
# REPLIES OF THE EUROPEAN COMMISSION

# TO THE EUROPEAN COURT OF AUDITORS' SPECIAL REPORT

on **the Innovation Fund**

# Contents



This document presents the replies of the European Commission to observations of a Special Report of the European Court of Auditors, in line with Article 265 of the Financial Regulation and to be published together with the Special Report.

# I. THE COMMISSION REPLIES IN BRIEF

The Innovation Fund is one of the world's largest funding programmes for the deployment of net-zero and innovative technologies in all sectors covered by the EU Emission Trading System (EU ETS). It aims to bring to the market solutions to decarbonise European industry and support its transition to climate neutrality while fostering its competitiveness.

The Innovation Fund is a key funding instrument for delivering the EU's economy-wide commitments under the Paris Agreement and the climate and energy priorities put forward in the REPowerEU Plan, the Hydrogen Bank, the Green Deal Industrial Plan, the Clean Industrial Deal, the Net-Zero Industry Act and the Industrial Carbon Management Strategy.

The overall size of the Innovation Fund increased from 450 million ETS allowances to approximately 530 million in the 2023 revision of the EU ETS Directive. In addition to this, EUR 12 billion of the funds that are monetised for the Innovation Fund are directed to REPowerEU chapters of the Recovery and Resilience Facility. The total funding under the Innovation Fund depends on the carbon price and may amount to about EUR 40 billion from 2020 to 2030, calculated by using a carbon price of EUR 75/t$CO_2$. Having a set number of allowances over the operational period gives the Commission sufficient visibility and predictability as the budgets for annual actions are also set on an annual basis.

Since 2020 the Commission and the European Climate, Infrastructure and Environment Executive Agency (CINEA) have organised 14 calls for proposals for regular grants and competitive bidding auctions; three of those calls are ongoing. The Commission and CINEA note that the current evaluation methods offer a strong selection framework. The ECA also acknowledges that the selection processes are generally timely and well documented. The Commission has ensured compliance with the Financial Regulation, and for complex calls increased the Time-to-grant up to 11 months, as stipulated in the respective call documents.

The Innovation Fund is technologically neutral – there is no preference for specific technology. Projects eligible for the calls for proposals choose how to achieve emission reductions in an optimal way. The Commission sets the objectives and budget of the calls for proposals after consulting a wide range of stakeholders, the Innovation Fund Expert Group (IFEG) and the Member States.

By the end of June 2025, 208 projects signed grant agreements for a total of EUR 11.6 billion in support. Those projects are located in 26 countries, cover 25 sectors and are testing over 100 climate mitigation pathways and combinations of decarbonisation pathways. They have the potential to deliver 901 MtCO2e of greenhouse gas (GHG) emission avoidance over their first 10 years of operation.

The Innovation Fund has neither a quantified nor an intermediate target for emission avoidance for 2030. The aim of the Fund is to support the technologies of the future - to de-risk a wide portfolio of innovative technologies that will deliver on the EU climate objectives through their roll-out. This is why replicability is an important criterion of the evaluation of the Innovation Fund.

Each project has, however, quantified targets for greenhouse gas emission avoidance. The Commission would like to highlight that, by the end of June 2025, just over 7% of projects had entered into operation. The majority of supported projects are still to enter into operation. Moreover, only some of these projects had completed the initial years of monitoring their greenhouse gas emission avoidance and have thus reported on it. The Commission would thus like to highlight that the ECA audited the five projects that had reported greenhouse gas emission

avoidance, and that those had reported already 73,6% of the aggregate greenhouse gas emission avoidance in the respective monitoring periods by the end of June 2025[1]. With these projects being early on in implementation, this shows a relatively good progress in terms of achieving greenhouse gas emissions reductions.

The Innovation Fund is at a relatively early stage in the programme and project monitoring periods. The Innovation Fund portfolio is still expected to deliver on the planned GHG emission avoidance. It is therefore too soon, on the basis of these early and limited results, to draw any valid conclusions on the overall Innovation Fund portfolio performance in terms of achieving GHG emission avoidance.

The majority of the supported projects, corresponding to 98% of the funding, are large and complex. They are being implemented in a challenging market context in which costs are rising significantly due to inflation, the war in Ukraine, supply chain disruption, and off-take uncertainties resulting from the novelty of the products or delayed regulatory framework transposition. Most delayed or terminated projects have not faced technical issues but rather significant hurdles in building their business case as a consequence of the exceptional and challenging market environment since 2020. Nevertheless, at the end of June 2025, 45 projects had already reached the critical stage of financial close, 16 of which successfully entered into operation. Although project risks had been assessed at the time of awarding funding, many of the external challenges were of an extraordinary magnitude – and in some cases including events that may qualify as force majeure – so they could not have been anticipated during evaluation. Despite some delays, the majority of supported projects are on track to be deployed.

# II. REPLIES TO THE RECOMMENDATIONS

## Recommendation 1 – Establish a structured analysis to guide the allocation of Innovation Fund resources

***The Commission should ensure that decisions on the allocation of resources to decarbonization pathways and emerging policy priorities are guided by a structured and forward-looking analysis of the technological landscape. This analysis should consider the evolution of both mature and breakthrough innovative technologies.***

**(Target implementation date: 31 December 2027)**

The Commission **accepts** this recommendation.

The Innovation Fund operates within the boundaries set by the EU ETS Directive, which empowers the Commission to support 'innovation in low- and zero-carbon techniques, processes and technologies that contribute significantly to the decarbonisation of the sectors.' To this end, it should select projects 'by means of a transparent selection procedure, in a technology-neutral manner'.

To ensure that the resources are used effectively for those projects with the highest greenhouse gas abatement potential, the Commission and CINEA are performing regular analysis of the project portfolio in their annual progress reports. They report on key performance indicators included in the

[1] See ECA observation 58.

performance framework and provide detailed feedback on policy and technology and market analyses in the annual knowledge-sharing reports. The Innovation Fund Expert Group (IFEG), the Member States and a wide range of stakeholders are informed of the outcome of each call evaluation, including the resulting contributions to various policy objectives. The IFEG, the Member States and the wide range of stakeholders are further consulted on the planned annual calls at dedicated meetings. This provides essential input to the decision on the allocation of Innovation Fund resources, taking account of the policy priorities set by the Commission. This is a continuous process that can be further reinforced to allow for a structured analysis recommended by the ECA.

## Recommendation 2 – Examine additional measures to contribute to the faster deployment of funds

***Taking into account the long-term nature of the projects financed by the Innovation Fund, the Commission should consider additional measures to improve the budgetary planning of calls for proposals and with a view to allowing funds to be deployed earlier. This should contribute to achieving faster results and reduce the accumulation of assets. Such measures should be applicable for the period after 2030, follow a careful risk analysis of the Fund's exposure to the evolution of the carbon market, and be based on reasonable expectations on project termination.***

**(Target implementation date: 31 December 2030)**

The Commission **accepts** this recommendation.

Following the revision of the ETS Directive on 10 May 2023, which allows both the front-loading of Innovation Fund resources and the use of budgetary commitments in annual instalments, the Commission has proactively front-loaded substantial Innovation Fund resources to accelerate the achievement of results. The ETS allowances have been monetised according to the auctioning calendar, balancing the need of generating resources early on without disturbing the functioning of the carbon market. The Innovation Fund calls have been planned on an annual basis, considering the available budget (already monetised and future sales) and the risks associated with possible fluctuations in the carbon price. As a result, the Innovation Fund calls that followed the revision of the ETS Directive have a larger and more stable total budget. The total budgets of the last calls were as follows: IF23 calls with EUR 4.8 billion, IF24 calls with EUR 4.6 billion; IF25 calls with EUR 5.2 billion. All call resources are committed to projects, while resources from terminated projects are rolled over to the subsequent calls and committed to new projects.

In light of this experience with committing resources to projects while steadily auctioning the allowances in the context of an evolving carbon price, managing the assets, and monitoring the project implementation cycle, it will be timely, before the next period, to consider further measures. These measures could contribute to faster deployment of the funds to companies investing in low and net-zero technologies and processes without disturbing the smooth functioning of the carbon market.

## Recommendation 3 – Improve project assessment and address delays and cancellations

***The Commission should:***

***(a) improve project evaluation methods to allow a more accurate assessment of potential reductions in greenhouse gas emissions, and of both financial and technological maturity of projects;***

***(b) assess the need for increased flexibility regarding the requirements and the timing of financial close and the period for the verification of reductions in greenhouse gas emissions.***

**(Target implementation date: 31 December 2028)**

The Commission **accepts** this recommendation.

The Commission and CINEA have continuously improved the evaluation of project applications drawing on lessons learned after each call for proposals. The Commission and CINEA note that the current evaluation methods offer a strong selection framework. Nevertheless, they will continue to improve the evaluation methods.

The Commission acknowledges that for some beneficiaries reaching certain milestones, e.g. achieving financial close within the set period of four years, has been challenging for various reasons, especially due to unforeseen situations that arose in the context of recent disruptive global events such as COVID-19 and the war in Ukraine. The current framework – four years to financial close; the time needed for entry into operation; the adjustable monitoring period of minimum three or five years following entry into operation; amendments and suspensions within this timeline in duly justified cases – already provides a high level of flexibility. The Commission and CINEA will nevertheless assess the need and space for further flexibility.

# III. REPLIES TO OBSERVATIONS

## 1. Innovation Fund resources and emerging EU priorities

### The steering of Innovation Fund resources[2]

The Commission is continuously analysing the Innovation Fund project portfolio, including for geographical and sector balance, and the results of each call. The planning of subsequent calls thus considers the project portfolio, industry response to previous calls and the emerging policy priorities. For example, in 2022, the Commission proposed a topic on clean-tech manufacturing and in 2023 the first auction for renewable hydrogen. Their aims were to address the challenges ensuing from the war in Ukraine and to support the REPowerEU plan and the Hydrogen Strategy, building European independence in the production and supply of renewable energy and energy carriers. The support given to the clean-tech manufacturing topic has steadily increased in subsequent calls, with a dedicated call in 2024 for the manufacturing of EV battery cells. This shows Europe's commitment to support this key sector for the clean transition and for the competitiveness and resilience of European industry, as also set out in the Net Zero Industry Act.

The response from industry has likewise increased over the years, with more project applications in most calls. The Innovation Fund remains technologically neutral. The dedicated topics and calls are open to multiple technologies and applications. For example, hydrogen is an energy carrier with potential to decarbonise a large number of hard-to-abate sectors, in energy-intensive industries,

[2] See ECA observations 10 and 25-29.

energy storage and transport. Moreover clean-tech manufacturing topics are open to a wide range of sectors: renewables, energy storage, hydrogen, and heat pumps. Results show a relatively balanced sectoral spread of funded projects, taking into account the varying investment needs of the different sectors.

The Commission has used a variety of measures to support sectors or technologies not receiving sufficient support so as to ensure a balanced portfolio. For example, there are bonus points for the maritime sector, for net carbon removals and for projects led by SMEs. Moreover, the heat auction call launched in December 2025 is addressing an underfunded family of technologies for electrification of industrial heat where large untapped potential exists.

**Complementarity of the Innovation Fund with other funding sources**[3]

The Innovation Fund has been set up so as to be complementary to other EU and national programmes that support net zero technologies. This is because the decarbonisation investment needs (estimated in the industrial sector at EUR 18 billion per year between 2021 and 2040)[3] greatly exceed the funding available through the Innovation Fund. So even if programmes partially overlap, the scale of investment needs exceeds the combined resources available in these programmes. There have, for example, been cases where Recovery and Resilience Facility (RRF) funding has targeted the same type of projects. However, the RRF generally funds the deployment of more mature technologies and infrastructure projects. It is thus complementary to the Innovation Fund and helps to accelerate the progress towards the common objective of transitioning to a climate-neutral economy[5]. The same is true of the Horizon Europe programme, the Modernisation Fund, the Connecting Europe Facility, the Just Transition Fund, the Important Projects of Common European Interest (IPCEIs) and other national support programmes. Furthermore, the introduction of the 'Auction as a service' and 'Grants as a service' options into the Innovation Fund calls ensures that the different funding programmes effectively complement the Innovation Fund rather than overlapping with it.

**Availability of financial resources and disbursements**[6]

The EU ETS sets the allowances available for innovation funding at approximately 530 million, while based on the revisions made through the REPowerEU amending Regulation[7], it also contributes an additional EUR 12 billion to REPowerEU chapters of the Recovery and Resilience Facility. The Innovation Fund's total funding depends on the carbon price, and may amount to

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[3] See ECA observations 8 and 16-20.

[3] In-depth assessment the accompanying Commission's communication 'A Clean Planet for all – A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy'; https://climate.ec.europa.eu/document/download/dc751b7f-6bff-47eb-9535-32181f35607a_en?filename=com_2018_733_analysis_in_support_en.pdf; see Table 10.

[5] REPowerEU chapters of the Resilience and Recovery Facility have complementary objectives to support energy infrastructure: boosting energy efficiency in buildings and critical energy infrastructure, decarbonising industry, increasing the production and uptake of sustainable biomethane and of renewable or fossil-free hydrogen, and increasing the share and accelerating the deployment of renewable energy, etc.: see Article 21c(3) of (EU) Regulation 2023/435. (See ECA Box 2.)

[6] See ECA observations 11 and 30-34.

[7] See Regulation (EU) 2023/435 of the European Parliament and of the Council of 27 February 2023 amending Regulation (EU) 2021/241 as regards REPowerEU chapters in recovery and resilience plans and amending Regulations (EU) No 1303/2013, (EU) 2021/1060 and (EU) 2021/1755, and Directive 2003/87/EC

about EUR 40 billion from 2020 to 2030, calculated using a carbon price of EUR 75/t$CO_2$. The Innovation Fund allowances from the EU ETS are being auctioned on the basis of an agreed schedule, which ensures predictability for the market.

Following the 2023 revision of the EU ETS Directive, Innovation Fund resources can be front-loaded and annual payment instalments used in the setting of annual commitments. This has also made calls larger and more stable. The most recent IF calls have all had a total budget of over EUR 4.5 billion (IF23 calls: EUR 4.8 billion; IF24 calls: EUR 4.6 billion; IF25 calls: EUR 5.2 billion.)

The annual budget of the Innovation Fund is set in financing decisions, which are based on: (i) thorough analysis of the available resources (both allowances already auctioned and available allowances still to be auctioned, as well as funds released from withdrawn and terminated projects); (ii) the needs for disbursement to ongoing projects; (iii) the past evolution of the carbon market price and market forecasts for the future; (iv) the needs of beneficiary sectors; (v) current policy priorities; and (vi) obligations from the legal basis[8] (such as the need to front-load resources). This approach ensures that the current market needs and policy priorities are served while providing applicants with visibility on which funds will be used in the annual calls.

All Innovation Fund resources are either committed to ongoing projects or rolled over to new projects.

## 2. Innovation Fund project implementation

Projects receiving regular grants have a maximum of four years to reach financial close and can enter into operation in accordance with their implementation plan. The monitoring period after entry into operation is set by default as three or five years, depending on the call or topic, but can be adjusted if the projects need to demonstrate full greenhouse gas emission avoidance over a longer period, for example due to the need to ramp up to full production.

At the end of June 2025, in addition to the 16 projects that had entered into operation[9], 29 projects had reached financial close, with the rest still preparing to reach this key milestone. The four years to reach financial close has proved necessary due to the large scale, high complexity and risk profile of the projects. They are all highly innovative and face fierce competition on the market from incumbent technologies and non-EU countries, while having to deal with the changing regulatory framework, the inflationary environment after COVID-19 and the war in Ukraine. CINEA follows each project closely and agrees to amendments to adjust project timelines and/or project scope and consortia, when such changes are justified and do not call into question the award and equal treatment of all projects.

**Project maturity**[10]

The Innovation Fund evaluation procedure cannot anticipate changes during implementation, especially those resulting from: (i) adverse market trends (e.g. significantly increased costs due to inflation, the war in Ukraine or the aftermath of the COVID-19 pandemic, regulatory uncertainty, or slower-than-expected build-up of demand for clean and innovative products); (ii) delayed

[8] 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

[9] See ECA Figure 6.

[10] See ECA observations 12 and 37 to 52.

permitting processes (which are in the hands of the relevant authorities); or (iii) unexpected corporate decisions (due to changes of corporate strategy during project implementation).

The Innovation Fund aims to support projects that still present technological or business risks and are thus not bankable on the market without support. It is probable that some of these projects will not be carried out. If the Innovation Fund did not do this, it would just displace private financing and not achieve its main objective of de-risking innovative technologies.

In addition, the Commission considers that delays and cancellations cannot be directly or indirectly linked only to insufficient project maturity, as the unforeseen events affecting the projects could not have been detected during the selection process. The evaluation of proposals follows a rigorous and diligent assessment procedure which aims to ensure that projects with insufficient maturity do not pass the evaluation. Although the evaluation of the first calls for proposals in 2020 may have led to over-optimistic expectations in some selected proposals due to the novelty of the Innovation Fund and immaturity of the proposals' target markets, the evaluation methodology has been regularly adjusted over time to ensure that evaluation experts assess proposals strictly against the criteria laid down in the call. The experts must base their assessment on the evidence presented in the proposals and select for funding only those proposals that are deemed sufficiently mature. The evaluation is based on the facts, calculations and claims as presented in the proposals, which reflect the situation when the proposals are submitted. It therefore cannot prevent selected projects from being delayed or cancelled in the future.

**Cancelled projects and delays in project implementation**[11]

By the end of June 2025, there were 20 terminated projects. Most delayed or terminated projects have faced or are facing fundamental changes in their market conditions or corporate strategies that have developed less favourably than expected when the proposal was submitted and evaluated. The key reasons are the effects of COVID-19 pandemic (which affected supply chains), the war in Ukraine (which has led to inflation and a significant increase in costs not covered by the planned contingencies), and adverse developments in some markets (e.g. the green hydrogen market, the eFuels market or clean-tech markets such as batteries or PV cells, which are affected by complex issues related to regulatory instability, the impact of imports from third countries at competitive pricing, the effect of changing policies of major trade partners, or slower-than expected build-up of demand/'off-take' for clean products). Such developments fundamentally affect the business case for many Innovation Fund projects. Most delayed or terminated projects do not face technical issues but fundamental market headwinds that were not reasonably foreseeable, or not identifiable on the basis of the information available during the evaluation. (The risk analysis of most selected projects included the mitigation measures against foreseeable risks at the time the grant agreement was signed, and these were duly assessed.) Some projects also terminated their grant agreements due to corporate decisions that could not have been predicted when the proposal was submitted and evaluated, or the grant agreement was prepared.

# 3. Innovation Fund results in terms of greenhouse gas emission reductions

**Reductions in greenhouse gas emissions**[12]

[11] See ECA observations 37 to 40.

[12] See ECA observations 15, 65 and 66.

By the end of June 2025, 208 projects signed the grant agreement. Those projects have the potential to deliver 901 $MtCO_2e$ of greenhouse gas emission avoidance over their first 10 years of operation. In total, 16 projects have entered into operation. But these are in their first few years. They have so far delivered some 26 $ktCO_2e$ of greenhouse gas emission avoidance. ECA states that "Early indicators show poor results in terms of greenhouse gas emissions reductions"[13], however overall and on (weighted) average, the five projects visited by the ECA had already, by June 2025, delivered 73.6% of their planned greenhouse gas emission avoidance in the respective monitoring periods[14].

The Innovation Fund is in its very early years, and the projects that have entered into operation are in their very early stages. It is therefore too soon, on the basis of these early and limited results, to draw any valid conclusions on the overall IF portfolio performance in terms of achieving GHG emission avoidance.

Once amendments to grant agreements are approved, the timeline of projects – and hence of greenhouse gas emission avoidance – is adjusted. This results in a shifting of greenhouse gas emission avoidance in the future, but not in lower expected delivery.

**Greenhouse gas avoidance methodology**[15]

The greenhouse gas methodology is made transparent to all applicants by providing clear rules on calculations and assumptions. Applicants who overestimate their potential for greenhouse gas avoidance may either be scored down during the evaluation for using unrealistic or unsubstantiated assumptions, or may not receive the full grant, which is dependent on verified emission avoidance. Both the evaluation and the possible reduction of the grant serve as a strong deterrent to the overestimation of the greenhouse gas emission avoidance. As explained above, it would be too soon, on the basis of the available results to draw any conclusions on the accuracy of the greenhouse gas emission avoidance calculated at the time of application.

[13] See title above ECA observation 53.

[14] 73.6% is the weighted average greenhouse gas emissions avoidance achieved for the five projects at the time of the ECA's visit (corresponding to 108.3%, 65.7%, 63.5%, 35.3% and 9.6% individually, as represented in Figure 8 in the ECA report).

[15] See ECA observations 14 and 61 to 64.