ETS Directive includes changes on:



1. The overall size of the Innovation Fund increase from 450 million ETS allowances to ca. 530 million ETS allowances.



2. Scope changes: new sectors (e.g. Maritime); medium-scale projects; DNSH from 2025; stronger reference to multiple environmental impacts



3. The introduction of new financial instruments under the Fund (“Competitive Bidding”): Fixed premium, Contracts for Difference (CfDs) or Carbon Contracts for Difference (CCfDs), covering up to 100% of the funding gap



4. Stronger attention to geographical balance

Overview of the draft delegated act revision

“Regular” grants

Award criteria
Definition of relevant costs
Small-, medium- and large-scale projects

Competitive bidding

General framework
Calls for proposals, qualifications, ranking and other issues

Project development assistance

Technical assistance for Member States with low effective participation

Strengthened governance

"Regular" grants – Award criteria

- **5 existing award criteria will be kept** but adjusted to accommodate new requirements:
 - The potential to reduce overall climate impact will be evaluated (not only GHG emission avoidance potential)
 - It will be clarified that scaling-up projects may be considered as "innovative"
 - The potential for addressing multiple environmental impacts and contribution to circularity and zero pollution objectives will be evaluated as part of the "replicability" criterion
 - The wording for cost-efficiency criterion will be simplified
- **Possibility to apply an additional award criterion** in the context of sector-specific call or topic

Grants - Definition of small- and medium-scale projects

	Small-scale projects	Medium-size projects (NEW)	Large-scale projects
Current IF Regulations	Up to EUR 7.5 million	n/a	Above 7.5 million
Proposed changes	Up to EUR 20 million	Above EUR 20 million and up to EUR 100 million	Above EUR 100 million

"Regular" grants - Relevant costs

1. **Update of Relevant Costs definition:** mention of "economic revenues" and "operational benefits"
2. Preparation for **simplification of the guidance on Relevant Costs (Annex B)** as of the next call for proposals
 - ✓ **"No-Reference" to become default methodology** (the sum of actual costs/benefits/revenues)
 - ✓ "Reference Plant" methodology (the sum of actual costs/benefits/revenues compared to a counterfactual scenario) would still be possible
 - ✓ "Levelised costs" methodology would no longer be used
3. **Simplified methodology would apply to large-, medium- and small-scale projects**

Competitive bidding procedures chapter

- New chapter mirroring the provisions applicable to grants: “provisions applicable to support awarded on basis of a competitive bidding procedure”
- **Competitive bidding = auctions**
- Types of support:
 - contracts listed in Article 10a(8) of ETS Directive
 - **pilot auctions** will award fixed premiums for renewable hydrogen (grants under the Financial Regulation) → **the European Hydrogen Bank**
 - in the future, **Contracts for Difference or Carbon Contracts for Difference** could be awarded
 - In the future other types of low-carbon products could be auction goods

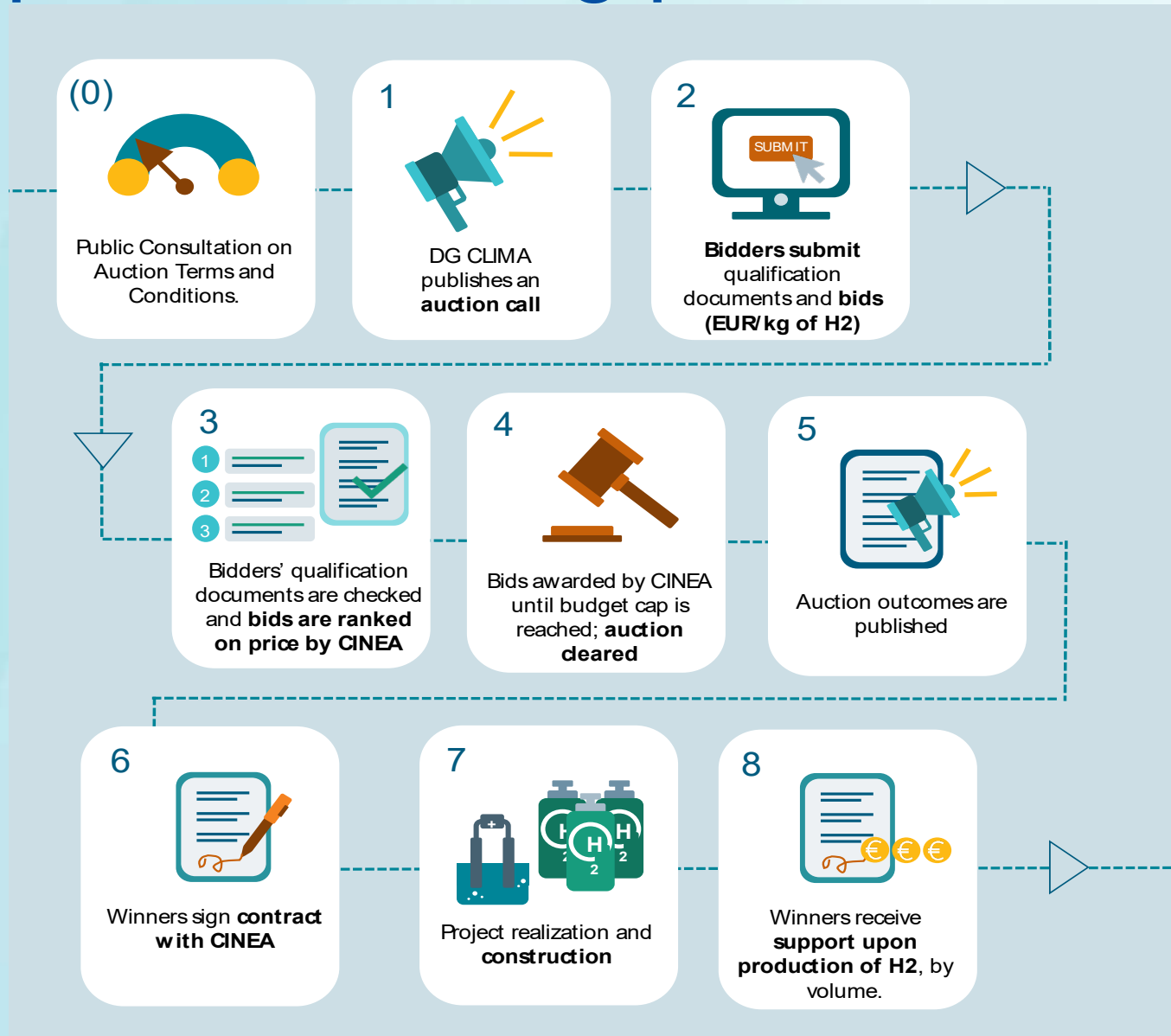


Competitive bidding procedures principles

Auction design and principles (aligned with CEEAG guidelines)

- Auctions need to be **competitive** (open, clear, transparent and non-discriminatory)
- Auctions need to be **based on objective criteria** defined *ex ante* in accordance with the objectives of the ETS Directive
- Auctions need to be **designed in a way to minimise the risk of speculative bidding**
- Auctions need to have a binding constraint (budget or volume) → **not all bidders will receive aid**
- **ex-post adjustments** to the bidding process outcome must be avoided

Competitive bidding procedures stages



Project development assistance (PDA)

Current situation	Issues	Target situation
<ul style="list-style-type: none">▪ PDA aims to improve the maturity of your project through high-quality technical and financial advisory support▪ Projects that applied for an IF call for proposals and met all the criteria except the maturity criteria are eligible for PDA▪ CINEA longlists project that have potential, the EIB shortlists those projects and may award PDA	<ul style="list-style-type: none">➤ Limited number of projects can currently benefit from PDA➤ The timetable for obtaining a PDA is aligned with that of calls for proposals for grants and a project can only benefit from a PDA if it has first applied to such a call for proposals	<ul style="list-style-type: none">✓ Projects will be able to apply for PDA regardless of whether they applied for a grant ('open PDA')✓ Projects that applied for an IF grant and met some of the award criteria may have their applications automatically considered for PDA

Implementation Timeline 2023



13 June	Stakeholder Workshop on next calls and auctions
4-5 July	Workshop on 3 rd small-scale call for proposals
End June	Publication of IF DR for public feedback
July	Results of 3 LSC evaluation
End July	Adoption of IF DR
Early September	Auctions Final Terms and Conditions published
September	ISC on next Financing Decision
End September	DR enters into force
September	IFEG meeting + Consultation of MS on draft Financing Decision
19 September	Deadline 3 rd small-scale call for proposals
November	4 th Calls for proposals for grants launched (small-, medium- and large-scale)
December	First pilot auction launched

Highlight on future events



**Innovation Fund
Project Development
Assistance –
Knowledge Sharing
Event**

14 June 2023

[More info](#)



EUSEW 2023
**Boosting innovation
and investments
through carbon
pricing**

22 June 2023

[More info](#)



**Small-scale call
2022**
**Workshop and
orientation sessions**

4&5 July 2023

[More info](#)

Thank you



https://climate.ec.europa.eu/eu-action/funding-climate-action/innovation-fund_en

https://cinea.ec.europa.eu/programmes/innovation-fund_en



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[European Climate, Infrastructure and Environment Executive Agency](#)



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Innovation Fund Stakeholder Consultation event

13 June 2023 - In person and online

Break time 11:10 – 11:30 CEST

Next session – workshops:

- Industry decarbonisation, including substitute products → Room 0D (ground floor)
- Aviation → Room 4B (fourth floor)

Please note the event is livestreamed and recorded.

