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EVALUATION

of the Innovation Fund's operation

{SWD(2026) 228 final}

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Glossary

Acronym	*Meaning*
AaaS	Auctions-as-a-service
CCS	Carbon capture and storage
CCU	Carbon capture and utilisation
CINEA	European climate, infrastructure and environment executive agency
CISAF	Clean Industrial Deal State Aid Framework
CO_2	Carbon dioxide
EEA	European Economic Area
EU ETS	European Union emissions trading system
FP7	Seventh Framework Programme, EU funding's instrument focused on technological research between 2007-2013
GaaS	Grants-as-a-service
GHG	Greenhouse gas
IFEG	Innovation Fund Expert Group
KPI	Key performance indicator
IT	Information technology
LIFE	EU's funding instrument for the environment and climate action
LSC, LSP	Large-scale call or project
MSC, MSP	Medium-scale call or project
NCP	National contact point
PDA	Project development assistance
SSC, SSP	Small-scale call or project
SME	Small and medium sized enterprise
TRL	Technology readiness level

Term	*Definition*
Accessibility	Ensuring applicants' ability to navigate the requirements of the calls, prepare competitive proposals, and obtain the support needed to participate effectively.
Blending operations	Cooperation framework established between the Commission and other public finance institutions to combine forms of support and/or financial instruments and/or budgetary guarantees, and funding from the private sector.
Competitive bidding	Mechanism used by the Innovation Fund to award funding to producers of low- or zero-carbon products through a selection based on the most competitive bid.
Leveraging or mobilising investment	Attracting and unlocking private and/or public capital to fund supported projects.
Project size	The size of a project refers to the categorisation used in the Fund's legal framework: 'small-scale project' refers to a project with a total capital expenditure not exceeding EUR 20 000 000; 'medium-scale project' to a project with a total capital expenditure above EUR 20 000 000 and not exceeding EUR 100 000 000; and 'large-scale project' for a project with a total capital expenditure above EUR 100 million.
Relevant costs	Costs eligible for Innovation Fund support (net extra costs borne by the applicant due to the application of the innovative technology proposed).
Replicability	A project's technical and market potential for widespread application or reproduction, or for future cost reductions. Part of the calls' award criteria.
RFNBO	Renewable Fuels of Non-Biological Origin
State aid	Any economic advantage granted by a public authority, using state resources, on a selective basis to entities engaged in economic activity that distorts (or threatens to distort) competition in the EU market.
Synergies	For this evaluation, synergies are the deliberate efforts to align, connect, and streamline different EU policies, programmes, and legislative acts to maximise their impact while minimising burdens.
Technical assistance	Targeted, non-financial expert support to Member States, helping them support potential applicants and funded projects.
Topic	Sub-category within a call for proposals with a specific focus on size (i.e. small-scale) or theme (i.e. manufacturing).

1. INTRODUCTION

1.1. Purpose and scope of the evaluation

The Innovation Fund (the Fund) is a key instrument of the EU's climate policy, sourced from the auctioning of allowances under the EU ETS, and designed to finance the demonstration and deployment of innovative low-carbon technologies in energy-intensive industries, renewable energy production, energy storage, industrial carbon management, buildings and transport sectors (maritime, aviation and road transport). An interim evaluation of its operation is required under Article 24 of Commission Delegated Regulation (EU) 2019/856 in 2025 and every five years thereafter.

This evaluation focuses on how the Fund has contributed to the EU's climate, industrial and energy objectives, particularly by reducing GHG emissions, supporting breakthrough technologies, and leveraging additional public and private investment. It also examines how the Fund has been implemented in practice, including its governance structures, disbursement mechanisms, and alignment with the objectives of the EU ETS Directive. Finally, it also assesses the Fund's coherence and synergies with other EU funding instruments, such as Horizon Europe and LIFE, and explores its added value compared to national-level support schemes.

The evaluation covers the period from the Fund's start of operations in 2020 to 2025 ([1]). This period allowed for an assessment of the Fund's early implementation, providing insights into how it has developed over time, adapted to changing policy and market conditions, and responded to external shocks such as the COVID-19 pandemic and the energy crisis.

The evaluation covers all countries eligible for Fund support, namely all European Economic Area (EEA) countries. It captures the Fund's operations across diverse national and regional contexts, including differences in industrial structures, innovation capacities, and administrative systems. Attention was paid to participation across Europe and the way the Fund has addressed regional disparities in access to funding opportunities.

In line with the Commission's better regulation guidelines, the evaluation assessed five evaluation criteria: the effectiveness of the Fund in achieving its objectives, the efficiency of its governance and funding mechanisms, its coherence with other EU and national policies, its relevance in addressing identified needs, and its EU added value compared to action at the national level.

Based on the evaluation results, the Commission will, where necessary, make proposals to ensure that the Fund progresses towards achieving its objectives set out in Directive 2003/87/EC ([2]). The evaluation results will also inform the impact assessment of the revision of the EU ETS Directive.

([1]) The data analysed covers information available up to the first quarter of 2025 (Q1 2025). This cut-off date reflects the project portfolio, budget monitoring and evaluation updates. In some cases, the latest figures from the Fund dashboard (including November 2024 updates) were used when they provided more recent or more granular information.

([2]) Commission Delegated Regulation (EU) *2019/856 of 26 February 2019 supplementing Directive 2003/87/EC of the European Parliament and of the Council with regard to the operation of the Innovation Fund, Article 24(2),* available at: Delegated regulation - 2019/856 - EN - EUR-Lex

1.2. Methodology

1.2.1. Methodology applied

To gather insights into the Fund's performance since its start, external contractors conducted a supporting study ([3]). The study reviewed the Fund's achievements to date and highlighted areas where its design and implementation could be strengthened to maximise its contribution to the EU's 2030 and 2050 climate targets. The study combined desk research, interviews, surveys, a cost-benefit analysis and case studies to provide a comprehensive evidence base to inform the Fund's evaluation.

The evaluation employed a **mixed-methods approach**, combining quantitative and qualitative data to assess the five evaluation criteria. The methodology included: a 'call for evidence', a public consultation questionnaire, targeted interviews, stakeholder surveys, and workshops. This multi-pronged methodology ensured a comprehensive understanding of the Fund's performance from diverse perspectives, including applicants, beneficiaries, public authorities, National Contact Points (NCPs), and industry and civil society stakeholders.

The data analysed covers information available up to the first quarter of 2025. This cut-off date reflects the project portfolio, budget monitoring and evaluation updates. In some cases, the latest figures from the Innovation Fund dashboard (including November 2024 updates) were used when they provided more recent or more granular information, or data from end of 2024 when later data was not available. Data was collected from several sources, including the quarterly reports (cut-off date Q1 2025), an internal operational document on ongoing and terminated projects, the Annual Knowledge Sharing Report on projects' challenges and measures, as well as the performance framework and other data sources such as progress reports, anonymised evaluation reports, EIB reports and legal frameworks ([4]).

The 'call for evidence' and public consultation gathered input from 190 respondents, representing businesses (40–53%), public authorities, NGOs, and citizens across EEA countries. These contributions highlighted broad support for the Fund's role in decarbonisation but also identified key challenges, such as administrative burden for small-scale projects, geographical imbalances, and the need for simplified application processes. Public authorities emphasised the disproportionate reporting requirements and suggested priority access to Project Development Assistance (PDA) for underserved regions. Complementary position papers, desktop research and case-specific feedback further enriched the evidence base.

To deepen insights, 79 structured interviews were conducted with beneficiaries, EU Commission staff, members of the Innovation Fund Expert Group (IFEG), evaluators, and financial partners (e.g. the European Investment Bank). These interviews explored operational challenges, success factors, and areas for improvement, with a focus on project implementation, blending mechanisms, and strategic alignment. Additionally, four targeted surveys were deployed:

([3]) Study for the evaluation of the operation of the Innovation Fund, contracted out to Ramboll, December 2025, link: https://data.europa.eu/doi/10.2834/5290243

([4]) The evaluation's support study provides a full overview of the methodology and data sources used.

- A **beneficiaries' survey** (124 responses) assessed the Fund's **added value**;
- An unsuccessful applicants' survey (154 responses) identified barriers to access;
- An **NCP survey** (27 responses); and
- A survey with **Horizon Europe beneficiaries** (79 responses) examined synergies between programmes.

Finally, the Directorate General for Climate Action (DG CLIMA) organised a 'reality check' on 12 November 2025, an in-person workshop with selected practitioners to discuss the preliminary conclusions and lessons learned from the evaluation. *Annex II* provides further details on the methodology and analytical models used.

1.2.2. Methodological limitations and mitigation measures

While the methodological approach is robust, some limitations should be acknowledged when interpreting findings.

A first limitation relates to the **timing of the evaluation**. The Fund was launched in 2020, and many supported projects are still in the first stages of implementation and have not yet reached a final investment decision. These early and limited results do not allow for any valid conclusions about the overall portfolio performance in achieving GHG emissions avoidance. The evidence is thus largely prospective and focuses more on expected outcomes and the efficiency of processes rather than on realised outcomes, such as GHG emissions reduction, replicability, or market transformation.

A second and related limitation concerns **data availability** and **completeness**. While monitoring data, project documentation, surveys, and interviews generated valuable insights, not all the indicators necessary to answer the evaluation questions were consistently reported. Although the Fund's monitoring system (e.g. quarterly reports, public dashboard) tracks information on project implementation and characteristics, some economic performance indicators (e.g. job creation, gross added value) are not collected. In some cases, confidentiality and commercial sensitivity (although intrinsic to the Fund) may have limited beneficiaries' willingness to disclose detailed project information (especially on resources), thereby restricting the depth of analysis of certain aspects. Nonetheless, the level of detail provided was still sufficient to understand the most important aspects of project implementation, the challenges encountered and the reasons for termination.

Similarly, data on costs for various stakeholders, including applicants, has not been continuously collected since the beginning of the evaluation period. In the 2023 applicants survey, DG CLIMA started collecting data on the costs of applying to the Fund. The survey was further expanded in 2024. Hence, the two data sets were not comparable. This data gap was mitigated by introducing questions on application costs and administrative costs for reporting and monitoring across the surveys conducted for the evaluation to assess efficiency (see section 4.1.2). However, the evolution of costs during the evaluation period could not be analysed to the same extent.

Although data on co-financing is available at the application stage, it is most reliable when projects reach financial close. Indeed, beneficiaries must report information on other sources of financing (public and private) in their application. They are then required to update these

sources of co-financing in their reporting obligations for financial close. This 'lag' between information provided at the application stage and at financial close limits the ability to assess the financing structure of supported projects and the Fund's leverage at this time.

Another challenge identified stems from data management. Although data is reported in the relevant documents for each process, it has not yet been collected and stored in a structured database. Therefore, only limited data is currently presented in the public dashboard and in knowledge sharing reports. The Fund had already identified this gap, as well as others, before the evaluation and initiated work to develop a Knowledge Sharing Digital Solution (KSDS) ([5]), expected to standardise data collection and create a single database for information collected from projects. Although this limitation did not affect the evaluation's work, introducing a centralised data source will make monitoring and reporting more efficient.

While surveys and interviews captured a broad range of perspectives, participation rates varied across stakeholder groups and sectors. Large companies and the hydrogen sector participated most frequently in these consultations. This composition broadly mirrors the Fund's portfolio and application patterns, in which large industrial players and hydrogen-related projects account for a significant share of proposals and awarded projects. Their strong participation thus contributes to the representativeness of consultation findings.

A slight geographical concentration is also evident among both beneficiaries and unsuccessful applicants. Western EEA countries along the corridor from Spain to Germany were well represented, with only a few responses from central and eastern EEA countries. While participation rates varied, the overall reliability of the evidence base remains high. The evaluation draws on multiple, complementary sources, which were systematically triangulated to validate findings and ensure that conclusions do not rely on a limited number of individual responses.

These imbalances may have introduced a degree of **selection bias** (that is, a potential overrepresentation of specific stakeholder groups) stemming from diversity within the Fund's portfolio, varying capabilities to engage in consultations, and geographical disparities in innovation ecosystems. Indeed, the perspectives of larger, better-resourced actors are more prominently represented than those of smaller ones or stakeholders from countries with less advanced innovation ecosystems. For instance, the beneficiaries' survey achieved a high response rate: 124 respondents out of 188 who received invitations (66 %). Still, coverage of SMEs and micro-enterprises was limited: 26 entities out of 71 SMEs participating in Fund projects by the end of March 2025. These 71 SMEs were participating in 50 projects. Among them, 35 are project coordinators.

Similarly, the survey of unsuccessful applicants generated a sizeable sample (154 respondents). Yet nearly half of the respondents were large industrial actors (42 %, 65 out of 154), which may obscure the barriers faced by smaller or less conventional applicants. This selection bias was considered and mitigated throughout the analysis by selecting interviews and case studies to cover a range of sectors, technologies, and geographies. Still, practical constraints meant that some perspectives remained underrepresented. However, while valuable for offering in-depth qualitative insights, case studies are more illustrative than representative and so cannot capture the full diversity of experiences across the portfolio.

([5]) The KSDS aims to collect information on project implementation. Its launch is planned for Q4 2026.

The reliance on **self-reported evidence** introduces further limitations. Survey and interview data are subject to recall bias, self-selection effects, and potentially strategic framing. Respondents might also interpret the same survey questions differently, potentially affecting the comparability of responses. These risks were mitigated through drafting of questions and through triangulating consultations with desk research, project documentation, and monitoring data. However, the potential for uneven coverage and partial perspectives cannot be disregarded. While consultation activities offered insights into prevailing themes, trends, and perceptions, they should thus be interpreted as indicative rather than representative of the Fund's portfolio.

A third limitation concerns the **attribution of effects**. The Fund's support is one of several factors shaping project development, bankability and deployment, alongside national subsidies, private financing, or other EU programmes (such as Horizon Europe, LIFE, InvestEU, the Modernisation Fund, and CEF). Distinguishing its contribution from these parallel funding sources is complex. This challenge is compounded by the unfeasibility of a counterfactual impact evaluation design, such as through comparison with a control group. Indeed, Fund projects are unique and heterogeneous. They differ widely in technology, sector, composition, and geography, making it difficult to find a comparable control group. This risk was mitigated by a 'reality check'. Although a valuable tool for validating practical experiences, 'reality checks' are not equally suited to all areas of the evaluation. They provide limited added value for questions that rely on quantitative analysis, such as measuring emissions reductions, calculating induced investment ratios, or conducting cost–benefit assessments, which require comprehensive datasets and modelling.

The Fund also operates within a complex market and policy environment characterised by overlapping support measures, evolving regulatory frameworks, and global market dynamics. These attribution challenges are also intertwined with broader contextual factors (such as exogenous shocks, supply chain disruptions, and geopolitical developments), which further complicate efforts to isolate the Fund's specific effects from these factors. The evaluation thus relies on triangulation of qualitative and quantitative evidence to approximate the Fund's contribution.

A fourth limitation relates to the **points of comparison**. Assessing the Fund's performance requires a benchmark, either against similar EU programmes, national schemes, or the Fund's stated objectives. Each has drawbacks that are important to consider when interpreting the analysis.

Other EU programmes can, by definition, only be compared to a limited extent with the Fund as they have different objectives, target groups, selection criteria, disbursement and monitoring requirements. For instance, while the Fund is primarily focused on GHG emissions reduction and project selection is largely based on this criterion, this is not the case for other programmes. National schemes vary significantly in scope, scale, and eligibility, and internal targets may not fully capture the Fund's broader political ambition.

Moreover, as the Fund is a new instrument, its performance cannot be directly compared with earlier cycles. Its predecessor programme (NER 300) provides historical context but differs in scope, objectives and design, limiting its utility as a benchmark. Therefore, these differences need to be considered when drawing conclusions based on these comparisons.

Finally, **contextual dynamics during the evaluation period** posed external limitations. The Fund's implementation coincided with exogenous shocks, including the COVID-19 pandemic,

supply chain disruptions, inflationary pressures, and the energy price crisis triggered by Russia's war of aggression against Ukraine. Together with rising capital costs, these developments affected projects' costs, timelines, and investment conditions, making it difficult to disentangle the effect of the Fund's design from broader market and geopolitical factors.

To address these limitations and minimise their effects on the evaluation results, as outlined for each limitation, **mitigation strategies were implemented**. These include triangulating various evidence sources (desk research, surveys, interviews, case studies, and a public consultation) and validating findings through a 'reality check'. As a result, the evaluation provides a credible and balanced assessment of the Fund's performance to date, while acknowledging the constraints imposed by timing, data availability, confidentiality, attribution challenges, and the lack of fully comparable benchmarks.

2. WHAT WAS THE EXPECTED OUTCOME OF THE INTERVENTION?

2.1. Description and objectives of the Fund

The Fund was established through the 2018 revision of the EU ETS Directive (Directive (EU) 2003/87/EC), supported by the corresponding Impact Assessment, which identified the need for a dedicated EU-level mechanism to accelerate the demonstration and deployment of low-carbon technologies. The impact assessment highlighted that achieving the EU's long-term climate objectives required substantial early investment in innovative technologies, well before their commercial maturity, particularly in hard-to-abate sectors and long-distance transport and justified the creation of the Fund.

The Impact Assessment accompanying Delegated Regulation (EU) 2019/856, which operationalised the Fund, reiterated this need. It emphasised that, without targeted support, many promising solutions (such as hydrogen electrolysers, industrial electrification, carbon capture and storage (CCS), carbon capture and utilisation (CCU), and innovative industrial processes) risked remaining stuck in the 'valley of death' between demonstration and commercialisation ([6]).

The Fund began operations with its first call for proposals in 2020. At that time, the EU had proposed to become climate-neutral by 2050 as part of the European Green Deal. To put the EU on the path to climate neutrality, the Commission proposed the Fit for 55 package of legislative measures in July 2021, establishing the legal framework to reduce emissions by 55 % by 2030. Meeting this enhanced level of ambition required both a rapid scale-up of mature renewables (such as wind and photovoltaics) and an accelerated deployment of less mature technologies needed for deep decarbonisation, including green hydrogen, advanced CCS/CCU, and innovative industrial processes ([7]).

At the same time, many of the key technologies required for decarbonisation, notably renewable hydrogen, CCS, and long-duration energy storage, were still at the demonstration or early commercial readiness stage. These maturity constraints were reinforced by additional barriers:

([6]) Muscio, A., Simonelli, F., & Vu, H. (2023). *Bridging the valley of death in the EU renewable energy sector: Toward a new energy policy*. Business Strategy and the Environment, 32(7), 4620–4635.

([7]) IEA (2023), *Energy Technology Perspectives 2023*, IEA, Paris.

funding gaps, performance uncertainties, a lack of infrastructure (e.g. grids, storage, transport), and long lead times of up to a decade for industrial-scale implementation.

The enhanced ambitions also meant that European industries faced a steeper trajectory to decarbonise while maintaining their global competitiveness. However, the absence of stable offtake markets and demand-side signals limited business cases. Financing from private investors was scarce. National support mechanisms existed but were fragmented, varied in scale, and often insufficient to close investment gaps ([8]). Flexible financing tools, such as risk-sharing, blending finance, or contracts for difference, were limited. Against this background, the EU needed a predictable, large-scale mechanism that could de-risk investments, create competition based on excellence, accelerate financial close, and provide confidence to both innovators and investors ([9]).

These barriers could not be effectively addressed by national authorities acting alone. Many technologies require coordinated cross-border infrastructure and a well-developed internal market, with existing demand for low-carbon, innovative products (for example, hydrogen pipelines, electricity grids, or CO_2 transport and storage networks) that no single Member State could develop in isolation. Fragmented national support risks duplication, uneven competition and an unlevelled playing field across the internal market. The EU also faced intensifying global competition, as Japan advanced hydrogen solutions, South Korea expanded renewable deployment, and China gained strong positions in electric vehicles and batteries ([10]). Without an EU-level response, the EU risked missing its climate targets and losing industrial competitiveness in fast-growing clean technology markets, with implications for industrial growth, job creation, and strategic autonomy ([11]).

The Fund was designed to complement research-focused funding instruments (such as Horizon Europe) by supporting the later stages of the innovation chain, bridging the gap from demonstration to commercialisation. It was designed not only to accelerate the deployment of low-carbon technologies but also to stimulate the creation of new markets for climate-neutral products, thereby reinforcing the EU's technological leadership in the global transition to climate neutrality ([12]).

The Fund's legal basis is anchored in the EU ETS Directive ([13]), with detailed operational rules set out in Delegated Regulation (EU) 2019/856, as amended by Delegated Regulation (EU)

([8]) Delors Centre (2025). *Lost in implementation?*, Jacques Delors Centre Policy Brief, April 2025; Green Finance Institute (2025). Financing Europe's Industrial Decarbonisation

([9]) World corporate top R&D investors – *Paving the way to carbon neutrality* (2021).

([10]) World corporate top R&D investors – *Paving the way to carbon neutrality* (2021); DG CLIMA - *Market testing for low-carbon innovation support to energy intensive industry and to power generation – Demand for innovation support* (2018).

([11]) Delors, J. & all, *Making the Energy Transition a European Success*, Report, Jacques Delors Institute, (2017).

([12]) European University Institute (EUI), Debelke, J., Egenhofer, C., & Lamas, R., *Options to finance the premium cost of climate-neutral products in the EU : the potential of the ETS and demand creation*, (2022)

([13]) European Commission, *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC*. Available at: https://eur-lex.europa.eu/eli/dir/2003/87/2024-03-01/eng

2023/2537. Together with the Impact Assessment ([14]) and Explanatory Memorandum ([15]), these documents justified the need for EU action to address the financial and technological barriers that prevent innovations from reaching the market, support climate objectives, and reinforce the EU's competitiveness.

The Fund's overall objective is to support innovation in low- and zero-carbon techniques, processes and technologies that contribute significantly to the decarbonisation of the sectors covered by the EU ETS Directive and to zero pollution and circularity objectives, including projects aimed at scaling up such techniques, processes and technologies for broad roll-out across the EU. Such projects must have significant potential to reduce GHG emissions and contribute to energy and resource savings, in line with the EU's climate and energy objectives.

With the 2023 revision of the EU ETS Directive ([16]), the EU ETS was extended to maritime transport and established a separate ETS (ETS II) covering buildings and road transport. Delegated Regulation (EU) 2019/856 was amended in 2023, notably with provisions on competitive bidding (Article 10b). These changes further anchored the Fund within the broader policy framework of the European Green Deal, European Climate Law, and the Clean Industrial Deal.

The Intervention Logic (*Figure 1*) describes how the Fund combines dedicated resources, structured activities and targeted support mechanisms to generate outputs, results and long-term impacts. By mapping the pathways from inputs to impacts, and testing the underlying assumptions and risks, the intervention logic frames the evaluation of the Fund's ability to deliver on its intended objectives.

The Fund was designed to conduct a wide range of **activities** to achieve its objectives, including calls for proposals ('regular' grants and auctions), technical assistance, support to applicants, PDA, blending operations, 'as-a-service' schemes, communication and knowledge sharing activities.

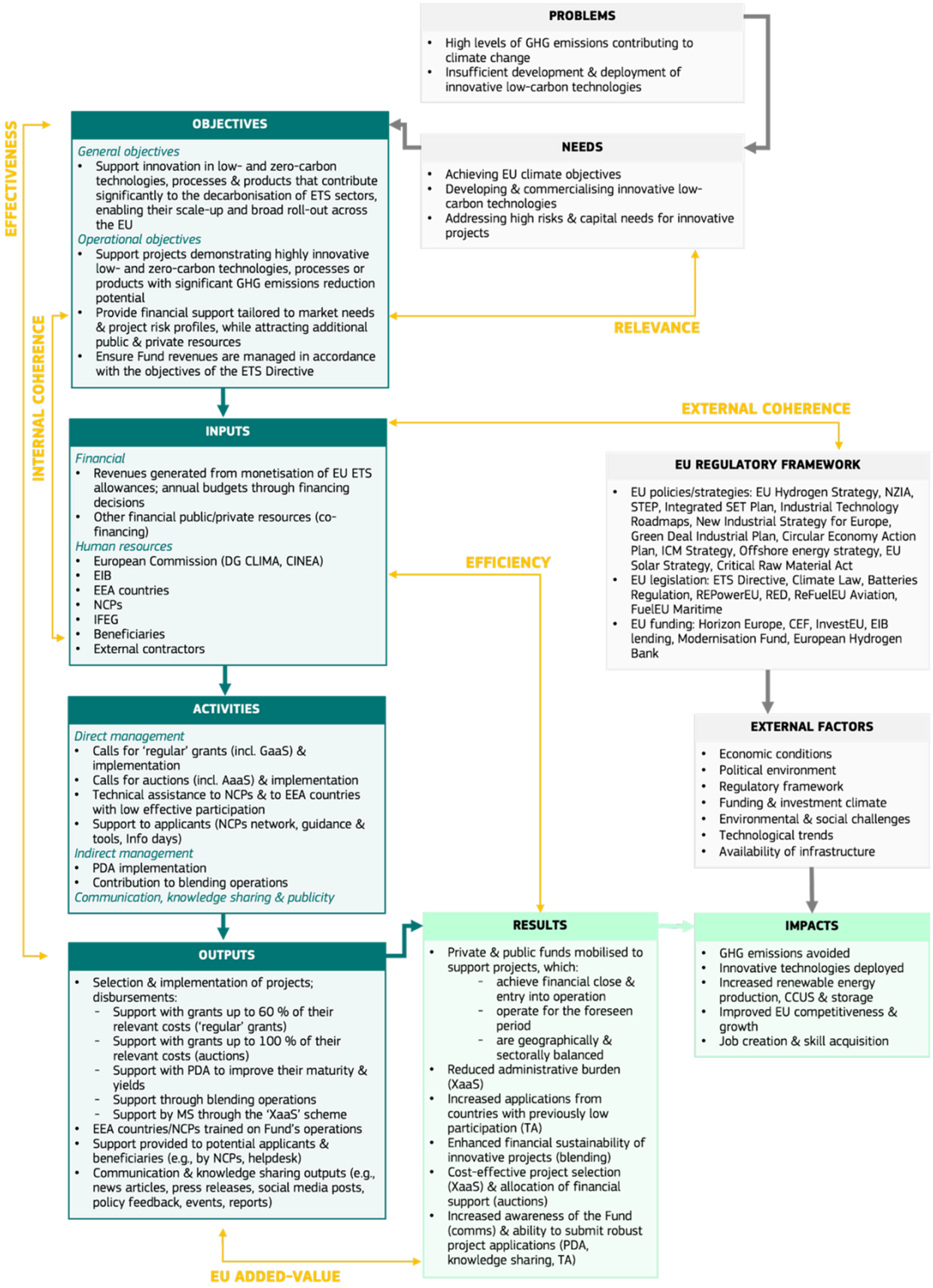
In the short-term, the **outputs** of the intervention (i.e. the Innovation Fund) are expected to include the selection and implementation of projects, the disbursement of financial support, the provision of technical assistance to national authorities and applicants, and the production of communication materials (press releases, reports, training sessions, and workshops).

([14]) European Commission, *Commission Staff Working Document: Impact Assessment Accompanying the Document Proposal for a Directive of the European Parliament and of the Council on the Protection of Undisclosed Know-How and Business Information (Trade Secrets) Against Their Unlawful Acquisition, Use and Disclosure* (SWD(2015) 135 final, 28 November 2015), Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52015SC0135.

([15]) European Commission, *Communication from the Commission: (C(2019) 1492 final), available at: https://climate.ec.europa.eu/document/download/783eaa94-ef70-4679-909f-e088a930ac3e_en?filename=c_2019_1492_en.pdf*.

([16]) European Commission, *Directive (EU) 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union*, Official Journal of the European Union L 130, 16 May 2023, available at: https://eur-lex.europa.eu/eli/dir/2023/959/oj/eng

Figure 1: Intervention logic for the evaluation of the Innovation Fund



In the medium term, these outputs should deliver **results** that are critical to the Fund's effectiveness. Supported projects are expected to reach milestones such as financial close and entry into operation ([17]) and to operate for at least 10 years, demonstrating their viability and replicability. The distribution of funding is expected to ensure geographical and sectoral balance, and be reinforced by targeted assistance and simplified procedures to broaden participation from underrepresented EEA countries . The Fund is also designed to mobilise additional investment from public and private sources and to reduce risks associated with innovative low-carbon technologies. Mechanisms such as auctions and 'as-a-service' schemes are intended to streamline processes and reduce administrative burden by eliminating the need for separate national calls, building on European-level competition, and offering a streamlined process for State aid notification by being in line with the applicable State aid rules. Finally, PDA and other forms of support aim to strengthen the technical and financial maturity of proposals to secure funding.

The results are intended to lead to long-term **impacts**. Supported projects are expected to deliver significant reductions in GHG emissions. By supporting first-of-a-kind and replicable projects, the Fund is designed to reinforce the competitiveness of EU industry, creating new value chains and consolidating the EU's global position in clean technologies. Anticipated broader socio-economic impacts include job creation and the development of new skills, supporting a just and inclusive transition to a low-carbon economy.

External factors could affect the intervention's expected achievements as available resources depend on the price of carbon in the EU's carbon market. On the project side, permitting delays, cost inflation, and operational risks are common for first-of-a-kind deployments. Broader risks, such as regulatory or political uncertainties and weak demand signals for low-carbon products, could also affect project viability and market uptake.

2.2. Points of comparison

The evaluation requires reference points against which to assess progress. They describe the baseline situation at the Fund's launch in 2020. Looking at the situation before the Fund was implemented allows to show what might have happened during the evaluation period if the Fund had not been put in place.

Before 2020, the situation for sectors covered by the EU ETS Directive was as follows ([18]):

– Low-carbon technology demonstration projects are inherently high-risk endeavours and tend to struggle to attract the required capital ([19]).

([17]) Financial close refers to the stage when a project has secured all financing agreements and can continue to implementation. A project must reach this stage within four years of the award decision. Entry into operation refers to the start of its operational phase and should occur within five years after financial close, unless a longer period is justified by the project's characteristics (Delegated Regulation (EU) 2019/856, Art. 11(2)).

([18]) European Commission, Staff Working Document SWD(2019) 85 final – Impact assessment, unless otherwise stated.

([19]) *Market testing for low-carbon innovation support to energy intensive industry and to power generation – Demand for innovation support* (2018); NER 300 lessons learnt – Executive summary, Publications Office, 2018.

– For energy-intensive industries, expert consultations showed a wide range of options (broadly categorised as process innovations, new products, and end-of-pipe solutions). Yet most were still in the development phase and required significant investment to be demonstrated at an industrial scale. Relevant projects were not undertaken, especially given the risks and the investments required to demonstrate their technical feasibility.

– Emerging renewable energy technologies such as ocean energy, floating wind, geothermal, concentrating solar power technologies and advanced bioenergy continued to struggle to achieve the critical mass demonstration needed to enable further cost reductions and spur rollout at scale ([20]).

– Large-scale demonstration of innovative solutions was particularly slow in the renewable heating and cooling technology category, including electricity storage, which is of high importance given that heating and cooling in buildings and industry account for half of the EU's energy consumption.

– The number of installed CCS facilities was much lower than expected because the technology's cost had precluded widespread adoption. The technology requires higher carbon prices to be competitive. In addition, projects required integration into complex industrial chains, further increasing their risks. It was thus important to maintain support to demonstrate the viability of projects and the safe, reliable underground storage of carbon dioxide (CO_2).

For net-zero mobility and buildings (which were included in the scope of the Fund only since the revision of the EU ETS Directive), the situation before 2023 was as follows:

– Emissions reductions had been insufficient to put the EU on a firm path towards climate neutrality. Thus, a market incentive for investment was needed ([21]).

– The EU ETS did not yet cover maritime transport, and the sector's contribution to EU emissions reductions remained minimal. Analysis projected maritime GHG emissions to rise by about 14 % by 2030. The revision of the EU ETS Directive included the sector and enabled the Fund to finance low-carbon maritime technologies, such as green hydrogen, ammonia, and alternative fuels. At the end of Q1 2025, the number of Fund projects in maritime and aviation remained low (six in maritime and one in aviation, according to the latest quarterly report), making it difficult to compare the situation today with that before 2023 in a meaningful way.

– Aviation was already partly covered by the EU ETS, but only for intra-EEA flights. Baseline projections showed emissions would continue to grow, underscoring the limited effectiveness of existing measures. The revision of the EU ETS Directive reduced airlines' free allowances and channelled additional revenues to the Fund.

([20]) European Commission, *The Future of Food and Farming: For a sustainable European and global food system*, COM(2019) 640 final, 2019, https://op.europa.eu/en/publication-detail/-/publication/7fc3beff-2b55-11e9-8d04-01aa75ed71a1/language-en.

([21]) European Commission, 'EU Emissions Trading System (ETS 2): Buildings, Road Transport and Additional Sectors', *Climate Action*, available at: https://climate.ec.europa.eu/eu-action/carbon-markets/ets2-buildings-road-transport-and-additional-sectors_en [accessed 24 June 2026]

Overall, low-carbon demonstration projects faced three main types of risks that were largely beyond the control of the individual project operator:

- Technology risks related to the demonstration of technologies not yet tested at large scale - even if they worked in the laboratory or at a pilot facility, they may have failed or underperform when scaled up.

- Market risks related to the development of carbon, energy, and commodity prices meant that current and expected price levels were not sufficiently incentivising private operators to invest in these projects.

- Risks related to policy changes were particularly relevant for investments in low-carbon technologies that may operate for 20 years or longer, as their viability depends on specific policies (e.g. a carbon price or a feed-in tariff).

Lessons learned from the experience with NER 300 provided insights into the problems the Fund was meant to address at its inception:

- The NER 300 programme left the technology risk largely with the project operator, as the grant was fully paid out if at least 75 % of the planned emissions reductions were achieved, unless Member States guaranteed upfront funding. It did not de-risk projects during the first stages of development because it provided funding only after entry into operation, based on verified emission reductions. However, many projects encountered difficulties during the first stages, especially in securing additional financing. The promise of a grant disbursement upon entry into operation was not sufficient to entice third parties to provide additional upfront financing.

- Under NER 300, Member States were responsible for the pre-selection and nomination of projects, as well as for the signing and management of contracts. The Commission selected projects after the EIB conducted due diligence. The role of the Member States was supposed to ensure financial and regulatory support to the selected projects. However, this support materialised only to a limited extent and led to complex interactions among different parties, including project proponents, national authorities, the EIB, and the Commission.

- The European Court of Auditors also found that "*the design of the NER 300 limited the Commission and Member States ability to respond effectively to changing circumstances*" ([22]).

For a full description of the points of comparison, please see *Annex III*.

3. HOW HAS THE SITUATION EVOLVED OVER THE EVALUATION PERIOD?

The Fund's legal framework has evolved to align with the EU's increasingly ambitious climate targets, respond to lessons learned from earlier programmes, and adapt to the dynamics of the carbon market.

([22]) European Court of Auditors, *Climate Action: Low-carbon economy – Significant reduction in greenhouse gas emissions from cars not yet in sight* (Special Report No. 24/2018), Publications Office of the European Union, 2018, https://op.europa.eu/webpub/eca/special-reports/climate-action-24-2018/en/

The Fund's foundation lies in the EU ETS Directive, which established the EU's cap-and-trade system and earmarked auctioning revenues to support climate innovation:

– In 2018, an major amendment of the EU ETS Directive aligned the EU ETS with the then-agreed ambition of the 2030 climate and energy framework. It allocated the sale of 530 million EU ETS allowances to the Fund, at an estimated carbon price of EUR 75 per tonne of CO_2. As the cumulative emission cap for 2021-2030 is about EUR 12 billion in allowances, the Fund thus represents 4.4 % of the EU ETS.

– The 2023 revision of the EU ETS Directive further tightened the emissions cap, setting the EU on a path to achieve 55 % emission reductions by 2030. It extended the EU ETS to new sectors, such as maritime and aviation, thereby broadening the Fund's scope and resources.

The Fund's operational rules are set out in Delegated Regulation (EU) 2019/856, which defines eligibility conditions, award and selection procedures, milestone-based disbursements, and measures to support sectoral and geographical balance. It also introduced PDA and enabled blending operations. Detailed arrangements for calls, submission and evaluation procedures, and monitoring requirements are further specified in the Commission's annual Financing Decisions and in the delegation of tasks to CINEA. The 2023 amendment of Delegated Regulation (EU) 2019/856 updated the Fund's rules to align with the revised ETS Directive.

Table 1: Innovation Fund budget

Year	IF auctioned allowances, in million	Average carbon price, in EUR/tCO_2e	RePowerEU transfers, in billion EUR	IF commitments, in billion EUR
2020	50	32.7	-	0.00
2021	40	80.7	-	0.15
2022	40	84.0	-	2.95
2023	40	83.3	1.5	3.54
2024	87	64.5	3.4	5.24
2025	87	73.5	3.8	5.05

The total volume of Fund-auctioned allowances comprises both the allowances auctioned to finance the Fund and those whose proceeds are earmarked for transfer to REPowerEU. Following an amendment in 2023 to the EU ETS Directive ([23]), EUR 12 billion from the Fund's monetised resources will be made available to support REPowerEU actions by August 2026. This total includes allocations under the various funding streams, namely calls for proposals, PDA, and administrative expenditure. The figures reflect the Fund's status at the end of Q1 2025.

([23]) European Comission, *Regulation (EU) 2023/435 of 27 February 2023 Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials and Amending Regulations (EU) 168/2013, (EU) 2016/1036, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020* [2023] *OJ L 62/1*, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32023R0435.

3.1. Activities

The Fund uses two types of calls for proposals to allocate support: calls for 'regular' grants and auctions (i.e. competitive bidding). At the end of 2024, the Commission had launched nine calls for proposals. These calls had a combined budget of EUR 11.8 billion.

Considering that, in line with Article 110(5) of Regulation (EU, Euratom) 2018/1046 and the updated Financial Regulation 2024/2509, the annual financing decisions allowed the Fund's annual budgets to increase by 20 %, projects have been awarded a total of EUR 12.7 billion through calls for proposals.

The Fund also uses blending operations with the EU-Catalyst Partnership and through InvestEU, as well as PDA and technical assistance. This section introduces the different types of implementing activities.

3.1.1. Calls for 'regular' grants

Five calls for 'regular' grants were launched between 2020 and Q1 2025. These calls aimed to:

- support projects demonstrating innovative technologies, processes, business models or products and services, that are sufficiently mature and have a significant potential to reduce greenhouse gas emissions; and

- offer financial support tailored to market needs and risk profiles of eligible projects, while attracting additional public and private resources.

3.1.1.1. Evaluation phase

Proposals are evaluated based on a set of award criteria ([24]), set out in each call document published on the EU Funding and Tenders Portal and following a standard staggered approach (submission followed by evaluation). An evaluation committee, composed of independent experts and coordinated by CINEA, assess all applications. Proposals are first checked for admissibility and eligibility requirements. Proposals found admissible and eligible are then evaluated against the award criteria and ranked by score. Proposals that pass the individual thresholds are considered for funding within the available budget (i.e. up to the budget ceiling). Other proposals are rejected or, if applicable, passed on to the national funding scheme (see 'as-a-Service' section below). As of 2023, all proposals passing the individual thresholds are awarded the Strategic Technologies for Europe Platform (STEP) Seal, a quality label meant to help projects obtain additional or alternative funding, from private and public investors and including from EU funding schemes implemented at national level.

The 'degree of innovation' criterion assesses how much a project advances beyond the current state of the art in its field, ranging from incremental improvements to breakthrough innovations. Projects are evaluated based on their novelty compared to existing solutions at the EU (or national) level. If a proposal is similar to previously funded projects, applicants must justify the new innovative elements, such as scale, application, or technical differences. Failure to demonstrate sufficient innovation may result in a lower score.

([24]) European Commission, *Innovation Fund 2025 – Call Fiche (Net-Zero Technologies)*, 2025, https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2025/call-fiche_innovfund-2025-nzt_en.pdf.

‘Project maturity’ is divided into three sub-criteria: technical, financial and operational. Technical maturity evaluates the feasibility of achieving the project’s expected outputs, the understanding of technical risks, and the proposed risk mitigation measures. Financial maturity assesses the project’s ability to reach financial close within 48 months of signing the grant agreement, taking into account the credibility of the business model, the financial plan, and expected profitability. Operational maturity assesses the credibility of the project implementation plan, the project team's relevance and track record, and the state of play regarding permits, licenses, and regulatory procedures.

The ‘cost efficiency’ criterion evaluates a project's cost efficiency by calculating the ratio of the requested grant to the absolute GHG emission reduction. The score is calculated using a formula that reduces points proportionally as the ratio increases. Additionally, the quality of the cost calculation ensures that the cost estimates are credible and meet the minimum requirements. Errors in cost calculations or incomplete submissions can lead to rejection. For most topics, projects with a cost-efficiency ratio exceeding 200 EUR/tCO_2e are rejected. This criterion has been adjusted in the past, such as for the ‘pilot’ topic during the IF24 Call, when the threshold was 2 000 EUR/tCO_2e.

The criterion for GHG emission avoidance is assessed with three sub-criteria. ‘Absolute avoidance’ measures the total GHG reductions over ten years compared to a reference scenario. ‘Relative avoidance’ assesses the efficiency of emission reductions relative to the reference scenario. Finally, the ‘quality of calculation’ ensures methodological rigour, compliance with requirements to reduce emissions below the EU ETS benchmarks and sustainability requirements.

The ‘replicability’ criterion evaluates a project’s potential for broader deployment and systemic impact. It includes ‘replicability in terms of efficiency gains and multiple environmental impacts’, which assesses resource efficiency, circularity, and environmental benefits. ‘Replicability in terms of further deployment’ examines plans for transferring the project or technology to other sites. Finally, ‘contribution to Europe’s industrial leadership and competitiveness’ considers the project’s role in developing new industrial ecosystems, supply-chain resilience, and reducing dependencies on third-country inputs. For the maritime sector, emphasis is placed on enhancing European competitiveness and resilience.

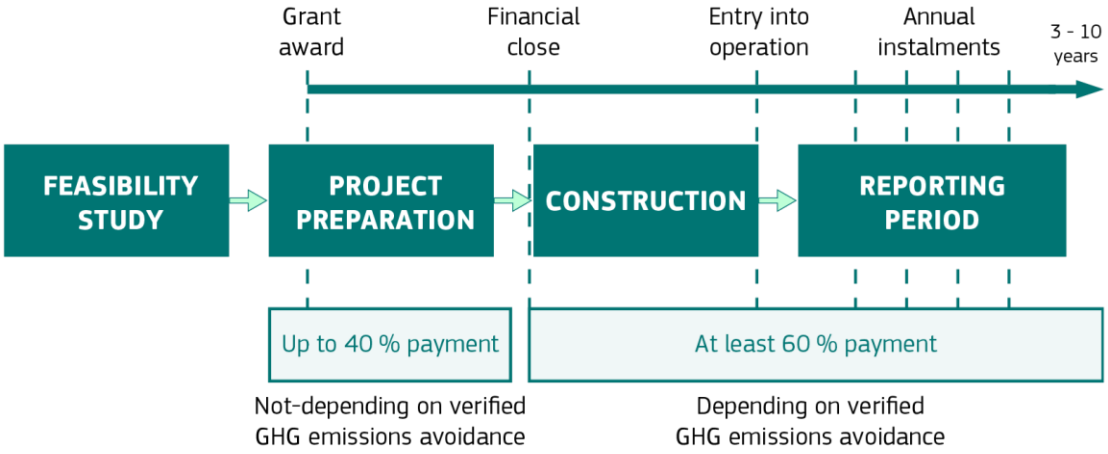
Maximum score and bonus points per criterion and per topic are specified in each call’s document published on the EU Funding and Tenders Portal.

3.1.1.2. Grant agreements and financing rates

If a project passes evaluation and is ranked within the budget limit, it is invited to prepare a grant agreement with CINEA. This agreement sets the framework for the grant, including its terms and conditions, in particular regarding deliverables, reporting and payments.

The Fund pays up to 60 % of the relevant costs, calculated according to the methodology indicated in each call (usually covering capital and operational costs minus revenues over the first ten years of operation). The grants are disbursed as lump sums based on project financing needs, with disbursements tied to milestones achieved. For calls for ‘regular’ grants, up to 40 % of the grant can be disbursed before the entire project is fully up and running, based on predefined milestones. The key milestones are the signature of the grant agreement, financial close and entry into operation.

Figure 2: Key financing milestones for calls for 'regular' grants



3.1.2. Competitive bidding

Since 2023, competitive bidding through auctions has been introduced as a complementary financing mechanism on the basis of Chapter IIb of the Innovation Fund Regulation. Funds are disbursed only at entry into operation, in the form of unit contributions.

Participation in auctions has been strong, though subscription rates are moderating as the Fund matures:

– The IF23 Auction was launched in 2023 to support the production of RFNBO (Renewable Fuels of Non-Biological Origin) hydrogen ([25]). It attracted 132 bids from 17 countries. Six projects were awarded and are expected to produce up to 1.52 million tonnes of renewable hydrogen and avoid over 10 million tonnes of CO_2 equivalent ($mtCO_2e$) in their first ten years of operation.

– The IF24 Auction continued the approach, including a maritime topic. 61 bids were submitted from 11 countries. Within this auction, 12 proposals were initially selected under the general topic and 3 under the maritime topic.

3.1.2.1. Evaluation phase

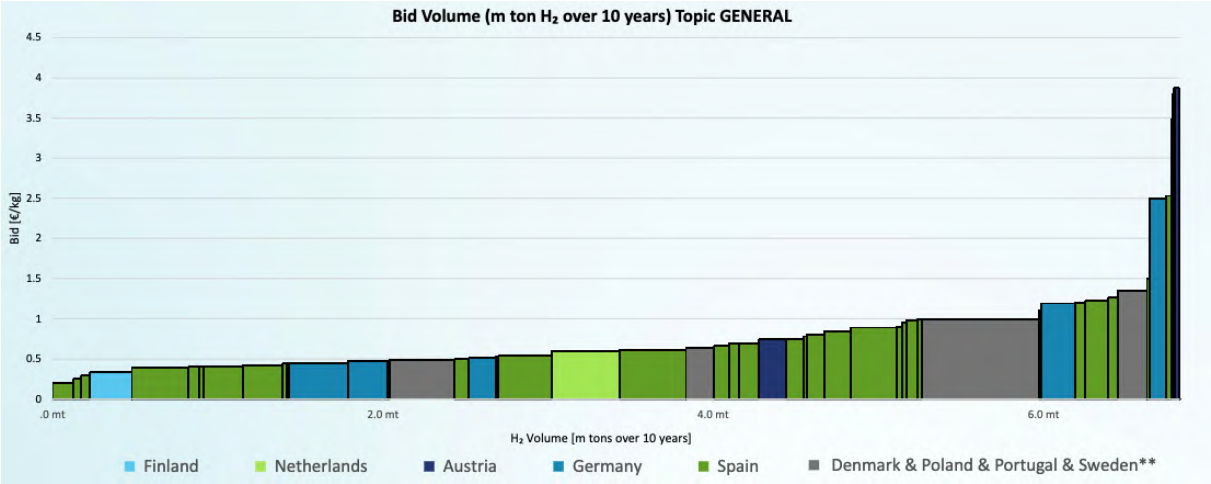
Unlike calls for 'regular' grants, auctions award grants through a competitive bidding procedure on price. The bid price is the requested unit contribution (fixed premium) per kg of RFNBO hydrogen production payable for up to ten years. The bid price per unit is expected to cover the premium required by the producer, i.e. the difference between the expected revenue from the

([25]) Renewable Fuels of Non-Biological Origin are liquid and gaseous renewable fuels (such as renewable hydrogen) produced from renewable energy sources, as defined in Article 2(36) of Directive (EU) 2018/2001 (Renewable Energy Directive II).

sale of one unit and the unit's levelised ([26]) cost (i.e. elements such as production, sale, transport, and storage can be priced into the bid).

The proposals in auctions follow the standard submission and evaluation procedure with evaluation by an independent committee. Such proposals are first checked for admissibility and eligibility requirements. If they pass this initial check, they are ranked from lowest to highest bid price in EUR per kg of produced hydrogen in a bid-curve (*Figure 3*: IF24 Auction bid curve). Proposals that fall within the auction's budget are funded if they pass the award criteria of 'relevance' and 'quality' (on a pass/fail basis).

Figure 3: IF24 Auction bid curve



3.1.2.2. Grant agreements and financing rates

If the project passes evaluation, it is invited to prepare a grant agreement with CINEA. Payments are scheduled only during the project's operational (reporting) period. Up to 100 % of the relevant costs is covered, calculated according to the methodology indicated in each call for proposals (usually covering capital and operational costs minus revenues over the first ten years of operation).

Unlike calls for 'regular' grants, auctions offer an additional completion guarantee: financial close must be reached within 2.5 years of the grant's signature. If the milestone is not achieved in time, the grant agreement may be terminated. Additionally, entry into operation must be reached within 5 years of the grant's signature, at which point the project must demonstrate a nameplate capacity equal to the capacity expressed in its original bid.

3.1.3. 'As-a-service' schemes

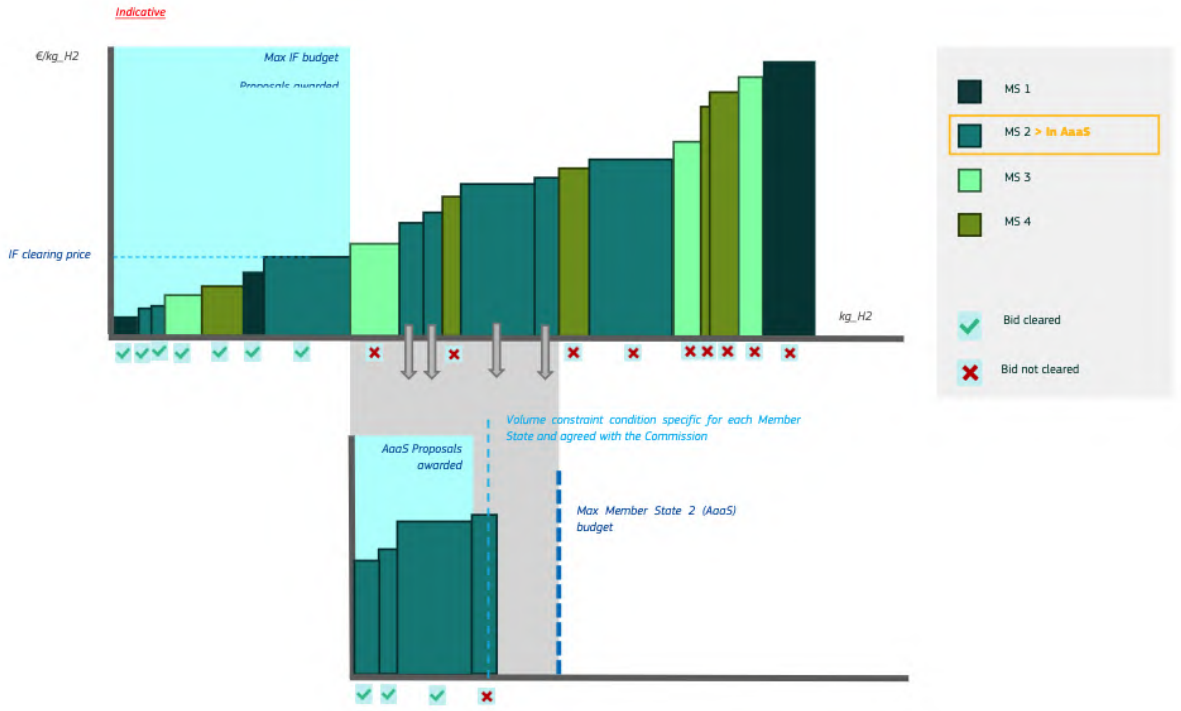
To avoid fragmentation at the early stage of the European hydrogen market's formation and to save administrative costs associated with developing different hydrogen support schemes by the EEA, the Commission created the Auction-as-a-Service (AaaS) scheme in 2023 for the first

([26]) Levelized cost means the average cost of producing per unit over the lifetime of a project, accounting for all capital, operating, and maintenance expenses.

hydrogen auction. As of 2024, this option is also offered for calls for 'regular' grants as 'Grants-as-a-Service' (GaaS).

EEA countries can use AaaS ([27]) and GaaS ([28]) to support 'additional' projects (in addition to projects awarded by the Fund) through, respectively, auctions or calls for 'regular' grants. Projects that pass all evaluation thresholds but cannot be funded (because they exceed the budget's ceiling) may benefit from national funding if the project is located in an EEA country participating in AaaS or GaaS. EEA countries willing to participate must use resources from their national budgets, the Modernisation Fund or the Recovery and Resilience Facility. To be eligible, proposals must express their interest during the application stage.

Figure 4: The Auction-as-a-Service scheme



'As-a-service' schemes eliminate the need for separate national calls (and thus avoid duplication of effort), reduce the administrative burden on national administrations and applicants, build on the cost-discovery and efficiency of EU-level competition, and offer a streamlined process for State aid notification when they are closely aligned to the applicable State aid rules.

AaaS was available during the IF23 and IF24 Auctions, with participation from Germany, Austria, Spain and Lithuania. Announced budgets in the latest auction ranged from EUR 36 million in Lithuania to EUR 400 million in Austria or Spain.

([27]) European Commission, '*Auctions-as-a-Service for countries in European Economic Area (EEA): Concept Note*', Version 0.5, 2 December 2024.

([28]) European Commission, '*Grants-as-a-Service (Gaas) possibility under the Innovation Fund (IF) 'regular' grants calls: Concept Note*', Version 0.1, 27 October 2025.

GaaS was introduced in 2024 and, in 2025, was extended and simplified under the Clean Industrial Deal State Aid Framework (CISAF) ([29]) to make it more attractive. Despite this, GaaS has not yet been used by national autorities.

These schemes matter because they help mobilise additional resources, thus increasing funding opportunities for innovative projects across Europe. They also reduce the administrative burden for national authorities and applicants by creating a single application and evaluation process. They also help achieve more cost-efficient allocation of funding by creating EU-level competition.

3.1.4. Blending operations

Blending operations combine Fund resources with other EU financial tools to support the deployment of clean technologies at various stages of development. So far, they have included two initiatives, both with guaranteed top-ups on InvestEU: the EU-Catalyst partnership and an initiative for the batteries value chain.

The EU-Catalyst partnership is a joint initiative launched in 2023 by the Commission, the EIB, and Breakthrough Energy ([30]). Breakthrough Energy provides equity and grants, while the EIB offers quasi-equity and venture debt. The Commission contributes through a Fund's top-up guarantee under InvestEU and through grants from Horizon Europe. By late 2023, the partnership had announced its first projects.

The InvestEU top-up for batteries, which started in December 2024, targets the EU battery value chain, including the development, recycling, and manufacturing of components. It provides a Fund top-up guarantee to InvestEU, helping the EIB to provide venture debt to bridge the gap between R&D ([31]) and commercialisation. By the end of Q1 2025, no operations had been announced under this initiative.

3.1.5. Other activities

3.1.5.1. Technical assistance and support to applicants

Technical assistance was introduced by the 2023 revision of the EU ETS Directive. It aims to build national capacity to support applicants and improve geographical coverage. Two forms of technical assistance exist.

First, all Nantional Contact Points (NCPs) receive dedicated support, including training, workshops, and coordination activities. A contract between DG CLIMA and an external provider was launched in 2023. It aims to support NCPs in promoting the Fund at the national level, advising applicants and facilitating cross-border cooperation.

([29]) European Communication, Communication from the Commission – *Framework for State Aid measures to support the Clean Industrial Deal (Clean Industrial Deal State Aid Framework)* (C/2025/3602).

([30]) Global network founded by Bill Gates and other investors to accelerate innovation in sustainable energy and support the commercialisation of technologies needed for net-zero emissions. More information on the partnership can be found on the Commission's website. The partnership ended on request by Breakthrough Energy Catalyst at the end of 2025.

([31]) Research and development.

Second, technical assistance is available on request for EEA countries with low effective participation in the Fund (as defined in Delegated Regulation (EU) 2019/856). The Commission defined a list of eligible EEA countries based on the lowest Fund support relative to their share of EU ETS verified emissions (2013–2020). As of 15 September 2023, the 20 EEA countries eligible were Austria, Croatia, Cyprus, Czechia, Denmark, Estonia, Germany, Greece, Hungary, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Norway, Portugal, Romania, Slovakia, and Slovenia. Financing Decision C(2023)7827 allocated EUR 4 million to provide targeted capacity-building, proposal preparation, and regulatory guidance in these countries.

NCPs provide support to applicants through awareness-raising measures such as national information days. Fifteen events were held between November 2023 and February 2024 ([32]), thirteen of which included orientation dialogues, allowing applicants to meet directly with DG CLIMA and CINEA.

DG CLIMA and CINEA further support applicants with methodological guidance on cost calculations and GHG emissions avoidance, online manual and FAQs, webinars ([33]) and updates via the Clean Energy Newsletter. Call-specific Q&As and a dedicated helpdesk also reinforce support for applicants. For the 2022 calls, more than 1 000 queries were managed, mainly on GHG methodologies, relevant costs, and eligibility ([34]). The IF23 Call generated a similar volume of questions, with peaks in the final weeks leading up to closure.

3.1.5.2. Project development assistance (PDA)

PDA resources increased significantly between 2020 and 2023. In the first Financing Decision, EUR 25 million was allocated to PDA for the following three years. Following lessons learned, PDA was simplified in the 2023 amendment to Delegated Regulation (EU) 2019/856, allowing projects to apply directly with the EIB for support. The 2023 Financing Decision supported this by allocating EUR 90 million to PDA over the next three years, underscoring its growing role in the Fund's portfolio. As of 2025, PDA is being implemented with new eligibility conditions, as per the 2023 revision of Delegated Regulation (EU) 2019/856, aiming to ensure a wider pool of projects is available to the EIB.

PDA has followed the same geographical spread as applications received. Most projects were concentrated in larger industrialised economies such as Germany, France, Spain, and Italy, reflecting their sizeable industrial bases and larger pipelines of potential projects. Smaller countries, such as Bulgaria, Croatia, and Latvia, had fewer supported projects, although participation was recorded in almost all EEA countries.

Energy-intensive industries make up the largest share of proposals receiving PDA, complemented by renewables, hydrogen, and industrial carbon management. PDA beneficiaries also include proposals in steel, cement, and chemical, followed by renewables (wind and solar), hydrogen (production and storage) and CCS/CCU. Low-carbon transport and enabling technologies are also present, though in smaller numbers.

([32]) European Commission website, accessed in October 2025.

([33]) Such as how-to and orientation sessions as seen for instance on the European Commission website, accessed in October 2025.

([34]) European Commission, *Innovation Fund progress report – Report from the Commission to the European Parliament and the Council*, August (2022,), Publications Office of the European Union, 2022.

PDA beneficiaries include both large industrial companies and smaller firms. Large enterprises represent around half of all selected proposals, while SMEs ([35]) account for about one-third. Mid-sized companies form a smaller but notable share.

PDA also covers a wide range of advisory services tailored to project needs. The most frequent services include financial structuring and viability assessments, technical feasibility studies and market context analyses. Other services cover permitting and regulatory compliance, contract revisions, procurement and tendering strategies, and capacity-building for project management. In some cases, projects also received guidance on securing additional financing and addressing State aid compliance.

As of 2025, PDA is being implemented with new eligibility conditions, as per the 2023 amendment of Delegated Regulation (EU) 2019/856, aiming to ensure a wider pool of projects is available to the EIB.

3.1.5.3. Communication and knowledge sharing activities

DG CLIMA and CINEA circulate press releases, articles, and monthly project stories. On social media, they promote information for upcoming events or project inauguration ceremonies, in addition to the previously listed materials. Between 2020 and 2023, 41 press releases and 144 news articles (83 on DG CLIMA's website, 61 on CINEA's) were published.

On their end, beneficiaries must publicly acknowledge the Fund's support and disseminate information about their projects.

Knowledge sharing is mandated under the EU ETS Directive and Delegated Regulation (EU) 2019/856. Beneficiaries must submit knowledge sharing plans covering the full project lifecycle, including management, financing, permitting, construction and performance. Closed-door workshops allow beneficiaries to discuss project-specific issues such as financial close, permitting, and market conditions. At the same time, open-door events engage broader stakeholder groups and promote synergies with other EU-funded projects ([36]).

Between 2020 and 2023, the Fund organised more than ten knowledge sharing events, two Cleantech Conferences and thematic workshops. In 2023, thematic events focused on CO_2 transport and storage, hydrogen, energy storage, and CCS, while earlier sessions addressed financing and permitting challenges ([37]).

Participation levels in these activities vary by format and year. The IF23 Call info day recorded over 5 300 unique views, while the 2023 Cleantech Conference had more than 1 000 registered participants across in-person and online attendance. Other info days and workshops between

([35]) Small and medium-sized enterprises.

([36]) European Commission: European Climate, Infrastructure and Environment Executive Agency, Annual knowledge sharing report of the Innovation Fund – De-risking innovative low-carbon technologies, Publications Office of the European Union, 2024; Report from the Commission to the European Parliament and the Council on the implementation of the Innovation Fund, including the review referred to in Article 24 of Regulation (EU) No 10311/2010.

([37]) European Commission, *Innovation Fund progress report – Report from the Commission to the European Parliament and the Council*, (2022), Publications Office of the European Union

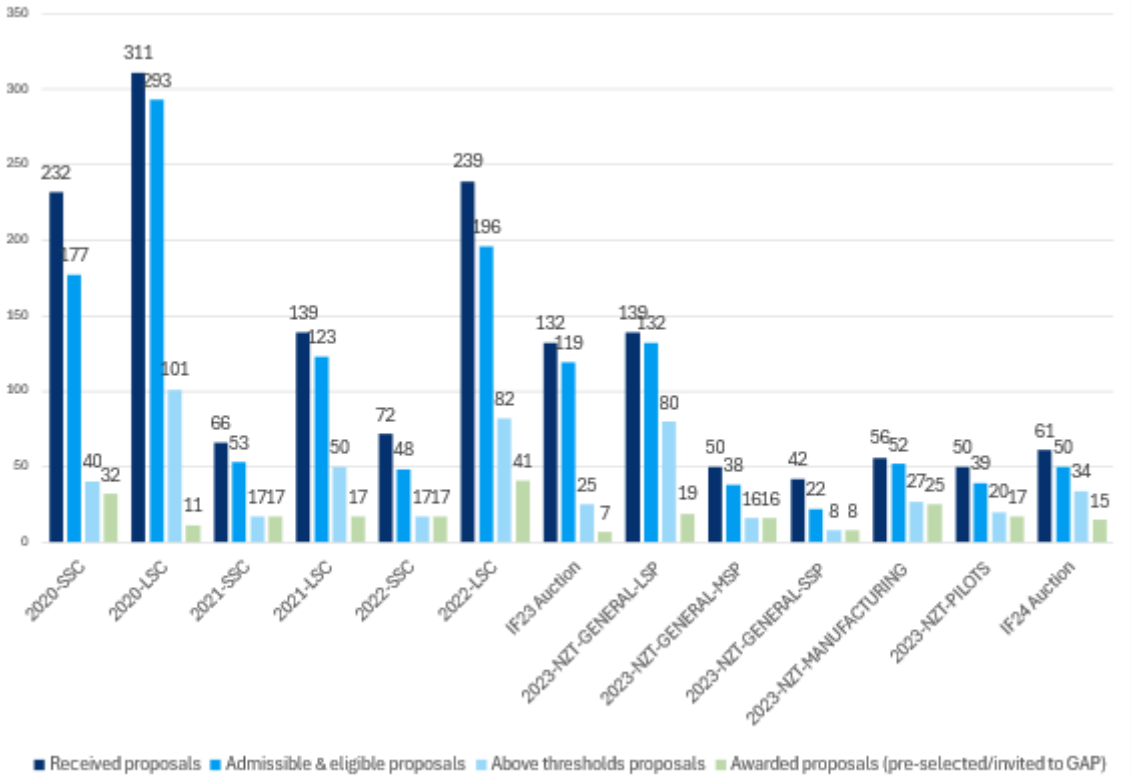
2021 and 2024 typically involved several hundred to thousands of participants, reflecting the scale of outreach across countries and stakeholder groups.

3.2. Portfolio outcomes

The Fund has built a sizeable project portfolio in its first four years. By the end of March 2025, 208 projects had been awarded grants ([38]): 202 through calls for 'regular' grants and 6 through auctions, totalling EUR 11.6 billion in committed support. Of these, 192 projects are ongoing, and 16 have been terminated ([39]). The portfolio spans a wide range of sectors, geographies and sizes, reflecting the increasing scope of successive calls and the introduction of new funding windows. However, most supported projects remain at an early stage of implementation and reported figures are prospective.

The number of proposals received during calls has increased continuously since 2020 (*Figure* 5: Evolution of number of proposals received through the evaluation stages per call). Moreover, the quality of proposals has also improved, as evidenced by the increasing share of proposals that pass all evaluation criteria (*Figure 6*: Share of proposals received passing all award criteria).

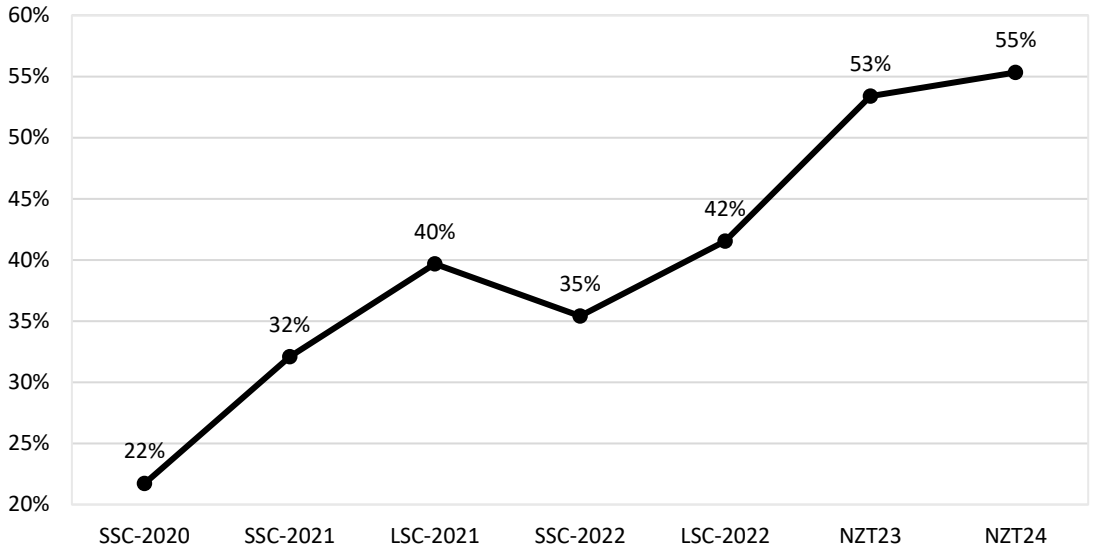
Figure 5: Evolution of number of proposals received through the evaluation stages per call



([38]) 'Awarded grants' refers to the 'awarded proposals' (pre-selected proposals) who eventually signed a grant.

([39]) 16 projects during the evaluation period (up to end of March 2025). Additional projects were terminated later in 2025. 'Terminated projects' refers to projects which were terminated after they signed a grant agreement. Some pre-selected proposals may withdraw during grant agreement preparation. These are not included in terminated projects.

Figure 6: Share of proposals received passing all award criteria



Demand for support consistently exceeded available resources, with applicants requesting more than 7 times the available budgets, although the intensity of oversubscription has evolved (*Table 2*: Oversubscription rate per call (budget requested by evaluated proposals over budget available). However, within each call, oversubscription in some topics (e.g. large-scale projects) has been offset by undersubscription in others (e.g. small-scale projects), enabling reallocation.

Demand for support also became more differentiated as the Fund's structure expanded. In 2023, topic-level variation in oversubscription rate widened:

- General large-scale projects experienced intense competition (with an oversubscription rate of 10.2), while manufacturing and medium-scale competitions were more moderate (respectively 2.4 and 2). General small-scale projects received fewer requests than their planned budget (0.5).

- Pilots, despite their novelty, displayed a moderate oversubscription rate (4).

Table 2: Oversubscription rate per call (budget requested by evaluated proposals over budget available

Year/Call	Oversubscription rate
SSC-2020	7.4
LSC-2020	20.4
2020 total	**19.2**
SSC-2021	2
LSC-2021	7.7
2021 total	**7.3**
SSC-2022	1.8

Year/Call	Oversubscription rate
LSC-2022	5.5
2022 total	**5.4**
IF23 auction	13.2
IF23 general large-scale	10.2
IF23 general medium-scale	2
IF23 general small-scale	0.5
IF23 manufacturing	2.4
IF23 pilots	4
2023 total	**6.9**

In volume terms, the number of applications has followed a similar pattern, with high initial participation gradually giving way to more focused competition. The first large-scale call in 2020 received 332 proposals (for the first stage) but funded only 7 (through the second stage), a 2 % success rate. Application numbers declined in later years, which can be explained by the novelty of the call, as applicants could not estimate their chances of success, and by the more limited effort required for the first application stage. This, on the other hand, resulted in a longer evaluation process and a longer time-to-grant.

Nevertheless, success rates remained highly uneven across topics, ranging from just 8 % for general large-scale projects to 34 % for manufacturing in 2023. Several factors can explain this difference, including the novelty of some topics (and fewer potential applicants), the broader sectoral and technological eligibility of the general topics, and the size of the grants requested relative to the topic budget, which can result in fewer (but larger) projects being selected.

3.2.1. Geographical and sectoral distribution

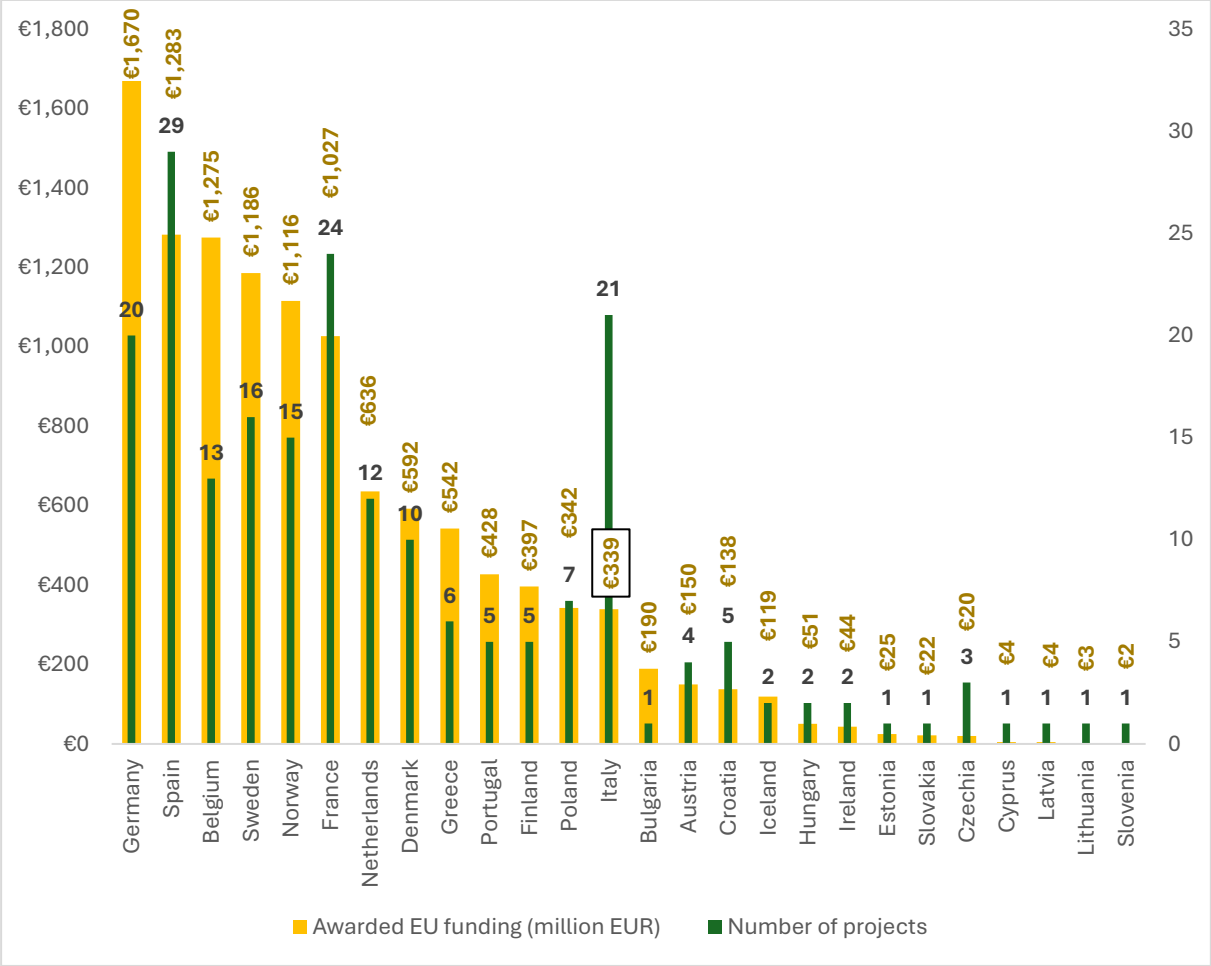
The Fund's portfolio is dominated by energy-intensive industries, which account for more than half of all projects, reflecting the scope of the EU ETS and the required decarbonisation efforts. Alongside these, a significant share of projects targets renewables and energy storage, while industrial carbon management and mobility represent smaller components of the portfolio.

Within energy-intensive industries, projects span a wide range of sectors, though hydrogen and chemicals stand out as the largest groups. Cement, refineries, and iron & steel also well represented, while other sectors (such as paper, glass, ceramics, aluminium and fertilisers) are represented to a lesser extent.

The primary contributions to the decarbonisation of the mobility sector are for the production of sustainable fuels and vehicle batteries. When these investments are considered from the 'energy intensive industries' sector, then 'mobility' accounts for more than one-third of the Fund portfolio ([40]).

([40]) European Climate, Infrastructure and Environment Executive Agency (CINEA), *Mobility Factsheet*, (2023).

Figure 7: Portfolio geographical distribution (number of projects and awarded funding)



National portfolios show distinct sectoral profiles. Energy-intensive industry projects dominate Spain and Italy, while Sweden and France have more balanced portfolios that include renewables. Central and eastern European projects are concentrated in industrial and manufacturing initiatives.

Projects are concentrated in larger industrial economies (*Figure 7*). Among the 208 awarded projects, Spain (29 projects), France (24), Italy (21) and Germany (20) account for the largest shares of supported projects, followed by Sweden (16), Belgium (13) and the Netherlands (12). Central and eastern European countries such as Poland (7) and Czechia (3) have lower but noticeable participation rates. In contrast, smaller countries, including Cyprus and the Baltic States, are represented by one or two projects each. Funding is also concentrated, but the differences are less pronounced than in the number of projects. Germany leads in total support (EUR 1.67 billion), followed by Spain and Belgium (EUR 1.28 billion each), Sweden (EUR 1.19 billion) and Norway (EUR 1.12 billion).

Beyond the project's implementation location, an analysis of the geography of beneficiaries (coordinators and participants) provides another perspective on the portfolio's distribution. The Fund's public dashboard identifies 480 participating entities across awarded projects, with the majority based in Spain (78), France (65), Germany (48), Italy (33), the Netherlands (32), and Norway (35).

Hence, although project sites are concentrated in a few countries, participation extends across a wider range of countries through multinational consortia. Several smaller countries (such as Iceland, Finland, Denmark, Ireland, and the Baltic States) appear more prominently, reflecting their involvement as partners rather than project hosts.

Large-scale projects dominate the portfolio in terms of financial value. They account for around EUR 9.7 billion, the overwhelming share of Fund resources. By contrast, medium-scale projects received EUR 1.2 billion and small-scale projects about EUR 0.25 billion. In terms of the number of projects, all sizes are represented. Although the number of projects is similar between small- and large-scale projects, the amount of funding differs, due to the size of the projects and the relevant costs funded.

Moreover, the weighting between large- and small-scale projects has shifted over time. Small-scale projects were prominent in the early calls. However, their relative share has declined as the Fund increasingly channelled resources to larger, more mature initiatives, particularly after the introduction of new topics in 2023 and a decline in interest in the small-scale topic. As medium-scale, manufacturing and pilot topics were introduced later in the Fund's lifetime, these are de facto less represented in the portfolio at the end of Q1 2025.

The distribution across sectoral categories shows distinct patterns. Energy-intensive industries dominate across all project sizes. Renewable energy projects are increasingly common in the small- and medium-scale segments, where technology innovation and demonstration are more prevalent. Projects in industrial carbon management, by contrast, are concentrated in the large-scale segment, reflecting their considerable costs, long development cycles, and infrastructure requirements.

3.2.2. Project implementation and disbursement

Most projects are still at an early stage. By Q1 2025, 153 projects were before financial close, 26 were between financial close and entry into operation, and 13 had entered into operation. Among these 13 projects, 7 were in their first year, 4 in their second, and 2 in their third year of operations.

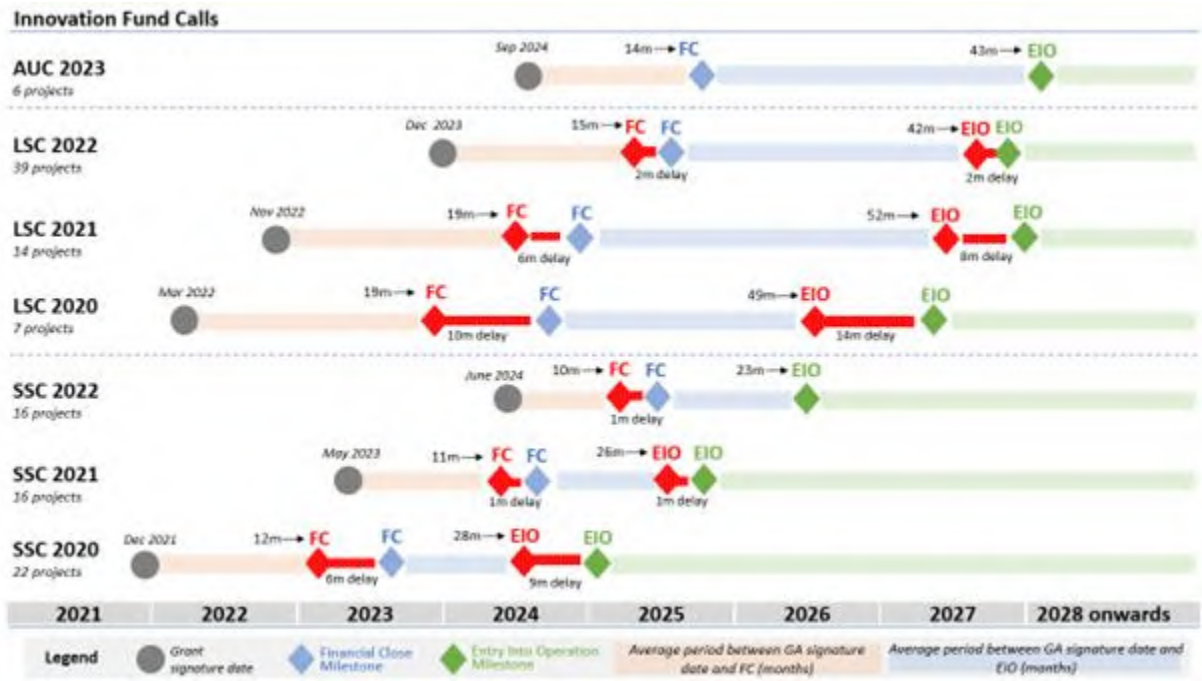
Overall, large-scale projects take longer than small-scale projects, having higher funding needs and averaging 2.1 years to reach financial close and more than 4.6 years to enter into operation. Medium-scale projects are the fastest to reach financial close (just over 1 year) and entry into operation in about 3 years. Small-scale projects are close behind, taking around 1.4 years to reach financial close and 2.8 years to operation (*Figure 8*: Average time to reach milestones).

Progression to financial close also differs across categories. Energy storage has advanced the most (more than 30 % of projects reaching that stage), followed by renewable energy (more than 25 %) and energy-intensive industries (close to 20 %). By contrast, none of the CCS or mobility projects had reached financial close at the time of reporting.

Progression to milestones also varies by technology. Projects in industrial carbon management have the longest planned average time to financial close (just over 2 years) and to entry into operation (over 5 years). Energy-intensive industries average around 1.7 years to financial close and 3.7 years to operation. Renewable energy projects are faster on both counts. Mobility and energy storage projects are similar to renewables in reaching financial close, but they take slightly longer to become operational. However, these averages are based on a small number of

projects that have reached financial close and may evolve as more projects advance through implementation.

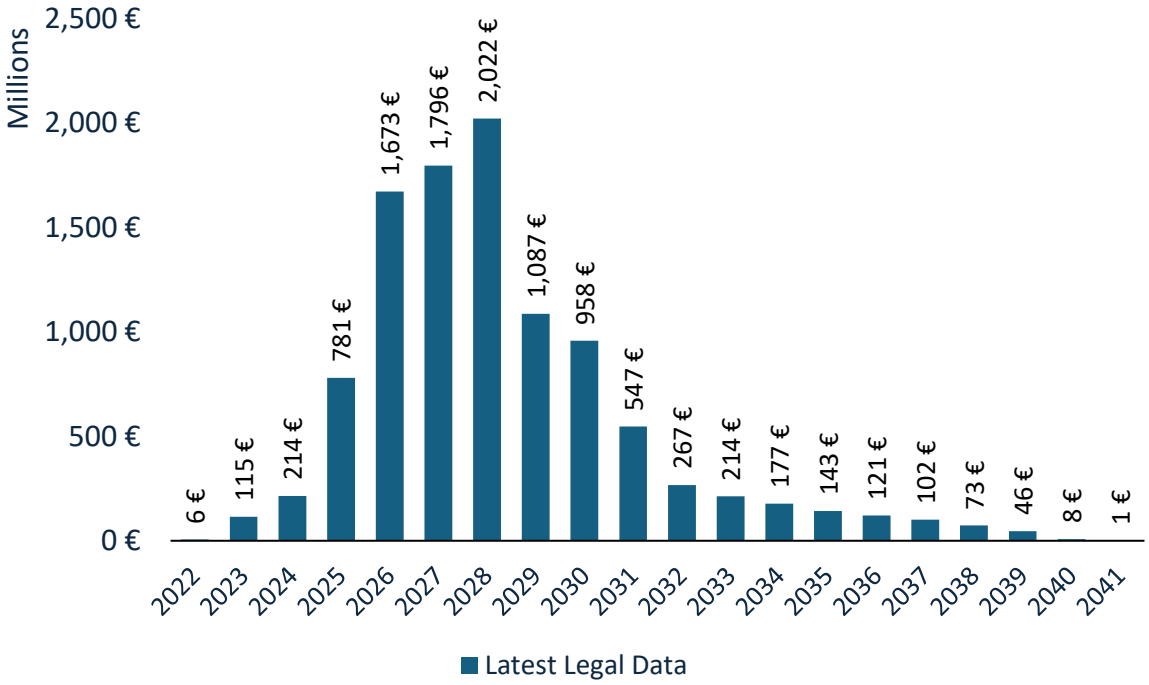
Figure 8: Average time to reach milestones



Because the Fund is in its early years, most projects are yet to reach financial close. However, based on the status of ongoing projects and their planned milestones, the number of projects reaching financial close is projected to increase gradually, peaking in 2028.

The status of funds disbursed to projects further underscores the Fund's early implementation. As of Q1 2025, EUR 321.3 million of cumulative payments had been disbursed. Based on the most recent grant agreements, disbursements are planned to increase in 2026, 2027 and 2028, as more projects reach financial close (*Figure 9*: Disbursement schedule, current and projected as of the end of Q1 2025).

Figure 9: Disbursement schedule, current and projected as of the end of Q1 2025



4. EVALUATION FINDINGS

4.1. To what extent was the Fund successful and why?

4.1.1. Effectiveness

The evaluation of effectiveness relied on a combination of quantitative and qualitative evidence. Quantitative data included project metrics such as the number and quality of funded projects (based on GHG reduction potential, Technology Readiness Level (TRL) progression, and sectoral distribution), funding mobilised (public and private), and operational timelines (e.g. time to reach milestones). Financial indicators, like oversubscription rates, risk diversification, and revenue allocation efficiency, provided insights into the Fund's operational performance and alignment with EU ETS objectives.

Qualitative evidence was derived from surveys, interviews, stakeholder consultations and annual knowledge sharing reports offering critical perspectives on challenges and successes. Beneficiaries, unsuccessful applicants, NCPs, and public authorities shared feedback on administrative barriers, co-financing gaps, and geographical disparities. At the same time, case studies and expert interviews (e.g. with DG CLIMA and evaluators) examined the Fund's strategic coherence and support mechanisms (e.g. PDA, auctions, blending operations). For a full overview of the evidence used to analyse the Fund's effectiveness, please see *Annex III*.

The Fund has been **effective in selecting and financing innovative decarbonisation projects**, both 'first-of-a-kind' and more mature 'scale-up' types, with high potential to reduce GHG emissions, establishing itself as a cornerstone of EU climate finance. The Fund's design, notably its award criteria for 'regular' grants (innovation, maturity, replicability, and cost efficiency), has consistently recognised the strongest proposals. Scoring analysis confirms that awarded proposals consistently outperformed non-selected ones across all criteria. During

interviews, evaluators also noted that the rigorous evaluation process identified proposals with strong potential for innovation and GHG emissions reduction.

The Fund not only selects but also incentivises high-quality proposals. This indirect positive effect was not originally foreseen in the evaluation's intervention logic. As became clear from the survey of unsuccessful applicants, after rejection, applicants often revised timelines, improved business and financial plans, or strengthened their teams before reapplying and successfully securing funding.

By Q1 2025, the Fund's portfolio comprised **208 signed projects expected to avoid 871 mtCO_2e** over their first decade of operation. Distributed evenly over ten years, the Fund's portfolio is expected to avoid 87 mtCO_2e annually. These emissions correspond to more than 7 % of 2024 EU ETS-verified emissions (1 033 mtCO_2e), with an additional 89 mtCO_2e from maritime and 62 mtCO_2e from aviation ([41]). This comparison highlights the scale of the Fund's potential impact, even without accounting for replication effects. Respondents to the beneficiaries' survey reported that their projects are expected to trigger innovations and open new markets, with wider sectoral diffusion extending the potential for emissions reduction beyond the projects themselves. Interviews with DG CLIMA and CINEA, as well as evaluators and representatives of national authorities, confirmed these views, suggesting that the Fund's impact extends beyond its supported portfolio.

Oversubscription to calls for 'regular' grants has been recurring, attesting to the Fund's success (*Table 2*: Oversubscription rate per call (budget requested by evaluated proposals over budget available). Applicants requested more than seven times the available budget between 2020 and 2023, confirming the Fund's relevance. The gradual reduction in oversubscription rates (from 21.3 in 2020 to 5.6 in 2023) suggests improved targeting and alignment between supply and demand. However, the sustained imbalance between requested and available budgets also shows that many high-quality, above-threshold proposals remain unfunded, particularly in energy storage, chemicals, and renewables.

Meanwhile, **auctions have received a strong market response**. The IF23 Auction attracted 132 bids from 17 countries, with its budget being 19 times oversubscribed and yielding bid prices well below the EUR 4.5/kg ceiling (EUR 0.20–0.60/kg). Auctions complement 'regular' calls by focusing on price competition for more mature decarbonisation technologies and, as an added benefit, enabling market price discovery. Auctions also offer simplified procedures, which are thus faster, as confirmed by beneficiaries who found them simpler and more transparent than multi-award criteria calls. However, it is difficult to draw conclusions about the broad effectiveness of auctions in general as they have so far only been applied to the hydrogen sector, which is very capital-intensive and has faced several challenges ([42]). As for other sectors, the expansion in the share of energy from renewable energy sources has been significantly facilitated by auctions organised by Member States ([43]).

([41]) EU ETS Data Viewer, European Environment Agency, accessed February 2026, https://www.eea.europa.eu/en/analysis/maps-and-charts/emissions-trading-viewer-1-dashboards.

([42]) European Court of Auditors, *Special Report 11/2024: The EU's Industrial Policy on Renewable Hydrogen*, June 2026, https://www.eca.europa.eu/en/publications?ref=sr-2024-11.

([43]) European Commission, *Recommendation and Guidance on Auction Design for Renewable Energy*, Directorate-General for Energy, June 2026, https://energy.ec.europa.eu/publications/recommendation-and-guidance-auction-design-renewable-energy_en.

The Fund has also been successful in mobilising substantial additional finance, particularly private investment, and national co-funding, while also generating synergies with other EU programmes:

- The Fund has leveraged around EUR 45.2 billion in total investments against EUR 11.08 billion in grants (a leverage ratio of about 1:4), with private financing accounting for most of the additional resources mobilised. The total capital expenditure (expected/planned) communicated by applicants in their applications serves as a proxy for the total volume of investments mobilised by Fund grants. Once projects reach financial close, more accurate data on the investments mobilised is available for reporting. The data on mobilised investments is based on capital expenditure recorded at financial close.

- National co-funding has played a sizeable, though uneven, role across countries.

- Synergies with other EU funding instruments exist, with a few projects reporting concurrent EU funding, partly due to the Financial Regulation's strict rules prohibiting double funding ([44]).

Nonetheless, evidence points to synergies with other EU programmes beyond additional financing. Among 38 projects previously funded by FP7, Horizon 2020 or Horizon Europe that applied to the Fund's calls for proposals, 13 projects were eventually successful. Although the sample is yet limited, findings are promising:

- The success rate ([45]) of projects previously funded under these programmes is 32.5 %, well above the overall portfolio success rate of 12 %. These 13 projects are spread across several sectors: iron & steel (3 projects), followed by chemicals, wind energy, manufacturing of components, and other (2 projects each), and hydrogen and other energy storage (1 project each).

- During evaluation, most unsuccessful applicants failed to reach the minimum threshold under financial maturity (14 projects), followed by technical maturity (5 projects). Financial maturity is also the most common reason for failure for applicants overall.

Stakeholders' feedback ([46]) also points to **complementarities with Horizon Europe**. In the survey, beneficiaries and unsuccessful applicants named Horizon Europe as the most common complement. Indeed, several Fund projects build on earlier Horizon Europe or Horizon 2020 results, illustrating strong sequential links along the innovation pipeline. Case study evidence also confirms that Horizon Europe typically supports research and demonstration at lower TRLs, while the Fund finances higher TRLs, large-scale and commercial deployment. Stakeholders also indicated that prior support from Horizon Europe can strengthen applicants' technical maturity and project design, thereby improving their success rate; however, this has not been systematically verified or supported by quantitative data. Although respondents to the

([44]) The 'no double-funding' principle means that combined EU funding cannot exceed 100 % of the eligible costs, which is ensured by limiting the combined funding rates from the two programmes to 100 %. Additionally, the same costs cannot be funded twice by the EU budget.

([45]) Success rate is defined as the number of funded projects divided by all proposals submitted during all calls for proposals until the IF23 Call.

([46]) Surveys with beneficiaries (Q74, Q75), unsuccessful applicants (Q5), NCPs (Q63) and Horizon Europe beneficiaries (Q13).

public consultation called for more synergies between EU funding programmes, NCPs reported limited capacity to advise on combining instruments.

Roll-out of technologies is progressing but remains at an early stage:

- The Fund primarily supports technologies at TRL 6, 7, or 8 (93 % of projects), with most projects targeting a final TRL of 9. The exceptions are hydrogen auction projects, which favour the further deployment of a proven commercial technology (already at TRL 9), and projects from the pilot topic, which usually start at TRL 6 and a minority at TRL 5 or 7.

- Rollout has already begun, with new solar manufacturing technologies, solar-hybrid installations, new wind turbine generators, low-carbon glass manufacturing, and biomethane production techniques now in operation. Nevertheless, most projects are still before financial close or in construction, so rollout is still to come.

The Fund's portfolio is **on track** to achieve its objectives within the 15-year implementation horizon ([47]), and this horizon appears realistic. Quantitative evidence shows an average project duration of around 8.8 years, while case studies confirm that typical durations range from 7 to 15 years. Recent calls show shorter timelines as project maturity improves.

Nonetheless, project implementation confirms that, even with rigorous selection, project **delays, deviations (amendments) and terminations** can occur. By the end of Q1 2025, 16 of 208 supported projects (8 %) were terminated prematurely. Their share of funding was reallocated to projects from the reserve lists (if still open) or to future calls.

Deviations from planned milestones are relatively common, particularly in early- and mid-stage development. About 40 % of projects report delays before financial close, and about 63 % of those that have already passed financial close experience delays before entry into operation. Deviations occur across most of the covered sectors, including CCS, hydrogen, energy-intensive industries, energy storage, and several manufacturing and renewable sectors.

Reasons for a project's withdrawal from grant agreement preparation vary ([48]). The primary cause is funding challenges driven by market pressure and changing market conditions. These include sector instability, difficulties in raising capital, substantial cost increases, and the inability to secure off-take agreements, all of which often lead to an unviable business case. Other reasons included a lack of necessary infrastructure, significant permitting delays, withdrawal of a key partner in the consortium, supply chain disruptions and energy or feedstock availability constraints ([49]).

Similarly, once the grant agreement is signed, delays in meeting milestones and early terminations cannot be linked to a single specific factor (such as insufficient project maturity). Rather, as with withdrawals, terminations are often due to several intertwined external and

([47]) Fund projects must reach financial close within 4 years of grant agreement and typically face a mandatory operation/monitoring period of 3 to 10 years after entry into operation. This results in a potential timeline from grant agreement to completion of up to 14-15 years (4 years to financial close and up to 10 years of monitoring).

([48]) Grant agreement preparations start 6 to 8 months after deadline for submission of applications. Economic and regulatory conditions may have changed for the project in this period.

([49]) Interviews with DG CLIMA and CINEA.

market-related challenges that fundamentally alter the original business cases ([50]). Key examples include the disruptive impacts of the COVID-19 pandemic, which strained global supply chains, and the economic fallout from Russia's war of aggression against Ukraine, leading to unanticipated inflation and cost escalations that exceeded planned contingencies. Additionally, volatility in emerging green markets, such as green hydrogen, e-fuels, batteries, and solar photovoltaic, has been exacerbated by regulatory instability, competitive imports from third countries, shifting trade policies, and weaker-than-expected demand growth. While most projects had mitigation measures in place for foreseeable risks at the time of evaluation, many delays stem from unpredictable market headwinds or corporate strategic changes that were not identifiable during the application or grant agreement preparation phases.

Furthermore, the 2025 annual knowledge sharing report identifies areas of challenges, common to all projects, as well as successful mitigation strategies, to a greater or lesser extent:

- **Securing off-take agreements:** Projects face challenges in nascent markets due to market uncertainty and the limited cost-competitiveness of innovative green products compared to conventional alternatives. Successful strategies include early establishment of off-take agreements, integration of key partners and suppliers into project consortia, diversification of off-take options, identification of backup off-takers, and continuous monitoring of international market trends.

- **Rising costs:** Projects face significant increases in material, equipment, and construction costs, alongside more stringent technical requirements. Mitigation measures include implementing financial contingency buffers, renegotiating agreements, and securing additional funding to maintain financial viability.

- **Supply chain constraints:** Projects experience equipment shortages and cost increases, impacting timelines and budgets. Mitigation strategies include diversifying suppliers, renegotiating delivery schedules, exploring local sourcing options, and implementing strategic stock management.

- **Permitting and regulatory challenges:** Projects are hindered by complex, lengthy permitting procedures that vary across countries and by regulatory uncertainty, leading to delays and increased costs. Mitigation efforts involve early stakeholder engagement, ongoing dialogue with local, regional, and national authorities, and proactive environmental impact assessments. In interviews, Fund beneficiaires suggest further improvements such as increased capacity of permitting authorities, creation of regulatory sandboxes for innovative solutions, and simplification of application processes.

- **Dependence on external infrastructure:** Projects rely on the timely completion of external infrastructure, such as grid connections, CO_2 transport and storage facilities, and hydrogen/CO_2 pipelines, which are beyond their direct control. Risk mitigation includes early coordination with infrastructure developers, progress monitoring, and collaboration with local authorities to design and develop necessary transportation infrastructure.

These challenges are often intertwined, and the reason for delays or terminations cannot be attributed to a single challenge. Desk research, public consultation, survey results and

([50]) Interviews with DG CLIMA and CINEA.

interviews of beneficiaries confirm that financial gaps are the most important factor behind delays. At the same time, administrative burden also contributes, but to a lesser degree.

The Fund's evaluation process is rigorous and methodically sound, ensuring only projects with demonstrated maturity are selected. While early calls in 2020 may have reflected overly optimistic assumptions due to market conditions at the time and the Fund's novelty, the methodology has since been refined to improve and strengthen the evaluation. Evaluations cannot anticipate unforeseen external challenges that could lead to project delays or terminations. The evidence thus suggests that the Fund's selection process is effective, as milestone delays are rarely linked to aspects of the project detectable at the evaluation stage. However, the Fund's continuous monitoring framework (combining milestone-based oversight with continuous exchanges) enables early detection of issues and supports timely corrective action. As a result, most deviations are managed through amendments rather than leading to termination.

Funded projects are expected to deliver substantial GHG emissions reductions, with a focus on hard-to-abate sectors. For the evaluation of the Fund's effectiveness, only the expected GHG emission reductions of the 192 ongoing projects are considered:

- The largest contributors are the cement & lime sector (138 mtCO2e), hydrogen and related manufacturing (169 $mtCO_2e$), the iron & steel sector (82 $mtCO_2e$) and chemicals (52 $mtCO_2e$).

- Energy-intensive industries and industrial carbon management together account for the largest share of expected GHG emissions avoidance. Projects in renewables, storage, and mobility contribute smaller but strategically important shares, diversifying the Fund's technology portfolio.

- The expected large abatement in energy-intensive industries and industrial carbon management illustrates the Fund's relative strength compared to national schemes, since not all Member States can finance high-risk, capital-intensive, industrial decarbonisation projects at a comparable scale.

- The concentration of support in these sectors illustrates the Fund's unique offer but also exposes it to delivery risks common to those sectors. Maintaining a diversified portfolio that balances large-scale industrial decarbonisation with mitigation technologies in other sectors (e.g. clean tech manufacturing) is essential. A diversified portfolio not only diminishes risks associated with technological advancements but also promotes cross-sector collaboration and innovation. Clean tech manufacturing is a particular case which offers substantial potential for emission reductions through the introduction of novel production methods and sustainable materials across sectors.

The Fund has managed its budget in line with the EU ETS Directive, ensuring (1) broad sectoral and geographical eligibility, (2) transparent and well-controlled financial governance, and (3) structured risk mitigation through milestone-based disbursements and continuous monitoring.

(1) Calls have progressively spanned sectors covered by Annex I and III of the EU ETS Directive, including CCS/CCU, renewables, hydrogen, and, more recently, maritime, aviation, batteries, and clean tech manufacturing. Despite broad eligibility, funded projects are still concentrated in energy-intensive industries, cement and hydrogen, and in larger industrial economies, while smaller countries are still underrepresented:

– Projects have been awarded for implementation in nearly all eligible countries, with Germany, Spain, Belgium, Sweden, and Norway accounting for most of the awarded funding.

– Analysis of beneficiaries shows several factors that contribute to success. Still, participation continues to correlate most strongly with national industrial capacity, the availability of co-funding, and support during the application process (e.g. from public administration or the broader innovation ecosystem).

– Instruments such as PDA and technical assistance have improved access, supporting the entry of participants from countries including Denmark, Hungary, Slovakia, and the Baltic States. Yet, they have not fully offset disparities.

– When benchmarked against countries' economic weight, emissions profiles and industrial value added, the portfolio appears more balanced, although disparities remain.

(2) Internal procedures, including detailed audit trails, disbursement validation, and anti-fraud mechanisms, reinforce transparency and compliance with the EU ETS Directive.

(3) Revenue allocation has been effective in committing available resources, with consistent use of the budgetary flexibility allowed by financing decisions. Financial risks are managed through flexible financing and structured safeguards. These safeguards have strengthened accountability and enabled reallocation of unused resources, but have also limited flexibility for projects with weaker liquidity, particularly SMEs:

– A milestone-based payment system supports timely disbursements (up to 40 % at financial close and subsequent instalments). Funding awarded corresponds to commitments (grant agreements in force), while actual disbursements depend on project progress and milestone achievement, reducing the risk of overcommitting resources.

– Case study evidence confirms that Fund grants were decisive in enabling financial close and investor confidence, demonstrating the conversion of committed resources into bankable projects. However, the need to secure co-financing, given the 60 % funding rate ([51]), and the lack of support for operational expenditure for small-scale projects in earlier calls, delayed some projects (8 % of projects cite this as a main reason for the delay) and the mobilisation of total investment, especially in capital-intensive sectors. For auctions, market evolution in the hydrogen sector made resource requested under the bid insufficient. Delays in reaching milestones further illustrate that, while revenues are effectively committed, their translation into active spending is not always immediate.

In parallel, broader structural obstacles, such as, fragmented national frameworks, simultaneous application of different legal frameworks (e.g. in the case of co-funding), inflationary pressures, high capital expenditure, long payback periods, and regulatory or permitting delays/bottlenecks,

([51]) The 60 % funding rate ceiling was decided following a sensitivity analysis for possible funding rates for the Fund done in the Impact Assessment of the EU ETS Directive. Rates between 50 % and 75 % were compared and the graphs showed that with an increasing funding rate, the size of the funds that must be provided by an investor is reduced.

further constrain uptake, especially for SMEs and breakthrough innovators. While tools such as PDA, AaaS, and STEP (Strategic Technologies for Europe Platform) seals ([52]) have strengthened credibility and opened new pathways, their impact remains modest to date.

The Fund has effectively operationalised the broader mandates of the EU ETS Directive, dedicating tracks for small- and medium-scale projects, preferential mechanisms for the maritime sector, measures to broaden geographical participation and substantial support for industries covered by CBAM ([53]):

- Procedural measures such as the creation of small- and medium-scale topics, PDA, and technical assistance have broadened access and improved maturity for smaller and less-represented applicants.
- Dedicated provisions for the maritime sector demonstrate that tailored call design can increase visibility and access.
- Geographical participation has expanded to almost all eligible countries, supported by PDA and technical assistance.
- Substantial funding has been channelled into CBAM sectors (hydrogen, cement & lime, and steel), positioning the Fund as a key instrument for de-risking decarbonisation in hard-to-abate industries.

However, outcomes remain uneven:

- SMEs continue to face financial and administrative burdens that limit their presence in the portfolio, indicating that dedicated measures have not yet yielded results.
- Maritime support is in its early stages, but results remain limited due to immature pipelines, infrastructure gaps, and regulatory uncertainty.
- Awards remain concentrated in larger EEA countries with stronger innovation and funding landscapes (i.e. number of leading industrial companies, national funding for potential applicants available) reflecting also more advantageous electricity costs and existing industrial basis, while smaller countries without those attributes continue to face structural disadvantages.
- Coverage across CBAM sectors is incomplete. Uneven sectoral coverage, maturity challenges, and cost pressures persist. Interviews with CINEA and member of the Innovation Fund Expert Group (IFEG) representatives confirm that CBAM-related sectors have consistently been supported, though only hydrogen benefited from a dedicated mechanism (e.g. auctions).

Technical assistance has strengthened the Fund's support structure by enhancing NCPs' capacity, expanding outreach, and fostering peer learning across countries. Training, communication tools, and networking have improved baseline knowledge and guidance on

([52]) Strategic Technologies for Europe Platform is an initiative which focuses on accelerating projects in the development and manufacturing phases across digital and deep tech, clean and resource efficient tech, biotech and defence tech, link: Strategic Technologies for Europe Platform (STEP) | European Union

([53]) Carbon border adjustment mechanism, link: Carbon Border Adjustment Mechanism - Taxation and Customs Union

application, and targeted support for countries with low participation rates has been launched to address structural disparities. Survey results and interviews of NCPs confirm broad participation and generally positive views. However, the effect on application quality remains limited and uneven. While application quality has improved, NCPs underlined that challenges with timelines, technical depth, and the generic nature of some support continue to constrain impact. The new targeted support for countries with low participation rates is promising but too recent to show results.

Project Development Assistance (from hereon PDA) has been effective in improving the maturity and bankability of proposals that were initially unsuccessful. Among the 37 PDA beneficiaries who reapplied, 16 eventually secured a Fund grant, or a 43 % success rate. Although one could compare this rate with the success rate of resubmissions that did not receive PDA, it would not be a fair comparison, as proposals selected for PDA are generally among the best proposals that did not make it to the final selection. The PDA's tailored financial and technical advisory services have proven effective in addressing critical maturity gaps and boosting investor confidence, as confirmed by survey results from unsuccessful applicants and interviews of the EIB. However, PDA's overall reach remains limited, with uptake concentrated in a few countries and sectors, delivery often too close to deadlines, and smaller promoters being less likely to benefit from it.

Blending operations under the Fund are limited and considered resource-intensive, making them complementary rather than central instruments of the Fund. However, they promise benefits of broader governance, shared due diligence, and a possible larger impact in mobilising external capital, notably through the EU–Catalyst partnership and the InvestEU battery top-up. Very few projects have received support under those instruments, so it is too early to judge their overall impact.

AaaS has enabled EEA countries to channel national funding to positively evaluated proposals for which there was no sufficient Fund budget, mobilising EUR 350 million in Germany under the IF23 Auction and EUR 836 million in Austria, Spain, and Lithuania during the IF24 Auction. The mechanism succeeded in reducing administrative burden and aligning national schemes with the Fund's evaluation, largely thanks to the close alignment of the EU-wide auctions to State aid rules. While the project awards did not materialise in Germany (due to transferred projects deciding to withdraw from the grant agreement preparation) and Lithuania (due to the lack of Lithuanian bids submitted in the auction), there is a tangible impact in Spain and Austria, with nine additional projects to be awarded.

The Fund has developed **a comprehensive and increasingly mature framework for communication and knowledge sharing**. Multi-channel communication, through Info Days, webinars, press releases, social media, and NCPs outreach, has ensured broad visibility, especially in larger EEA countries and sectors with strong pipelines. Knowledge sharing is consistently implemented through project-level plans, structured closed-door and public events, thematic workshops, and systematic feedback loops between CINEA and DG CLIMA, which together support peer learning, policy refinement, and replication of early lessons. Satisfaction levels are generally positive, with recent events benefiting from improved coordination, timelier announcements, and more consistent documentation. Nonetheless, effectiveness still varies across audiences and sectors: smaller countries and SMEs face capacity constraints; helpdesk responsiveness remains uneven for some users; and the relevance of knowledge-sharing events depends strongly on technological alignment. While these challenges persist, the Commission has progressively addressed them.

To summarise, the Fund has largely achieved its objectives, while becoming a cornerstone of EU climate finance. It has been effective in selecting and financing innovative decarbonisation projects with significant potential to reduce GHG emissions and advance the deployment of low-carbon technologies.

The Fund's operations indicate a substantial influence in mobilising additional finance, notably private investment, alongside national co-funding. Although synergies with other EU programmes, such as Horizon Europe, are modest, there is evidence of sequential links that support the innovation pipeline.

Despite ongoing challenges, including project delays, unequal geographic representation, and structural disparities faced by smaller countries and SMEs, the Fund's implementation remains on track to achieve its long-term objectives. The oversubscription of calls for proposals attests to its strong market relevance, though a sustained imbalance between requested and available budgets suggests room for expansion.

While the Fund has successfully managed its revenues, maintained broad sectoral and geographical eligibility, ensured transparent governance, and implemented structured risk mitigation, certain constraints affect project uptake. These include permitting, infrastructure, and market constraints typical of innovative technologies.

If the Fund has delivered significant progress towards helping to de-risk investments, accelerating financial closure, and reinforcing Europe's competitiveness in clean technology markets, efforts should continue to address funding gaps and disparities, ensure greater coverage, and improve the effectiveness of measures for smaller participants.

4.1.2. Efficiency

The evidence used to assess the Fund's efficiency is linked to its ability to launch predictable calls, adapt to market developments, and introduce new instruments. This mixed evidence base highlighted the Fund's balance between stability and adaptability:

- Performance data tracked resource use (e.g. administrative costs, staffing efficiency) and the uptake of new tools such as auctions, 'as-a-services' schemes, and blending operations.

- Stakeholder inputs from beneficiaries, NCPs, and managing bodies highlighted the Fund's operational flexibility through adjustments to award criteria, streamlined processes, and the launch of new instruments in response to evolving priorities (e.g. hydrogen, maritime decarbonisation).

- Comparative benchmarks against other EU programmes (e.g. Horizon Europe and LIFE) further assessed whether the Fund optimised its processes while maintaining predictability.

- Interviews and surveys also identified barriers to agility, such as administrative burdens and delays in grant preparation, as well as best practices (e.g. simplified application templates) to improve future efficiency.

To assess the Fund's efficiency in reducing GHG emissions, the expected GHG emission avoidance was used. Indeed, as most projects are still in early phases, actual GHG emissions

reductions are minimal, although the budget has been committed. Calculating the cost-efficiency of actual reductions would not have been representative of the Fund's portfolio.

Regarding investment mobilised, the total volume was calculated based on the total expected/planned capital expenditure communicated by project promoters during the application phase. Once a project reaches financial close, more accurate data on actual investments mobilised is available, as part of reporting requirements. Until then, the high overall cost-efficiency remains potential. For a full description of the evidence used to analyse the Fund's efficiency, please see *Annex III*.

The Fund demonstrates **high overall potential cost-efficiency** in reducing GHG emissions and mobilising investment. Across the programme funding period 2020–2024, the Fund demonstrated a potential to achieve an average cost-efficiency of EUR 13.36 per expected tCO2e avoided (calculated as the total Fund budget spent, direct management, and indirect management divided by the potential GHG emissions avoidance to be achieved by the awarded projects), among the lowest observed across comparable national interventions. While leverage ratios are lower than those of funding instruments such as the COSME Equity Facility for Growth (21.00) or InnovFin Equity (14.23), this reflects the Fund's design, which focuses on non-repayable grants that are needed for high-risk, first-of-a-kind projects where demonstration and innovation take precedence over financial returns..

The Fund also induced EUR 4.85 in direct investment (i.e. capital expenditure) per euro of budget spent (EUR 56.3 billion total) and an additional EUR 4.7 in indirect investment (EUR 54.6 billion). Applicants risk penalties if they overestimate their potential to reduce GHG emissions. During evaluation, unrealistic or poorly substantiated claims may lead to lower scores, while final grant amounts are tied to verified emission reductions, meaning overestimates could result in reduced funding. These mechanisms act as strong disincentives against inflated projections. However, given the limited data available to date, it is too early to assess whether applicants' calculations for GHG emissions avoidance proved accurate.

Most beneficiaries consider the **funding rate** adequate to ensure projects' financial viability (77 out of 124 respondents, or 61 %), but its adequacy is highly context-dependent, reflecting differences across project categories, technologies, and maturity levels ([54]):

- Among those who found the rate insufficient, the main reasons cited were that it does not sufficiently cover high upfront costs (37 respondents) and that securing the remaining 40 % from other sources is challenging (26 respondents).

- This is particularly the case for capital-intensive or operational-intensive projects in hard-to-abate sectors. For more mature technologies, such as renewables and energy storage, the rate was generally viewed as sufficient to enable realisation.

Interviews and case studies report that inflation, disbursement procedures, and limited access to complementary national or regional funding are frequently cited as barriers to reaching financial close.

The Fund runs with relatively **low execution costs** compared to other EU programmes, but evidence suggests this efficiency is partly linked to understaffing. Between 2020 and 2024,

([54]) Surveys with beneficiaries (Q9, Q10), unsuccessful applicants (Q16), and Horizon Europe beneficiaries (Q20); interviews of beneficiaries with CINEA and Hydrogen Europe; case studies.

direct management costs accounted for only 0.9 % of the Fund's total budget – well below the 3-4 % observed for LIFE and Horizon Europe programmes. Although total expenditures and staffing levels have grown in line with the Fund's expansion, interviews with CINEA highlight persistent capacity shortages and heavy workloads. At the same time, low remuneration rates undermine CINEA's ability to attract and retain external evaluators, increasing transaction costs due to repeated recruitment, training, and supervision. Inefficient information technology (IT) systems and outdated administrative tools further strain operational efficiency.

Administrative costs for beneficiaries are high in absolute terms but low relative to the grant size:

- Beneficiaries spend an average of EUR 95 000 per small-scale project and EUR 240 000 per large-scale project on application and reporting, reflecting the different nature of the projects in terms of size and maturity, as well as the larger average size of support available under the Fund.

- Administrative costs related to the application stage averaged EUR 36 000 for small-scale projects and EUR 131 000 for large-scale projects.

- Administrative costs related to monitoring and reporting obligations were on average EUR 59 000 for small-scale projects and EUR 108 000 for large-scale projects.

While the costs are considerable in total (*Table 3*: Administrative costs for beneficiaries during application), they constitute a small part compared to the grants received. When only the administrative costs of the application are considered, these represent 0.2 % of the grant value for large-scale projects, 0.4 % for medium-scale projects, and 1 % for small-scale projects, compared with 3-5 % in Horizon Europe ([55]).

Table 3: Administrative costs for beneficiaries during application

Instrument and evaluation period	Administrative costs related to application vs grant received	Average administrative costs for application
Innovation Fund overall (2020-2024)	**0.5 % ([56])**	**EUR 85 000 ([57])**
Small-scale projects	1.00 %	EUR 36 000
Medium-scale projects	0.40 %	EUR 69 000
Large-scale projects	0.20 %	EUR 131 000
Horizon Europe (2021-2024) ([58])	**3 – 5 %**	**EUR 21 000 – 32 000**

([55]) The average grant size for Horizon Europe projects was EUR 2.9 million while for the Fund, the average grant size was EUR 7.3 million for small-scale projects, EUR 27.4 million for medium-scale projects, and EUR 110.1 million for large-scale projects. (source: *Interim Evaluation of the Horizon Europe Framework Programme for Research and Innovation (2021 – 2024)*).

([56]) Weighted average of small-, medium- and large-scale projects.

([57]) Weighted average of small-, medium- and large-scale projects.

([58]) European Commission, Staff Working Document SWD(2025) 110 final – *Interim Evaluation of the Horizon Europe Framework Programme for Research and Innovation* (2021 - 2024).

Although small-scale projects see lower average administrative costs in absolute terms, the reporting and documentation requirements and add to the perceived burden, particularly for SMEs that rely on external consultants to meet compliance obligations. In addition, compared to the grant amount received, small-scale projects spend a larger percentage of their funds on application costs. However, compared with other programmes such as Horizon Europe, this percentage remains low.

Calculating the grant received per euro of total administrative costs further highlights the additional burden on small-scale projects compared to large-scale projects (*Table 3*: Administrative costs for beneficiaries during application). Large-scale projects receive substantially greater grant amounts relative to administrative expenditures, whereas medium-scale projects achieve moderate efficiency, and small-scale projects realise the lowest returns. This discrepancy stems from the fact that administrative requirements, including application, reporting, and monitoring obligations, apply uniformly to all projects, with only minor simplifications for the small-scale projects. However, grant amounts are proportionate to a project's relevant costs, which vary considerably between small- and large-scale projects. Consequently, small-scale projects bear a disproportionately higher administrative burden relative to the funding they receive.

Table 4: Grant received per administrative costs

Instrument and evaluation period	Grant received per EUR of total administrative costs ([59])
Innovation Fund overall (2020-2024)	**EUR 329 ([60])**
Small-scale projects	EUR 56
Medium-scale projects	EUR 171
Large-scale projects	EUR 463

Based on data reported by projects at the end of Q1 2025, the Fund has the potential to generate high societal benefits, with total net quantifiable benefits estimated at EUR 279 billion over the programme funding period 2020-2030 ([61]), with a benefit-cost ratio of 14.3 when measured against the EU contribution ([62]) and 2.5 when all costs, including national and private co-financing, are considered ([63]). This means that for every euro of EU budget spent, EUR 14.30 in benefits is generated (showing that the quantifiable benefits of funded projects exceed the

([59]) Application, monitoring & reporting costs.

([60]) Weighted average of small-, medium- and large-scale projects.

([61]) EUR 66 billion for the evaluation period 2020-2024 and EUR 213 billion for 2025-2030.

([62]) The benefit-cost ratio for EU contribution is calculated by dividing the total quantifiable benefits (monetised GHG emissions avoided) by the costs incurred by EU institutions, including Fund grants, public financing by other EU funds and programmes, and other costs incurred by the Fund and related to direct management, indirect management, and blending operations.

([63]) The benefit-cost ratio for overall costs is calculated by dividing the total quantifiable benefits by the total costs of the fund, including all costs incurred by EU institutions, as well as additional public and private financing costs.

EU's contribution by more than 14 times) and that for every euro of total costs, EUR 2.50 in benefits is produced.

These results, based on an estimated budget of EUR 40 billion between 2020 and 2030 and on expected emissions avoidance, show that the Fund delivers strong value for money compared to other EU interventions:

- Even when all costs are included, the ratio remains robust at 2.5. This is lower than that of programmes such as LIFE (4.7-7.1) and Horizon Europe (5.0-6.0), which can be explained by the type of projects the Fund supports. Although Fund projects require substantial co-financing with a 60 % funding rate ceiling, in reality, the Fund often covers only around 25 % of total capital expenditure. Additionally, compared to LIFE and Horizon Europe, the projects are close to the market and must achieve GHG emissions avoidance.

- Sensitivity analyses confirm that the ratio remains positive under less favourable assumptions, such as lower CO_2 prices or reduced budgets, suggesting that the Fund's long-term cost-efficiency is resilient to such external changes.

In addition to quantifiable benefits, indirect qualitative benefits have been identified, including health and social benefits, although they could not be monetised (see *Annex IV*).

However, **efficiency varies** across project sizes, categories, sectors and regions:

- Small-scale projects show greater cost-efficiency in emission avoidance, while large-scale projects are more efficient at leveraging additional financing. Small-scale projects perform best compared to both EU and total funding, with the highest benefit–cost ratios, while large-scale projects – although delivering most of the total quantified benefits – show lower efficiency due to their capital intensity. Moreover, projects located in eastern and northern Europe, regardless of size, show greater cost-efficiency in emission avoidace than the EU-average.

- Energy storage and renewable energy projects perform best on emissions avoidance, while energy storage, energy-intensive industries, iron & steel, and solar energy achieve above-average investment mobilisation. Sectoral patterns show that industrial carbon management projects generate the largest absolute GHG emissions savings, while energy storage and renewable energy projects perform best relative to EU funding.

- Regional differences are also pronounced, with northern and eastern Europe achieving above-average benefit-cost ratios, reflecting competitive cost structures and supportive national conditions.

Disbursements are well monitored and procedurally sound, but often slower than desired for project implementation. The design choice to release funds only after achieving milestones ensures control and accountability. Still, it leads to long lead times and liquidity strain, particularly for capital-intensive, first-of-a-kind projects. Once milestones are reached, payments are processed efficiently, supported by clear monitoring tools and structured oversight from CINEA. Delays mostly stem from project-side challenges, such as permitting, financing, and market conditions, rather than administrative inefficiency. Compared with other EU mechanisms, the Fund's milestone- and lump-sum-based model is viewed by beneficiaries

as more transparent and disciplined, though less flexible and more burdensome than national programmes.

Recent measures have **improved disbursement efficiency, though administrative effort remains high**. CINEA has improved guidance and support through webinars and helpdesk services, while clarifying milestone requirements and tightening rules on postponements. Newer approaches, such as the auction's simplified payment structure, show potential to accelerate disbursements and increase flexibility. Communication between CINEA and beneficiaries is generally effective and valued. However, variations in guidance, occasional changes in project officers, and the rigidity of IT systems continue to cause delays and lead to a certain degree of confusion. Administrative costs remain low in budgetary terms but high in staff effort for both CINEA and beneficiaries.

Additional measures have been taken during the evaluation period to ensure **efficient disbursement** and limit the risk of holding assets that will be needed later for payments. Before 2023, the Fund's allowances were spread evenly over the years, and commitments were based on available resources. To allow funds to be committed earlier and avoid holding assets for longer, the 2023 amendment to the EU ETS Directive introduced the possibility of using annual instalments and frontloading the Fund's resources for calls. This means that projects' payment schedules are accounted for when defining the upcoming call's budget. The commitments no longer need to be based solely on available resources, but instead follow a projection linked to expected future payments and inflows. This measure allows for frontloading Fund resources at an early point in time without selling allowances earlier.

In practice, multi-annual actions can be financed through annual budgetary instalments linked to grant disbursements (project payments). This reduces the need for frontloading Fund allowances (selling allowances in advance to cover higher call budgets) and therefore has limited/no impact on the EU carbon market price while allowing for an increase in yearly commitment levels. Although resources are effectively channelled between parallel calls through this frontloading, there is still room for improvement, notably in the management of reserve lists to increase the speed of budget reallocation and in maximising the opportunity costs of unused funds.

The **application and selection processes** are transparent but remain demanding. Support tools are valued, yet their quality is uneven, and complex methodologies lead many applicants to rely on consultants. As seen in *Figure 8*: Average time to reach milestones, processing times have increased, reducing efficiency despite transparent and fair award criteria and a well-organised evaluation and selection process. This is due to the increased number of proposals received per call (*Figure 5*: Evolution of number of proposals received through the evaluation stages per call) and topics introduced (see 3.3 Project implementation).

The **preparation of grant agreements** provides a solid basis for project implementation, as for example relevant documents are requested and project milestones clearly defined, but is resource-intensive. The process ensures that risks are addressed. Yet beneficiaries experience duplication of effort and heavy workloads. CINEA's support is valued, and projects typically start quickly after grant agreements are signed.

Communication and coordination during implementation are **efficient and appreciated**. CINEA is praised for its responsiveness and proactive contact, as reflected in the 'partnership approach'. Both internal coordination within CINEA and coordination between DG CLIMA and CINEA are well-structured. Still, some beneficiaries call for clearer guidance and more targeted knowledge sharing.

Monitoring of the Fund safeguards accountability but creates a heavy administrative burden. Reporting obligations are seen as disproportionate and sometimes impractical, especially through the SyGMa portal. Beneficiaries rely on CINEA to navigate requirements, though staff turnover sometimes reduces continuity. While administrative burden remains significant, there are **clear opportunities for simplification**:

- Evidence across surveys, interviews, and case studies consistently shows that the main burdens stem from complex GHG and financial methodologies, extensive reporting, and the high resource intensity of the application preparation. These challenges affect all applicants but disproportionately impact SMEs with limited internal capacity.

- Simplification measures introduced so far (such as streamlined cost calculation methods and structured templates) have had positive effects but have not fully addressed the underlying issues. The persistence of heavy reporting and methodological complexity suggests that simplification efforts should focus on the most resource-intensive processes rather than on procedural fine-tuning.

There is **potential for further simplification** both during the application and implementation stages:

- Evidence indicates that measures such as clearer templates, staged applications, and, where possible, simplified reporting requirements could help reduce administrative effort while maintaining control and transparency.

- Improving guidance, ensuring continuity of contact points, and enhancing technical workshops would help reduce reliance on external consultants.

- The AaaS experience demonstrates that centralisation, standardisation, and parallelisation of administrative procedures can reduce processing time, costs, and duplication, though some of the burden is shifted rather than reduced.

PDA demonstrates measurable success relative to its advisory purpose and resource scale, though outcomes vary across projects. The total expenditure of EUR 23.6 million (about EUR 380 500 per project) is modest compared to Fund grants (about EUR 58 million per project on average). It reflects a focused use of funds for targeted technical and financial support:

- About 26 % of supported proposals ultimately received Fund grants. When looking only at the 60 % of supported proposals which re-applied to a call for proposals, the success rate reach 43 %, with additional successes through national or private financing, indicating strong leverage and catalytic impact.

- Due to a lack of relevant benchmarks available for comparison, PDA's overall cost-efficiency cannot be determined. Limitations in monitoring and data gaps on long-term outcomes also add uncertainty. However, alignment with call timelines, project maturity, and promoter capacity influenced the extent to which PDA could be applied effectively.

Consistent practices and procedural learnings have improved the delivery of PDA, but timing and promoter engagement remain critical determinants for results:

- The use of maturity scorecards, targeted scoping, framework-based consultant mobilisation, and continuous oversight by the EIB have strengthened process discipline and reduced transaction costs.

- Efficiency is highest when assignments begin early, have clearly defined scopes that are adequately targeted to a specific proposal's needs, and benefit from active promoter participation.

- Conversely, late starts, limited internal capacity, or a less developed pipeline of eligible proposals in certain regions have reduced the return on PDA inputs.

Since **blending operations** have only started recently and the total number of financed projects is still low, limited conclusions can be drawn on their cost-efficiency. Financial resources dedicated to blending operations totalled about EUR 420 million over the period 2020–2024. The EIB plays a key role in due diligence for projects eligible under such operations, but the number of human resources allocated to such operations is unspecified. Clear eligibility criteria, synchronised review procedures, and close coordination between the Commission, the EIB, and Breakthrough Energy ensure accountability, but implementation is slow.

Although the Fund has already adopted best practices, the broader application of **efficiency measures from other EU programmes** could further strengthen its management processes:

- Lessons from Horizon Europe and LIFE show that simplifying application procedures, reducing the number of negotiation stages, and adopting more flexible electronic workflows can lower administrative burdens and speed up time-to-grant.

- The European Innovation Council's programme uses interviews of applicants, which may reduce the burden on applicants and the need for external consultants when producing detailed written responses. It also provides evaluators with an opportunity to seek clarifications from applicants. Like the Connecting Europe Facility, it offers multiple cut-off dates that can be relevant for smaller projects that have less possibility to wait for an opportunity to apply for funding.

However, the Fund's focus on investments in market-ready innovations with high commercial viability and the high grant amounts mean that lessons learned from other programmes such as Horizon Europe and European Innovation Council cannot be directly transferred to the Fund. Even so, practices in other programmes, such as early financial maturity checks, pre-financing mechanisms, and simplified reporting requirements, have improved cost-efficiency in those programmes, and their application in some form may be considered for the Fund.

The analysis shows that changes in expectations about the time to reach financial close or in project operational aspects were cited as **key reasons for amending or terminating a grant agreement**:

- Financial close prospects changed mainly because of permitting and regulatory barriers, but adverse market and cost developments and partnership issues were also cited.

- Projects were terminated when these types of challenges became insurmountable.

– In most cases of termination, projects could not secure financial close or lost economic viability, and redesigns were not possible if they would result in a fundamental change to the project.

– A change in the level of innovation, expected GHG emission avoidance, or replicability were rarely cited as reasons to amend or terminate a grant agreement. This implies that the Fund's selection process based on these criteria is robust, as the likelihood that implementation realities differ from the initial assessment for one of these reasons is small.

4.1.3. Coherence

4.1.3.1. Internal coherence

The Fund's **internal coherence** is characterised by strong alignment between activities and objectives, often confirmed in practice by the progress of projects towards high TRLs and early commercial readiness. Supporting mechanisms such as blending operations and 'as-a-service' schemes also show moderate alignment but high potential for synergies, complementing conventional pathways.

However, there may be target conflicts between the Fund's objectives, such as combining revenue management efficiency with geographical balance or broad technological coverage:

– A primary built-in tension is the conflict between supporting innovative solutions and pushing for their large-scale deployment. The need for 'bankability' to attract private capital, combined with a focus on first-of-a-kind products, creates tension when infrastructure and functioning markets are lacking.

– Furthermore, a limited funding pool spread across different technologies and regions creates a target conflict, potentially leading to insufficient support for specific technologies and processes.

This indicates that activities' high potential for synergies is often neutralised by market realities, design choices that implicitly favour certain technologies, and a lack of stakeholder participation in sectors that the Fund appears to underfund:

– The most significant obstacle, as identified in surveys ([64]) and during the 'reality check', is linked to the application and reporting processes. Although beneficiaries often report satisfaction with the support they receive, the complexity of the application process and updates to award criteria between calls create additional financial strain and risk, discouraging smaller promoters.

– Another operational barrier is the conflict between the Fund's risk-taking ambition and the limited flexibility of its financial rules. The focus on capital expenditure, coupled with disbursement rules, can create liquidity bottlenecks in the early stages of projects (which can be addressed through project amendments), often forcing promoters to self-finance crucial preparatory work. Adapting to changing market and technological conditions, particularly in the face of market shocks, can create friction between the objective of successful

([64]) The beneficiaries' survey (Q29, Q44), the unsuccessful applicants' survey (Q21) and the survey with Horizon Europe beneficiaries (Q1) indicate dissatisfaction with the burdens of the application process. In Q30, Q45 and Q48 of the beneficiaries' survey, some respondents raised similar issues for monitoring and reporting.

decarbonisation and the aim of operational effectiveness, thereby limiting the ability of even highly aligned projects to reach completion.

4.1.3.2. External coherence

The evaluation of the Fund's **external coherence** reveals a complex landscape. The Fund is highly aligned with EU policies and regulations, yet there are significant barriers to regulatory and funding coordination.

The Fund's legal framework (the Financial Regulation) encourages synergies with other EU and national programmes. The 'no double-funding' principle of the Financial Regulation in most of the cases means that combined EU funding cannot exceed the eligible costs, which is ensured by limiting the combined funding rates from two or more EU programmes to 100 %.. For State aid, the rules on combined support are established in relevant State aid frameworks (e.g. GBER, CEEAG, CISAF). In practice, however, cumulation is difficult to manage due to the complex calculations required to avoid double funding and to respect State aid rules, as well as the different rules of different funding instruments.

The introduction of **'as-a-service'** schemes further strengthens the potential for synergies with national funding. Coherence with national funding schemes is best achieved by allowing national authorities to use funds from other public schemes through 'as-a-service' schemes. Both AaaS and GaaS are also useful when a country lacks schemes to support decarbonisation projects. Rather than developing a new scheme 'from scratch', national authorities can rely on the Fund's selection mechanism and benefit from the EU-level competition to identify the best national projects. For climate, environmental protection and energy 2022 ('CEEAG') EU-level auctions of 'as-a-service' schemes.

By 2025, AaaS allowed EUR 2.9 billion from national resources to be added to the Fund's budget:

– Spain was able to make use of resources from the Recovery and Resilience Facility (RRF). Using the AaaS scheme, Spain achieved a strong complementarity with its H2 Valleys funding scheme.

– In 2025, Germany used AaaS to support the development of projects producing hydrogen beyond its borders (in Denmark) using the same principle, while supporting the development of infrastructure and off-takers with other funding schemes nationally.

Besides the effect of more projects being financed in countries using AaaS, there is also an indication that the number of bids received in these countries increased. Indeed, in general, more bids are submitted to the Fund auction from a particular country when the country participates in AaaS. For instance, during the IF24 Auction which had the AaaS for Austria, Austria received three times as many bids as during the IF25 Auction (when Austria did not use AaaS). Grants-as-a-Service has not yet been used by EEA countries

When it comes to complementarities with other EU programmes, the Fund encourages synergies ([65]):

– Horizon Europe is one of the instruments most complementary to the Fund (Section 4.1.1). As of the end of Q1 2025, 13 Fund projects were previously funded by FP7, Horizon 2020 or Horizon Europe (out of 38 known previously funded projects that applied for Fund support). Even though only a small number of projects applied, their success rate was 32.5%, compared with 12% on average for the overall portfolio. Stakeholders also confirmed Horizon Europe as the most common complement to the Fund ([66]).

– Because it contributes to STEP priorities by strengthening the competitiveness and resilience of the European economy, the Fund is authorised to award STEP Seals to help projects obtain additional or alternative funding from other sources, including EU funding programmes implemented at national and regional level (e.g. cohesion policy funds).

– In practice, proposals scoring above all evaluation thresholds during calls for 'regular' grants are automatically awarded a STEP seal. To date, the Fund has awarded the quality label to 316 projects, more than any other funding programme in the scope of STEP. The Commission is working with Member States to promote these projects and unlock additional or alternative funding at both the EU and national levels.

– Complementarities with the Modernisation Fund exist and could be further amplified if beneficiary countries used it to support innovative projects on their territory through 'as-a-service' schemes (so far, only Lithuania has done so).

– The Fund also complements the Connecting Europe Facility (CEF). Many supported projects, especially in CCS and hydrogen, need to connect to new infrastructure. CEF is supporting CO_2 and hydrogen pipelines necessary for the development of full value chains for these new technological pathways. Closer coordination among project promoters could create greater synergies with CEF, as the instrument addresses residual needs and intervenes where market or other funding mechanisms are insufficient.

– Finally, Fund projects have been able to combine funding from the Just Transition Fund and the Recovery and Resilience Facility, albeit to a lesser extent due to the different scopes of these programmes.

Funded projects and the Fund's objectives are also highly aligned with broader EU policies:

– The strong participation of hydrogen-related projects aligns with the European Hydrogen Strategy and the Net-Zero Industry Act. Projects in sectors such as chemicals, cement & lime, and refineries are also consistent with the New Industrial Strategy for Europe, the Circular Economy Action Plan, and the Industrial Carbon Management Strategy. Furthermore, the numerous projects in renewables and energy storage align with the Solar

([65]) European Commission, *Innovation Fund 2024 – Call Fiche (Net-Zero Technologies)*, Publications Office of the European Union, 2024, https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2024/call-fiche_innovfund-2024-nzt_en.pdf.

([66]) Surveys with beneficiaries (Q74, Q75), unsuccessful applicants (Q5), NCPs (Q63) and Horizon Europe beneficiaries (Q13).

and Offshore Energy Strategies, and the objectives of the Green Industrial Deal Plan and of the Strategic Technologies for Europe Platform (STEP).

– This high potential for synergies is enhanced by the Fund's ability to respond quickly to changes in technological demand, as it is funded by EU ETS revenues rather than conditional on the EU's seven-year budget cycle. However, a focus on a few sectors in calls for proposals could risk underfunding other needed emerging technologies and prevent potential synergies from materialising.

The Fund's objectives are also highly coherent and relevant to EU climate and industrial legislation and regulations. By issuing annual calls for proposals, the Fund can quickly adapt to policy priorities. For instance, after the Net Zero Industry Act was adopted in 2024, calls for proposals were revised to align with it. Many projects address multiple sector-specific pieces of legislation, such as the EU ETS, the EU Batteries Regulation, and FuelEU Maritime. However, the strong alignment in objectives does not necessarily translate into alignment in specific requirements, application and reporting processes. This mis-alignment is viewed by both project promoters and stakeholders as a significant barrier to accessing finance.

The alignment across countries is uneven and sometimes constrained. Stakeholder consultations highlight that regional cost structures, due to for example regional variation in permitting rules and administration as well as energy price within a country, can disadvantage some countries in auctions, and survey evidence shows outreach often favours large companies. Some interviews further highlighted differences in administrative and eligibility frameworks, limited consultation in designing calls, and weak coordination with national schemes, all of which reduce the potential for systematic EU–national complementarity. Continuous work with NCPs and technical assistance to countries with low effective participation in the Fund are measures taken to make the geographical balance more even.

At the same time, a fundamental tension exists because the Fund aims to support innovative solutions before the regulatory environment is fully ready for them. This can lead to less ambitious funding rounds in the future or to direct obstacles to legislation and funding, which could contribute to relocating technology development and deployment outside Europe. Frictions between EU and national regulations, or between EU regulation and their national implementation, can also negatively affect the success of projects, which depend on the speed and consistency of legislative adoption.

For instance, a renewable methanol project reported financial-closure delay of over a year due to off-takers' hesitation to commit before the final transposition of RED III in Spain. There is also a risk of funding projects that are already 'bankable' through conventional financing, thereby diverting limited funds from innovative projects that are struggling to secure private capital. Finally, projects partially supported by the Fund could fail to reach financial close, resulting in stranded investments, inefficient budget use, and blocked support capacity.

4.2. How did the Fund make a difference and to whom?

The Fund provides EU added value by enabling large-scale, high-risk, capital-intensive climate innovation projects that often **exceed the financial and regulatory capacity of individual countries**:

– While national initiatives provide substantial and broad-based support for innovation, the Fund's targeted approach and substantial budget allow it to bridge funding gaps, de-risk emerging technologies, and catalyse systemic change, particularly in hard-to-abate sectors.

– Beneficiaries' feedback and case studies highlight the Fund's pivotal role in project realisation, with many initiatives unlikely to have proceeded without EU-level support. Its strategic positioning, EU-level competitive selection, and transnational relevance foster ambition, quality, and knowledge spillovers, advancing collective progress toward climate goals.

However, the Fund's added value is not always indispensable, as some beneficiaries report access to alternative financing. Its impact may be diluted when supporting projects better suited to other EU or national instruments. Additionally, the Fund's relevance may be less pronounced in already mature technologies and competitive sectors, suggesting that other support mechanisms (performance standards, public procurement, or tax incentives) may be more appropriate in such cases.

The Fund delivers meaningful added value to Europe's climate innovation landscape, particularly by **supporting high-risk, large-scale projects that individual countries would struggle to fund or coordinate**:

– While the Fund's cumulative impact over ten years is notable (871 $mtCO_2e$), it corresponds to a reduction of around 87 $mtCO_2e$ per year, a fraction of EU-wide reductions achieved by national efforts (120 $mtCO_2e$ per year on average between 2017 and 2023) ([67]).

– Its true strength lies in its ability to complement national efforts by targeting breakthrough technologies and systemic change, especially in hard-to-abate sectors.

– The Fund's EU-level structure, characterised by competitive grant allocation, substantial pre-financing, and transnational reach, enables the pooling of resources, fosters knowledge sharing, and accelerates the deployment and replication of innovative solutions across borders. This approach not only enhances cost efficiency but also ensures strategic coherence with broader EU climate objectives, which would be difficult to maintain through fragmented national programmes.

Additionally, the Fund pioneered several new policy features, adding to its EU added value:

– The last two calls for proposal (IF24 and IF25 Calls) included award criteria on projects' contribution to European industrial competitiveness ('resilience' criterion). This criterion, introduced ahead of the Net Zero Industry Act, ensures that proposals are evaluated based on their contribution to the EU's competitiveness.

– Similarly, 'as-a-Service' schemes are unprecedented at the EU or national level. Despite the emergence of robust national funding mechanisms in several countries, these initiatives are best viewed as complements rather than substitutes for EU-level action.

The Fund's alignment with the European Green Deal and its ability to attract additional investment through policy signalling further amplifies its impact. Without the Fund, the EU

([67]) European Commission: Directorate-General for Climate Action, *Climate action – Leading the way – From plans to implementation for a green and competitive Europe – Progress report 2024*, Publications Office of the European Union, 2024.

would risk a slowdown in breakthrough climate innovation, increased fragmentation, and reduced cross-border technology diffusion, ultimately undermining collective progress toward climate neutrality. While challenges remain in attributing outcomes to the Fund and ensuring additionality, and while some barriers persist for smaller applicants or in mature sectors, the Fund's design and strategic focus make it a driver of technological progress and coordinated climate action in the EU.

The Fund's **impact on economic growth and job creation is evident**, with beneficiaries anticipating substantial increases in turnover and employment. However, the lack of detailed employment data and robust counterfactuals at this stage limits the precision of these assessments. The Fund fosters skills development and workforce upskilling, primarily as a co-benefit of deploying innovative climate technologies, with training and capacity-building frequently cited by beneficiaries.

By positioning the EU at the technological frontier, generating demonstration effects, and building industrial ecosystems around clean technologies, the Fund strengthens **strategic autonomy and knowledge spillovers** across the EU. However, its contribution to social and regional cohesion largely depends on a project's location and its alignment with local development strategies, suggesting that cohesion outcomes could be enhanced through more explicit territorial considerations.

To fully realise its leveraging potential and maximise its impact, the Fund must address systemic misalignments between the design of its calls and the risk profiles of proposals and improve coordination among EU, national, regional and private funding sources.

4.3. Is the Fund still relevant?

The Fund's objectives remain relevant in today's climate and technology context. They are aligned with EU climate and industrial policy priorities, provide critical support for hard-to-abate sectors, and respond to the pressing need to scale up innovative technologies. By combining a technology-neutral design with targeted instruments when required, the Fund has positioned itself as a mechanism for bridging high-risk financing gaps at an industrial scale. The persistent underfunding of clean technologies, the evidence of demand for the Fund's grants, and the importance of first-of-a-kind projects to lead the way for the climate transition confirm its continued fit with both current and foreseeable needs.

At the same time, the Fund's relevance is tempered by certain **design frictions**:

– While safeguards against funding uncertain projects are expected, unsuccessful applicants noted that strict financial-maturity requirements can disadvantage SMEs and higher-risk innovations, limiting access for smaller actors.

– Some sectors remain more represented in the Fund's portfolio (*Figure 7*: Portfolio geographical distribution (number of projects and awarded funding)). The perceived concentration of support in the hydrogen and CCS sectors also raises questions about the balance of support between eligible sectors.

The Fund's continued relevance will depend on sustaining its flexible, broad call structure and strengthening complementarity with other EU instruments, such as Horizon Europe, whose early-stage research and demonstration projects can progress to the Fund once their technologies reach higher market maturity. The scale of future investment needs, the risks of

fragmented national approaches, and the levels of global competitiveness further underline the necessity of coordinated EU-level action.

4.3.1. EU climate and energy policy objectives

The Fund broadly aligns with the decarbonisation needs of European industry but does not yet fully address the scale and diversity of these needs:

- The Fund is particularly relevant for large-scale, capital-intensive projects at demonstration and early deployment stages. Its technology-neutral scope allows it to align with sectoral priorities across hydrogen, CCS, cement & steel, and other hard-to-abate sectors. Each call states how it aligns with EU policy objectives.

- The Fund's ability to meet industry needs remains constrained by its financial design and limited scale relative to demand (as evidenced by the oversubscription rates presented in Section 3.2).

Although in its early phase, the Fund contributes to several climate policy targets relevant to the EU's decarbonisation and innovation needs through the implementation of projects across various sectors:

- The Net-Zero Industry Act aims to scale net-zero industrial capacity, with the Fund directly supporting its objectives through a dedicated EUR 1.4 billion topic for clean tech manufacturing under the IF23 Call. To date, the Fund has built a strong portfolio of projects advancing EU net-zero manufacturing, with 25 new clean tech manufacturing projects selected during the IF23 Call and 15 previously funded projects focused on manufacturing plants for energy storage, renewables, and energy-intensive industries: This brings the Fund's total support for EU net-zero manufacturing to EUR 2.4 billion, targeting 8.1 GW/year of solar photovoltaic capacity and 11.6 GW/year of electrolyser production by the end of 2024.

- Since 2020, 41 industrial carbon management projects have received over EUR 5 billion, enabling up to 18.6 mt per year of CO_2 capture (37 % of the Net Zero Industry Act's CCS target) and 11.7 mt per year of CO_2 injection capacity (23% of the injection target).

The Fund aligns with the EU's renewable energy goals, as outlined in the revised Renewable Energy Directive, the European Wind Power Action Plan, and the EU offshore renewable energy ambitions, by accelerating targeted technology deployments to boost renewables in the electricity mix and enhance energy security. By the end of 2024, the Fund supported 11 wind and wind manufacturing projects (EUR 375 million), 14 solar and solar manufacturing projects (EUR 607 million), 5 hydro and ocean energy projects (EUR 118 million), and 1 geothermal project (EUR 92 million).

The REPowerEU plan highlights RFNBO hydrogen as a climate-neutral option for hard-to-decarbonise sectors. The Fund contributes to delivering on the EU hydrogen strategy by supporting hydrogen, notably through two dedicated auctions (IF23 and IF24). By the end of Q1 2025, 27 funded projects had the capacity to produce more than 750 kilotonnes of RFNBO and low-carbon hydrogen per year.

The Fund also supports the development of alternative fuels, in line with ReFuelEU Aviation and FuelEU Maritime, with EUR 1.6 billion awarded to fuel projects, including EUR 612 million for fuel produced exclusively for the transport sector. These include 14 projects in hydrogen (EUR 522 million), 5 in e-methanol (EUR 273 million), 3 in ammonia (EUR 530 million), 2 in sustainable aviation fuel (EUR 206 million), 2 in e-methane (EUR 87 million), and 1 in bio-LNG (EUR 4 million). Additionally, 8 mobility projects planned to avoid 27 $mtCO_2e$. These include 6 projects in the maritime sector receiving dedicated support of EUR 211 million and EUR 95 million for a project of electric aircraft.

The relevance of the Fund's objectives at the national level emerges as generally strong, though it varies depending on the depth and design of domestic climate and energy policies. The Fund's objectives are broadly relevant at the national level, aligning with core industrial decarbonisation priorities and complementing national climate legislation and funding schemes. In countries with limited resources, the Fund often plays a critical enabling role. In contrast, in countries with stronger support frameworks, it adds value primarily by bridging large-scale financing gaps and signalling EU-wide priorities.

4.3.2. Mechanisms to ensure continued relevance

The Fund is most effective in directing resources to hard-to-abate, capital-intensive industries, where GHG emissions reductions are both critical and costly. The introduction of dedicated tracks and sectoral allocations has further sharpened this focus, while efforts to consider broader climate impacts extend its reach. Yet, gaps remain, as underrepresented areas still face barriers to participation.

In terms of promoting innovation, the Fund has become a central instrument for supporting first-of-a-kind projects and de-risking breakthrough technologies at the EU level. Its technology-neutral and flexible design accommodates a wide variety of innovation pathways, as confirmed by industry stakeholders and beneficiaries.

The Fund's objectives are designed to adapt to future needs and emerging issues, but sustained flexibility and adaptability will require ensuring that structural rules do not narrow the space for diverse innovation pathways. The Fund ensures selection of the most relevant projects through its award criteria (see *3.1.1 Calls for 'regular' grants*):

– To ensure alignment with the most relevant innovations in each technology and sector, the Fund relies on external expert evaluators to design and evaluate all award criteria. For instance, selected specialists are hired to evaluate the 'degree of innovation' criterion in calls for 'regular' grants across all technology areas and to assess each project's novelty, scalability, and transformative potential. It is the criterion with the highest number of points available in each call. This approach ensures that only the most impactful and forward-looking solutions receive support.

– The 'cost efficiency' criterion measures the ratio of the requested grant to the absolute GHG emissions avoided. This approach ensures that public funding is allocated to the most impactful and economically viable decarbonisation technologies, maximising the Fund's cost-efficiency, with significant variation between technologies (***Error! Reference source not found.***). While all funded projects meet the minimum thresholds, differences across sectors highlight that some require higher investments than others.

These differences underscore that all technologies play a role in the EU's decarbonisation strategy, and that the Fund's threshold-based system ensures that only the most viable projects within each sector are selected. This system allows the Fund to remain technology-neutral and support a diverse portfolio of technologies, from mature solutions with high cost-efficiency to emerging innovations that, despite higher costs, are essential for long-term climate targets.

Table 5: Average cost-efficiency per sector

Sector	Average cost-efficiency score
Manufacturing of components for energy intensive industries	11.61
CO_2 transport and storage	11.50
Aviation	11.50
Road transport	11.50
Manufacturing of components for renewable energy or energy storage	11.33
Manufacturing of components for energy storage	11.25
Manufacturing of components for renewable energy	11.21
Manufacturing of components for production of renewable energy or energy storage	9.85
Cement & lime	9.80
Chemicals	9.07
Non-ferrous metals	8.81
Use of renewable energy outside Annex I	8.60
Maritime	8.44
Refineries	8.25
Other	8.17
Glass, ceramics & construction material	7.91
Hydrogen	7.67
Biofuels and bio-refineries	7.31
Renewable heating/cooling	7.30
Iron & steel	6.96
Wind energy	6.33
Other energy storage	6.06
Solar energy	5.80
Pulp & paper	5.75
Intra-day electricity storage	5.74
Hydro/Ocean energy	4.45
Geothermal energy	4.33

The Fund's objectives demonstrate a strong degree of anticipation of future needs, as they are regularly updated in response to EU climate policy reforms, stakeholder consultations, and foresight on industrial priorities. Indeed, the Fund is structurally positioned to anticipate and remain relevant to evolving policy and market contexts. For instance, the Fund has demonstrated practical adaptability by expanding its scope to include emerging sectors, such as maritime, aviation, and manufacturing, when new decarbonisation priorities arose. The flexibility of annual calls, combined with continuous stakeholder engagement and expert-driven assessments, positions the Fund to effectively address evolving challenges while remaining aligned with the EU's long-term climate goals.

At the same time, the flexibility of the Fund's objectives is, in practice, moderated by design constraints. Indeed, strict procedures, maturity requirements, and limited scope for more disruptive or less mature innovation restrict the Fund's full adaptability.

Stakeholder consultations, experts' input, and knowledge sharing mechanisms are used iteratively to ensure the Fund's continued relevance:

- Stakeholder workshops gather insights on decarbonisation challenges from industry, public authorities, and other key actors, while the IFEG provides sector-specific guidance on emerging priorities and upcoming call design. This engagement ensures that the Fund remains responsive to real-world needs.

- Specific knowledge sharing requirements are also put in place, mandating that funded projects disseminate lessons learned, best practices, and technical insights through open and closed events, annual reports, and public data repositories (e.g. CINEA's knowledge sharing webpage). These activities not only accelerate commercialisation and scalability of supported technologies but also inform future funding priorities by identifying gaps and opportunities in the decarbonisation landscape.

- Stakeholder feedback is also systematically incorporated into call planning and budget allocation, ensuring that funding reflects evolving technological, economic, and regulatory conditions.

While this consultative approach aligns the Fund with current decarbonisation challenges, further structured analyses enhance its long-term strategic responsiveness:

- DG CLIMA and CINEA reinforce this alignment through regular portfolio analyses, monitoring of key performance indicators, market trends, and policy alignment.

- For instance, DG CLIMA reports annually to the Climate Change Committee on the implementation of the Fund via annual progress reports, while CINEA collects implementation feedback from projects for annual knowledge sharing reports.

5. CONCLUSIONS

The Fund's core instruments demonstrate a potential to achieve the Fund's objectives effectively, efficiently and coherently:

- The Fund's attractiveness stems from its unique position to bring innovative low-carbon technologies to commercial application and to overcome technical, commercial, regulatory, and infrastructural risks. Considering the benefit-cost ratios both regarding

EU costs and total costs (including public and private financing), the Fund's efficiency is high.

- The effective implementation of calls for proposals enabled the identification and support of projects with significant potential for GHG emissions reduction and mobilised substantial additional investment showcasing the Fund's effectiveness.

- Although it is too early in the Fund's implementation to draw conclusions on its efficiency in reducing GHG emissions, the mechanisms in place to mitigate the risk of overestimations indicate that significant expected GHG emissions reductions will materialise.

- Supported projects represent a diverse portfolio across sectors and technologies, driving large-scale industrial decarbonisation and the deployment of key mitigation technologies.

- Despite their early stage, 'as-a-service' schemes and blending operations enable the mobilisation of substantial additional investment, showing future potential.

- Supporting and advisory activities (PDA, technical assistance) are consistent with the Fund's objectives.

- Communication and knowledge sharing activities have expanded the Fund's visibility, strengthened policy feedback, stakeholder engagement, and peer learning.

- The Fund's disbursement processes are transparent and well-controlled, with milestone-based payments ensuring accountability.

- Application, selection, and grant preparation procedures are transparent and robust. Monitoring and reporting requirements ensure accountability. The milestones-based approach enables CINEA to help project developers overcome implementation challenges and act as a partner toward successful completion.

- The IFEG is a successful example of stakeholder engagement, involving national authorities and industry representatives in governance without creating substantial administrative costs. It provides a platform for receiving market feedback, especially on methodologies for GHG emission reductions and relevant costs.

- Evidence points to complementarities with other EU financing instruments, such as Horizon Europe, STEP, CEF, InvestEU and the Modernisation Fund.

- While evidence indicates sectoral and geographical imbalance in the portfolio, it also reflects the technological and commercial maturity of projects across various locations and sectors.

However, operational and financial challenges impact the Fund's efficiency:

- A high oversubscription rate leaves many proposals unfunded.

- At the application stage, methodological complexity (particularly the GHG methodology) and documentation requirements create heavy workloads for evaluators

and applicants, especially SMEs, even if they are consistent with high grant amounts and help ensure the fair selection of the best proposals.

– The 60 % funding rate ceiling is perceived as adequate by most stakeholders, although views depend based on technology, maturity, and capital requirements.

– The milestone-based disbursement approach causes strain for some capital-intensive projects and SMEs.

– Monitoring and reporting requirements remain resource-intensive for both beneficiaries and CINEA. At the same time, certain useful data for evaluating the Fund's performance are not collected (e.g. job creation and gross added value).

– While promising, it is too early to draw valid conclusions on the impact of supporting and advisory activities (PDA, technical assistance).

– Although the Fund effectively serves as a follow-up to Horizon Europe, synergies with other Union programmes could be further exploited.

Simplification measures have already been implemented and are beginning to show results: reducing the number of cost calculation approaches from five to two, automating financial templates through the Financial Information File, providing clearer guidance for GHG emissions reductions and business plan templates, and simplifying rules for the hydrogen auction. Still, further potential remains, for instance by tailoring and simplifying application rules for SMEs, introducing staged applications (i.e. pre-check and full evaluation), requiring shorter, less overlapping templates during application, and more proportionate reporting during implementation (notably for knowledge sharing). Stakeholders also cited the need for more user-friendly digital tools, including reporting portals enabling automatic data reuse to avoid repetitive data entry ([68]). These adjustments, if implemented, could better align the Fund's procedures with project needs while maintaining transparency and oversight.

In terms of **coherence**, the Fund shows strong alignment with EU climate and industrial policies. Its flexible design demonstrates a high degree of adaptability to evolving policy priorities and responsiveness to market realities, keeping it relevant and confirming its strategic role in delivering the EU's decarbonisation objectives.

Finally, the Fund brings **benefits that could not have been achieved without the EU's intervention**:

– The Fund's answers to the necessity of EU-level coordination to complement fragmented national support and prevent widening disparities between countries. Evidence shows that national schemes alone cannot address underinvestment or ensure cohesion in industrial transition.

– The Fund's catalytic effect on technological progress is evident in hard-to-abate sectors. By de-risking early deployment, it advances technologies from demonstration to commercial scale, accelerates replication, and generates spillovers that national

([68]) Beneficiaries' survey (Q41).

schemes alone could not achieve. Beneficiaries confirm its catalytic role in bridging funding gaps for capital-intensive innovations that would not otherwise materialise.

– By fostering EU-wide competition, the Fund drives excellence, cost-efficiency, and technological ambition. While most projects are implemented nationally, competition raises standards and investor confidence, accelerating deployment timelines.

– Knowledge sharing requirements mandate the spillover of lessons learned and further accelerate the dissemination of technologies across Europe.

– AaaS has demonstrated clear efficiency gains for national authorities and applicants alike, through the centralisation and standardisation of project selection, the reduction of duplication and timelines and the acceleration of State aid procedures thanks to the alignment of Fund's auctions design with the CEEAG.

6. LESSONS LEARNED

If the Fund is crucial to supporting innovative, first-of-a-kind technologies in sectors that currently lack a technically and economically viable business case, the evaluation identified several areas for improvement.

Resource allocation and portfolio diversification

The evaluation highlighted an imbalance in project representation across countries, sizes and sectors in the portfolio. Although a variation is to be expected, some considerations could accommodate a more diverse portfolio:

– Increased Fund resources, coupled with diversified instruments, such as thematic calls and topics and bonus points in the award criteria, help expand access, particularly for smaller countries, emerging sectors, and small-scale projects and SMEs

– If introduced, dedicated measures must be accompanied by tailored guidance and careful budget sizing to ensure a fair and balanced uptake across sectors and sizes. The Fund has already shown that dedicated topics or bonus points for technologies such as manufacturing, hydrogen or maritime can increase the number of projects in these sectors.

  Considering future calls specifically for SMEs could allow a simplified application process beyond what is feasible for a dedicated topic under the same call. At the same time, the diversification of calls should be coupled with an increased fund size to avoid creating too small pools of funds or unnecessary internal administrative burden.

– Project development assistance and technical assistance could be further developed to support the least mature innovative solutions.

– The 'as-a-service' schemes could ensure an even broader mix of technologies and geographies in the portfolio. However, the future success of these schemes is largely dependent on the availability of national budgetary resources and commitments. Further promoting the 'as-a-service' and supporting national authorities in the administrative process will be material.

– Leveraging and strengthening existing mechanisms, such as the National Contact Points network, the Innovation Fund Expert Group, and regular stakeholder consultations, could ensure continued alignment with the technologies needed to achieve the EU's decarbonisation objectives.

– Particularly for small-scale projects and SMEs, the Fund's leverage could be increased by reducing administrative burden during application and implementation. For instance, simplified evaluation procedures, improved digital tools, and proportionate reporting obligations could ease this burden. However, any change in the application, evaluation and reporting phases must balance simplification with robust accountability.

Balancing data needs with administrative efficiency

The evaluation highlighted several data gaps leading to methodological limitations. At the same time, administrative burden, especially for SMEs, is one of the Fund's main challenges. The Fund needs to balance the identified needs for further data collection and reporting with administrative efficiency, so that simplifications in the evaluation and reporting process do not come at the expense of institutional resilience. Future growth will require adequate staffing and stronger investment in IT tools.

The evaluation underscores the need for smarter data collection strategies that maximise insights without increasing burdens:

– Integrating cost-tracking into existing surveys and stakeholder consultations (rather than introducing new reporting requirements) could help fill identified data gaps (e.g. on administrative costs) while leveraging current processes.

– A sustained focus on high-impact indicators (e.g. expected GHG emissions avoidance, average time to financial close) will ensure that data improvements align with practical constraints.

Furthermore, knowledge sharing, data collection and processing practices are currently predominantly manual, relying on Excel spreadsheets. This approach poses significant challenges regarding data quality and reliability, scalability, data management and reporting efficiency. The fragmented and uncoordinated nature of data repositories and procedures also impairs effective project monitoring and the ability to extract and analyse relevant data, which is critical for policy feedback. Digitalisation will be key in ensuring the balance between strengthening data collection and reducing administrative strain:

– The forthcoming Knowledge Sharing Digital Solution (KSDS) should help standardise and streamline data collection. This digital platform aims to address the challenges arising from limitations observed during the evaluation and thus to facilitate effective, reliable and sustainable data collection, processing, visualisation, knowledge extraction and sharing. The tool should be able to improve, amongst others, the timely delivery and analysis of project implementation data to support strategic policy formulation and comprehensive oversight of the portfolio, further ensuring the Fund's relevance and EU-added value, and a better understanding of the Fund's effectiveness and efficiency.

– The KSDS should also aim to alleviate administrative burden for beneficiaries. It could do so by extracting data from all available deliverables and documents associated with the project/beneficiary and feeding it into other tools and reports via soft links (special files

pointing to other existing files). Such a tool would ensure that beneficiaries do not have to enter the same information multiple times. The feature of simplified reporting for beneficiaries should be seen as a priority for the tool, especially to accommodate for SMEs.

Despite forthcoming solutions, some data gaps may remain unaddressed. For instance, indicators of economic performance (e.g. such as number of jobs created or gross added value) and more accurate information on complementarities with other EU instruments would require additional effort from projects to collect and report on. Less quantifiable indicators, such as technological spillover and learning effects, might also be difficult to collect without imposing significant additional burden.

Although a difficult balancing act, developments to enhance data quality must go hand-in-hand with reduced administrative burden to remain effective and inclusive.

Continued project support and implementation

Premature terminations are rare (8 % of awarded proposals). They are often the consequence of unforeseeable external challenges connected to market conditions. At this stage of the Fund's implementation, it is too early to draw any conclusions on this rate. However, the continued monitoring of project challenges and mitigation strategies (through annual knowledge sharing reports for instance) could inform the analytical needs of future evaluations. Although largely dependent on external factors, some measures could be considered to support projects' successful implementation:

– Greater flexibility in funding rules, including earlier or phased disbursements, would help balance innovation support with financial realism. However, this more proactive approach would need to account for the increased risk of funds disbursed without actual results.

– Introducing a completion guarantee for large-scale projects, similar to auctions, could ensure that only the most serious and mature proposals are selected, avoiding blocking budgets for projects withdrawing before financial close.

– More generous and accessible cumulation rules could also ease liquidity constraints and improve the project's financial viability while maintaining fiscal discipline.

Despite an effective allocation of resources for calls for proposals (through frontloading) and grant disbursements (through annual budgetary instalments), there is room for improvement, notably on the management of reserve lists (to increase the speed of budget re-allocation) and on maximising the opportunity costs of unused funds. Increased digitalisation, through for example the KSDS tool, could be considered to make internal processes more efficient in identifying reallocation of unused funds.

For auctions, adequate safeguards against non-delivery will continue to be necessary to ensure their future success. Completion guarantees could remain to support the Fund's credibility. As competitive bidding has proven efficient and effective to support hydrogen producers, the Fund could be used to support other sectors.

Bridging mechanisms, such as the STEP Seal, create a more integrated EU climate finance architecture. Further exploring blending operations and combining Fund grants with another funding instrument could help achieve faster implementation and mobilise further private capital towards green innovation.

Annex I Procedural information

Lead DG: Directorate General for Climate Action (DG CLIMA)

Decide reference: PLAN/2024/864

No exceptions from the usual 'better regulation' procedural requirements were made.

1. ORGANISATION AND TIMING

On 25 March 2024, DG CLIMA sent a note inviting 17 Commission services to participate in an Inter-Service Group (ISG) to steer the preparation of the first evaluation of the Innovation Fund and the Modernisation Fund.

By the end of April 2024, all services invited had nominated representatives for both evaluations:

- Budget (DG BUDG)
- Competition (DG COMP)
- Defence Industry and Space (DG DEFIS)
- Economic and Financial Affairs (DG ECFIN)
- Employment, Social Affairs and Inclusion (DG EMPL)
- Energy (DG ENER)
- Environment (DG ENV)
- Financial Stability, Financial Services and Capital Markets Union (DG FISMA)
- Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)
- Joint Research Centre (JRC)
- Legal Service (SJ)
- Maritime Affairs and Fisheries (DG MARE)
- Mobility and Transport (DG MOVE)
- Regional and Urban Policy (DG REGIO)
- Research and Innovation (DG RTD)
- Secretariat-General (SG)
- Reform and Investment Task Force (DG SG REFORM)

Representatives from DG CLIMA's better regulation unit and the executive agency for European climate, infrastructure and environment (CINEA) were invited to attend meetings and copied in communications.

Although the ISG was consulted on both evaluations concurrently, the next table describes only the organisation and timing of the Innovation Fund evaluation.

Milestone	Date
Establishment of the ISG	25 March 2024
Kick-off meeting with contractor (Ramboll)	14 November 2024
Creation of ISG's collaborative workplace, invitations to 1st ISG meeting	6 January 2025
Draft 'call for evidence'	6 January 2025
Draft methodology (Ramboll)	15 January 2025
1st ISG meeting ('call for evidence' and consultation strategy)	28 January 2025
Launch of the 'call for evidence' and public consultation questionnaire on Have your say	15 April 2025
Close of the public consultation	08 July 2025
Publication of factual summary report and contributions to the public consultation questionnaire on Have your say	04 September 2025
2nd ISG meeting (evaluation updates, next steps)	8 October 2025
Draft evaluation study including synopsis report (Ramboll)	14 October 2025
Upstream RSB meeting	27 October 2025
Draft study shared with ISG for review	
'Reality check'	12 November 2025
Presentation of the evaluation preliminary findings to Innovation Fund Expert Group	13 November 2025
Final study including synopsis report (Ramboll)	12 December 2025
3rd ISG meeting (final study, draft evaluation report)	22 January 2026
Submission of documents to RSB	18 February 2026
RSB hearing	11 March 2026
Interservice Consultation end	15 June 2026
Publication	15 July 2026

2. CONSULTATION OF THE REGULATORY SCRUTINY BOARD

The evaluation was selected for scrutiny by the Regulatory Scrutiny Board. Following the hearing with the Board taking place on 11 March 2026, Board issued a positive opinion with reservations on 13 March 2026. The comments received are listed below, alongside the reference to the section addressed and a summary of the amendments made.

RSB Opinion point	SWD section	Summary of revision
(1) With the Innovation Fund being a performance-based instrument, the report should explain upfront the different types of instruments and their mechanisms (when funds are disbursed and under which conditions, differentiating grants from auctions and supporting measures). The report should also better explain the mitigating measures taken to address the methodological limitations	Section 3.1. Activities Section 1.2. Methodology	The evaluation report has been revised to include an introduction of the different types of activities and a short description of their implementation characteristics, before presenting their state of play including which activities started in 2020 and which were adjusted or added in 2023. The 'as-a-Service' feature of the IF (i.e. 'Auctions-as-a-Service' and 'Grants-as-a-Service') are also more clearly presented. The report has been revised to explain the mitigation measures applied and how limitations have been addressed, using elements from the supporting study (triangulation of evidence sources, validation through 'reality check').
(2) The report should clarify what types of evidence have been used to analyse the Fund's effectiveness and efficiency. The report should describe more clearly how project withdrawals, deviations (amendments) and terminations have been interpreted in terms of the Fund's effectiveness and efficiency. It should also analyse more in depth the possible impacts of the challenges encountered in this early implementation phase, including delays and their root causes.	Section 4.1.1. Effectiveness Section 4.1.2. Efficiency Section 6. Lessons Learnt	The report has further clarified what different types of evidence has been used for the effectiveness and efficiency analysis. The report has further expanded on the several reasons for withdrawals, deviations and terminations, including findings in the Annual Knowledge Sharing Report on projects' challenges and terminations. However, as these are often intertwined, their effects were not attributed to a single reason. At this stage of the programme's implementation, it is too early to draw any conclusions from such analysis.

RSB Opinion point	SWD section	Summary of revision
(3) The report should be more informative on the costs for the various stakeholders and how they have evolved over the period under evaluation. The cost-benefit analysis should be improved. The calculation of the expected GHG emission avoidance should be clarified, and the report should not conclude on the efficiency of the Fund on the basis of such expected emission reduction to avoid over-estimating its efficiency. The assessment of administrative burden regarding both the preparation of the application and the implementation of the project by beneficiaries, should be reinforced, in particular for SMEs.	Section 1.2. Methodology Section 4.1.2. Efficiency Section 6. Lessons Learnt	The analysis of efficiency has been reviewed to include further information on costs to stakeholders, and a clarification of data gaps and limitation in this regard. The report clarifies the choice made to look at potential GHG emissions avoidance over actual reductions when assessing cost-efficiency. The report has added some further information on administrative costs for beneficiaries during application and implementation phase.
(4) The analysis of the Fund's coherence with other programmes, such as the Recovery and Resilience Fund (RRF), Connecting Europe Facility (CEF), Horizon Europe, as well as with national schemes should be strengthened.	Section 4.1.3. Coherence	When comparing the Fund's efficiency with other EU programmes the report has included information presented in the support study on the limitations of comparing these programmes. A short assessment of whether other programmes could have been more appropriate for comparison purposes (such as CEF or regional funds) was also added. Since all programmes have their specificities, none is an ideal benchmark. The coherence chapter has been amended to further explain how the 'as-a-Service' features operate and contribute to the Fund's coherence.

RSB Opinion point	SWD section	Summary of revision
(5) The report should make better use of available data to reinforce the analysis of the relevance of the Fund, notably as regards the focus of supported projects in terms of their alignment with the technologies needed for decarbonisation. The assessment of needs related to decarbonisation pathways should be based on both opinion and observational data, including on the continuously updated data on globally available technologies and their economic viability.	Section 3.1. Activities Section 4.3. Relevance	The report has further elaborated on the various activities performed to stay aligned with technologies needed for decarbonisation, including further explain how the Fund's award criteria functions in selecting the most relevant project in terms of their alignment with the technologies needed for decarbonisation. Relevance and alignment with technologies needed for decarbonisation has further been exemplified by an additional comparison between relevant climate and energy targets compared to Fund backed projects' deliverables, such as expected GHG emissions, installed renewable energy capacity, NZIA CO2 injection target and REPowerEU.
(6) The report should better explain what the lessons learned are for the Fund, including on simplification potential for applicants and data collection for the monitoring and evaluation including for systemic impacts (catalytic effect, technological spillovers, learning effects) and relevance.	Section 6. Lessons Learned	The lessons learnt has been further expanded to address simplification potential and means for further improvements in data collection for monitoring and relevance. Resource allocation and portfolio diversification, notably for SMEs, has been highlighted, as well as the balance between administrative efficiency and further data collection.

3. EVIDENCE USED

For desk research purposes, both quantitative and qualitative data have been used. The evaluation also uses data collected during stakeholder consultations.

Quantitative data

The evaluation mainly used publicly available monitoring and reporting data:

Source	Reliability
The programme's performance statement provides an overview of its implementation and performance, and data on key performance indicators.	The data published is provided by DG CLIMA annually (with quality insurance also provided by CINEA). Annual results are compared with targets to assess progress. However, there is no baseline data and the nature of these

	targets is not clear since they depend on subscription to calls for proposals and the magnitude of funded projects.
The annual progress reports (2021, 2022, 2023) are prepared by the Commission to report to the Climate Change Committee, the EU Council and to the European Parliament on the progress made on implementation.	The reports are prepared by DG CLIMA annually (with quality insurance also provided by CINEA). They provide figures on KPIs. However, the data from the most recent report is showing the picture at end 2024 (due to the length of the publication process).
The Innovation Fund project portfolio dashboard is an interactive reporting platform containing project data.	The dashboard is linked to the corporate IT systems for grant management and is thus automatically updated based on the info put there. However, the data is not always up to date as the system is only updated once a process is finalised (such as an amendment) and once all the reporting obligations have been closed.
The Fund initial Impact assessment proposes a list of indicators to monitor and evaluate the Fund's impact and information on the NER 300 programme.	Although indicators were not quantified for the most part, the initial impact assessment provided the baseline needed to capture the changes the Fund's implementation brought. The lack of an evaluation of the NER 300 programme's operation also limits its utility as a benchmark.
Country fiches offer an overview of the Fund's implementation by country.	Country fiches are communication products aimed at the public. They are only updated after all grant agreements for one call are signed.
Project factsheets present key details about supported projects.	Project factsheets are communication products aimed at the public. They contain information provided by beneficiaries during application. They are updated regularly and show the data in line with the dashboard.
Quarterly reports (not publicly available) provide data on the portfolio of projects with grant agreements in force.	Quarterly reports are prepared by CINEA during its reporting exercise to DG CLIMA. They are the most accurate source for projects data, although their quarterly delivery means that the extracted information always refers to the previous quarter.
Proposal database (not publicly available) provide data on all awarded and non-awarded proposals, budget committed, and project selection	The proposal database is updated after the evaluation results of each call for proposal. It is the reference document for all previous applications received. CINEA ensures its accuracy.
The EIB's financial statements (not publicly available) provide information on asset management and project development assistance.	The EIB reports annually to the Commission on its activities. The data is considered reliable.
Data from other related EU programmes (e.g. Horizon Europe, Modernisation Fund, European Hydrogen Bank)	As published by the Commission. The data is considered reliable.
Official statistics from the International Energy Agency, Eurostat, and the European Environment Agency provide the latest data on the context the Fund	As available online. These organisations are considered as a reliable independent source of data on the context in which the Fund evolves.

Qualitative data

In its literature review, the contractor aggregated information from Fund documents, either publicly available or provided by DG CLIMA: financing decisions, calls for proposals, guidance on award criteria, evaluation summary reports, data on risk assessments conducted during project selection, quarterly reports, annual progress reports, knowledge sharing reports, and the EIB's annual reports. The contractor also considered sectoral studies (e.g. on market failures and funding needs, on market readiness for new technologies).

Stakeholder consultations

The contractor collected stakeholder inputs during the preparation of the supporting study through interviews (of beneficiaries, the Commission, CINEA, the EIB, NCPs, IFEG members, national authorities, and evaluators) and surveys (with beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries and NCPs).

4. USE OF EXTERNAL EXPERTISE

During the evaluation process, DG CLIMA sought expert advice on several occasions and as part of consultation activities (*Annex V*):

- signature of a procurement contract with Ramboll on 28 October 2024, resulting in a Support study by Ramboll delivered in December 2025 and published simultaneously with the Staff Working Document;
- publication of a 'call for evidence' and launch of public consultation on Have your say on 15 April 2025;
- organisation of a 'reality check' with selected practitioners on 12 November 2025;
- presentation of the evaluation preliminary findings to the Innovation Fund Expert Group on 13 November 2025.

The supporting study conducted by the contractor will be published on the EU's Publications Office website on Have your say.

Annex II Methodology and analytical models used

Throughout the evaluation process, DG CLIMA applied the principles and procedural steps outlined in the better regulation guidelines and toolbox that were most appropriate for the Innovation Fund's evaluation.

Mixed-methods analytical approach

Mixed methods and triangulation of data sources were used to perform the analysis of the findings. The mixed methods and data sources included:

- An extensive literature review of relevant sources, including published and ongoing work by the Commission and other institutions and stakeholders.

- Data collection: For specific data sets (related to project implementation and proposal evaluation), CINEA was involved. The agency's Business Intelligence team first extracted raw datasets, which CINEA's project officers then reviewed for quality assurance. DG CLIMA also performed a quality check before providing the data to the contractor.

- A comprehensive consultation strategy including conduct of interviews, surveys and project-specific case studies (more details on these activities are presented in *Annex V*).

Evaluation results were also tested with stakeholders:

- On 12 November 2025, DG CLIMA first organised a 'reality check' with selected practitioners. The event took place in the Commission's premises and online. DG CLIMA invited a shortlist of stakeholders who had made the most significant contributions to the public consultation. Ramboll presented their preliminary findings and posed questions to gather stakeholders' feedback. Following the event, stakeholders had an additional week to provide written feedback.

- On 13 November 2025, DG CLIMA invited Ramboll to give a presentation during an IFEG meeting. IFEG members also had an additional week to provide written feedback.

Methodological strengths and weaknesses

Robustness of evaluation analysis

The evaluation relies on a well-defined intervention logic that lays out the causal relations between the different expected outputs, results and impacts of the Fund, both in terms of its actual objectives and in terms of the functioning, governance and processes. The intervention logic provided the basis for defining the key sub-questions, judgement criteria / hypotheses, and indicators, in line with the evaluation questions set out in the Tender Specifications. A comprehensive evaluation matrix was developed to guide and structure the systematic analysis undertaken in this evaluation.

Comprehensive evidence base established through a systematic approach to data collection

A comprehensive evidence base was established through a systematic and multi-layered approach to data collection. Evidence was gathered continuously throughout the evaluation by

combining literature and desk reviews, statistical analysis, and stakeholder consultations at both EU and EEA country level. This mixed-method design enabled the evaluation team to draw on a wide range of quantitative and qualitative inputs and perform robust triangulation, ensuring that findings could be cross-validated, inconsistencies identified, and conclusions grounded in strong evidence.

While the methodological approach is robust, some limitations should be acknowledged when interpreting findings (see *1.2 Methodology*).

On certain aspects, the contractor did not assess why specific stakeholders raised concerns or whether those concerns were valid. In the final evaluation, some of the stakeholder concerns reported in the study have been nuanced:

- Although cost-verification rules are often seen as constraints, they are intended to protect the Fund against non-advancing (or 'ghost') projects and to ensure its credibility.

- The Fund does allow eligible operational expenditure within relevant costs. The perception of insufficient support for operational expenditure reflects implementation experiences from early calls, where beneficiaries reported that relevant costs calculations tended to emphasise capital expenditure and that milestone timing occasionally created short-term liquidity gaps.

- Contrary to what many stakeholders stated, there is some flexibility in the disbursement system: up to 40 % of the grant can be disbursed at early milestones, including before full operation.

Annex III Evaluation matrix and details on answers to the evaluation questions

This Annex presents the evaluation matrix, which served as the organising framework for the evaluation, and factual answers to the questions under each evaluation criterion. The analysis and evidence presented provide the main points substantiating the assessment done in the evaluation report.

Answers are summarised. For a full assessment, readers can refer to the external support study (*Support for the evaluation of the Innovation Fund*).

1. POINTS OF COMPARISON

In line with Tool #46, the expected results and impacts of the preferred policy option presented in the Innovation Fund's impact assessment have been used as points of comparison. The table below summarises the points of comparison used to assess the intervention.

Evaluation criteria	Points of comparison	Indicators
Effectiveness /Efficiency	The Fund's impact assessment indicates that the Fund's success will be measured by the extent to which supported projects. - succeed to financial close - succeed to entry into operation deliver planned emission reductions.	The impact assessment proposed a list of indicators used to monitor and evaluate the Fund's impacts. During the evaluation, the hired contractor introduced additional indicators to complement the initial list and answer evaluation questions. These indicators are presented in Table 1 of the evaluation report. Because no quantitative targets were assigned to the Fund's objectives, NER 300 is used as a baseline to assess performance in some of the points of comparison but not all.
Coherence	The impact assessment's preferred options (timing of payments at variable milestones, multiple selection criteria) were identified as having a high degree of internal coherence as they were in line with the approaches used under other EU programmes (Horizon 2020, Horizon Europe and InvestEU).	The Fund's performance is qualitatively assessed through a comparison with other scenarios not retained in the impact assessment, which most of the time was the baseline situation (NER 300).

	Similarly, a streamlined governance with a public implementing body (the EIB or an executive agency) was identified as having a high degree of internal coherence as higher synergies could be expected from a public operator running other programmes funding research or roll-out of low carbon technologies (such as Horizon Europe, CEF or InvestEU). Although the impact assessment did not identified areas of external coherence, the Fund's performance statements include a section on how the Fund contributes to sustainable development goals (SDGs 7, 9 and 13) since 2023.	
EU added value	The subsidiarity arguments put forward before the intervention can be found in the EU ETS impact assessment: **Necessity of EU action**: "*Climate change is a trans-boundary problem and both international and EU action can effectively complement and reinforce regional, national and local action. Increasing the 2030 target for EU GHG reductions will impact many sectors across the EU economy and coordinated action at the EU level is therefore indispensable and has a much bigger chance of leading to the necessary transformation, acting as a strong driver for cost-effective change and upward convergence. Furthermore, many of the policy elements assessed in this initiative have an important internal market dimension, in particular the options related to […] the low-carbon funding mechanisms. EU action can also inspire and pave the way for the development of market-based measures at global level, e.g. as regards the maritime transport within IMO.*" **Added value of EU action**: "*As a carbon market, the ETS incentivises emission reductions to be made by the most cost-*	As a counterfactual situation is lacking (see limitations), the Fund's performance is assessed as the extent to which: - these arguments are still valid - the expected changes resulting from EU action were delivered. The evaluation also analyses whether any contextual changes or other factors affected the assumption that such change could only be generated at EU level action.

	effective solutions first across the activities it covers, achieving greater efficiency by virtue of its scale. Implementing a similar measure nationally would result in smaller, fragmented carbon markets, risking distortions of competition and likely lead to higher overall abatement costs. The same logic holds for the extension of carbon pricing to new sectors."	
Relevance	According to the Fund's impact assessment, the Fund was expected to *"address the shortcomings of the NER300 programme and provide a better upside potential for projects, limit their downside risks, and be administratively simpler"*. The Fund's operational objectives were then defined in Delegated Regulation 2019/856, Article 3.	The evaluation assesses how the needs and objectives of the Innovation Fund in the current situation compare to the ones initially identified. The evaluation also looks at how megatrends might have impacted the intervention and how the situation is likely to develop in the future (following new political priorities or external changes).

The Fund builds directly on the experience gained from the NER 300 programme, which was set up under Directive 2009/29/EC amending the EU ETS Directive. NER 300 aimed to support the commercial-scale demonstration of CCS and innovative renewable energy technologies. It was financed through the monetisation of 300 million allowances from the New Entrants' Reserve ([69]). Two calls for proposals were launched in 2012 and 2014, distributing funds to a variety of renewables projects and one CCS project.

However, the programme faced significant implementation challenges. The 2008–2009 financial crisis and the collapse in carbon prices that followed reduced available revenues and made the business case for CCS projects untenable. Regulatory revisions to the Renewable Energy Directive ([70]), the slow adoption of support schemes, and unfavourable market conditions for decarbonisation projects (e.g. decreasing/low fossil fuel prices) led to significant delays and a high rate of project withdrawals. As a result, unspent funds were reallocated to other financial instruments (the CEF Debt Instrument and the InnovFin EDP) and to the Fund.

([69]) 2010/670/EU

([70]) The EU's Renewable Energy Directive (RED) was amended to address GHG caused by indirect land-use change (ILUC).

Reviews by the European Court of Auditors ([71]) and DG CLIMA ([72]) highlighted the programme's shortcomings. NER 300 provided funding tied strictly to verified emission reductions but did not address the upfront financial and technological risks inherent to large-scale demonstration projects (unless the Member States were willing to guarantee the upfront funding). Moreover, the rigid governance model offered little flexibility to adapt to changing market or policy conditions.

The Fund was designed to overcome these weaknesses. It introduced milestone-based disbursements, allowing up to 40 % of funding to be paid before projects begin delivering verified emission reductions, thereby supporting financial close. Its scope was expanded to new sectors, reflecting the broader decarbonisation challenge. Governance was streamlined to reduce administrative complexity. Selection criteria were reoriented to also give weight to innovation, project maturity, replicability, and GHG emissions-reduction potential in addition to cost efficiency, which was the sole criterion in the NER 300. Whereas NER 300 applied a 'maximum three projects per country' rule to ensure geographical spread, the Fund allows EU-wide competition, complemented by simplified procedures for small-scale projects and targeted technical assistance. These adjustments were informed by extensive stakeholder consultations during the Fund's design phase ([73]).

Guidance for reading the evaluation question matrix:

- blue text indicates new indicators/sources or modifications to existing ones introduced during the evaluation
- ~~strikethrough text~~ indicates indicators/sources initially foreseen in the evaluation matrix but not used in the analysis (or for which no relevant information was found)

2. EFFECTIVENESS

Evaluation question	Evaluation sub-question	Indicator	Points of comparison/Judgment criteria	Data source
1. How successful has the Fund been in supporting mature projects with	1.a. Selecting and funding mature projects - How effective has the	Number of awarded and non-awarded proposals	High innovation levels and significant GHG reduction potential	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals); data on success rate from Horizon Europe,

([71]) Special report No 24/2018: Demonstrating carbon capture and storage and innovative renewables at commercial scale in the EU: intended progress not achieved in the past decade, European Court of Auditors, 2018.

([72]) NER 300 lessons learnt – Executive summary (2018).

([73]) Commission Staff Working Document SWD(2019) 85 final – Impact assessment.

significant potential to reduce GHG emissions, with the aim of scaling up innovative technologies, processes, or products for commercial deployment across the EU?	Fund been in selecting and funding mature projects with substantial GHG reduction potential?	Submitted, eligible and above threshold Amount of funding committed (total amount paid and total amount of grants requested) Quality of awarded and non-awarded proposals (award criteria scores)		LIFE; data from CINEA on project selection and funding Desk research from qualitative sources: aggregate information from Fund documents (calls, criteria, evaluation summary reports, quarterly and progress reports) Surveys: beneficiaries, unsuccessful applicants ~~NCPs~~ Interviews: beneficiaries, NCPs, the Commission, CINEA ~~national authorities, trade and business associations, the EIB~~ Case studies
	1.b. Potential to reduce GHG emissions - What are the potential GHG emissions reductions from the projects funded by the Fund?	Planned avoidance of GHG emissions ($mtCO_2e$) Potential of emission reductions if the supported technology is scaled up	Substantial GHG reduction potential and achievement of targets	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals), Innovation Fund dashboard Desk research from qualitative sources: Fund documents (e.g. quarterly and progress reports) Surveys: beneficiaries ~~unsuccessful applicants~~ Interviews: the Commission, CINEA, NCPs ~~beneficiaries, national authorities, trade and business associations; the EIB~~
	1.c. Eligible categories - How effective has the Fund been in selecting and funding projects within eligible categories, i.e. energy-intensive industries, renewables, energy storage, industrial carbon management, net-zero mobility and buildings?	Number of projects (in pipeline, under development, operational) Planned/installed capacity across all eligible categories Geographical distribution of planned/installed capacity of each technology Percentage increase of planned/installed capacity of each	Substantial contribution to energy-intensive industries, renewables, energy storage, industrial carbon management, net-zero mobility and buildings	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals) and official statistics from the International Energy Agency, Eurostat, the Environment Agency Desk research from qualitative sources: Fund documents (e.g. quarterly and progress reports) Surveys: NCPs ~~beneficiaries, unsuccessful applicants~~

		technology per eligible country, as a result of funded projects		Interviews: trade and business associations, the Commission, CINEA ~~beneficiaries, national authorities, the EIB~~
	1.d. Enabling commercial deployment - How effective has the Fund been in enabling the commercial deployment of these technologies, processes, or products across the EU?	Expected duration in years from signature to financial close, to entry into operation Higher TRL after funding	Successful commercialisation and broad roll-out of technologies without significant delays in terms of implementation	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals) Desk research from qualitative sources: Fund documents (e.g. reporting and progress reports) and the International Energy Agency database on low-carbon technologies Surveys: beneficiaries, ~~Unsuccessful applicants~~ Interviews: beneficiaries, ~~national authorities, trade and business associations;~~ the Commission, CINEA, ~~the EIB~~ Case studies
	1.e. Calls for 'regular' grants - How effective has been the use of calls for 'regular' grants?	Number and success rate of projects funded through calls for 'regular' grants Stakeholders' views on appropriateness of calls criteria (e.g. degree of prescriptiveness) Planned investments mobilised	High success rate and quality of projects funded under calls for proposals and large contribution to the success of Fund (in terms of GHG reduction potential or upscaling of innovative technologies, processes or products)	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals); Innovation Fund dashboard; data on success rate from Horizon Europe Desk research from qualitative sources: Fund documents (calls, criteria) Surveys: beneficiaries, unsuccessful applicants, NCPs Interviews: the Commission, CINEA ~~beneficiaries, national authorities, NCPs, trade and business association, the EIB~~
	1.f. Competitive bidding - How effective has been the use of auctions?	Number and success rate of projects funded through auctions Stakeholders' views on appropriateness of the instrument Planned investments mobilised	High success rate and quality of projects funded under auctions and large contribution to the success of Fund (in terms of GHG reduction potential or upscaling of innovative	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals); data on success rate from Horizon Europe Desk research from qualitative sources: Fund documents (calls, criteria)

			technologies, processes or products)	Surveys: beneficiaries, unsuccessful applicants, NCPs Interviews: national authorities, NCPs, trade and business association, the Commission, CINEA ~~beneficiaries, the EIB~~
2. How effective has the Fund been in mobilising additional EU funding, state aid, and private investment?	2.a. Leveraging additional EU funding (i.e. Horizon Europe, IPCEIs, PCIs, InvestEU, CEF, EIB lending) - How successful has the Fund been in leveraging additional EU funding?	Amount of additional EU funding leveraged	Significant increase in additional EU funding	Desk research from quantitative sources: Fund data (awarded proposals) Desk research from qualitative sources: Fund documents (reporting documents) Surveys: beneficiaries, NCPs, Horizon Europe beneficiaries, unsuccessful applicants Interviews: beneficiaries, NCPs, the Commission - ~~unsuccessful applicants, national authorities, trade and business association, the EIB~~ Case studies
	2.b. Securing State aid - How effective has the Fund been in leveraging State aid for projects?	Amount of State aid secured	Significant increase in State aid	Desk research from quantitative sources: Fund data (awarded proposals) Desk research from qualitative sources: Fund documents (reporting documents) Surveys: beneficiaries, ~~NCPs~~ Interviews: beneficiaries, ~~unsuccessful applicants,~~ national authorities, NCPs, trade and business association, the Commission, CINEA, ~~the EIB~~ Case studies
	2.c. Attracting private funding - How successful has the Fund been in attracting private funding?	Amount of private funding attracted	Significant increase in private funding	Desk research from quantitative sources: Fund data (awarded proposals) Desk research from qualitative sources: Fund documents (reporting documents)

				Surveys: beneficiaries, ~~NCPs~~ Interviews: beneficiaries, ~~unsuccessful applicants, national authorities,~~ NCPs, trade and business associations; the Commission, CINEA, ~~the EIB~~ Case studies
	~~d. Challenges and solutions in mobilising funding - What challenges have been encountered in mobilising additional funding, and how have they been addressed?~~ ([74])	~~Identification of challenges and solutions implemented~~	~~Effective identification and mitigation of challenges~~	Desk research from qualitative sources: Fund documents (reporting documents, data on risk assessments conducted during project selection), sectoral studies (e.g. on market failures and funding needs, on market readiness for new technologies) Desk research from quantitative sources: external data, dashboard, quarterly report, etc. Surveys: beneficiaries, unsuccessful applicants - ~~NCPs~~ Interviews: beneficiaries, the Commission, CINEA, the EIB ~~- unsuccessful applicants, national authorities, NCPs, trade and business associations~~ Case studies
	2.d. Tailoring financial support - How well has the Fund tailored its financial support to market needs and risk profiles of eligible projects?	Alignment of funded projects with priority sectors identified in the EU's decarbonisation goals and market studies Oversubscription rate (overall, per call, per sector) Ratio of applications received to funds allocated Percentage of projects awarded funding which enter into operation Proportion of projects that failed to meet milestones or defaulted due to risk-related issues	High satisfaction and alignment with market needs while ensuring an effective assessment of risk profiles	

([74]) Challenges already commented under the specific questions on EU additional funding (a), State aid (b) and private funding (c).

		~~Percentage of funded projects classified as high-risk at the time of application~~ ~~Degree of risk diversification across funded projects~~		
3. How effectively are the Fund's revenues managed in compliance with the EU ETS Directive objectives?	3.a. Sectoral and geographical coverage - Are the revenues of the Fund managed in line with the objectives of the Directive in terms of technology pathways and geographical coverage?	Number of sectors and countries covered ~~Number of cross-sectoral applications~~ ~~Number of cross-countries applications~~	The management of the revenues of the Fund meet the objectives of the Directive in terms of technology pathways and geographical coverage	Desk research from qualitative sources: Fund documents (reporting documents) Desk research from quantitative sources: external data, dashboard, quarterly report, etc. Interviews: CINEA, NCPs, the EIB
	3.b. Revenue management - How transparent is the management of the revenues for both direct and indirect management? How well do the revenue management practices for both direct and indirect management align with the objectives of Directive 2003/87/EC?	Availability and clarity of financial reports (if any) for direct and indirect management ~~Stakeholders' feedback on the clarity and transparency of revenue management (direct and indirect)~~ ~~Stakeholders' feedback on degree of alignment with Directive objectives~~	High transparency and clear reporting, and strong alignment and positive stakeholder feedback	Desk research from qualitative sources ~~Interviews: national authorities, the Commission, CINEA, the EIB~~
	3.c. Efficiency of revenue allocation - How efficiently are Fund's revenues allocated to projects?	Proportion of funds allocated ~~Time from revenue collection to project funding~~	Timely and efficient allocation of funds	Desk research from qualitative and quantitative sources Interviews: beneficiaries ~~national authorities, the Commission, CINEA, the EIB~~ Case studies

	3.d. Management of financial risks - How well are the financial risks managed?	Identification and mitigation of financial risks, contingency measures in place	Effective risk management and mitigation strategies	Desk research from qualitative sources Surveys: beneficiaries Interviews: the Commission, CINEA, beneficiaries ~~national authorities, the EIB~~ Case studies
4. How effectively has the Fund implemented other mandates under the EU ETS Directive?	4.a. Representation of small and medium projects - How did the Fund specifically support small and medium-scale projects?	Number of small/medium-scale projects funded, number of large-scale projects Percentage of small, medium and large-scale projects	Proportional representation of small/medium projects	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals); other EU funds data; data on success rate from Horizon Europe Desk research from qualitative sources: Fund documents (calls, criteria, progress reports) Surveys: beneficiaries, unsuccessful applicants, NCPs Interviews: beneficiaries, NCPs, trade and business associations, the Commission, CINEA ~~national authorities, the EIB~~ Case studies
	4.b. Attention to maritime sector - How much special attention has been given to the maritime sector by the Fund (e.g. under the IF23 Call and IF24 Auction)?	Number of maritime projects funded Amount of funding awarded to support renewable hydrogen production for the maritime sector (IF24 Auction) Number of calls dedicated to maritime sector	Significant funding and progress in the maritime sector	
	4.c. Geographical participation - How successful has the Fund been in increasing geographical participation balance?	Geographic distribution of funded projects	Balanced representation across European regions	
	4.d. Support for CBAM - How effective has the Fund been in supporting projects in sectors covered by CBAM?	Number and quality assessment scores of projects in sectors covered by CBAM	Effective support and implementation of CBAM projects	

5. Will the Fund achieve its objectives within the planned timeline?	5.a. Achievement of Fund objectives within the implementation horizon - What are the typical timelines for projects from approval to completion?	Expected average time from project approval to completion	Projects are expected to be completed within their expected duration	Desk research from quantitative sources: Fund data (awarded) Desk research from qualitative sources: Fund documents (progress reports) ~~Surveys: beneficiaries~~ Interviews: beneficiaries, the Commission, CINEA ~~national authorities, trade and business associations, the EIB~~ Case studies
	5.b. Internal factors causing delays - What are the key internal factors causing delays in project implementation?	Identification of internal factors (e.g. technological complexities, cash flow issues) causing delays	Minimal delays due to internal factors	Desk research from qualitative sources: Fund documents (progress reports) Surveys: beneficiaries Interviews: beneficiaries, the Commission, CINEA, NCPs ~~national authorities, trade and business associations, the EIB~~ Case studies
	5.c. External factors causing delays - What are the key external factors causing delays in project implementation?	Identification of external factors (e.g. political uncertainties, supply chain disruptions) causing delays	Minimal delays due to external factors	
	5.d. Effectiveness of timeline management - How effectively are project timelines managed and monitored?	Frequency and accuracy of project monitoring and reporting	Effective monitoring and timely adjustments	Desk research from quantitative sources: Fund data (awarded)
6. How has the implementation of technical assistance, PDA, blending operations and AaaS improved the Fund's	6.a. Support from technical assistance - How has technical assistance to NCPs supported project	Number of NCPs receiving technical assistance Quality and number of guidance materials and tools provided to applicants	Improved project development and implementation	Desk research from qualitative sources: Fund documents (progress reports) Surveys: NCPs ~~beneficiaries~~ Interviews: NCPs ~~beneficiaries, national authorities, the Commission, CINEA, the EIB~~

effectiveness in meeting its objectives?	development and application preparation?	Quality and number of Info days organised		~~Desk research from quantitative sources: Fund data (awarded)~~
	6.b. Contribution of PDA to project readiness - How has PDA contributed to proposals readiness and success?	Number of proposals with PDA agreement negotiation, PDA execution ongoing, and PDA execution completed Success rate of proposals receiving PDA Maturity and yield of proposals supported through PDA	Increased proposal readiness and success rates	Desk research from qualitative sources: Fund documents (progress reports) Surveys: unsuccessful applicants ~~beneficiaries~~ Interviews: the EIB ~~beneficiaries, national authorities, the Commission, CINEA~~ ~~Desk research from quantitative sources: Fund data (awarded)~~
	6.c. Effectiveness of blending operations - How effective have blending operations been in leveraging additional funding?	Amount of additional funding leveraged through blending operations	Significant increase in leveraged funding	Desk research from qualitative sources: Fund documents (progress reports) Surveys: NCPs ~~beneficiaries~~ Interviews: the Commission, CINEA, private actors ~~beneficiaries, national authorities, the EIB~~ ~~Desk research from quantitative sources: Fund data (awarded)~~
	6.d. Effectiveness of 'Auction-as-a-Service' scheme - How effective has AaaS been in facilitating the support of national funding for Innovation Fund projects that could not be funded by the Fund due to budget limitations?	Share of Innovation Fund-positively evaluated projects receiving national funding through AaaS Amount of national funding mobilised for such Innovation Fund-positively evaluated projects Stakeholders' feedback on whether Innovation Fund positive evaluation of selected projects acted as a driver to unlock national funding	Significant complementarity between Innovation Fund and national funding	Desk research from qualitative sources: Fund documents (progress reports) Interviews: national authorities, the Commission, CINEA ~~beneficiaries, the EIB~~ ~~Desk research from quantitative sources: Fund data (awarded)~~ ~~Surveys: Beneficiaries~~

	~~e. Impact on overall project success rate - What has been the impact of these support mechanisms on the overall project success rate?~~ ([75])	~~Stakeholders' feedback on success rate of projects with and without these support mechanisms~~	~~Higher success rates for projects with support mechanisms~~	~~Desk research from quantitative sources: Fund data (awarded)~~ ~~Desk research from qualitative sources: Fund documents (progress reports)~~ ~~Surveys: beneficiaries, NCPs~~ ~~Interviews: beneficiaries, national authorities, NCPs, the Commission, CINEA, the EIB~~
	~~6.e. Best practices and lessons learned - What best practices and lessons have been learned from the implementation of these support mechanisms?~~ ([76])	~~Identification and documentation of best practices and lessons learned~~	~~Clear documentation and application of best practices~~	~~Desk research from qualitative sources: Fund documents (progress reports)~~ ~~Surveys: beneficiaries, NCPs~~ ~~Interviews: national authorities, NCPs, the Commission, CINEA, the EIB beneficiaries~~ ~~Desk research from quantitative sources: Fund data (awarded)~~
7. How effective has the Fund been in executing communication, knowledge sharing, and publicity activities?	7.a. Communication with stakeholders - How well has the Fund communicated its objectives, processes, and outcomes to stakeholders (including industry stakeholders and eligible countries)?	Clarity and frequency of communication, stakeholder awareness levels	High clarity and frequent communication, high stakeholder awareness	Desk research from qualitative sources: Fund documents (knowledge sharing) Surveys: beneficiaries, unsuccessful applicants, NCPs Interviews: beneficiaries, national authorities, NCPs, trade and business associations, the Commission, CINEA, the EIB Case studies ~~Desk research from quantitative sources: Fund data (knowledge sharing); data from other EU programmes such as Horizon Europe~~
	7.b. Knowledge sharing facilitation - How effectively has the Fund facilitated knowledge sharing among stakeholders?	Quality of knowledge sharing events Number of knowledge sharing events per year and number of participants	High quality of events, high participation levels	

([75]) This sub-question is redundant as the impact of the different mechanisms is discussed under their respective questions.

([76]) Best practices and lessons learned are discussed under their respective questions.

	~~c. Publicity efforts – How successful have beneficiaries' efforts been in communicating accurate and useful information about Innovation Fund projects and their outcomes?~~ ([77])	~~Stakeholders' awareness on the scope, progress and results of Innovation Fund projects as communicated by beneficiaries~~ ~~Stakeholders' feedback on how useful information on projects as shared by beneficiaries is for own needs (e.g. useful in decision-making or project planning)~~	~~High reach and engagement, positive media coverage~~	
	~~7.c. Best practices and lessons learned in communication – What best practices and lessons have been learned from the communication, knowledge sharing, and publicity efforts?~~ ([78])	~~Identification and documentation of best practices and lessons learned~~	~~Clear documentation and application of best practices~~	

Answers to evaluation sub-questions	Indicators	Results
EQ1. How successful has the Fund been in supporting mature projects with significant potential to reduce GHG emissions, with the aim of scaling up innovative technologies, processes, or products for commercial deployment across the EU?		
EQ1.a - The Fund has consistently identified and selected proposals that in their	Number of awarded and non-awarded proposals	242 proposals awarded (15 % of total proposals received or 47 % of proposals which met all evaluation criteria) 1347 non-awarded proposals

([77]) Publicity efforts have been included under communications (sub-question 7.a.).

([78]) Best practices and lessons learned are discussed under their respective questions.

proposal combine the highest levels of innovation, maturity, replicability, and cost-efficiency. Yet, intense competition and persistent oversubscription left many high-quality proposals unfunded.	Submitted, eligible and above threshold	1589 proposals submitted 1342 proposals eligible (85 % of total proposals received) 517 proposals above threshold (33 % of total proposals received)
	Total amount of funding committed (and total amount of grants requested)	Budget planned: 11.8 billion Budget awarded: EUR 12.7 billion Budget requested (by eligible proposals): EUR 87 billion
	Quality of awarded and non-awarded proposals (award criteria scores)	Awarded proposals consistently outperformed non-selected ones across all criteria in calls for 'regular' grants. Awarded projects cluster at the upper end of the innovation score distribution (typically above 4), while non-selected proposals scored lower on average. Awarded proposals were concentrated in the highest-scoring bands for GHG emissions avoidance (around 4 or above). In the beneficiaries' survey, nearly 4 in 5 projects applied at the demonstration or scale-up stage (TRL 6-8). In comparison, many respondents to the survey of unsuccessful applicants were still at the pilot stage.
EQ1.b - The Fund's portfolio is expected to deliver substantial GHG emissions reductions	Planned avoidance of GHG emissions	Together, ongoing projects are anticipated to avoid 871 mtCO2e over their first decade of operation.
	Potential of emission reductions if the supported technology is scaled up	This indicator could not be calculated with the evidence available. The Fund portfolio is still largely in demonstration and early deployment phases, and reliable data on replication, market uptake, and counterfactual deployment are not yet available. Any estimate of scale-up impacts at this stage would therefore be speculative rather than evidence-based.

EQ1.c - Although the Fund supports projects across all eligible categories, funding is concentrated in energy-intensive industries.

Number of projects (in pipeline, under development, operational)

Category	Number of projects	Awarded funding (EUR)	Before financial close	Between financial close and entry into operation	Operational	Terminated
Energy-intensive industries	114	6.2 billion	84	11	8	11
Renewable energy	42	1.2 billion	27	9	2	4
Energy storage	24	739 million	15	5	3	1
Industrial carbon management	21	3.1 billion	20	1	0	0
Net-zero mobility and buildings	7	362 million	7	0	0	0

Planned/installed capacity across all eligible categories

Geographical distribution of planned/installed capacity of each technology

Percentage increase of planned/installed capacity of each technology per eligible country, as a result of funded projects

These indicators could not be calculated with the available data. The majority of projects have not yet reached installation or operation, and comparable national baseline data by technology are limited. Attribution of capacity changes to Innovation Fund support would therefore be speculative at this stage.

EQ1.d - Even if implementation and realised outcomes remain limited, given the programme's early stage, evidence suggests that the Fund has built a strong pipeline of projects progressing toward future roll-out.	Expected duration in years from signature to financial close, to entry into operation	Average time to expected financial close: 1.7 years Average duration from grant signature to expected entry into operation: 3.7 years
	Higher TRL after funding	Respondents to the beneficiaries' survey expect significant commercial impacts, though realised outcomes are still limited given the early stages. Case studies also suggest TRL advancement: BBRT expects to move from pilot to full industrial scale, reaching TRL 9 with its first processed output, while InnoSolveGreen progressed from TRL 6–7 to 8–9, demonstrating its replicability in the Baltic region.
EQ1.e - Calls for 'regular' grants have been effective in selecting high-quality projects (see EQ1.a) and mobilising additional investments, but the evaluation phase can be challenging for both evaluators and applicants.	Number and success rate of projects funded through calls for 'regular' grants	220 proposals awarded out of 1396 proposals received (16 % success rate)
	Stakeholders' views on appropriateness of calls criteria (e.g. degree of prescriptiveness)	Stakeholders' views on the appropriateness of calls' criteria differ: - In the beneficiaries' survey, respondents valued the clarity of the award criteria and the support provided by CINEA through info days and the Fund's website. - Evidence from the public consultation and surveys with unsuccessful applicants and NCPs suggests that the award criteria are overly prescriptive. - The two statements do not contradict each other: the criteria can be clear while still being prescriptive.
	Planned investments mobilised	EUR 41.8 billion (186 projects)
EQ1.f - Auctions have proven effective in driving cost competition and market discovery, but firm conclusions cannot be drawn as auctions have only been applied to the hydrogen sector, which was in transition during the period in question.	Number and success rate of hydrogen projects funded through auctions	22 proposals awarded out of 193 proposals received (11 % success rate)
	Stakeholders' views on appropriateness of the instrument	Although stakeholders do not question the appropriateness of auctions, they consistently emphasised the need for ongoing monitoring and stronger safeguards to ensure that cost competition translates into viable projects.
	Planned investments mobilised	EUR 3.4 billion (6 projects)

EQ2. How effective has the Fund been in mobilising additional EU funding, state aid, and private investment?		
EQ2.a - The Fund has developed frameworks for complementarities with other EU instruments, but actual financial leverage has been modest.	Amount of additional EU funding leveraged	EUR 420 million through the EU-Catalyst partnership EUR 200 million InvestEU top-up for the IF24 Call EUR 45.2 million (4 projects)
	Challenges identified	Although respondents to the public consultation called for more synergies between EU funding programmes, NCPs reported limited capacity to advise on combining instruments and difficulties in explaining methodological differences between Horizon Europe and the Fund. Beneficiaries do not consistently differentiate between EU and national/regional funding when declaring public investment mobilised in applications and during implementation. Beneficiaries do not consistently monetise EU support received.
	Solutions implemented	The Commission introduced recent tools aiming to better connect funding instruments, such as more explicit business-case requirements and Coordination and Support Actions in Horizon Europe's 2023-24 work programmes, and the STEP Seal. If practical results remain scarce, a few instances have been reported.
EQ2.b - Projects were able to secure substantial State aid, but leverage depends on the national context and on further clarification about cumulation rules.	Amount of State aid secured	EUR 4.1 billion (36 projects)
	Challenges identified	National frameworks have a substantial impact on the success of the portfolio, and inconsistencies in the interpretation of cumulation rules and occasional withdrawal of expected support create bottlenecks. Stakeholders warned that cumulation rules are not flexible enough (but also too much, depending on the category of stakeholders) and that more guidance is needed. Beneficiaries do not consistently differentiate between EU and national/regional funding when declaring public investment mobilised in applications and during implementation.

	Solutions implemented	DG CLIMA publishes guidance on cumulation rules in the documents accompanying calls, clarifying how combined support should be reflected in applications and assessed by national authorities or other EU programme managers.
EQ2.c - The Fund has mobilised substantial private investment, though some barriers still limit its leverage potential.	Amount of private funding attracted	EUR 45.2 billion in total investments for EUR 11.08 billion in grants, a leverage ratio of about 1:4 (roughly EUR 4 of private/public investment for EUR 1 grant) EUR 46.1 billion according to data reported by projects (169 projects)
	Challenges identified	Projects are not commercially viable in the short-term, making them unattractive to risk-averse investors. Beneficiaries do not consistently report internal corporate financing as 'additional funding'.
	Solutions implemented	PDA has demonstrably helped bridge some gaps. The 'as-a-service' scheme and the STEP Seal create new pathways for complementary support (although they have yet to be materialised).
EQ2.d - The Fund has attracted demand far exceeding available resources, confirming strong alignment with market priorities but also revealing limits in tailoring support to diverse project needs and risk profiles.	Alignment of funded projects with priority sectors identified in the EU's decarbonisation goals and market studies	By design, the Fund thus targets sectors identified as having the most substantial potential for emissions reduction in the EU ETS Directive.
	Oversubscription rate (overall, per call, per sector)	Overall: 7.4 (see Table 6 in the supporting study)
	Ratio of applications received to funds allocated	Budget requested by evaluated proposals / budget awarded = 6.8 Almost a 1:7 ratio (EUR 7 requested for EUR 1 awarded)
	Percentage of projects awarded funding which enter into operation	7 % (13 out of 192 projects)

	Proportion of projects that failed to meet milestones or defaulted due to risk-related issues	A combination of regulatory, financial, and administrative factors often results in delays in achieving milestones. Thus, it is not possible to single-out delays due to risk-related issues.
EQ3. How effectively are the Fund's revenues managed in compliance with the EU ETS Directive objectives?		
EQ3.a - The Fund's revenues have been managed to ensure a broad sectoral and geographical scope, in line with the objectives of the EU ETS Directive. However, funded outcomes remain concentrated in a few sectors and countries.	Number of sectors covered	25 sectors represented in the portfolio
	Number of countries covered	26 countries represented in the portfolio (out of 30 eligible)
EQ3.b - Revenue management is highly transparent and consistent, though the scope of publicly available information is limited.	Availability and clarity of financial reports for direct and indirect management	Internal financial reports for direct and indirect management are transparent and clear. External transparency depends on information made available by the Commission.
EQ3.c - Revenue allocation has been efficient in committing available resources. However, committed resources do not guarantee that projects will meet milestones and eventually receive funding.	Proportion of funds allocated	Over 7 calls for proposals for ‘regular’ grants and 2 auctions, quantitative evidence shows that the Fund eventually awarded 107 % of its planned budget.

EQ3.d - Financial risk management is robust and procedurally mature, with flexible financing and structured safeguards, though funding rules and external shocks continue to challenge projects.	Identification and mitigation of financial risks, contingency measures in place	Strict financial maturity checks during the evaluation phase. After selection, a milestone-based payment system provides firm financial discipline and protects the Fund against non-advancing projects. CINEA also manages risks through structured early-warning tools, including a monthly monitoring table and a dedicated internal reporting tool developed outside the corporate IT systems (such as Sygma/eGrants) to capture deviations not yet visible there. Projects at risk are next escalated to DG CLIMA for mitigation or formal amendments. Amendments can extend timelines and adjust work plans.
EQ4. How effectively has the Fund implemented other mandates under the EU ETS Directive?		
EQ4.a - Although procedural efforts have been made to ensure the representation of small- and medium-scale projects in the portfolio, the financial support they receive remains much lower than that of large-scale projects.	Number and percentage of small-, medium- and large-scale projects	62 small-scale projects (33 % of the portfolio) 43 medium-scale projects (22 %) 87 large-scale projects (45 %)
EQ4.b - The Fund has given dedicated attention to the maritime sector by tailoring call design, but the number of funded projects remains modest.	Number of maritime projects funded	9 maritime projects
	Number of calls dedicated to maritime sector and awarded funding	1 topic under the IF23 Call – EUR 198 million for 6 projects 1 topic under the IF24 Auction – EUR 96 million for 3 projects
EQ4.c - The Fund has expanded its geographical coverage, but awards remain concentrated in larger industrial economies.	Geographic distribution of funded projects	By Q1 2025, projects were awarded in almost all eligible countries but concentrated in larger industrial economies (Spain, France, Italy and Germany accounting for almost half of the portfolio with 87 projects).

EQ4.d - The Fund has strongly supported certain CBAM sectors, but gaps remain in others.	Number of projects in sectors covered by CBAM	26 hydrogen projects 16 cement & lime projects 8 iron & steel projects
	Assessment of quality scores of these projects	Quality scores are slightly below the portfolio average (36 vs 37.5), reflecting technological and financial immaturity, especially in hydrogen and cement.
EQ5. Will the Fund achieve its objectives within the planned timeline?		
EQ5.a - The Fund's portfolio is on track to achieve its objectives within the 15-year implementation horizon. Funded projects are planned within reasonable schedules, despite deviations and sector-specific complexity.	Expected average time from project approval to completion	Quantitative evidence shows an average planned duration of about 8.8 years, well within the implementation horizon (15 years).
EQ5.b - Delays often arise from a combination of financial, administrative, and technical internal difficulties.	Identification of internal factors causing delays	Difficulties in gathering the evidence needed to validate a milestone. Technical redesigns, underestimated costs and governance issues in large consortia also compound delays.
EQ5.c - Externally, permitting and regulatory hurdles are recurring causes of delay across sectors. Macroeconomic instability and market immaturity have further undermined timelines.	Identification of external factors causing delays	Sector-specific hurdles: complex and unpredictable permitting procedures, lack, inadequacy or shortage of needed infrastructure (such as storage capacity and grid infrastructure), supply chains uncertainty, lack of EU standards and difficulty securing national co-financing. Structural challenges: inflation, war in Ukraine, COVID-19, increasing costs, supply chain shortages, weak offtake markets, delayed transposition of EU Directives, limited infrastructure capacity, policy uncertainty and fragmented implementation of EU legislation, immature demand-side incentives, commodity prices volatility.

EQ5.d - A robust monitoring system provides close oversight and timely risk detection. At the same time, beneficiaries experience reporting obligations as burdensome.	Frequency and accuracy of project monitoring and reporting	Project timelines are proactively managed. CINEA monitors projects through milestone validation, annual reporting and knowledge sharing deliverables. To ensure accuracy, CINEA combines formal reports with frequent informal exchanges, risk-based reporting cycles (every six months before financial close, annually afterwards) and joint financial–technical oversight.
EQ6. How has the implementation of technical assistance, PDA, blending operations and AaaS improved the Fund's effectiveness in meeting its objectives?		
EQ6.a - Technical assistance has enhanced NCPs' capacity and outreach, though its impact on application preparation remains emergent.	Number of NCPs receiving technical assistance	All NCPs receive dedicated support, including structured training, communication materials and network activities. Targeted technical assistance for countries with low participation rates is available on demand for 20 countries identified as having the lowest ratio of Innovation Fund support relative to their verified share of ETS emissions.
	Quality and number of guidance materials and tools provided to applicants	By the end of 2024, 5 training sessions had been completed (out of 9 planned). Close to 60 % of NCPs surveyed (11 out of 19) are 'very satisfied' or 'somewhat satisfied' with the services provided by DG CLIMA directly or through contractors.
	Quality and number of Info days organised	15 events were held between November 2023 and February 2024.
	Stakeholders' feedback on success rate of projects with and without these support mechanisms	Survey and interview evidence confirm positive views, though satisfaction was uneven across countries. Many respondents judged technical assistance as only 'somewhat' improving application quality.
	Identification and documentation of best practices and lessons learned	Structured training and networking have improved baseline knowledge and peer learning, but there were delays in the delivery of some communication materials and uneven uptake by NCPs due to capacity constraints. These capacity constraints place a significant burden on this activity, as the resources available and the NCP's role vary widely across countries. NCPs also underlined the importance of tailoring support.

EQ6.b - PDA contributes to project readiness and success by improving the maturity of promising proposals. However, its overall reach remains limited.	Number of proposals with PDA agreement negotiation, execution ongoing, and execution completed	Over 6 calls for proposals (2020-2022), 87 proposals were eligible for PDA. The EIB selected 70 and eventually, 62 signed an agreement. All 62 assignments have been completed. Data for the IF23 Call onwards was not available at the time of reporting.
	Success rate of proposals receiving PDA	By 2024, 37 PDA beneficiaries had reapplied to the Fund, with 16 successfully selected for grants, a 43 % success rate.
	Maturity and yield of proposals supported through PDA	Eligible proposals must fulfil minimum thresholds for GHG emissions avoidance and degree of innovation, achieve at least 50 % of points under the project maturity criterion, and be identified by evaluators as having the potential to improve their maturity through tailored assistance.
	Stakeholders' feedback on success rate of projects with and without these support mechanisms	Survey evidence points to mixed satisfaction.
	Identification and documentation of best practices and lessons learned	PDA's effectiveness depends on tailoring its scope to promoters' needs, ensuring timely delivery, and improving accessibility across regions.
EQ6.c - Blending operations have proven their value in mobilising additional resources and targeting sectors with acute financing barriers, but their overall impact remains modest.	Amount of additional funding leveraged through blending operations	EUR 420 million
	Stakeholders' feedback on success rate of projects with and without these support mechanisms	Awareness among applicants and NCPs remains limited.
	Identification and documentation of best practices and lessons learned	Blending operations have demonstrated added value when strong institutional coordination is combined with targeted advisory support, though challenges in scale, timing, and attractiveness remain.

EQ6.d - National contributions (via ‘as-a-service’ schemes) have proven effective in providing countries with a ready-made framework to fund positively evaluated but unsuccessful proposals. However, it is too early to assess their effectiveness.	Share of Innovation Fund-positively evaluated projects receiving national funding through AaaS	3 Spanish projects under the IF24 Auction
	Amount of national funding mobilised for such Innovation Fund-positively evaluated projects	EUR 1.2 billion from Germany, Austria, Spain and Lithuania during the IF23 and IF24 Auctions.
	Stakeholders’ feedback on whether Innovation Fund positive evaluation of selected projects acted as a driver to unlock national funding	For AaaS only: reserve-list mechanics were identified as a best practice, enabling the smooth transfer of proposals when funding became available
	Stakeholders’ feedback on success rate of projects with and without these support mechanisms	Not available.
	Identification and documentation of best practices and lessons learned	Overall, transparent ranking, strong EU–national coordination, streamlined State aid procedures and flexible design worked well. In contrast, the needs for early budget clarity, stronger outreach, and adaptable rules remain to ensure broader and more effective uptake of the mechanism.
EQ7. How efficiently has the Fund used its resources to achieve its objectives?		

	Clarity and frequency of communication, stakeholder awareness levels	As of November 2024, 15 IFEG meetings had taken place. Institutional info days are organised by DG CLIMA and CINEA after each call opening to ensure the broadest dissemination of support. They attract strong participation. Between 2020 and 2023, DG CLIMA and CINEA issued 41 press releases and 144 news articles. The Innovation Fund helpdesk is also open during each application window. For the 2022 calls, more than 1 000 queries were managed.
EQ7.a - The Fund has communicated its objectives, processes, and results through frequent and varied channels, ensuring high awareness among many stakeholders. Clarity, responsiveness and visibility could be improved.	Stakeholders' awareness on the scope, progress and results of funded projects as communicated by beneficiaries	Not available.
	Stakeholders' feedback on how useful information on projects as shared by beneficiaries is for own needs (e.g. useful in decision-making or project planning)	See EQ7.b
	Identification and documentation of best practices and lessons learned	Best practices identified across evidence sources include multi-channel and hybrid communication, presenting both successful and unsuccessful proposals, and publishing recordings and materials online. Lessons learned highlight the need for earlier event announcements, sector-tailored guidance, national-language sessions, and structured outreach beyond the usual applicant base to improve geographical and sectoral coverage.
EQ7.b - The Fund has institutionalised knowledge	Quality of knowledge sharing events	Survey evidence shows that beneficiaries value these efforts, but their perceived relevance varies markedly across project types and sectors.

sharing as a core requirement and created numerous events and tools to foster exchange. Overall satisfaction with these activities is positive, though experiences vary across sectors and project sizes.	Number of knowledge sharing events per year and number of participants	Between 2020 and 2023, the Fund organised more than 10 knowledge sharing events and thematic workshops.
	Identification and documentation of best practices and lessons learned	Recent feedback (2025 meetings) show that the Fund's knowledge sharing framework is regarded as advanced and well-developed, highlighting the work already done by CINEA to address stakeholders' feedback. Nonetheless, continuing to strengthen early coordination, cross-sector linkages, and the systematic integration of lessons learned into wider EU-level learning frameworks would help sustain and expand these improvements over time.

3. EFFICIENCY

Evaluation question	Evaluation sub-question	Indicator	Judgment criteria	Data source
8. How efficiently has the Fund used its resources to achieve its objectives?	8.a. Reduce GHG emissions - How well are resources being used to maximise GHG emission reduction?	~~Total grants provided~~ Total Innovation Fund budget spent Expected GHG emissions reduction => GHG emissions / ~~EUR grant provided~~ Innovation Fund budget spent	~~High expected GHG emission reduction per EUR grant provided~~ Low EUR grant provided per expected tCO_2e avoided (benchmark: other similar policy instruments (see EQ9), and ETS price)	Desk research from quantitative sources: Fund data (awarded and non-awarded proposals, budget committed), Innovation Fund dashboard Desk research from qualitative sources: Fund documents (calls, criteria, budgets, quarterly and progress reports) Surveys: beneficiaries Interviews: beneficiaries, ~~national authorities, trade and business associations;~~ the Commission, CINEA, the EIB
	8.b. Induce investments - How well are resources being used to induce investments in mature, innovative projects with significant GHG reduction potential?	~~Total grants provided~~ Total Innovation Fund budget spent Total investments in projects supported by Fund => EUR induced investment / ~~EUR grant provided~~ Innovation Fund budget spent	High induced investment per EUR grant provided (benchmark: other similar policy instruments (see EQ9)	
	8.c. Increase low-carbon technologies in eligible categories - How well are resources being used to increase low-carbon technologies in energy-intensive industries, renewable energy, industrial carbon management, energy storage net-zero mobility and buildings?	GHG emissions / EUR grant provided Innovation Fund budget spent EUR induced investment / EUR grant provided Innovation Fund budget spent ~~Total grants provided Potential/installed capacity of renewable energy, industrial carbon management, energy storage, net-zero mobility and buildings through projects supported by Fund~~ ~~=> respective indicators:~~ ~~Low-carbon technologies, renewable energy and buildings: MW/EUR grant provided~~ ~~CCS/CCU: mtonnes/EUR grant provided~~ ~~Energy storage: kWh/EUR grant provided~~	Low EUR grant provided per expected tCO_2e avoided High induced investment per EUR grant provided ~~High potential or installed capacity of~~ for low-carbon technologies in energy-intensive industries, renewable energy, industrial carbon management, energy storage, net-zero mobility and buildings per EUR grant provided	

		~~Net-zero mobility (battery capacity): Ah/EUR grant provided~~		
	8.d. Efficiency of resource utilisation by project size, country/region, sector, year - How efficiently are the revenues allocated to different project sizes (small, medium, large-scale), countries/regions, sectors, and by year?	By project size, country/region, sector, year: - expected reduction in GHG emissions / ~~EUR grant provided~~ Innovation Fund budget spent - EUR induced investment / ~~EUR grant provided~~ Innovation Fund budget spent	High efficiency of resource utilisation across different project sizes, countries/regions, sectors, years Benchmarking against the average, thus expressing the relative efficiency of the different subcategories.	
	8.e. Efficiency of the current 60 % Innovation Fund funding rate - Is the 60 % funding rate adequate for projects to reach final close or are (potential) projects over- or under subsidised by the Innovation Fund?	% of projects reaching financial close % of applicants who indicate that mobilising the remaining funds is the main barrier for meeting the Innovation Fund requirements Distribution of private and public funding (see EQ2)	High or low % of financial close (Innovation Fund over and under subsidising, respectively) High or low % of applicants indicating that mobilising funding is a main barrier (Innovation Fund under and over subsidising, respectively)	Desk research from quantitative sources: Innovation Fund dashboard Surveys: beneficiaries, unsuccessful applicants
9. How efficiently has the Fund been implemented?	9.a. Direct management (Commission and CINEA) - What are the costs related to direct management of the Commission and CINEA?	Direct labour and financial costs related to (but not limited to): calls implementation, support to NCPs, guidance and tools for applicants Communication, knowledge sharing, and publicity	Low ratio of costs to funding Benchmark: corresponding indicators for similar EU interventions under direct management (see EQ9)	Interviews and/or data requested from: ~~national authorities,~~ the Commission, CINEA, the EIB
	9.b. Indirect management (~~Commission and CINEA~~ EIB) - What are the costs related to indirect management of the ~~Commission and CINEA~~ EIB?	Direct labour and financial costs related to PDA calls and implementation ~~Contribution to blending operations~~ ~~AaaS~~	Low ratio of costs to funding ~~Benchmark: corresponding indicators for similar EU interventions under indirect management (see EQ9), if applicable~~	
	~~c. Communication, knowledge sharing, and publicity~~	~~Labour and IT costs related to communication, knowledge sharing, and publicity~~	~~Low ratio of costs to funding~~	

	~~(Commission, CINEA and project beneficiaries) - What are the costs related to communication, knowledge sharing, and publicity by the Commission, CINEA and project beneficiaries?~~			
	~~d. Support and assistance (national authorities) - What are the costs sustained by national authorities to provide support and assistance to the Commission?~~	~~Direct labour costs related to (but not limited to):~~ ~~- support and assistance on implementation of Fund~~ ~~- acknowledgement of selected projects~~	~~Low ratio of costs to funding~~	~~Interviews and/or data requested from: national authorities~~
	9.c. Support and assistance (NCPs) - What are the costs sustained by NCPs to provide support and assistance to applicants?	Direct labour costs related to (but not limited to): support to applicants, communication, knowledge sharing and publicity ~~Supporting the preparation and submission of proposals~~ ~~Assisting in disseminating relevant updates and ensuring compliance with national regulations and fund requirements~~	Sufficient resources relative to the support needs ~~Low ratio of costs to funding~~	Surveys: NCPs Interviews and/or data requested from: NCPs, ~~the Commission, CINEA, the EIB~~
	9.d. Administrative costs (project beneficiaries) - What are the administrative costs for project beneficiaries?	Direct labour costs & costs of external services related to preparing the project proposal, complying with monitoring, and reporting obligations	Low ratio of costs to funding Benchmark: corresponding indicators for similar EU interventions (see EQ9)	Surveys: beneficiaries
	9.e. Administrative costs (unsuccessful applicants) - What are the administrative costs for unsuccessful applicants?	Direct labour costs & costs of external services related to preparing the project proposal	Low average administrative costs per proposal Benchmark: corresponding indicators for similar EU interventions (see EQ9) ~~Low ratio of costs to funding~~	Surveys: unsuccessful applicants
10. How do the costs of the Fund 's	10.a. Magnitude of cumulative costs and benefits (businesses,	Total costs vs. total benefits	Benefits outweigh costs	

interventions compare to their benefits?	administrations, citizens/consumers) - What are the total costs and benefits of the Fund interventions?	Benefit-cost ratio Benefits: environmental (GHG emission reduction, increased renewable energy/CCS/CCU/storage), economic (stimulating innovation, job creation, increasing EU's competitiveness in new technologies (qualitative), supporting local economies (qualitative)), and societal (improving air quality)	High benefit-cost ratio Benchmark: corresponding indicators for similar EU interventions (see EQ9)	Costs: EQ2 Benefits: - Desk research from qualitative sources: Fund documents - Desk research from quantitative sources: Fund data, Innovation Fund dashboard Surveys: beneficiaries Interviews: beneficiaries, ~~national authorities,~~ NCPs, ~~trade and business associations;~~ the Commission, CINEA, the EIB
	~~b. Short-term v. long-term cost-benefit outcomes - What are the short-term and long-term cost-benefit outcomes of the Fund?~~	~~Comparison of short-term (within 10 years) vs. long-term (> 10 years) benefits~~ ~~Based on aggregated project data~~	~~Long-term benefits significantly outweigh short-term costs~~	
	10.b. Variation across project type - How do the cost-benefit outcomes vary by project type?	Benefit-cost ratios different project types (small, medium, large-scale projects)	Favourable benefit-cost ratios across project types	
	10.c. Variation across funding schemes and services - How do the cost-benefit outcomes vary by funding scheme ~~under direct and indirect management~~?	Benefit-cost ratios for different funding schemes and services (e.g. calls for proposals, technical assistance, PDAs, AaaS)	Favourable benefit-cost ratios across various funding schemes	
	10.d. Variation across categories/sectors - How do the cost-benefit outcomes vary by category/ sector?	Benefit-cost ratios for all eligible categories/sectors	Favourable benefit-cost ratios across various categories/sectors	
	10.e. Geographic variation - How do the cost-benefit outcomes vary by ~~country~~ geographic region?	Benefit-cost ratios for different ~~EEA countries~~ geographic regions	Favourable benefit-cost ratios across various locations	
	10.f. Indirect benefits - What are the indirect benefits of the Innovation Fund?	Indirect benefits quantified and qualified, based on aggregated project data Indirect effects in scope: environmental (stimulating green transition through increased renewable energy/CCS/CCU/storage), economic	Significant indirect benefits observed	

		(stimulating innovation, job creation, increasing EU's competitiveness in new technologies (qualitative), supporting local economies (qualitative)		
11. How efficiently have disbursements under the Fund been processed?	11.a. Timeliness and monitoring of disbursements - How timely have the disbursements been made to project beneficiaries? How well are the disbursements monitored and controlled?	Average time from approval to disbursement Monitoring and control frequency of disbursements	Timely disbursement within expected timelines	Desk research from quantitative sources: Fund data (financial data) Desk research from qualitative sources: Fund documents Surveys: beneficiaries Interviews: beneficiaries, national authorities, trade and business associations; the Commission, CINEA, the EIB
	11.b. Reasons for delays - What are the main reasons for any delays in disbursement?	Identification of reasons for delays	Minimal delays and clear understanding of delay causes	Desk research from quantitative sources: Innovation Fund dashboard Surveys: Beneficiaries Interviews: Beneficiaries, CINEA
	11.c. Comparative disbursement efficiency - How do the disbursement processes compare with those of similar funding mechanisms?	Comparison of disbursement efficiency metrics	Comparable or better efficiency than similar mechanisms (benchmark: other similar policy instruments (see EQ9)	Desk research from qualitative data: literature review Desk research from quantitative data: data from NER 300 programme and other related EU programmes

				(e.g. Horizon Europe, Modernisation Fund, European Hydrogen Bank) Surveys: Beneficiaries Interviews: beneficiaries, the Commission, CINEA, the EIB
	11.d. Disbursement improvement measures - What measures have been implemented to improve the efficiency of the disbursement process?	Identification and effectiveness of improvement measures	Effective measures leading to improved efficiency (time to pay)	Desk research from qualitative data: literature review Interviews: the Commission, CINEA, the EIB
	11.e. Communication effectiveness - How effective are the communication channels between the Fund administration and beneficiaries on disbursements?	Frequency and quality of communication, stakeholder feedback	Effective and clear communication	Desk research from qualitative sources: literature review Surveys: beneficiaries, NCPs Interviews: beneficiaries, the Commission, CINEA, the EIB
	11.f. Disbursement administrative costs - What are the administrative costs associated with the disbursement process?	Ratio of administrative costs to total disbursements	Low administrative costs relative to disbursements	Interviews: the Commission, CINEA
12. How efficiently have other Fund processes been executed?	12.a. Application process - How efficient are the application and selection processes for Fund funding?	Direct support for applicants:	Short processing times, high stakeholder satisfaction	Desk research from qualitative sources: literature review

		– provision of relevant templates, e.g. for business plans and feasibility studies – provision of relevant cost methodologies – provision of guidelines/methodology for estimation GHG reduction potential Fitness of the award criteria Average time for application processing and selection		Surveys: beneficiaries, unsuccessful applicants, NCPs Interviews: beneficiaries, NCPs, ~~national authorities, trade and business associations~~; evaluators, the Commission, CINEA, ~~the EIB~~
	12.b. Grant agreement signature - How effectively do the Fund 's process to prepare and sign grant agreements supports timely project implementation?	Time from fund allocation to grant agreement signature to project initiation Stakeholder feedback on the grant agreement preparation phase ~~Proportion of allocated funds that is used~~	Timely allocation and stakeholder satisfaction ~~high proportion of allocated funds used~~	Desk research from quantitative sources: Fund data Interviews: national authorities, trade and business associations, the Commission, CINEA
	12.c. Stakeholder coordination and communication - How efficient is the communication and coordination between CINEA, the Commission and beneficiaries ~~and national authorities~~ during project implementation?	Frequency and quality of communication and coordination, stakeholder satisfaction	Efficient communication and coordination, high stakeholder satisfaction	Desk research from qualitative sources. Surveys: beneficiaries Interviews: beneficiaries, national authorities, CINEA
	12.d. Fund monitoring - How well are the funds monitored to ensure they are used as intended?	Frequency and thoroughness of financial audits, stakeholder satisfaction ~~compliance rates~~	Efficient and effective monitoring	

13. What opportunities exist to simplify and reduce burdens within the Fund?	13.a. Administrative burdens - What are the key administrative burdens faced by stakeholders?	Stakeholder feedback on administrative processes	Identification of key burdens	Surveys: beneficiaries, unsuccessful applicants, ~~NCPs~~
	13.b. Types of simplification measures - What simplification measures can be implemented to reduce administrative burdens?	Identification and implementation of simplification measures (e.g. simplified GHG calculation for small-case projects, removal of knowledge sharing plan at application stage)	Potential for effective reduction of administrative burdens	Interviews: beneficiaries, NCPs, national authorities, trade and business associations, the Commission, CINEA, the EIB
	13.c. Impact of 'Auction-as-a-Service', which have been closelyaligned to the applicable State aid rules, on administrative burden - What has been the consequence of implementing AaaS in decreasing administrative burden?	Perceived administrative burden ~~Administrative burden metrics pre- and post-implementation~~	Significant decrease in administrative burden	Desk research from qualitative sources: Fund documents Interviews: beneficiaries, NCPs, national authorities, trade and business associations, the Commission, CINEA, the EIB ~~Surveys: beneficiaries, unsuccessful applicants, NCPs~~
14. How cost-efficient is the PDA in terms of success rate versus resources used?	14.a. PDA resources used - What are the total and average resources (financial, human, etc.) used for providing PDA?	Total cost and resource allocation for PDA Average costs and resources allocation for PDA per proposal	Efficient resource allocation	Desk research from quantitative data: EIB financial statements Interviews: the Commission, the EIB
	14.b. Comparison between PDA costs and success rate achieved - How do the costs of supported proposals compare to the success rate achieved?	Cost-success rate ratio of supported proposals	Success rate is proportionate to PDA costs	Desk research: PDA annual reports Surveys: unsuccessful applicants

	14.c. PDA best practices - What best practices and lessons have been identified in terms of PDA cost-efficiency?	Identification and documentation of best practices and lessons learned	Clear documentation and application of best practices	Desk research from qualitative sources: literature review, PDA annual reports Surveys: beneficiaries, unsuccessful applicants Interviews: beneficiaries, national authorities, trade and business associations, the Commission the EIB
	14.d. Cost-efficiency patterns - What are the specific patterns contributing to the cost-efficiency of PDA?	Analysis of cost-efficiency patterns across project type, sector, geographic location, maturity	Identification of key cost-efficiency factors	Surveys: unsuccessful applicants Interviews: the EIB, the Commission
15. How cost-efficient are blending operations on success rate versus resources used?	15.a. Resources used in blending operations - What are the total resources (financial, human, etc.) used for blending operations?	Total cost and resource allocation for blending operations	Efficient resource allocation	Desk research from quantitative data: Fund data Interviews: the Commission, CINEA, the EIB
	15.b. Comparison between costs of blending operations and success rate achieved - How do the costs of projects supported through blending operations compare to the success rate achieved?	Cost-success rate ratio of blending operations-supported projects	Success rate is proportionate to costs of blending operations	Surveys: Beneficiaries Interviews: beneficiaries, national authorities, trade and business associations; the Commission, CINEA, the EIB
	15.c. Blending operations best practices - What best practices and lessons have been identified in terms of blending operations cost-efficiency?	Identification and documentation of best practices and lessons learned	Clear documentation and application of best practices	Desk research from qualitative sources: literature review Surveys: beneficiaries Interviews:

				beneficiaries; national authorities, trade and business associations; the Commission, CINEA, the EIB
	15.d. Cost-efficiency patterns - What are the specific patterns contributing to the cost-efficiency of blending operations?	Analysis of cost-efficiency patterns across project type, sector, geographic location, maturity	Identification of key cost-efficiency factors	Desk research from qualitative sources: literature review Surveys: beneficiaries Interviews: beneficiaries; national authorities, trade and business associations; the Commission, CINEA, the EIB
16. How do the Fund's efficiency outcomes compare to similar interventions?	16.a. National comparison - How do the efficiency of resource use, efficiency of the execution, and the cost-benefit ratio of the Innovation Fund compare to those of similar national interventions?	Comparative analysis against a pre-defined 'basket' of similar national interventions of the following quantities: Resource use (expected reduction in GHG emissions per EUR granted~~, induced investments per EUR granted~~) ~~Total costs and administrative costs~~ ~~Cost-benefit ratios~~	Comparable or better efficiency outcomes	Desk research from qualitative sources: literature review (e.g. focus on sources relevant to biggest countries in terms of funds received) Surveys: beneficiaries The selection of similar national and EU interventions will be made based on the survey for beneficiaries and literature search
	16.b. EU comparison - How do the efficiency of resource use, efficiency of the execution, and the cost-benefit ratio of Fund projects compare to those of similar EU interventions?	Comparative analysis against a pre-defined 'basket' of similar EU interventions of the following quantities: Resource utilisation (~~expected reduction in GHG emissions per EUR granted~~, induced investment per EUR granted) Total costs and administrative costs Total amount of people working on the Fund (in FTE) vs allocated grants	Comparable or better efficiency outcomes	

		Benefit-cost ratios		
	16.c. Lessons learnt - What lessons can be learned from the efficiency of similar interventions?	Identification and documentation of best practices	Clear documentation and application of best practices	
17. What are the main reasons for amending or terminating grant agreements, and how is efficient fund use ensured?	17.a. Reasons for amending or terminating Gas - What have been the main reasons for amending or terminating GAs?	Reasons provided for amending or terminating grant agreements Assessing the following possible aspects: innovation level, GHG reduction potential, replicability, maturity, financial close or operational aspects, procedural reasons or other reasons	Substantial number of projects that were amended or terminated due to the listed reasons	Desk research from qualitative data: Fund documents Surveys: beneficiaries Interviews: beneficiaries, the Commission, CINEA, ~~the EIB~~
	~~b. GHG emission reduction potential - Has a change in the expected GHG reduction potential of projects been reason to amend or terminate grant agreements?~~	~~Number of projects for which the project's GHG reduction potential has led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due to the project's GHG reduction potential~~	
	~~c. Replicability - Has a change in the expectation of the replicability of projects been reason to amend or terminate grant agreements?~~	~~Number of projects for which the project's replicability has led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due to the project's expected replicability~~	
	~~d. Maturity - Has a change in the actual level of maturity of projects been reason to amend or terminate grant agreements?~~	~~Number of projects for which the project's maturity has led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due to the project's maturity~~	
	~~e. Financial close or project operational aspects - Has a change in the expectations about the time for financial close or a change in expectations on project operational aspects (e.g. technological, HR) been reason to~~	~~Number of projects for which a change in the time for project's financial close or project operational aspects has led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due to change in the time of project's financial close or project operational aspects~~	

	~~amend or terminate grant agreements?~~			
	~~f. Procedural reasons - Have there been any procedural reasons to amend or terminate grant agreements?~~	~~Number of projects for which procedural reasons have led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due to procedural reasons~~	
	~~g. Other reasons - Have there been other reasons to amend or terminate grant agreements?~~	~~Number of projects for which other reasons have led to amending or terminating grant agreements~~	~~Substantial number of projects that were amended or terminated due other reasons~~	

Answers to evaluation sub-questions	Indicators	Results
EQ8. How efficiently has the Fund used its resources to achieve its objectives?		
EQ8.a - The Fund's portfolio demonstrates a high potential efficiency for GHG emission reduction, with an overall potential efficiency of EUR 13.36 per expected ton of CO_2e avoided.	Total Innovation Fund budget spent	EUR 11.09 billion in awarded grants EUR 530 million in management costs
	Expected GHG emissions reduction	871 278 371 tCO_2e
EQ8.b - The Fund demonstrates the capacity to mobilise investments beyond its direct financial support.	Total Innovation Fund budget spent	EUR 11.6 billion
	Total induced investment	EUR 56.3 billion in direct investment EUR 54.6 billion in indirect investment
EQ8.c - The Fund's efficiency varies substantially across categories, with energy storage	Innovation Fund budget spent / expected GHG emissions reduction	Category | Euro budget spent per expected tCO_2e avoided | EUR induced investments (direct

performing best on GHG emissions avoidance and investment mobilisation.	EUR induced investment / Innovation Fund budget spent		

		+ indirect) per euro budget spent
Energy-intensive industries	16.50	11.68
Renewable energy	10.71	8.57
Energy storage	5.16	13.42
Industrial carbon management	13.92	5.52
Net-zero mobility & buildings	21.90	6.56
Total	**13.36**	**9.55**

EQ8.d - The Fund's efficiency varies substantially across regions, project sizes, and sectors.

Innovation Fund budget spent / expected GHG emissions reduction (by project size, country/region, sector, year)

Type	Specification	Euro budget spent per expected tCO_2e avoided	EUR induced investments (direct + indirect) per euro budget spent
Region	Eastern Europe	10.37	4.40
	Northern Europe	10.17	13.24
	Southern Europe	20.86	9.46
	Western Europe	13.91	7.93
Size	Small-scale	5.52	2.99
	Medium-scale	16.60	4.24
	Large-scale	13.50	10.40
Sector	Manufacturing of components	6.78	8.76
	Hydrogen	35.62	8.96
	Chemicals	31.68	9.72
	Cement & lime	18.51	4.76

	EUR induced investment / Innovation Fund budget spent (by project size, country/region, sector, year)	Glass, ceramics & construction material	47.76	5.04
		Refineries	24.54	4.94
		Intra-day electricity storage	4.71	4.86
		Iron & steel	9.59	26.13
		Other energy storage	1.15	5.40
		Solar energy	4.93	11.21
		Wind energy	52.01	9.61
		Maritime	149.04	7.08
		Other	10.89	7.04
EQ8.e - The 60 % funding rate appears to be appropriate. The funding rate was insufficient in certain sectorsdepending on capital needs and the availability of co-funding sources.	% of projects reaching financial close	20 % of the portfolio (39 projects)		
	% of applicants who indicate that mobilising the remaining funds is the main barrier for meeting the Innovation Fund requirements	30 % of the surveyed beneficiaries found the funding rate insufficient (37 respondents out of 124).		
	Distribution of private and public funding	See EQ2.		

EQ9. How efficiently has the Fund been implemented?

EQ9.a - Direct management costs amounted to EUR 78 million, representing only 0.9 % of the Fund's total budget.

Direct labour and financial costs for DG CLIMA and CINEA

Specification	2020	2021	2022	2023	2024
Direct management DG CLIMA	2.04	4.98	4.46	7.62	15.22
Direct management CINEA	0.01	7.73	9.19	11.20	15.13
Total direct management (in million EUR$_{2024}$)	**2.05**	**12.71**	**13.65**	**18.82**	**30.35**

EQ9.b - Indirect management costs amounted to EUR 24 million, reflecting a relatively stable annual cost range of EUR 4 to 7 million.	Direct labour and financial costs related to PDA calls and implementation	EUR_{2024} 24 million
EQ9.c - NCPs incurred an estimated EUR 19 million in administrative costs to support applicants and beneficiaries, with annual expenditures rising from EUR 2 million in 2020 to EUR 5 million in 2024 as the number of active NCPs increased.	Direct labour costs related to (but not limited to): support to applicants, communication, knowledge sharing and publicity	EUR_{2024} 19 million
EQ9.d - Beneficiaries incurred an estimated EUR 35 million in administrative costs, with an average of EUR 95 000 per small-scale project and EUR 240 000 per large-scale project. Each euro spent on administrative activities generates roughly EUR 329 in grants received.	Direct labour costs & costs of external services related to preparing the project proposal, complying with monitoring, and reporting obligations	EUR 35 million in administrative costs, with an average of EUR 95 000 per small-scale project and EUR 240 000 per large-scale project.
EQ9.e - Administrative costs for unsuccessful applicants are similar to those of beneficiaries. However, unsuccessful applicants were more critical about the application process than beneficiaries.	Direct labour costs & costs of external services related to preparing the project proposal	Administrative costs for unsuccessful applicants are similar to those of beneficiaries.
EQ14. How cost-efficient is the PDA in terms of success rate versus resources used?		
EQ14.a - Between 2021-2014, a total of EUR 23.6 million was spent	Total cost and resource allocation for PDA	EUR_{2024} 23.6 million

on PDA, corresponding to an average of about EUR 5.9 million per year.	Average costs and resources allocation for PDA per proposal	EUR 380 500 per proposal (total budget spent / 62 PDA beneficiaries)
EQ14.b - A comparison between PDA costs and success rate shows that the financial inputs have generated measurable though varied outcomes.	Cost-success rate ratio of supported proposals	Of 62 proposals for which PDA was completed, around 37 reapplied to the Innovation Fund. 16 were awarded funding, a success rate of 43 % when considering only resubmissions (26 % in total).
EQ14.c - To improve PDA's cost-efficiency, evidence highlights targeted scoping, standardisation, promoter engagement and flexibility as key success factors.	Identification and documentation of best practices and lessons learned	PDA was most efficient when support focused on specific maturity gaps, aligned with evaluation feedback and when consultants where closely managed by the EIB. Clearly defined scopes and deliverables at the outset, along with flexibility to adapt to evolving project needs, were also crucial for maintaining relevance and cost-efficiency of the PDA process
EQ14.d - Several recurring patterns contribute to PDA's cost-efficiency, notably relating to project selection, timing, scope, and promoter engagement.	Analysis of cost-efficiency patterns across project type, sector, geographic location, maturity	PDA has achieved reasonable cost-efficiency as an advisory instrument, with limited financial resources producing measurable results in project maturity and eventual grant success. Resources were used most efficiently when targeted at mature proposals with engaged promoters, and delivered within well-timed, clearly scoped assignments. However, systematic impact tracking should be improved.
EQ15. How cost-efficient are blending operations on success rate versus resources used?		
EQ15.a - Financial resources dedicated to blending operations totalled EUR 429 million over the period 2020–2024.	Total cost and resource allocation for blending operations	EUR_{2024} 429 million
EQ15.b - Because the number of projects financed by blending operations has been small so far, and their recent launch, evidence was insufficient to assess their cost-success ratio.	Cost-success rate ratio of blending operations-supported projects	Not available.

EQ15.c - The EU-Catalyst partnership has potential through close coordination, clear governance, and rapid decision-making. Still, given the limited number of funded projects, this potential has not yet been realised.	Identification and documentation of best practices and lessons learned	See answer.
EQ15.d - Because the number of projects financed by blending operations has been small so far, and their recent launch, evidence was insufficient to establish cost-efficiency patterns.	Analysis of cost-efficiency patterns across project type, sector, geographic location, maturity	Not available.
EQ11. How efficiently have disbursements under the Fund been processed?		
EQ11.a - Disbursements are tightly monitored and controlled. The conditionality of achieving milestones means that the disbursement cycle usually starts only after financial close.	Average time from approval to disbursement	Assuming the first disbursement takes place after financial close, the average expected time from grant signature to first disbursement is around 1.7 years.
	Monitoring and control frequency of disbursements	See EQ12.d
EQ11.b - Delays in disbursement stem from delays in achieving milestones, particularly financial close.	Identification of reasons for delays	A combination of regulatory, financial, and administrative factors often results in delays in achieving milestones (see EQ5.b and EQ5.c), amendment procedures to adjust timelines and thus postponements of disbursements, especially for innovative or capital-intensive projects.
EQ11.c - The Fund's disbursement system is more structured and risk-controlled than for NER 300, but also more complex and less flexible than other funding schemes.	Comparison of disbursement efficiency metrics	For NER 300, the average time to first disbursement was around 5 to 7 years. For the First Call (awarded Dec 2012), most operational projects only began receiving funds around 2017–2019.

<table>
<tr><td>EQ11.d - Measures to improve the efficiency of the Fund’s disbursement process have focused on streamlining procedures and strengthening guidance.</td><td>Identification and effectiveness of improvement measures</td><td colspan="6">Support to applicants and beneficiaries has been consistently revisited to clarify the disbursement process. CINEA clarified milestones definition and the introduction of auctions also introduced a lighter disbursement process.</td></tr>
<tr><td>EQ11.e - Since the evidence did not distinguish communication on disbursements from general communication, an analysis of the effectiveness of communication on disbursements specifically was not possible.</td><td>Frequency and quality of communication, stakeholder feedback</td><td colspan="6">See answer. The effectiveness of overall exchanges is presented under EQ12.c</td></tr>
<tr><td>EQ11.f - Administrative costs related to the disbursement process are moderate in financial terms but substantial in time and effort for both CINEA and beneficiaries.</td><td>Ratio of administrative costs to total disbursements</td><td></td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td></tr>
<tr><td></td><td></td><td>Total direct management costs</td><td>2.05</td><td>12.71</td><td>13.65</td><td>18.82</td><td>30.35</td></tr>
<tr><td></td><td></td><td>Innovation Fund budget spent</td><td>0</td><td>1 239</td><td>2 082</td><td>3 513</td><td>5 124</td></tr>
<tr><td></td><td></td><td>Direct management costs vs budget spent</td><td>N/A</td><td>1.2 %</td><td>0.7 %</td><td>0.5 %</td><td>0.6 %</td></tr>
<tr><td colspan="8">EQ12. How efficiently have other Fund processes been executed?</td></tr>
<tr><td rowspan="3">EQ12.a – Although processing times are lengthening, the application and selection processes are increasingly efficient.</td><td>Direct support for applicants: provision of relevant templates and guidance on relevant costs calculation and GHG emissions reduction methodology</td><td colspan="6">The range of direct support to applicants is vast, expanding and appreciated by stakeholders.</td></tr>
<tr><td>Fitness of the award criteria</td><td colspan="6">Interviews confirmed that while the evaluation framework is transparent and supported by clear award criteria.</td></tr>
<tr><td>Average time for application processing and selection</td><td colspan="6">The average time between the application deadline and the evaluation results has lengthened, from 3-4 months in the early years to 6.5 months for the IF23 Call.</td></tr>
</table>

EQ12.b - Grant agreement preparation is considered a critical but demanding step. It establishes a solid framework for implementation but also places significant burden on beneficiaries.	Time from fund allocation to grant agreement signature to project initiation	Quantitative evidence shows that since 2022, projects have typically started between 21 to 28 days after grant agreement signature
	Stakeholder feedback on the grant agreement preparation phase	The beneficiaries' survey showed that the grant agreement preparation phase is more intense and condensed than many applicants anticipated, leading to dissatisfaction with this implementation phase. Nonetheless, beneficiaries highlighted the professionalism and responsiveness of CINEA's project officers and noted that institutional support from DG CLIMA and CINEA helped them navigate the process.
EQ12.c - Communication and coordination between DG CLIMA, CINEA, and beneficiaries during project implementation is effective and appreciated, with strong satisfaction with the role of CINEA's project officers.	Frequency and quality of communication and coordination, stakeholder satisfaction	Around two-thirds of surveyed beneficiaries reported being very satisfied with institutional communication and support. CINEA's project officers are valued for their professionalism, responsiveness, and proactive approach.
EQ12.d – Monitoring mechanisms are thorough and effective in safeguarding the use of funds and ensuring accountability. However, their efficiency is reduced by reporting obligations experienced as heavy by beneficiaries.	Frequency and thoroughness of financial audits, stakeholder satisfaction	CINEA monitors project progress and disbursements through quarterly and monthly reports, which align payments with implementation milestones and function as early warning mechanisms for delays. External audits and strict rules on permissible project changes further ensure that funds are used as intended. However, reporting obligations are commonly perceived as burdensome.
EQ10. How do the costs of the Fund 's interventions compare to their benefits?		
EQ10.a - The Fund is expected to generate EUR 279 billion in quantifiable societal benefits for the programme funding period 2020-2030.	Total costs vs. total benefits	For the programme funding period (2020-2030): Total costs: EUR_{2024} 187 billion Total benefits: EUR_{2024} 466 billion Total net benefits: EUR_{2024} 279 billion

<table>
<tr><td rowspan="2"></td><td>Benefit-cost ratio</td><td>Considering only the EU’s contribution (expected to total EUR 32 billion for 2020-2030), the benefit-cost ratio amounts to 14.3.
When considering overall costs, including national, private, and other public co-financing, the benefit–cost ratio is 2.5</td></tr>
<tr><td>Benefits: environmental, economic, and societal</td><td>See EQ10.f</td></tr>
<tr><td>EQ10.b - Large-scale projects account for most of the quantifiable benefits, totalling EUR 49 billion, or about 74 % of the total quantifiable benefits for 2020-2024.</td><td>Benefit-cost ratios different project types (small, medium, large-scale projects)</td><td>For the period 2020-2024, small-scale projects achieved the most favourable benefit-cost ratios, with 19.5 for the EU contribution and 3.0 for overall costs. Medium-scale projects followed with ratios of 13.7 and 4.2. Large-scale projects recorded 12.5 and 1.9.</td></tr>
<tr><td>EQ10.c – As opposed to calls for ‘regular’ grants, hydrogen auctions show a negative cost-benefit balance of -EUR 2.5 billion, resulting in a benefit-cost ratio of 0.4 when overall costs are considered. For other activities, no data are currently available to quantify their benefits, making it impossible to calculate a benefit-cost ratio.</td><td>Benefit-cost ratios for different funding schemes and services (e.g. calls for proposals, technical assistance, PDAs, AaaS)</td><td><table>
<tr><th>Call type</th><th>Benefit-cost ratio (EU contribution)</th><th>Benefit-cost ratio (overall costs)</th></tr>
<tr><td>Hydrogen Auctions</td><td>2.5</td><td>0.4</td></tr>
<tr><td>Calls for ‘regular’ grants</td><td>13.6</td><td>2.2</td></tr>
</table></td></tr>
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<tr>
<td>EQ10.d - The cost-benefit analysis shows considerable variation in outcomes across eligible categories and sectors.</td>
<td>Benefit-cost ratios for all eligible categories/sectors</td>
<td>
<table>
<tr><th>Category</th><th>Benefit-cost ratio (EU contribution)</th><th>Benefit-cost ratio (overall costs)</th></tr>
<tr><td>Industrial carbon management</td><td>13.2</td><td>3.2</td></tr>
<tr><td>Energy-intensive industries</td><td>10.5</td><td>1.5</td></tr>
<tr><td>Energy storage</td><td>31.5</td><td>3.0</td></tr>
<tr><td>Net-zero mobility and buildings</td><td>8.0</td><td>1.5</td></tr>
<tr><td>Renewable energy</td><td>14.8</td><td>2.3</td></tr>
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<tr>
<td>EQ10.e - Projects in northern and eastern Europe deliver the greatest benefits relative to the EU contribution, efficiently translating EU support into societal gains. When considering overall costs, projects in eastern Europe performs best, generating benefits that outweigh total investments.</td>
<td>Benefit-cost ratios for different geographic regions</td>
<td>
<table>
<tr><th>Region</th><th>Benefit-cost ratio (EU contribution)</th><th>Benefit-cost ratio (overall costs)</th></tr>
<tr><td>Eastern Europe</td><td>16.3</td><td>4.4</td></tr>
<tr><td>Northern Europe</td><td>17.0</td><td>2.0</td></tr>
<tr><td>Southern Europe</td><td>8.3</td><td>1.6</td></tr>
<tr><td>Western Europe</td><td>12.5</td><td>2.2</td></tr>
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<tr>
<td>EQ10.f – Beyond direct financial support, induced investments and potential GHG emission reductions,</td>
<td>Indirect benefits quantified and qualified, based on aggregated project data</td>
<td>Because indirect benefits are more difficult to quantify and monetise, they have been assessed primarily qualitatively in Annex B of the supporting study.</td>
</tr>
</table>

the Fund generates a broad range of indirect benefits, including contributing to stimulating the green transition and innovation, job creation, increasing the EU's competitiveness, supporting local economies, and improving the health of people and the environment.	Indirect effects in scope: environmental, economic, societal	Survey evidence highlights that the Fund supports a range of indirect benefits, including enhanced reputation, improved technological expertise, and better access to finance for beneficiaries.
EQ13. What opportunities exist to simplify and reduce burdens within the Fund?		
EQ13.a - Administrative burdens are substantial and stem from methodological complexity and extensive documentation requirements during the application phase, and heavy reporting obligations during implementation.	Stakeholder feedback on administrative processes	If the Fund's administrative processes ensure accountability and control, stakeholders confirm they impose considerable burdens on applicants, beneficiaries, and support structures.
EQ13.b – Although some simplification measures have been introduced, further adjustments could reduce administrative burden for applicants and beneficiaries, notably allowing for differentiated requirements.	Identification and implementation of simplification measures	If efforts made to simplify the application process have improved clarity, they not fully alleviated the workload. Stakeholders suggest scaling administrative requirements to a project's size and complexity and allowing more flexibility for SMEs.
EQ13.c - The introduction of 'Auctions-as-a-Service' has substantially reduced administrative burden for DG CLIMA and participating countries by centralising procedures and shortening timelines.	Perceived administrative burden	The experiences gathered show that efficiency gains linked to the implementation of AaaS are considerable but partly depend on the institutional capacity and regulatory frameworks of participating countries.

EQ16. How do the Fund's efficiency outcomes compare to similar interventions?		
EQ16.a - When compared with similar national interventions, the Fund shows strong relative efficiency.	Comparative analysis against similar national interventions of resource use (expected reduction in GHG emissions per EUR granted)	The Fund's potential efficiency (EUR 13.36/tCO_2e) is higher than that of most comparable national interventions. But methodological and contextual differences limit the scope for direct comparison between instruments.
EQ16.b - When compared to other EU interventions, the Fund performs favourably relative to the EU contribution but shows lower efficiency when total costs are considered. The Fund also shows relatively lower leverage for induced investments.	Comparative analysis against similar EU interventions of: Resource use, induced investment per EUR granted Total costs and administrative costs Total amount of people working on the Fund (in FTE) vs allocated grants Benefit-cost ratios	See answer. For a comparison of administrative costs, see EQ9.d
EQ16.c – Experience from other EU programmes highlights several efficiency best practices, particularly on financial maturity assessment, flexible funding mechanisms and simplification.	Identification and documentation of best practices	See answer.

EQ17.a – Delays in achieving milestones, due to a combination of factors, are the main reasons for amendments, sometimes leading to termination.	Reasons provided for amending or terminating grant agreements	As discussed in EQ5.b and EQ5.c, a combination of regulatory, financial, and administrative factors often results in delays in achieving milestones, and thus amendment procedures to adjust timelines, especially for innovative or capital-intensive projects. Amendments are not always accepted, especially if they can change the scope of a project in a way that fundamentally alters its original design and could put into question the award decision. Changes in innovation level, GHG emissions reduction potential, or replicability were thus not identified as the main reasons for amendments or terminations.

4. COHERENCE

Evaluation question	Evaluation sub-question	Indicator	Judgment criteria	Data source
18. How internally coherent are the components of the Fund?	18.a. Internal goal alignment - How are the Fund 'activities' (e.g. calls for proposals, PDA, technical assistance, blending operations, AaaS) aligned with its objectives ~~(business investment in clean energy and industry, boost economic growth, create future-proof jobs, reinforce European technological leadership on a global scale~~ e.g. awarding projects with significant GHG reduction potential, cost-effectiveness - effectiveness, geographical balance in revenue management)?	Alignment: number of sub-objectives an activity is aligned to (0 to 9) Potential for synergies: number of other activities also contributing to sub-objectives (0 to 16) ~~Degree of internal synergy: triangulation between Fund data (e.g. correspondence between sectors of awarded proposals and objectives of the Fund) and stakeholders' feedback~~	Indication of changes from concrete (i) corroborative findings, (ii) caveats and contradictions, (iii) new insights in surveys/interviews/case-studies compared to initial a priori assessment ~~Minimum gaps between activities and objectives~~	Desk research from qualitative sources: Fund documents (e.g. progress reports), literature review Desk research from quantitative sources: Fund data (awarded proposals) Surveys: beneficiaries, Horizon Europe, NCPs, unsuccessful applicants Interviews: ~~beneficiaries, national authorities,~~ trade and business associations; the Commission, CINEA, the EIB Case studies
	18.b. Barriers and target conflicts - Which of the Fund 'activities' constitute a barrier or target conflict with its objectives?	Cohesiveness & complementarity: 8:8 matrix on whether activities facilitate the success of other activities and indirectly improve the outcomes of objective contributions (Scores 0, 1, or 2) Triangulation between literature review and stakeholders' feedback ~~Degree of internal impediment:~~	Indication of changes and identification of target conflicts and barriers from concrete evidence (surveys, interviews, case-studies) compared to initial a priori assessment ~~Minimum barriers and conflicts~~	
19. How externally	19.a. External goal certainty - What are the main, overarching,	Alignment of objectives: Triangulation between Fund	Types and occurrences of synergy of calls with the main objectives of	Desk research from qualitative sources: Fund

coherent is the Fund with other EU policies and initiatives?	objectives of EU climate and energy policies/initiatives (Net Zero Industry Act, STEP, European Hydrogen Strategy, Integrated SET Plan, Industrial Technology Roadmaps, New Industrial Strategy for Europe, Green Deal Industrial Plan, Circular Economy Action Plan, Bioeconomy Strategy, EU Biodiversity Strategy for 2030, Industrial Carbon Management Strategy, Offshore energy strategy, EU Solar Strategy) and to which degree are there synergies with the Fund's calls?	documents, literature review and stakeholders' feedback	EU climate and energy policies/initiatives	documents (e.g. list of past and future calls), literature review Desk research from quantitative sources: Fund data (awarded proposals) Surveys: beneficiaries, Horizon Europe, NCPs, unsuccessful applicants Interviews: ~~beneficiaries, national authorities,~~ trade and business associations; the Commission, CINEA, the EIB Case studies
	19.b. Alignment with EU legislation - To which degree are calls for proposals aligned/with other relevant EU legislation (e.g. ETS Directive, European Climate Law, Batteries Regulation, REPowerEU, Renewable Energy Directive, ReFuelEU Aviation, FuelEU Maritime)	Alignment of objectives: triangulation between literature review, analysis of relevant legislation and stakeholders' feedback ~~Degree of external alignment~~	High alignment, i.e. Fund calls do not create frictions or overlaps with other EU legislation sharing similar objectives	Desk research from qualitative sources: Fund's documents (e.g. list of past and future calls), literature review Desk research from quantitative sources: Fund data (awarded proposals) Surveys: beneficiaries, unsuccessful applicants, Horizon Europe, NCPs Interviews: ~~beneficiaries, national authorities,~~ trade and business associations; the

				Commission, CINEA, the EIB Case studies
	19.c. Synergy with EU Funding and Research Programmes - To which degree do the Fund's activities complement other EU programmes in such a way that they can function as a follow-up of projects with a low commercial readiness level and a suitable pre-cursor for further commercialisation, funding and market success? (e.g. Horizon Europe, IPCEIs, Invest EU, CEF, Cohesion Fund)?	Obstacles and factors that potentially enhance or reduce synergies between Innovation Fund and these EU programmes: triangulation between literature review and stakeholders' feedback across the three funding instruments (calls, XaaS, blending operations compared to other EU programmes) ~~Degree of external complementarity~~	High complementarity, i.e. beneficiaries from Horizon Europe also apply for Fund, and beneficiaries from Fund also apply for Invest EU)	Desk research from qualitative sources: Fund documents (e.g. progress reports), literature review Desk research from quantitative sources: Fund data (awarded proposals) Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries Interviews: ~~beneficiaries, national authorities,~~ trade and business associations, the Commission, CINEA, the EIB Case studies

Answers to evaluation sub-questions	Indicators	Results
EQ18. How internally coherent are the components of the Fund?		

EQ18.a - The Fund's design shows strong internal coherence, with core mechanisms closely aligned to its decarbonisation objectives and complementary instruments effectively broadening its reach and coverage.	Alignment: number of sub-objectives an activity is aligned to (0 to 9) Potential for synergies: number of other activities also contributing to sub-objectives (0 to 16)	
EQ18.b – The most critical barriers to alignment between the Fund activities and its objectives stem from the Fund's design, a demanding application process and systemic and structural issues.	Cohesiveness & complementarity: 8:8 matrix (Scores 0, 1, or 2) Triangulation between literature review and stakeholders' feedback	See above.

Activity	Alignment	Cohesiveness & complementarity	Synergy	Coherence
A1: Calls for 'regular' grants	high	low	high	medium
A2: Auctions	high	low	very high	high
A3: Technical assistance	very low	low	very low	low
A4: Support to applicants	low	high	very low	low
A5: PDA	low	medium	high	medium
A6: Blending operations	medium	very low	high	low
A7: 'as-a-service' schemes	medium	very low	high	low
A8: Knowledge sharing & communication	very low	very high	very low	low
Total	**low**	**medium**	**medium**	**medium**
Funding activities	medium	low	high	medium
Supporting activities	very low	high	low	low

E19. How externally coherent is the Fund with other EU policies and initiatives?

EQ19.a - The Fund has a high degree of external coherence with the main goals of EU climate and energy policies.	Alignment of objectives: Triangulation between Fund documents, literature review and stakeholders' feedback	Robust evidence observed from various sources.
EQ19.b - The Fund demonstrates a high degree of external coherence with EU legislation, a finding consistently supported across qualitative desk research, surveys, and case studies.	Alignment of objectives: triangulation between literature review, analysis of relevant legislation and stakeholders' feedback	Robust evidence observed from various sources.
EQ19.c - The Fund demonstrates a strong potential to function as a follow-up to Horizon Europe. Despite some operational friction, there are also possible synergies with programmes funding large-scale infrastructure (like CEF) or supporting lower-income Member States (like the Modernisation Fund). The Fund's activities show varying degrees of coherence with national programmes	Obstacles and factors that potentially enhance or reduce synergies between the Fund and these EU programmes: triangulation between literature review and stakeholders' feedback on funding activities	High complementarity is anticipated due to common objectives. However, the Fund' strong potential to function as a follow up to Horizon Europe has limitations, notably because of the differences between both programmes objectives and application cycles.

5. RELEVANCE

Evaluation question	Evaluation sub-question	Indicator	Judgment criteria	Data source
20. To what extent do the Fund's objectives remain relevant given the current context of climate action and technological development needs?	20.a1. Relevance in the current policy context - To what extent do the scope and the objective of the Fund remain relevant over the implementation period? How do the Fund objectives still correspond to the current context of climate action?	Persistence of the policy objective and degree of alignment with current EU policy goals: triangulation between literature review, analysis of policy documents and stakeholders' feedback	High relevance in the current context	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries, unsuccessful applicants, ~~Horizon Europe beneficiaries~~ Interviews: beneficiaries, ~~national authorities,~~ trade and business associations; the Commission, CINEA, the EIB Case studies ~~Desk research from quantitative sources: data from the International Energy Agency, Eurostat, EEA, patents, venture capital~~
	20.a2. Relevance in the current technology context - Do the Fund objectives still correspond to the current context of technology development needs?	State of current technology development, existing technologies, current progress in technologies and maturity, and technology needs	High relevance in the current context	
	20.b. Future relevance projections - Will the Fund objectives remain relevant based on the expected evolution in the coming years?	Existing projections, foresight analysis and trend changes	Continued relevance in future contexts	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries; ~~unsuccessful applicants, Horizon Europe beneficiaries~~ Interviews: ~~beneficiaries,~~ national authorities, NCPs, ~~trade and business associations;~~ the Commission, CINEA, ~~the EIB~~
	20.c. Necessity for EU-Level action - Do the problems/needs still require	EU dimension of the problems that the Fund intends to address triangulation between literature	High necessity for EU-level action	Desk research from qualitative sources: Fund documents and literature review

	action at the EU level? (linked to EU added value)	review, policy documents and stakeholders' feedback Persistence of the problems in case of non-EU action: triangulation between literature review, policy documents and stakeholders' feedback		Interviews: beneficiaries, ~~national authorities,~~ trade and business associations; the Commission, CINEA, ~~the EIB~~ Case studies ~~Desk research from quantitative sources: data from the International Energy Agency, Eurostat, the Environment Agency, patents, venture capital~~ ~~Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries~~
21. How well do the Fund's objectives address current challenges in reducing GHG emissions and promoting innovation?	21.a. Targeting high-potential sectors - How effectively does the Fund target sectors with the highest potential for GHG emissions reduction?	Allocation of funds to high-potential sectors	Significant allocation to high-potential sectors	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries Interviews: beneficiaries, ~~national authorities,~~ trade and business associations; the Commission, CINEA, ~~the EIB~~ Case studies ~~Desk research from quantitative sources: data from the International Energy Agency, Eurostat, the Environment Agency, patents~~
	21.b. Promoting innovation in climate technologies - How relevant is the Fund in promoting innovation in climate technologies?	Level of innovation in funded projects Investment gaps at TRL levels covered by the Fund Replicability of projects funded by the Fund	High level of innovation	
22. How adaptable are the Fund's	22.a. Anticipation of future trends - How well do the Fund objectives anticipate	Degree of anticipation of future trends: triangulation between	High anticipation of future trends	Desk research from qualitative sources: Fund documents and literature review

objectives to future needs and emerging issues?	future trends and challenges in climate policy? (link to 1.b)	literature review and stakeholders' feedback		Surveys: beneficiaries, unsuccessful applicants Interviews: beneficiaries, ~~national authorities,~~ trade and business associations; the Commission, CINEA, ~~the EIB~~
	22.b. Flexibility and adaptability - How flexible is the Fund in adjusting to new technological developments and policy changes?	Stakeholders' feedback on mechanisms for flexibility and adaptation through the different activities and objectives of calls	High flexibility and adaptability	
23. How relevant are the Fund's objectives at the national level?	23.a. Alignment with national policies - How well do the Fund objectives align with national climate and energy policies of eligible countries?	Degree of alignment with national policies and plans: triangulation between literature review, policy documents at national level and stakeholders' feedback	High alignment with national policies	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries, NCPs, Horizon Europe beneficiaries Interviews: ~~beneficiaries, national authorities,~~ trade and business associations; the Commission, CINEA, ~~the EIB~~ ~~Desk research from quantitative sources: data from Eurostat~~
24. How well do the Fund's activities align with the current needs of European industry?	24.a. Relevance to European industry needs - How well do the Fund's activities meet the current needs of European industry?	Needs of industry at the times of Fund launch Simplification measures compared to NER 300 programme: triangulation between literature review, policy documents and stakeholders' feedback Needs of industry beyond direct financial support	High relevance to industry needs	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries Interviews: beneficiaries, ~~national authorities,~~ trade and business associations; the Commission, CINEA, ~~the EIB~~ Case studies

				~~Desk research from quantitative sources: Fund data on awarded and non-awarded proposals~~

Answers to evaluation sub-questions	Indicators	Results
EQ20. To what extent do the Fund's objectives remain relevant given the current context of climate action and technological development needs?		
EQ20.a.1 - Over the evaluation period, the Fund's legal framework has evolved to align with the EU's increasingly ambitious climate targets, thereby adapting to new policy contexts and proving its continued relevance.	Persistence of the policy objective and degree of alignment with current EU policy goals: triangulation between literature review, analysis of policy documents and stakeholders' feedback	Evidence sources confirm that the Fund's objectives remain closely tied to the EU's current policy framework and objectives.
EQ20.a.2 - The Fund's focus on highly innovative and mature solutions corresponds to current technology development needs, although some gaps remain.	State of current technology development, existing technologies, current progress in technologies and maturity, and technology needs	Evidence sources confirm the Fund's continued relevance in the current context, whil pointing to a few gaps.
EQ20.b - The Fund's objectives are expected to remain relevant in the coming years due to substantial investment gaps and long deployment cycles for industrial decarbonisation.	Existing projections, foresight analysis and trend changes	Desk research analysis estimates a financing gap of EUR 50-92 billion by 2030, especially for green steel, cement, CCS and long-duration storage. The Fund would serve as a key instrument to help close this gap.

EQ20.c - Evidence consistently points to the continuing need for EU-level action to address problems of scale, coordination and competitiveness in industrial decarbonisation.	EU dimension of the problems that the Fund intends to address triangulation between literature review, policy documents and stakeholders' feedback	Fragmented national investment efforts and limited fiscal capacity in several Member States risk widening industrial disparities, underscoring the need for stronger EU-level financing instruments (such as the Fund), to mobilise capital at scale and ensure cohesion in the transition.
	Persistence of the problems in case of non-EU action: triangulation between literature review, policy documents and stakeholders' feedback	As above.
EQ21. How well do the Fund's objectives address current challenges in reducing GHG emissions and promoting innovation?		
EQ21.a - The Fund directs its support towards sectors with substantial potential for emissions reduction, though coverage is uneven.	Allocation of funds to high-potential sectors	The EU ETS Directive covers sectors having the most substantial potential for emission reductions. By design, the Fund thus effectively targets sectors with the highest potential for GHG emissions reduction.
EQ21.b - The Fund is structured to promote high innovation in climate technologies.	Level of innovation and replicability of funded projects	See EQ1.a
	Investment gaps at TRL levels covered by the Fund	Survey responses from unsuccessful applicants indicate that not all advanced proposals (at TRL 6–8) could be supported, highlighting that available resources are not sufficient.
EQ22. How adaptable are the Fund's objectives to future needs and emerging issues?		

EQ22.a - The Fund’s approach to anticipating future climate and policy challenges relies on its financial structure, consultation processes, and alignment with broader EU priorities.	Degree of anticipation of future trends: triangulation between literature review and stakeholders’ feedback	Theoretically high.
EQ22.b - The Fund’s flexibility in adjusting to new technological and policy changes is attested by its evolving regulatory framework, award criteria, and call structure (also see EQ20.a.1).	Stakeholders’ feedback on mechanisms for flexibility and adaptation through the different activities and objectives of calls	The Fund’s calls for proposals are considered a strength, as they allow adjustments to new policy directions. Feedback loops between evaluators and CINEA have supported further refinements, making the programme more responsive over time.
EQ23. How relevant are the Fund's objectives at the national level?		
EQ23.a - The Fund’s objectives align broadly with the national climate and energy policies of eligible countries, though the degree of complementarity varies.	Degree of alignment with national policies and plans: triangulation between literature review, policy documents at national level and stakeholders’ feedback	Despite a broad alignment, procedural and structural barriers can limit the Fund’s objectives effective integration with domestic strategies.
EQ24. How well do the Fund’s activities align with the current needs of European industry?		
EQ24.a - Building on lessons learned from NER 300, the	Needs of industry at the times of Fund launch	During the Fund’s design phase, extensive consultations with industry stakeholders took place to inform adjustments compared to NER 300.

Fund was designed to meet industry needs at the time of its launch. It still addresses industry needs beyond direct financial support, but some gaps remain.	Simplification measures compared to NER 300 programme: triangulation between literature review, policy documents and stakeholders' feedback	The Fund introduced milestone-based disbursements, allowing up to 40 % of funding to be paid before projects begin delivering verified emission reductions, thereby supporting financial close. Governance was streamlined to reduce administrative complexity. The Fund allows EU-wide competition, complemented by simplified procedures for small-scale projects and targeted technical assistance.
	Needs of industry beyond direct financial support	Surveys, including the public consultation and case studies, confirm that the Fund is perceived as relevant to priority sectors such as hydrogen, cement, steel, and chemicals, while also providing reputational and signalling benefits that strengthen investor confidence and partnerships.

6. EU ADDED VALUE

Evaluation question	Evaluation sub-question	Indicator	Judgment criteria	Data source
25. What unique benefits does the Fund provide that cannot be achieved by national initiatives alone?	25.a. Unique benefits of the Fund in terms of scale and scope - How does the scale and scope of the Fund compare to national initiatives? To what extend has the Fund allowed the supported projects to be realised? Would projects have happened without Fund support? Could the projects be realised through support by national authorities only (without the Fund)?	Comparison of Fund's scale and scope with similar national initiatives	Larger scale and broader scope than national initiatives	Desk research from qualitative sources: Fund documents, literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, NCPs, trade and business associations, the Commission, CINEA, the EIB
	25.b. Unique transnational benefits of the Fund - What are the transnational benefits (e.g. cross-border collaborations) facilitated by the Fund?	Number and quality of cross-border projects	Significant transnational benefits	Desk research from qualitative sources: Fund documents and literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB
	25.c. Unique benefits of the Fund in terms of technological progress - How does the Fund foster innovation that would be unlikely at the national level?	Number (or value) of follow-on investments resulting from initial Innovation Fund financing Stakeholders' feedback on likelihood of funding at national level for projects with similar innovation levels as funded projects Critical level of funding mobilised	High level of innovation unique to EU-level action	

26. How does the Fund enhance the overall impact of climate action across the EU?	26.a. Enhanced impact of climate action compared to national level - What are the cumulative GHG reductions achieved through the Fund compared to national efforts? Is it still valid to assume that the objectives of the Fund can best be met by action at EU level? What would be the most likely consequences of stopping the Fund?	Total expected GHG reductions (tons CO_2e)	Greater expected cumulative GHG reductions	Desk research from qualitative sources: Fund documents, literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB
	26.b. Pathways to enhanced impact of climate action at EU level - How does the Fund improve the cost-effectiveness of climate action in the EU?	Cost per ton of CO_2e reduced	Lower cost per unit of GHG reduction	
27. In what ways does the Fund contribute to EU policy objectives beyond the reduction of GHG emissions?	27.a. Contribution to growth and job creation - How does the Fund support economic growth, competitiveness and job creation in the EU?	Expected number of jobs created Expected increase in companies' turnovers Number of cross-sector or cross-border partnerships formed	Significant economic growth and job creation	Desk research from qualitative sources: literature review Surveys: beneficiaries Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB
	27.b. Contribution to skills acquisition - How does the Fund support skills acquisition in the EU?	Number of workshops, seminars, or training sessions conducted as part of Fund projects Number of workers who received training or upskilling as part of Fund projects	Significant acquisition of skills relevant to the EU climate objectives	Desk research from qualitative sources: Fund documents, literature review Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, trade and business

		Evidence of reduced skill gaps in key sectors aligned with the Fund objectives		associations, the Commission, CINEA, the EIB
	27.c. Contribution to innovation in climate action - How does the Fund enhance the EU's technological leadership in climate action?	Number of new technologies developed and deployed Technological spillovers across sectors	Significant advancements in technological leadership	Desk research from qualitative sources: Fund documents (reporting), literature review Desk research from quantitative sources: Fund data on awarded proposals Surveys: beneficiaries, unsuccessful applicants, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB
	27.d. Contribution to social and regional cohesion - How does the Fund contribute to social and regional cohesion within the EU? (linked to relevance)	Geographic distribution of funded projects Share of projects that aim to enhance local infrastructure (e.g. energy access, public facilities) Share of projects that aim to address community needs (e.g. healthcare, housing, education) Share of projects that aim to reduce social or regional disparities (e.g. bridging rural–urban gaps)	Improved social and regional cohesion	Desk research from qualitative sources: Fund documents (reporting), literature review Desk research from quantitative sources: Fund data on awarded proposals Surveys: beneficiaries Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB

	27.e. Leverage of additional resources - How does the Fund enhance synergies with other EU funding programmes and policies?	Number of projects benefiting from the support of multiple EU programmes Quality of synergistic projects	Enhanced synergies with other EU programmes	Desk research from qualitative sources: Fund documents (reporting) Desk research from quantitative sources: Fund data on awarded proposals Surveys: beneficiaries, unsuccessful projects, Horizon Europe beneficiaries, NCPs Interviews: beneficiaries, national authorities, trade and business associations, the Commission, CINEA, the EIB

Answers to evaluation sub-questions	Indicators	Results
EQ25. What unique benefits does the Fund provide that cannot be achieved by national initiatives alone?		
EQ25.a - Compared to similar national initiatives, the Fund stands out for its larger scale and its specific focus on the deployment of innovative net-zero technologies.	Comparison of Fund's scale and scope with similar national initiatives	The comparative analysis (see EQ16.a), supported by interviews with policymakers and beneficiaries, confirms that while national programmes are substantial, the Fund's scale, targeted focus and transnational reach provide unique benefits that could not be fully replicated only through national efforts.
EQ25.b - The Fund's design (as an EU-level mechanism to compete for funding) and its emphasis on projects with high replication potential enable unique transnational benefits (e.g. cross-border collaborations), driving the spread of innovation and fostering knowledge transfer across countries.	Number and quality of cross-border projects	Out of 1342 proposals evaluated as of end of Q1 2025, 25 were led by partners from multiple countries (out of which 6 projects were eventually awarded).

EQ25.c - The Fund plays a pivotal role in fostering innovation that would be unlikely at national level. However, it is difficult to assess if projects would have happened without the Fund's support or with national funding only.	Number/value of follow-on investments resulting from initial Innovation Fund financing Critical level of funding mobilised	See EQ1.e
	Stakeholders' feedback on likelihood of funding at national level for projects with similar innovation levels as funded projects	80 % of surveyed beneficiaries (98 out of 124) stated they would not have been able to realise their project solely with the support of national-level programmes and initiatives. But there is also evidence that a substantial portion of projects might have been implemented without EU-level support. It remains difficult to quantify the EU's added value relative to alternative national funding scenarios.
EQ26. How does the Fund enhance the overall impact of climate action across the EU?		
EQ26.a - Although substantial, the Fund's expected cumulative GHG emissions reductions remain a fraction of EU-wide reductions. The Fund's added value lies in its capacity to support innovation in hard-to-abate sectors, thereby accelerating decarbonisation and systemic change.	Total expected GHG reductions (tCO_2e)	As of the end of March 2025, 192 funded projects were anticipated to avoid over 870 $mtCO_2e$ over their first decade of operation.
EQ26.b - The Fund improves the cost-effectiveness of climate action in the EU by using a competitive process to allocate grants, thus ensuring that only the most innovative and cost-effective projects receive support.	Cost per tCO_2e reduced	See EQ16.a
EQ27. In what ways does the Fund contribute to EU policy objectives beyond the reduction of GHG emissions?		
EQ27.a – The Fund supports economic growth, competitiveness and job	Expected number of jobs created	The Fund supports employment creation and skills development, with an estimated 26 000 direct jobs created by the existing portfolio.

creation in the EU, particularly by targeting hard-to-abate sectors and supporting first-of-a-kind demonstrations designed for replication.	Expected increase in companies' turnovers	Many projects expecting annual turnover increases of over EUR 10 million.
	Number of cross-sector or cross-border partnerships formed	See EQ25.b
EQ27.b - Skills acquisition occurs as a co-benefit of demonstrating first-of-a-kind technologies, with workforce development appearing organically during project implementation.	Number of workshops, seminars, or training sessions conducted as part of Fund projects Number of workers who received training or upskilling as part of Fund projects Evidence of reduced skill gaps in key sectors aligned with the Fund objectives	Too early to assess.
EQ27.c - The Fund is essential to enhance the EU’s technological leadership in climate action.	Number of new technologies developed and deployed	25 sectors represented in the portfolio
	Technological spillovers across sectors	See EQ25.
	Geographic distribution of funded projects	See EQ3.a

EQ27.d - Funded projects contribute to social and regional cohesion within the EU to some extent.	Share of projects that aim to enhance local infrastructure (e.g. energy access, public facilities) Share of projects that aim to address community needs (e.g. healthcare, housing, education) Share of projects that aim to reduce social or regional disparities (e.g. bridging rural–urban gaps)	Monitoring data is missing.
EQ27.e - Funded projects effectively leverage additional resources, showing that the Fund enhances synergies with other EU funding programmes and policies, primarily through its de-risking effect.	Number of projects benefiting from the support of multiple EU programmes	Quarterly reports show that 38 projects (out of 208 projects awarded, so 18 %) reported existing synergies with other EU initiatives.
	Quality of synergistic projects	See EQ1.a

Annex IV Overview of benefits and costs, table on simplification and burden reduction

Table 1. Overview of costs and benefits identified in the evaluation						
	Citizens/Consumers		Businesses		Administrations	
	Quantitative	Comment	Quantitative	Comment	Quantitative	Comment
Direct costs related to implementation (administrative costs, financial and labour costs)						
Recurrent	*Impact assessment:* *Not applicable.* Evaluation: Not applicable.	*Impact assessment:* *No costs for the citizens.* Evaluation: No evidence to suggest any cost was passed to citizens or consumers since the start of the Fund.	*Impact assessment:* *A reduction compared to the baseline (NER 300).* Evaluation: **EUR$_{2024}$ 17.6 million** (administrative costs related to monitoring and reporting for 2020-2024)	*Impact assessment:* *Recurrent costs will involve reporting related to the achievement of milestones at the commissioning, ramp-up and entry into operation, audits, and periodic reporting during the operation. However, the baseline was not quantified.* Evaluation: This figure does not consider that beneficiaries are in any case preparing many of the documents required for other purposes, so the direct costs are likely to be exaggerated.	*Impact assessment:* *For EU institutions, low administrative costs compared to the baseline. For national authorities, access to simplified, faster and more efficient structure to support innovative projects compared to the baseline.* Evaluation: EU institutions (2020-2024): DG CLIMA: **EUR$_{2024}$ 34 million** CINEA: **EUR$_{2024}$ 43 million** EIB: **EUR$_{2024}$ 23.7 million** Innovation Fund grants: **EUR$_{2024}$ 9.5 billion** Co-financing with other EU initiatives: **EUR$_{2024}$ 95 million** Blending operations: **EUR$_{2024}$ 329 million** National authorities (2020-2024): NCPs activities: **EUR$_{2024}$ 19 million** Co-financing: **EUR$_{2024}$ 2.6 billion**	*Impact assessment:* *However, the baseline for institutional administrative costs was not quantified.* Evaluation: [missing: share of admin budget (in relation to all grants disbursed) then compared to Horizon Europe, LIFE and NER 300]
Direct costs related to applying to the Fund						
One-off	*Impact assessment:* *Not applicable.*	*Impact assessment:* *Not applicable.*	*Impact assessment:*	*Impact assessment:*	*Impact assessment:*	*Impact assessment:*

	Evaluation: Not applicable.	Evaluation: Not applicable.	*A reduction compared to the baseline.* Evaluation: **EUR$_{2024}$ 17.7 million** (administrative costs related to applying) Average EUR$_{2024}$ 120 000 costs for application (85 000 external and 35 000 internal costs, data based on survey results)	*The baseline was not quantified.* Evaluation: The application costs reflect the larger scale and greater complexity of the Innovation Fund's requirements compared to other funds (Horizon Europe: EUR$_{2024}$ 35 000). The external costs of the application represent 0.15 % of the average contribution from the Fund (compared to 3-5 % for Horizon Europe).	*A reduction compared to the baseline.* Evaluation: **EUR$_{2024}$ 0.3 million** (EIB)	*The baseline was not quantified.* Evaluation: One-off administrative fee.
Direct benefits						
Recurrent	*Impact assessment:* *GHG emissions avoided by supported projects: EUR 608 to 1400 investment related to each tonne of CO_2e abated on a sample of technologies.* *From this we can calculate that for every EUR 1 million of investment between 714 and 1 643 tCO_{2e} was supposed to be abated.* Evaluation: 871.2 mtCO_2e for 10 years for 192 active projects.	*Impact assessment:* *Avoided emissions are a function of the undertaken investments. A comprehensive estimation was not possible for the expected emissions reductions.* *Generated employment is a function of the undertaken investments. A comprehensive estimation was not possible.* Evaluation: The expected benefits have been realised and the costs per CO_2e avoided related to them are in the higher end of what was anticipated. Beneficiaries' survey responses indicate that almost all expect to create direct jobs. About 43	*Impact assessment:* *Estimated investment volume for low-carbon technologies: EUR 55 to 68 billion.* Evaluation: Innovation Fund grants: **EUR$_{2024}$ 9.5 billion** Private investments mobilised: **EUR$_{2024}$ 52 billion** EIB: **EUR$_{2024}$ 23.7 million** Co-financing with other EU initiatives: **EUR$_{2024}$ 95 million** Blending operations: **EUR$_{2024}$ 329 million**	*Impact assessment:* *The investment volume, which the Fund will effectively be able to support, will critically depend on the carbon price.* Evaluation: The private co-financing shows a leverage of over 5x of the private capital.	*Impact assessment:* *GHG reduction/avoidance achieved through the operation of the fund contributing to the achievement of national emission reduction targets, and of national renewables and energy efficiency targets.* *Opportunities for co-financing projects supported by the fund and the creation of parallel and/or synergetic funding mechanisms.* Evaluation: Not applicable.	*Impact assessment:* *Not quantified.* Evaluation: Not evaluated.

	Total capital expenditure: EUR 56.4 billion, which results in EUR 647 of investment related to each tonne of CO_2e abated. Hence, **for every EUR 1 million of investment, 1 547 tCO_2e is abated**.	% of respondents reported that their project would create at least 50 jobs. When aggregated and extrapolated to all 192 ongoing projects, the survey results suggest the creation of an estimated **25 000 jobs**. Since detailed information was not provided, the employment effect cannot be monetised.				
Indirect benefits						
Recurrent	<u>*Impact assessment:*</u> *Positive externalities resulting from low-carbon technologies passed on through the value chain and improving access to sustainable products and services for citizens. Positive environmental impacts (reduction of pollutants associated with fossil fuels combustion).* <u>Evaluation:</u> The health benefits of the Fund's activities manifest as improved air quality, resulting from the avoidance of GHG emissions from fossil	<u>*Impact assessment:*</u> *Not quantified.* <u>Evaluation:</u> Expected GHG emissions avoided should have a significant impact on air pollutants and hence on human health. However, no data on avoided non-GHG emissions ($PM_{2.5}$, O_3, NO_x, or SO_2) are available. It is thus not possible to estimate the reduction in these emissions linked to the Fund's activities in a quantitative manner, nor to monetise the Fund's impacts on human health. Reduced air pollution levels may also benefit the natural environment. The Fund may thus contribute to environmental health benefits through lower ozone and nitrogen emissions.	<u>*Impact assessment:*</u> *Roll-out of low-carbon technologies after 2030 (broader adoption due to demonstration effect and technology transfer). Increased competitiveness of EU industry (global leadership on low-carbon technologies). New opportunities in sustainable finance contributing to the achievement of sustainable finance targets, diversification of investment portfolio. Development of new markets and new business models and partnerships with technology service providers and cross-fertilization through the creation of collaborative consortia for cross-sectorial technologies. Indirect benefits across value chains resulting from the adoption of low-carbon technologies; also, some potential for technology transfer.*	<u>*Impact assessment:*</u> *Not quantified* <u>Evaluation:</u> On supporting local economies, the results suggest that while the Fund generates substantial investment leverage across Europe, its capacity to stimulate domestic economic activity varies by national context and industrial capacity. On competitiveness, the study reveals that the Fund's support is necessary, but not sufficient, to enhance competitiveness in a structured way. Funding needs to be complemented by national policy actions. On the development of new markets, it is too early to assess.	<u>*Impact assessment:*</u> *Not applicable.* <u>Evaluation:</u> Not applicable.	<u>*Impact assessment:*</u> *Not applicable.* <u>Evaluation:</u> Not applicable.

	sources, which the Fund achieves.		<u>Evaluation:</u> Not applicable.			

TABLE 2: Simplification and burden reduction (savings already achieved)								
	Citizens/Consumers/Workers		Businesses		Administrations			
	Quantitative	Comment	Quantitative	Comment	Quantitative	Comment		
Direct compliance cost savings								
Recurrent	Not applicable.	Not applicable.	EUR 1.1-.3.8 million in savings to applicants, following the simplification applied for the IF24 call (compared to the IF23 call).	The provided estimate of the achieved savings focuses on the difference between the IF23 and the IF24 calls for different reasons: (a) Before the IF23, the Fund was growing and adjusting, and comparison would not be consistent. From 2023 onwards, the same call's structure is applied. (b) While there have been additional progressive simplifications to the application process over time, before the IF23, the specifics of these simplifications and their impact was not recorded in detail. (c) Auctions have a very different – and lighter - structure from calls for 'regular' grants, thus they are not comparable, hence not studied. Finally note that the analysis performed focuses solely on the application process. Administrative costs related to other phases of the funding lifecycle (e.g. contractual due diligence, reporting and monitoring) are not covered.	Not applicable.	Not applicable.		

PART II: II Potential simplification and burden reduction (savings)								
	Citizens/Consumers/Workers		Businesses		Administrations			
	Quantitative	Comment	Quantitative	Comment	Quantitative	Comment		
On an annual basis, after the end of each call, the application process is reviewed and the stakeholders are consulted to identify ways to further improve the Innovation Fund, to simplify the application process and to reduce the associated burden to applicants.								
Recurrent	Not applicable.	Not applicable.	Very difficult to provide a specific number, but further simplifications could reduce the required hours to prepare an application up to 10 %. Assuming the average application cost (internal+external) of IF24	The average internal cost to apply to the IF24 is estimated at around EUR 53 300 per applicant. When accounting for both the internal costs incurred by applicants, and the costs with hiring external consultants, the average cost becomes EUR 102 500 per applicant. This is dependent on many factors, like the topic,	Not applicable.	Not applicable.		

			and assuming a similar number of applications (around 360), this could lead to an additional EUR 2-4 million in savings.	category, sector, company size, location, re-submission, etc. The applicant costs can be reduced with further simplification of the process, especially in the GHG methodology which is considered the most demanding criterion. For example, one possibility that has been identified is the provision of equations to support the GHG calculation for selected EII sectors. Additional measures could be improved support from the NCPs (who benefit dedicated technical assistance for this reason) and the introduction of mentorship programmes that connect applicants with industry experts, who may help refine and enhance their proposals.				

Annex V Stakeholder consultations

As part of the Innovation Fund evaluation, several consultation activities were conducted to gather information from a wide range of stakeholders. All consultation activities, their results and analyses are summarised in the evaluation report and this annex.

Disclaimer: *The contributions received during a public consultation published on Have your say cannot be regarded as the official position of the Commission and its services and thus do not bind the Commission. Respondents to public consultations are self-selecting. Data gathered through public consultation cannot be considered a representative sample of the EU population.*

1. CONSULTATION STRATEGY

In line with the consultation strategy foreseen in the 'call for evidence', DG CLIMA conducted a 12-week public consultation on the evaluation of the Fund's operation via *Have your say*, inviting representatives from eligible countries, National Contact Points (NCPs), members of the Innovation Fund Expert Group (IFEG), beneficiaries, unsuccessful applicants and other stakeholders to participate. The **public consultation** was designed to gather broad stakeholder input on both the design and implementation of the Fund, and to provide evidence for the evaluation. DG CLIMA first published the 'call for evidence' on 14 April 2025. The public consultation questionnaire was published on 15 April 2025. The consultation period was open until 8 July 2025. The questionnaire was available in all 24 official EU languages. DG CLIMA promoted the public consultation through the Commission's website, social media and direct email outreach. On 4 September 2025, DG CLIMA published the consultation's factual summary report. Feedback received in response to the 'call for evidence' was automatically published as contributions when stakeholders uploaded its via *Have your say*.

Between March and July 2025, the contractor conducted online **interviews** and **surveys** to complement the public consultation, under DG CLIMA's supervision.

In November 2025, DG CLIMA presented the evaluation's preliminary findings during two hybrid **workshops** ('reality check' and IFEG meeting).

	Call for evidence	Public consultation questionnaire	Interviews	Surveys	Workshops
The Commission			x		
The EIB	x	x	x		
Beneficiaries	x	x	x	x	
Unsuccessful applicants	x	x		x	
National authorities	x	x	x		

	Call for evidence	Public consultation questionnaire	Interviews	Surveys	Workshops
NCPs	x	x	x	x	
Evaluators			x		
Contractors			x		
IFEG members	x	x	x	x	x
Breakthrough Energy Catalyst			x		
Horizon Europe beneficiaries				x	
Industry stakeholders (outside of IFEG)	x	x			x

2. OVERVIEW OF THE RESULTS OF CONSULTATION ACTIVITIES

2.1. 'Call for evidence'

97 contributions were posted online, representing:

- **39 companies/businesses (40 %)**, 28 business associations (29 %), 11 non-governmental organisations, 5 EU citizens, 4 public authorities, 3 trade unions, 3 'others', 2 consumer organisations, 1 academic/research institution, 1 environmental organisation (together accounting for the remaining 31 %).

- **92 respondents from 16 EEA countries (95 %)**: Belgium (40 respondents), Italy (9), Ireland (6), Finland (6), France (5), Germany (5), Poland (3), the Netherlands (3), Spain (3), Denmark (3), Austria (3), Romania (2), Sweden (1), Portugal (1), Norway (1), Czechia (1). Additionally, 2 respondents from the United Kingdom, and 1 respondent each from Morocco, Canada and Brazil.

30 respondents submitted additional position papers and reports to complement their contributions. Overall, the evidence points to a broad consensus on the Fund's critical role in delivering the EU's decarbonisation objectives. However, it also reveals calls for greater clarity, simplification and alignment with wider policy frameworks to ensure the Fund's effectiveness and broad coverage (both sectoral and geographical).

4 respondents identified as 'public authority': three NCPs (Belgium, Czechia, Denmark), and one regional authority (Northern Netherlands). Among them, three submitted additional position papers. While all recognised the Fund's critical role and the need to increase its budget, they also called for specific measures to ease the burden on small-scale projects (4 mentions) and to increase geographical balance (3 mentions).

2.2. Public consultation questionnaire

93 respondents ([79]) completed the online survey, representing:

- **49 companies/businesses (53 %)**, 21 business associations (23 %) and 7 public authorities, 4 EU citizens, 3 'others', 3 non-governmental organisations, 3 trade unions, 2 academic/research institutions, 1 environmental organisation (together accounting for the remaining 24 %).

- **90 respondents from 16 EEA countries (97 %)**: Belgium (25 respondents), Italy (13), France (11), Spain (7), Poland (5), Ireland (5), Germany (5), Norway (4), the Netherlands (3), Austria (3), Greece (2), Denmark (2), Sweden (1), Portugal (1), Finland (1), Estonia (1), Czechia (1). Additionally, 1 respondent each for North Macedonia, the United Kingdom and Switzerland.

- When asked whether they were familiar with the Innovation Fund, 89 % of respondents (82 out of 92) indicated they had detailed knowledge of the Fund's objectives and activities, suggesting that the public consultation engaged well-informed stakeholders.

7 respondents identified as 'public authority': four NCPs (Estonia, Italy, Norway, Denmark), two port authorities (Algeciras Bay in Spain and Volos in Greece) and one region (France's Provence-Alpes-Côte-d'Azur). Recurring issues concern a burdensome application process (3 mentions) and heavy reporting requirements during implementation (4 mentions). Public authorities were particularly concerned with the disproportionate burden on smaller entities (3 mentions), suggesting several solutions: a bonus point and decreased requirements during calls for proposals (4 mentions) and a priority access to PDA (1 mention). Nonetheless, they recognised efforts had already been made to simplify the application process and reduce the amount of documentation required (1 mention) and that administrative requirements are necessary (1 mention). The Fund's alignment with national frameworks was also underscored (2 mentions). Several additional suggestions were made, notably to increase geographical balance (using LIFE's indicative national allocations) or add additional award criteria (strategic autonomy, contribution to circularity and other environmental objectives).

2.3. Interviews

Ramboll conducted **79 online interviews** ([80]):

- 33 interviews of beneficiaries

([79]) One response was disregarded at the request of the submitting organisation, as it did not include their Transparency Register number, leading to a total of 92 responses being considered in this report. A suitability check was conducted with no exclusions for the 92 responses. All contributions were manually reviewed to check for duplicates, accuracy and signs of coordinated responses or campaigns. Three sets of responses received additional scrutiny. One set came from a person with the same name but a different email and organisation; despite some similar answers, both submissions were accepted. Two other sets, one from the aviation sector and one from the pulp and paper sector, had similar open-ended responses, but not enough to qualify as campaigns. Thus, all four responses were accepted. One contribution from Malta was sent directly to the contractor and was excluded as not part of the consolidated dataset (including it would have required manual entry with minimal impact on results).

([80]) Each interview included two or more participants. Hence, the number of stakeholders interviewed is significantly larger than the total number of interviews

– 18 with staff from the Commission (including DG CLIMA and CINEA)

– 7 with National Contact Points

– 7 with IFEG members

– 6 with evaluators

– 3 with staff from the EIB

– 2 with representatives from national authorities

– 2 with contractors

– 1 with Breakthrough Energy Catalyst

The interviews each followed an interview guide developed for each specific stakeholder group in close collaboration with DG CLIMA. Interviews were either general or with a specific focus (33 interviews for case studies ([81]), 8 scoping interviews, and 2 on blending operations). Interviews conducted as part of the case studies used the interview guides intended for the main evaluation, with some additional questions added which were specific to their project.

2.4. Surveys

Four online surveys were designed to target four key stakeholder groups, using EUSurvey.

2.4.1. Beneficiaries' survey

A first targeted survey was addressed to the Fund's beneficiaries to assess the performance of the Fund from the perspective of organisations that have successfully received support, in terms of effectiveness, efficiency, relevance, coherence, and EU added value. The survey was distributed by CINEA via email. **124** beneficiaries responded:

– Most respondents to this survey represent large enterprises (77 responses), followed by medium and small enterprises (19 responses each).

– All EU Member States except Estonia and Malta are represented.

– At the time of application, most projects had a technological readiness level between 6 (demonstration) and 8 (scale-up), with 61 and 36 responses, respectively.

2.4.2. Unsuccessful applicants' survey (including recipients of PDA)

The unsuccessful applicants' survey aimed to understand the barriers and challenges that prevented them from securing funding, assess perceived fairness and transparency, and capture outcomes achieved without the Fund. CINEA disseminated the survey via email. **154** respondents participated:

([81]) Only 30 case studies have been produced. For three of them, both the coordinator and the participant were interviewed.

– The respondent sample was dominated by large enterprises, with SMEs following behind.

– Respondents represent all EEA countries except Malta and Iceland, for which no responses were received.

– A third of respondents come from the hydrogen sector, followed by chemical, cement & lime, refineries, and other sectors outside the scope of the EU ETS Directive.

– **Most** respondents (58 %, number) have only applied once for funding under the Innovation Fund. Among those who applied multiple times, most have applied twice (40 out of 63), some have applied three times (15), and a few have applied four times or more for funding (8).

2.4.3. NCPs' survey

The NCPs' survey aimed to gather insights on the operational aspects of the Fund's implementation, focusing on their role in guiding/supporting applicants, challenges in dissemination, and views on accessibility and transparency. The survey was disseminated by Ramboll via email. All NCPs were invited to complete the survey. 27 respondents participated, with only Cyprus and Greece not participating, thus providing a representative perspective of this stakeholder group's views:

– Most NCPs view their role and the Fund as broadly aligned with the needs of applicants. However, a notable minority expressed concerns that additional resources, time, and simplification of procedures would be needed to meet applicants' needs fully. These respondents also highlighted national-level constraints, such as a lack of co-financing options or restrictive mandates.

– Across the surveyed NCPs, the most often requested support activities were (i) advice on project and call alignment, and (ii) assistance with understanding call texts, rules, and procedures. These activities are offered by nearly all NCPs and are generally rated as effective.

– Nevertheless, some respondents noted challenges stemming from the complexity of Innovation Fund documentation, lack of expertise on technical issues (e.g. GHG methodologies, cost calculation), and limited information from both applicants and the DG CLIMA.

– In terms of dissemination, almost all NCPs reported using email communication and self-organised Innovation Fund events as their main tools, which were also rated the most effective. Despite these efforts, more than half of the respondents reported difficulties in reaching their entire target audience, with some citing a lack of comprehensive contact data for potential applicants.

– Moreover, most NCPs indicated insufficient knowledge of the performance of supported projects (20 out of 26), both domestically and in other countries, citing limited structured information exchange and the absence of systematic feedback loops.

2.4.4. Horizon Europe beneficiaries' survey

This survey aimed to explore complementarities and synergies between Horizon Europe and the Innovation Fund and identify barriers/enablers across the lifecycle of low-carbon innovation.

A total of 79 responses were collected, covering a wide geographical and sectoral spread, with representation from Spain and Greece, and from sectors including transport, solar energy, hydrogen, wind, bioenergy, energy storage, carbon capture, aviation, and maritime. Most of the projects under review were at advanced stages of development, with technology readiness levels (TRL) of 5–7, indicating proximity to market application.

The survey highlighted that awareness of the Innovation Fund is relatively high, yet actual participation remains limited. Only a single respondent reported having applied – unsuccessfully – to the Innovation Fund based on their Horizon Europe project, and most respondents were uncertain about future applications to the Innovation Fund across sectors. This suggests that, despite the Fund's positioning as a natural follow-on to Horizon Europe, the practical connection between the two instruments is not yet systematically established.

Some beneficiaries identified several synergies between the programmes. At the project level, stakeholders recognised the Fund's potential role in supporting deployment and market introduction of technologies initially developed under Horizon Europe, thereby enabling greater CO_2 savings and accelerating market entry. At the programme level, nearly all respondents emphasised the importance of access to scaling-up finance and networking opportunities across sectors. The Innovation Fund was considered essential in bridging the gap between research and market readiness by providing late-stage, large-scale demonstration funding, complementing Horizon Europe's earlier-stage support.

Nevertheless, concerns were raised about gaps in the innovation pipeline. Several respondents noted that Horizon Europe supports pilot projects to advance TRLs, while the Innovation Fund targets large-scale deployment. However, they perceived a 'missing step' between these stages, which leaves many technologies without adequate support during the transition from demonstration to commercialisation. This structural gap was described as contributing to high attrition rates in the European innovation landscape.

Barriers to participation in the Innovation Fund were also highlighted. Respondents described the application process as complex, requiring extensive technical and administrative documentation, including precise CO_2 calculations. Some expressed doubts about the cost–benefit balance of applying, particularly as most permits and co-financing must already be secured before applying. Insufficient co-financing, high prototype costs, and a lack of sector-specific guidance were identified as further obstacles. For SMEs in particular, Horizon Europe was perceived as a more accessible programme for collaboration, while the Innovation Fund was described as burdensome and poorly tailored to their needs.

Stakeholders pointed to a few enablers that could strengthen synergies between Horizon Europe and the Innovation Fund and improve accessibility. These included clearer guidelines, standardised templates, simplified GHG accounting tools, and enhanced pre-application support. Greater alignment between Horizon Europe and the Innovation Fund was strongly recommended, alongside better coordination between EU and national policies.