Filling the EU Climate Investment Gap more efficiently





Prepared by

CLIMATE STRATEGY & PARTNERS

About Climate Strategy & Partners

Climate Strategy & Partners ("Climate Strategy") is a leading policy advisory and consulting firm in the areas of climate finance, innovation, energy efficiency investments, as well as the corporate strategies and government policies required to accelerate the transition to a net-zero emissions economy. For 15 years, the Climate Strategy team has been providing global companies, banks and Governments first class advice. Climate Strategy's chief executive, Peter Sweatman, has authored or co-authored 25+ white papers, he was the rapporteur to the EU Commission and UN Environment Finance Initiative's Energy Efficiency Financial Institutions Group (EEFIG), and the G20's Energy Efficiency Finance Task Group, leading a decade of ground-breaking work from 2013-23. Climate Strategy has supported energy transition policy development at the G20, in the EU, and in Spain, Mexico, France, and the UK. Launched in 2016, Climate Strategy's subsidiary Energy Efficiency Capital Advisors (EECA) structured and executed energy efficiency placements totalling over Euro 50 million for Spanish cities, companies and buildings for international investors.

About this Report

This report is co-authored by Peter Sweatman and Adriana Rodríguez, who have been supported by Alejandro Bravo for case studies and research, and Mauricio Yrivarren for the report's graphic design and review. The report builds upon the inputs of multiple experts and stakeholder meetings, yet the views and conclusions expressed herein are attributable only to Climate Strategy & Partners, and not to the supporting organisations nor reviewers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the European Climate Foundation, as a funder, nor Climate Strategy & Partners nor the authors concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries.

Acknowledgements

This document reflects the views only of the authors and not necessarily those of the expert reviewers and their respective organisations. Climate Strategy would like to thank the European Climate Foundation for their support in enabling this report. We would also like to thank our many reviewers and contributors, particularly: Christopher Schröder (Agora Energiewende), Michaela Holl (Agora Energiewende), Anelia Stefanova (CEE Bankwatch Network), Christophe Jost (CEE Bankwatch Network), Jules Besnainou (Cleantech for Europe), Olivier Vardakoulias (Climate Action Network Europe), Pietro Cesaro (E3G), Alba Berhami Sintomer (E3G), Marlène Siméon (Future Cleantech Architects), Zita Herman (Greens/EFA in the European Parliament), Pierre-Marie Aubert (Institut du Développement Durable et des Relations Internationales), Ciarán Humphreys (Institute for Climate Economics), Clara Calipel (Institute for Climate Economics), Andreas Eisl (Jacques Delors Institute), Eulalia Rubio (Jacques Delors Institute), Sebastian Mang (New Economics Foundation), Chris Vrettos (REScoop.eu), Greg Arrowsmith (The Association of European Renewable Energy Research Centers), Till Eichler (Transport & Environment), and Xavier Sol (Transport & Environment).

Executive Summary

"The next Multiannual Financial Framework (MFF) 2028-34 can become the budgetary instrument of a reform decade. The need for a comprehensive modernisation of the European Union is undisputed by most stakeholders. Europe needs to become more competitive, more sustainable and more sovereign."

Policy Department for Budgetary Affairs of the European Parliament

How Europe invests in the coming years will determine the nature of the Union, its security, sustainability and competitiveness. **The EU faces an additional annual climate investment need of €340-477 billion.** This investment must deploy enough clean assets for the timely energy transition of its highest-emitting sectors (buildings, transport, energy, industry and agriculture) by 2050. **The gap is also one of industrial competitiveness**, as European cleantech firms face global pressure from continued investment plans put forward by other countries like the US and China. Depending on the year, region and sector, **30-60% of these investments will have to come from the public purse.**

The next EU budget will determine how Europe capitalises on its "first mover" policy advantage and builds the strategic net-zero value chains to deliver a just climate transition. A new Clean Industrial Deal can reinforce industrial competitiveness and decarbonisation as two sides of the same coin, as proposed by Mario Draghi. A new European Competitiveness Fund can also catalyse the necessary investment capacities in strategic cleantech value-chains. Three mutually reinforcing strategies are needed to fill the EU climate investment gap: 1) Increasing Climate Investments in National Budgets, 2) More EU Money for Climate Investments, and EU Competitiveness, and 3) Improved design-efficiency in the Delivery of the EU budget. This report focuses on the latter by **providing a set of recommendations and principles to integrate an "efficiency-first" approach in the EU budget to lever the necessary private investments to fill the climate investment gap.**

Many **of the clean technologies needed over the next 10 years (e.g. solar panels, EV chargers, insulation, heat pumps and wind turbines) are mature and produce savings and returns to private investors.** This makes them ideal for an increased use of financial instruments for corporations and homeowners. The report takes a granular look at:

a) the most salient sectoral investment gaps in the deployment of specific clean assets
b) the EU funds targeting these assets
c) the mix of instruments used to deliver these key funds
d) the type of end-beneficiaries with eventual control of the funded asset.

The analysis shows that **significant inefficiencies exist in the disbursement by Member States of the largest EU funds due often to a preference of grants over EU financial instruments.** Further research suggests that higher-income households and larger companies may benefit more than is necessary, raising concerns about the additionality of that public funding. The leverage impacts of the EU budget on private finance can be improved, and precious grant money for supporting the climate transition can be better used.

In an already constrained EU budget, grant-based schemes have to focus on delivering an "EU added value" and a just transition by: 1) decarbonising public goods and services, 2) supporting low-income, energy poor households across the EU, and 3) strengthening early-stage technologies to sustain Europe's future leadership in net zero value chains. Yet, **to finance mature clean assets, this report recommends boosting EU Financial Instruments as a Service (FIaaS) for Member States**. EU FIaaS have been tried and tested in specific sectors and this report documents successful country experiences in case studies from InvestEU, the Innovation Fund, and RRF financing for the SME climate transition. **An EU FIaaS is a template for a financial instrument that is specifically designed to deliver an efficient blended finance structure tailored to a specific clean asset, for the decarbonisation of a specific sector.** These FIaaS can be taken off the shelf at the EU level, within the structure of a specific EU managed fund (e.g. InvestEU, the Innovation Fund, the EIC), to deliver for Member States in a ring fenced manner: They can be enhanced by national contributions from shared management funds (e.g. Cohesion Policy, Modernisation Fund, Common Agricultural Policy), and deployed through local channels.

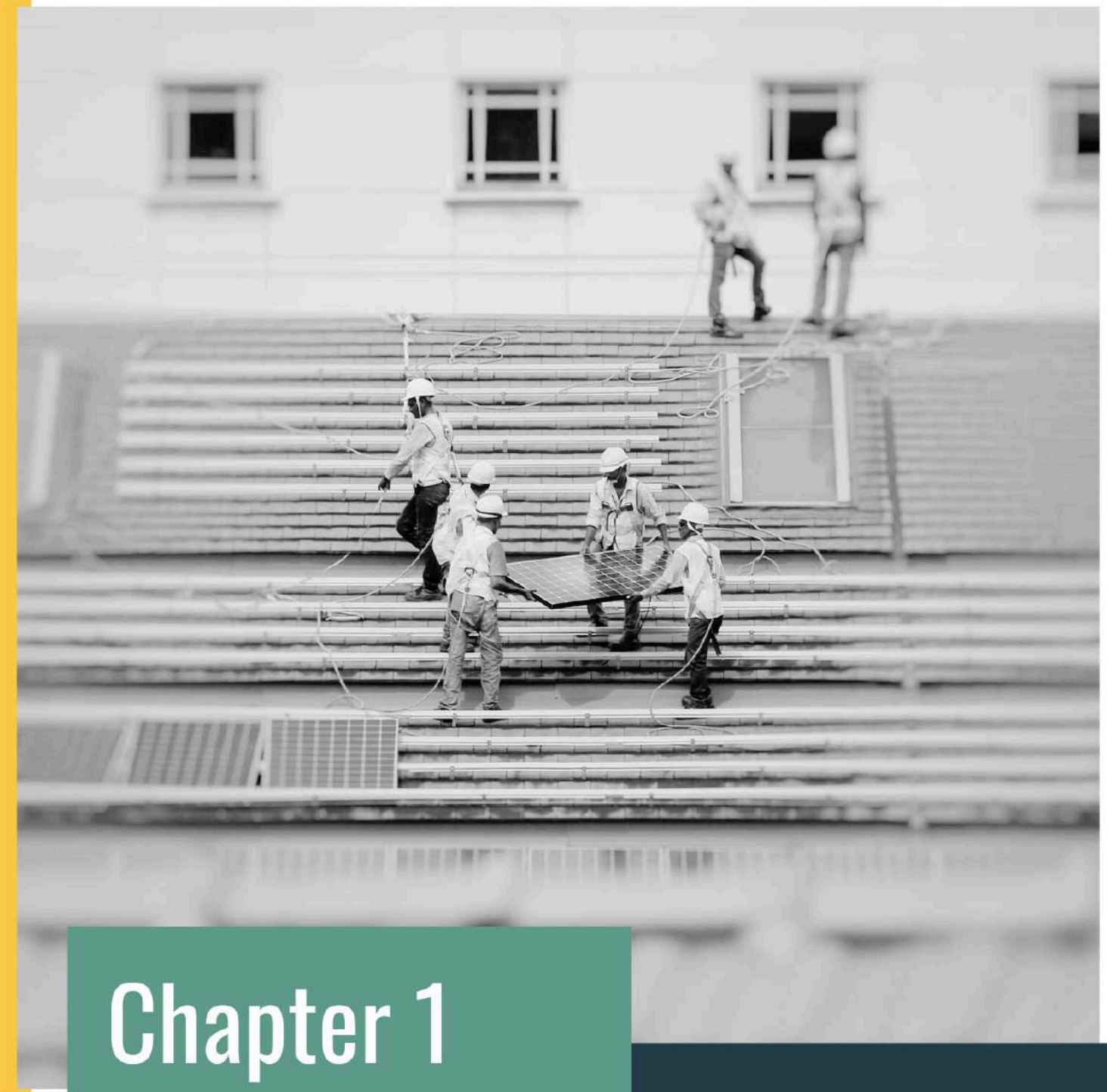
The advantages of EU FIaaS include the **simplification of administrative procedures for Member States, such as State Aid clearance, while being locally-adapted** to each country's national conditions; the **acceleration of fund disbursement** by using the networks and resources of competitive retail channels with reach to millions of SMEs and households; and the possibility of **enhancing the strategic impact of funds** with sector-specific, asset-tied financing schemes. Their EU-level design can **harmonise instrument deployment and application across the EU, addressing the current "patchwork" of funding sources** identified by the EIB, ECA and others that is complicating the delivery to end-beneficiaries.

In integrating an "efficiency first" approach in the EU budget, there is no need to reinvent the wheel. The operationalisation of an efficient EU budget can be based on best practices from existing EU instruments, such as InvestEU and the Innovation Fund, and EU FIaaS should be actively tested in the current programming period. **This report proposes a set of sector and asset-specific funding strategies based on the type of asset deployments and end-beneficiaries to determine when EU FIaaS should be considered and where grants can be prioritised.** Sectoral analysis points at potential avenues for integrating asset-specific EU FIaaS in existing EU instruments, such as a) expanding the policy windows under InvestEU to Sustainable Housing, to Sustainable Transport, and to Sustainable Agriculture, all activated by the MS compartment, b) expanding "as a service" auctions and other innovative instruments to specific cleantech products under the Innovation Fund, c) including FIaaS for cleantech scale-up in the EIC.

The SME and industrial competitiveness question is also explored in detail to showcase how **EU FIaaS could more effectively channel funds to SME decarbonisation and accelerate the historically slow absorption rates of some of the largest EU funds.** The next MFF is a clear opportunity to review and reinforce existing EU financial instruments that are working well for SMEs and cleantech with a more proactive and "risk-taking" approach from the EIB. **This report also offers recommendations to enable the EIB Group to better deliver its Climate Bank mandate and bridge the cleantech scale-up finance gap with more internal resources and an increased size and efficiency of its cleantech programs.**

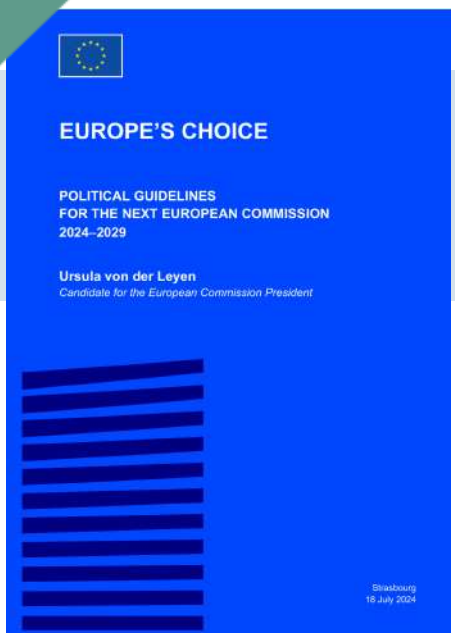
Ensuring an effective uptake of EU FIaaS by Member States requires improved national assessments of the climate investment gaps and strategic planning to identify opportunities for financial instruments. **Additional national reforms may also be needed to enable an institutional framework that strengthens the role of national promotional banks and other retail channels in the transition, which are key to reach to SMEs and households.** Member States must also focus on implementing the regulatory changes introduced under the Fit for 55 regulatory package, which will **accelerate market growth for cleantech** and thereby reduce the need for additional financial support for the industrial transition on the supply side. **These policy levers to increase investment efficiency can be incentivised by a shift to a "reforms for investments" model of EU shared management funds.**

Table of Contents



Chapter 1

The EU Climate for Competitive Investment



Chapter 1: The EU Climate for Competitive Investment

"This will be an investment Commission"

President Von der Leyen *(18th July 2024, Strasbourg).*

Europe needs more investment to unlock future prosperity at a time when political and economic conditions are undermining its capacity to invest. Society is undergoing an unprecedented structural and economic transformation that impacts how people live, move and eat, and how energy is produced and distributed. Existing employment, buildings, land use and transport systems need to be adapted to reflect the physical impacts of temperature increases of 1.5ºC above pre-industrial times. Such a socio-economic shift requires significant deployment of political and investment capital, and to be successful the economic trajectory needs to be established over the long-term and its execution must be relentless, confident and focused.

A competitive Europe is one which can confidently embrace a low emissions future and the economic advantages this can bring. The quality of public and private investment decisions in such a moment is uniquely important, which is why the implementation of the current EU budget, and the design of the next one, are among the most important policy decisions for the next European Commission.

The climate transition is, in part, an industrial competition, with global powers like China and the US investing to scale-up deployment and the manufacturing of strategic clean technologies, in order to own net-zero value chains. China is the single strongest global investor in clean energy and tech, accounting for one-third of clean energy investments worldwide[1] ($890 billion in 2023)[2] and one-fifth of the country's 5.2% GDP growth in 2023.[3] The US Inflation Reduction Act (IRA) adopted in 2022 is the single biggest investment in climate solutions not just in the US, but in the world.[4] While initial estimates put the IRA's impact at $370 billion in federal incentives, two years later it is expected to have mobilised, together with private investments, a total of $1 trillion in climate-aligned funding, while spurring over 334.000 jobs in clean energy sectors and the development of over 542 new factories and projects.[5]

The EU provides directional clarity in its climate and energy transition through a robust regulatory framework, articulated through binding 2030 emissions and energy savings targets, and a 2050 net zero commitment enshrined in law. This EU legislative basis has been developed through the European Green Deal, the Climate Law and the Fit for 55 regulatory package - and has a pre-legislative 2040 climate target in progress. The EIB notes[6] that the market signals provided by this regulatory framework are key in building up a strong domestic demand for green techs and products and mobilising private investment towards clean sectors. The revised European Emissions Trading System and the new Carbon Border Adjustment Mechanism will also support in reducing the relative price of green products and drive demand for investments.[7]

In response to the US IRA, the EU launched the Green Deal Industrial Plan (GDIP) which set out targeted legislation to support cleantech manufacturing in the EU through the Net Zero Industry Act (NZIA). **Yet so far the EU has not accompanied this strong regulatory framework with a long-term, detailed and predictable Climate Investment Plan**, in conjunction with Member States, to fill the significant shortfall between currently available resources and those required to deliver the EU's climate and energy targets, and own the technologies that produce it. In 2025, **the European Commission will propose a Clean Industrial Deal, supported by a European Competitiveness Fund as its "investment arm",** which may reinforce the EU budget and remedy this lack of investment planning in the transition.

[1] International Energy Agency. (2024). World Energy Investment 2024: China. Available at https://www.iea.org/reports/world-energy-investment-2024/china.
[2] Carbon Brief (2023). Analysis: Clean Energy Was Top Driver of China's Economic Growth in 2023. Available at https://www.carbonbrief.org/analysis-clean-energy-was-top-driver-of-chinas-economic-growth-in-2023/.
[3] International Energy Agency. (n.d.). Clean Energy is Boosting Economic Growth. Available at https://www.iea.org/commentaries/clean-energy-is-boosting-economic-growth.
[4] Rocky Mountain Institute. (2023). "On the Climate Bill's Second Birthday: Surging Successes but a Split Reality." Available at https://rmi.org/on-the-climate-bills-second-birthday-surging-successes-but-a-split-reality/
[5] Ibid.
[6] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[7] "Allowances scheme do modify the risk-return profile of stocks, which can provide a financial incentive to consider emissions in investment decisions." Benchora,I. & Galanti,S. (2024). "Verified carbon emissions and stock returns in the EU Emissions Trading System." Energy Policy. Available at https://www.sciencedirect.com/science/article/abs/pii/S0301421524002842

The demand for greater investment is not limited to the climate and energy sectors. Defence spending must increase to deliver NATO commitments. As signalled in President von der Leyen's second term guidelines,[8] investment in research and innovation (R&I) in strategic priorities must also increase to meet targets under the Lisbon Agenda, and match relative R&I investment levels of the US and China (as a share of GDP) - albeit a focus on climate in this portfolio is also needed. There is also rising pressure to increase investments in infrastructure development and affordable housing, and improve socio-economic development to tackle increasing inequalities, across and within regions. **"We need to spend more, spend better, spend together"**[9] said President von der Leyen in her pursuit to build a European Defence Union. This seems applicable to many EU budget areas.

Many of the security, economic and social crises that Europe faces are intimately connected to the climate emergency. Europe's dependence on fossil fuel imports was laid bare when Russia invaded Ukraine.[10] The resulting gas crisis has increased the costs of living for households and exacerbated the share of energy poverty among Europeans.[11] Tackling the climate emergency will also simultaneously improve EU security, resilience and build future prosperity.

Despite the demand for more public expenditure, national governments face limited investment capacities with high existing debt burdens. **The "EU added value" from EU funding is therefore more important than ever and the Union can address this polycrisis** jointly and in coordination with Member States.[12] The Recovery and Resilience Facility (RRF or Recovery Funds) is an example of concerted EU-level action, and it has been a significant source of public investment in the climate transition. Yet, the RRF ends in 2026 and will leave a significant gap in public finances.

Many of the security, economic and social crises that Europe faces are intimately connected to the climate emergency

Calls for more EU joint borrowing have been made to fill the climate investment gap and build a competitive Europe, most notably in Mario Draghi's landmark report on competitiveness.[13] Despite the expectations for more EU-level action, the EU budget remains around 1% of EU GDP since the 1980s.[14] Whether the calls for a greater EU budget are politically met or not, **efforts must also focus on better deploying existing public funds and crowding-in more private investments for the transition.** Large amounts of public and private money are used suboptimally, or spent on fossil fuels and other environmentally harmful activities that, if redirected, could contribute to narrowing the climate investment gap. The current challenge calls for more resources with new strategies to increase the efficiency of EU budgetary instruments and lever a greater share of green private investment.

"Efficiency" in public investment can be defined as using sufficient public support to deliver system wide change, without crowding out the private sector or creating moral hazard. This means using the appropriate instrument (grant, loan, equity, guarantee) to deliver its maximum impact.**[15]** An efficiency-first approach for the EU budget could be informed by the "Energy Efficiency First Principle", with *ex ante* consideration in all transition sectors and related investment decisions. For example, if offering a grant, can the same outcome be achieved with a loan? And for loans, can a guarantee achieve the same outcome more efficiently? Efficiency can be considered as the first step when designing a new public support or investment. In a constrained budget, this kind of efficiency-oriented approach would enable limited public funds to be extended in selected asset classes and for some beneficiaries. While efficiency cannot address wealth disparity, and will not provide the additional hundreds of billions necessary annually to deliver net-zero by 2050, it will prevent waste and can enable faster deployment of mature clean assets.[16]

---

[8] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[9] Ibid.
[10] Centre for Research on Energy and Clean Air (2023). "Financing Putin's War." Available at https://energyandcleanair.org/financing-putins-war/.
[11] Euractiv (2023). Energy Poverty on the Rise in Europe, Statistics Show. Available at https://www.euractiv.com/section/energy/news/energy-poverty-on-the-rise-in-europe-statistics-show/
[12] Bruegel (2023). "When Will the European Union Finally Get the Budget It Needs?" Available at https://www.bruegel.org/analysis/when-will-european-union-finally-get-budget-it-needs
[13] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[14] Bruegel (2023). "When Will the European Union Finally Get the Budget It Needs?" Available at https://www.bruegel.org/analysis/when-will-european-union-finally-get-budget-it-needs
[15] Moral hazard occurs when "risk takers" in the private sector do not take into account risks that are underwritten by the Government, leading to Government taking all risks with no support from the private sector. Efficiency should also be understood in terms of "who is the most efficient actor to assess and manage specific risks" - e.g, the risk of a license getting approved, or the risk of a law being repealed or tariff getting changed is better managed by Government, but the credit risk of a developer or the cost of X tons of cement in 2026 is a risk that can be more efficiently taken up by the private sector.
[16] Rousseau 2024 which calculated needs from 2024 to 2050. Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

The energy transition will be delayed if society expects transition investments for free or part-subsidised when they payback in reasonable time periods. Efficient public investments increasingly require the development of blended financing instruments where public funds back-stop or absorb risks that are too expensive or uninvestable by the private sector. A Just Transition cannot subsidise the refurbishment of second homes or provide discounts on luxury EVs, but it should make home renovation or EVs attractive and available equally for all segments of society. Mature transition assets, like solar panels, EV chargers, insulation, heat pumps and wind turbines, produce revenues and savings and therefore can sustain private investment, and they must do so. **A Just Transition requires an efficient and fair public budget that prioritises grants for the households that need them and for public goods that provide social and environmental benefits.** Increased public funding is also needed to level the playing field for innovative cleantech scale-ups that can sustain Europe's transition post-2030 and build its industrial leadership.

Learning from the Energy Efficiency First Principle

The Energy Efficiency First Principle (EE1st) is one of the five pillars of the Energy Union strategy launched in 2015, which advocates that **the best and most cost-effective way to meet energy needs lies in prioritising energy efficiency considerations first, before building new clean energy generation or expanding grid infrastructure.**[17] The EE1st principle acts like a rule of thumb, and focuses first on the reduction of energy waste and improving the efficiency of energy use to lower supply-side transition investment requirements. The approach is central to delivering Europe's lower-cost transition pathways, and encouraging both the public and the private sectors to invest first in energy efficient solutions, rather than just supply-side expansion - although both are required.[18]

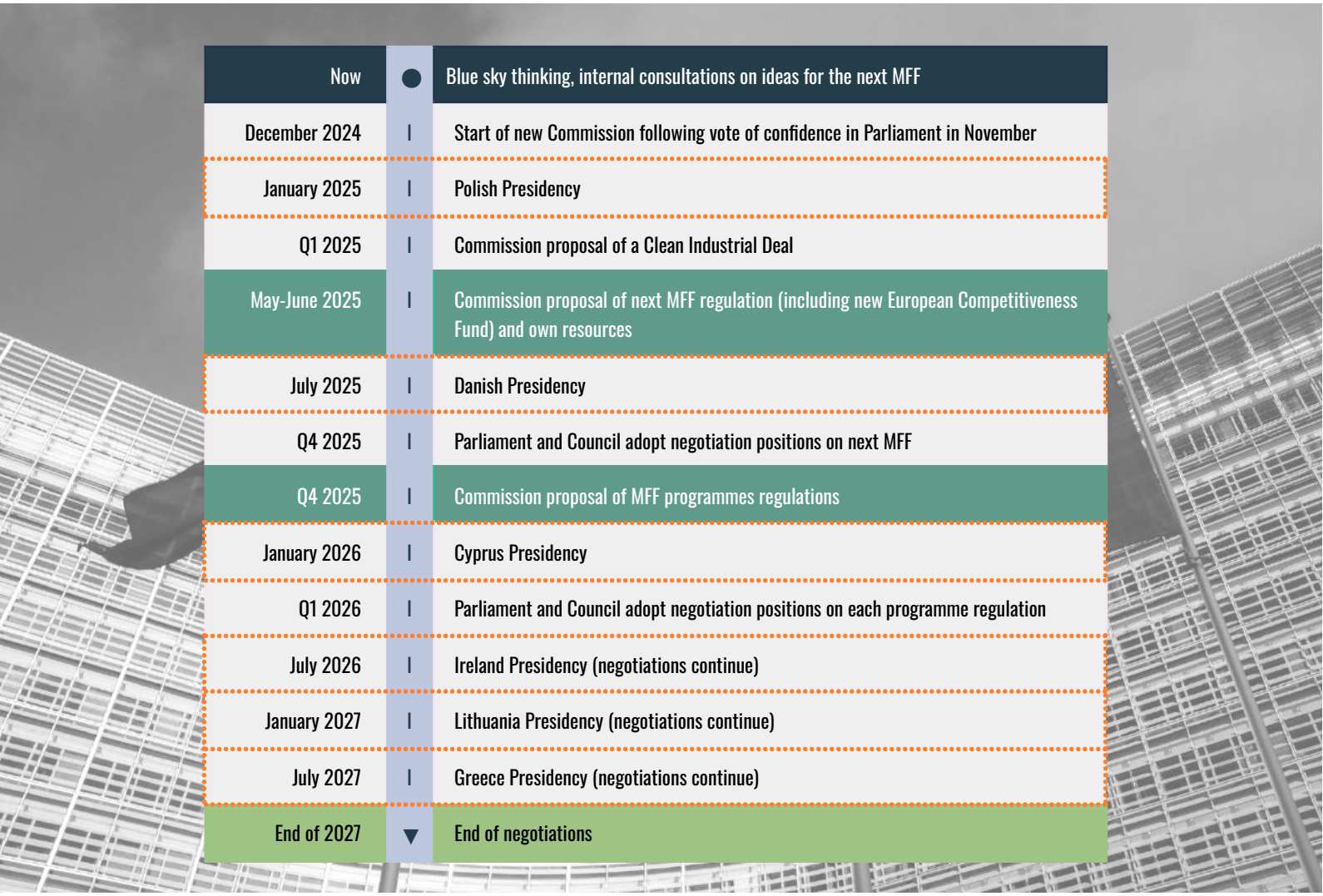
Spain was the first EU country to directly transpose the EE1st principle into its national legislation, in Law 10/2022 of 14th June, for urgent measures required to improve energy renovation of Spanish buildings.[19] In doing so, Spain recognised its buildings as the asset with the greatest potential for energy savings. It also stimulated a cost-benefit analysis for potential policies and major investments, using the EE1st principle, in both energy and non-energy related sectors.[20]

The application of the EE1st approach is not limited to the energy sector. **The energy efficiency directive defines it as an overarching principle that can be taken into account in all sectors to inform policy, planning and investment decisions.**[21] In sectors where energy efficiency is material, managing authorities (as directors of EU Structural and Cohesion funding) should take it into account as a way to prioritise projects that use less energy.[22] In Cohesion Policy Funds, or InvestEU, the application of the EE1st principle by the participant can result in higher cost coverage for projects fulfilling the principle or constitute a self-standing element when assessing projects.[23]

[17] European Commission. (2023). Launch and facilitate the implementation of new EEFIG Working Group: Applying the Energy Efficiency First principle in sustainable finance. Available at https://op.europa.eu/en/publication-detail/-/publication/20330c99-7df5-11ee-99ba-01aa75ed71a1/language-en (p.7)
[18] European Commission. (2021). Commission Recommendation (EU) 2021/1749 on Energy Efficiency First: from principles to practice. Guidelines and examples for the implementation in decision-making in the energy and non-energy sectors. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749
[19] European Commission. (2023). Launch and facilitate the implementation of new EEFIG Working Group: Applying the Energy Efficiency First principle in sustainable finance. Available at https://op.europa.eu/en/publication-detail/-/publication/20330c99-7df5-11ee-99ba-01aa75ed71a1/language-en (p.22)
[20] Ibid.
[21] European Commission. (2023). Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749&qid=1643799901520
[22] European Commission. (2021). Commission Recommendation (EU) 2021/1749 on Energy Efficiency First: from principles to practice. Guidelines and examples for the implementation in decision-making in the energy and non-energy sectors. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749
[23] Ibid.

EU Budget Timetable

In 2025, the EU Commission will present its proposal for the next Multiannual Financial Framework (MFF) for the post-2027 programming period, with additional proposals for specific EU funds and instruments (see the tentative timeline below). The overall amounts and the architecture of this new MFF must be unanimously approved by the European Council, after obtaining a majority vote in the European Parliament. The regulations for the individual funds will also be adopted in parallel by co-decision between the Parliament and the Council.



Now	●	Blue sky thinking, internal consultations on ideas for the next MFF
December 2024	|	Start of new Commission following vote of confidence in Parliament in November
January 2025	|	Polish Presidency
Q1 2025	|	Commission proposal of a Clean Industrial Deal
May-June 2025	|	Commission proposal of next MFF regulation (including new European Competitiveness Fund) and own resources
July 2025	|	Danish Presidency
Q4 2025	|	Parliament and Council adopt negotiation positions on next MFF
Q4 2025	|	Commission proposal of MFF programmes regulations
January 2026	|	Cyprus Presidency
Q1 2026	|	Parliament and Council adopt negotiation positions on each programme regulation
July 2026	|	Ireland Presidency (negotiations continue)
January 2027	|	Lithuania Presidency (negotiations continue)
July 2027	|	Greece Presidency (negotiations continue)
End of 2027	▼	End of negotiations

President von der Leyen has set out the Commission's priorities for the new MFF in her Political Guidelines[24] and in the Mission Letter to the new Commissioner for Budget[25]: 1) more focused, policy-based and targeted where EU action is most needed; 2) simpler and linking key reforms with investment; 3) providing more impact through greater de-risking and leverage from national, private and institutional financing. **This paper offers an "efficiency first" approach to assessing climate investments in the next EU budget to address these priorities, and deliver on EU competitiveness, economic and climate goals.** Given the urgency to deploy clean assets before 2028, to meet 2030 targets, the "efficiency first" principles developed here can also be trialled ahead of the next budget.

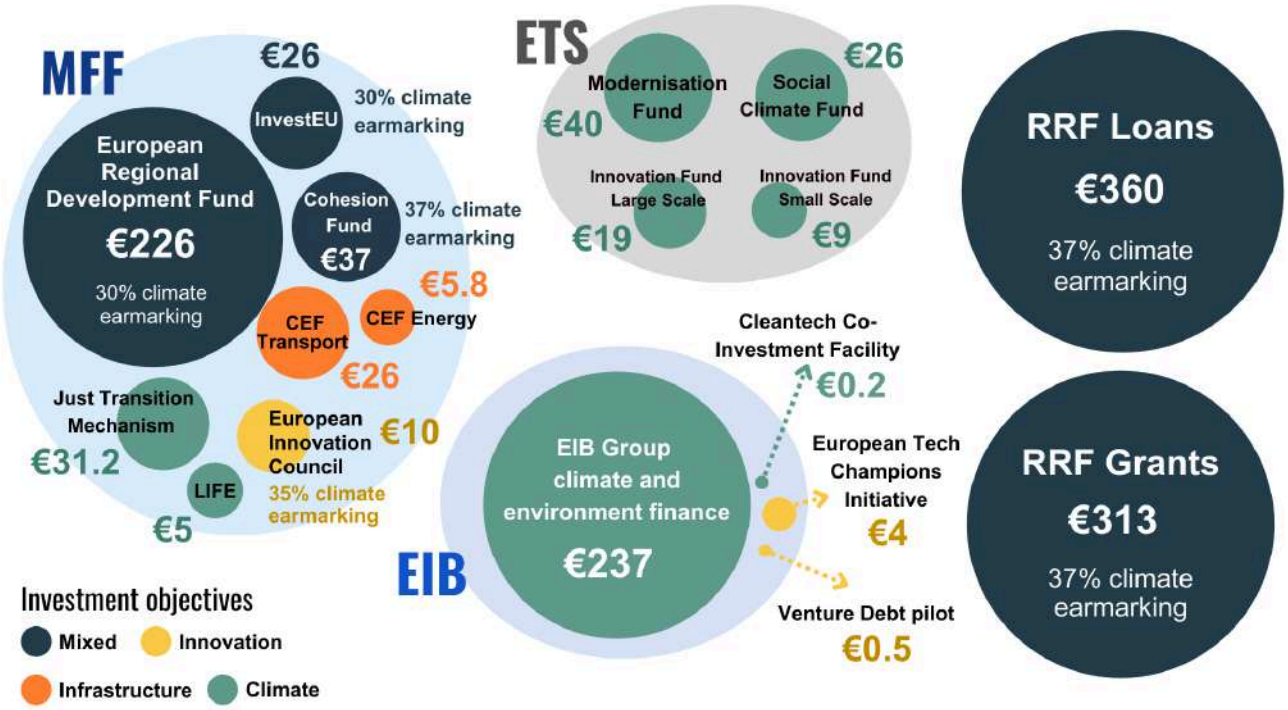
[24] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[25] European Commission. (2024). Mission Letter for Serafin. Available at https://commission.europa.eu/document/download/db369caa-19e7-4560-96e0-37dc2556f676

Methodology

This report sets out to develop an efficiency-first approach to structuring the next EU budget to help to part-fill the climate investment gap, boost the EU's green industrial competitiveness, and ensure there are sufficient public funds for those who need them. The approaches proposed here can also be trialled during the last years of the current MFF and can be implemented after the mid-term reviews. **The analysis builds upon a review of the existing instruments of the current programming period (2021-27) for relevant climate investments in mature technologies and solutions (Graph 1).**

Recognising the significant investment gap in climate R&I, and the need for increased grant-based public funding to develop early-stage, clean technologies, much of the climate investments needed to meet the EU 2030 targets, and reduce emissions by 90% by 2040, is in technologies which are market-ready. Efficiency as a principle can only work for technologies that generate some revenues, or savings. **Therefore, this report focuses on the efficient use of EU funds for deploying mature clean technologies and solutions, without prejudice to the critical importance of doubling European R&I funding, via a successor to Horizon Europe.[26]**

Graph 1: Size of relevant EU funds for climate deployment in the 2021-2027 period, classified by investment objectives (in billion euros)[27]



Source: Created by Climate Strategy from European Commission and EIB sources

[26] As proposed by Draghi. Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf

[27] Budget as agreed in the 2021-2027 programming period of the MFF and EIB programs, or as expected from ETS revenues until 2027. The EIB €192 billion target for climate and the environment was increased with an additional €45 billion financing for REPowerEU purposes. The EIB Group 2023 Climate Bank Roadmap Progress Report notes that between 2021 and 2023 a total of €116 billion euros were dedicated to supporting green investments and it is expected to deliver €45 billion annually from 2024 to 2027. Therefore, the EIB is expected to provide a total of around €300 billion in the whole programming period. Sources include:
European Commission. (n.d.) Multiannual Financial Framework 2021-2027 (in Commitments) - Current Prices. Available at https://commission.europa.eu/system/files/2021-01/mff_2021-2027_breakdown_current_prices.pdf
European Court of Auditors. (2021). Sustainable Finance: Funding the EU's Climate Transition. Available at https://www.eca.europa.eu/lists/ecadocuments/sr21_22/sr_sustainable-finance_en.pdf
European Investment Bank. (2023). EIB to support Green Deal Industrial Plan with €45 billion in additional financing. Available at https://www.eib.org/en/press/all/2023-270-eib-to-support-green-deal-industrial-plan-with-eur45-billion-in-additional-financing#:~:text=At%20its%20meeting%20this%20week,eligible%20sectors%20in%20the%20EU
European Investment Bank. (2023). EIB to Support Green Deal Industrial Plan with EUR 45 Billion in Additional Financing. Available at https://www.eib.org/en/press/all/2023-270-eib-to-support-green-deal-industrial-plan-with-eur45-billion-in-additional-financing.
European Investment Bank. (2024). EIB Group 2023 Climate Bank Roadmap Progress Report. Available at https://www.eib.org/attachments/lucalli/20240145_eib_group_2023_climate_bank_roadmap_progress_report_en.pdf

The recommendations and conclusions of this report are extended from the academic literature and Commission own-analysis, with input drawn from interviews with policymakers and experts in climate investments and public finance.

The climate investment gap required for European decarbonisation is described in Chapter 2, **and focuses on five priority sectors by taking a granular, asset-specific outlook of: Energy and Grids, Buildings, Transport, Industry and Agriculture.** The mix of finance, investment and agency currently targeting that sector is also considered. Data for this comes from European Commission staff working documents, and impact assessments, and from academic literature from reputed think tanks. Many of these reports provide estimates of the public and private investment needs (supply and demand side), and in some instances provide a more granular analysis at the sectoral and asset-specific level. A few of these reports only offer estimates of the public investment gap - which varies depending on their assumptions of the appropriate public-private ratio in climate investments.

Chapter 3 provides an overview of the strategies proposed to fill the climate investment gap at the Member State and EU level. It provides an assessment of Member States' existing investment capacities, and underlines the importance of green budgeting practices, and offers a frame for the added value of the EU budget in supporting national climate investments. It also considers proposals to increase the EU budget for climate (by the creation of a new Fund or Facility) and the opportunities to increase funding to clean industrial capabilities through a new European Competitiveness Fund.

Chapter 4 takes a deep dive into the most climate-relevant EU funds to assess the uptake of public-private financial instruments that blend funding and finance, which can serve to extend the reach and amounts of public budgets. There has been an explicit push at the EU level to develop blueprints or templates of financial instruments that can be replicated and deployed at national or regional level. The InvestEU Member State compartment is highlighted as an underutilised model to facilitate the implementation of EU-level financial instruments as a service for Member States to increase their investment capacity with national contributions from the largest EU funds.

Chapter 5 offers best practices and case studies in the use of EU financial instruments that have been more commonly used by Member States to increase the speed and efficiency of delivery of RRF funds for the energy transition of SMEs. EU financial instruments can activate different retail channels and deliver programmatic blended finance efficiently to millions of small and growing businesses across the continent. This can help release pressure from local administrations which have faced slow rates of absorption of EU funds. A set of strengths and weaknesses in the use of these tools are also identified for potential policy reforms in the next EU budget that can activate a smarter use of EU financial instruments when they are most effective.

Chapter 6 develops the concept of "EU Financial Instruments as a Service" and provides recommendations on how these instruments could be integrated in the next MFF, potentially via the new European Competitiveness Fund. The chapter also provides sectoral climate funding strategies by matching appropriate EU financing types (grants, loans or blended financial instruments) with end-beneficiaries. Based on case studies of building renovation investments and the Innovation Fund, some lessons are transposed to financing a rapid deployment of retail assets in the transport and the energy sector. The report seeks to tie the public fund efficiency principle to the specific needs in selected sectors where the climate investment gap is especially prominent, with the exception of agriculture.

Chapter 7 extends the broader "efficiency" analysis for SMEs to cleantech and industrial scale-ups. Efficiency measures are identified to increase public-private blended finance and accelerate investment delivery to grow the EU's clean industrial capabilities at the pace required to boost European competitiveness in cleantech. An increased role of the EIB Group and its cleantech programs is considered in further detail, with several of the existing offerings highlighted and variations recommended based upon recent research.

The report contains **conclusions and policy recommendations in Chapter 8 as input in developing the next MFF, and the use and design of other EU funds.**

Relevant case studies of EU financial instruments, Member State and international best practices are included throughout to provide empirical support to the main recommendations of this report. The report was reviewed by experts from think tanks, NGOs and EU specialists in the climate and sustainable finance fields. Their comments and suggestions have been integrated to improve the quality and depth of this analysis.

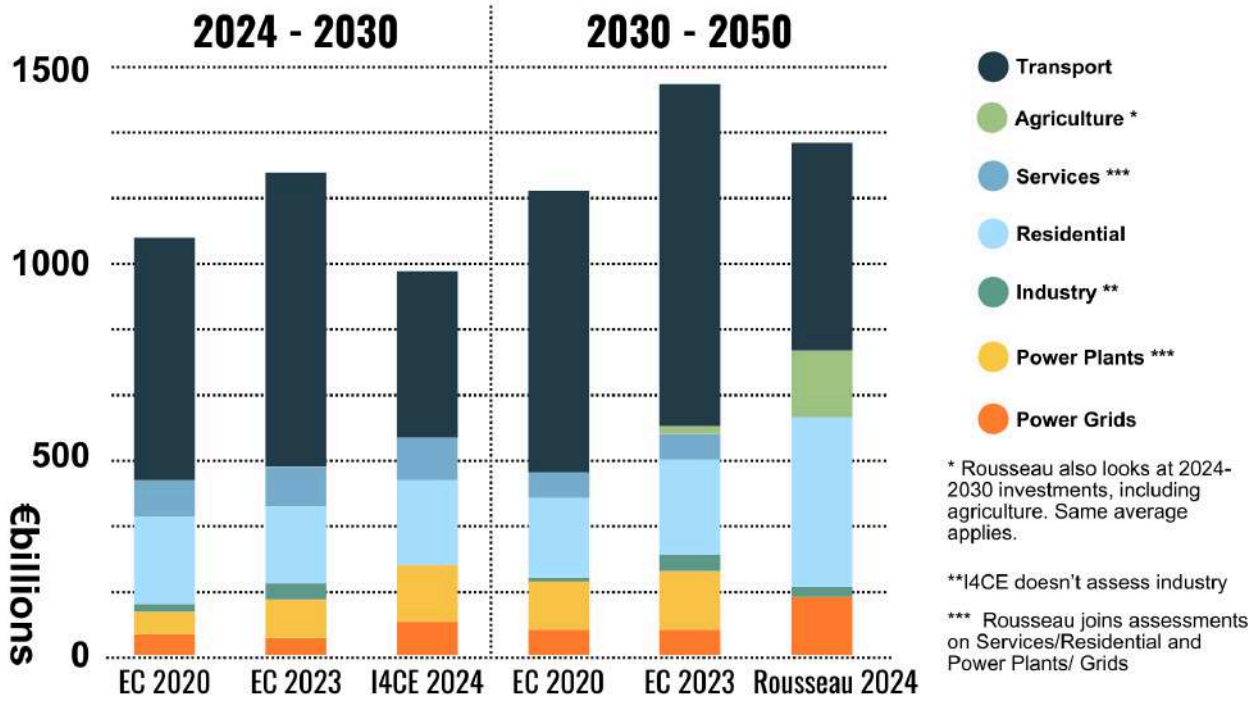
Chapter 2

Sizing the EU Climate Investment Gaps

Chapter 2: Sizing the EU Climate Investment Gaps

Several reports, including three from the European Commission, have assessed the **sectoral investment needs** to meet the EU's energy and climate targets (see Graph 2).[28] To reduce Europe's GHG emissions by 55% by 2030, experts believe that the required EU-level[29] public and private investments range between €813[30] to €1,241[31] annually.[32] Reports looking to a 2050 horizon provide higher post-2030 annual investment needs, ranging between €1.215[33] to €1.520[34] billion from 2030-50.[35] With the acceleration resulting from a proposed 90% emissions reduction target by 2040, the Commission sees the investment needs in the 2030-40 decade peaking at around €1.570 billion annually.[36] The proposed 2040 target translates into 3% to 5% of EU GDP that should be invested annually in the transition compared to the 2011-2020 decade, but it also leaves relatively lower investment needs in the 2040-50 decade.[37]

Graph 2: EU Annual Climate Investment Needs (public & private) (€billions/year)



Source: Climate Strategy creation from several reports from the Commission (EC 2020, 2023 and 2024) and think tanks (I4CE 2024 and Institute Rousseau 2024). See footnote 28 for references.

[28] Commission reports: European Commission. (2020). Communication on Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0562.; European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063; European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
I4CE: Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf ; Institute Rousseau: Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

[29] The reports analysed only provide estimates for EU-level investments and do not specify what funding is nationally or EU-sourced.

[30] I4CE, which doesn't take into account industry and agriculture. Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf

[31] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF. , which doesn't take into account agriculture

[32] Investment volumes relate only to net zero targets i.e. decarbonisation and energy system investments. They do not include investments associated with building resilience/adapting to climate change; nor do they consider wider natural capital investment required to protect and enhance the delivery of eco-system services.In this sense, estimates in this report should be considered as a lower bound.

[33] European Commission. (2020). Communication on Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0562. which doesn't take into account agriculture

[34] Rousseau 2024 which calculated needs from 2024 to 2050. Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692

[35] This report does not look into the EU adaptation investment gap, which has been estimated to be at around EUR 35 billion and 500 billion annually, and is reportedly one of the most important barriers to further progress towards climate resilience. The less is spent on climate mitigation, the larger the adaptation gap will be. European Investment Bank. The EIB Climate Adaptation Plan. Available at https://www.eib.org/en/publications/the-eib-climate-adaptation-plan

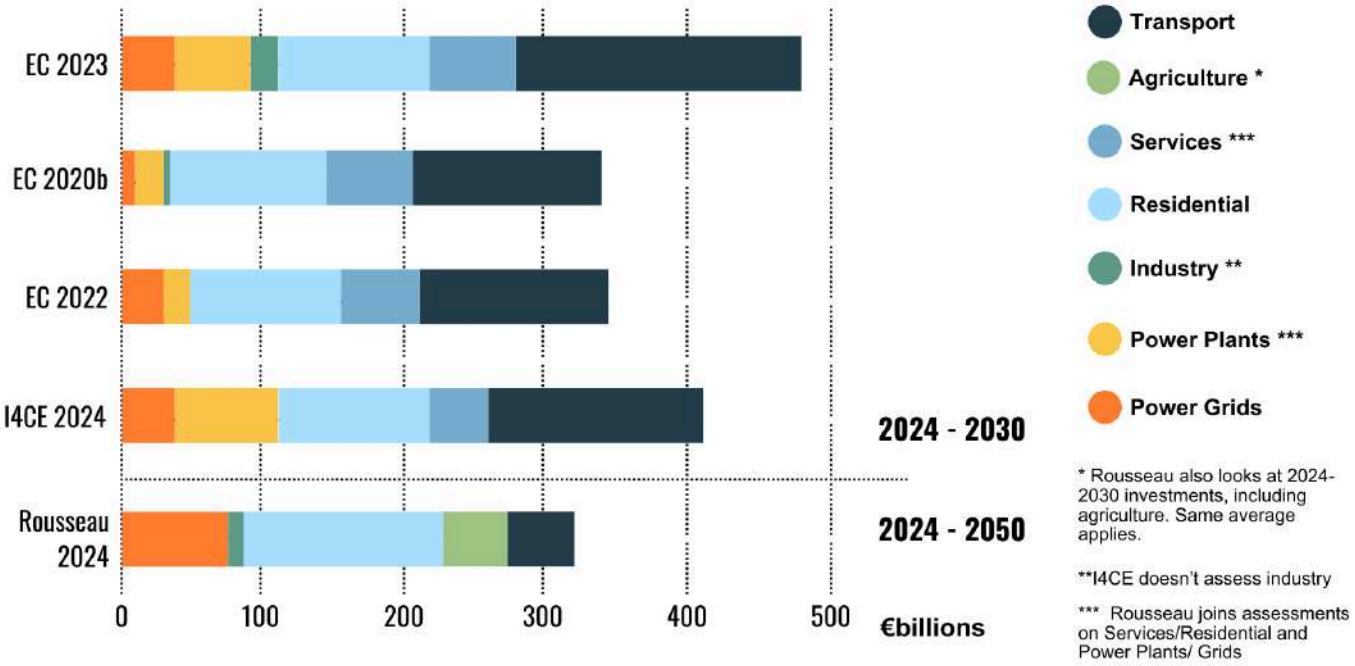
[36] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

[37] Ibid.

While different methodologies and transition scenarios were used to provide these different estimates, all of them focus on energy system-level investments. Certain patterns in the future like the use of public transport or the relative priority of energy efficiency are key factors which impact the estimated sector distributions. One notable similarity is that, on average, across the different scenarios and reports, **demand-side investments are 84% of the total from 2024 to 2050.** Most of these demand-side investments are in transport and buildings (residential and tertiary), they relate to asset deployment at the retail level (e.g. homes, SME offices and facilities) and are geographically diverse.

Around half of the expected EU investment is hard to identify in existing budgets and using current trends. Some reports[38] estimate these **sectoral climate investment gaps** by taking into account historical EU-level public and private investments and current EU and Member State's public investment schemes for decarbonisation (see Graph 3). Between 2024 and 2030, European Commission, Mario Draghi[39], and independent think tank analysis identify an EU-level public and private investment gap of €340[40] to €477[41] billion annually (approximately an additional 1.5% to 2% of EU GDP investments compared to the 2011-2020 decade).

Graph 3: EU Annual Climate Investment Gap (public & private) (€billions/year)



Source: CS creation based on several reports from the Commission (EC 2020b, EC 2022, and EC 2023) and think tanks (I4CE 2024 and Institute Rousseau 2024). See footnote 38 for references.

The relative need for EU or Member State public funding of the climate transition depends on several factors like the prosperity of the target region, the type of asset being built (cross-border or national, infrastructure or retail, low or high tech maturity) and the nature of the end-beneficiary (low or high-income

[38] Commission reports: European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF ; European Commission. (2020b). Communication on Europe's moment: Repair and Prepare for the Next Generation. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0098; European Commission. (2022). Communication towards a green, digital and resilient economy:our European Growth Model. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0083; Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf; Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

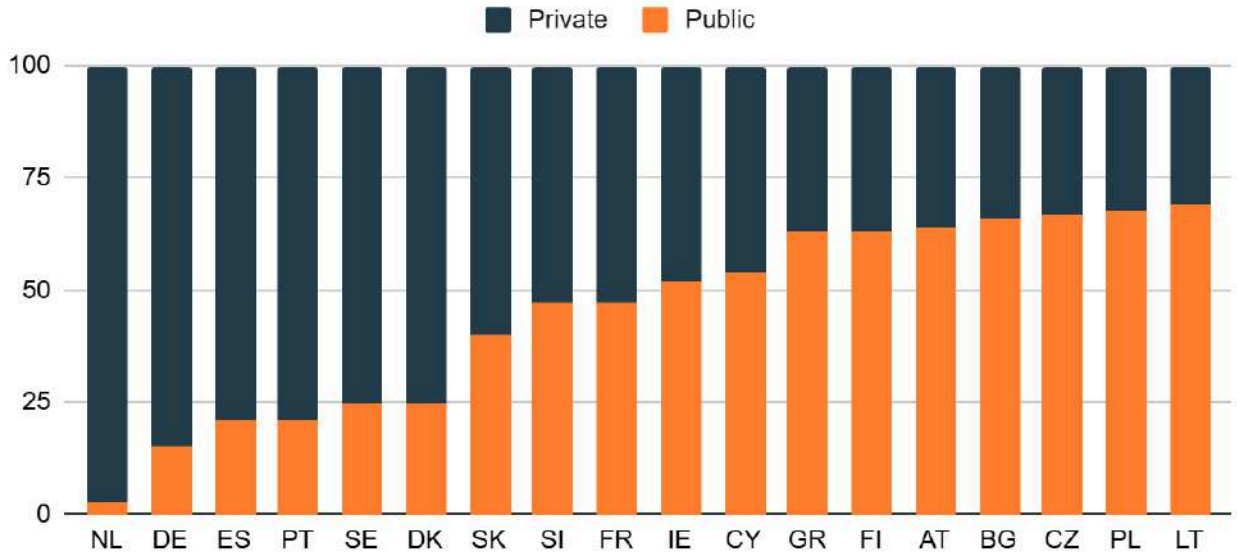
[39] Mario Draghi's report does not provide a sectoral breakdown of the investment gap, hence it wasn't included in the graph. He estimated an additional annual investment needs by 2030 of €300 billion for energy and €150 billion for transport. Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf

[40] European Commission. (2020). Communication on Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0562.

[41] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF

household, small or big company). An EIB assessment of available National Energy and Climate Plans (NECPs) in 2021 shows the varying public-private investment ratios that were anticipated for the energy transition by different Member States (Graph 4). Then, Central and Eastern European countries estimated that about 60% of green investments would be funded from public sources, whereas in Western and Northern European countries this ratio was only expected to be 37% from public funding.

Graph 4: Public and private sources of additional green investment needs[42] (percentages of total, average for 2021-30)



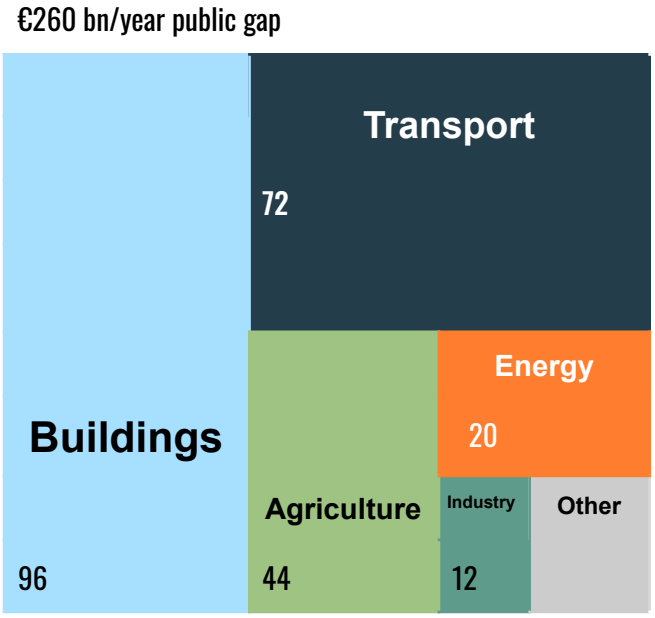
Using the public-private ratios provided by the 2021 NECPs, an ECB (2023) paper[43] estimates that an additional 1.8% of EU GDP (or €235 billion) of annual green public expenditure in 2021-2030 is required to deliver the EU 2030 targets. Institute Rousseau (2024) also assesses the **public sector investment gap** and places it at €260 billion per annum. This is 2.5 times the funds presently available through climate mainstream proportions of the current MFF (excluding the Common Agricultural Policy).[44] Other reports find that the split between public and private finance varies in a range between 1:5 and 1:2.[45] Buildings, transport and agriculture sectors stand-out in this public investment gap. Overall, it must be noted that it is difficult to estimate the share of public funding required (and even more difficult to estimate the EU share) and efforts to extract exact figures should take into account developments in carbon prices - notably how the revised European Emissions Trading System (ETS), the new ETS2 on buildings and transport, and the Carbon Border Adjustment Mechanism (CBAM) drive prices and investments for clean assets. Still, **what is clear is that more public funding is needed, as well as more granular and regularly updated assessments at national and EU level of where the major investment gaps exist.**

[42] European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf and European Investment Bank. (2020). Investment Report 2020: Building a Smart and Green Europe in the COVID-19 Era. Available at https://www.eib.org/en/publications/investment-report-2020. *In the EIB report, data for some countries are missing.

[43] ECB Occasional Paper Series (2023), The climate change challenge and fiscal instruments and policies in the EU. European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf and European Investment Bank. (2020). Investment Report 2020: Building a Smart and Green Europe in the COVID-19 Era. Available at https://www.eib.org/en/publications/investment-report-2020. *In the EIB report, data for some countries are missing

[44] Total amount based EU funding available to support the energy transition in 2021-2026: €695 billion (€99 billion annually) yearly. European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

[45] The split between the public and private role in financing additional investment needs is projected to range from a ratio of 1:5 , up to 1:2 Wolff, G. B., Sapir, A., & Tagliapietra, S. (2021). Promoting EU Industrial Policy through Strategic Sovereignty. Bruegel Policy Contribution, 18. Available at https://www.bruegel.org/sites/default/files/private/wp_attachments/PC-2021-18-0909.pdf. Bruegel estimates the range between 1:4 to 1:5 for the energy and climate dimension. Lane, P., Carreras, A., & Castañeda, G. (2023). Chapter 8: Economic Sovereignty in the Digital Era. In P. Lane et al., Sovereignty and Digitalization. Open Book Publishers. Available at https://www.openbookpublishers.com/books/10.11647/obp.0328/chapters/10.11647/obp.0328.08.



Graph 5: Annual additional public investment by sector (€billion/year) *Source: Institute Rousseau 2024*

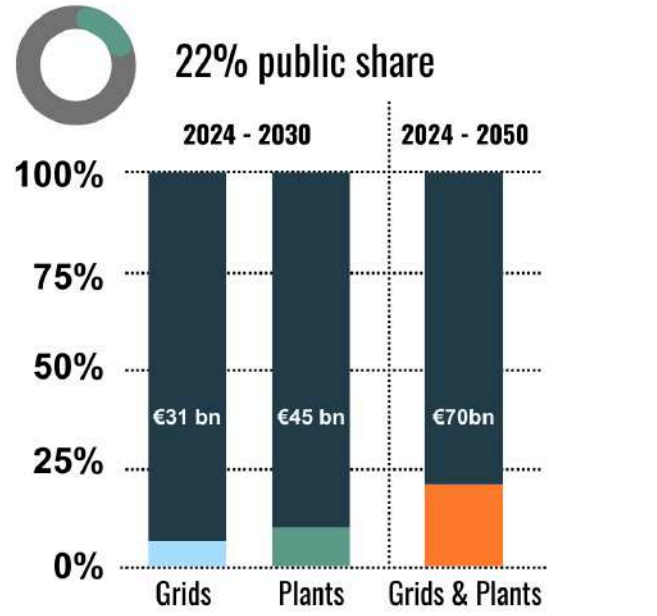
Before advancing strategies to fill the EU climate investment gap, a more granular analysis within each sector is necessary. **Different sectors require different climate assets to be built to decarbonise** (e.g. more renewables and grids for power, renovation for buildings and EVs for road transport) **and these come in radically different sizes, with different remuneration regimes, varying degrees of technological maturity, and there is no "one size" for all European regions**. It is clear that financial instruments designed to promote early stage venture capital cleantech investments in industry are wholly different from those promoting rooftop solar deployment for low income families.

EU Climate Investment Needs - by Sector

The following sections look further into the public and private climate investment gaps by sector. The analysis underscores that different **economic sectors require different amounts of investment to decarbonise, and that the technology and credit risks in different sectors and in different regions are not homogeneous.** This has a profound impact on instrument design and therefore requires a more sophisticated approach to public-private finance blending, which is developed in the next chapters. The blended financial instruments used to deploy small assets at the retail level (e.g. home renovations or rooftop solar) are very different from those required to build a new railway, to pay a premium for green hydrogen production, to fund corporate innovation, or to support a new heat-pump manufacturing facility.

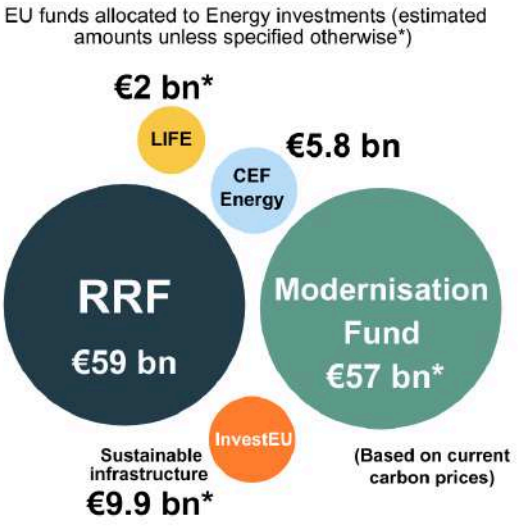
For each sector, the absolute amount and relative public-private investment needs are shown, together with a historic public/private observed ratio as well as a snap-shot of the relevant EU-level funds that could apply. Sectoral assessments are then offered to connect needs, via asset type, to public instruments.

Graph 5[46]



Annual share of public & private investment gap of Power Grids & Plants from total gap

(Averages from EC 2023, EC 2020b, EC 2022, I4CE 2024, Institute Rousseau 2024)



* Renewable energy and Grids are part of investment scope, but no specific allocation is provided

Other EU funds that contribute to renewable energy and grid investments (among a wide range of objectives and sectors), but where exact data has not been found: European Regional Development Fund, Innovation Fund.

The average of the estimated (public and private) investment gaps in EU power generation and grids through 2050 is c. €70 billion annually. This is some 20% of the overall EU climate investment gap identified by the studies reviewed.[47] Building energy generation assets and making grid investments sits largely in the domain of sophisticated developers and regulated utilities (some partly publicly owned) that have good access to finance.[48] This supports the Institute Rousseau (2024) estimate that **only 22% of the energy and grid investment is needed from public sources**. Households and SMEs, however, are involved as investors in retail climate-assets via the installation of rooftop solar panels and energy communities.[49] **A proactive EU funding strategy based on blended public/private instruments can accelerate the millions of smaller-scale SME and home retail transactions**, by lowering costs of finance and providing grant-based targeted support to the energy poor.

Nearly 200 countries pledged at COP28 to triple the deployment of renewables by the end of this decade to meet the Paris Agreement 1.5º target.[50] In many countries, EU included, **policy and administrative barriers are among the main bottlenecks that are preventing an accelerated development of mature renewables (like wind and solar) and the distribution of grid assets required to support their integration.**[51] The REPowerEU strategy[52] and the EU Action Plan for Grids[53] also identify key bottlenecks that include regulatory certainty of targets and standards, long-term planning and cross-border coordination,

[46] As of 2024, approximately €34.2 billion from the RRF has been allocated to accelerate the deployment of renewable energy sources across EU member states. This includes investments aimed at boosting renewable energy capacity, reforming permitting processes, and supporting energy communities. Additionally, about €25 billion has been dedicated to enhancing energy infrastructure, particularly focusing on modernizing electricity grids, integrating renewable energy sources, and implementing smart meters and storage solutions. European Commission.(2024).Recovery and Resilience Facility for clean energy. https://energy.ec.europa.eu/topics/funding-and-financing/recovery-and-resilience-facility-clean-energy_en

[47] Averages from European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF. ; European Commission. (2020b). Communication on Europe's moment: Repair and Prepare for the Next Generation. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0098 ; European Commission. (2022). Communication towards a green, digital and resilient economy:our European Growth Model. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0083, Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf, Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

[48] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

[49] Ibid.

[50] International Energy Agency. (2023). COP28: Tripling Renewable Capacity Pledge. Available at https://www.iea.org/reports/cop28-tripling-renewable-capacity-pledge.

[51] European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

[52] REPowerEU Strategy European Commission (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.

[53] European Commission. (2023). Questions and Answers on European Energy Infrastructure. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_6045

permitting procedures and skills. The deployment of renewable electricity has been driven by national support schemes and limited EU funding (mainly via the Modernisation Fund),[54] and investment costs have fallen dramatically. Renewable electricity is broadly cost-competitive on a market basis in many regions (assuming priority dispatch) and the Commission therefore expects that the need for public support will decrease and that private funding will replace it and drive accelerated deployment.[55]

The new Commissioner for Energy and Housing, is expected to lead a "clean energy investment strategy" and kickstart a de-risking initiative to unlock private investments in clean energy infrastructure.[56] Further, the Commissioner's mandate letter requires a review of the relevant EU legal framework to accelerate the upgrade and expansion of grids.[57] The European Roundtable for Industry identifies[58] a set of regulatory actions needed, in addition to the recent electricity market reform, to remove obstacles to private funding which include: de-risking anticipatory grid investments, unlocking flexibility such as storage and demand response, streamlining permitting processes and a priority-based approach for grid development.[59] In principle, lack of finance does not appear as a bottleneck at present, however the storage and integration of higher proportions of renewables offers new financial challenges for the future.

EU funding has been central in promoting energy grid interconnectivity between Member States. The REPowerEU strategy identifies this as a priority, by accelerating the implementation of electricity Projects of Common Interest (PCI) for an interconnected system delivering an increased share of renewable energy. The Connecting Europe Facility (CEF) for Energy was re-energized under REPowerEU to support PCIs not implemented by the market, or not implemented within the time needed to deliver the REPowerEU objectives.[60]

CEF for Energy has a total budget of €5.8 billion for 2021-2027, just 1.2% of the whole energy investment gap for this period. REPowerEU did not increase the budget for CEF. Current electricity PCIs and Commission efforts are focused on increasing the interconnection capacity between the Iberian Peninsula and France and the synchronisation of the Baltic States' electricity networks with the continental European network.[61] An opinion by the European Economic and Social Committee recommends abolishing subsidies for fossil resources (also mandated under the new Commissioner's mandate letter)[62] and the taxation of windfall profits from oil companies to increase the necessary public investments in energy infrastructure to crowd-in more private money.[63]

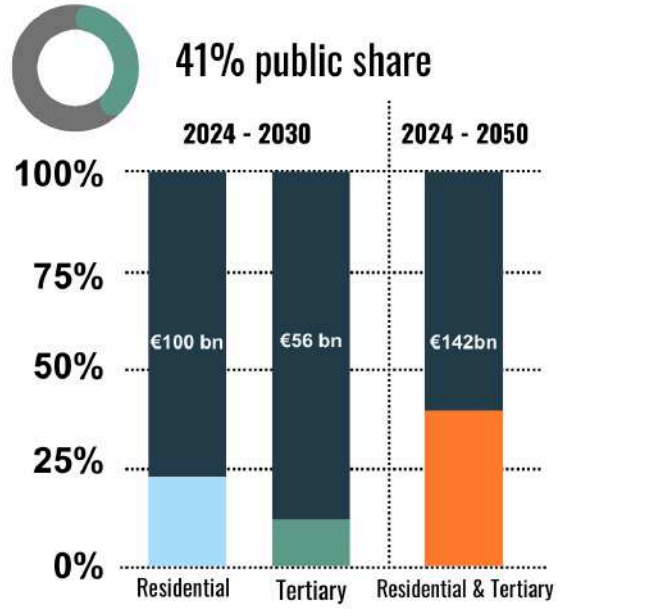
In terms of where else EU funds may play a role, **an Investors Dialogue on Energy report[64] encourages an increased use of financial instruments to de-risk private investments in more innovative, early stage clean energy technologies** (like green hydrogen or ocean energy). Several existing EU-level funds already address the development of early stage innovative renewables with grants (such as Horizon Europe, the European Innovation Council and the Innovation Fund) and support their scale-up and deployment with financial instruments (Innovation Fund, InvestEU and Modernisation Fund).

---

[54] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[55] Ibid.
[56] European Commission. (2024). Mission Letter for Jorgensen. Available at: https://commission.europa.eu/document/download/1c203799-0137-482e-bd18-4f6813535986_en?filename=Mission%20letter%20-%20JORGENSEN.pdf
[57] Ibid.
[58] European Round Table for Industry (ERT). (2024). Strengthening Europe's Energy Infrastructure. Available at https://ert.eu/wp-content/uploads/2024/04/ERT-Strengthening-Europes-energy-infrastructure_March-2024.pdf.
[59] Ibid.
[60] "The Commission launches together with this communication a new CEF Energy call for proposals for Projects of Common Interest (PCIs) with a total estimated budget of around EUR 800 million. Successful projects will be selected in the second half of 2022 to support the most urgent infrastructure projects needed for realising the REPowerEU priorities. In early 2023, the Commission will launch another CEF Energy call for proposals for PCIs for projects to apply that may not be ready for this year's call." European Commission (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.
[61] European Commission (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.
[62] European Commission. (2024). Mission Letter for Jorgensen. Available at: https://commission.europa.eu/document/download/1c203799-0137-482e-bd18-4f6813535986_en?filename=Mission%20letter%20-%20JORGENSEN.pdf
[63] European Economic and Social Committee (EESC). (2022). Public Investment in Energy Infrastructure as a Climate Solution. Available at https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/public-investment-energy-infrastructure-part-solution-climate-issues.
[64] European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

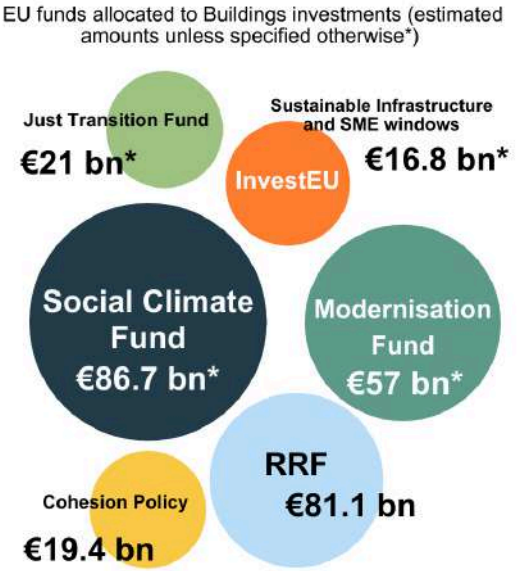
Residential and Tertiary Buildings + + + +

Graph 6[65]



Annual share of public & private investment gap of Residential and Tertiary Buildings from total gap

(Averages from EC 2023, EC 2020b, EC 2022, I4CE 2024, Institute Rousseau 2024)



*Buildings are part of investment scope, but no specific allocation is provided

Buildings is the sector with the largest climate investment need, and public finance gap in the EU. Energy renovation of existing buildings is one of the most critical decarbonisation levers in Europe (representing 40-50% of the climate investment gap, versus just 3-4% for climate assets in new buildings' construction).[66] Building renovation rates and investments to transition European buildings remain far below those needed to deliver a fair and just energy transition, and meet EU climate and energy targets.

The overall rate of building renovation in the EU is around 1% per year, with one fifth of these (just 0.2%) being deep renovations. This is ten times lower than the stipulated 2% target of annual deep renovations anticipated by the EU Renovation Wave.[67] This comes at a severe cost to European energy security and resilience. It also exposes the EU to a huge extra cost in a crisis when Governments subsidise energy use when they might have provided investments for homeowners to make long-term structural savings.[68] From January 2021 to January 2023, electricity bills increased on average by 67% across EU member states,[69] that resulted in an estimated 35 million of EU households (8% of Europeans) being unable to keep their homes adequately warm.[70]

[65] Data on RRF and Cohesion funds retrieved from: E3G & Renovate Europe. (2022). Renovate2Recover One Year On: What progress on buildings renovation?. Available at https://www.renovate-europe.eu/renovate2recover-one-year-on-what-progress-on-building-renovation/;
Renovate Europe. (2023). 2021-2027 Cohesion Policy Support for Energy Efficiency and Building Renovation. Available at https://www.renovate-europe.eu/2021-2027-cohesion-policy-support-for-energy-efficiency-and-building-renovation/#:~:text=What%20is%20the%20break%2Ddown,subject%20to%20energy%20efficiency%20requirements

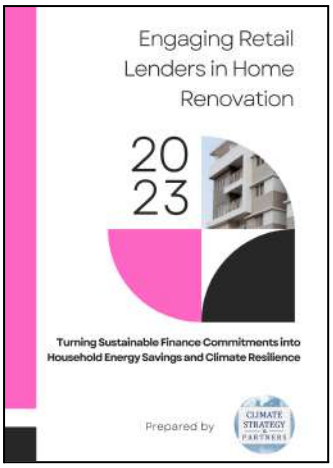
[66] Based on I4CE estimations. Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf

[67] The strategy's target is to double energy renovation rates in the next ten years, leading to greater energy and resource efficiency. The Commission estimates that 35 million buildings could be renovated by 2030, also creating up to 160 000 jobs in the construction sector. European Commission. (2020). Supporting the European Climate Pact. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1835.

[68] For example in Spain, Climate Strategy has estimated that if the Government had effectively implemented its 2014 national renovation plan, the annual energy savings would have been close to the caloric equivalent of the 3.3 million toe of Russian gas that Spain imported in 2021. Esade EcPol. (2022). Emergency Energy Response in Europe. Available at https://www.esade.edu/ecpol/wp-content/uploads/2022/05/AAFF_ENG_EsadeEcPol_Insight35_EmergencyEnergy_DEF.pdf
Also see Energy Monitor. (2022). Building Renovation during Crisis: Long-Term Vision. Available at https://www.energymonitor.ai/opinion/opinion-building-renovation-eyes-to-the-horizon-during-a-crisis/

[69] European Union Council. (2023). Infographic – Energy price rise since 2021. Available at https://www.consilium.europa.eu/en/infographics/energy-prices-2021/

[70] Eurostat. (2021). 8% of EU population unable to keep home adequately warm. Available at https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211105-1



Climate Strategy has published several reports addressing the residential renovation challenge that pinpoint the need to prioritise EU grants for energy poor households (a key objective of the new Social Climate Fund), and make better use of smart, blended finance approaches for homes with poor economics, leaving private savings as a source of finance for the renovations of wealthy households.[71] Given that the EU Renovation Wave targets have not been met in recent years, **Climate Strategy sees remaining residential renovation investment needs for 2023-30 of around €2 trillion (or €250 billion per annum) and €6 trillion from 2023 to 2050**.[72] From another source, I4CE sees the current public and private investment gap in residential buildings renovation as €52 billion annually, with an additional €42 billion annual climate investment necessary in the renovations of the tertiary sector. I4CE believes that this is probably an underestimate of the actual gap.[73] **For the tertiary sector, the Commission estimates annual investment needs of €87 billion to meet the 2030 targets,[74] and €62 billion annually from 2030 to 2050**.[75]

Institute Rousseau believes that the public share of climate investments in the buildings sector needs to be 41%. Climate Strategy proposes this ratio at a lower level of around 25% when modelling a blended finance approach that levers EU funds through the use of guarantees, and retail mortgage lenders to improve the efficiency and distribution of renovation loans. **CS sees a residential buildings public investment need of €500 billion by 2030 (around €70 billion annually, including collateral for guarantees) to lever the necessary €1.5 trillion (some €214 billion annually) of private finance**.[76] These annual investments in building renovations are around six times the IEA's measured 2019 total investments in European buildings for energy efficiency of €57 billion.[77]

"Lack of finance" is frequently cited by building owners and policymakers as one of the main barriers preventing more building renovations, yet some banks offering financing solutions point to an underwhelming and low customer demand for them.[78] **Bank channels are indeed underused for energy transition engagement with millions of mortgage holders and EU funds have struggled to deliver enough grants and blended finance solutions for home renovations.**[79] Both of these issues must certainly be addressed and resolved ahead of the next EU budget, and trialled with new funds. To attract more public and private capital for the upgrade of residential buildings, **a "pan-European investment platform for affordable and sustainable housing" is proposed,** in collaboration with the European Investment Bank and national promotional banks and institutions, and **to double Cohesion Policy funding for affordable housing**.[80]

---

[71] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php and Climate Strategy & Partners. (2022). The EU Renovation Loan: a new instrument to fund the EU Renovation Wave. Available at https://www.climatestrategy.com/en/informe_23.php

[72] Ibid.

[73] Conservative estimates according to I4CE. Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf

[74] European Commission. 2020 Commission Staff Working Document. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0176

[75] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

[76] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

[77] International Energy Agency. (2020). Energy Efficiency in 2019: Report Highlights. Available at https://www.iea.org/reports/energy-efficiency-2020/energy-efficiency-in-2019

[78] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

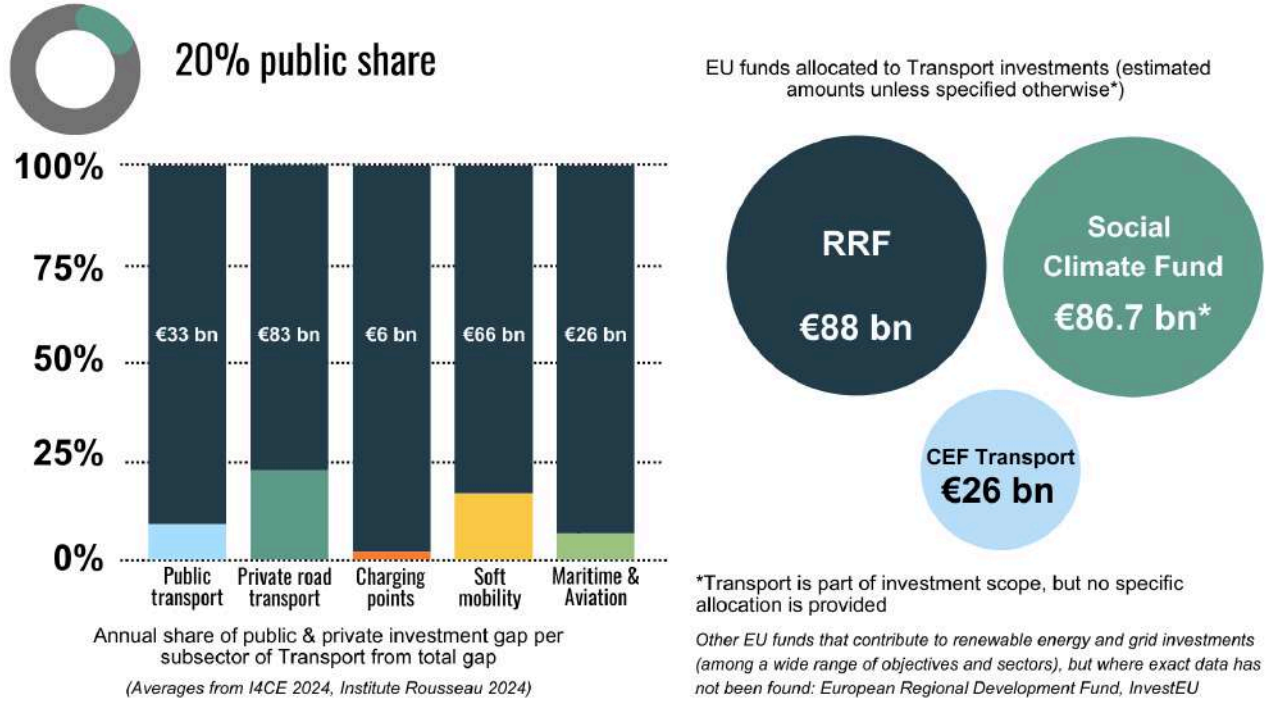
[79] For instance, Cohesion funds are still heavily grant-dominated. Renovate Europe. (2023). 2021-2027 Cohesion Policy Support for Energy Efficiency and Building Renovation. Available at https://www.renovate-europe.eu/2021-2027-cohesion-policy-support-for-energy-efficiency-and-building-renovation/#:~:text=What%20is%20the%20break%2Ddown,subject%20to%20energy%20efficiency%20requirements

[80] European Commission. (2024). Mission Letter for Jorgensen. Available at: https://commission.europa.eu/document/download/1c203799-0137-482e-bd18-4f6813535986_en?filename=Mission%20

Building renovations in colder climates will require more investment in thermal insulation and improved envelope performance, whereas those in temperate regions will focus more on heat-pumps, onsite solar water heating and electricity generation.[81] **I4CE believes that €36 billion alone will be invested annually in the deployment of heat pumps**.[82] This provides a clear link between building climate investments (heat pumps) and industrial strategy/ EU Competitiveness (low cost, competitive EU manufacturing). 30 million heat pumps must be installed by 2030 under the REPowerEU Action Plan and the Green Deal Industrial Plan.[83]

Transport + + + +

Graph 7[84]



Annual share of public & private investment gap per subsector of Transport from total gap

(Averages from I4CE 2024, Institute Rousseau 2024)

Investment estimates for the transport transition vary widely among sector analysts depending upon their future visions of the penetration of shared mobility solutions and the role of traditional public transport (rail, bus and metro) compared with private alternatives. The above Graph 7 shows the average needs in transport sub-sectors from the various studies, representing 56% of the total public and private investment gap (€214 billion annually). The social and cultural choices and behavioural changes by Europeans regarding their mobility impact both public and private transport investment needs. This leads to greater levels of uncertainty compared to other sectors.

[81] Climate Strategy & Partners. (2023). Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

[82] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf

[83] European Commission (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.&qid=1653033742483 and European Commission. (2023). A Green Deal Industrial Plan for the Net-Zero Age. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0062

[84] Data on RRF retrieved from: European Commission (2024). Sustainable Mobility: Thematic Analysis of the Recovery and Resilience Scoreboard. Available at https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/assets/thematic_analysis/scoreboard_thematic_analysis_sustainable_mobility.pdf

By 2030, Transport & Environment (T&E) estimated an investment need of €310 billion annually (total of €1.8 trillion) for aviation, shipping and e-mobility[85] for these sectors to follow a Net Zero trajectory. T&E further believes this investment will rise to €520 billion annually by 2040 (a total of €7.7 trillion).[86] For the 2030-2050 period, **the Commission sees even higher transport investment needs for these sectors of around €800 billion annually** (€680 billion for private road transport and €113 billion for maritime and aviation).[87]

For the electrification of road transport, T&E believes that €250 billion is needed each year by 2030 to develop a resilient domestic EV battery value chain and get EVs and Zero Emissions Trucks on European roads. This is a similar figure to the I4CE estimate of €200 billion annually needed by 2030 in private road transport. I4CE (2024) believes that the investment gap in the electrification of road transport is nearly 60% at €115 billion annually.[88] **T&E sees a "realistic" contribution from the public sector in road, aviation and maritime decarbonisation of €230 billion by 2030 (€38 billion annually)**, covering 13% of their projected total investment needs. As reference benchmarks, in 2021, the EU and its 27 Members spent €61 billion of public funds on building and expanding highways, and, in 2022, €34 billion in fossil fuel subsidies to the EU transport sector.

On the other hand, Institut Rousseau (2024) decarbonisation scenarios promote a different and more public transport-led vision of future mobility that would release significant transition savings (€95 billion annually).[89] This entails a reduction in air traffic and private cars in favour of greater use of and investments in public transport. **Institute Rousseau's work finds a very small public investment gap in private road transport (just €13 billion annually), but a bigger one in public transport options (€39 billion annually) and soft mobility**[90] **(€10.5 billion annually). Rail represents the greatest single-asset public finance gap at €36 billion annually from a total gap of €70 billion.**[91] I4CE also finds a significant gap in rail investments of €29 billion annually.[92] T&E will produce a specific analysis on rail investments in 2025. The Commission's assessment for the 2030-2050 period only looks at the annual investment needs of rail (not the gaps) and finds lower levels at €47 billion (possibly also due to differing assumptions on private versus public transport).

Different EU funds address the transition to clean road transport (Cohesion funds, RRF, InvestEU, etc.), but **experts have criticised initial signs of the overuse of grants for private transport and the lack of prioritisation for public transport and infrastructure that are better examples of the "EU added value"** these funds should bring. A lack of historical data on transport investments also hinders an accurate assessment of investment needs and planning for the gaps. **The Connecting Europe Facility Transport has a 2021-27 budget of €26 billion, which is 10% of the projected annual public finance gap in rail.** Historically, the implementation of this, mainly grant-based, MFF instrument seems to be on the right path, with experts claiming it being "an efficient and targeted instrument for Trans-European infrastructure investments."[93] The main challenge is increasing its budget to meet the investment demand.[94]

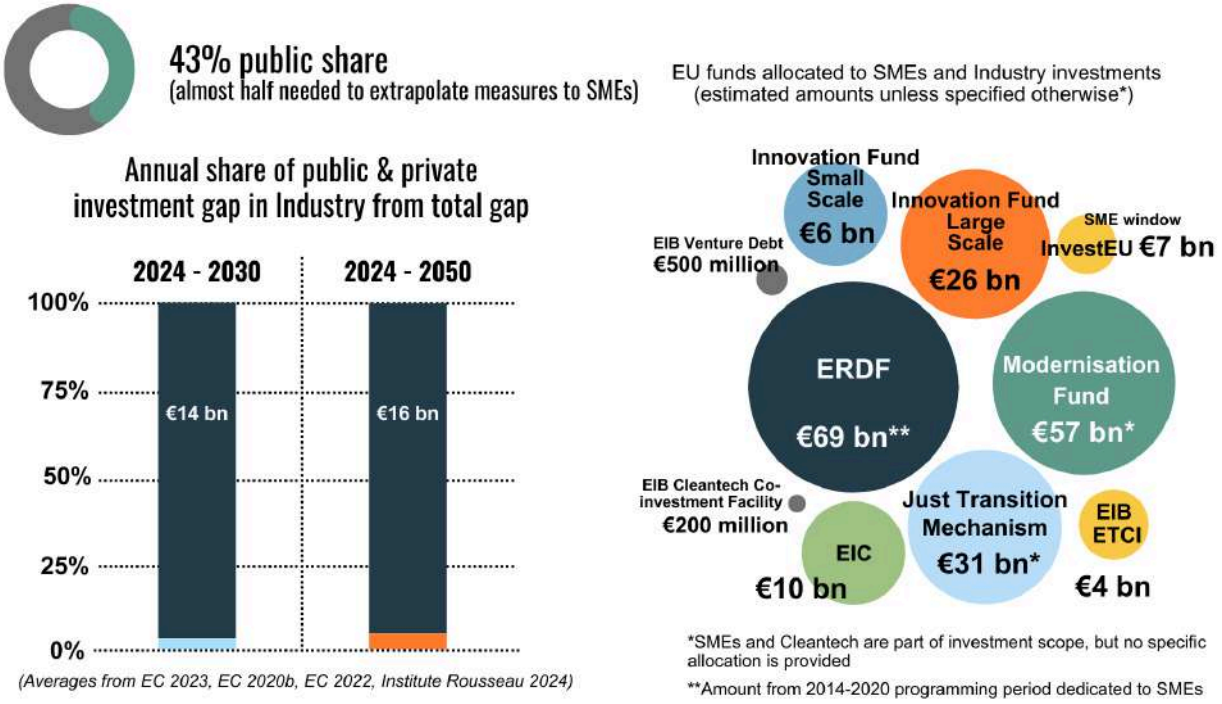
A significant challenge for the next MFF is how to best support the development of new clean e-fuels for maritime and aviation, which according to T&E require investments by 2030 worth €100 billion (€14 billion annually). As these are less mature technologies[95] which have to play a greater role after 2030, they require both public finance and market development to deliver to scale. T&E estimates that two thirds of this "early stage" investment should come from public funding through greater support in the Innovation Fund and InvestEU, with the use of smart financial instruments like Carbon Contracts for Difference and public guarantees. Similarly, **Institute Rousseau finds a public gap of around €10 billion annually.** The production of these new technologies can create EU competitiveness opportunities if addressed with instrument efficiency in public budgeting.

---

[85] Sustainable fuels for aviation and shipping, road charging infrastructure, domestic battery production, electric vehicle (EV) production and uptake, and electrification of heavy-duty vehicles
[86] Based on findings from Transport & Environment. (2024). Investment Needs for a Green Transition in Transport. Available at https://www.transportenvironment.org/uploads/files/202411_investment_needs_study.pdf
[87] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[88] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf
[89] Including public buses and coaches (€3 billion) and rail (€36 billion). Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692
[90] Such as investments in bikes, biking lanes and parkings.
[91] Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692
[92] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf
[93] UNIFE. (2021).TEN-T Networks Completion Needs EUR 500 Billion. Available at https://www.unife.org/wp-content/uploads/2021/03/For-completion-TEN-T-networks-needs-EUR-500-billion-RailwayPRO.pdf
[94] Ibid.
[95] S&P Global (2023). TRL 4-7 Out of 11 Based on IEA Spectrum. Available at https://www.spglobal.com/_assets/documents/ratings/research/101595057.pdf

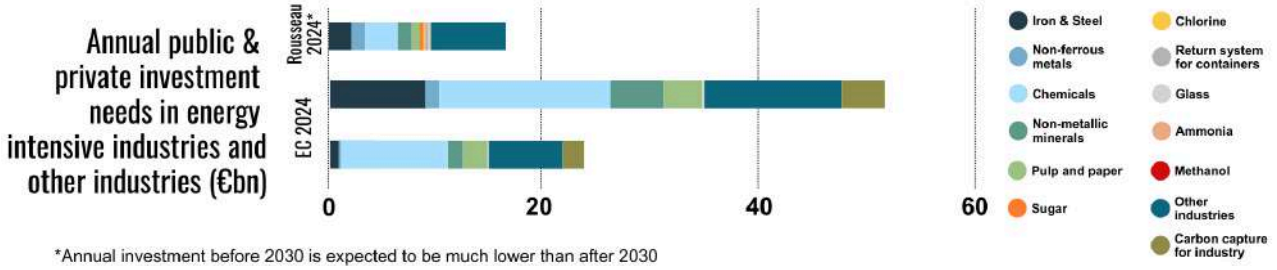
Industry and cleantech manufacturing + + + +

Graph 8[96]



European heavy industry (chemicals, iron and steel, cement, pulp and paper and aluminium) is challenged by relatively high energy prices, paying a higher cost of carbon than in competing geographies, and the fact that Europe's economy is relatively mature compared to faster growing emerging economies with lower labour costs. As such, **the capital investment gap in industrial decarbonisation is the least of EU industry's concerns - estimated as €16 billion annually until 2050 (5% of the transition investment gap).**

Graph 9



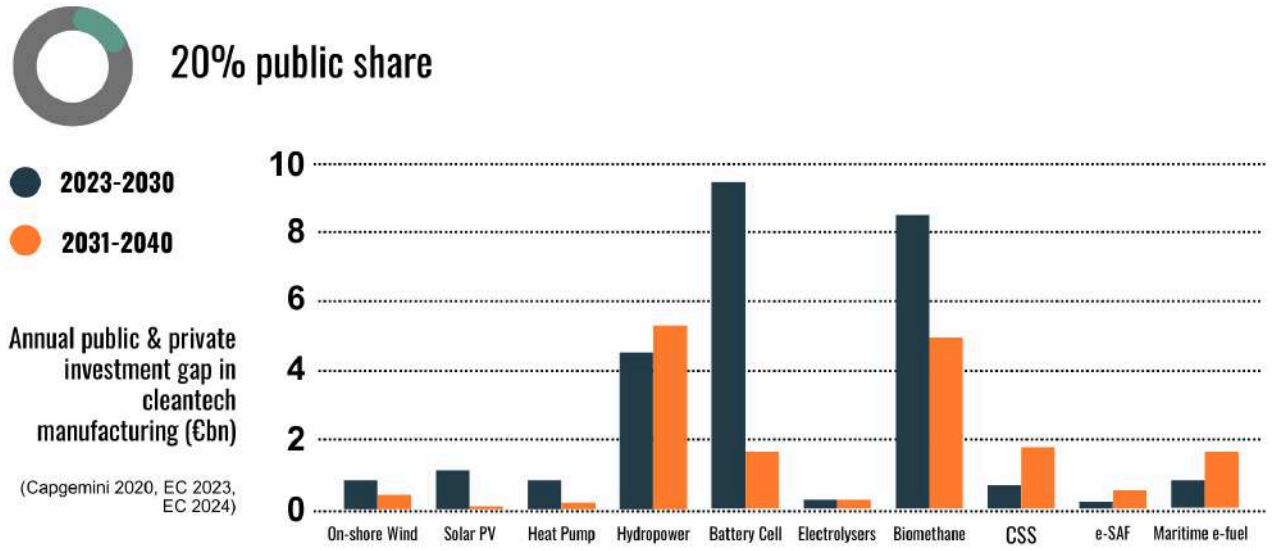
Institute Rousseau (2024) finds that the public climate investment gap in industry is just €5 billion euros annually until 2050, with €11 billion needed from the private sector per year.[97] The Commission's 2040 target impact assessment notes that the increase compared to historical investments (...) is much less significant in industry, and **takes place in sectors where large companies dominate and where access to long-term finance is likely to be good**.[98] Regulation and strengthened price signals for green products with carbon pricing under the EU Emissions Trading System are the main levers that will ensure that large industrial companies redirect their investments from fossil to mature clean assets and to R&I in less mature cleantech solutions.[99]

[96] ERDF data: European Commission. (2021). Cohesion Policy support for small and medium-sized enterprises. Available at https://cohesiondata.ec.europa.eu/stories/s/n4ee-2h83
[97] Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692
[98] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[99] European Commission. (2023). Press Release on Green Financing and SMEs. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_4756

Most of the public funding effort should potentially focus on industrial SMEs that have more difficult access to external finance and higher financing costs.[100] SMEs active in manufacturing account for 9% of SMEs in the EU[101] and benefit from smart public finance strategies that lower the cost of sustainable private finance and mobilise their investments in cleantech. Most of these SMEs are in non-energy intensive manufacturing activities that represent 30-40% of the total investment needs in industry.[102] Here **the main decarbonisation levers are often electrification and energy efficiency, which can also be addressed with blended public and private finance instruments.**

Cleantech manufacturing to provide European companies with the necessary solutions to decarbonise is a strategic pillar for a competitive EU in the global race to develop net-zero industries. **The Commission sees the need to invest €92 billion from 2024 to 2030 in six strategic clean technologies: wind, solar PV, heat pumps, batteries, electrolysers and Carbon Capture and Storage (CCS), with around 20% (€16 to €18 billion) coming from public sources.**[103] For the 2030-2040 decade, the Commission estimates that €23 billion is needed for manufacturing these five technologies (excluding CCS).[104] **The Commission estimates that €8 billion of the current MFF could be available for supporting first-of-a-kind installations and net-zero technology production plants**. Yet it concludes that "while funding possibilities have recently increased, the current EU budget has insufficient possibilities for supporting the objectives of the Net-Zero Industry Act and for ensuring a level-playing field between Member States".[105]

Graph 10



Also in the 2030-40 decade, investments in deploying sustainable aviation fuel, maritime solutions and CCUS will need to ramp-up significantly. **R&I and first-of-a-kind investments are required before 2030 to ensure the EU retains the supply chains to these technologies with a lower "readiness level" (TRL).**

Under a new Commissioner for Industry, the next EU mandate will be developing **a Clean Industrial Deal, supported by an Industrial Decarbonisation Act and a European Competitiveness Fund, to drive industrial decarbonisation and boost its global competitiveness** by levering public and private investments and building up lead markets for cleantech.[106] This will require a review of the current EU budget

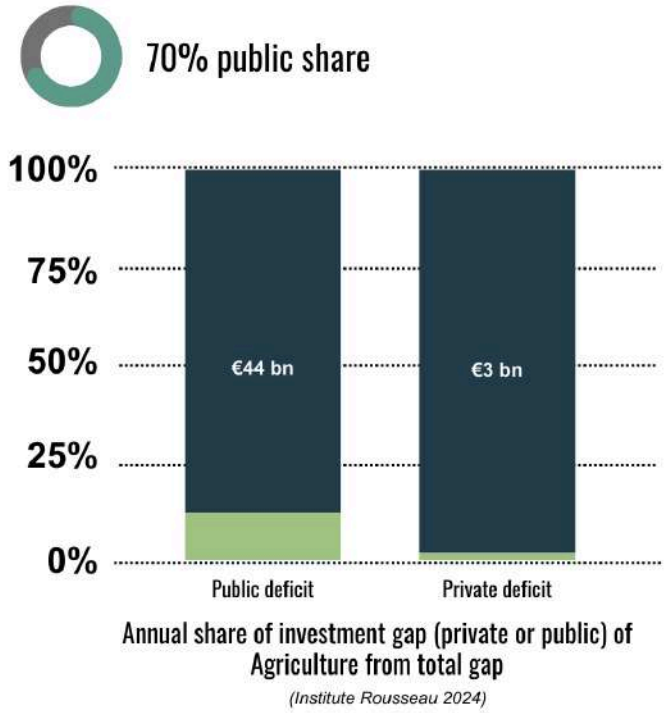
[100] Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union
[101] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[102] Based on estimates from Institute Rousseau 2024 and EC 2024. Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692 and European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[103] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[104] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063 - Two thirds of total investments are for battery manufacturing, one fifth to one quarter are for manufacturing of wind technologies, and electrolysers, solar PV and heat pumps each represent between 2 and 6% of the total.
[105] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[106] European Commission. (2024). Mission Letter for Séjourné. Available at: https://commission.europa.eu/document/download/6ef52679-19b9-4a8d-b7b2-cb99eb384eca_en?filename=Mission%20letter%20-%20S%C3%89JOURN%C3%89.pdf

to identify opportunities. **Cohesion Policy funds, RRF, Modernisation Fund and InvestEU are, to date, the most significant public funding programs for supporting industrial SME decarbonisation.**

In the case of cleantech start-ups, the Innovation Fund is the most relevant for the scale-up of mature projects and is expected to deploy a total of €40 billion until 2030, however with a higher carbon price this figure is likely to be more (an estimated total of €82 billion between 2025-2030).[107] Helpfully, a specific Innovation Fund call for cleantech manufacturing was recently integrated in 2023 with a €1.4 billion budget,[108] and a Battery Fund is expected to enter into force by the end of 2024 with a €3 billion budget.[109] **The EIB and EIF also have programs for de-risking private investments in cleantech innovation and scale-up**, and these could grow to meet the cleantech industrialisation needs for more equity, guarantees and venture debt.

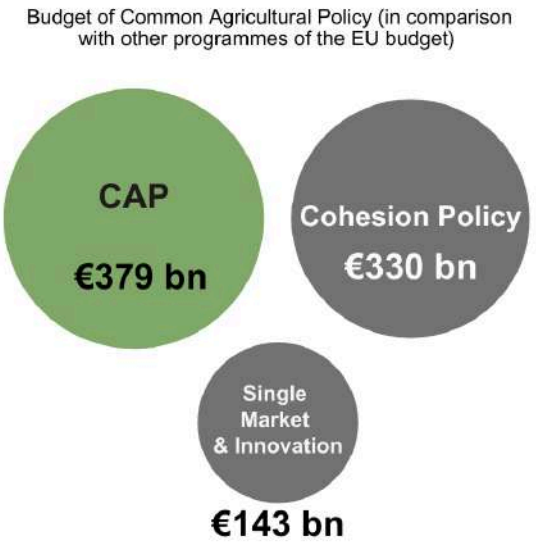
Agriculture + + + +

Graph 11



Annual share of investment gap (private or public) of Agriculture from total gap

(Institute Rousseau 2024)



A report by the European Scientific Advisory Board on Climate Change (ESABCC) finds that agriculture emissions have remained largely unchanged since 2005.[110] As agriculture emissions account for 11% of the EU's total net GHG emissions, aligning the sector with Europe's climate goals is fundamental to reach net zero by 2050.[111] The ESABCC finds that 60% of agricultural emissions could be reduced below 2005 levels by 2050 with ambitious supply- and demand-side measures. For this to happen, **ESABCC recommends that ambitious climate targets, and the policies and incentives to achieve them, should be "at the heart" of the EU's Common Agricultural Policy (CAP).**[112]

The CAP is financed through the European Agricultural Guarantee Fund (EAGF) which provides direct support and funds market measures, and the European Agricultural Fund for Rural Development (EAFRD) which finances rural development. While support from EAGF is annual, support from the EAFRD takes the

[107] Institute for Climate Economics. (2023). Sharpest Tool in the Box: EU Climate Report. Available at https://www.i4ce.org/wp-content/uploads/2023/09/The-sharpest-tool-in-the-box_report.pdf
[108] European Commission. (n.d.) Innovation Fund Calls for Proposals. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/calls-proposals_en
[109] BEPA. (2023) EU Battery Manufacturing Boost. Available at https://bepassociation.eu/the-commission-announced-e3-billion-to-boost-the-eus-battery-manufacturing-industry/
[110] EU Climate Advisory Board. (2024). Focus on Climate Implementation to achieve 2040 goals. Available at https://climate-advisory-board.europa.eu/news/eu-climate-advisory-board-focus-on-immediate-implementation-and-continued-action-to-achieve-eu-climate-goals
[111] Ibid.
[112] Ibid.

form of multi-annual payments and commitments through grants or financial instruments. **As part of the 2021-2027 programming period of the MMF, a total of EUR 378.5 billion[113] were assigned to CAP to be allocated through the EAGF and the EAFRD**, with EUR 264 billion dedicated to Member States CAP Strategy Plans[114] and EUR 114.5 billion dedicated to cover 2021 and 2022 Member States' 'transitional arrangements'.[115]

Institute Rousseau (2024) finds a climate investment gap in agriculture of €47 billion annually (the third largest sectoral gap).[116] To put it in perspective, this is roughly 87% of the annual budget of CAP, which in itself represents one third of the MFF budget. Many experts believe that significant opportunities exist to explore an optimisation approach that could trigger "dual objectives" from the CAP budget, in terms of climate mitigation on the one hand, and increased resilience and food security on the other. From a broader perspective (not just climate focused), an EIB report finds a private financing gap in 2022 of €62 billion (that is, the unmet financing demand from economically viable farms and agri-food SMEs).[117] **From this financing gap, 30.4% (€18.9 billion) accounted for intended green investments**.[118] Small farms (75% of the farm population) and young farmers faced the greatest difficulties in accessing finance, in terms of loan rejections and discouragement to apply for bank products.[119] This was especially the case for long-term loans, which are essential to support the long-term ecological transition of farmers.

While CAP was reformed for 2023-2027[120] to take into account the European Green Deal, criticism was raised as the new ambition was not seen as enough and that it did not integrate the Commission's Farm to Fork Strategy, which was published right after the reform.[121] **Institute Rousseau points to CAP's "outdated" model focused exclusively on agricultural productivity, and proposes a shift to an agroecological approach** based on emerging innovative practices that take into account agrosystems holistically (that is, the interactions between soil and living organisms). The additional public investments required would thus be directed to reducing herd size (and increasing plant-based consumption) and adapting breeding practices, supporting affordable quality food, converting crop systems to agroecology, and converting tractors to clean energy.

The ESABCC echoes these recommendations on the need to reform CAP's approach on climate, by including "standalone emission reduction objectives in addition to obligations to pursue other environmental and sustainability objectives." The ESABCC finds significant ambitions and policy gaps and inconsistencies in CAP including: 1) climate mitigation goals are largely qualitative, and following the large-scale farmers protests in March 2024, the EU significantly lowered the environmental conditionality requirements under CAP[122], 2) Member States' CAP Strategic Plans suffer from a discretionary emphasis on climate and are difficult to quantify *ex ante*, 3) direct income support is still provided for emission-intensive agricultural practices, and 4) emissions from agriculture are not covered in the EU's GHG emission pricing system.[123] The latter point is also the reason why ESABCC recommends to integrate a system for estimating and pricing agricultural emissions.

[113] Ibid.
[114] Delivering CAP 2023-27 targets is based on the CAP Strategic Plans (CSPs), a single planning tool intended to shift the implementation of CAP from compliance to performance. CSPs were drafted by Member States (MS) and were approved by the European Commission in late 2022. Whilst drafted following a common framework and guidelines, CSPs should respond to specific national needs, be evidence-based, and supported by a SWOT analysis to prioritise actions. European Commission. (2023). Summary of CAP Strategic Plans for 2023-2027. Available at https://agriculture.ec.europa.eu/document/download/6b1c933f-84ef-4b45-9171-debb88f1f757_en?filename=com-2023-707-report_en.pdf
[115] Transitional arrangements refer to the extension of the CAP 2014-2020 legal framework into 2021 and 2022, and CAP spending programmes from 2023-2027 that are outside of the CAP Strategic Plans such as promotion, school schemes or POSEI (POSEI: the programme of options specifically relating to remoteness and insularity).
[116] This is based on the Ten Years For Agroecology modelled by the Institute for Sustainable Development and International Relations (IDDRI) and AScA. Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.
[117] Unmet demand implies: a loan applied for but not obtained; financing refused by the potential borrower; a loan not applied for due to fear of rejection. Fi-Compass. (2023). Financing gap in the agriculture and agri-food sectors in the EU. Available at https://www.fi-compass.eu/sites/default/files/publications/FinancingGapAgricultureAgrifood_RTW_0.pdf
[118] Including: Irrigation, drought and flood protection or other investments to manage changed climate; Organic farming or other agro-ecological practices; Digital solutions or advanced machinery to optimise the use of fertilisers and crop protection products; Reducing energy and fuel consumption; Production of renewable energy such as solar panels or biogas plants. Fi-Compass. (2023). Financing gap in the agriculture and agri-food sectors in the EU. Available at https://www.fi-compass.eu/sites/default/files/publications/FinancingGapAgricultureAgrifood_RTW_0.pdf
[119] Fi-Compass. (2023). Financing gap in the agriculture and agri-food sectors in the EU. Available at https://www.fi-compass.eu/sites/default/files/publications/FinancingGapAgricultureAgrifood_RTW_0.pdf
[120] Cagliero, R., Vassallo, M., Pierangeli, F., Pupo D'Andrea, M. R., Monteleone, A., Camaione, B., & Tarangioli, S. (2023). The Common Agricultural Policy 2023-2027. How do member states implement the new delivery model?. Italian Review of Agricultural Economics (REA), 78(1), 49–66. https://doi.org/10.36253/rea-14318
[121] European Parliament. (2020). Study on Strategy implications for agriculture and the CAP. Available at https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/652206/IPOL_IDA(2020)652206_EN.pdf
[122] European Parliament. (2024). Targeted CAP amendments on environmental conditionality. Available at https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2024)760414
[123] EU Climate Advisory Board. (2024) Focus on Climate Implementation to achieve 2040 goals. Available at https://climate-advisory-board.europa.eu/news/eu-climate-advisory-board-focus-on-immediate-implementation-and-continued-action-to-achieve-eu-climate-goals

While the Commission estimated that €100 billion (26%) of CAP funds were spent on climate action during 2014-2020, an ECA report finds that these funds had a limited impact on agriculture-related emissions.[124] ECA argues CAP "mostly finances measures with a low potential to mitigate climate change", and that it "does not seek to limit or reduce livestock (50% of agriculture emissions) and supports farmers who cultivate drained peatlands (20% of emissions)".[125] In late 2023, the European Commission acknowledged that Member States' CSPs lacked sectoral strategies in terms of funds and instruments to overcome long-term sectoral barriers preventing food security.[126]

Eco-schemes are a novel green element of the reformed CAP. Designed by Member States and voluntary for farmers, they intend to minimise negative impacts on both agriculture and the environment and assist in making farming sustainable. But analysis by the Institute for European Environmental Policy (IEEP) of four Member States' CSPs (France, Spain, Poland and Germany) has found that **CAP's eco-schemes have resulted in the majority of farmers receiving payments without having to alter their farming methods.**[127]

In January 2024, the Commission launched a Strategic Dialogue on the Future of EU Agriculture which included a review of potential improvements to CAP and the support for the transition of agricultural methods.[128] **One of the recommendations that emerged from this Dialogue seeks the creation of a Temporary Just Transition Fund outside of CAP to support the sector's transition,** and increase public-private collaboration to mobilise capital for both small and large-scale farmers (although experts suggest this should be a Pillar 2 of CAP instead of an external structure to CAP). **The EIB is also recommended to launch a specific loan package for the sector.**

In his Parliament hearings, the new Commissioner for Agriculture (Christophe Hansen) addressed the financing challenges that small and young farmers face, and the importance of bridging the investment gap to help farmers transition to more sustainable agricultural practices. In doing so, he highlights the importance of strengthening policy levers and proposes to update the 2018 Plant Protein Strategy and the 2020 Sustainable Livestock Strategy to enhance domestic production of plant-based proteins to improve food security and sustainability.

Experts note the intricacies in the agriculture sector required to overcome the inadequately framed tensions between price competitiveness (under growing international market pressure) on the one hand, and sustainability and resilience on the other. Yet this balance can be achieved, and sustainability can become a competitiveness driver, with the right policies and instruments that combine both dimensions. For instance, **the Good Food Institute finds a promising investment landscape for European companies and start-ups developing alternative proteins, which can bring significant industrial opportunities to the agriculture sector in Europe.**[129] But to reach scale, these new tech companies continue to need grants (for early-stage innovations), customised funding solutions to de-risk private investments, guarantees to support the build-up of factories and other scale-up infrastructure, and banks need to provide later-stage capital.[130]

[124] European Court of Auditors. (2021). CAP and Climate: Special Report. Available at https://op.europa.eu/webpub/eca/special-reports/cap-and-climate-16-2021/en/
[125] Ibid.
[126] European Commission. (2023). Summary of CAP Strategic Plans for 2023-2027: joint effort and collective ambition. Available at https://agriculture.ec.europa.eu/document/download/6b1c933f-84ef-4b45-9171-debb88f1f757_en?filename=com-2023-707-report_en.pdf
[127] Institute for European Environmental Policy. (2023). Environmental and climate assessments of CAP Strategic Plans Summary of impact based on four key Member States. Available at https://ieep.eu/wp-content/uploads/2023/04/Environmental-and-climate-assessements-of-CAP-Strategic-Plans_IEEP-2023.pdf
[128] European Commission. (2024). Strategic Dialogue on the Future of EU Agriculture. Available at https://agriculture.ec.europa.eu/document/download/c9fdbb7b-10c9-405f-9be8-427ef6ad7614_en?filename=strategic-dialogue-report-executive-summary-2024_en.pdf
[129] Good Food Institute Europe. (2024). Alternative Protein Investment in Europe. Available at https://gfieurope.org/blog/european-investment-figures-point-to-an-evolving-alternative-protein-sector/
[130] Ibid.

Chapter Conclusions

Around half of the transition investments needed are missing to reach the EU 2030 climate targets and pursue a net zero trajectory to 2050. This gap ranges **between €340-477 billion annually, with the public component representing 30-60% of this** (over €200 billion annually), depending on the sector, source, prosperity of the target region, the type of asset being built and the end-beneficiary.

Sectoral decarbonisation solutions come in radically different sizes, with different remuneration regimes, varying degrees of technological maturity, and with no "one size" for all European regions. However, approximately **84% of the total investment needs are found in demand-side sectors** where asset deployment at a retail level must be accelerated, particularly in buildings and transport.

Energy and Grids

20%[131] of the overall investment gap (€70 billion annually). Dominated by large players with relatively easy access to private finance. **The main bottleneck is the upgrade and expansion of grids, where EU action is needed to address regulatory barriers to unlock private capital and increase EU funding for Member State interconnections through the Connecting Europe Facility.** A proactive EU funding strategy of blended public/private instruments is required to accelerate the millions of smaller-scale SME and home retail transactions.

Buildings

39% of the total investment gap until 2050 (€142 billion annually) and the largest public gap. **Building renovation is the critical decarbonisation lever but activity remains too low, arguably in part because EU funds have not delivered enough grants and blended finance solutions.** Climate Strategy identifies a residential buildings investment need of €500 billion of public funding by 2030 (around €70 billion annually) to lever the necessary €1.5 trillion of private finance. For the tertiary sector, I4CE finds an investment gap in renovations of €42 billion annually. Heat pump deployment will require an additional €36 billion per year by 2030.

Transport

53% of the total investment gap until 2050 (€214 billion annually). **Public funding estimates vary depending on the future vision of shared mobility and public transport.** T&E sees a "realistic" contribution from the public sector in private road transport, aviation and maritime decarbonisation of €38 billion annually by 2030. **Rail is the greatest single-asset public finance gap at €29-36 billion annually.** Due to their low maturity levels, new e-fuels for aviation and maritime will require greater levels of public funding (approximately €10 billion annually). **Initial signs exist of an overuse of EU funds for private transport instead of public transport and infrastructure.** The total budget of the Connecting Europe Facility Transport is only 10% of the annual public finance gap in rail.

Industry and cleantech

Industrial decarbonisation is 5% of the total investment gap until 2050 (€16 billion annually), of which approximately €5 billion annually would come from public funding. At least €18 billion of public funding is needed in total in the 2024-30 decade to support the manufacturing of strategic cleantech. **The sector is dominated by large enterprises with good access to finance, where the main lever is carbon pricing signals. More blended finance instruments should focus on de-risking investments in industrial SMEs and the deployment of cleantech.**

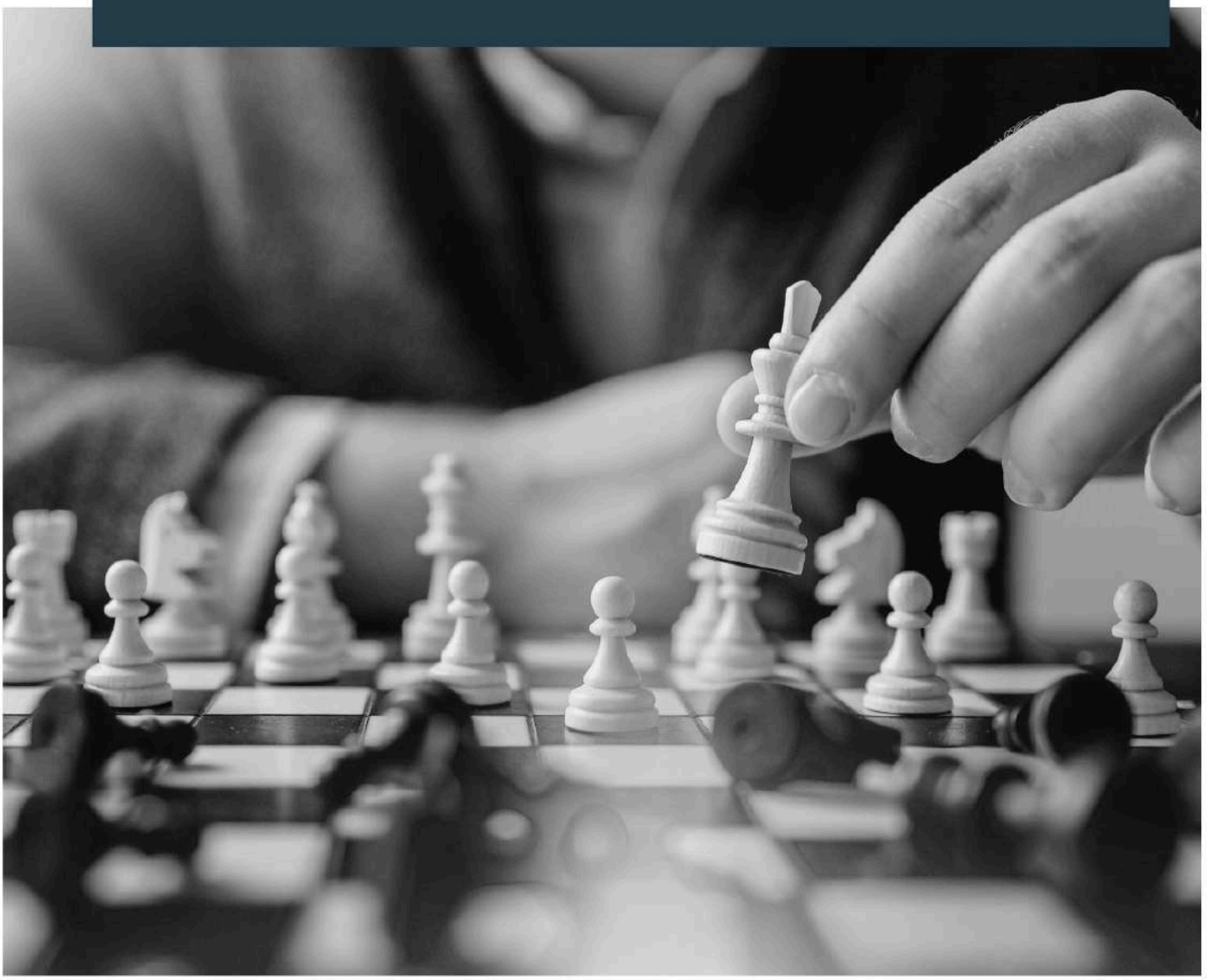
Agriculture

12% of the total investment gap until 2050 (€47 billion), of which most would come from public funding (€44 billion). **Access to private finance is particularly difficult for small farms and young farmers, with the green financing gap estimated at €18.9 billion.** Reforming CAP (€378.5 billion for 2021-2027) is fundamental to integrate mandatory emissions reduction targets, optimising direct income support schemes to contribute to climate mitigation, and **integrating grant schemes and financial instruments to support the development and scale-up of agri cleantech companies.**

[131] Note that the sectoral shares of the total investment gap do not add up to 100% as they are averages from different studies with varying estimates

Chapter 3

Strategies to Fill the identified Climate Investment Gaps



Chapter 3: Strategies to Fill the identified Climate Investment Gaps

The sectoral assessments of the climate investment gaps show a significant need to ramp up public and private expenditure. **This chapter offers some strategies to fix the currently insufficient EU budget allocations for the transition**, at a moment in which Member States are facing new fiscal rules that, in practice, will limit the use of national resources for climate and energy investments. **Approximately €99 billion per annum could be available from the current EU budget[132] (excluding CAP) to support the development, manufacturing and uptake of clean tech and solutions, which is just 8% to 12% of the climate investment needs identified in the previous chapter.**

There are three ways to fill the remaining investment gap: 1) Increase climate investments at the national level; 2) Allocate more EU-level funds to transition sectors; 3) Leverage more private investments with the public funds available either at national or at EU level with new instruments. All of these strategies should be a top priority in the next EU mandate and are considered separately in the following sections.

Increasing Climate Investments in National Budgets

It is important to recognise that "climate investments" are - in most cases - national modern infrastructure investments which deliver upgraded services to people, such as new rail links, more energy efficient homes, easy EV charging, and onsite power, which come with local employment. Decarbonisation measures work alongside new military, digital and social investments, and climate assets can align with those priorities.[133] Many climate investments are the logical choices of a cleaner, less wasteful and more competitive future Europe, and are therefore not an "extra" but a new way of investing core components of public budgets that replace traditional, fossil-leaning choices. During the negotiation of the new fiscal rules in 2023, a New Economics Foundation study argued that **national gap spending to invest in climate or public services can lead to greater growth** (known as "green multipliers"), whereas many studies have shown, based on historical trends, that Member States' cuts in social and public goods can, perversely, lead to higher debt burdens as GDP growth is lowered.[134]

"Climate mainstreaming" or "green budgeting"[135] (earmarking green investments in EU and national budgets) are effective approaches to support growth-driving investments in Member States while aligning them with their national climate and energy targets. These are also **efficient approaches to avoid harmful investments that undermine countries' decarbonisation goals, and distort the market signals for investors and consumers.** The definitions of green investments in the EU Taxonomy are leading approaches that help define material contribution and harm in an investment context.

[132] This includes the MFF, RFF, REPowerEU, Cohesion Policy funds, Social Climate Fund, Modernisation Fund, InvestEU, Innovation Fund, Horizon Europe and LIFE. European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

[133] Le Monde. (2024). The Draghi Report and Public-Private Roles. Available at https://www.lemonde.fr/idees/article/2024/09/20/le-rapport-draghi-evite-la-question-epineuse-du-partage-des-roles-entre-public-et-prive_6325337_3232.html

[134] "A 1% green stimulus, irrespective of the current deficit position, can generate growth and reduce debt-to-GDP in the medium term due to the outsized green multiplier." New Economics Foundation. (2023). New EU fiscal rules jeopardise investment needed to combat the climate crisis. Available at https://neweconomics.org/2023/08/new-eu-fiscal-rules-jeopardise-investment-needed-to-combat-climate-change

[135] "Green budgeting consists of a set of tools to help governments align public budgets with national climate and environmental objectives. These tools include among others environmental impact assessments of selected budgetary items, drafting budgetary circulars or performance indicators considerate of climate and environmental goals. Green budget tagging, the practice of scanning all budgetary items (i.e., expenditure, revenue, tax expenditure) and systematically identifying whether they contribute to or impede the achievement of climate and environmental objectives, is a useful green budgeting tool." Institute for Climate Economics. (2023). Greener, better, stronger: Factors for the successful implementation of green budgeting in EU Member States. Available at https://www.i4ce.org/en/publication/greener-better-stronger-factors-for-successful-implementation-green-budgeting-in-eu-member-states-climate/

Member States' fossil fuel subsidies remained relatively stable at about €56 billion (2022 prices), over the period 2015-2021, and increased to €123 billion in 2022 due to high energy prices related to post-COVID recovery and Russia's invasion of Ukraine.[136] National budgeting systems are traditionally "blind" to policy outcomes, and instead are guided by prospective effect rather than actual impact on national strategic goals.[137] As I4CE (2023) notes, this is starting to change with new initiatives from the European Commission to support Member States in integrating green budgeting practices.[138] A total of 12 EU countries have engaged in various forms of green budgeting on a recurring and internal basis.

Green budgeting approaches are key to incentivise and prioritise national investments[139] in the climate transition, at a moment in which the new fiscal rules introduced after the recent revision of the Stability Growth Pact limit the ability of Member States to increase public expenditure.[140] According to a study by the New Economics Foundation (2024), only three countries (Denmark, Sweden, Ireland) would be able to sufficiently meet their national climate and social investment needs.[141] If the RRF grants were extended after 2026, an additional two Member States (Croatia and Lithuania) would be able to meet at least their minimum social and green investment needs. Highly indebted countries are especially constrained by the interest rate premiums for their debt. **European solutions that provide access to EU-level borrowing costs are fundamental to support the climate transition in certain Member States.** The New Economics Foundation finds that an additional €300-420 billion a year (2.1-2.9% of EU GDP) is needed for all Member States to meet their funding requirements. They propose more flexible fiscal rules, new progressive taxation, and the creation of a long-term EU investment fund.[142]

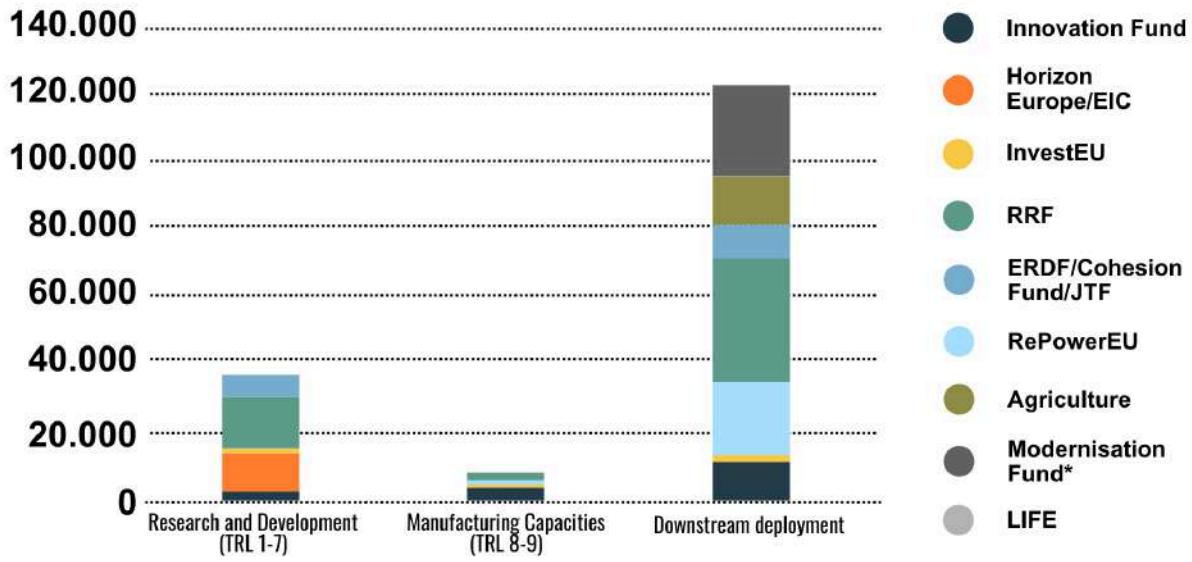
Historically, EU sources of funding have been catalytic for many Member State investments in climate and energy, particularly in low income countries. In the 2014-20 period, 14% of the public funding for environmental objectives came from the EU, with on average 7 Euros coming from national budgets for every 1 Euro from the EU. Yet in some countries (such as Croatia, Greece, Slovakia, Romania), the EU to Member State ratio of public investment in environmental objectives was closer to 1:1.[143]

In a new context of hardened fiscal constraints, EU funds will remain key to fill national climate investment gaps. The new fiscal rules provide an exemption (from the Member States' net expenditure path towards debt reduction) for any national government expenditure which is co-financed by European programs[144]. This aims to protect the implementation of EU programs (such as Cohesion Policy and Common Agricultural Policy that rely on national co-financing) and had created an additional, aggregate annual fiscal space of €23 billion for EU Member States for the current MFF period[145]. **This exemption could be increasingly used in the coming years, especially with the next MFF, to build co-financed programmes and instruments that could lever EU and national spending without running against the reformed fiscal framework.**[146] To support this approach, a new EU-level funding instrument to access common resources, like EU Green Bonds, could provide ring-fenced funding to projects of strategic climate interest with Member States.

[136] European Environment Agency. (2023). Fossil Fuel Subsidies. Available at https://www.eea.europa.eu/en/analysis/indicators/fossil-fuel-subsidies
[137] Institute for Climate Economics. (2023). Greener, better, stronger: Factors for the successful implementation of green budgeting in EU Member States. Available at https://www.i4ce.org/en/publication/greener-better-stronger-factors-for-successful-implementation-green-budgeting-in-eu-member-states-climate/
[138] "The European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) published the EU Green Budgeting Reference Framework (GBRF) – a no 'onesizefitsall' tool – in 20202. Additionally, a multicountry capacity building programme, the "EU Green Budgeting Training", was launched in 2021 at the request of Member States. It is funded by the European Union with the Commission's Technical Support Instrument, managed by the Directorate-General for Structural Reform Support (DG REFORM), and carried out in cooperation with the Institute for Climate Economics (I4CE) and Expertise France." Institute for Climate Economics. (2023). Greener, better, stronger: Factors for the successful implementation of green budgeting in EU Member States. Available at https://www.i4ce.org/en/publication/greener-better-stronger-factors-for-successful-implementation-green-budgeting-in-eu-member-states-climate/
[139] "This concern comes from past experiences, from policies implemented in the aftermath of the 2008/2009 global financial crisis (GFC) when public investment fell to almost zero in some EU Member States." "It is worthwhile to highlight, when discussing investment and fiscal space, that in high debt-level EU Member States (with public debts over 90% of GDP), 'net investments decreased to a GDP close to or even below zero' (Blesse et al., 2023)." European Environment Agency. (2023). Investments into the Sustainability Transition: leveraging green industrial policy against emerging constraints. Available at https://www.eea.europa.eu/publications/investments-into-the-sustainability-transition
[140] Formally, the new fiscal rules are generally less constraining than the old ones or remained the same (e.g. regarding the 3% limit). In practice, the new fiscal rules are less constraining for a considerable share of member states, while more constraining for some countries, especially those with high public debt levels.
[141] European Trade Union Confederation. (2024). Navigating Constraints for Progress: Examining the Impact of EU Fiscal Rules on Social and Green Investments. Available at https://www.etuc.org/sites/default/files/publication/file/2024-04/Publication%20-%20Fiscal%20Rules%20Report.pdf
[142] European Trade Union Confederation. (2024). Navigating Constraints for Progress: Examining the Impact of EU Fiscal Rules on Social and Green Investments. Available at https://www.etuc.org/sites/default/files/publication/file/2024-04/Publication%20-%20Fiscal%20Rules%20Report.pdf
[143] Green finance includes climate finance, but also financing of specific environmental objectives, such as industrial pollution control, water management and biodiversity protection. Given its scope, the EIR looks at these separately. European Commission. (2022). Report from the Commission to the European Parliament and the Council on the Implementation of the Recovery and Resilience Facility. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=comnat%3ACOM_2022_0438_FIN
[144] European Commission. (2024). EU Regulation 024/1263 on the effective coordination of economic policies and on multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97. Available at https://eur-lex.europa.eu/eli/reg/2024/1263/oj
[145] Allenbach-Ammann, J. (2024). Exception to debt rules strengthens EU programs. Table Europe Professional Briefing. Available at https://table.media/en/europe/feature/exception-to-debt-rules-strengthens-eu-programs/
[146] Di Carlo, Donato; Eisl, Andreas & Zurstrassen, Dimitri (2024): Together we trade, divided we aid: EU industrial policy, state aid, and the loosening of the EU competition regime. In: EU Industrial Policy Report 2024. Luiss Hub for New Industrial Policy and Economic Governance (LUHNIP), Chapter 4. 54-80. Available at https://leap.luiss.it/wp-content/uploads/2024/09/20240919_Luiss_Rapporto-LUHNIP_v6.pdf

In the 2021-2027 programming period, the Commission estimates that a total of €695 billion (€99 billion per annum)[147] could be available from the current EU budget to support the energy transition (excluding CAP). This is just about 8% to 12% of the climate investment needs identified in the sectoral assessments from Commission and think tank reports. The estimate is based on the minimum climate mainstream earmarking established by law for each EU fund. **A total of €36 billion would be available for R&I of net zero technologies, €8 billion for manufacturing and €124 billion to support users in the uptake and deployment of these technologies (Graph 12).** The RRF would cover around 6% of the total investment needs until the end of the program in 2026.[148] This estimate does not include the allowances from ETS revenues, of which Member States have full control, and which generated €43 billion in 2022.[149] Since the revision of the ETS directive in 2023, Member States must allocate all of these revenues to climate action.[150]

Graph 12: Estimated potential maximum in the EU budget to support different stages of net zero technologies between 2021 to 2027 (€ million)[151]

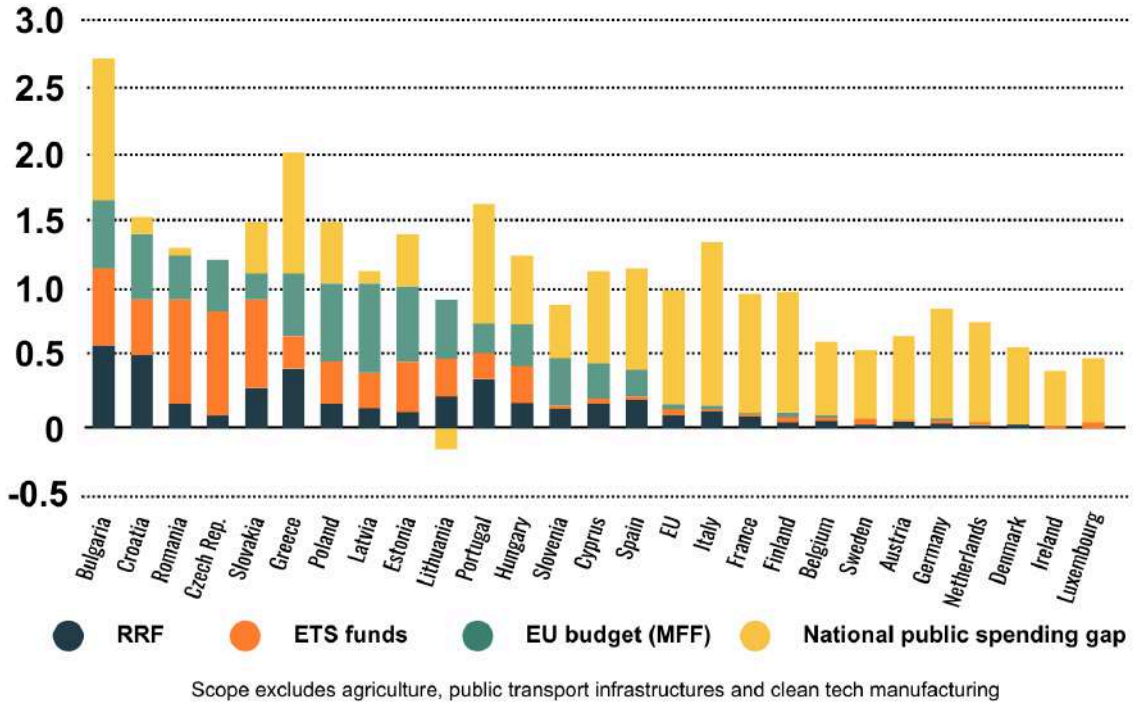


Source: European Commission (2023)

[147] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[148] European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf
[149] European Environment Agency. (2024). Auctioning Revenues and Reported Usage. Available at https://www.eea.europa.eu/en/analysis/maps-and-charts/auctioning-revenues-and-reported-usage-1?activeTab=6fbd444d-c422-4a78-8492-fd496bd61b7a
2040 target impact assessment: "At their peak, revenues from carbon pricing could amount to close to 0.7% of GDP, which is significant in relation to the total energy investment needs for the transition to climate neutrality, and the contribution that may be required from the public sector. Between 2031 and 2050, total revenues from carbon pricing, based on the carbon values from the PRIMES model, would amount to about EUR 1 500 billion. This compares with cumulative energy system investment needs (excluding transport) of about EUR 13 100 billion, i.e., close to 11% of the total. Such projections are obviously very sensitive to assumptions regarding carbon values." European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[150] "An exclusion exists to spend up to 25% of ETS revenues for compensation of indirect costs. A coalition of CSOs, cleantech innovators, investors, industry associations and researchers have urged EU Member States to allocate ETS revenues more efficiently towards climate goals, delivering on clean industrial competitiveness. Instead of allocating up to 25% towards continuing de-facto fossil fuel subsidies for old industries, ETS revenues should be directed towards crowding-in private investments to scale new climate technologies." Bellona. (2024). 16 Civil Society Organisations, Cleantech Innovators, Investors, Industry Associations, and Researchers Urge EU Member States to Allocate ETS Revenues More Efficiently Towards Climate Goals. Available at https://eu.bellona.org/2024/10/08/press-release-16-civil-society-organisations-cleantech-innovators-investors-industry-associations-and-researchers-urge-eu-member-states-to-allocate-ets-revenues-more-efficiently-towards-climate-go
[151] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

In the current programming period, EU funding committed to Member States is critical in supporting their energy transitions, particularly RRF, with different roles in different countries, as shown by Agora in the graph below. **However, around two thirds of the needed energy investments still have to come from national resources, and when RRF ends in 2026, this will require even greater national budgetary support.** Therefore, as the next section will further explain, more EU money is essential to fill the current national climate investment gaps at a moment of limited capacity to increase national expenditure.

Graph 13: Annual public spending needs to support clean energy, resource and energy efficiency investments and available EU grants[152]



Source: Agora Energiewende (2024)

The share of EU funding needed to support Member States in the climate transition depends on several factors like the prosperity of the target region, the type of asset being built and its contribution as a "public good". **The concept of the "EU value added" has been useful in prior policy debates, and official Commission documents, to assess when the EU budget can promote a European public good and align national investments with EU policy goals.** An example might be clean energy investments for climate change mitigation, that align national public investments with the EU climate and energy targets and EU directive transposition. **The mission mandated[153] to the new Commissioner for Budget of shifting the current EU budget from being programme-based to a policy-based would derive valuable insights from improving the integration of the "EU added value" to enhance climate expenditure and reduce distortive and harmful spending in fossil fuels that go against the EU policy goals.** This report will include the "EU added value" as a benchmark when assessing, in the following chapters, the most efficient EU funding strategies per sector.

[152] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[153] European Commission. (2024). Mission Letter for Serafin. Available at https://commission.europa.eu/document/download/db369caa-19e7-4560-96e0-37dc2556f676

Defining EU added value in public funding for climate action

The European Commission defines "EU added value" as the **"value resulting from an EU intervention which is additional to the value that would have been otherwise created by Member State action alone**."[154] This term was first introduced in the Commission's budgetary proposal for the second financial perspectives (1994–1999), which stated that, in accordance with the subsidiarity principle, "the Community must always demonstrate that its financing provides added value."[155] The definition comes from the theory of fiscal federalism and helps to evaluate in what instances EU-level spending would be the most efficient and effective at delivering a public good, specifically in terms of increasing returns to scale and cross-border benefits.[156]

A public good can be defined as "goods and services that are freely accessible and whose use by one does not affect (too much) use by someone else. For this reason, they can only be provided by the public sector."[157] **As put forward by a European Parliament report, ensuring a healthy and liveable planet by combating climate change is considered as a European public good.**[158] EU spending can clearly provide an added value and competitiveness by increasing clean energy and transport interconnections among Member States.[159] Eulalia Rubio from the Jacques Delors Institute proposes some additional layers to this analysis to identify an "added value" in EU budgetary debates based on both economic and policy-related criteria (see Table below).

Table: Four ways of using 'added value' in EU budgetary debates (Rubio, 2011)

	ECONOMIC CRITERIA	POLITICAL/POLICY-RELATED CRITERIA
EX-ANTE	Criterion to assess the economic benefits of spending at EU level in a policy area (resulting from economies of scale, threshold effects, cross-border externalities)	Criterion to assess the political benefits of spending at EU level in a policy area (in terms of visibility of the EU project, alignment with the EU's priorities, etc.)
EX-POST	Criterion to evaluate the added value generated by an EU spending programme (in terms of capacity to exploit economies of scale, address cross-national externalities, coordination gains)	Criterion to evaluate the political or policy-related benefits stemming from certain EU spending interventions (in terms of alignment of national investment with then EU's priorities, coordination of national reform agendas, respect for the EU's values, etc.)

Past debates around Cohesion policy have broadened the definition of "added value" to encompass **the positive impact of EU spending as a lever of policy change and to align national investments with EU policy priorities, signalling a shift to an "EU Budget for results" focused on impact.**[160] This shift is slightly reflected in the new 2021-2027 MFF with the inclusion, although limited, of "enabling conditionalities" in Cohesion funds. A conditionality approach has been strengthened even more under the Recovery and Resilience Facility following a performance-based design.

A key question to put this analysis into practice is "what would have happened if Member States had acted alone, or (when there is no similar national support action) in the absence of the EU intervention?" **Given the looming climate investment gaps and the limited capacities across Member States (with some being more limited than others) to direct national resources to decarbonisation measures, the "added value" that EU spending can bring is clear.**

---

[154] SEC(2011) 867 final: Commission staff working paper. European Commission. (2011). Commission Staff Working Paper - The Added Value of the EU Budget. Available at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:0867:FIN:EN:PDF

[155] See for more analysis from 2011: Jacques Delors Institute. (2011). The Added Value of the EU Budget. Available at https://institutdelors.eu/wp-content/uploads/2018/01/bref28_addedvalue_en.pdf

[156] European Parliament. (2024). European Added Value in the Budgetary Process [Report]. Available at European Parliament. (2024). European Added Value in the Budgetary Process. Available at https://www.europarl.europa.eu/RegData/etudes/IDAN/2024/755722/IPOL_IDA(2024)755722_EN.pdf
Government positions from the Dutch, French and German governments coincide in the EU funding providing the most added value in policies where resources can be administered more efficiently by the EU than at national level, or to provide public goods which could not have been otherwise produced at national level. European Climate Action Journal. (2021). European Added Value: What Does It Mean? Available at https://medium.com/ecajournal/european-added-value-what-does-it-mean-b7a325e8906e ;
French Government. (2017). Note du Gouvernement Français sur le Budget UE 2020-2027. Available at https://www.terre-net.fr/ulf/data/001-arno/180110-notegouvernementsurbudgetUE2020-2027.PDF

[157] European Parliament. (2024). European Added Value in the Budgetary Process [Report]. Available at European Parliament. (2024). European Added Value in the Budgetary Process. Available at https://www.europarl.europa.eu/RegData/etudes/IDAN/2024/755722/IPOL_IDA(2024)755722_EN.pdf

[158] Ibid.

[159] EU added value in cross-border mobility: creating the backbone of an EU transport infrastructure. European Court of Auditors. (2020). Realising European added value. Available at https://www.eca.europa.eu/Lists/ECADocuments/JOURNAL20_03/JOURNAL20_03.pdf

[160] European Climate Action Journal. (2021). European Added Value: What Does It Mean? Available at https://medium.com/ecajournal/european-added-value-what-does-it-mean-b7a325e8906e. See Added value at the heart of the EU's budgetary Decision-making By Gert Jan Koopman, Director-General for Budget, European Commission.
European Court of Auditors. (2020). Journal of the European Court of Auditors. Available at https://www.eca.europa.eu/Lists/ECADocuments/JOURNAL20_03/JOURNAL20_03.pdf

Finally, **determining an adequate amount of EU funding for Member States' energy transitions requires a granular assessment of their NECPs, and a review of their own depiction of the investment needs and sources to meet their targets.** These climate investment assessments are also important to implement and monitor the impacts of green budgeting practices. However, as the Commission's 2023 EU-wide review of the draft updated NECPs points out, Member States have failed to deliver them: "a solid assessment of investment needs backed by concrete measures to attract private finance, as the bulk of investment necessary to reach the Union's climate and energy targets must come from private sources, is still mainly absent from the plans."[161]

This is also an issue at the EU-level: the European Climate Neutrality Observatory (2023) points out that the EU currently has no consistent tool to ensure the annual monitoring of the EU climate investment gap (that is, the difference between the total investment needs required annually by 2030 to achieve the EU 2030 targets and the actual climate investments happening in the EU economy).[162] The European Scientific Advisory Board on Climate Change also called on the EU to develop a more granular and accurate overview of required and actual investments in climate mitigation to monitor and assess progress.[163]

As the new Commission begins work on reforming the MFF to assess new proposals for increasing climate investments, it will be important to have at its disposal an adequate and regularly updated overview of the climate investment gap at the EU and each Member State level. **It appears that an increased focus on national planning linked to reforms and investments may be the next move by the Commissioner for Budget**, possibly by even asking Member States to develop a single national plan addressing holistically all the allocations from EU funds under shared management (CAP, Cohesion Policy, and more).[164] **This may be an opportunity to improve climate investment planning at the EU and national level and determine when and where EU funds should act as a lever for national transitions.** But improved planning should already start now, as the delivery of the European Green Deal and the implementation of the sectoral policy targets agreed under the Fit for 55 legislative package require commensurate investments well before 2030.

[161] European Commission. (2023). Proposal for a Council Recommendation on Economic Policy Reforms. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2023%3A796%3AFIN
[162] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf and European Climate Neutrality Observatory (2023)
[163] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf
[164] Politico. (2024). European Commission's Budget and Economic Reforms Plan Raises Power Concerns. Available at https://www.politico.eu/article/european-commission-budget-economic-reforms-conditions-power-grab/; ScienceBusiness. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund

More EU money: Climate Investments for EU Competitiveness

The EU Green Deal has established an investment framework that can deliver a net-zero emissions economy in Europe by 2050, and leaves a significant investment gap which can be filled by this upcoming "investment Commission", as President von der Leyen announced.[165] In response to this gap, Member States' limited fiscal capacity, and the strategic role that EU funds play in supporting cross-border public goods and driving national investments in the transition, calls have been made to increase the EU budget for climate.[166]

The recent Draghi report commissioned by Commission President von der Leyen frames financing for the transition and other strategic objectives as a top priority. Similarly to other Commission and think tanks reports analysed in the previous chapter, Draghi identifies an annual €450 billion public and private investment gap in the energy transition during 2025-30. **To fill the gap, he calls for the EU to commit to the regular issuance of common bonds, as well as measures for reforming the EU budget to reallocate expenditure in strategic priorities, the issuance of common safe assets, reviving securitisation and enhancing the Capital Markets and Banking Union.**[167] The Commissioner for Budget has been tasked with introducing new own resources and exploring all sources of financing to ensure sufficient and sustainable funding for EU common priorities.[168]

Reports by several think tanks and NGOs echo the need to increase the EU budget for climate in similar amounts to Draghi. I4CE identifies a €406 billion climate investment gap and recommends **creating an EU Climate Investment Plan to address the public funding tools to crowd-in private funding, the role of Member State public funding, and the potential sources of new EU funding**.[169] Agora Energiewende proposes the creation of a **"Green Deal Implementation Fund" in the next MFF of €260 billion annually over the 2028-2034 period**. Agora sees this GDIF as there to:

1. "Plug" the funding gap of €170 billion that the Recovery and Resilience Facility will leave after 2026;
2. Maintain EU co-financing for one third of total public spending needs for clean energy, resource and efficiency investments;
3. Provide €50 billion (at current prices) to support EU strategic cleantech manufacturing (i.e. €7.1 billion per year);
4. Enable supporting investments in the residential sector and select infrastructure.[170]

For Agora, the necessary finance could be raised with new "own resources", funded at the EU-level by a methane fee or a financial transactions tax. Several other groups of NGOs and think tanks have also put forward their own proposals for the creation of a European Climate Fund.[171] One group[172] proposes such **a Fund created within the MFF via a central fiscal capacity financed through common debt**. Another group recommends a **Next Generation 2.0 fund that, together with the funds made available via the MFF (1% of EU GDP), amounts to at least 1.6% of EU GDP per year.**[173] A coalition of NGOs[174] led by T&E[175] calls for the creation of a **€1 trillion Social and Green Investment Plan through a single, new ad-hoc financial instrument (a successor to the RRF)**, financed through joint borrowing, a 50% climate and nature earmarking of the next EU budget and new own resources for the EU. This Plan includes a Green Industry pillar to scale key cleantech sectors, a Social and Just Transition pillar to address the impacts of the transition and energy poverty and job creation, and would also serve to reinforce the Innovation Fund,

[165] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[166] Agora Energiewende also points out that the looming repayment of the common debt issued to set up the NextGenerationEU budget has not been secured. Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[167] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[168] European Commission. (2024). Mission Letter for Serafin. Available at https://commission.europa.eu/document/download/db369caa-19e7-4560-96e0-37dc2556f676
[169] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/en/publication/european-climate-investment-deficit-report-investment-pathway-europe-future/
[170] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[171] European Environmental Bureau. (2024). Letter to MEPs on the EU Transformation Fund. Available at https://eeb.org/wp-content/uploads/2024/09/20092024-Letter-MEPs-EU-Transformation-Fund.pdf
[172] ECCO Climate. (2024). European Climate Fund Letter. Available at https://eccoclimate.org/wp-content/uploads/2024/02/European-Climate-Fund-letter-signed.pdf
[173] European Environmental Bureau. (2024). Letter to MEPs on the EU Transformation Fund. Available at https://eeb.org/wp-content/uploads/2024/09/20092024-Letter-MEPs-EU-Transformation-Fund.pdf
[174] Climate Action Network Europe. (2024). A Social and Green Investment Plan for a Prosperous and Just Transition. Available at https://caneurope.org/public-statement-a-social-and-green-investment-plan-for-a-prosperous-and-just-transition/
[175] Transport & Environment. (2024). Investment Plan: Transforming Transport for Sustainability. Available at https://www.transportenvironment.org/uploads/files/TE_-Investment-Plan_April-2024.pdf

InvestEU and the Social Climate Fund. The T&E-led Plan would have a 10-year timeframe to provide long-term visibility to decision-makers, investors, and citizens.

As discussed in the previous section, an increased EU budget allocation for climate and energy is a productive investment - not a cost - that can drive growth and can capitalise upon a unique opportunity to improve Europe's global competitiveness and security. **The Commission sees a clean and independent energy system providing savings of €2.8 trillion through a reduction of fossil fuel imports** (reducing import costs from 4.1% of GDP in 2022 during the energy crisis to less than 1.4% of GDP by 2040, and less than 0.6% by 2050).[176] **Lower energy costs would increase the productivity of European industry and firms. In addition, by accelerating investments in clean technologies, the EU can retake first mover advantage in a global race** to deliver clean industrial competitiveness where the US and China already have ambitious cleantech investment plans.

In his report, Draghi acknowledges the dual issue of energy costs, due to fossil fuel dependence impeding industrial competitiveness, and the lack of renewables and grid development slowing the transition. He proposes **a Joint Decarbonisation and Competitiveness Plan to lower energy prices and decouple clean energy from gas, and for Europe to take the lead in cleantech.**[177] **Along with most experts, Draghi sees green industrial competitiveness as a strategic priority that should inform the design of the new European Competitiveness Fund (ECF).** This new fund, announced by Commission President von der Leyen, aims to ensure (in part) that the EU develops strategic technologies like cleantech and manufactures them in Europe by using the power of the EU budget to lever and de-risk private investments with an enhanced role for the EIB Group.[178] However, when designing this new ECF, or other potential Climate Funds, the devil is in the detail, as intentions do not drive investments, and **smaller, younger and more innovative cleantech firms have not so far seen enough direct benefits from previous initiatives like the Strategic Technologies Europe Platform and the Net Zero Industry Act.**[179]

Bringing in new money through the ECF, and boosting allocations to the development and deployment of clean technologies and solutions, can bring many co-benefits. **But the design of the new Fund should avoid an inefficient repackaging exercise where other existing and well-performing instruments for climate - which may just need more capital and some design fixes or improvements - are overhauled.**[180] The last two sector-specific chapters of this report further address design recommendations for the ECF to prevent inefficiencies and bottlenecks in the next MFF. The additional capital for the ECF can be sourced from multiple sources. **A significant part of the climate investment gap could be secured by "reallocating current expenditure that is either superfluous or harmful to the transition process."**[181] Put in perspective, the EU-27 spends €359 billion each year on fossil fuel subsidies, which is less than the €260 billion of the extra public climate investment needed according to Institute Rousseau.[182] Europe provides five times more subsidies to fossil fuels than in 2022 was invested in cleantech (which was in itself a "near record").[183]

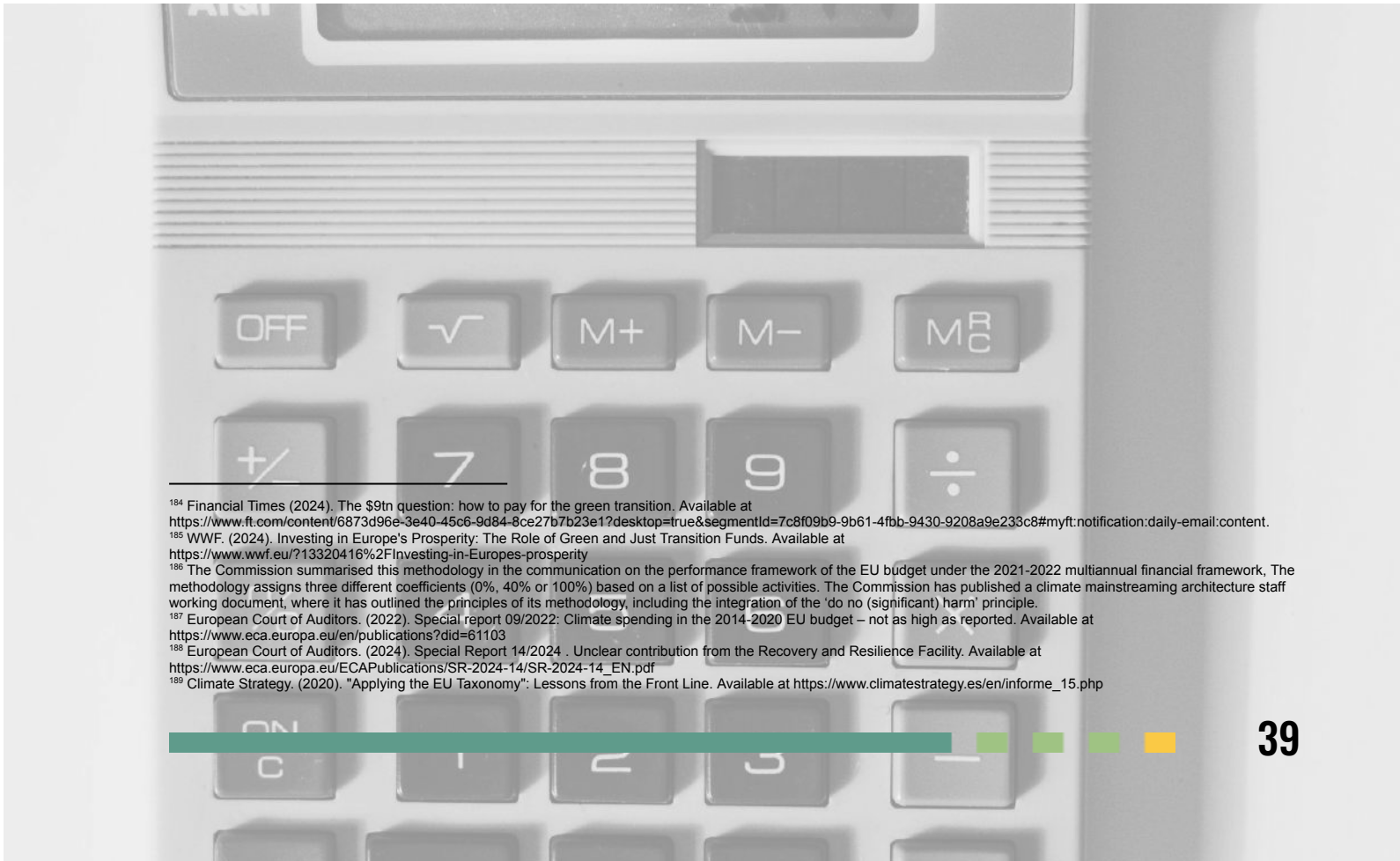
---

[176] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[177] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[178] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[179] Cleantech for Europe. (2024). Open Letter: Europe Needs a Cleantech Competitiveness Deal. Available at https://www.cleantechforeurope.com/policy/open-letter-europe-needs-a-cleantech-competitiveness-deal
Funding that had been proposed for cleantech under STEP ended up being mostly re-directed to other non-climate related priorities.
The overall impact of NZIA is yet to be seen as the secondary legislation is developed and implemented.
[180] As reported by Science Business, it appears from Commission internal documents that, instead of bringing in new money, the European Competitiveness Fund would be a merging initiative of many funds (including EIC, Innovation Fund, InvestEU and Horizon Europe), which risks undermining the effectiveness of existing funds that have been performing well for climate, but that just require more capital. ScienceBusiness. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund
[181] Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692
[182] Ibid.
[183] Cleantech for Europe. (2022). Cleantech Annual Briefing 2022. Available at https://cleantechforeurope.webflow.io/publications/cleantech-annual-briefing-2022

When considering new funding sources for climate and competitiveness in the next EU budget, the focus should be in redirecting this harmful expenditure towards clean assets. This is also the key in derisking the transition and driving private sector investments (also essential to fill the climate investment gap), providing clear and credible market signals with the redirection of public money from fossil fuel and related assets to clean ones. "Much of the fretting about climate finance misses a crucial point (...): **there is plenty of capital available in the industrialised world. It just needs to be deployed effectively** — with better use made of the private sector," explains Kingsmill Bond, an energy strategist at Rocky Mountain Institute (RMI).[184]

An efficient budget that supports the EU's strategic priorities on climate and competitiveness can only work if the entire budget doesn't harm the transition or competitiveness. Each time a "market or price signal" is muted by a blanket reduction of diesel prices, a direct gas subsidy or accelerated permit for an LNG terminal, the market for cleaner alternatives is hit, cleantech firms run out of money, or lose customers, as confidence in the transition is called into question. Moreover, **reducing public budgets' exposure to fossil fuel price volatility and including a climate risk and damage analysis in budgetary planning would provide significant resilience benefits to EU finances** - a lesson learned a bit too late with the Russian invasion of Ukraine.[185]

The 2021-2027 programming period of the MFF integrated a climate mainstreaming target[186] of 30% (up from 20% in the previous period). However, **the ECA has several times cast doubt on the appropriateness of the European Commission's methodology for accounting for climate-related spending.** In the 2014-2020 programming period, the ECA found that the Commission overstated €72 billion of climate expenditure, particularly due to significant deficiencies in the climate accounting under the Common Agricultural Policy.[187] A more recent ECA report points to an overstatement of at least €34.5 billion in Member States' reported climate expenditure within the RRF, a lack of clear evidence (due to a weak reporting and monitoring exercise) of the positive climate impact of planned RRF measures, and inconsistencies in the application of the "Do no Significant Harm Principle" in line with the Taxonomy Regulation.[188] It is clear, and well developed in prior reports by Climate Strategy[189], that **aligning public and private definitions of green in line with the EU Taxonomy is the only way to maximise leverage, and that non-green investments cannot be doing significant harm to the EU's climate and energy transition.**



[184] Financial Times (2024). The $9tn question: how to pay for the green transition. Available at https://www.ft.com/content/6873d96e-3e40-45c6-9d84-8ce27b7b23e1?desktop=true&segmentId=7c8f09b9-9b61-4fbb-9430-9208a9e233c8#myft:notification:daily-email:content.
[185] WWF. (2024). Investing in Europe's Prosperity: The Role of Green and Just Transition Funds. Available at https://www.wwf.eu/?13320416%2FInvesting-in-Europes-prosperity
[186] The Commission summarised this methodology in the communication on the performance framework of the EU budget under the 2021-2022 multiannual financial framework, The methodology assigns three different coefficients (0%, 40% or 100%) based on a list of possible activities. The Commission has published a climate mainstreaming architecture staff working document, where it has outlined the principles of its methodology, including the integration of the 'do no (significant) harm' principle.
[187] European Court of Auditors. (2022). Special report 09/2022: Climate spending in the 2014-2020 EU budget – not as high as reported. Available at https://www.eca.europa.eu/en/publications?did=61103
[188] European Court of Auditors. (2024). Special Report 14/2024 . Unclear contribution from the Recovery and Resilience Facility. Available at https://www.eca.europa.eu/ECAPublications/SR-2024-14/SR-2024-14_EN.pdf
[189] Climate Strategy. (2020). "Applying the EU Taxonomy": Lessons from the Front Line. Available at https://www.climatestrategy.es/en/informe_15.php

Safeguarding Sustainability: The 'Do No Significant Harm' Principle and its increasing role in the EU Budget

The Do No Significant Harm (DNSH) principle is a critical piece of the Sustainable Finance architecture that protects the European environment from material harm. It is defined in the EU Taxonomy Regulation (article 17) and aims to **ensure that projects and investments do not cause significant damage to the EU's six environmental pillars**.[190] These pillars are: Climate Change Mitigation; Climate Change Adaptation; Sustainable Use and Protection of Water and Marine Resources;Transition to a Circular Economy; Pollution Prevention and Control; Protection and Restoration of Biodiversity and Ecosystems. The concept needs to extend to all investments - not just taxonomy-aligned ones.

DNSH presently establishes a set of minimum bars for all EU Taxonomy-aligned investments to deliver. For example, if building a hydroelectric dam delivers climate mitigation, it must not indirectly harm (in a significant way) water resources or biodiversity. Climate Strategy argued in 2020 that DNSH could be applied in the operations of all EU funds. **While DNSH was initially applied to private finance, it has already been included in several EU funding instruments, yet its application differs significantly among them (as shown by a JRC Report)**: Recovery and Resilience Facility, European Regional Development Fund, Cohesion Fund; Just Transition Fund; and InvestEU.[191] For these funds, DNSH must be assessed not only during the course of a project but also in its expected life cycle impact.[192] A public consultation was undertaken to mainstream the DNSH in the new Social Climate Fund.[193]

According to Article 4 of the RRF Regulation, the use of Recovery Funds can only support measures that respect the DNSH criteria, which is also applied to each reform and investment from the Recovery and Resilience Plans (RRP) of every Member State.[194] The Commission has provided specific technical guidance to Member States on how DNSH should apply in the context of the RRF, where the Commission will then evaluate with a rating system the submitted RRPs with only two possible options: A or C. 'A' if no measure within a RRP leads to significant harm to environmental objectives and 'C' if one or more measures does lead to significant harm to environmental objectives (in which case the plan could not be endorsed by the Commission).[195] **However, there are inconsistencies in how RRF and Cohesion Policy use DNSH, as the latter applies DNSH only at programme level**, requiring all programmes to be compliant with DNSH criteria, which should be checked by Member States before submitting the programmes for adoption by the Commission.[196]

The Horizon Europe programme has also been partially incorporating DNSH into its requirements. Unlike other programmes, **HEU only specifically demands the fulfilment of the DNSH criteria for the projects applying to the European Innovation Council calls**.[197] In the rest of HEU calls, applicants can voluntarily showcase their respect to the DNSH when applying, but this will not be scored or taken into account by the evaluators.[198] HEU evaluators can also ask, only for monitoring purposes, an additional question to test the DNSH compliance of the project.[199]

The Commission is currently developing further guidance to extend the DNSH application to the Modernisation Fund and the Social Climate Fund, which should form the basis for a common, uniform applicability to all EU funds for the next MFF after 2027.[200] In this sense, the Commission launched a consultation on the application of the "DNSH" principle for the Social Climate Fund, including technical Guidance and its sector-specific annexes.[201] This will continue an established trend by the Commission to develop individual guidance in the form of explanatory notes for the DNSH application in different funds such as RRF[202] and Cohesion policy[203].

Nevertheless, as WWF has observed, **to reduce administrative burden when applying DNSH, the major goal should be to establish common EU tools with an unified methodology that apply to all of the different EU funding instruments**.[204] This idea has been already received and incorporated by the Commission in the recent regulation on the financial rules applicable to the general budget of the Union, signalling the need to review and simplify as far as possible the existing structural funds to alleviate the burden imposed on stakeholders[205].

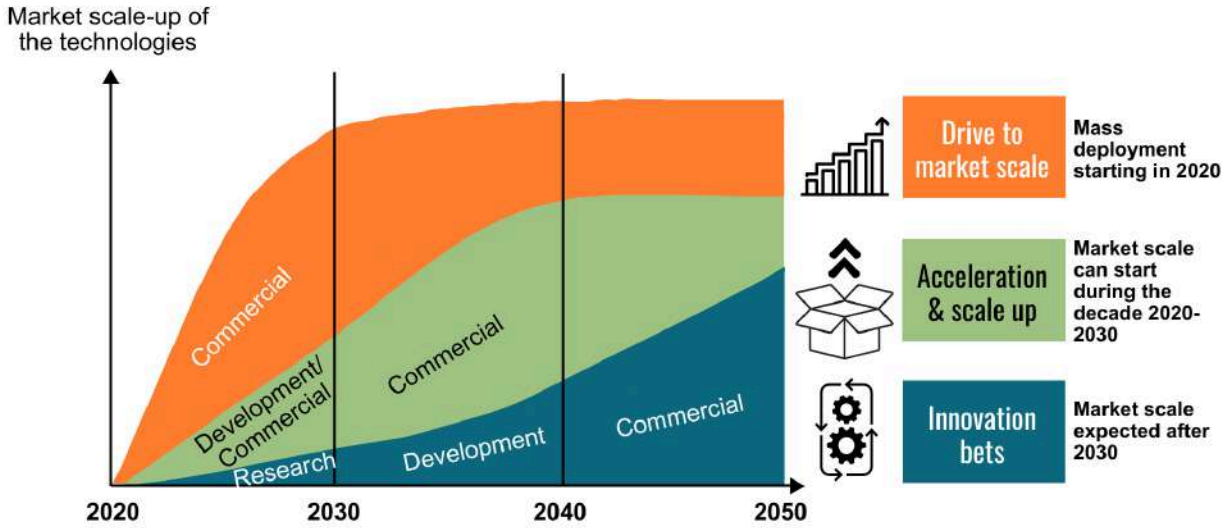
---

[190] European Commission. (2021). Do No Significant Harm (DNSH) Principle: Explanatory Note. Available at https://www.anpal.gov.it/documents/552016/1098881/06_EGESIF_21-0025-00_DNSH_expl_note.pdf/23bd2ac2-a422-a570-599e-e976c7eb33d5?t=1634727397571
[191] BELTRAN, M.M. et al. (2023) The implementation of the 'do no significant harm' principle in selected EU instruments, JRC Publications Repository. Available at: https://publications.jrc.ec.europa.eu/repository/handle/JRC135691
[192] European Commission. (2023). Technical Screening Criteria for the DNSH Principle. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023XC00111 (p.5)
[193] European Commission. (2024). Consultation on the Application of the DNSH Principle under the Social Climate Fund. Available at https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/social-climate-fund/consultation-application-dnsh-principle-under-social-climate-fund_en
[194] European Commission. (2023). Technical Screening Criteria for the DNSH Principle. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023XC00111
[195] Ibid.
[196] European Commission. (2021). Do No Significant Harm (DNSH) Principle: Explanatory Note. Available at https://www.anpal.gov.it/documents/552016/1098881/06_EGESIF_21-0025-00_DNSH_expl_note.pdf/23bd2ac2-a422-a570-599e-e976c7eb33d5?t=1634727397571 (p.2)
[197] European Commission. (2021). Standard Briefing Slides for Experts in Horizon Europe Funding Tenders. Available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/experts/standard-briefing-slides-for-experts_he_en.pdf
[198] Ibid.
[199] Ibid.
[200] Bankwatch. (2024). From Theory to Practice: A Case-Based Analysis of the EU's DNSH Principle. Available at https://bankwatch.org/wp-content/uploads/2024/07/2024_07_From-theory-to-practice_A-case-based-analysis-of-the-EUs-do-no-significant-harm-principle.pdf (p.6)
[201] European Commission. (2024). Consultation on the Application of the DNSH Principle under the Social Climate Fund. Available at https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/social-climate-fund/consultation-application-dnsh-principle-under-social-climate-fund_en
[202] European Commission. (2023). Technical Screening Criteria for the DNSH Principle. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023XC00111
[203] European Commission. (2021). Do No Significant Harm (DNSH) Principle: Explanatory Note. Available at https://www.anpal.gov.it/documents/552016/1098881/06_EGESIF_21-0025-00_DNSH_expl_note.pdf/23bd2ac2-a422-a570-599e-e976c7eb33d5?t=1634727397571
[204] WWF, ShareAction & E3G. (2024). Investing in Europe's Prosperity: The Role of Responsible Investment. Available at https://wwfeu.awsassets.panda.org/downloads/e3g-shareaction-wwf-report-investing-in-europes-prosperity.pdf (p.88)
[205] European Council. (2023). Council Document on Economic and Fiscal Policy Coordination (PE/99/2023). Available at https://data.consilium.europa.eu/doc/document/PE-99-2023-INIT/en/pdf (p.5)

Efficiency in the design and delivery of the EU budget

Even if the EU taps into its own funds, and a new Climate Investment Fund is created to replace the Recovery and Resilience Facility in 2026, public budgets under the new MFF will need to lever significantly more private sector climate investments per Euro than ever before. As shown in the estimates of the Commission and think tank reports, around 40-70% of the climate investment gap will need to be filled by private capital. Fortunately, **the bulk of pre-2030 climate investments are in mature commodity assets that come with revenues that pay back private sector contributions in full, or in part.** CapGemini looked at the 55 technology strategies required to decarbonise Europe's economy and the relative technology maturity of those investments by decade (see Graph 14).[206] The majority of the climate investments required for market scale before 2030 are mature (like solar, wind, insulation, heat pumps, EVs, etc.). Similarly, the Commission has identified that most of the technologies needed to reach the proposed 2040 target of 90% emissions reductions are also mature - i.e. in a Technology Readiness Level (TRL) of at least 8 (out of 9).[207]

Graph 14: Market scaling up trajectory between 2020 and 2050, per level of maturity[208]



Source: Capgemini Research Institute (2020).

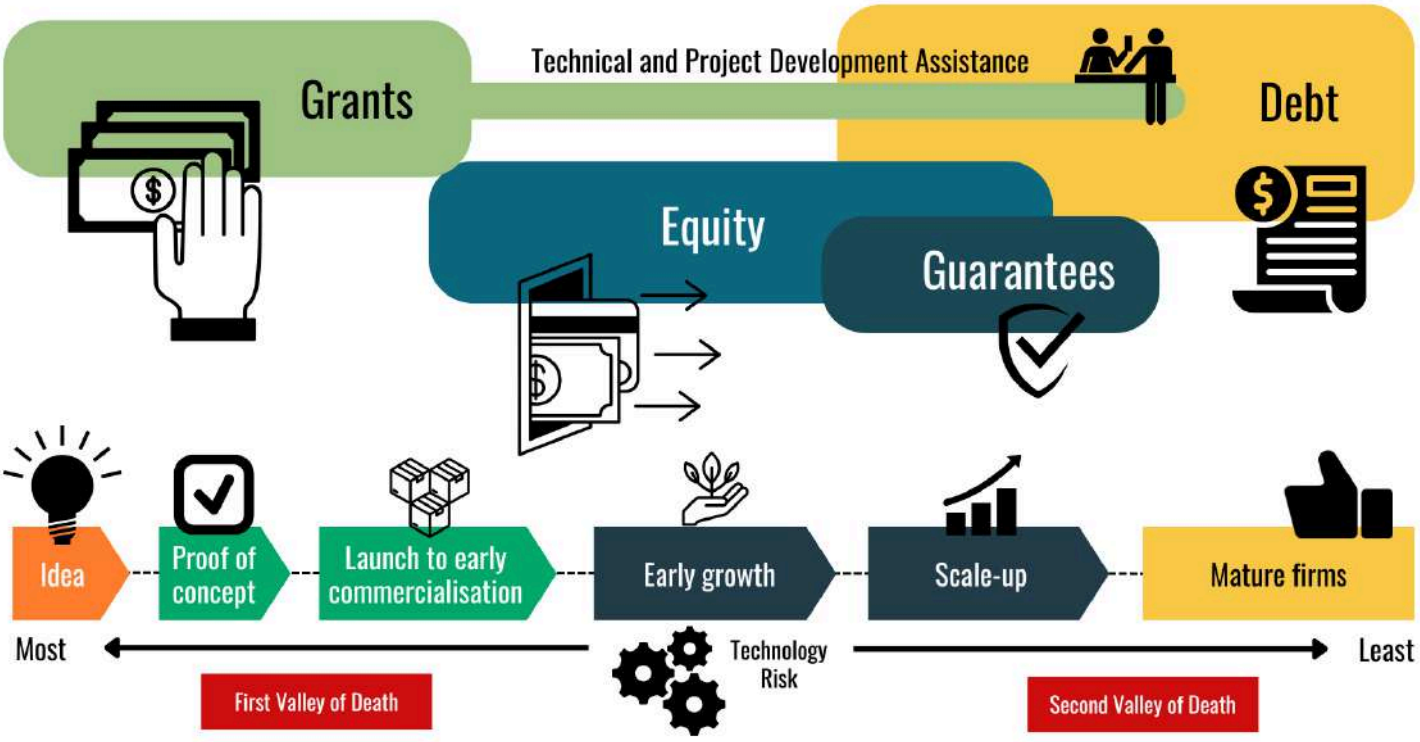
A successful leverage strategy of private capital in mature clean assets leaves more scarce EU funding to be better used to provide clean public goods and infrastructure, support low-income families participating in the benefits of the transition, and boost R&I investments for the low TRL cleantech. Public funding is best in certain circumstances, and desirable, to make the transition (and the shift to clean services provision) more affordable, fair, speedier and of higher quality. Enrico Letta's report on the Single Market makes the case for public services - referred to as "services of general interest" (SGIs) - in fostering competitiveness, economic stability and social cohesion.[209] The New Economics Foundation (2024) argues SGIs also contribute significantly to reducing emissions - such as clean public transport and renewable energy infrastructure.[210] SGIs can "can play a crucial role in aligning social policies and environmental goals so that they are mutually reinforcing" and "enhance the EU's geopolitical resilience by fortifying its internal cohesion and reducing dependencies on external resources and actors".[211] But since SGIs are largely public and state-owned companies, and will not generate profits, they will never be

[206] Capgemini Research Institute. (2020). Net Zero 2020: How Companies Can Hit Their Bold Climate Goals. Available at https://www.capgemini.com/wp-content/uploads/2020/10/Net-zero-main-report-2020.pdf
[207] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063: "DACC (TRL of 7) and BECCS (TRL of 5.5) are less mature today, and need to be further developed over the coming years. These two technologies will come into play only between 2030 and 2040."
[208] Capgemini Research Institute. (2020). Net Zero 2020: How Companies Can Hit Their Bold Climate Goals. Available at https://www.capgemini.com/wp-content/uploads/2020/10/Net-zero-main-report-2020.pdf
[209] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[210] New Economics Foundation. (2023). Strong Public Services for a Prosperous Europe. Available at https://neweconomics.org/uploads/files/Strong-public-services-for-a-prosperous-Europe_NEF.pdf
[211] Ibid.

commercially viable for private investors.[212] **Therefore, the "EU added value" of EU funds should focus on and prioritise increasing public subsidies in the provision of clean SGIs.**

On the other hand, grant funding, except as used for project development and technical assistance, is likely to be an inefficient way to deploy mature technologies. Letta's report claims that "the initial priority should be to mobilise private capital" to fill the climate investment gap and his recommendations provide a starting point on how the European budget can improve its leverage.[213] **Letta emphasises "there is a funding gap not just with respect to amounts, but also with respect to the type of funding that is available."[214] Traditional public funding schemes do not always well address the specific financial needs of a given sector, particularly when it comes to the development and deployment of new clean technologies.**

Graph 15: Efficiency zones of public financial instruments based on maturity stage of the clean technology



Source: Climate Strategy

Public intervention must focus on establishing the right regulatory incentives and pricing structures to redirect private capital to clean assets. As the free allocations from the ETS phase out over time, ETS prices increase,[215] and as a greater extent of clean assets become more market competitive, the basic business case for green investment will improve over time. If used correctly, the EU budget will have an increasing significant role to play providing the necessary risk capital to crowd in private investments. The following chapters will take a closer look at the climate funding gap to show **a set of priority areas, particularly focused on the demand side, that could benefit from a more efficient approach in the design of public instruments that leverage private capital.**

[212] Jacques Delors Centre. (2023). Green Deal and Industrial Policy: Navigating the Transition. Available at https://www.delorscentre.eu/fileadmin/2_Research/1_About_our_research/2_Research_centres/6_Jacques_Delors_Centre/Publications/20230525_SMack_FFindeisen_GreenDeal.pdf

[213] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf

[214] Ibid.

[215] Current ETS prices are around €60-70/tonne – and, notwithstanding considerable price volatility, are expected to grow in real terms over the next decade as the supply of allowances reduces. Statista. (2024). Average carbon price projections worldwide 2022-2050, by region. Available at https://www.statista.com/statistics/1334906/average-carbon-price-projections-worldwide-by-region/#:~:text=The%20average%20EU%20ETS%20carbon,International%20Emissions%20Trading%20Association%20members.

Projects deploying mature technologies in developing regions may need public guarantees that cover non-technology related factors like geographical concentration, credit and regulatory risks. A report from the European Parliamentary Research Services (2019) highlights that financial instruments can bring efficiency gains to the Cohesion Policy budget",[216] while increasing the sustainability of public finance, and stimulating better performance and quality of investment projects with the requirement to repay. Moreover, financial instruments "can improve access to finance, through targeting financially viable projects that have not been able to obtain sufficient funding from market sources."[217] **The EU must therefore review the type of financing instruments it offers to support the climate transition.**

In absolute financial terms, Europe has enough private capital to fill the climate investment gap and unlock the competitiveness benefits of quickly manufacturing and deploying already mature clean technologies. The IEA believes that the global market for key mass- manufactured clean energy technologies will be worth around $650 billion a year by 2030,[218] and will double energy manufacturing jobs over that period. Without the majority contribution from private sources, the EU will lose this opportunity for global green industrial leadership and improved competitiveness. Letta highlights that, **due to the fragmentation of financial markets, the EU faces a "significant inefficiency" in the infra-utilisation of the €33 trillion of European's private savings** (34% of which is held in current accounts), which are instead partly being diverted (around €300 billion annually) to foreign markets. Private savings could - if re-deployed via the capital markets - otherwise "substantially aid" the achievement of the EU strategic objectives like the green transition.[219]

Mario Draghi's report on competitiveness echoes the essential role of private capital in filling the climate investment gap and the need to improve EU funding strategies to amplify their leverage potential. Draghi proposes to strengthen - even doubling - existing EU funds that are demonstrating effective support for R&I and cleantech deployment (like Horizon Europe and the Innovation Fund). At the same time, **Draghi wants public money to be more efficient and focused on de-risking cleantech investments with an increased use of financial instruments** like public guarantees, Contracts for Difference (CFDs) and Carbon CFDs, by topping-up InvestEU for the green transition, and with an enhanced role for cleantech in EIB programs (like the European Tech Champions Initiative) to bring along European institutional investors.

President von der Leyen's Political Guidelines[220] support the EIB's critical role, as the EU Climate Bank, in mobilising private capital for green objectives. By boosting a greater integration among national financial markets and levering more institutional capital, the EIB can support the mission first stated by Letta to create a Savings and Investment Union that boosts the climate transition. In the 2021-27 budget cycle, the EIB is ahead of its planned €192 billion disbursement (debt, guarantees and equity) for climate and environment.[221] Through its leverage effect, the total public and private investments mobilised by EIB and InvestEU is likely to be €522 billion by 2027.[222] **An EU budget more oriented towards efficiency with the use of financial instruments will need strong leadership from the EIB as mandated by the Commission, as well as a greater instrument array for leverage, and potentially more contributed capital by Member States.**

[216] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[217] Ibid.
[218] International Energy Agency. (2023). Energy Technology Perspectives 2023: Executive Summary. Available at https://www.iea.org/reports/energy-technology-perspectives-2023/executive-summary
[219] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[220] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[221] €31 billion of this is related to InvestEU. European Court of Auditors. (2021). Sustainable Finance: Funding the EU's Climate Transition. Available at https://www.eca.europa.eu/lists/ecadocuments/sr21_22/sr_sustainable-finance_en.pdf
[222] €81 billion of this €522 billion is related to InvestEU. European Court of Auditors. (2021). Sustainable Finance: Funding the EU's Climate Transition. Available at https://www.eca.europa.eu/lists/ecadocuments/sr21_22/sr_sustainable-finance_en.pdf

An increase in the use of financial instruments is in the radar of the next Commission's considerations for the new budget. As proposed by the former EU Budget Commissioner, Johannes Hahn, in the 2024 Annual EU Budget Conference, this challenge requires an innovative and fresh look at financial instruments to increase the efficiency and investment capacity of the EU budget to make it fit for the future.[223] This report will show that, if designed correctly and at EU level, **financial instruments can energise public-private channels to optimise the deployment of public funding for green investments in households and SMEs, while also freeing up administrative capacity** that has historically faced significant deployment bottlenecks and as a result slow absorption rates of EU funds.

A study procured under the Investors Dialogue on Energy initiative provides an overview of the expected leverage achieved by the use of financial instruments (loans, equity and guarantees) in energy sector investments in Cohesion Policy funds (Table 1).[224] The leverage factor ranges from 1.3x for loans, 1.8x for equity and 4.8x for guarantees.[225] **The leverage factor can be higher using a budget guarantee, like InvestEU, which reaches an average of 11.4x due to an overall risk diversification based on a highly granular portfolio.**[226] However, it must be noted that the InvestEU leverage varies depending on the policy window and type of projects and intermediaries involved, and while it is high when guaranteeing financial intermediaries' lending to SMEs, it is lower when targeting large energy infrastructure projects and manufacturing facilities.[227]

Table 1: Overview of multipliers in energy sector investment instruments and schemes in energy generation in EU-27[228]

Type of financial instrument from mapping	Average target multiplier from mapping	Median achieved leverage as at 31 Dec 2020 - financial instruments under ERDF/CF
Loans	1.57x (based on 29 instruments with available target multiplier)	1.3x (based on 451 instruments)
Equity	1.17x (based on 3 instruments with available target multiplier)	1.8x (based on 211 instruments)
Guarantees	1.79x (based on 12 instruments with available target multiplier)	4.8x (based on 87 instruments)

Source: European Commission (2024)

[223] European Commission. (2024). Annual EU Budget Conference: Looking Ahead at the EU Budget's Future. Available at https://commission.europa.eu/ec-events/annual-eu-budget-conference-2024-looking-ahead-eu-budget-future-2024-04-29_en

[224] "An important element of an instrument's effectiveness is its multiplier effect, that is the instrument's capacity to attract additional private financing compared to the instrument's initial public budget, and channel funds to the targeted projects" European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

[225] "It should be noted that, in most cases, the mapping considered the target multiplier as the ratio of target private finance attracted based on the amount of public financing. On the other hand, the achieved leverage effect for the instruments included below considers the total amount of finance reaching final recipients divided by the public (ESIF) support. As a result, target multipliers from the mapping are likely to have lower values compared to achieved leverage figures." European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

[226] The financing of manufacturing projects would not lead to such a high multiplier. European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
In infrastructure projects, the leverage is also lower (around 7-8x). InvestEU Steering Board. (2022). InvestEU Leverage and Multiplier Effect Calculation Methodology. Available at https://investeu.europa.eu/document/download/21e274de-9e54-4909-8db5-05760d72f16d_en?filename=InvestEU%20Steering%20Board%20-%20InvestEU%20Leverage%20and%20Multiplier%20Effect%20Calculation%20Methodology.pdf
The higher 11.4x averaged leverage is explained by the SME window, due to the multiplier effect of guaranteeing banks who then lend to their SME portfolio.

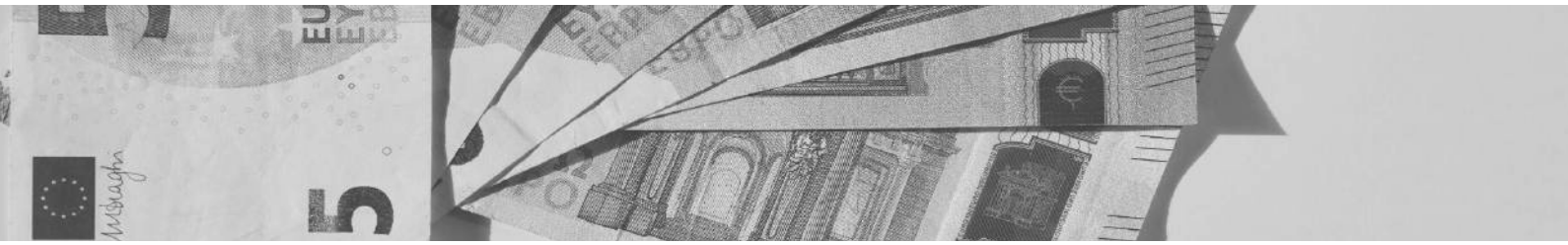
[227] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

[228] European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

Grants are often less effective at crowding-in private investments[229] and hence, in a constrained budget environment, should be "reserved" for when private investment opportunities are scarce, such as if the end-beneficiary is a poor individual/household or a small company developing a new, risky technology with difficult access to finance. But again, the devil is in the detail, and **special attention must be given to the design and implementation of financial instruments that adequately target the market failure they were made to address.[230]**

Several papers[231] have highlighted that **an over-reliance on de-risking strategies[232]** that neglect the need for regulatory "sticks" and the additional public investment needed (for energy poverty, infrastructure development and to gain cleantech leadership), are **not adequate nor up to the challenge of the high levels of speed, coordination and systemic transformation required for the climate transition and an ambitious green industrial policy.**[233] An exclusive de-risking strategy also risks the privatisation of public goods and services and, hence, losing the "just" component of the transition and creating the potential for a social backlash.[234] **InvestEU has been positioned as the most critical de-risking instrument in Europe to leverage private capital in the transition, and as such should be reinforced, but cannot be a substitute for additional public funding**. At the same time, InvestEU may also require additional backing from the EU budget to crowd-in riskier, transformative climate investments.[235]

Taking note of the limitations of de-risking strategies and the importance of increased EU public funding, the following chapters of this report provide further analysis to support an "efficiency first" approach in the EU budget to increase Europe's investment capacity in the climate transition, mobilise private investments and accelerate the delivery of EU funds. To operationalise this approach, **a set of principles and recommendations at the sector-level are provided for the design and deployment of financial instruments in the EU budget to fill the climate investment gap**. The three themes developed are: 1) Cost effective deployment to SMEs and lessons learned, 2) EU financial instruments as a service for Member States, and 3) Investing in the future for cleantech.



While this report does not systematically dive into the importance of regulatory incentives - which are also essential to provide the right market signals that mobilise private capital in the transition - **the last section highlights the need of building and strengthening lead markets for clean technologies and solutions.** Despite the overall success of the European Green Deal[236] in creating stronger investment incentives in climate assets than in other non-clean sectors, current political discourses point to a risk of deregulation and a step-back in the sectoral targets set in law under the Fit for 55 package. Although these efforts are framed under the benefits of "simplification", they can instead reverse the already well-established market signals for investors and lead to greater complexity and inefficiencies. This would in turn undermine the potential success of public funding in de-risking and supporting the uptake of clean technologies and solutions. Fundamentally, sustainability and long-term competitiveness are combined objectives and it is wrong to frame as opposing forces.

---

[229] OECD. (2018). The theory and practice of financial instruments for small and medium-sized enterprises. Available at https://www.oecd-ilibrary.org/docserver/a16242ca-en.pdf ; OECD. (2023). Are Industrial Policy Instruments Effective?. Available at https://www.oecd-ilibrary.org/science-and-technology/are-industrial-policy-instruments-effective_57b3dae2-en

[230] Ibid.

[231] Mazzucato, M. & Semieniuk, G. (2023). The European Derisking State: Creating Markets for a Green Economy. UWE Repository. Available at https://uwe-repository.worktribe.com/output/11044798/the-european-derisking-state ; Jacques Delors Centre. (2023). Green Deal and Industrial Policy: Navigating the Transition. Available at https://www.delorscentre.eu/fileadmin/2_Research/1_About_our_research/2_Research_centres/6_Jacques_Delors_Centre/Publications/20230525_SMack_FFindeisen_GreenDeal.pdf

[232] Gabor (2023) and Gabor & Braun (2024) suggest a status-quo of *weak* derisking in Europe as the main strategy for green industrial policy which, if without greater regulatory guidance and public investments that provide market signals, has limitations that could lead to not the most efficient avenues for decarbonisation. Gabor, D., & Braun, B. (2023). Green macrofinancial regimes. Available at https://doi.org/10.31235/osf.io/4pkv8

[233] According to Gabor & Braun (2024) under a "de-risking state" with capital in the driving seat, "the coordination and distributional fault-lines undermine decarbonisation ambitions". Gabor, D., & Braun, B. (2023). Green macrofinancial regimes. Available at https://doi.org/10.31235/osf.io/4pkv8

[234] Ibid.

[235] Jacques Delors Centre. (2023). Green Deal and Industrial Policy: Navigating the Transition. Available at https://www.delorscentre.eu/fileadmin/2_Research/1_About_our_research/2_Research_centres/6_Jacques_Delors_Centre/Publications/20230525_SMack_FFindeisen_GreenDeal.pdf

[236] European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

Chapter Conclusions

The potential for increased growth, competitiveness and social cohesion make the case for unlocking more public investments in the climate transition. **Improving and mainstreaming green budgeting at the national and EU levels can support the mission of "finding more money"** by reallocating billions of euros from harmful fossil fuel investments to providing efficient housing and accessible public transport for households, and building globally-competitive clean industrial capabilities in the EU.

But given Member States' limited ability to increase national expenditure under the new fiscal rules, European funding and solutions offered at EU-level borrowing costs, are essential. **EU-level funding intervention can unlock the "EU added value" necessary to lever Member States' investments and align them with the EU strategic priority of pushing for a just and competitive climate transition**. The current EU budget allocated to this is insufficient (covering just 8-12% of the climate investment gap), and will be even less after RRF ends in 2026. **The EU has to consider and develop new climate funding sources.** This should also be accompanied by **an improved EU and national-level investment planning with granular assessments, updated regularly, of funding sources and gaps in NECPs.**

Several well-developed proposals exist from the NGO and think tank community, also echoed by Draghi, to **turn to joint borrowing, amplify new own resources, create an RRF predecessor instrument framed under a long-awaited Climate Investment Plan.** The shift to a policy-based EU budget also requires improved climate investment planning at the EU level and in NECPs to assess and monitor the trajectory towards meeting the EU climate and energy goals.

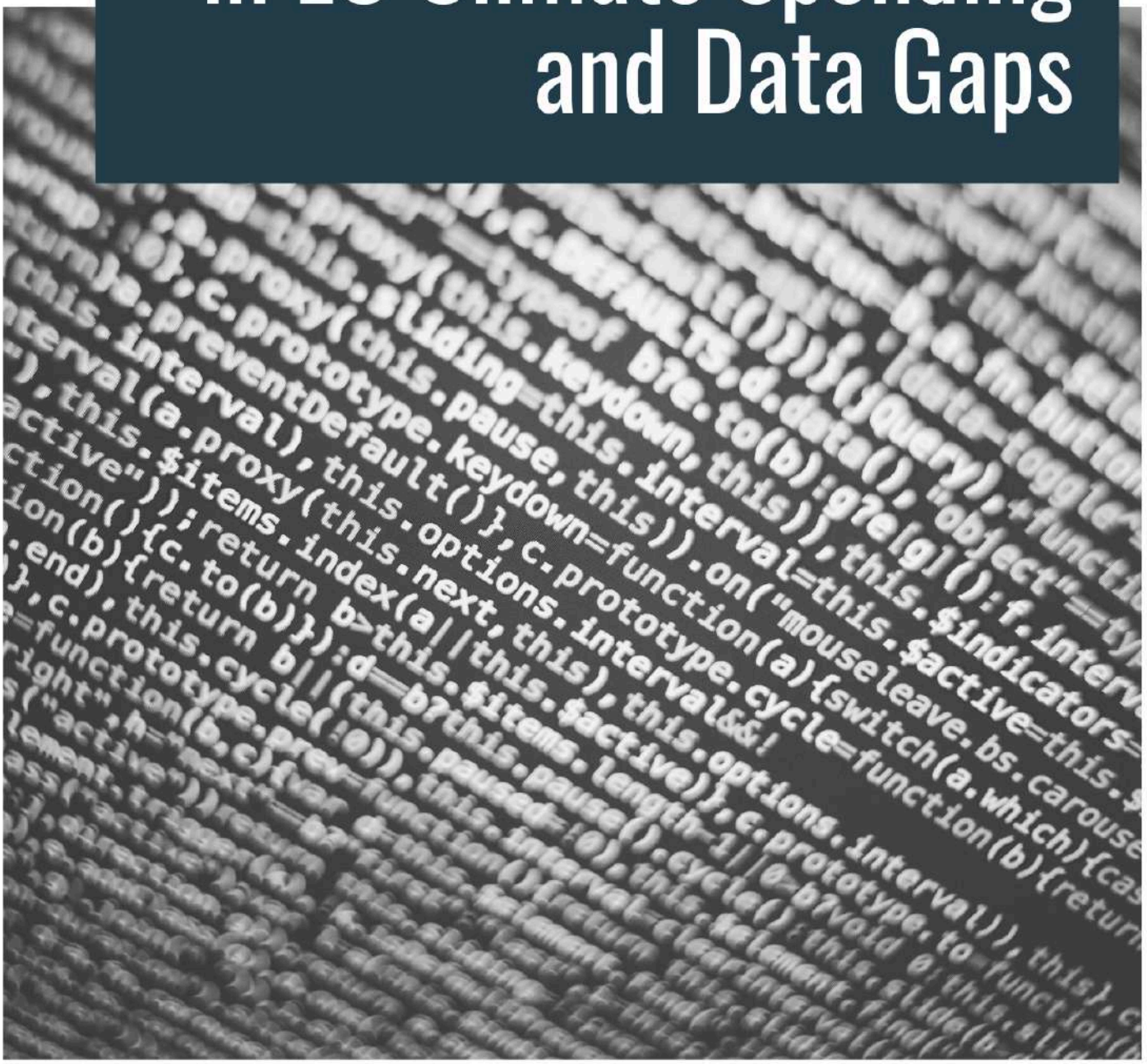
But even if the EU taps significantly into its own funds, and a new Climate Fund is created, **public budgets will need to be more efficient in leveraging significantly higher private sector climate investments per Euro of public commitment than ever before**. Enrico Letta sees this as "the initial priority" that should drive the new Single Market he envisions under a Savings and Investment Union. At least half of the climate investment gap will need to be filled by private capital. Fortunately, **the bulk of pre-2030 and 2040 climate investments are in mature commodity assets that come with revenues or savings that pay back private sector contributions in full, or in part.**

Letta finds a clear gap in the type of instruments used to finance clean asset deployment. This report takes a closer look at the climate funding gap to provide **a set of priority areas, particularly in the demand side sectors, that could benefit from a more efficient approach in the design of public, EU-level financial instruments that leverage private capital**. A successful integration of an "efficiency-first approach" in the EU budget would leave additional scarce EU grant funding to provide clean public goods and infrastructure, support low-income families participating in the benefits of the transition, and boost R&I investments for the low TRL cleantech. The sectoral investment assessments have shown that additional public funding for these types of assets and beneficiaries is still needed.

If designed correctly, a new European Competitiveness Fund could offer new capital and instruments to de-risk private investments in clean solutions and build the business cases for the European Green Deal. **Supported by an enhanced leadership from the EIB as the Climate Bank**, the Fund could lay the foundations for the concept of "efficiency" in public funding through the smart design and deployment of financial instruments in the current and the next EU budget.

Chapter 4

Resolving Inefficiencies in EU Climate Spending and Data Gaps



Chapter 4: Resolving Inefficiencies in EU Climate Spending and Data Gaps

In addition to the need for "fresh money", the European Commission is calling for a more outcome-focused, performance-based and policy-aligned EU budget that looks to increase de-risking and leverage of private financing.[237] This shift is driven by the apparent efficiencies identified by the Commission in the implementation of the RRF, a more "methodological" planning aligned with EU strategic priorities, and targeted reforms that increase the impact of investments.[238] The "RRF model" is held in contrast with prior applications of Cohesion Policy and other relevant shared-management EU funds (including the Common Agricultural Policy). Concerns have been raised about their slow absorption rates, effective contributions to EU long-term policy goals, and moderately high spending irregularities[239]. Similar concerns have also been raised regarding RRF and its climate contributions.[240] A better understanding of the role of financial instruments in the delivery of specific outcomes is an important exercise in this high-level budget debate. This requires an instrument-level **review of the efficiency of delivery methods (in coherence with the delivery speed required by the EU climate targets), as well as their impact on target-beneficiaries (to ensure results aligned with a just transition and the "EU added value")**.

While EU financial instruments have been available to Member States, for years, to increase their investment capacity and crowd-in private investments, they are hardly used. This chapter analyses the most relevant EU funds for the deployment of clean technologies in the next decade. It shows **significant inefficiencies in the disbursement by Member States of the largest EU funds, as well as a reluctance to take the advantages of EU financial instruments offered as a service** (called "off-the-shelf financial instruments"). Some research suggests that higher-income households and larger companies may benefit more than is necessary.[241] This means that the leverage impact of the EU budget on private finance is sub-optimal, and that precious grant money for supporting the climate transition can be better used. The following chapter 5 will then take a deep dive into the RRF to identify best practices and potential opportunities that the wider use of EU financial instruments could offer in the context of the next MFF.

Reviewing the uptake of financial instruments to deliver EU funds

The Mission Letter to Commissioner for Budget, Piotr Serafin, asks to **"develop a more impactful budget, ensuring a better use of our budget to de-risk and leverage further national, private and institutional financing."**[242] Commissioner for Financial Services, Maria Luís Albuquerque, is tasked with working on "risk-absorbing measures to crowd-in private funding from commercial banks, investors and venture capital" to build a "European Savings and Investment Union" (as proposed by Enrico Letta), and foster capital for innovation and competitiveness, and better use of people's savings.[243] To properly integrate the lessons from the past**, inefficiencies in existing EU funds must be identified and addressed to ensure a more impactful use of the EU budget** to: a) crowd-in private finance into creditworthy projects to fill a large climate investment gap and, like this; b) free up money for grant-based schemes for beneficiaries that need it the most.

A report by Rideker, Bischof and Lang (2024) finds that **while Cohesion Policy funds have a positive impact on growth, they are delivering income gains for richer regions and wealthy households, thus increasing income inequality in poorer European regions**.[244] This is partly explained by the complexity in

[237] This is also supported by expert analysis, e.g. Bruegel: "Rethinking the approach could build on the experience with the RRF, in particular its focus on both reforms and investments in exchange for financial support, and its performance-based approach. EU programmes involving transfers to member countries should be designed in line with these two aspects, moving where possible from an output-based to an outcome-based approach to make sure that such projects really make a difference and do not only focus on intermediate objectives." Bruegel (2023). "When Will the European Union Finally Get the Budget It Needs?" Available at https://www.bruegel.org/analysis/when-will-european-union-finally-get-budget-it-needs

[238] European Commission. (2024). Communication on strengthening the EU through ambitious reforms and investments. Available at https://commission.europa.eu/document/download/f953f881-5a01-4040-804c-16be479ed3c4_en?filename=COM_2024_82_1_EN_ACT_part1_v5.pdf ; European Court of Auditors. (2023). Report on Cohesion Policy. Available at https://www.eca.europa.eu/en/publications/SR-2023-06

[239] European Court of Auditors. (2024). Annual Review of EU Policies. Available at https://www.eca.europa.eu/en/publications/RV-2024-03

[240] European Court of Auditors. (2024). Special Report 14/2024. Unclear contribution from the Recovery and Resilience Facility. Available at https://www.eca.europa.eu/ECAPublications/SR-2024-14/SR-2024-14_EN.pdf

[241] Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution ; Institute for European Environmental Policy. (2023). Who Took the Burden of the Energy Crisis?. Available at https://ieep.eu/publications/who-took-the-burden-of-the-energy-crisis/

[242] European Commission. (2024). Mission Letter for Serafin. Available at https://commission.europa.eu/document/download/db369caa-19e7-4560-96e0-37dc2556f676

[243] European Commission. (2024). Mission Letter for Albuquerque. Available at https://commission.europa.eu/document/download/ac06a896-2645-4857-9958-467d2ce6f221_en?filename=Mission%20letter%20-%20ALBUQUERQUE.pdf

[244] Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution

securing EU funds, with lengthy bidding and application processes, where larger firms, or households with more resources, are better able to apply. Similarly, a report by the Institute for European Environmental Policy (2023) finds that **some of the public support during the 2022 energy crisis did not primarily benefit vulnerable groups and had regressive distributional impacts.**[245]

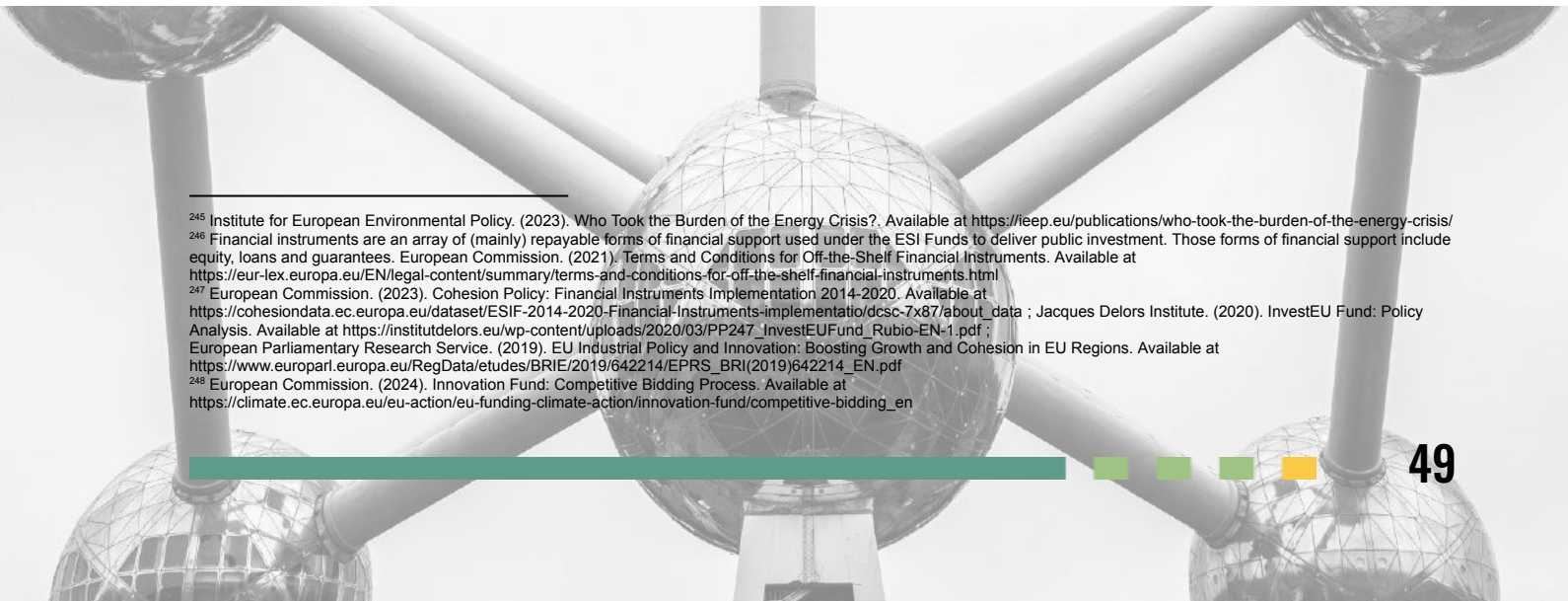
These undesired EU budgetary outcomes constitute a loss of efficiency and a missed opportunity in levering more private funding towards the strategic objectives of the EU, like competitiveness and climate. Instead, smart public budgeting schemes are needed to reserve full grants for those households that cannot afford, say a renovation or a solar panel, and for those young, innovative companies that are developing breakthrough technologies. For households with savings, and for the average mid-sized and large company, financial instruments that only cover the green premium of new cleantech, and that lower the transaction costs of decarbonisation measures, are required to incentivize the reallocation of additional private money towards EU climate objectives.

Off-the-shelf financial instruments[246] were created in 2014 (some of them at the EU-level managed by the EIB Group) to incentivise the use of loans, equity and guarantees instead of traditional grant-making, and as a way to support Member States efficiently combine public and private resources. They are designed to offer templates to accelerate the more efficient spending of EU funds managed by Member States (which have historically mobilised relatively low levels of private funding), and so streamlining countries' administrative efforts, avoiding long set-ups and reinventing existing structures nationally. This section will show that **the general use of financial instruments (both off-the-shelf and locally tailor-made) for climate purposes from EU funds is low,[247]** although the exact numbers for all funds have not been made available (a significant data gap for researchers).

The following Table 2 lists the relevant instruments for the development and deployment of climate solutions from the EU budget that are analysed in this report. Those that stand out for the use of financial instruments are the InvestEU Fund (backed by a budget guarantee of €26.2 billion and mainly managed by the EIB), the EIC Accelerator (which provides equity to support SMEs in developing and scaling up innovations) and the new auctions of fixed premiums for hydrogen projects (the "Hydrogen Bank") of the Innovation Fund.[248] At present, these are all relatively small pots of money compared to the overall climate investment gap: the EIC has a total budget of €10 billion (with a 35% climate earmarking) and the Innovation Fund hydrogen auction has an €800 million budget, so far. The EIB Group has several financing programs dedicated to cleantech investments, but these are also sub-scale for the size of the challenge. These smaller funds are particularly relevant for cleantech *manufacturing*, and are covered in Chapter 7, while the following sections will delve into the use of financial instruments in the largest EU funds for clean asset *deployment and uptake*.

An extended analysis is provided of Cohesion Policy (one third of the EU budget) and a highlight of best practices from the InvestEU program (the corner-stone of de-risking instruments in the EU). The Social Climate Fund (SCF) is not covered here, as it will begin to be implemented in 2026 once Member States finish drafting their national Social Climate Plans in 2025. **These Social Climate Plans will specify how Member States plan to use grant funding or financial instrument mechanisms in delivering the SCF funds**. Clearly, the conclusions of the analysis of existing instruments are applicable, however.

The following sections examine the key funds and their relevance and impact on filling the forward looking climate investment gap in the next budget.



[245] Institute for European Environmental Policy. (2023). Who Took the Burden of the Energy Crisis?. Available at https://ieep.eu/publications/who-took-the-burden-of-the-energy-crisis/
[246] Financial instruments are an array of (mainly) repayable forms of financial support used under the ESI Funds to deliver public investment. Those forms of financial support include equity, loans and guarantees. European Commission. (2021). Terms and Conditions for Off-the-Shelf Financial Instruments. Available at https://eur-lex.europa.eu/EN/legal-content/summary/terms-and-conditions-for-off-the-shelf-financial-instruments.html
[247] European Commission. (2023). Cohesion Policy: Financial Instruments Implementation 2014-2020. Available at https://cohesiondata.ec.europa.eu/dataset/ESIF-2014-2020-Financial-Instruments-implementatio/dcsc-7x87/about_data ; Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf ; European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[248] European Commission. (2024). Innovation Fund: Competitive Bidding Process. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en

EU fund	Source	Objectives	Period	Budget	Climate	End Beneficiary	Financial Instruments (FIs)	Implementation of FIs	Possible allocation to InvestEU MS Compartment
RRF Grants	NextGenEU	Response to Cov-19 to support reforms and investments aimed to make EU economies greener, digital and more resilient	2021-2026	€313	37%	SMEs, large companies and households	Grants Loans Equity Guarantees	No overall assessment found. Case studies identified in Spain, Greece and Romania. Just 4 Member States used EIB-managed FIs for RRF (SP, IT, RO, GR)	4% Additional 6% for STEP
RRF Loans				€360 bn	37%				
ERDF	MFF	Cohesion among EU regions	2021-2027	€226bn	30%	Mostly SMEs and households	Grants Loans Equity Guarantees	Report from 2014-2020: Low uptake (9% or €25 billion). 3.4x leverage. €2 billion for supporting a low carbon economy €490 million for environment and resource efficiency	5%
Cohesion Fund	MFF	Environment and transport investments in low-income MS	2021-2027	€37bn	37%	Mostly SMEs and households	Grants Loans Equity Guarantees		
Just Transition Mechanism	MFF	Support regions negatively affected by the transition	2021-2027	€21bn grants €10bn loans	All, but exclusion on fossil investments under Pillar 2[249]	SMEs, large enterprises, households, public projects on energy and environment	Grants InvestEU FIs: Loans Equity Guarantees	No data or assessments found. Implementation began recently.	Dedicated InvestEU scheme expected to mobilise €10 to €15 billion
LIFE	MFF	Supports environmental, nature conservation and climate action projects	2021-2027	€5bn	Clean Energy Transition = €997 million Climate Change Mitigation and Adaptation = €947 million	SMEs Public authorities Non-profit organisations	Grants Loans	Report from 2014-2020 evaluation report: Private Finance for Energy Efficiency (PF4EE) managed by EIB to implement Member States' energy efficiency action plans through financial intermediaries. 4% of total LIFE for PF4EE (€215 million) (vs. 73% in grants, of which 14% for climate action) Slow start of PF4EE. Mobilised €700 million in 10 Member States (3.3x leverage)	Not specified
Modernisation Fund	ETS	Support low-income Member States in modernising energy systems and improving energy efficiency	2021-2030	€57bn (assuming a carbon price of €75/tCO2)	All	SMEs, large enterprises, households, public projects on energy	Grants Premiums Loans Guarantees Capital injections	Lack of detail in Member States' reporting templates No systemic assessment made by Investment Committee	Not specified
Social Climate Fund	ETS	Support most affected vulnerable groups to ETS2 (buildings and transport)	2026-2032	€86.7bn	All, except direct income support	Vulnerable: households, microenterprises , transport users	Grants Financial instruments (not specified)	Social Climate Plans with measures under drafting by Member States, to be submitted in 2025. These Plans will determine the use of financial instruments. On-going DNSH public consultation.	4%
InvestEU Fund	MFF	Support investment across the EU that fosters sustainable growth and job creation	2021-2027	€26bn budget guarantee (11.4x)	30% 60% for Sustainable Infrastructure window	SMEs, large enterprises, households	Loans Equity Guarantees	84% of budget committed by 2024 Low utilisation of Member State compartment (12 operations by 4 Member States registered in total in 2022 and 2023, for a total of €239 million)	N/A
Innovation Fund	ETS	Commercial demonstration of innovative low-carbon technologies (includes manufacturing call)	2020-2030	€40bn (based on current ETS carbon price €74/ton)	All	SMEs, large enterprises	Grants CFDs CCFDs Fixed Premiums	High oversubscription of IF large-scale calls. 10.6% success rate in large-scale calls (30x the budget) 21% average success rate in small-scale calls of 2021-2023 High oversubscription of pilot Hydrogen Premium Auction (€700 million): 5% success rate. Possibility of Auction as a Service for Member States - used by Germany, Spain, Austria, Lithuania	N/A
EIC Accelerator	MFF	Supports SMEs to develop and scale up innovations across a variety of areas.	2021-2027	€675mn in 2024 €634 million in 2025 (from €10bn overall budget for EIC)	35%	SMEs	Grants Equity	High oversubscription 5.4% success rate (in 2021, 65 out of an estimated 1,196 applicants)	N/A
EIB European Tech Champions Initiative	EIB + MS	Fund-of-funds to invest in large-scale venture capital funds, which will in turn provide growth financing to European tech champions in their late-stage growth phase	2023-onwards	€500mn + MS contributions= €3.85bn	No earmarking	SMEs	Equity	Expected leverage of €10bn (2.3x)	N/A
EIB-Breakthrough Energy Europe Fund	EIB + BEV	Equity fund that will invest in economically-viable breakthrough clean energy tech companies along the innovation chain in Europe.	2019-onwards	€100 mn	All	SMEs	Equity	No more information provided	N/A
EIB - Cleantech Co-investment Facility	EIB	The EIF will participate in equity funding rounds alongside EIF-backed fund managers, co-investing on equal market terms and conditions into EU-based SMEs and Midcaps	2024-2028	€200mn	All	SMEs and Midcaps	Equity	No more information provided	N/A
EIB Venture debt pilot	EIB	Loans to early-stage companies to provide liquidity in between equity funding rounds	Created 10 years ago	€500 mn pilot	No earmarking	SMEs	Debt	It has delivered an overall of €6.8 billion to about 300 companies (not exclusively cleantech) EIB is developing a dedicated €500 million scale-up debt pilot for direct support to EU technology champions in their late stage of growth that are beyond established venture debt criteria, but still require growth financing.	N/A

[249] European Commission. (2021). Regulation (EU) 2021/523 establishing the InvestEU Programme and amending Regulation (EU) 2015/1017. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0523

LIFE Program + + + +

The LIFE program was launched in 1992 and, until recently, was the only EU funding programme exclusively dedicated to the environment, nature protection and climate action.[250] In the 2021-2027 period, LIFE has a total of €5 billion budget and two sub programmes on "Clean Energy Transition" (€997 million)[251] and "Climate Change Mitigation and Adaptation" (€947 million). The sub-programme **mainly involves the break-up of market barriers for the transition of SMEs, as well as support to public authorities and non-profit organisations.**

So far, it appears that financial instruments have not been prevalent in disbursing LIFE funds to SMEs in comparison to grant schemes. One pilot financial instrument on Private Finance for Energy Efficiency (PF4EE)[252] was integrated in 2014, managed by the EIB, to "test innovative approaches to leverage funding".[253] PF4EE aimed to increase availability of debt financing for investments supporting Member States' energy efficiency priorities set in their National Energy Efficiency Action Plans. After a "slow start", **a total of EUR 215 million (20% of the "Clean Energy" sub-programme budget, and 4% of the total LIFE budget) were allocated for investments through the PF4EE**, of which 77% had been committed by end 2020.[254] PF4EE increasingly supported investments and is **currently on track to reach its lifetime target of mobilising €700 million**[255] **(a 3.3x leverage)**. An upcoming review of the 2021-2024 period of LIFE is forthcoming and should provide further information on developments in this front.

Modernisation Fund + + + +

The Modernisation Fund aims to **support 13 Member States meet the EU's energy targets by helping them to modernise energy systems and improve energy efficiency**.[256] One of the target goals is to support the just transition in carbon-dependent regions.[257] The Fund is expected to have a €57 billion budget from 2021 to 2030 derived from ETS resources, assuming a carbon price of €75/tCO2.[258] Recent projections are estimating an even higher budget due to an increase in the carbon price.[259] The EIB is in charge of approving the investment proposals drawn up by Member States, after which the Commission takes a disbursement decision.

The Modernisation Fund allows beneficiary Member States to decide on the form of support they can use (grants, premium, guarantee instruments, loans or capital injections). However, **a lack of detail on the use of financial instruments in Member States' reporting templates makes it hard to analyse their utilisation.** In the 2022 Annual Report by the Modernisation Fund Investment Committee, no systematic information is provided on the form of deployment of the funds. There is just one project where the use of a financial scheme is mentioned in Czechia: "Financial instrument for improving energy efficiency in business (ENERG Programme)."[260]

[250] European Commission. (2024). Report on the Mid-Term Evaluation of Climate Action Programs. Available at https://commission.europa.eu/document/download/3bcfd746-83c4-445b-a4e2-6227d780580e_en?filename=report-on-the-mid-term-evaluation_swd_355_en.pdf
[251] Clean Energy Transition is focused on "the creation of capacity building and diffusion of knowledge, skills, innovative techniques, methods and solutions for reaching the objectives of Union legislation and policy on the transition to renewable energy and to increased energy efficiency." European Commission. (2021). Regulation on the Governance of the EU Emissions Trading System. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32021R0783
[252] PF4EE provides loans, risk-sharing and expert support to financial intermediaries for increasing investments in energy efficiency projects in EU Member States - through financial intermediaries such as commercial banks, the PF4EE will finance energy efficiency projects from private investors, including small and medium-sized enterprises (SMEs) and private individuals, and from municipalities or other public sector bodies. European Commission. (2024). Private Finance for Energy Efficiency (PF4EE). Available at https://climate.ec.europa.eu/document/download/b843fa66-9a2a-4e54-8c1b-c95fe893c4e3_en
[253] European Commission. (2024). Communication on Climate Transition Finance: COM(2024) 359 Final. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2024%3A359%3AFIN
[254] Ibid.
[255] Ibid.
[256] European Commission. (2024). ETS Modernisation Fund: Financial Reporting and Updates. Available at https://modernisationfund.eu/wp-content/uploads/2023/03/MF_IC_Annual_Report_2022.pdf
[257] The MF implementing regulation shows that it can actually complement the JTF by contributing to the implementation of TJTPs. It's also worth specifying that the 2 instruments have very different governance models, MF being very centralistic versus JTF being managed locally by NUTS 3 regions, and this is likely to support very different kinds of projects, especially since eligibility rules under JTF are restricted.
[258] European Commission. (2024). Modernisation Fund. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/modernisation-fund_en
[259] Pahle, M. , Sitarz, G. , Osorio,S. , Görlach,B. & Merschel,P. (2023). MSR through 2030: impact on market liquidity and considerations for the 2026 reform. Available at https://ariadneprojekt.de/media/2023/12/Ariadne-Documentation_ETSWorkshopBruessel_December2023.pdf
[260] European Commission. (2024). ETS Modernisation Fund: Financial Reporting and Updates. Available at https://modernisationfund.eu/wp-content/uploads/2023/03/MF_IC_Annual_Report_2022.pdf

Repair Your Grandma's Home in Czechia: Leveraging EU Modernisation funds to boost private investments in home renovations

A successful example of the use of financial instruments for disbursing EU funds for climate is the case of the national Czech programme "Repair your Grandma's Home". **This program is co-financed by the Modernisation Fund and targets renovation and energy saving measures in households**. Basic support finances up to 50% of the direct implementation investments for household efficiency measures with an interest free loan offered by the government, in combination with market finance from building societies for the other half. [261]

This program was created in 2024, but it follows an established trend in the Czech Republic since 2009 by which the national government has been using part of its allocated EU funds with local co-financing to promote the deep renovation of buildings. In the past, these programs have been contributed to by a variety of EU funds, including Cohesion funds, ERDF and the sale of ETS Emission allowances. **As a result of these innovative funding schemes, of the 3.9 million Czech dwellings, over a third have been renovated in the last 15 years.**

There is some data uncertainty on the current state of Czechia's residential buildings, where only 10% of them have Energy Performance Certificates (EPC).[262] A recent study has estimated that 54% of Czech homes would fall into EPC-class E, F and G (i.e. the worst performing) and that u**p to 65% will need to be renovated by 2050 to deliver EU targets, which will require 98,000 buildings renovations per year** (current home renovation rates are estimated to be at 35-40,000 units per year).[263]

The "Repair your Grandma's Home" program has an initial allocation of CZK 5 billion (€200 million) to cover up to half of direct implementation investments related to the renovation. **The participants can also receive a government subsidy as an advance prepayment of up to CZK 1 million (€40.000).**[264] Czech commercial banks and building societies offer complementary loans to cover the difference between the total eligible expenditure and the advance grant provided by the government.[265] **These loans have low-interest rates (between 3% and 4%)[266] with a long-term repayment period of up to 20 years.**[267]

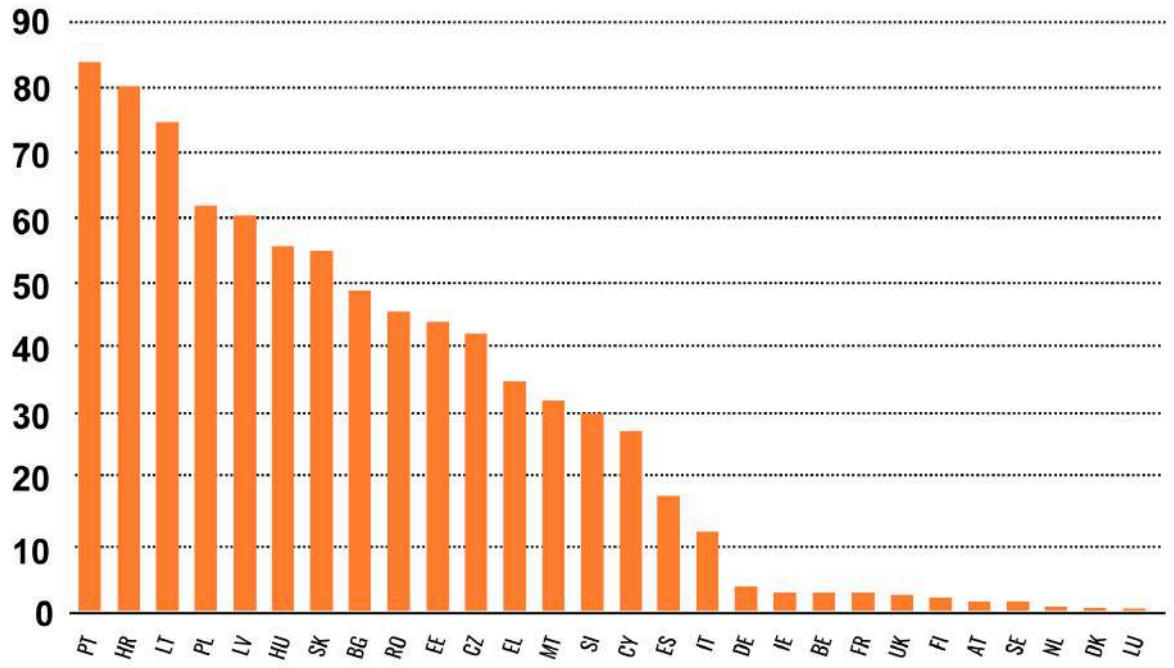
[261] Dreamville. (2024). The "Renovate the Grandma's House" programme. Available at https://www.dreamville.cz/en/the-renovate-the-grandmas-house-programme/
[262] GreenOmeter. (2024). Second Party Opinion Trigema - Green Bond Framework Reenometer. Available at https://cbaonline.cz/upload/3181-metodika-top15-2024-02-05-en.pdf
[263] Ibid
[264] Czechia's Renovation Program. (2024). Funding Fixer-Upper Homes: Policy Guide. Available at https://www.expats.cz/czech-news/article/czechia-s-new-subsidy-program-lets-homeowners-secure-funds-for-fixer-uppers
[265] Grant Thornton. (2024). Repairing a house inherited from your grandmother with a favourable loan from the new year. Available at https://www.grantthornton.cz/en/news/repairing-a-house-inherited-from-your-grandmother-with-a-favourable-loan-from-the-new-year/
[266] Dreamville. (2024). The "Renovate the Grandma's House" programme. Available at https://www.dreamville.cz/en/the-renovate-the-grandmas-house-programme/
[267] Grant Thornton. (2024). Repairing a house inherited from your grandmother with a favourable loan from the new year. Available at https://www.grantthornton.cz/en/news/repairing-a-house-inherited-from-your-grandmother-with-a-favourable-loan-from-the-new-year/

Cohesion Policy (ERDF, Cohesion Fund and Just Transition mechanism) + + + +

Cohesion Policy[268] is nearly one third of the EU budget and, within this pot, **the European Regional Development Fund (ERDF - €226 billion) and the Cohesion Fund (CF - €37 billion) provide a unique opportunity to accelerate investments in the deployment of clean solutions.** The ERDF is designed to strengthen economic, social and territorial cohesion in the EU by correcting imbalances between regions, enabling investments in a smarter, greener, more connected and more social Europe.[269] The CF targets environment and transport investments in Member States with a gross national income per capita below 90% EU-27 average.[270] **The Just Transition Mechanism is a new fund (€21.2 billion in grants and €10 billion in EIB loans) introduced in the 2021-2027 period under Cohesion Policy** that aims to mobilise €55 billion in investments in countries and regions expected to be particularly negatively affected by the transition away from fossil fuels.

In many Member States, Cohesion Policy funds represent over one third of the share of total public investment in the country, even going over 50% in some cases (Graph 16). A total of 30% of funds under the ERDF and 37% of Cohesion Funds must support climate investments.[271] Together with the Just Transition Fund, they are expected to contribute **at least €85 billion to energy transition investments in the 2021-2027 programming period.**[272]

Graph 16: Share of Cohesion Policy funds, % of public investment



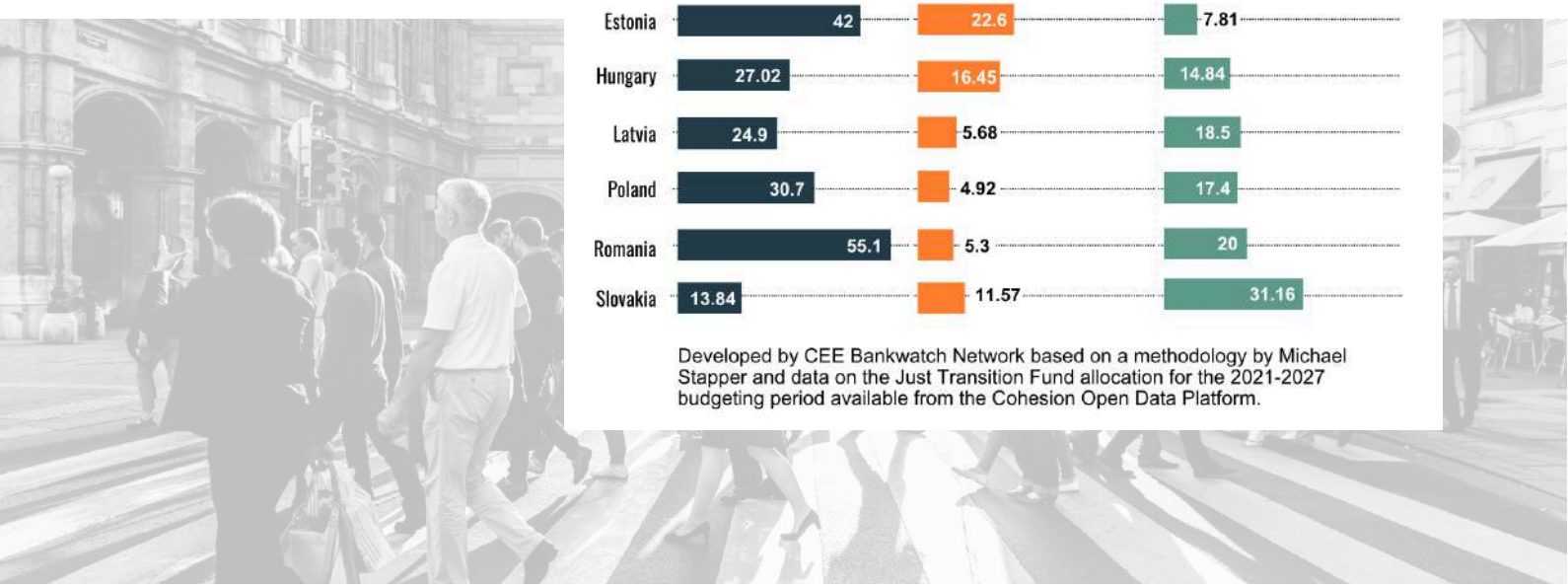
Source: CAN Europe

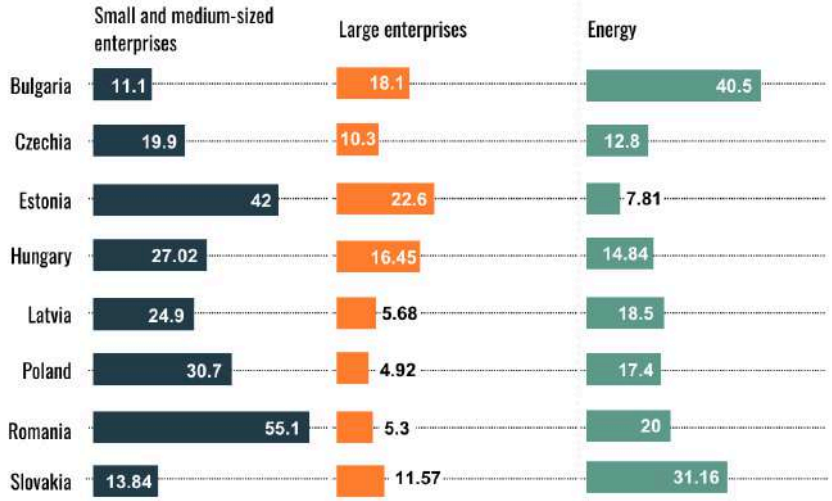
[268] Cohesion Policy has a total budget of €392 billion and is made up of: the European Regional Development Fund (ERDF), Cohesion Fund (CF), European Social Fund Plus (ESF+) and Just Transition Fund (JTF). European Commission. (n.d.). Cohesion Policy. Available at https://ec.europa.eu/regional_policy/policy/what/investment-policy_en
[269] European Commission. (2024). Regional Policy Performance Overview. Available at https://ec.europa.eu/regional_policy/funding/erdf_en
[270] Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. European Commission. (2021). Cohesion Policy. Available at https://ec.europa.eu/regional_policy/funding/cohesion-fund_en
[271] European Commission. (2020). Commission Staff Working Document - Stepping up Europe's 2030 climate ambition. Available at https://eur-lex.europa.eu/resource.html?uri=cellar:749e04bb-f8c5-11ea-991b-01aa75ed71a1.0001.02/DOC_2&format=PDF
[272] This includes the planned support to renewable energy and clean technologies and intervention fields that indirectly support renewables and clean-tech. EUR 60.5 billion is available for indirect support to renewables and clean-tech. European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

No reports have been found that analyse the extent of financial instruments used in Just Transition, as Member States' Just Transition Plans were only approved in the second half of 2022. The first pillar of the Mechanism is the Just Transition Fund that draws €19 billion from the EU budget[273] and operates under shared management within the Cohesion Policy framework. The second pillar - the Just Transition Scheme under InvestEU - levers a €26 billion budget guarantee and is expected to mobilise €10 to €15 billion of investments in just transition projects through financial products managed by implementing partners (mainly the EIB).[274] The third pillar is a Public Sector Loan Facility made up of €1.5 billion of grants from the EU budget, and €10 billion in loans from the EIB Group, which must be used together. The second and third pillars are under direct management of the Commission.[275]

For future research, it would be useful to better understand the level of activation from Member State demand of the InvestEU scheme, as well as the relative use of financial instruments versus grants under the Just Transition Fund, especially when targeting productive investments in SMEs and larger enterprises. The business sector is expected to receive an important allocation of the Just Transition Fund under the policy category of economic policies for diversification (see Graph 17).

Graph 17: Where will the money go? Percentage of total country budgets from Just Transition Fund for particular types of investments[276]



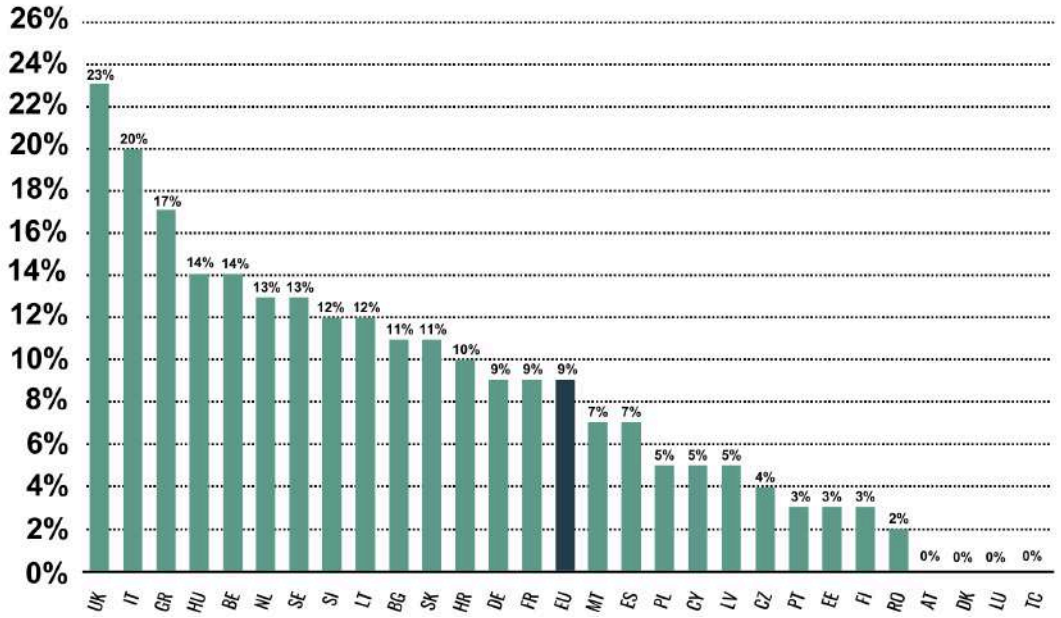


Developed by CEE Bankwatch Network based on a methodology by Michael Stapper and data on the Just Transition Fund allocation for the 2021-2027 budgeting period available from the Cohesion Open Data Platform.

More can be done with the ERDF and CF to build smart financing schemes that lever private investments. A report from the European Parliamentary Research Services (2019) states that "financial instruments may be a beneficial way to optimise the use of the cohesion budget."[277] **But the Commission's 2022 evaluation shows that only 9% (€25 billion) of the 2014-2020 budget from ERDF and CF was committed using financial instruments.[278] From this 9%, just €2 billion (8% of the €25 billion) was committed to supporting the low carbon economy, over half through loans (€1 billion).**[279] The use of financial instruments for environment and resource efficiency objectives has also not really taken off with commitments of just €490 million. In fact, the vast majority of financial instruments (€15.5 billion of ERDF) were used for the general objective of supporting SMEs.

[273] The budget source is split between MFF (€8.4 billion) and NGEU (€10.9 billion).
[274] Bankwatch. (2023). Second and Third Pillars of the Just Transition Mechanism. Available at https://bankwatch.org/wp-content/uploads/2023/03/2023_03_The-second-and-third-pillars-of-the-Just-Transition-Mechanism_final.pdf
[275] Ibid.
[276] Dobre,D. & Stępień,M. (2024). Following the Money from the Just Transition Fund. Available at https://www.just-transition.info/following-the-money-from-the-just-transition-fund/
[277] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[278] European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf
[279] The amounts do not include FIs where the managing authorities undertake implementation directly. Ibid.

Graph 18: ERDF and CF allocated to FIs as percent of the ERDF and CF allocated to the Member States[280]

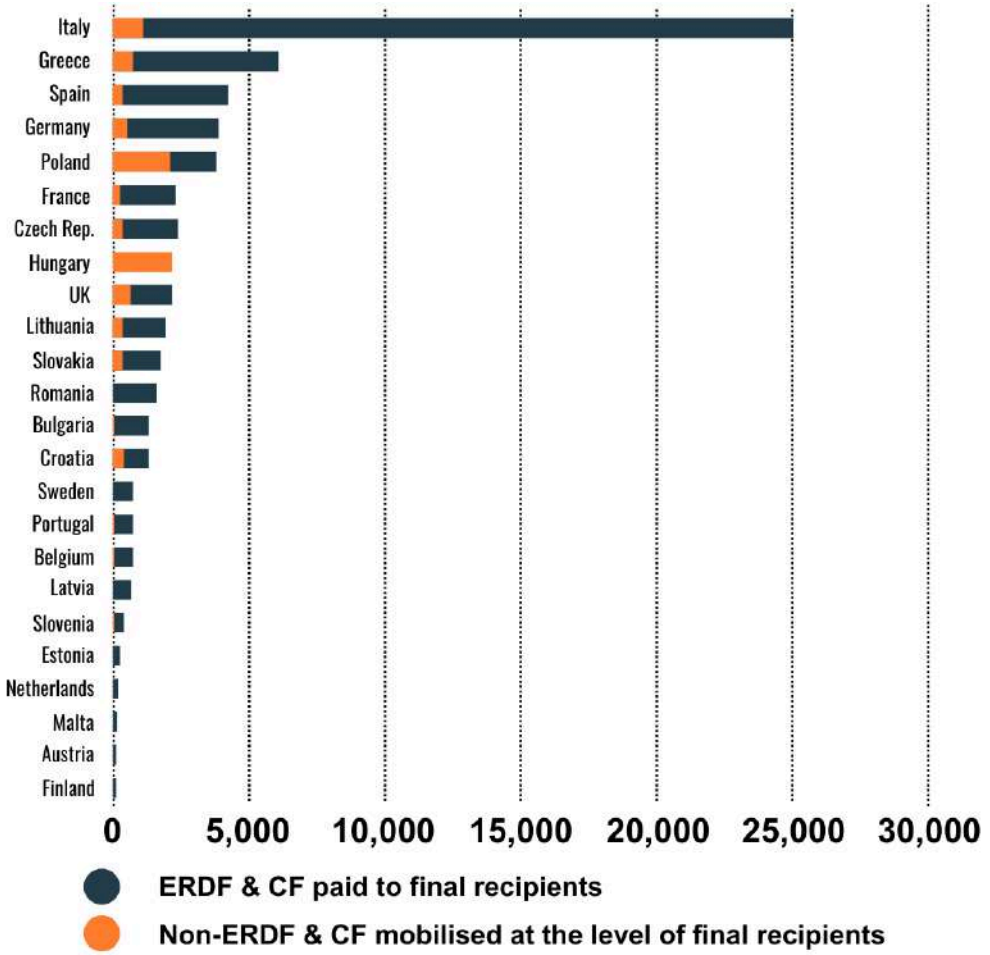


Source: European Commission (2022).

Total programme amounts committed to financial instruments, including national co-financing, reached over €31 billion. **The largest amount of programme resources were committed through loans (€13.4 billion), followed by guarantees (€8.3 billion) and then equity investments (€4.5 billion).**[281] The largest recipient group were SMEs (665,000), nearly three quarters of which (490,000) received support through guarantees. 485 large enterprises were supported with financial instruments. A total of 100,000 individuals were supported mainly with loans. By the end of 2022, €15.8 billion of ERDF and CF funds were paid to final recipients via financial instruments, or set aside for guaranteed loans which are **estimated to have mobilised €60.7 billion of additional financing** (loans, loans backed by guarantees supported from programme resources, and equity support or similar). In other words, **each euro from ERDF and CF used in a financial instrument mobilised on average 3.8 times the underlying resources** (through the current mix of loans, guarantees and equity).[282] The largest mobilisation was achieved in Italy, Greece and Spain (Graph 19).

[280] European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf
[281] Ibid
[282] The data to calculate achieved leverage has been provided for: 613 loan FIs, with a median achieved leverage of 1.3 (571 and 1.3 in 2021); • 89 guarantee FIs, with a median achieved leverage of 5.2 (87 and 5.3 in 2021); • 241 equity FIs, with a median achieved leverage of 2.0 (223 and 1.9 in 2021). European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf

Graph 19: Amount of reimbursable financing provided to final recipients as of end of 2022 (€ million)[283]



Source: European Commission (2022).

A Commission study[284] on Cohesion Policy Funds in the 2014-20 period uncovered a slow absorption rate, with only 52.5% of the total financial resources paid to Member States by 2020. By the end of 2023, there was a quick catch up with 94.4% of the 2014-20 funds having been absorbed. As for the current budget for the programming period 2021-2027, by the end of 2023, only 33% of the ERDF and the Cohesion Fund budgets had been committed for spending and only around 3% had been effectively spent.[285] The reasons for this historically slow absorption include: lack of administrative capacity and training of national and local authorities, inefficient institutional structures, limited quality and lack of consistent political support, political instability, patronage, and clientelism.[286] **In terms of retail climate investments in households and SMEs, a big challenge lies in the fact that millions of small transactions need to be made to reach a critical mass of them.**

Solutions proposed to accelerate the absorption of Cohesion funds include increasing administrative capacity, enhancing the effectiveness and efficiency of selection procedures and delivery modes, and bolstering coordination between stakeholders and providing support to build capacity of beneficiaries.[287] These recommendations are certainly important to ensure the good governance of EU funds. Increased administrative capacity can accelerate grant procedures for those beneficiaries that require them. But if filling

[283] Source: European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf
[284] European Parliament Think Tank. (2023). Regional Policy and Performance: IPOL Study. Available at https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747284/IPOL_STU(2023)747284_EN.pdf
[285] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
European Commission. (2023). EU Budget Performance: Regional Policy Overview. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/regional-policy-performance_en#budget-performance--implementation
[286] European Parliament Think Tank. (2023). Regional Policy and Performance: IPOL Study. Available at https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747284/IPOL_STU(2023)747284_EN.pdf
[287] Ibid.

the climate investment gap requires mainly the massive retail-level deployment of mature technologies faster, and these technologies come with revenues (energy production or savings) and need co-investment with private funds, the grant versus financial instrument question has to be re-addressed. As the next chapter will further develop with a comparison of RRF delivery to the SME energy transition, **greater streamlining and standardising through the use of financial instruments, and their purveyors, might help solve these long-standing absorption issues that some EU funds have struggled with**.

Several elements stand out from an assessment of the use of financial instruments in CF and ERDF. Firstly, **it appears that the power of financial instruments to deliver critical climate objectives may not be well appreciated among Member States, which in great part is due to a lack of expertise and capacity in local administrations to design and manage them.**[288] Commission reports and the European Court of Auditors[289] from the 2007-2013 programming period, and from the 2014-2020 period,[290] started airing these concerns. The delayed launch and delivery of the funds via financial instruments to final recipients was largely attributed to the lack of expertise in managing authorities, and this continues.

Second, **recipients that can pay back Cohesion funds can be more actively targeted with financial instruments instead of, or in combination with more limited,[291] grants** (especially if, as research suggests,[292] wealthier individuals and firms are benefitting the most from Cohesion funds, which are mostly distributed via grants). For instance, Cohesion funds provide the most significant EU funding to support SME competitiveness and their transition to a low carbon business model.[293] In the 2014-20 period, the European Regional Development Fund (ERDF) dedicated **over €69 billion to supporting productive investments in enterprises and SMEs.**[294] From this, **just €1.9 billion was dedicated to supporting energy efficiency projects, and €1.9 billion to supporting environmentally friendly production processes**. In all European Structural and Investment Funds (ESIF), **financial instruments for SMEs represented 23.7% of the resources available for overall SME support.**[295] This means that 77% of ESI funding for SMEs was offered as grants. In some Member States, no financial instruments were even used to support SMEs (Cyprus, Denmark, Ireland, and Luxembourg).

A concentration of grant-based funding for SMEs accessed via public tenders and a set of qualification criteria promoted and assessed by managing authorities can lead to administrative bottlenecks and overly cautious, and therefore administratively heavy, approaches. **Complex and lengthy bidding and application procedures explain why many of the SMEs that need EU funding struggle to get it.**[296]

---

[288] A 2015 European Policies Research Centre (EPRC) study showed that the instruments can be burdensome and difficult for regional authorities to manage, and are perceived as less useful in small projects and in certain areas. Another issue mentioned was that the fees and costs can be high, while local and regional authorities sometimes struggle with co-financing their part of a financial instrument. Moreover, financial instruments constitute very complex funding tools with significant risks if they lack adequate planning and delivery mechanisms.
Fi-Compass. (2014). Financial instruments in 2014-2020: Learning from 2007-2013. Available at https://fi-compass.eu/sites/default/files/publications/Financial%20instruments%20in%202014_20_learning_from_2007-13%20_wishlade_and%20michie_0.pdf

[289] European Court of Auditors (2012), Financial Instruments for SMEs co-financed by the European Regional Development Fund" special report 2/2012; European Commission (2012), Financial Instruments in Cohesion Policy, SWD(2012) 36 final, 27.2.2012

[290] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf

[291] Fi-Compass. (2021). Combination of financial instruments and grants. Available at https://www.fi-compass.eu/sites/default/files/publications/Combination%20of%20financial%20instruments%20and%20grants_1.pdf

[292] Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution

[293] European Commission. (2021). Cohesion Policy support for small and medium-sized enterprises. Available at https://cohesiondata.ec.europa.eu/stories/s/n4ee-2h83

[294] Ibid.

[295] Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union

[296] Evidence for Cohesion Policy - Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution

Finally, **the EIB - as a channel - continues to be underutilised** despite providing the highest amount of leverage and strong institutional knowledge as the European Climate Bank in emerging clean sectors. **This is also true for local implementing partners** (national promotional banks, national financial institutions, private funds, etc.) **that have an untapped potential and local capillarity** by which they can more easily reach millions of households and SMEs.

Acknowledging the efficiency benefits of an increased uptake of financial instruments, but given the administrative complexity that locally tailor-made instruments have historically entailed for managing authorities, in 2014 the Commission developed off-the-shelf financial instruments (among them a renovation loan, a capped portfolio guarantee, a risk sharing loan, etc.).[297] **These instruments provide standard terms and conditions compatible *ex-ante* with the rules of Cohesion Policy and state aid, which aim to simplify the setting-up procedure for disbursing Cohesion Policy funds via financial instruments**.[298] Some of these instruments were developed at the EU-level, centralised under and managed by the EIB Group. Cohesion Policy itself was also reformed in 2014 to **allow Member States to transfer part of their structural fund allocations to the EIB Group as the financial manager of all EU-level financial instruments on behalf of the Commission**.[299] Following the rules of procedure established, the EIB would select financial intermediaries, including national promotional banks, based on the strength of their internal procedures for the deployment of these fund allocations within designated territories.[300]

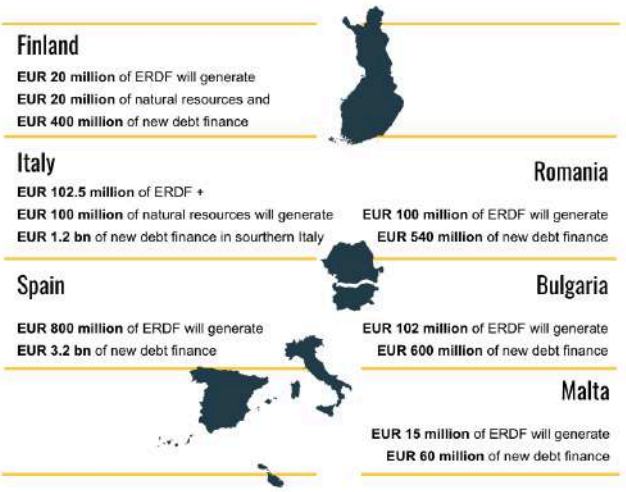
The delegation to the EIB-managed financial instruments, as a service to Member States, had two main advantages: **No national co-financing was needed, and the local managing authorities did not have to spend scarce resources in setting up and managing financial instruments.**[301] But in the 2014-2020 period, **just €3.6 billion of ERDF and CF were committed to instruments managed by the EIB Group** with €1.4 billion managed directly, and €2.2 billion via EIF, in 14 Member States. In Romania, Cyprus and Malta, all instruments were managed by the EIB or EIF. **Six Member States contributed €1.5 billion to the EIB SME Initiative.**[302] The SME Initiative was created in the 2014 reforms as a tool for Member States to transfer a part of their Cohesion Policy funds to an EU-level instrument managed by the EIF that would enhance local SMEs' access to finance by lowering transaction costs. It provided partial risk cover for SME loan portfolios of originating financial institutions and offered two main products: an uncapped portfolio guarantee instrument and a securitisation instrument.[303] Cohesion policy contributions were pooled with resources coming from centrally-managed financial instruments (COSME, InnovFIN) and with EIF own resources, to obtain a higher financial leverage.[304]

[297] European Commission. (2014). Commission Implementing Regulation (EU) No 964/2014 laying down rules for the application of Regulation (EU) No 1303/2013 as regards standard terms and conditions for financial instruments. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02014R0964-20190216
[298] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[299] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[300] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[301] Ibid. / Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[302] European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf
[303] European Investment Fund. (n.d.). SME Initiative. Available at https://www.eif.org/what_we_do/guarantees/sme_initiative/index.htm
[304] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf

Yet, like other EIB-managed off-the-shelf instruments, **the SME Initiative was underused and was only operational in Bulgaria, Finland, Italy, Malta, Romania and Spain.**[305] The initiative managed to mobilise just €1.5 billion of Cohesion Policy resources in total (instead of its minimum target of €3 billion) and over €6 billion in debt finance (a 4x leverage).[306]

A report by Jacques Delors Institute (2020) provides reasons for the low uptake of the SME Initiative and other EU-level off-the-shelf instruments.[307] First, the **misalignment with the calendars of Cohesion policy**, as changing the Member States' Operational Programs proved to be difficult when the SME Initiative and other EU instruments were introduced in 2013. Secondly, the **time pressure to make the payments of the Cohesion allocation discouraged national managing authorities** from finding new ways to lever the funds, especially the less developed countries who have the largest allocations of Cohesion funds. And finally, **Member States with lower allocations and with acute investment needs were more incentivised to use centralised EU financial instruments.**

The SME initiative was implemented under the European Regional Development Fund (ERDF) in Bulgaria, Finland, Italy, Malta, Romania, and Spain.



Source: Fi-Compass (2018)

EU Countries where a strong collaboration existed with the EIB, and with well-established national promotional banks, were more likely to sign up to the SME Initiative and to allocate funds to instruments managed by the EIB, like Bulgaria, Romania and Malta. They were possibly already aware of the benefits that this delegation to the EIB could bring to lever their national resources more efficiently. Regulatory obstacles that required the application of different sets of rules were certainly a disincentive in some systems. Further, the **need to coordinate the application to the SME Initiative between central and regional governments also made it more complicated.** Finally, using the SME Initiative implied **a marginal loss of control for Member States**, and an outsourcing or delegation of decisions to the EIF in order to gain volume and efficiency. This can lead to a loss of political visibility at the local level, if not adequately considered and compensated for in communications.

Overall, the assessment of the previous Cohesion Policy period appears to show that Member States still preferred tailor-made instruments to address specific local market needs and serve end-beneficiaries[308] - although these have not been commonly used. Member States' feedback suggests that off-the-shelf instruments are not versatile enough to be used in a wide range of situations.[309] **The complexity of running financial instruments for managing authorities has led to a preference for grant-based approaches.** It has also resulted in backlogs due to the low financial and administrative capacity locally to deal with significant flows of finance. A legitimate question arises around the rapid deployment of homogeneous and mature "transition assets" by SMEs and households (like rooftop solar, EV chargers and heat pumps): **Which financing or funding route is easier and preferred by the end-beneficiary?**

[305] European Investment Fund. (n.d.). SME Initiative. Available at https://www.eif.org/what_we_do/guarantees/sme_initiative/index.htm
[306] Fi-compass. (2018). SME Initiative under the EAFRD. Available at https://www.fi-compass.eu/sites/default/files/publications/SME_Initiative_under_the_EAFRD.pdf
[307] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[308] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[309] Ibid.

InvestEU Fund + + + +

In the current MFF programming period (2021-27), InvestEU was created to bring together and simplify the different EU-level financial instruments.[310] **The InvestEU Fund succeeded the European Fund for Strategic Investments (EFSI)[311] and integrated 13 other - formerly independently managed - EU financial instruments to support investments across the EU that foster sustainable growth and job creation.** InvestEU is backed by a €26.2 billion budget guarantee and is expected to mobilise €372 billion in investments[312] (an 11.4x leverage)[313] through its implementing financial partners (17 in total, so far). The EIB Group is the main implementing partner as it manages at least 75% of the budget. Up to 25% of the EU budget guarantee under the InvestEU Fund is implemented by other implementing partners - international financial institutions as well as national promotional and development banks - to channel finance to investments in eligible sectors. The InvestEU Advisory Hub is also one of the key technical assistance and project development support mechanisms available at EU level, especially in emerging and new sectors in cleantech.[314]

InvestEU is designed to fill investment gaps in strategic areas where finance for investments might otherwise be insufficient, thereby helping the EU achieve its long-term policy goals. At least 30% of the InvestEU budget has to support finance for investments in line with the EU climate objectives.[315] The program and budget is structured around four policy pillars,[316] each targeting specific sectors and types of investment:

1. Sustainable Infrastructure (€9.9 billion): Supporting investments in energy efficiency, renewable energy, digital infrastructure, and other green initiatives that contribute to the EU's climate goals and the transition to a green economy. At least 60% must be spent on climate action.
2. SME and Mid-Cap Support (€6.9 billion): Facilitating access to finance for SMEs and small mid-caps to promote their competitiveness and growth (a substitute of the previous SME Initiative), including clean investments aligned with the EU Green Deal.[317]
3. Research, Innovation, and Digitalization (€6.6. billion): Boosting investments in innovation, research, and development, as well as digital projects.
4. Social Investment and Skills (€2.8 billion): Supporting investments in education, healthcare, affordable housing, and social inclusion.

[310] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[311] The EFSI was the financing component of the Investment Plan for Europe (or 'Juncker Plan') launched in 2014.
[312] The €10.5 billion budget earmarked for the InvestEU Fund allows the EU budget to provide a guarantee of €26.2 billion. In addition, each financial partner will be expected to contribute some resources to ensure that their interests are aligned, adding an estimated total of €6.55 billion, so the total guarantee will be around €32.75 billion. This in turn will be leveraged by each financial partner. This means they can lend more than the guarantee amount. Finally, each InvestEU-backed project will attract other private and public investors, as we have seen under the European Investment Plan. We expect this will trigger at least €372 billion in total investment. European Commission. (n.d.). Frequently Asked Questions about the InvestEU Fund. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/frequently-asked-questions-about-investeu-fund_en
[313] Due to InvestEU targeting higher risk innovation projects and SMEs, as well as the greater focus on EU policy objectives, we expect a slightly more conservative multiplier effect than under EFSI: 11.4 rather than 15. That is to say that for every public euro that is mobilised through the Fund, €11.4 of total investment – that would not have happened otherwise – is generated. European Commission. (n.d.). Frequently Asked Questions about the InvestEU Fund. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/frequently-asked-questions-about-investeu-fund_en
[314] European Commission. (n.d.). InvestEU Advisory Hub. Available at https://investeu.europa.eu/investeu-programme/investeu-advisory-hub_en
[315] European Investment Bank. (n.d.). InvestEU Fund Overview. Available at https://www.eib.org/en/products/mandates-partnerships/investeu/index#:~:text=At%20least%2030%25%20of%20the,will%20go%20up%20to%2060%25
[316] European Investment Bank. (n.d.). How does the Fund work?. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/about-investeu-fund/how-does-fund-work_en
[317] Fi-compass. (n.d.). InvestEU Programme: Outlook for the upcoming period. Available at https://www.fi-compass.eu/sites/default/files/publications/InvestEU%20Programme%20-%20Outlook%20for%20the%20upcoming%20period.pdf

InvestEU provides a blueprint of how Member States can use EU financial instruments to accelerate the deployment of funds towards clean solutions while also maximising the contributions from private finance. **InvestEU allows Member States to establish a compartment, with contributions from their national resources, aimed at increasing their investment capacity through the InvestEU budget guarantee.**[318] The investment objective of a Member State (MS) compartment must be aligned with at least one of the 4 policy windows that InvestEU supports, which can all be used to support climate and energy investments. **The MS compartment can also be used to activate technical assistance initiatives from the InvestEU Advisory Hub technical to develop bankable projects.**[319]

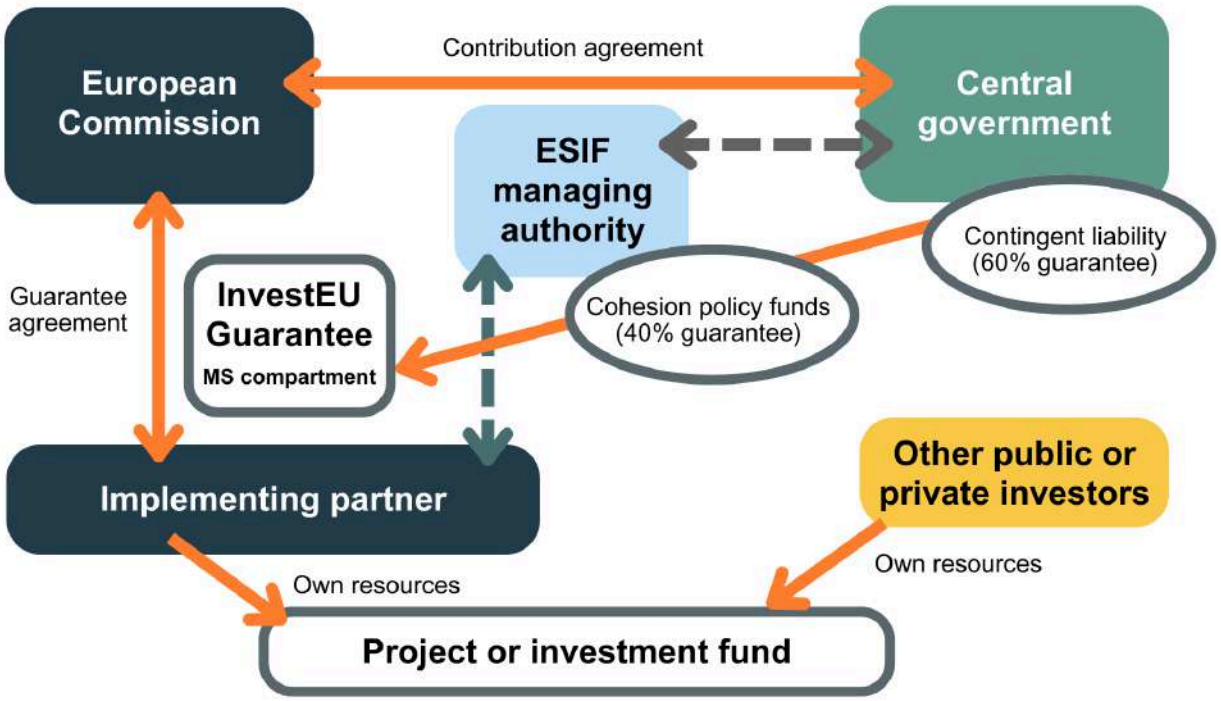
The MS compartment enables countries to increase their investment capacity by contributing with their national resources (including EU-sourced funds). The InvestEU budget guarantee for the MS compartment is collateralised by the Member State's contribution. This means the project risk is not mutualised but covered with a specific allocation of national resources. Member States contributions from EU-sourced funds are exempted from national co-financing. One of the advantages of the MS compartment is that it will have almost no impact on national public finances - **while the country will assume a contingent liability, it will be small and in principle excluded from the national debt calculus**.[320]

A total of €970.2 million of EU common provisioning funding is allocated to the MS compartment for 2021-2027,[321] but understates the importance as it does not include: a) contributions from additional Member States agreed after the date of the 2023 performance review, b) tranches of provisioning to be paid after 2027 and, c) back-to-back guarantees coming on top of cash contributions to cover contingent liabilities.

Member States can contribute to the compartment from their shared management funds (Cohesion funds - up to 5%[322] -, Social Climate Fund[323] - up to 4% -, European Agricultural Fund for Rural Development - up to 5%[324]-, European Maritime and Fisheries Fund), RRF funds (4%, and an addition 6% for STEP priorities)[325] and ETS revenues. These national resources are then turned into loans, guarantees or equity products to finance projects in their own territories,[326] with no need of additional national co-financing. When the contribution comes from EU structural funds, and if specifically stated in the Member State contribution agreement of InvestEU and in the partnership agreements with financial intermediaries, regional ring-fencing of investments is possible.[327] **The compartment's distribution for project funding relies on investment pipeline and management support from the EIB, their national promotional banks and private banks and investors.**

[318] European Commission. (n.d.). InvestEU Fund - The Member State compartment. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/member-state-compartment_en
[319] European Commission. (2021). Member State Compartments: Questions and Answers. Available at European Commission. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf
[320] Contingent liabilities are liabilities they may occur in the future. As long as they remain contingent, they must be disclosed but are not included in the calculation of debt. If they cease to be contingent, they shall be counted as debt. Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[321] European Commission. (n.d.). InvestEU Fund - Performance. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/investeu-performance_en
[322] The sum of MS contribution to InvestEU from the funds under shared management and transfer(s) to any other instrument under direct or indirect management as referred to Art. 21 in the Common Provision Regulation shall not exceed 5% of the initial national allocation of each fund.
European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf
[323] European Commission. (2023). Regulation (EU) 2023/955 establishing a Social Climate Fund and amending. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2023.130.01.0001.01.ENG
[324] The amount to be contributed to InvestEU shall not exceed 5% of the total EAFRD allocation to the CAP Strategic Plan. European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf
[325] Art. 7.2. European Commission. (2021). Regulation (Eu) 2021/241 establishing the Recovery and Resilience Facility. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241
[326] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[327] European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf (p.11)

Chart 1: Member State compartment of InvestEU Fund[328]



Source: Jacques Delors Institute (2020)

The MS compartment of InvestEU functions "as a service" for countries and offers a "model instrument" to design smart financing strategies to scale-up clean asset deployment at the local level. For instance, Member States can request the activation of the SME window, through a combination of the EU and MS compartments[329], to create a national financing scheme that supports clean investments in SMEs. As the next chapter will showcase, this practice has been on the rise to improve and increase the speed of delivery of RRF funds to SMEs. The policy targets of each MS compartment are set out in a programming document that must be signed off by the Commission.

Agora (2024) finds that a reallocation to InvestEU of three percent of the Cohesion Fund and ERDF could provide €7.7 billion and contribute to an additional budget guarantee of €21.5 billion, and lever an estimated €245 billion in additional investments. Larger shifts of national allocations to InvestEU, however, would require an amendment to the relevant rules governing the EU budget.[330]

Notwithstanding the relative alacrity with which InvestEU has deployed its funds, with 87% of its budget committed in 2024,[331] **the InvestEU's Member State compartments remain relatively underutilised**. In 2022, only Greece and Romania contributed a total of 35.9 million to the compartment.[332] In 2023, 10 operations for €203 million were approved from Bulgaria, Greece, Romania and Finland. This underutilisation, although increasing since the creation of InvestEu in 2021, is explained in part with similar reasons for the limited success of the SME Initiative: scepticism by Member States over the loss of control, a lack of experience with the use of EU financial instruments and with the EIB and national public promotional institutions (which may not have very strong retail reach to SMEs and households, or not even exist in some countries).[333] However, contrary to this scepticism that may exist, and in contrast to previous EU financial instruments like the SME Initiative, **the Member State compartment provides more leeway and control for Member States to decide how national resources are used and allocated.**[334]

[328] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[329] Fi-compass. (n.d.). InvestEU Programme: Outlook for the upcoming period. Available at https://www.fi-compass.eu/sites/default/files/publications/InvestEU%20Programme%20-%20Outlook%20for%20the%20upcoming%20period.pdf
[330] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[331] European Commission. (n.d.). InvestEU Fund - Performance. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/investeu-performance_en
[332] European Commission. (2023).Annual Management and Performance Report for the EU Budget - Financial Year 2022. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0401
[333] Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf
[334] Jacques Delors Institute. (2020). InvestEU Fund: A Proposal for the Future of Europe. Available at https://institutdelors.eu/wp-content/uploads/2020/08/PP247_InvestEUFund_Rubio-EN-1-1.pdf (p.15)

Interested Member States that want to implement a Member State compartment first **sign a contribution agreement with the European Commission, where the country in question can establish the size, the operations to be supported and the implementing partners** (which can be the EIB or EIF, a national promotional bank or other financial institutions).[335] The Commission also recognises the possibility for two or more Member States to agree on a single contribution agreement under the compartment. By doing so, each of the participating countries will receive pro rata shares of the MS compartment, thus helping to diversify the risk and attract more resources from implementing partners and other investors.[336]

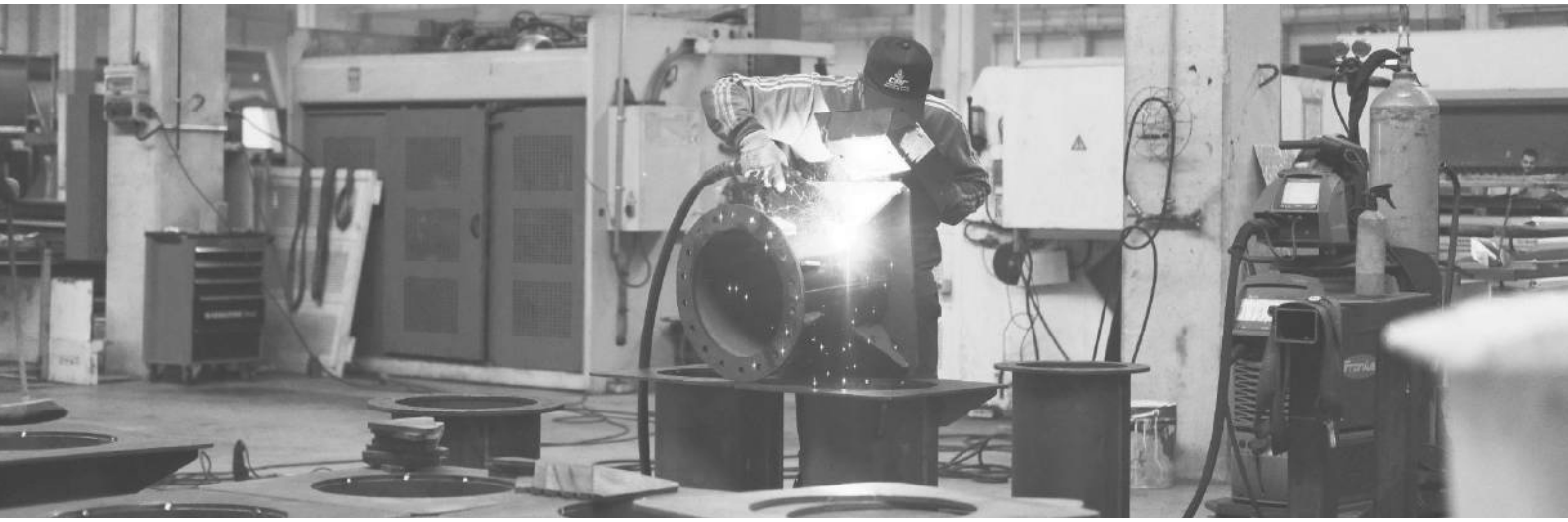
When the contribution agreement is complete and approved, the Commission will sign the guarantee agreements with the selected implementing partners, who can then deploy the investments with their own resources, partially backed by the guarantee.[337] Additionally, the designated implementing partners are expected to crowd-in other public or private investors into the operations falling under the Member State compartment.

One of the key advantages for Member States, compared with prior centrally managed EU financial instruments, is that InvestEU and its Member State compartments provide higher financial leverage, as national resources contribute to a budget guarantee instead of being invested directly in the project.[338] **Through a Member State compartment of InvestEU, delivered "as a service", there is more control and greater visibility for Member States, as the project can be managed by the accredited national promotion institutions, and overseen by the national authority.** Selection of implementing partners, the relevant elements of the investment operational framework, and monitoring choices are all open to local design input and oversight.[339] This means that Member States can decide to activate, for instance, the SME Window, or the Sustainable Infrastructure window, with contributions from structural funds into a Member State compartment, to target the deployment of specific clean assets that may be a priority in the national climate transition pathway. **This addresses the lack of versatility that managing authorities found in off-the-shelf instruments from the previous programming period.**

Another of the main advantages of the MS Compartment is the implementation simplicity it offers to Member State managing authorities, as it **only requires a simplified application of EU state aid rules if the target operations use the InvestEU Fund's financial products** (loans, guarantees, equity products etc.).[340] **Also, Member State managing authorities will be largely spared from the tasks of reporting and monitoring**, which are led by the Commission (DG ECFIN) which remains in charge of interacting with the implementing partner and collecting data, and writing bi-annual reports, etc. [341]

[335] Ibid.
[336] European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf (p.10)
[337] Jacques Delors Institute. (2020). InvestEU Fund: A Proposal for the Future of Europe. Available at https://institutdelors.eu/wp-content/uploads/2020/08/PP247_InvestEUFund_Rubio-EN-1-1.pdf (p.15)
[338] Ibid.
[339] Ibid.
[340] Many of these contributions are exempt from the notification requirement if they comply with the General Block Exemption Regulation (GBER) or other block exemption regulations, which simplify and speed up the process. If the contributions don't meet the exemption requirements, they must be notified to the European Commission for approval under the traditional state aid procedure. European Commission. (2021). Delegated Regulation (EU) 2021/1078 setting out the investment guidelines for the InvestEU Fund. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1078
"Where a Member State decides to transfer resources to InvestEU national compartments for implementing an existing InvestEU financial product developed for the EU compartment by the Commission with Union implementing partners and international implementing partners, such as the European Investment Bank Group and the European Bank for Reconstruction and Development, meaning that the Member State has no discretionary input into the design of the financial product, such a decision does not render the design of the financial product imputable to the State and hence such a decision does not in itself entail State aid." European Commission. (2023). Proposal for a Regulation of the European Parliament and of the Council establishing the Strategic Technologies for Europe Platform ('STEP'). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52023PC0335
[341] Jacques Delors Institute. (2020). InvestEU Fund: A Proposal for the Future of Europe. Available at https://institutdelors.eu/wp-content/uploads/2020/08/PP247_InvestEUFund_Rubio-EN-1-1.pdf (p.17)

As the Commission points out in its Green Deal Industrial Plan, given the heavy frontloading of InvestEU funding, just €11.37 billion of the guarantee is available for the 2024-27 period, while an increased demand is anticipated in the immediate future for cleantech manufacturing projects. The Commission is considering increasing InvestEU funding for the remaining programming period,[342] a need that the EIB underlined in its new Strategic Roadmap,[343] as did Mario Draghi's recent competitiveness report,[344] also echoing several independent experts and think tanks.[345] **In a shift to a more impactful EU budget that integrates conditions for efficient spending, the Member State compartment can be boosted and serve as a "model instrument" to design smart financing strategies for the massive deployment of mature clean assets using EU Financial Instruments as a Service.** A reinforced InvestEU budget and MS compartment should also be taken as an opportunity to address some of the transparency issues that the ECA, experts and NGOs have raised, particularly in the difficulties to track the climate impact of investments via InvestEU.[346]



SMEUnited suggests[347] that the budget guarantee is too small and that the SME Window is unable to cover the demand from national intermediaries. SMEUnited also argues that the administrative burden created by sustainability criteria and reporting is complex and that this orients intermediaries towards sustainable projects of over €2-5 million. They argue this excludes SMEs from green financial instruments, given the average loan guarantee provided by EIF is around €100,000. Asset-specific programmes can clearly ameliorate this problem. **The SME dimension is an important one given the opportunities that exist to mobilise private investments as a service to business decarbonisation, and support European cleantech manufacturing and uptake.**

The 9% of SMEs in energy intensive industries[348] will need smart financing strategies that facilitate access to decarbonisation programs for the uptake of cleantech. The other SMEs that dominate in non-energy intensive sectors also require access to financing programs for electrification and energy efficiency. **EU financial instruments, offered as a service to Member States, are a tool to activate efficient funding distribution channels for SMEs. As the next chapter will develop, this good practice has been on the rise among some Member States that in this way aimed to accelerate the distribution of RRF funds.**

---

[342] European Commission. (2023). Communication on A Green Deal Industrial Plan for the Net-Zero Age. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023DC0062

[343] "Maintenance of current investment level of EIF requires extension of existing mandates or new ones to avoid reduction of activities" (page 8) of European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf.

[344] European Commission (2024). Draghi Report Part A - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf

[345] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal

[346] "The InvestEU Regulation requires the European Commission to show its contribution to the Green Deal. However, as criticised by the European Court of Auditors, the reporting arrangements for InvestEU do not include the actual climate and environmental results of any projects it supports. Furthermore, the amounts of InvestEU financing tracked in accordance with the EU green taxonomy are not disclosed. Beyond these conceptual weaknesses, the European Commission in practice has so far failed to publish data through its climate tracking system as required by law. What's more, many documents are kept confidential and even the published ones rigorously protect clients' commercial confidentiality. As a result, it is difficult to verify InvestEU's climate impact and to scrutinise where the intermediated money ends up — let alone establish whether or not the EU lives up to the climate policy leadership role it lays claim to." Jacques Delors Centre. (2023). European Green Deal funding. Available at https://www.delorscentre.eu/en/publications/european-green-deal-funding

[347] SMEunited. (2024). SMEs ask InvestEU to be better tailored to their needs. Available at https://www.smeunited.eu/news/smes-ask-investeu-to-be-better-tailored-to-their-needs

[348] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

Chapter Conclusions

As the European Commission seeks to increase the impact of the EU budget and leverage private investments for the climate transition and cleantech competitiveness, EU financial instruments present an important but underutilised solution. An analysis of the most relevant EU funds for clean asset deployment uncovers a reluctance by Member States to take advantage of financial instruments. Instead, **certain grant schemes are not spent impactfully and are delivering benefits to high-income households and larger productive firms that don't need them, and who could otherwise be incentivised with financial instruments to invest in climate solutions**. This in turn would create greater public investment capacity for delivering grant schemes that target the decarbonisation of public goods, support low-income households, and boost R&I investments in early stage cleantech.

To ensure an accurate and granular EU budget-wise assessment of the potentials for EU financial instruments, it is important to address significant data gaps in the reporting of several EU funds. Through the Modernisation Fund and the Just Transition Fund, Member States will deliver significant EU funds to productive investments in SMEs and larger businesses, but both suffer from a lack of data and concrete reporting on the use of financial instruments for climate purposes.

The LIFE Programme and Cohesion Policy (ERDF and CF) are significant funding sources for decarbonisation initiatives, but during the 2014-2020 programming period, in both programs the uptake by Member States of financial instruments was low. This is a significant untapped opportunity - in many Member States, Cohesion Policy funds represent over one third of the share of total public investment in the country, rising to over 50% in some cases. Moreover, many of the beneficiaries of these funds are SMEs, which suggests there are opportunities to lever further with financial instruments, especially for financing climate assets.

The low uptake of financial instruments for disbursing EU funds is partly explained by a lack of capacity and expertise in local administrations. Despite the creation in 2014 of off-the-shelf EU financial instruments, which aimed to simplify instrument setup, and some delegate management to the EIB Group, the uptake continues to be low. **At the same time, the biggest funds like Cohesion Policy have suffered from slow absorption rates.** A big challenge lies in the fact that millions of small transactions need to be made to reach a critical mass of SMEs and households, which can be better streamlined and standardised via financial instruments. Complex and lengthy application procedures partly explain why many SMEs that need EU funding struggle to get it.

The underutilisation during the 2014-2020 period of off-the-shelf EU financial instruments was explained by reluctance by local administrations, including a misalignment with the calendars of Cohesion Policy, time pressure discouraging new ways of thinking and delivering, weak established relationships with the EIB, under-developed national promotional banks and retail networks, and coordination barriers between national and regional authorities. **In 2021, InvestEU was created to simplify and bring together different EU-level financial instruments, by including a Member State compartment, "as a service", to address these issues.**

Member States can now activate compartments with EU-sourced funds and take advantage of the 11.4x leverage provided by the InvestEU budget guarantee to design tailored financing schemes for clean asset deployment. National authorities have more control regarding the size, operations, and implementing partners of the compartment, while also gaining several efficiency benefits like simplified state aid procedures and reporting obligations managed by the Commission. The Member State compartment is, however, still underutilised, although the InvestEU budget is almost depleted. **In a shift to a more impactful EU budget that integrates conditions for efficient spending, the Member State compartment can be boosted and serve as a "model instrument" to design smart financing strategies for the massive deployment of mature clean assets via EU Financial Instruments as a Service.**

Chapter 5

Efficiency lessons from Recovery Funds in facilitating finance for the SME climate transition

Chapter 5: Efficiency lessons from Recovery Funds in facilitating finance for the SME climate transition

This chapter further develops the **efficiency gains of EU fund distribution via EU Financial Instruments as a Service for Member States, and addresses future avenues for improving uptake by managing authorities and facilitating local implementation.** Building on the theme of "streamlining and simplifying" EU funding programs proposed by Commission President von der Leyen[349] and others[350], and observing some of the recent experiences in Member States related to the deployment of RRF for SMEs, the question this chapter seeks to answer is: **Can the MFF better support small retail transition investments?** What lessons can be learned from financing schemes created for SME decarbonisation and competitiveness?

A concentration of grant-based funding for SMEs accessed via public tenders, many times with complex and lengthy application procedures, can lead to administrative bottlenecks and significant access barriers. **Experiences in a limited number of countries (Spain, Greece, Romania, Bulgaria) that used EU financial instruments (including the MS compartment) and retail bank channels to accelerate the absorption of RRF show the potential for greater speed and efficiency.** Tailored financing schemes as a standardised service for local SMEs (or households), and targeted at specific clean asset deployment, can be further encouraged in a shift to a more performance-based, outcome-led and policy-aligned EU budget. **Member States may need to carry out institutional reforms to set the right environment and conditions for energising competing retail channels that efficiently deliver EU funds to the end-beneficiary**, which could be guided by the Technical Support Instrument from the Directorate General for Reform.

Tailored financial instruments can improve SME uptake of clean assets

A big challenge that lies ahead in the decarbonisation of the European business fabric is the fact that millions of small transactions need to be made to reach a critical mass of SMEs. A total of 23 million SMEs employ around 100 million people in the EU, they account for more than half of EU GDP and their collective share of greenhouse gas emissions is 63% of all EU companies.[351] Supporting SMEs in a fair and just transition is a way to build the resilience of EU supply chains and help working people. Better access to sustainable finance for SMEs is addressed in the SME Relief Package, where the Commission sets to encourage financial institutions to include green SME financing in their products by working towards a standard definition of green loans for SMEs.[352] Yet more is needed to promote EU funding strategies to lower the costs of private green finance for SMEs, and thereby accelerate their energy and climate transition.

SMEs are prevalent in all the sectors where significant climate investment gaps exist and therefore are relevant targets for transition finance. The renovation of SME-owned buildings, the accelerated uptake of EVs in SME's commercial fleets, industrial heat pumps and the installation of EV charging points at SME facilities are some examples. Further, many young cleantech businesses are SMEs, they form the supply chains to EU industry (themselves also often SMEs) and are the hosts for decarbonisation, electrification and efficiency projects. **Contrary to recent arguments that overstate the burden of sustainability regulation and obligations on SMEs, and that propose deregulation as a solution,[353] the Eurobarometer (2022) finds that SMEs are increasingly interested in joining global decarbonisation efforts**: 89% of SMEs are taking at least one action to become more resource-efficient, 24% already have a concrete plan in place to reduce their carbon-footprint and 32% have green products in their product

[349] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[350] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf ; Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[351] European Commission. (2022). Eurobarometer: EU SMEs working towards sustainability. Available at https://single-market-economy.ec.europa.eu/news/eurobarometer-eu-smes-working-towards-sustainability-2022-03-28_en#:~:text=The%20EU%20counts%2023%20million,CO2%20emissions%20by%20companies.
[352] European Commission. (2023). Proposal for a Regulation on an Open, Sustainable and Autonomous Europe. Available at https://single-market-economy.ec.europa.eu/document/download/8b64cc33-b9d9-4a73-b470-8fae8a59dba5_en?filename=COM_2023_535_1_EN_ACT_part1_v12.pdf
[353] European Trade Union Confederation. (2023). Joint Call: Ban on Deregulation for SMEs. Available at https://www.etuc.org/en/document/joint-call-ban-deregulation-smes

range.[354] **These decarbonisation efforts contribute to increasing EU SMEs' competitiveness** through a reduction of energy costs and an increased share of production of green goods and services.

According to 27% of the SMEs undertaking environmental measures, the cost of these actions was a significant difficulty that they faced in their transition.[355] SMEs rarely have all the internal funds they need, and consequently they seek external financing.[356] **One in four SMEs report "severe difficulties" in accessing finance and they enjoy less favourable credit terms than larger companies**.[357] Smaller and younger SMEs also face information asymmetries, lack of credit history and disproportionately higher transaction costs.[358]

If well designed and tailored to SMEs, EU financial instruments standardised as service and targeted to deploy specific clean assets can help address information asymmetry and transaction costs,[359] while streamlining the delivery of EU finance.[360] The use of financial instruments can play a key role in ensuring that SMEs in the priority sectors for decarbonisation have an improved access to private sustainable finance, while contributing also to their competitiveness and growth.[361]

EU guarantees, like the InvestEU facility, provide the credit enhancement needed to enable more SMEs to use private finance and fill the climate investment gaps at lower costs. Grants may be necessary to support project development in SMEs, and yet seem more valuable in the context of support to vulnerable households or for boosting research and innovation in the development of less mature clean technologies. Most priority clean assets and the clean solutions with the greatest asset deployment funding gaps are mature enough for the use of financial instruments, including rooftop PV, heat pumps, building renovations, electric vehicles, and local charging infrastructure.[362]

A concentration of grant-based funding for SMEs accessed via public tenders, a set of qualification criteria promoted and assessed by managing authorities can lead to administrative bottlenecks and overly cautious, and therefore administratively heavy, approaches. Complex and lengthy bidding and application procedures explain why many of the SMEs that need EU funding struggle to get it.[363] Greater streamlining and standardising through the use of financial instruments, and their purveyors, might help solve these long-standing absorption issues that some EU funds have struggled with. As the previous chapter has shown, SMEs are a major target of Cohesion funds, the Modernisation Fund, the LIFE programme, etc., but the use of financial instruments to deliver to them has been small compared with grant schemes. In part, having to reach millions of stakeholders in a limited (7 year) timeframe has proven difficult for local administrations and has created backlogs and absorption delays, while the lack of expertise in managing locally tailor-made financial instruments has discouraged their use.

[354] European Commission. (2022). Eurobarometer: EU SMEs working towards sustainability. Available at https://single-market-economy.ec.europa.eu/news/eurobarometer-eu-smes-working-towards-sustainability-2022-03-28_en#:~:text=The%20EU%20counts%2023%20million,CO2%20emissions%20by%20companies.
[355] European Commission. (2022). Eurobarometer: EU SMEs working towards sustainability. Available at https://single-market-economy.ec.europa.eu/news/eurobarometer-eu-smes-working-towards-sustainability-2022-03-28_en#:~:text=The%20EU%20counts%2023%20million,CO2%20emissions%20by%20companies
[356] Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union
[357] Ibid.
[358] Ibid.
[359] OECD. (2018). The theory and practice of financial instruments for small and medium-sized enterprises. Available at https://www.oecd-ilibrary.org/docserver/a16242ca-en.pdf
[360] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf
[361] Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union
[362] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063, Capgemini Research Institute. (2020). Net Zero 2020: How Companies Can Hit Their Bold Climate Goals. Available at https://www.capgemini.com/wp-content/uploads/2020/10/Net-zero-main-report-2020.pdf
[363] Evidence for Cohesion Policy: Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution

The pressure to deliver EU funds was increased even more with the Covid-19 pandemic and the RRF to alleviate the economic downturn and support a green recovery. When the RRF was launched in 2020, suddenly national authorities had an unprecedented additional amount of money to disburse, and with a tight deadline (by 2026). **While these new Recovery Funds have also faced issues with absorption rates and lack of administrative capacity in some Member States,[364] they saw faster absorption than Cohesion funds.**

The faster absorption of Recovery Funds can be partly explained by the "cannibalisation" of "shovel ready" projects already developed for Cohesion funds, which has lowered the absorption of the latter.[365] The RRF scope also broadened the range of end-beneficiaries, as large companies that tend to be more successful in bidding processes could also apply for significant quantities of Recovery Funds. Cohesion funds mainly target SMEs and households. **Experts have also suggested that a relaxation of reporting criteria from managing authorities for RRF implementation has helped speed up the delivery.** The latest reports from the ECA raise concerns on this relaxed and, at times, inaccurate reporting and the lack of clarity and overestimations of the climate contributions of RRF.[366] **Time pressure and competing funding streams between RRF and Cohesion have also increased the error rate under Cohesion expenditure**.[367] A lack of administrative capacity to handle in time the large amounts of money available for the transition - which are still just half of what is actually needed - raises the question on what other delivery channels could improve the impact of EU funds.

The Commission's mid-term evaluation of the RRF found variable progress of delivery across Member States. **Some SME stakeholders had issues with the slow speed with which Recovery funds reached their ultimate beneficiaries, and highlighted the complexity of RRF-supported programmes designed at national level that made it hard for SMEs to participate.**[368] Yet, some good practices were seen in Member States that used financial instruments to accelerate the delivery of Recovery Funds and, in doing this, they used the national banks' network to better target SME recipients.

Spain was one of the largest beneficiaries of RRF but by the end of 2022, it had only executed 10% of the available grants. Reasons provided were: reduced administrative capacity, administrative complexities including the new processes required to manage RFF funds, anti-corruption oversight, EU state aid rules, and high inflation.[369] As a result of this slow absorption, and acknowledging that Spanish SMEs struggled to access RRF programs,[370] **reforms were introduced in the second allocation of RRF in 2023 to facilitate their access to the funds and support their competitiveness. One of them was the creation of a Green Credit Line of €22 billion managed by ICO** (the Spanish national promotional bank - *Instituto de Crédito Oficial*) that aims to support businesses in the implementation of sustainable projects such as energy efficiency, sustainable transport, renewable energy and storage and industrial decarbonisation.[371] Part of this Green Credit Line consists of funding provided by ICO to retail national banks who then provide sustainable loans to SMEs. **To avoid administrative bottlenecks and accelerate the deployment of funds to SMEs, those operations under €10 million would only require a self-declaration form from the banks for compliance with the auditing requirements.** An initiative under a "Green Book of Sustainable Finance" will provide a "positive list" of sustainable projects that will get faster access to the Green Credit Line with the self-declaration forms.[372]

While the implementation of the ICO Green Credit Line is yet to start, **previous and similar experiences in Spain underscore the benefits of using financial instruments to activate retail banks in the delivery of finance to SMEs**. In 2020, a Covid-19 Credit Line was created to provide immediate support to businesses and enhance their access to finance during the peak of the pandemic. This program consisted of an EIB loan

[364] European Commission. (2024). Commission Staff Working Document - Part 1 (SWD/2024/70/1). Available at https://commission.europa.eu/document/download/17c82840-518c-4c3d-ba98-7dae436b3a70_en?filename=SWD_2024_70_1_EN_autre_document_travail_service_part1_v4.pdf
[365] Ibid.
[366] European Court of Auditors. (2024). Special Report 14/2024 . Unclear contribution from the Recovery and Resilience Facility. Available at https://www.eca.europa.eu/ECAPublications/SR-2024-14/SR-2024-14_EN.pdf ; European Court of Auditors. (2024). Irregular EU spending increases. Available at https://www.eca.europa.eu/en/news/NEWS-AR-2023
[367] European Court of Auditors. (2024). Irregular EU spending increases. Available at https://www.eca.europa.eu/en/news/NEWS-AR-2023
[368] European Commission. (2024). Commission Staff Working Document - Part 1 (SWD/2024/70/1). Available at https://commission.europa.eu/document/download/17c82840-518c-4c3d-ba98-7dae436b3a70_en?filename=SWD_2024_70_1_EN_autre_document_travail_service_part1_v4.pdf
[369] S&P Global Ratings. (2023). EU RRF at Half-Time: Italy and Spain Will Likely Need Extra Time to Spend Their Funds. Available at https://www.spglobal.com/ratings/en/research/articles/230719-eu-rrf-at-half-time-italy-and-spain-will-likely-need-extra-time-to-spend-their-funds-12790825
[370] Suárez-Bustamante.A, Pérez-Cejuela-L, & Cinca,R. (2023). Brussels approves Spain's revised recovery plan and brings 93.5 billion more in funds. Available at https://euroefe.euractiv.es/section/fondos-europeos/news/bruselas-aprueba-el-plan-de-recuperacion-revisado-de-espana-y-acerca-93 -500-millones-mas- en-funds/ ; Suárez-Bustamante.A, Pérez-Cejuela-L, & Cinca,R. (2024). Spain's proposal: using AI to facilitate SMEs' access to recovery funds. Available at https://euroefe.euractiv.es/section/fondos-europeos/news/propuesta-espana-usar-ia-acceso-pymes-fondos-recuperacion/
[371] Inversión 6 (C13.I6): Líneas ICO Verde e ICO Empresas y Emprendedores. Council of the European Union (2023). Draft Addendum to the Council Conclusions on the approval of the evaluation of the recovery and resilience plan for Spain. Available at https://data.consilium.europa.eu/doc/document/ST-13695-2023-ADD-1-REV-1/es/pdf.
[372] Spanish Ministry of Economic Affairs and Digital Transformation. (2024). Green Paper on Sustainable Finance. Available at https://portal.mineco.gob.es/RecursosArticulo/mineco/ministerio/participacion_publica/audiencia/ficheros/Libro_Verde_Finanzas_Sostenibles.pdf

to ICO of €1.5 billion that was used to create: 1) a guarantee line of €100 billion to secure loans granted by financial institutions to companies and the self-employed hit by the COVID-19 crisis; 2) a guarantee of €400 million to help companies and the self-employed in tourism and related sectors; 3) a guarantee line of €1.2 billion to secure loans to lessees in an economically and socially vulnerable situation as a result of the spread of COVID-19.[373] **In just two years, retail banks were able to mobilise €140 billion in private financing to businesses (10% of Spanish GDP, a European record in this kind of program). SMEs and the self-employed represented 98% of the beneficiaries of this financing.**

The deployment speed of the Spanish Covid-19 line shows that it can be unlocked through the capillarity of retail banks to reach SMEs, **something which banks hope can be replicated through the ICO Green Credit Line.** However, the eventual success of these credit lines will depend on the demand for green loans from SMEs (which in turn depends on SMEs' awareness of the benefits of sustainable investments for their businesses). **Spanish retail banks are working to establish internal procedures and train their sales teams and commercial networks to activate this demand.[374]** Retail banks employ tens of thousands of people in their commercial networks in the EU, who can reach millions of SMEs. Increasingly these networks are empowered with new software tools to automate the identification of funds and potential beneficiaries, so it can be expected that these commercial networks will be effective in activating the SME demand for sustainable finance, perhaps more so than the resource-constrained public administration.[375]

The implementation by Greece of the RRF loan facility (€18 billion of loans) is another example of public-private collaboration between national promotional banks and retail banks in the distribution of EU funds. To facilitate private sector financing at a moment of high interest rates and mobilise private investments in the climate transition, digitalization, R&D and other priorities, Greece created a Loan Facility,[376] which is distributed through three different channels: 1) On-lending through the European Investment Bank, European Bank for Rural Development, and commercial banks; 2) Equity support to mid-caps and SMEs; 3) **Additional funds for the InvestEU Member State compartment.**

38.5% of the Greek Loan Facility funds are committed to the climate transition.[377] Seven project classes have been identified for the Greek facility, of which six are focused on the green transition (including energy efficiency upgrades and equipment for buildings, energy storage, and R&D investments).[378] **Experts think the Greek example is a promising model for how to use the remaining loan components of RRF (only 13 Member States have used it, at this time, and mainly in small amounts)[379] and to accelerate its disbursement, while also gaining time for their deployment.**[380] And yet, just one in seven of the recipients under the Greek facility is an SME, as a result of commercial banks using strict credit rating criteria for providing loans that exclude many SMEs. Greece could follow the example of Spain, by creating a specific SME line that includes a conditionality to limit the amount of funding per loan, hence making them more appropriate and accessible for SMEs.

[373] European Investment Bank (2020). ICO COVID-19 Response for SMEs and Midcaps Spain. Available at https://www.eib.org/en/projects/all/20200190
[374] Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php
[375] Ibid.
[376] European Commission (2023). Loan Facility - Largest Measure in the Greek Recovery and Resilience Plan. Available at https://commission.europa.eu/projects/loan-facility_en
[377] Government of Greece (2021). National Recovery and Resilience Plan: Greece 2.0. Available at https://greece20.gov.gr/wp-content/uploads/2021/07/NRRP_Greece_2_0_English.pdf
[378] European Commission (2023). Loan Facility - Largest Measure in the Greek Recovery and Resilience Plan. Available at https://commission.europa.eu/projects/loan-facility_en
[379] Spain (€83 billion), Slovenia (€1 billion), Slovakia (€14 billion), Portugal (€5 billion), Poland (€34 billion), Lithuania (€1.5 billion), Italy (€122 billion), Hungary (€4 billion), Greece (€18 billion), Czechia (€818 million), Cyprus (€200 million), Croatia (€4 billion), Belgium (€264 million)
European Commission (2023). Recovery and Resilience Scoreboard - Country Overview. Available at https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html?lang=en
[380] As the funds have already been disbursed to financial intermediaries, they have more time beyond 2026 to make use of the Loan Facility

Greek compartment in InvestEU to support SMEs in their green and digital transition

One of the first contributors to an InvestEU MS Compartment was Greece, which **designated €400 million of its Recovery funds to support investments in SME climate action and digital transition.**[381] Using the InvestEU's SME and Sustainable Infrastructure policy windows, the European Investment Fund (EIF) was selected as the manager of the Greek program.[382]

The products offered to Greek participants by the EIF are: 1) a Sustainability Guarantee, which supports investments in climate action, energy efficiency and renewable energy; 2) the SME Competitiveness Guarantee that aims to improve access to finance for SMEs; 3) the Innovation and Digitalisation Guarantee to improve access to finance for R&D-intensive Greek enterprises, and support the uptake of digital technologies and digital transformation of Greek SMEs and Small Mid-Caps.[383]

This is the first time that Greece has used a Sustainability Guarantee from the EIF. It expects to attract a broader base of private investments to the country and reduce the financing costs for SMEs in the transition.[384] **In April, the EIF signed guarantee agreements with Greece's top four banks (Alpha Bank, Eurobank, National Bank of Greece and Piraeus Bank) expecting to mobilise up to €4.5 billion (11.3x leverage) in financing for SMEs in the three different action areas identified by the EIF**.[385]

The use of EU financial instruments "as a service" to deliver Recovery loans is starting in more Member States, with the support of the EIB group,[386] although possibly not at the scale and speed required for the green transition. Spain, Italy and Romania are the only other countries aside from Greece that have signed implementing agreements with the EIB to establish a fund of funds for businesses with contributions from their National Recovery Plans. Spain and Italy have established a fund of funds in the Urban Development and Sustainable Tourism sectors, managed by the EIB with support from private national financial intermediaries in their distribution. In Italy, the fund has a €772 million contribution from the RRF and is already being implemented by selected national intermediaries.[387] While the Spanish fund[388] targets SMEs and mid-caps[389], all business sizes seem to be targeted by the Italian program.[390]

Romania has also agreed with the EIB a fund of funds with a total allocation of €300 million to offer an unfunded, capped guarantee to financial institutions, to support climate and digital investments by large businesses and small municipalities.[391] The EIB has already signed guarantee agreements with three Romanian banks totalling €98 million that are expected to mobilise €750 million in new lending (7.7x leverage).[392] Romania also has a financing scheme **focused on the SME transition delivered through the InvestEU Member State compartment, and managed by EIF, with contributions from RRF.** The Greek facility also includes a financing scheme targeted at SMEs and delivered by the EIF through the MS compartment with RRF contributions. **It seems that some, but still just a few, Member States are beginning to appreciate the efficiency gains and simplicity of the MS compartment**, and the increased investment capacity and leverage of private finance achieved via the InvestEU guarantee.

[381] European Investment Bank. (2022). EIB Group and Greece Take Next Steps in Implementing RRF Investments with Additional €400M to Be Managed by EIF. Available at https://www.eib.org/en/press/all/2022-501-eib-group-and-greece-take-next-steps-in-implementing-rrf-investments-with-additional-eur-400m-to-be-managed-by-eif
[382] Ibid.
[383] European Investment Fund. (2024). EIF Provides Credit Guarantees to Leading Greek Banks to Unlock Up to €4.5 Billion of SME Lending. Available at https://www.eif.org/what_we_do/guarantees/news/2024/eif-provides-credit-guarantees-to-leading-greek-banks-to-unlock-up-to-4-5-billion-of-sme-lending.htm
[384] InvestEU. (2023). Sustainability Guarantee – Greece: InvestEU Member State Compartment (Capped Guarantee). Available at https://investeu.europa.eu/document/download/00e3f4db-c7ff-4a4d-82b4-fa126beb9614_en. (p.4)
[385] European Investment Fund. (2024). EIF Provides Credit Guarantees to Leading Greek Banks to Unlock Up to €4.5 Billion of SME Lending. Available at https://www.eif.org/what_we_do/guarantees/news/2024/eif-provides-credit-guarantees-to-leading-greek-banks-to-unlock-up-to-4-5-billion-of-sme-lending.htm
[386] European Investment Bank (n.d.). Recovery and Resilience Facility (RRF): Financial instruments in Spain. Available at https://www.eib.org/en/products/mandates-partnerships/rrf/index
[387] European Investment Bank (2023). Recovery and Resilience Facility (RRF): Italy Overview. Available at https://www.eib.org/en/products/mandates-partnerships/rrf/italy.htm
[388] No information has been found on the total contribution from Spain to the new fund
[389] European Investment Bank (2023). Final Questions and Answers – RRF Spain. Available at https://www.eib.org/files/procurement/tender/final-questions-and-answers-ceoi-2407-rrf-spain-i.pdf.
[390] European Investment Bank (2023). Questions and Answers Document. Available at https://www.eib.org/attachments/documents/ceoi-1683-qa-vf.pdf.
[391] European Investment Bank. (2024). EIB Moves to Support Romanian Businesses and Municipalities as Vice-President Tsakiris Visits Bucharest. Available at https://www.eib.org/en/press/all/2024-226-eib-moves-to-support-romanian-businesses-and-municipalities-as-vice-president-tsakiris-visits-bucharest
[392] Ibid.

EIF and leading Romanian banks join forces to lower SME transaction costs

In 2023, Romania activated the SME Window using an InvestEU Member State Compartment with contributions from its Recovery and Resilience Facility. **Its main objective is improving SME competitiveness and access to finance for their digital and green transition.**[393] Consequently, the Commission gave its support to a guarantee facility by the EIF, as the designated implementing partner, that has signed agreements with four Romanian banks[394] to support Romania's SMEs.[395] The collaboration between the EIF and the five Romanian banks unlocked a series of EIF uncapped guarantees of up to €1 billion.[396] On top of this previous agreement, in 2024 the EIF has released new uncapped direct guarantees totalling €477.75 million to banks, which is expected to catalyse a minimum of €700 million in funding for Romanian SMEs.[397]

This financial instrument provides two different types of guarantees that target different final SME beneficiaries: 1) An SME Competitiveness Uncapped Guarantee, that specifically targets SMEs with a higher risk or with insufficient collateral[398] (companies that have received at least a 5% lower turnover than in the preceding financial year).[399] 2) A Sustainability Guarantee to support SMEs working on their green and sustainable transformation[400], covering both climate mitigation and adaptation measures.[401] The EIF guarantees **enable partner banks to offer loan terms that would not be normally offered, with a guarantee that covers up to 70% of the capital (or up to 80% in Just Transition Regions and Cohesion Regions).[402]**

Offering EU Funds through competing retail channels

Overall, the broad distribution of individual "transition assets" like solar panels, EV chargers, heat pumps, and tailored package solutions for SMEs in specific sectors of the economy needs efficient retail distribution channels. **In some regions this may be local and managing authorities, but SMEs also have many other business touchpoints, including: retail banks, utilities, and internet providers.** As Spain discovered in the deployment of Recovery Funds, retail banks can be helpful in providing pre-assessed leads for SMEs which may qualify for funding among their clients. There are over one hundred thousand bank branches in the European Union, with millions of SMEs in their networks, and retail lenders already process millions of daily customer interactions online.[403]

The *Realisatiefonds* in the Netherlands offers another example of sustainable finance instruments delivered via local banks, with a targeted and simplified approach to energy communities. Energy communities are an emerging retail channel for the transition. This targeted scheme in the Netherlands provides standard procedures and works in close collaboration with private banks to leverage private financing for energy communities. Energy communities have faced difficulties in getting external financing due to their complex legal structures, and this approach has helped to speed financing decisions for them.

[393] InvestEU. (2023). SME Competitiveness Guarantee Romania Member State Compartment. Available at https://investeu.europa.eu/document/download/679411fe-983f-48be-8696-b60fbcadebe9_en?filenam
[394] Banca Comerciala Romana, Banca Transilvania, CEC Bank and Raiffeisen Bank, and a German bank (ProCredit Bank). European Investment Fund. (2023). EIF and Leading Romanian Banks Join Forces to Empower SMEs for Sustainable Growth. Available at https://www.eif.org/what_we_do/guarantees/news/2023/eif-and-leading-romanian-banks-join-forces-to-empower-smes-for-sustainable-growth
[395] European Investment Fund. (2023). EIF and Leading Romanian Banks Join Forces to Empower SMEs for Sustainable Growth. Available at https://www.eif.org/what_we_do/guarantees/news/2023/eif-and-leading-romanian-banks-join-forces-to-empower-smes-for-sustainable-growth
[396] Ibid.
[397] European Investment Fund. (2024). Romanian banks to get an additional €500 million in financing under new EIF guarantee agreements. Available at https://www.eif.org/InvestEU/news/2024/romanian-banks-to-get-an-additional-eur500-million-in-financing-under-new-eif-guarantee-agreements.htm
[398] InvestEU. (2023). SME Competitiveness Guarantee Romania Member State Compartment. Available at https://investeu.europa.eu/document/download/679411fe-983f-48be-8696-b60fbcadebe9_en?filenam
[399] InvestEU. (2023). InvestEU SME Competitiveness Guarantee Presentation Slides. Available at https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/22890/sme_competitiveness_slides.23b5c827de9c.pdf
[400] European Investment Fund. (2023). EIF and Leading Romanian Banks Join Forces to Empower SMEs for Sustainable Growth. Available at https://www.eif.org/what_we_do/guarantees/news/2023/eif-and-leading-romanian-banks-join-forces-to-empower-smes-for-sustainable-growth
[401] InvestEU. (2023). InvestEU Sustainability Guarantee. Available at https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/22890/sustainability_guarantee_layout_update_dec23.033a6810f03b.pdf
[402] European Investment Fund. (n.d.). InvestEU Guarantees. Available at https://engage.eif.org/investeu/guarantees
[403] EUSEW. (2023). Fredrik Nilzen intervention in panel: Strengthening energy efficiency for the clean energy transition and energy independence. Available at https://interactive.eusew.eu/eusew-2023/sessions/3305191a-6c82-44c1-802f-145d622bfdc5

Facilitating access to finance for energy communities via local retail banks

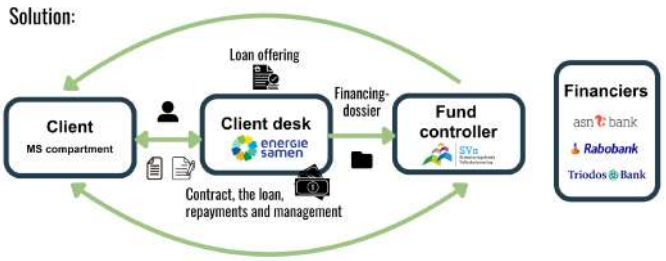
Local communities can come together and make investments in clean energy through energy communities, where groups acting as a single entity can improve access to energy and financial markets similarly to other larger actors.[404] Energy communities can increase public acceptance of renewable energy projects, thanks to the reduced energy costs and the creation of green jobs.[405] **The importance of energy communities in the EU is expected to grow as the REPowerEU plan seeks to have an energy community in each municipality with a population of more than 10,000 by 2025.**[406]

Several EU funding opportunities exist for supporting the creation and development of energy communities, including RRF funds, Cohesion policy (ERDF, Cohesion Fund and Just Transition Fund), and the Modernisation Fund.[407][408] Nevertheless, as stipulated in EU legislation (RED II and IEMD), **energy communities also need to mobilise private capital investment and cannot depend only on public funds to be viable**.[409] A leading example of this is the use of a co-management model where a professional, national community energy expert organisation can partner with public and/or private entities to fund and accelerate the creation and development of energy communities, as shown in the Netherlands.

Case study on the Netherlands: Realisatiefonds

The Realisation Fund (*Realisatiefonds*) was launched at the end of 2021 and has so far helped 43 energy communities in securing business loans for the building phase of their large-scale PV projects.[410] **This project is managed and driven by Energie Samen, which is a private (non-profit) Dutch association that supports and represents community-driven renewable energy projects with a Community Energy Financing Scheme that helps to scale-up and provide finance to energy communities**.[411] The Realisation Fund is supported and funded by three ethical and cooperative banks (Rabobank, ASN Bank and Triodos) that aim to provide €110 million (pooled between the 3 banks from their green budgets) for the financing of the proposed loans. [412]

The Realisation Fund provides loans of €30,000 to €1 million, which can cover up to 75% of the total construction costs of the project, with the other 25+% being financed by the applicant community.[413] To be considered as eligible, the energy community must receive from the Dutch government a feed-in tariff that ensures a minimum price for the sale of electricity for the duration of the 15 years loan period.[414] The loan's interest rate is fixed for 13.5 years from when the loan commences, and can vary between 5.25-5.5%.[415]



Source: Energie Samen (2024)

Energie Samen helps accelerate and standardise the process of loan applications, while reducing the risk for the banks, as they know that the applications have already passed a quality procedure in the form of the Realisation Fund. **This co-management model is exemplary, and could be emulated in other EU countries, where a professional, national community energy expert organisation can partner with national authorities to create similar revolving, sustainable national funding schemes.**

Furthermore, the Realisation Fund facilitates and accelerates not only the energy community loan application but also its reception. Consequently, this provides funding schemes that are fit for purpose to the energy communities, and resolves the

[404] European Commission. (n.d.). Energy Communities. Available at https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumers-and-prosumers/energy-communities_en
[405] European Commission. (2024). Focus on Protecting and Empowering Energy Consumers. Available at https://energy.ec.europa.eu/news/focus-protecting-and-empowering-energy-consumers-2024-06-18_en
[406] EU Funding Portal. (2024). Developing Support Mechanisms for Energy Communities. Available at https://eufundingportal.eu/developing-support-mechanisms-for-energy-communities/
[407] European Commission. (2024). Covenant of Mayors - Financing Models and Opportunities for Energy Communities. Available at https://eu-mayors.ec.europa.eu/en/What-are-the-financing-model-and-opportunities-to-set-up-and-run-energy
[408] Also, as a reference, the REScoop.eu financing tracker helps to identify and assess whether and how the RRF is being used by Member States to support energy communities. REScoop.eu. (n.d.). Recovery and Resilience Funds: Financing Tracker. Available at https://www.rescoop.eu/policy/financing-tracker/recovery-resilience-funds
[409] Curtin, J. (2023). Financial Instruments for Community Energy Projects. Energy Policy, 171, Article 113. Available at https://www.sciencedirect.com/science/article/pii/S0301421523000587?ref=pdf_download&fr=RR-2&rr=8bd5ae274e11c905 (p.6)
[410] ACCE. (n.d.). Community Energy Financing Schemes. Available at https://acce.rescoop.eu/cefs
[411] ACCE.(2023). Best Practice Report on Community Energy Financing Schemes. Available at https://acce.rescoop.eu/resources/best-practice-report-on-community-energy-financing-schemes
[412] SVN. (n.d.). Realisatie Fonds Loan Program for Energy Cooperatives. Available at https://www.svn.nl/verenigingen-stichtingen-en-cooeperaties/op-zoek-naar-een-lening/realisatiefonds/
[413] Energie Samen. (n.d.). Realisatie Fonds for Energy Cooperatives. Available at https://energiesamen.nu/pagina/106/realisatiefonds-voor-energiecooperaties
[414] ACCE. (2023). Best Practice Report on Community Energy Financing Schemes. Available at https://acce.rescoop.eu/resources/best-practice-report-on-community-energy-financing-schemes (p.20)
[415] Energie Samen. (n.d.). Realisatie Fonds for Energy Cooperatives. Available at https://energiesamen.nu/pagina/106/realisatiefonds-voor-energiecooperaties

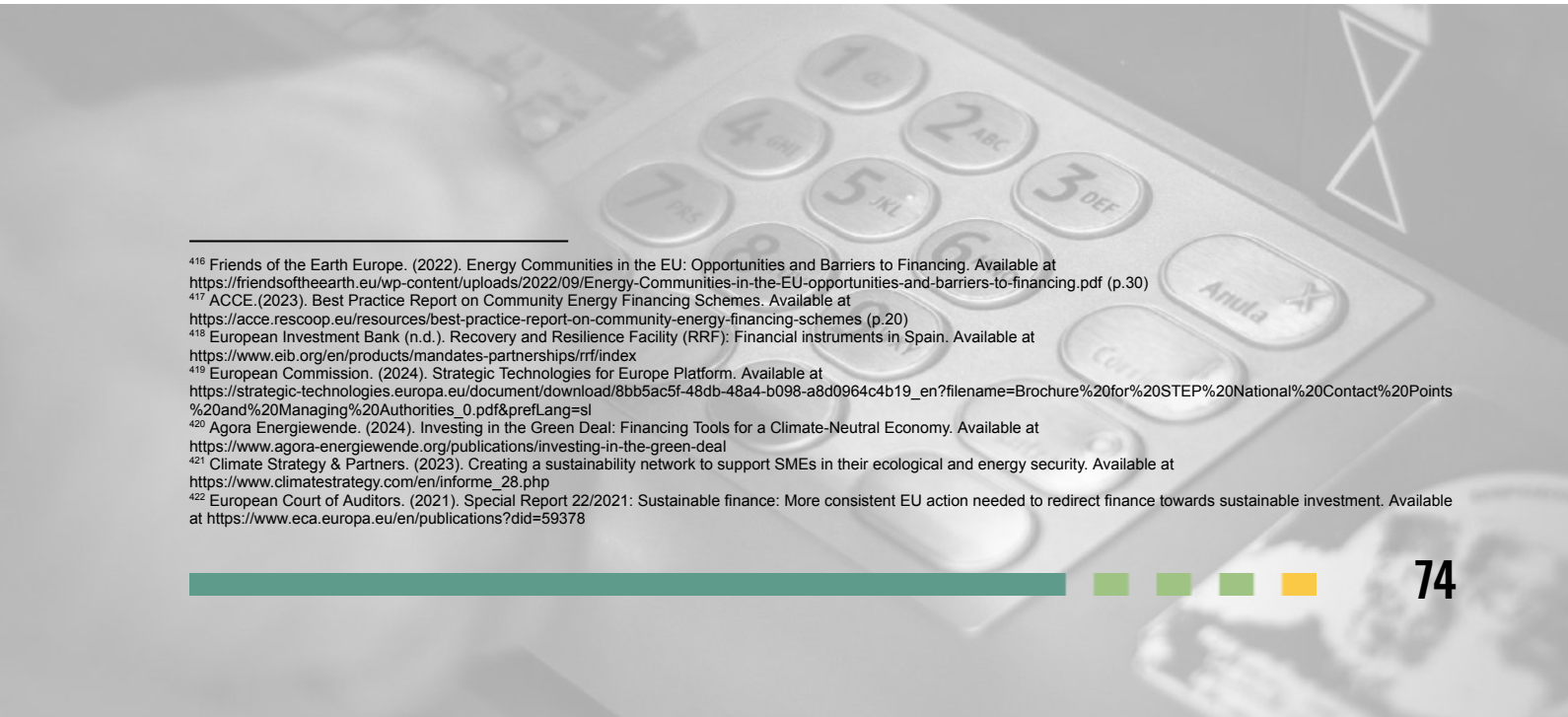
otherwise complex application and funding processes that hold back applicants with less technical expertise.[416] The loan starts its funding within 5 days of the application's reception by the partner bank, thanks to the fund controller (the Stimulation Fund for Housing of Dutch Municipalities (SVn)) that helps banks to assess the risks of each project by providing a quote for the loan.[417] The SVn is also a private, non-profit association located in the Netherlands but with close ties to public authorities as it was established in collaboration with Dutch municipalities, provinces, and other government bodies specifically to address housing affordability and urban development needs.

Establishing transparent and competitive distribution channels for EU funds using EU Financial Instruments as a Service (such as the MS compartment or the RRF financial instruments program managed by the EIB)[418] can address capacity bottlenecks for managing authorities. This would allow them to better prioritise limited resources for grant making that delivers greater public benefit and social support, where financial instruments are not appropriate. Broadening the retail channels that offer EU-backed financial instruments can also help overcome the gaps in training and digitalisation in public administrations, and improve the stability, consistency and governance for these funds (which could otherwise be impacted by changes in leadership and policy).

As the end of RRF deployment window approaches, **redirecting underspent parts into EU Financial Instruments as a Service can support Member States struggling to deal with both RRF and Cohesion funds at the same time.** The Strategic Technologies for Europe Platform regulation allows Member States to amend their Recovery Plans to allocate an additional amount of up to 6% of their RRF allocations as cash contribution exclusively to STEP priorities (among them cleantech) via the InvestEU Member State Compartment.[419] In this vein, Agora Energiewende (2024) proposes allocating a limited amount of Cohesion funds into InvestEU's Member State compartments, and like this also replenish InvestEU for this programming period.[420]

Certainly, the capacity and quality of services of different national promotional banks and of retail banks varies between Member States. Given stringent approval procedures and standards in deploying InvestEU, more partners and improved capacities will be a primary focus. Retail banks admit needing to strengthen their teams and working tools to provide more targeted "accompanying" services for SMEs in their green transition, which will also require faster and greater amounts of sustainable financing.[421]

Questions remain on which retail channels are more or less efficient than the current MFF channels in a specific country, and for specific assets, and how they can be made to work efficiently. Clearly the "quality" of the decisions made needs to be of a similar standard with transparent reporting of the incidence of fraud or failed KPIs by end-beneficiaries and in the retail distributors. The quality of national and local administrations' funding decisions has been questioned both under RRF and Cohesion Policy due to low capacity to deal with large amounts of funding in a limited time period. InvestEU has also faced criticisms due to lack of accurate tracking of the climate impact of its investments.[422] **A careful assessment would therefore be useful to determine how due diligence processes can be strengthened and how EU financial instruments can come in to support transparent reporting from retail channels and ensure a transformative impact of climate investments.**



[416] Friends of the Earth Europe. (2022). Energy Communities in the EU: Opportunities and Barriers to Financing. Available at https://friendsoftheearth.eu/wp-content/uploads/2022/09/Energy-Communities-in-the-EU-opportunities-and-barriers-to-financing.pdf (p.30)
[417] ACCE.(2023). Best Practice Report on Community Energy Financing Schemes. Available at https://acce.rescoop.eu/resources/best-practice-report-on-community-energy-financing-schemes (p.20)
[418] European Investment Bank (n.d.). Recovery and Resilience Facility (RRF): Financial instruments in Spain. Available at https://www.eib.org/en/products/mandates-partnerships/rrf/index
[419] European Commission. (2024). Strategic Technologies for Europe Platform. Available at https://strategic-technologies.europa.eu/document/download/8bb5ac5f-48db-48a4-b098-a8d0964c4b19_en?filename=Brochure%20for%20STEP%20National%20Contact%20Points%20and%20Managing%20Authorities_0.pdf&prefLang=sl
[420] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[421] Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php
[422] European Court of Auditors. (2021). Special Report 22/2021: Sustainable finance: More consistent EU action needed to redirect finance towards sustainable investment. Available at https://www.eca.europa.eu/en/publications?did=59378

The current policy discussions to reform the MFF, and its instruments, are looking to the RRF for best practices from a more performance-based approach that accelerates the disbursement of EU funds. Discussions also focus on the type of EU instruments offered to increase efficiency and lever private financing into the transition. Proposals have been tabled to integrate a performance-based governance model of "reforms for investments" in the next generation of Cohesion funds.[423] **The mid-term evaluation of the Recovery funds highlights the "efficiency gains by supporting reforms" that enhance the impact of investments.**[424] Experts have suggested that this approach is even more effective if funding conditionality is directly tied to reforms and better linked to the funded project, to prevent large delays in the investment for reasons unrelated to the transition.[425]

Reforms and conditions can be geared to increasing the use of financial instruments, and particularly EU Financial Instruments as a Service, for the deployment of mature clean assets that generate returns by households and SMEs. The next chapter further develops how to operationalise EU Financial Instruments as a Service and when they can best address climate investments in means tested households. These instruments can facilitate SME and household access to private finance and ultimately crowd-in more private investments to fill the priority climate investment gaps. WWF, ShareAction and E3G propose non-binding targets for guarantee-based funding under Cohesion programmes to increase financing from the private sector when possible. They support exploring synergies, particularly with InvestEU, and see valuable opportunities for collaboration and efficiency.[426]

Other MFF funds where absorption has been slow can also benefit from a more performance-based approach to prioritise EU financial instruments for clean asset deployment in SMEs. For instance, **local administrations have already warned[427] of a slow deployment of the Just Transition Mechanism due to the delays that arise when having to set up new local governance structures for a new fund.** An important part of Member States' allocations under this Mechanism are directed at productive investments in SMEs for economic diversification. The Mechanism has a scheme under InvestEU (Pillar 2) which could be energised with contributions to the Member State compartment from the Just Transition Fund (Pillar 1).

In conclusion, one way to improve take-up by SMEs (and potentially means tested households) of designated mature clean assets (such as heat pumps, solar panels, EV charge stations or buildings renovation) is to develop specific financial instruments that deliver the exact financing needed for just that specific asset. This is a way to connect lower cost finance to the specific deployment of strategic clean assets which the EU wants to prioritise, and that many SMEs need to deploy in order to transition. A project development grant or technical assistance "wrapper" can potentially also be included as a way to accelerate the development of a project pipeline and support those SMEs with limited financial experience. **Finally, if part-grant incentives are required (e.g. heat-pumps) then these can be net from the asset purchase price, thereby avoiding lengthy recovery applications which favour those already with savings.** An EU-level financial instrument, tailored for Member States and managing authorities, can simplify and support the set-up process of such an instrument, and it can also streamline the distribution of EU funds and address traditional bottlenecks by activating competing retail channels with standing close relations with SMEs.

Moreover, **reforms and conditionalities should continue to address institutional bottlenecks to ensure efficiency in retail distribution.** This is particularly important in those countries with less well distributed bank networks. The Directorate General for Reform has a Technical Support Instrument (TSI) that can support those Member States that may lack the experience in using financial instruments to deploy clean assets, and where national promotional banks may not have such a strong retail reach (or not even exist), to help them build a smart public finance strategy in collaboration with retail stakeholders. In this engagement exercise, **the TSI can actively encourage and boost Member State demand of EU financial instruments like the MS compartment by clarifying their strengths and advantages, and demystifying the complexity and presumably loss of control from managing authorities. The fi-compass advisory services platform (provided by the European Commission and the EIB) can also contribute, and should be coordinated, with this engagement,** as it is specifically targeted at providing know-how to EU shared management managing authorities on the implementation of financial instruments.[428]

---

[423] Financial Times. (2023). EU Recovery and Resilience Facility Mid-Term Challenges. Available at https://www.ft.com/content/53323bbe-90d6-4cef-9a5e-98f60ed0e82f
[424] European Commission. (2024). Commission Staff Working Document - Part 1 (SWD/2024/70/1). Available at https://commission.europa.eu/document/download/17c82840-518c-4c3d-ba98-7dae436b3a70_en?filename=SWD_2024_70_1_EN_autre_document_travail_service_part1_v4.pdf
[425] WWF, ShareAction & E3G. (2024). Investing in Europe's Prosperity: The Role of Responsible Investment. Available at https://wwfeu.awsassets.panda.org/downloads/e3g-shareaction-wwf-report-investing-in-europes-prosperity.pdf
[426] WWF. (2024). Investing in Europe's Prosperity: Green Growth Strategy. Available at https://www.wwf.eu/?13320416/Investing-in-Europes-prosperity
[427] Europeum Institute. (2023). How Czechia Can Utilize the Just Transition Fund. Available at https://europeum.org/data/articles/umi-cesky-stat-cerpat-fond-spravedlive-transformace-final3-en.pdf
[428] Fi-compass offers practical expertise and learning tools, such as methodological handbooks, factsheets and case studies, Commission regulatory guidance, training seminars and networking events. Services cover financial instruments under ESIF and microfinance under the Programme for Employment and Social Innovation (EaSI).

How DG Reform's Technical Support Instrument can fill climate investment gaps

DG REFORM was created in January 2020, to develop what was previously the Structural Reform Support Service (SRSS), to **provide support to EU Member States at the national, regional and local levels in implementing and delivering new and strategic legislation and reforms.**[429] DG Reform has a Technical Support Instrument (TSI) which provides tailor-made expertise to Member States as a way to design and implement the reforms they identify, and to develop administrative capacity and exchange best practices across Europe.[430] **This instrument is demand driven, from Member States, and does not require any extra co-financing from them.** In five years, DG Reform has helped to execute over 1,800 cutting-edge reform projects all over Europe.[431]

DG Reform engagement with Member States - REPowerEU Example

Following Russia's invasion against Ukraine in 2022, the TSI assisted a majority of Member States **determine investments and reforms that would reduce their reliance on Russian fossil fuel imports and implement the REPowerEU plan.**[432] In this collaborative initiative, 15 EU countries participated under a consortium that assisted them to diversify energy supplies, accelerate the transition to renewable energy and increase energy efficiency.[433]

Each participating Member State assigned a local team to coordinate with the consortium led by Trinomics that provided technical support, while another partner (E3M) gave modelling support to help plan and deliver reforms to each team.[434] With this program, the Commission helped support these Member States deliver the benefits for and implement reforms and investments that reduced their dependence on Russian fossil fuel imports and provide affordable, secure and sustainable energy to both households and businesses.[435] The participating Member States were supported by DG Reform in three main areas:

1. DG Reform explored the energy-related dependencies in each Member State, where they conducted **an individual targeted analysis on their fossil fuel dependencies and their energy demand and supply**.[436] This exercise evaluated how each country was progressing in terms of reducing its energy consumption, scaling up renewables and diversifying supply sources.[437]

2. Member States were supported in identifying a final shortlist of reforms and investments in each country, with an average of 13 measures in each and 199 projects in total (from a list with 562 potential projects).[438] All of the selected projects were related to clean/renewable energy, energy distribution/storage and energy efficiency measures.[439] **Specific reforms were mainly focused on market design and regulatory frameworks and for streamlining processes, such as project permitting and site selection**.[440]

3. Participating Member States could request **in-depth support as a way to assist them develop the short-listed initiatives**. A total of 59 measures were taken, mostly related to hydrogen (where all countries requested some type of support), as well as energy efficiency and biomethane.[441] One relevant example to highlight is the DG REFORM support for heat pumps in district heating for Czechia, where they helped identify potential cities with industrial clusters where this alternative could be feasible. Overall 5 case studies were analysed to identify the installation of 830 GWh of new heat from heat pumps by 2030, which will receive investment support under the Modernisation Fund.

[429] European Commission. (2024). Directorate-General for Structural Reform Support Delivering on Reforms. Available at https://reform-support.ec.europa.eu/document/download/10fb2012-bb59-4183-bec7-52d13e32a839_en?filename=Legacy%20Publication%20Report.pdf (p.3)
[430] European Commission. (n.d.). Technical Support Instrument (TSI). Available at https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/technical-support-instrument/technical-support-instrument-tsi_en
[431] European Commission. (2024). Directorate-General for Structural Reform Support Delivering on Reforms. Available at https://reform-support.ec.europa.eu/document/download/10fb2012-bb59-4183-bec7-52d13e32a839_en?filename=Legacy%20Publication%20Report.pdf (p.1)
[432] Ibid.
[433] European Commission. (2023). DG REFORM - Support to REPowerEU. Available at https://reform-support.ec.europa.eu/document/download/c58a5fce-0504-4852-89bb-f51a16131c5a_en?filename=REPowerEU%20TSI_Final%20synthesis%20report_0.pdf (p.6)
[434] Ibid.
[435] Ibid.
[436] European Commission. (2023). DG REFORM - Support to REPowerEU. Available at https://reform-support.ec.europa.eu/document/download/c58a5fce-0504-4852-89bb-f51a16131c5a_en?filename=REPowerEU%20TSI_Final%20synthesis%20report_0.pdf (p.7)
[437] Ibid.
[438] Ibid.
[439] Ibid.
[440] Ibid.
[441] Ibid.

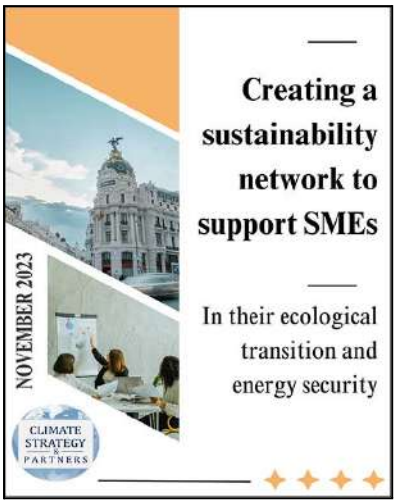
Aside from broadening the channels enabled to distribute EU funds, **Member States can also look to activate other parallel channels that distribute information on financing opportunities and provide support to SMEs.** This can increase SME demand for sustainable finance offers. Local chambers of commerce, unions and sectoral associations are examples of intermediaries that are in direct contact with SMEs and could help guide them. Member States can better position the clean transition in the mandates of these networks of organisations and ensure that they acquire the necessary human resources and knowledge to support SME climate action.[442]

Accountants, lawyers and administrators are another set of SME intermediaries who sit at the core of legal, administrative, accounting and HR services provided to SMEs, especially those too small to support these services in-house - also those with insufficient internal capacity to seek transition finance from the MFF. **A majority of SMEs outsource their administration service and financial accountancy to third-party firms[443] and these firms often hold the necessary data to identify SME targets and their potential efficiency and decarbonisation investments.** Assuming an alignment of interests for the administrative firm to identify the possibility of accessing MFF funds, this would result in a lower cost distribution of these funds.

An interesting and largely under-used access point to SMEs is via the software providers who produce the tools that accountants and administrators use to manage and prepare the financial reports of their SME clients. This is a concentrated market, where just a handful of software providers provide most of these tools for SMEs in Europe. While some are currently developing carbon accounting tools, they could also **include an "EU funds" application so that accountants can serve as information channels for SMEs on the available opportunities and support them in the applications for green finance.** In this context, Spain has recently proposed in the Economic and Financial Affairs Council the use of AI applications to reduce bureaucratic processes for SMEs to easily access Recovery Funds. Combining these efforts with the resources of service providers could lead to promising advances in the streamlining of EU funds for the SME transition.[444]

[442] Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php
[443] In the case of Spain, this is more than 80% of SMEs. Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php
[444] Suárez-Bustamante.A, Pérez-Cejuela-L, & Cinca,R. (2024). Spain's proposal: using AI to facilitate SMEs' access to recovery funds. Available at https://euroefe.euractiv.es/section/fondos-europeos/news/propuesta-espana-usar-ia-acceso-pymes-fondos-recuperacion/

Facilitating finance and knowledge support to Spanish SMEs in their transition with amplified local networks and accountancy tools



Most climate and sustainability policy initiatives have focused on the green transition of large companies. To bridge this knowledge and action gap, Climate Strategy began a 3-year research project and consultation process in 2022 involving more than 400 SMEs and more than 90 of their regional platforms (chambers of commerce, business associations, trade unions, etc.). 60% of the Spanish SMEs surveyed perceived the risks of climate change, and their dependence on fossil fuels.[445] **The majority of SMEs engaged also perceived an interest in contributing to the climate transition and understood the economic and competitiveness benefits that a sustainable business model can bring**. **However, some areas of their decarbonisation path still require work.** Most of the surveyed SMEs (58%)[446] had not calculated their carbon footprint. While SMEs have addressed some key areas in their decarbonisation process (almost 40% of SMEs have adopted waste recycling and energy efficiency measures)[447], less than one in five are working on eco-design improvements and green purchasing.[448]

The main challenge in mobilising decarbonisation among SMEs arises from their size, lack of resources, local dispersion and granularity. In this sense, SMEs are distributed across a multitude of sectors and in different regions, which makes it hard and costly to reach them. Climate Strategy identified some of the main channels used to reach SMEs: large companies (as clients), banks, business platforms, and accountants. **Each of them could play a role in mobilising and simplifying the decarbonisation of SMEs by facilitating access to carbon accounting and planning tools and to sustainable financing.**

In 2023, a Climate and Resilience Pact to engage Spanish SMEs in their transition[449] was launched to connect the efforts of regional and business platforms while also facilitating the exchange of information and knowledge between them. **By 2024, 22 business platforms, professional, trade union and civil society organisations, financial institutions, large companies and accountants' associations joined this Pact and have committed to more than 160 supporting actions for the SME climate transition this year, which are expected to benefit over 40,000 Spanish SMEs.**[450] The Pact offers a one-stop-shop for Spanish SMEs in their transition, by centralising best practices, tools and training resources online.

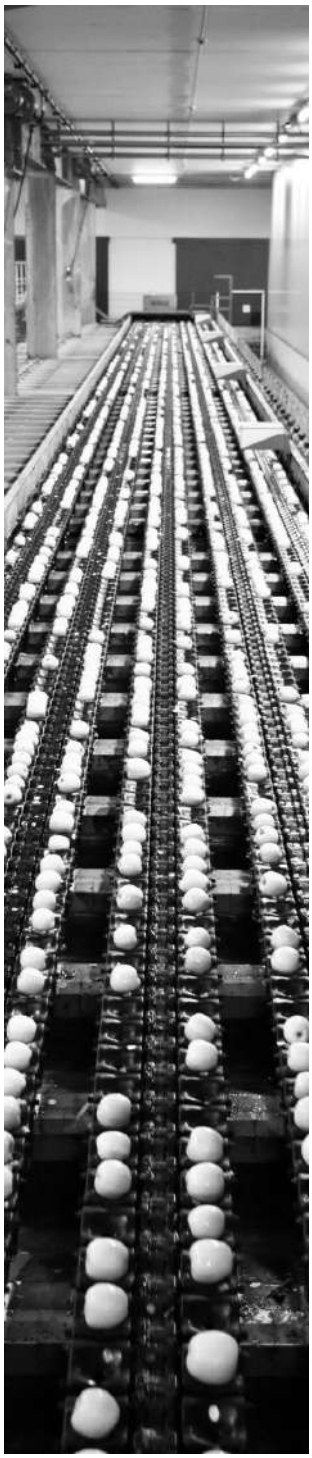
To support SMEs in calculating their carbon footprint, accountants play a useful role as they have the necessary financial data and skills.[451] Over three-quarters of SMEs in Spain outsource their administrative, legal and accounting processes, thus mobilising accountants could reach a critical mass of SMEs.[452] **Accountants can support SMEs in identifying material opportunities to decarbonise their activities, make them more aware of the cost savings attached, as well as guide them to the funding schemes and opportunities to make transition investments.**

In a series of workshops with accountancy associations in Spain, it became clear that **accountants are not aware of the linkages between financial and carbon data and the economic opportunities the transition could bring to SMEs.** A next step is to incentivise accountants to connect their annual financial accounting processes with the carbon accounting of a company by using interoperable and standardised tools. As identified by Spanish accountants that we interviewed, the lack of carbon accounting obligations nor tax incentives can also explain the absence of tools.[453]
Technology is also an important driver in facilitating carbon accounting. A letter from the World Business Council for Sustainable Development (WBCSD) together with SAP Sustainability highlights that with increased automation, more climate data can be collected and managed on a frequent basis.[454] For example, SAGE Earth (a component of the popular SAGE SME accounting package) uses financial data to calculate, manage and reduce the carbon footprint of companies, thus aligning both financial and non-financial reporting.[455]

Platforms similar to SAGE Earth also aim to help SMEs in the process to provide transparent climate data to finance providers. This is also the case of TILT, an initiative that thanks to an automated tool can estimate the climate profile risk of an SME with just 3 data points: address, products/sector and business type.[456] Another example of an automated tool exists in the UK called Perseus, which aims to provide national SME data to banks, so that they can derisk the lending in these companies and provide personalised support to SMEs.[457] In order to do that, Perseus is currently building a trust framework to enable data sharing and reporting related to the electricity consumption of SMEs, which is the starting point as “this is something that is in every methodology, in every business, and digital”. **Such new tech applications will help banks to proactively identify the risks and opportunities of a potential SME client, thereby unlocking and leveraging sustainable finance directed to these companies.**

[445] Climate Strategy & Partners. (2022). Mobilising SMEs in the face of the Climate and Energy Crisis: Analysis and Best Practices in Spain. Available at https://www.climatestrategy.com/en/informe_24.php
[446] Ibid.
[447] Ibid.
[448] Ibid.
[449] The Pact can be consulted here: Climate Strategy & Partners. (2023). Pact Activating SMEs x CLIMATE & RESILIENCE. Available at https://www.climatestrategy.com/en/descargarInforme.php?cual=136
[450] Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php
[451] Climate Strategy & Partners. (2023). 4-step guide for climate action in SMEs. Available at https://www.climatestrategy.com/en/informe_26.php (annex 1)
[452] Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php (p. 99)
[453] Ibid.
[454] Ibid.
[455] Sage. (n.d.). Sage Earth: Business Cloud Solutions. Available at https://www.sage.com/en-gb/sage-business-cloud/sage-earth/
[456] TILT SME. (n.d.). Transforming SMEs for a Sustainable Future. Available at https://www.tiltsmes.org/
[457] Icebreaker One. (n.d.). Executive Summary of Perseus Initiative. Available at https://ib1.org/perseus/executive-summary/

Chapter Conclusions



A big challenge that lies ahead in the decarbonisation of the European business fabric is the fact that **millions of small transactions need to be made to reach a critical mass of SMEs**. Supporting SMEs in a fair and just transition is a way to boost their competitiveness, build the resilience of EU supply chains and help working people by creating quality green jobs.

One in four SMEs report "severe difficulties" in accessing finance and they enjoy less favourable credit terms than larger companies.[458] Smaller and younger SMEs also face information asymmetries, lack of credit history and disproportionately higher transaction costs. **If well designed, EU financial instruments can help address SME information asymmetry and transaction costs, while streamlining the delivery of EU finance.**

Grants may be necessary to support project development in SMEs, but most climate investments come with revenues and returns to private investments (rooftop PV, heat pumps and building renovations, electric vehicles). A concentration of grant-based funding for SMEs accessed via complex public tenders partly explains administrative bottlenecks and difficulties for SMEs in accessing EU financing. **But the pressure to deliver Recovery Funds in the Covid-19 pandemic to alleviate the economic downturn and support a green recovery led some Member States to try faster and more efficient distribution approaches via the InvestEU Member State (CS) compartment.**

Collateralised with contributions from their Recovery Plans, the MS compartment provided these Member States with a simplified procedure to establish a tailored financing scheme for transition investments in SMEs. The distribution of finance is accelerated and taken to scale via implementing partners (local retail banks) with enough capilarity to reach millions of SMEs, and supported by the EIB Group's technical knowledge as the Climate Banks, and by policy-focused national promotional banks. In turn, these addresses capacity bottlenecks for local managing authorities, allowing them to better prioritise limited resources for grant making that delivers greater public benefit and social support, where financial instruments are not appropriate.

Certainly, the capacity and quality of services of different national promotional banks and of retail banks varies between Member States, and banks will need to work on improving their outreach to SMEs and tools to accompany them in their transition. **Reforms and conditionalities should continue to address institutional bottlenecks to ensure efficiency in retail distribution. This is particularly important in those countries with less well distributed bank networks, where the Directorate General for Reform can step in with its Technical Support Instrument.** A careful assessment is also critical to determine how due diligence processes and transparency can be strengthened via EU financial instruments.

Member States can also look to activate other parallel channels and technological tools that distribute information on financing opportunities and provide support to SMEs. This can increase SME demand for sustainable finance offers. Local chambers of commerce, unions, sectoral associations, and especially accountants, are examples of intermediaries that are in direct contact with SMEs and could guide them.

[458] Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union

Chapter 6

EU Financial Instruments as a Service to Member States

Chapter 6: EU Financial Instruments as a Service to Member States

Well designed and tested EU Financial Instruments can be offered as a service to Member States wishing to accelerate the deployment of specific assets, in specific sectors, for specific corporate or population groups. This service offers **a template, off-the-shelf EU-level instrument designed to deliver an efficient blended finance structure tailored to fit a purpose and ring-fenced to a region or Member State.**

Financial Instruments as a Service (FIaaS) can be created at the EU level, within the structure of a specific EU fund under direct management by the European Commission (e.g. InvestEU, the Innovation Fund, the EIC), to deliver financial instruments for Member States enhanced by national contributions to the FIaaS from shared management funds (e.g. Cohesion Policy, Modernisation Fund, Common Agricultural Policy). EU FIaaS aim to strengthen Member States' investment capacity in the climate transition, improve the impact of EU-sourced funds, and lever private investments. FIaaS provide **a simplified and quick set-up procedure that still allows for enough local empowerment and control to encourage Member State demand.** The scope of the resulting financing scheme is designed by the Member State, adapted to the local conditions and needs, and can use the best-fitting and competing local distribution channels.

As discussed in previous chapters, the concept of an FIaaS has been tried and tested under Cohesion Policy with the creation, back in 2014, of EU-level "off-the-shelf instruments". The new programming period consolidated these EU-level instruments under InvestEU. Country-level experiences with the new InvestEU Member State (MS) compartment to deliver RRF transition finance for SMEs point to promising simplification and efficiency gains that EU FIaaS can bring. They can **tap greater scales and speed with the activation of alternative retail distribution channels under management from the EIB Group and national promotional banks**. In turn, limited administrative capacity at the local level can more actively focus grant schemes on those end-beneficiaries that need them the most. Different types of FIaaS and distribution channels may be better fitting in specific sectors, for the clean assets targeted, given the role of banks in different countries and the end-beneficiaries receiving the funds. **This chapter provides a set of sectoral and asset-specific recommendations - building on existing EU FIaaS - that inform an investment roadmap for a smarter and more efficient use of EU grants and FIaaS in: Industry, Buildings, Energy, Transport, and Agriculture.**

EU FIaaS are an opportunity to scale the (historically low) use of financial instruments by Member States to better disburse EU-sourced funds. Their EU-level nature can **harmonise instrument design and application across the EU, addressing the "patchwork" of funding sources identified by the EIB, ECA and others[459] that is complicating the delivery to end-beneficiaries**. Early Commission thinking is positioning a new European Competitiveness Fund (ECF) as a merger or pooling of EU funds under direct management, with the aim to streamline and provide a more strategic steer.[460] The ECF was announced by President von der Leyen as an initiative to "reinforce" the next MFF to increase the EU investment capacity in strategic technologies like cleantech.[461] **This chapter will develop the lessons learned from previous programming periods suggesting what an optimal design of EU FIaaS might be to encourage national demand, and how they could be integrated in the next MFF, potentially via the new ECF.**

[459] European Court of Auditors. (2023). EU Financial Landscape Report. Available at https://www.eca.europa.eu/Lists/ECADocuments/SR23_05/SR_EU-financial-landscape_EN.pdf ; European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf ; European Commission (2024). Draghi Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf

[460] Science Business. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund&vgo_ee=sWDTmidSOLRZ28FeJs%2Fk94bWv7QD7tXX0gNrlhGtxAoHqa6LiIfITC%2FSXK9q%3AF9g%2FB0%2FJqjqL4LognuB0P4wFCnixD103

[461] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf..

A targeted "efficiency first" approach at the sector and asset-level

Integrating an "efficiency first" approach in the EU budget can be based on two distribution approaches: 1) Publicly-managed grant schemes that prioritise a) decarbonising public goods (e.g. public transport and infrastructure), b) supporting low-income, energy poor households in the transition; and c) strengthening R&I projects in early-stage, low TRL cleantech, and 2) EU FIaaS for Member States to accelerate the delivery of EU funds for mature clean assets and solutions with opportunities for revenue-making and savings.

The sectoral analysis of the main climate investment gaps highlights some priority assets for decarbonisation. **This section provides recommendations on what types of EU FIaaS could be developed (or expanded, if they already exist) for specific clean assets, and in what instances should grant-based schemes be prioritised.** Such assessment requires understanding: who the end-beneficiaries are; how mature the technology is; the revenues associated with the installation; and then determine the extent to which opportunities exist to lever private investments. **Many transition assets come with revenues and savings, and many end-beneficiaries have access to complementary funding streams.**

A lack of means-testing (only supporting households with insufficient means) and additionality requirements (supporting just assets that would not otherwise receive private financing) has been raised in the context of RRF allocations by Member States. **This leads to inefficiency and moral hazard, as grants are overused as subsidies without delivering expected social and EU added values**. For example, grants paid to subsidise the purchase of EVs may be equally "green" as investments in the extension of a metro line, although the transport service efficiency and overall support to meet climate targets are dramatically different and public transport faces a larger overall public investment gap.

To ensure a just transition, investment assessments within Member States' funding plans need social safeguards so that vulnerable households have fair and easy-to-access grant-based programs, and SMEs are made aware of opportunities for EU financing. **The "EU added value" is an additional consideration that should be integrated in Member States' planning** to ensure the prioritisation of EU funding for infrastructure, public transport, interconnector investments and other Services of General Interest.[462]

In the case of climate-related investment gaps, the ex-ante assessments of the assets due to be deployed (especially PV panels, EV networks and chargers, heat pumps, energy savings, cleantech industrial facilities) will help determine the financial envelope and pro-forma financing expected in each region. **Once these assessments are undertaken by Member States (national or regional authorities), the most efficient EU FIaaS can be activated based upon an "off the shelf" and "as a service" model** to reach scale, accelerate the channelling of EU funds and crowd-in private money into the large sectoral climate investment gaps.

[462] As proposed by Letta. Jacques Delors Centre. (2023). Green Deal and Industrial Policy: Navigating the Transition. Available at https://www.delorscentre.eu/fileadmin/2_Research/1_About_our_research/2_Research_centres/6_Jacques_Delors_Centre/Publications/20230525_SMack_FFindeisen_GreenDeal.pdf ; New Economics Foundation. (2023). Strong Public Services for a Prosperous Europe. Available at https://neweconomics.org/uploads/files/Strong-public-services-for-a-prosperous-Europe_NEF.pdf

Industry: Supporting cleantech front-runners in strategic sectors to boost the EU's global leadership with EU-level harmonised instruments + + + +

The climate investment gap in industry is just 5% of the overall gap (€16 billion annually) and is expected to be filled mainly with private investments from large industrial corporations that have good access to long-term finance.[463] Most of the public funding effort should be in: a) R&I grant-based funding for early-stage cleantech, and b) **creating blended finance instruments to facilitate access to transition finance to industrial SMEs and lower the green premium of new clean technologies that are in the scale-up phase.** While the previous chapter describes how the InvestEU MS compartment is a promising instrument to develop tailored national financing schemes for SME decarbonisation, this chapter will develop recommendations to ensure an MFF fit for the cleantech race. This is a strategic priority in Commission President von der Leyen[464] that requires a dedicated deep dive, as several EU-level and EIB instruments exist with an untapped potential to deliver.

One of these instruments is the **Hydrogen Premium Auction, which is positioned "as a Service" for Member States under the Innovation Fund** and is specifically designed with a particular focus on boosting national hydrogen manufacturing projects.[465] Several of its design features provide inspiration for developing EU FIaaS to support national cleantech projects - and in other sectors as well. In his Parliamentary hearing, Commissioner for Climate, Wopke Hoekstra, already highlights the need to "continue the success of the Innovation Fund" by fostering "auctions-as-a-service" or "grants-as-a-service" to enable Member States to fund projects on their territory screened by the Innovation Fund, and like this "tapping" the benefits of the single market.[466]

The auction as a service is first delivered by the Hydrogen Premium Auction, and managed by the European Climate, Infrastructure and Environment Executive Agency (CINEA) with budget allocations from the Innovation Fund. It aims to reduce green hydrogen costs through competitive bidding and economies of scale. Under this program, CINEA runs a pan-European auction identifying eligible projects that can receive support, first, from the Innovation Fund's own budget, and then from national Member State contributions.

In the first EU-level auction, **seven renewable hydrogen projects were selected and allocated a total budget of €720 million in support from the Innovation Fund.[467] The auction was highly oversubscribed as it attracted a total of 132 bids.**[468] The budget allocations to projects are provided based upon the premium that each project requires per kilogram of green hydrogen produced. The competitive bidding process ensures the lowest premium bids are awarded funding,[469] as evaluated and ranked by CINEA.[470] The winning bidders in the first auction plan to produce 1.58 million tonnes of renewable hydrogen over ten years, avoiding more than 10 million tonnes of CO2 emissions.[471]

The "auction as a service" component allows Member States to finance the national projects that are marked as eligible by CINEA but have not been awarded Innovation Fund money due to budget limitations.[472] Member States can contribute to this auction with domestic funds,[473] but also, as indicated by the Commission, there is the possibility of allocating national contributions that come from ETS revenues, the Modernisation Fund and "other sources".[474]

[463] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[464] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[465] European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf
[466] European Parliament. (2024). Hoekstra Written Questions and Answers. Available at https://hearings.elections.europa.eu/documents/hoekstra/hoekstra_writtenquestionsandanswers_en.pdf
[467] European Commission. (2024). Innovation Fund: Competitive Bidding Process. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en#auctions-as-a-service-aaas
[468] European Commission. (2024). EU Decarbonisation Call for Projects and Hydrogen Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_24_2333
[469] Euro-Funding. (2023). European Decarbonisation and Hydrogen Auction Opportunities. Available at https://euro-funding.com/en/blog/new-2023-european-decarbonisation-call-for-projects-and-hydrogen-auction-opens/
[470] European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf (p.3)
[471] European Commission. (2024). EU Decarbonisation Call for Projects and Hydrogen Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_24_2333
[472] European Commission. (2023). Results of the EU's Hydrogen Subsidy Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5823
[473] Florence School of Regulation. (2023). Insights on the EU's Hydrogen Subsidy Auction. Available at https://fsr.eui.eu/three-thoughts-on-the-eus-inaugural-hydrogen-subsidy-auction/
[474] European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf (p.3)

The awards offered by Member States through this service are considered as State Aid, but are **subject to a faster clearance process by which the Commission facilitates State aid notifications of Member State schemes through pre-filled notification templates and streamlined dialogue during prenotification**.[475] When allocating national funding to projects, Member States still need to respect the price-based project ranking established by CINEA, while they are still responsible for providing the awards, contract signatures, monitoring and payments.[476]

The "efficiency" gain of this auction as a service is that Member States can use an existing auction mechanism managed by CINEA to run a ranking mechanism that awards projects in their territory, thus saving the time and administrative costs in having to develop and resourcing a technically different national auction process. This provides hydrogen project developers a single set of rules for winning a subsidy across Europe, rather than having to apply to various funding schemes with different application procedures and timelines.[477] **The Commission can play an active role in the organisation of knowledge- and best practice sharing for all awarded projects.**[478] In this process, companies are dealt with directly instead of via financial intermediaries, which given the high uptake and oversubscription[479] in the general Hydrogen Premium Auction, it has shown to be a successful distribution model for this sector.

Germany was the first Member State to use the "auction as a service" component, and was then followed more recently by Spain, Austria and Lithuania.[480] **The Commission is currently considering extending these auctions as a service to other cleantech sectors.** However, a DG CLIMA paper with financing options to support battery manufacturing points to some limitations in terms of the asset targeted, as "auctions work best for homogenous goods, where each unit is identical (e.g. 1kg of H2) and therefore bid-prices are perfectly comparable."[481] This is why the Commission's final choice, although still to be announced, appears to be the creation of a Battery Fund with a call for proposals, as suggested by experts interviewed .The next chapter provides other alternatives of instruments to support the scale up of cleantech.

Germany is the first Member State to boost renewable hydrogen production by using the new EU Auction as a Service

Germany allocated €350 million from its national budget to the Innovation Fund auctions process for hydrogen production projects in its territory.[482] The auction was open until February 2024, and CINEA evaluated and ranked the bids by price.[483] As no winning bids from the EU-level HPA were located in Germany, some promoters of ranked projects in Germany were marked as eligible by CINEA and could decide between staying in the EU reserve list for future funding or to move their application to the Federal Ministry for Economic Affairs and Climate Action of Germany ("BMWK").

The BMWK made the funding decision based on the CINEA price-based ranking,[484] and BMWK can request further documentation if deemed necessary.[485] In this sense, the BMWK is currently developing an "additional" funding guideline.[486] The implementation period is 5 years from the award of the contract and the funding can be paid over a period of up to 10 years as a grant determined in euros per kg for the renewable hydrogen produced (with a maximum price established by the tender of €4.5 per kg of renewable hydrogen produced).[487]

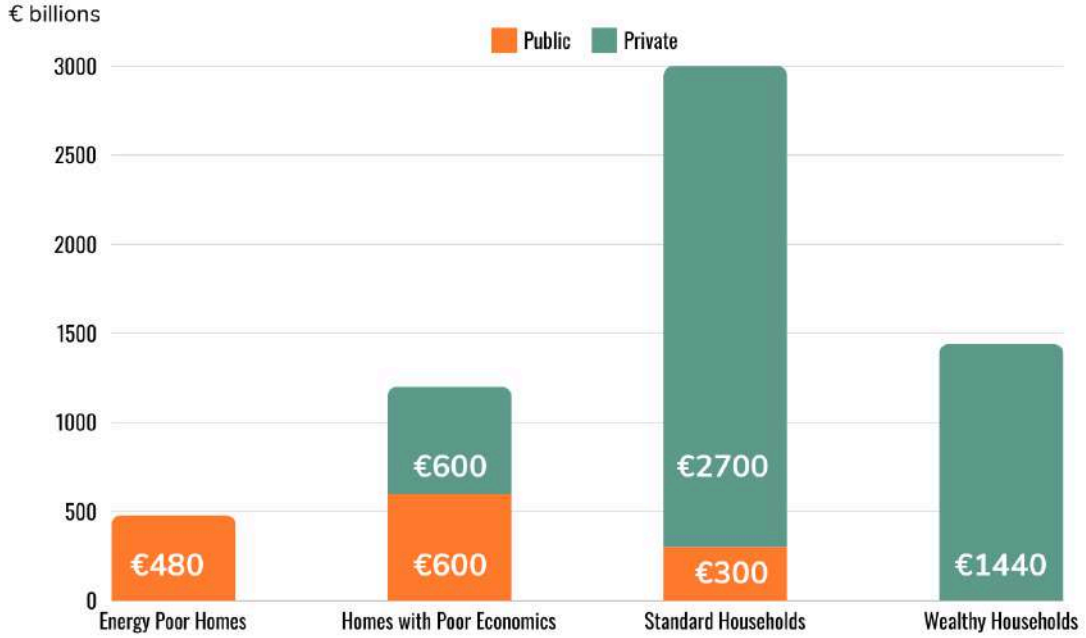
[475] European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf
[476] Ibid.
[477] European Commission. (2024). Innovation Fund: Competitive Bidding Process. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en
[478] European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf
[479] European Commission. (2024). EU Decarbonisation Call for Projects and Hydrogen Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_24_2333
[480] Spain is allocating between €280 and €400 million for the Auctions-as-a-Service scheme, using funds from its Recovery and Resilience Plan, Lithuania is dedicating around €36 million for the Auctions-as-a-Service scheme from their Modernisation Fund budget, Austria is committing €400 million from its national budget. European Commission. (2023). Results of the EU's Hydrogen Subsidy Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5823
[481] European Commission. (2023). Bidding Battery Options Paper. Available at https://climate.ec.europa.eu/document/download/a36b3195-cf28-4628-83f3-ba51b3b0a00e_en?filename=policy_funding_if_bidding_battery_options_paper_en_0.pdf
[482] European Commission. (2024). Innovation Fund: Competitive Bidding Process. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en
[483] German Federal Ministry for Economic Affairs and Climate Action (BMWK). (2023). H2 Pilot Program in EU Innovation Fund. Available at https://www.bmwk.de/Redaktion/DE/Downloads/H/h2-pilotausschreibung-eu-innovationsfonds.html
[484] Ibid.
[485] Ibid.
[486] Ibid.
[487] Ibid..

Buildings: filling the largest investment gap with an EU Renovation Loan as a service to mobilise more private savings into deep renovations + + + +

The renovation of buildings involves well-established technologies that bring significant reductions in energy costs, green value and generate a positive economic return over their lifetime.[488] **The buildings sector presents the largest climate investment gap and is uniquely well positioned to benefit from an increased use of EU FlaaS, as individual renovations deliver financial benefits and improve the value of the building for owners.**

Residential and commercial buildings need different financing and funding approaches depending upon who owns and occupies them. Best-in-class blended financial instruments are potentially the only efficient avenue that can deliver renovations at the speed and scale required by the EU's climate and energy targets. In 2023, the renovation of energy poor homes (8% of EU households) was estimated as requiring a total of €480 billion invested between 2023 and 2050 (Graph 20). This is just over 1% of the €4 trillion annual social expenditure in the EU.[489] The necessary attribution of grants for these largely "social investments" means that **financial instruments are required to lever private finance in other, wealthier segments of the population, particularly those "homes with poor economics" as reported in detailed sector research.**[490]

Graph 20: €6 trillion of home renovation finance needed for 2023-2050



Source: Climate Strategy (2023)

EU funds have struggled to deliver blended finance for building renovations, which will continue to pose key challenges for a necessary massive scale-up under this and the next MFF periods.[491] A report by Renovate Europe Campaign (2024) finds that "Cohesion policy remains a heavily grant-dominated environment (...), although positive developments show innovative projects and increased use of financial instruments in the energy efficiency sector."[492] Within the 9% commitments from ERDF and CF to financial

[488] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[489] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php Many studies have shown that the returns on this form of social investment will generate long-term positive returns to the public purse through increased economic activity, reduced health service costs and alleviated social pressures.
[490] Ibid.
[491] Renovate Europe. (2024). Multiannual Financial Framework Report 2021–2027. Available at https://www.renovate-europe.eu/wp-content/uploads/2024/01/23-04-24_MFF_21-27_Report_without_annex.pdf
[492] Ibid.

instruments, the share of energy efficiency investments via financial instruments is higher at 13%.[493] An additional 7% are provided as grants within a financial instrument. Still, the report finds that the use of blended finance instruments could be "vastly amplified" to successfully leverage private finance.

Member States' plans for Cohesion funds show an estimated €6.5 billion allocation for the energy renovation of residential buildings between 2021 and 2027.[494] Under RRF, €23 billion is expected to be deployed in residential buildings by 2026.[495] In total, these EU funds would only cover an additional 6% of the investment gap in energy poor homes, and this provides no capacity to accelerate energy renovation in other segments of the residential buildings market.

The Social Climate Fund (SCF) will be in place from 2026 and funded by revenues from the ETS-2 which covers buildings and transport. The social investments delivered through grant-enabled renovations in the energy-poor segment of the population are ideal for SCF. However, given that SCF also covers heating and cooling, integration of renewable energy, sustainable mobility, and income support to pay increased energy bills, it does not have enough funding if it purely allocates through grants. **With a total budget of €86.7 billion, the SCF would represent just 18% of the money needed for the renovation of the EU's energy poor homes, if spent entirely on that.**

The Just Transition Fund and the Modernisation Fund are used for supporting building renovation, but again these are small pots of money that share many investment priorities. **Given that RRF will end in 2026, there is a clear need to increase the public budget to support energy poor households.** The Mission Letters for Commissioner Jorgensen (Energy and Housing) and Commissioner Fitto (Cohesion) mandate the doubling of Cohesion Policy funds for affordable housing[496] with sustainability and resilience criteria to ensure it funds deep renovations to deliver lower energy bills.

Increasing the allocation of the EU budget for the energy poor will reduce the availability of grants in other segments of the population where financial instruments can lever more private finance. Over 70% of EU homeowners own the homes they live in. **The majority of these homeowners[497] can borrow against their homes to improve their comfort and energy performance and be paid back through a combination of energy savings and value increases over long periods.**[498] There is insufficient public funding to provide energy efficiency to all the households that need it, or that merit it. This is why markets have to be led by minimum energy performance standards coupled with attractive renovation funding options created through the efficient blending of public money for selected homeowners, with easy access and clear benefits. Just one or the other will deliver suboptimal outcomes.

This creates an opportunity for an EU Renovation Loan (ERL) as a way to blend public and private finance, lower the financing costs for home renovation and activate retail lenders to support the renovation of "homes with poor economics".[499] There is a significant segment of homeowners without savings, with a low energy performance and without access to a mortgage or cost effective finance. Typically these are pensioners, the retired and young families, and can be up to 20% of retail banks' clients.[500] An EU Renovation Loan can provide the benefits and cost savings of a deep renovation with most of the interest and principal repayments made at the earlier of transfer, sale or 30 years. An ERL offers an extra-low interest rate, by accessing an EU budgetary guarantee, to allow elderly and struggling homeowners in poor performing homes access to attractive renovation finance.

---

[493] All investments made under Specific Objective 2.1. Therefore, as well as the categories used throughout this report for businesses, residential and public buildings, it also includes investments in SME energy efficiency (intervention field 38), large enterprise energy efficiency (39), new energy efficient buildings (43), and services linked to the low carbon economy (46). Renovate Europe. (2024). Multiannual Financial Framework Report 2021–2027. Available at https://www.renovate-europe.eu/wp-content/uploads/2024/01/23-04-24_MFF_21-27_Report_without_annex.pdf

[494] Renovate Europe. (2023). 2021-2027 Cohesion Policy Support for Energy Efficiency and Building Renovation. Available at https://www.renovate-europe.eu/2021-2027-cohesion-policy-support-for-energy-efficiency-and-building-renovation/#:~:text=What%20is%20the%20break%2Ddown,subject%20to%20energy%20efficiency%20requirements

[495] This is just an assessment of the plans from 18 Member States. E3G & Renovate Europe. (2022). Renovate2Recover One Year On: What progress on buildings renovation?. Available at https://www.renovate-europe.eu/renovate2recover-one-year-on-what-progress-on-building-renovation/

[496] European Commission. (2023). Energy Transition Financing Mechanisms. Available at https://commission.europa.eu/document/1c203799-0137-482e-bd18-4f6813535986_en

[497] Half of EU households (100 million) would be "standards households." Approximately 48 million would be wealthy households. Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

[498] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

[499] Approximately 40 million homes in the EU are unable to privately finance a home renovation. Roughly 30%, or 12 million, of these households will be renting, and 28 million will own their own homes. For this segment a mix of grants and public support (via guarantees and EU Renovation Loans) will be required. The energy savings for this segment are real, but each building occupancy type (e.g. multifamily, single occupancy, detached etc) in different Member States will likely require a different public-private funding mix. For the sake of approximation, we assume that in this segment the funding mix will be 50% public and 50% private, as a rule of thumb. Another way to think about it is that around half the €30,000 upgrade investment budget can be repaid in energy savings (aligning with the typical projects listed in the prior chapter) and the remainder is part social resilience investment and part poverty alleviation, with returns to the state over the long-term.
Climate Strategy & Partners. (2022). The EU Renovation Loan: a new instrument to fund the EU Renovation Wave. Available at https://www.climatestrategy.com/en/informe_23.php

[500] Ibid.

The "EU Renovation Loan": An EU Financial Instrument provided as a Service to Member States renovating their residential buildings

Adopted in September 2023, and April 2024 respectively, the Energy Efficiency Directive[501] (EED) and Energy Performance of Buildings Directive[502] (EPBD) provide a new driving force to accelerate the renovation of European buildings. There are over one hundred thousand bank branches in the European Union and retail lenders process millions of daily customer interactions online.[503] **Over a quarter of EU homes have a mortgage but this channel to discuss energy savings is underused.** These retail lenders are well placed to offer and process the millions of energy renovation loans, or green mortgage top-ups, annually required to deliver the finance needed to upgrade and modernise the EU's buildings at the speed required.[504]

The EU Renovation Loan is designed as a long-term (30 year) financial instrument with a zero coupon structure[505], allowing qualifying homeowners to borrow the amount they require to transform their home through a deep renovation, and not pay cash interest until the property is sold or transferred, or the loan matures. **Interest on an EU Renovation Loan would accrue at EU borrowing costs, under an EU Green Guarantee (like that available under InvestEU) to offer access to this low-cost finance to older and less wealthy EU homeowners.**

The ERL would be backed by a junior lien on the property (so as not to reduce collateral available to the existing mortgage) and could benefit from central bank liquidity – to create a secondary market for this asset for originating banks. Banks would make fees through ERL origination, they will improve the creditworthiness of their clients, green their existing mortgage portfolios and align their assets more quickly with the Paris Agreement, thereby improving their Green Asset Ratios.

EED's article 30 and EPBD's article 17 call for the offer of green loans and green mortgages to promote energy efficiency lending, and mention the need for a 'Union guarantee' and 'renovation loans' and 'guarantee funds' combined with EU programmes respectively. Backed by an EU-level guarantee, the ERL could ensure fair access to an EU Capital Market for citizens and to assist banks in their lending to some of the most deserving families, and in turn solve the renovation finance gap at the right scale. **This would in turn mitigate energy poverty, and decarbonise the EU's buildingstock, hence meeting the objectives of the EED and the EPBD.**

[501] European Commission. (2023). New Energy Efficiency Directive published. Available at https://energy.ec.europa.eu/news/new-energy-efficiency-directive-published-2023-09-20_en
[502] European Union. (2024).Directive on the energy performance of buildings (recast). Available at https://data.consilium.europa.eu/doc/document/PE-102-2023-INIT/en/pdf
[503] EUSEW. (2023). Fredrik Nilzen intervention in panel: Strengthening energy efficiency for the clean energy transition and energy independence. Available at https://interactive.eusew.eu/eusew-2023/sessions/3305191a-6c82-44c1-802f-145d622bfdc5
[504] Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php
[505] Investopedia. (2021). What Is a Zero-Coupon Mortgage?. Available at https://www.investopedia.com/terms/z/zero-coupon-mortgage.asp

As a new attempt to reinvigorate energy efficiency investments in the review of the MFF and show leadership, a blueprint of the EU Renovation Loan can be created under EIB management as a fifth policy window of InvestEU (a Sustainable and Affordable Housing window). The "first million" homes of households with “poor economics” can be renovated through the EIB-led ERL (levering its existing PF4EE networks from the LIFE programme), subscribing retail banks, backed by the InvestEU budget guarantee collateralised by a contribution from the SCF, or similar EU funding source. Given likely low default rates on collateralised renovation loans, the expected leverage factor for the fifth policy window of InvestEU would be high (likely much higher than 11.4x) and therefore this window would provide excellent efficiency for EU committed contributions.

Once designed, the EU Renovation Loan can be offered to Member States via an InvestEU Compartment as an EU Financial Instrument as a Service. Member States could provide the collateral from nationally-allocated EU funds (e.g. Cohesion or Modernisation funding) to back the budgetary guarantee. Their policy and local retail bank(s) could be the agents and distributors of the nationally-designed ERL. **This “Renovation Loan as a Service” to Member States could extend EU cost of funds fairly to all European citizens, lever the EU budget and provide attractive long-term funding for renovations.**

In the case of commercial buildings, financial instruments must be used (and not grants) to incentivize business investments in upgrading the energy performance of their facilities by lowering the costs of financing. Targeted schemes have been designed with technical support to raise SME awareness about the economic benefits of renovations.[506] Under Cohesion funds, Member States allocated a total of €2.9 billion to the renovation of commercial buildings,[507] and under RRF another €2.9 billion.[508] This fills 2% of the estimated €215 billion total investment gap in tertiary buildings in the next 5 years (€43 billion annually) according to I4CE (2024).[509] The Sustainable Infrastructure window of InvestEU already provides dedicated financial products for the renovation of commercial buildings.[510] As illustrated in the previous chapter, **the InvestEU Member State compartment is an opportunity to produce dedicated financial schemes for SMEs and increase national investment capacities in renovating commercial buildings** (for instance, by contributing with the Cohesion and RRF funds allocated to this purpose).

Energy: EU-level financial instruments to promote cross-border collaboration and accelerate local, small-scale, retail investments + + + +

Energy and grids investments are just 20%[511] of the overall investment gap (€70 billion annually) and they are mostly expected to come from large developers and utilities with good access to finance. This is why Institute Rousseau (2024) estimates only a 22% public share needed to fill the gap. EU-level financial instruments that target energy investments should focus on setting the right price incentives and facilitate procedures to accelerate the deployment of large energy and infrastructure investments.

Households and SMEs are significant energy investors through their installation of rooftop solar panels, and via energy communities.[512] **A smart EU funding strategy is required to accelerate these millions of smaller-scale transactions, by lowering their costs of finance or providing grant-based targeted support local sources for the energy poor**. A CAN Europe (2024) report finds that most Member States lack a clear roadmap or strategy for rooftop solar PV, with insufficient stakeholder involvement and institutional mechanisms to support development, coupled with frequent changes in policy and a lack of targeted support for low-income households that have impacted consumer confidence and sector stability.[513]

[506] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[507] For public buildings, under Cohesion MS allocated a total of €10 billion. Renovate Europe. (2023). 2021-2027 Cohesion Policy Support for Energy Efficiency and Building Renovation. Available at https://www.renovate-europe.eu/2021-2027-cohesion-policy-support-for-energy-efficiency-and-building-renovation/#:~:text=What%20is%20the%20break%2Ddown,subject%20to%20energy%20efficiency%20requirements
[508] This is just an assessment of the plans from 18 Member States. Renovate Europe. (2018). Renovate to Recover: Full Study. Available at https://www.renovate-europe.eu/wp-content/uploads/2018/09/Renovate2Recover_Full-Study-1.pdf
[509] Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf - This gap also includes public buildings, for which MS have allocated under RRF a total of €22.5 billion.
[510] InvestEU. (n.d.). About the InvestEU Fund. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/about-investeu-fund_en
[511] Note that the sectoral shares of the total investment gap do not add up to 100% as they are averages from different studies with varying estimates
[512] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063
[513] CAN Europe. (2024). Rooftop Solar PV Report Update. Available at https://caneurope.org/content/uploads/2024/04/Rooftop-Solar-PV-Report-Update_April-2024.pdf

A similar approach to the buildings sector can promote more small-scale energy generation. This would **prioritise grants for the energy poor, and make use of blended finance for qualifying households and dedicated financial schemes for SMEs, taking advantage of the opportunities for simplification and streamlining that EU Financial Instruments as a Service can bring**. The InvestEU Member State compartment can support these instruments and link technical assistance from the InvestEU Advisory Hub. In this way, an EU-level targeted instrument for retail rooftop solar can support Member States in carrying out the necessary reforms for streamlining permitting and other administrative procedures.[514] **A "reforms for investments" approach can enhance the scale and impact of the financing scheme, and can be supported by DG REFORMs Technical Support Instrument.** Rooftop PV can also be included in the eligible assets list for the ERLs in the Member States whose renovation climates make sense.

The EU-level Renewable Energy Finance Mechanism is another example of an EU FlaaS to promote cross-border collaboration between Member States in renewable energy projects. To enable lowest-cost renewable target achievement, this mechanism can be voluntarily activated to link "contributing countries" with "hosting countries" that use payments from contributing countries to build renewable projects in the host's territory. The renewable energy generated as a result of such a collaboration jointly contributes to renewable energy targets in both of the respective countries (mostly to the contributing country). Through the REFM, the Commission turns these national contributions into grants or financial instruments (such as low-interest loans) delivered via competitive calls for proposals.[515] As standard renewable energy technologies (solar, onshore wind) have become more cost-competitive on a market basis, **REFM should shift towards mainly a financial instruments approach to crowd-in private investments.**[516]

The EU Renewable Energy Finance Mechanism as a Service for Member States to promote cross-border green energy collaboration

The Renewable Energy Finance Mechanism is designed to help EU member states develop and deploy renewable energy and therefore make it easier to deliver national and EU targets under the European Green Deal.[517] The REFM provides a means for Member States with marginally less attractive renewable resources[518] to **provide financial incentives to build lower cost and competitive production in other EU countries and receive the credit for the energy produced by that project as a contribution to its EU climate and energy targets**. This instrument also helps the host countries (especially for Member States with less income or with major constraints in their budget) to benefit from REFM's advantages[519] without an extra burden on their national budget.

Member States are designated as either project "contributors" or project "hosts" and the energy generated by these renewable projects counts towards the renewable energy targets for both countries.[520] Contributing Member States can choose to invest in technologies that would make no sense on their own territories, for example a land-locked 'Contributor' could support offshore wind projects.[521] **Host countries, with limited national budgets for renewable energy production, get to keep the positive externalities of more MW of renewable energy generating capacity** (better air quality especially if a coal-fired plant is closed because of the RES project, jobs…).[522]

[514] For instance, an exemption from regulation and licensing for a retail solar PV panel. See for instance the new planning permission exemptions for rooftop solar panels on homes and other buildings in Ireland. Government of Ireland. (2022). New Planning Permission Exemptions for Rooftop Solar Panels. Available at https://www.gov.ie/en/press-release/9ba0e-new-planning-permission-exemptions-for-rooftop-solar-panels-on-homes-and-other-buildings/
[515] European Commission. (2020). Regulation (EU) No 1294/2020 on the Union renewable energy financing mechanism . Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1294
[516] Renewable electricity is broadly cost-competitive on a market basis in many regions (assuming priority dispatch) and the Commission therefore expects that the need for public support will decrease and that private funding will replace it and drive accelerated deployment - European Commission. (2021). Commission Recommendation (EU) 2021/1749 of 28 September 2021 on Energy Efficiency First: from principles to practice. Guidelines and examples for the implementation in decision-making in the energy and non-energy sectors. Official Journal of the European Union, L 350, 1-9. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749
[517] European Commission. (n.d.). EU Renewable Energy Financing Mechanism. Available at https://energy.ec.europa.eu/topics/renewable-energy/financing/eu-renewable-energy-financing-mechanism_en
[518] European Commission. (n.d.). CINEA - About the EU Renewable Energy Financing Mechanism. Available at https://cinea.ec.europa.eu/programmes/eu-renewable-energy-financing-mechanism/about-eu-renewable-energy-financing-mechanism_en
[519] This can include: boosting local employment, lower greenhouse gas emissions, the modernisation of the energy system and reduced dependency on import. European Commission. (n.d.). CINEA - How Does the EU Renewable Energy Financing Mechanism Work? Available at https://cinea.ec.europa.eu/eu-renewable-energy-financing-mechanism-how-does-it-work_en
[520] European Commission. (2020). European Green Deal: New Financing Mechanism to Boost Renewable Energy. Available at https://commission.europa.eu/news/european-green-deal-new-financing-mechanism-boost-renewable-energy-2020-09-17_en
[521] European Commission. (n.d.). EU Renewable Energy Financing Mechanism. Available at https://energy.ec.europa.eu/topics/renewable-energy/financing/eu-renewable-energy-financing-mechanism_en
[522] Idem.

Member States express interest in REFM via an annual call that the Energy Commissioner sends to all EU energy ministers with a questionnaire where they define a participation and their preferences.[523] **Contributing countries pay a voluntary financial contribution into the scheme that is then used by the Commission to fund a competitive tendering process for projects located on the territory of the host countries that agree to participate.**[524]

Projects are awarded from the lowest to the highest energy production price.[525] **The Commission takes into account the preferences expressed by both contributing and host Member States to decide on the allocation of grants for the awarded projects**. This can support the build of renewable energy production sites (as investment support) or the delivery of renewable energy by providing incentives (as operating support) to offer premiums over normal market revenues.[526]

Finland-Luxembourg: The first tender under the EU renewable energy financing mechanism was oversubscribed

The first cross-border tender for renewables under REFM closed in September 2023, and the bids presented for project support significantly exceeded the proposed target volumes.[527] **This resulted in a binding commitment between Finland (host) and Luxembourg (contributor), for investment support to install solar PV infrastructure in Finland with a minimum capacity of 5 MW and a maximum of 100 MW, with a budget of €40 million as a voluntary contribution by Luxembourg.**[528] The tender had an initial target of 100 MW installed, and the total capacity of the projects that applied was 516 MW.[529] In resolution, the Commission decided to fund seven solar park projects totalling 213 MW with €27.5 million of Luxembourg's funding, for which **Luxembourg receives 80% of the renewable energy production of the projects for 15 years in the form of statistical transfers**.[530] For 2024, a second tender was opened on 30th July of 2024 until 4th March 2025, where Luxembourg will contribute with a bigger budget of €52.4 million to host (again) solar PV projects in Finland and onshore wind projects in Estonia.[531] ç

This partnership demonstrates how a small country like Luxembourg, with only 2,586 km2 of land, can benefit from the renewable energy production of a country with bigger extension and a higher cumulative solar PV capacity.[532] Luxembourg has used similar tools before, when in 2017, together with Lithuania they became the first EU countries to sign a bilateral agreement on statistical transfers of renewable energy, given that Lithuania was then producing renewable energy that already exceeded its 2020 renewable energy target.[533]

The REFM is intended as a "gap filler", the gap in question being that which exists between the sum of Member States's individual contributions to the overall EU renewable energy target, and the EU target itself. The REFM is the mechanism the European Commission will seek to deploy if, as 2030 approaches, the gap is not closing. Analysis of Member States' final updated NECPs (which should all have been submitted to the EC by June 2024) will reveal whether a gap is expected, and hence whether the need to deploy REFM is expected.

The incoming European Commission will decide whether to revise the "Governance of the Energy Union and Climate Action" Regulation[534] underpinning REFM and could decide to require REFM bids and ask more directly to support the EU's ambitions in clean energy industrial policy. One way would be to ask Member States to favour EU-made technology, eco-designed technology or otherwise innovative technology, mirroring Art 26 of NZIA.

[523] European Commission. (n.d.). CINEA - Expression of Interest: EU Renewable Energy Financing Mechanism. Available at https://cinea.ec.europa.eu/expression-interest-eu-renewable-energy-financing-mechanism_en
[524] European Commission. (n.d.). EU Renewable Energy Financing Mechanism. Available at https://energy.ec.europa.eu/topics/renewable-energy/financing/eu-renewable-energy-financing-mechanism_en
[525] European Commission. (2020). Regulation (EU) No 1294/2020 on the Union renewable energy financing mechanism . Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1294 (article 12)
[526] Ibid.
[527] European Commission. (2023). EU Renewable Energy Financing Mechanism: First Tender Oversubscribed. Available at https://energy.ec.europa.eu/news/eu-renewable-energy-financing-mechanism-first-tender-oversubscribed-2023-09-29_en
[528] European Commission. (n.d.). EU Renewable Energy Financing Mechanism. Available at https://energy.ec.europa.eu/topics/renewable-energy/financing/eu-renewable-energy-financing-mechanism_en
[529] European Commission. (2023). EU Renewable Energy Financing Mechanism: First Tender Oversubscribed. Available at https://energy.ec.europa.eu/news/eu-renewable-energy-financing-mechanism-first-tender-oversubscribed-2023-09-29_en
[530] Valtioneuvosto (Finnish Government). (2024). Seven Solar Park Projects Receive EUR 27.5 Million in Luxembourg-Funded Aid. Available at https://valtioneuvosto.fi/en/-/1410877/seven-solar-park-projects-receive-eur-27.5-million-in-luxembourg-funded-aid
[531] European Commission. (2024). RENEWFM 2025: Multi-Investment Opportunities. Available at https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/renewfm-2025-invest-multi?order=DESC&pageNumber=1&pageSize=50&sortBy=startDate&keywords=renewfm&isExactMatch=true&status=31094501,31094502
[532] Finland ranks 59th in the world for cumulative solar PV capacity while Luxembourg ranks 72nd. Profile Solar. (n.d.). Solar Energy Projects in Finland. Available at https://profilesolar.com/countries/FI/ ; Profile Solar. (n.d.). Solar Energy Projects in Luxembourg. Available at https://profilesolar.com/locations/Luxembourg/Luxembourg/
[533] International Energy Agency. (2020). Luxembourg 2020: Energy Policy Review. Available at https://iea.blob.core.windows.net/assets/8875d562-756c-414c-bc7e-5fc115b1a38c/Luxembourg_2020_Energy_Policy_Review.pdf
[534] European Union. (2018). Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ:L:2018:328:TOC&uri=uriserv:OJ.L_.2018.328.01.0001.01.ENG.

Transport: a case for prioritising the "EU added value" in clean public transport and levering private finance for private modes of transport + + + +

In the transport sector, many experts see a significant climate investment gap in rail, which is considered a clear public good with "EU added value" to offer sustainable mobility for all EU citizens and connectivity between Member States. The current public gap in rail is estimated as €36 billion per annum[535] and the Connecting Europe Facility Transport only covers 10% of this. European funds are well-established sources of funding for Member States to increase their investments in rail and also support other forms of public transport, although the bulk of public funding in transport still sits at national level. **Yet, analysis by CAN Europe shows that transport-related investments funded by the RRF are prioritising the roll out of infrastructure for e-mobility with a focus on private cars.** Citizen choice of mode of transport can only be improved for rail if those options are competitive and cost effective. Prioritising public funding for public transport would support its cost-competitiveness and help to facilitate clean transportation to all citizens.
For non-public modes of transport, blended finance instruments can be used to target the deployment at scale of clean technologies to optimise the limited funds in the current EU budget. T&E offers a set of proposals[536] for the electrification of private road transport that develop ideas for different EU-level financing schemes targeted at deploying specific clean assets and making them more affordable:

- **A €20 billion social leasing scheme under the Social Climate Fund to increase EV adoption through affordable leasing options for vulnerable households.** While the SCF can, and should be, also used for public transport investments, other EU budget lines are well-placed to support public transport (e.g. Cohesion funds, InvestEU), while the existing EU budget is not fit for purpose for social leasing.

- **Cheap loans and guarantees to help small hauliers purchase zero-emission Heavy-Duty Vehicles and support manufacturing.** Loans from the EIB and national public banks worth €25 billion by 2030, together with a €10bn guarantee under InvestEU, could mobilise a total of €95bn.

- **For charging infrastructure, loans from public banks should support the installation of deposit (HDVs) and home (LDVs) chargers.**

These blended finance schemes could also be operationalised by introducing them as EU FlaaS for Member States, with design support from the EIB Group to pilot an EU-level instrument that could be replicated nationally.

Agriculture: Optimising CAP expenditures with EU financial instruments to facilitate access to sustainable financing for small and young farms + + + +

Several EU institutions, think tanks, NGOs and experts have raised concerns about inefficiencies in the Common Agricultural Policy (CAP) and Member States' Strategic Plans, as well as inconsistencies in CAP's earmarked climate expenditures. The public investment gap is the third largest sectoral gap (€44 billion), while smaller farms and young farmers face several disadvantages when trying to access private finance for green investments. The EIB estimates that 30.4% (€18.9 billion) of the financing gap in the agriculture sector is in green investments. **The EIB Group has identified agriculture and the bioeconomy as key priorities under its 2024-2027 Strategic Roadmap.**[537] The Strategic Dialogue on the Future of EU Agriculture finds this as an opportunity for the EIB to launch a specific loan package for the sector to bridge the financing gap.[538]

[535] Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.
[536] Transport & Environment. (2024). Investment Needs for a Green Transition in Transport. Available at https://www.transportenvironment.org/uploads/files/202411_investment_needs_study.pdf
[537] European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/en/publications/20240198-eib-group-2024-2027-strategic-roadmap
[538] European Commission. (2024). Strategic Dialogue Report 2024. Available at https://agriculture.ec.europa.eu/document/download/171329ff-0f50-4fa5-946f-aea11032172e_en?filename=strategic-dialogue-report-2024_en.pdf

The Strategic Dialogue report provides several recommendations on how EIB-led instruments could facilitate access to finance for small and younger farmers,[539] such as:

- **EIB lending envelope for intermediaries of up to €3 billion (for the period 2024- 2027),** which includes targeted advisory support and additional guarantee capacity for de-risking lending to farmers and increasing financing flows and blending with either national or EU grants;
- **A Venture Debt programme or a new mandate for levering CAP resources.** This is important to address the scale-up financing gap that innovative cleantech firms in the agri and bioeconomy sectors face;

- **An EIF-led Private Equity programme** to back European fund managers that target European innovative technologies and solutions for the Future of Food;
- **An EIF guarantee scheme, possibly under InvestEU, or a dedicated Agricultural envelope that would incentivize Member States to lever their national resources of funds from the European Agricultural Fund for Rural Development (EAFRD) under the CAP Strategic Plans.** Blended instruments can be designed by the EIB and added to such a scheme.

A dedicated Agricultural envelope under InvestEU is enabled by the Member State compartment, which allows Member States to contribute up to 5% of their EAFRD funds.[540] This can then be used for a tailored financing scheme, as a service for the contributing Member State, to target the sustainability support for local farmers, to facilitate access to financing from local banks and other financial intermediaries, and to activate support from the InvestEU Advisory Hub.

A more efficient approach to financing the transition of small and young farmers with tailored EU FlaaS for agriculture investments can release pressure from the CAP budget to fill the additional public investment gap in the agri and food transition. A more efficient CAP budget can then increase contributions to climate and the environment, with support prioritising small-scale farmers instead of larger farms that have easier access to finance, and also providing them with better advice and training in the transition.

CAP can become a driver of R&I investments in early stage cleantech that is innovating to transition the food system into a more sustainable one, while strengthening EU industrial capabilities in these new agro-food sectors. Experts[541] suggest that reducing basic and coupled income support, could enable greater budget allocations for climate and industrial competitiveness expenditures. The largest part of CAP is directed to these income support schemes, which solely depend on the EU budget, as national co-financing is not required. Bruegel argues that these schemes do not represent a European Public Good,[542] thus the "EU added value" is not currently being prioritised in the significant allocations that the EU budget provides to CAP. This, in turn, is causing CAP to be "oversized".[543]

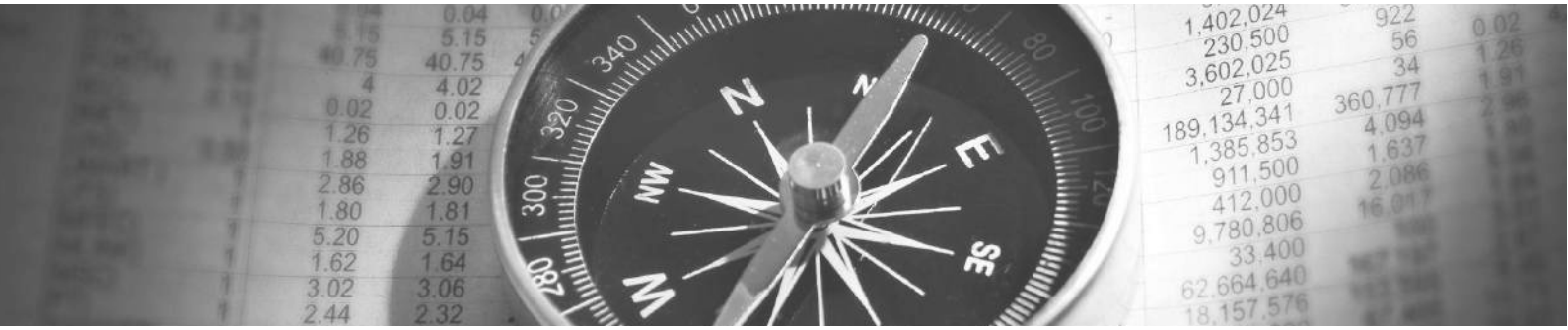
Eco-scheme requirements should also be strengthened by improving or removing ineffective options. Higher payments for eco-scheme commitments should boost their appeal in regions most relevant to farmers. Raising CAP's ambition in these lines ought to rely on Member States amending their CAP Strategic Plans on a yearly basis to integrate this set of measures,[544] which is also **an opportunity for Member States to identify in their investment plans when EU FlaaS should be activated.**

[539] European Commission. (2024). Strategic Dialogue Report 2024. Available at https://agriculture.ec.europa.eu/document/download/171329ff-0f50-4fa5-946f-aea11032172e_en?filename=strategic-dialogue-report-2024_en.pdf
[540] European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf
[541] Institute for European Environmental Policy. (2023). Environmental and climate assessments of CAP Strategic Plans. Available at https://ieep.eu/publications/environmental-and-climate-assessments-of-cap-strategic-plans/
[542] Buti, M. , Darvas, Z. and Steinbach, A. (2024). Bruegel: Memo to the commissioner responsible for the European Union budget. Available at https://www.bruegel.org/sites/default/files/2024-08/Memos%20budget.pdf
[543] Ibid.
[544] Institute for European Environmental Policy. (2023). Environmental and climate assessments of CAP Strategic Plans. Available at https://ieep.eu/publications/environmental-and-climate-assessments-of-cap-strategic-plans/

Positioning EU Financial Instruments as a Service in the next MFF

The "EU added value" of the EU budget should be geared towards both providing the necessary funding to fill the national climate investment gaps, as well as **establishing the mechanisms that simplify and harmonise fund disbursement for Member States**. Selected funding mechanisms should aim to avoid procedural duplications and reduce administrative barriers with the ultimate goal of increasing the efficiency of fund disbursement and building a more harmonised landscape for end-beneficiaries. This is the EU-added value that the provision of EU Financial Instruments as a Service (FIaaS) aims to achieve.

New and early Commission thinking on the post-2027 MFF is pointing to a potential merger or pooling of EU funds under direct management of the Commission (InvestEU, Innovation Fund, EIC, etc.), where an opportunity exists to integrate FIaaS. [545] This merger, or pooling, under a new European Competitiveness Fund (ECF) aims to reduce complexity and increase the strategicness of EU funding by aligning it with policy priorities and focusing on a hierarchy of EU Public Goods that offer "EU added value". In President von der Leyen's Political Guidelines, the ECF was first positioned as a reinforced "investment capacity" in the next MFF for strategic technologies like cleantech (as were STEP and the ideated Sovereignty Fund), to "use the power of our budget to leverage and de-risk private investment in our common goals."[546] **Regardless of the final form of the ECF, integrating EU FIaaS in the next MFF can support the strategic steer needed towards a more impactful and simplified EU budget that effectively levers private investments in the climate transition.** This would create a "middle path" as merging funds that have very different purposes and beneficiaries is not as easy, operationally, as the diagrams and debates suggest.



In his Parliamentary hearing, Commissioner for Budget, Piotr Serafin, supported the need to ensure more focused EU programmes and enhance Member States' investment planning under national plans that links reforms to investments and is targeted to where EU action is most needed.[547] This is in line with early Commission thinking that suggests integrating and coordinating all shared management funds within a single national plan (Cohesion Policy, Social Climate Fund Common Agricultural Policy, etc.). In such an approach, **EU FIaaS can be positioned as useful instruments to fill in the sectoral climate investment gaps that Member States' single plans may identify for the deployment of mature clean assets.**

A report by the European Parliamentary Research Service (2019) described the "financial instruments life-cycle" of how these could be integrated in Member States' partnership agreements and operational programmes under Cohesion Policy.[548] In the "strategic planning stage", the need to use financial instruments should be indicated, as well as their implementation modalities, the type of instruments needed, their thematic scope, and avenues for cooperation with EIB and financial intermediaries. Taking this approach to the potential scenario of a single Member State plan for investments, where the climate transition and cleantech industrial competitiveness are strategic priorities, **EU FIaaS can be effectively integrated in the reporting template to actively position them in the planning phase.** This integration can be linked to conditionalities on efficiency targets and improved management of EU-sourced funds, in order to activate Member State demand for EU FIaaS.

[545] Science Business. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund&vgo_ee=sWDTmidSOLRZ28FeJs%2Fk94bWv7QD7tXX0gNrlhGtxAoHqa6LilfITC%2FSXK9q%3AF9g%2FB0%2FJqjqL4LognuB0P4wFCnixD103

[546] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.

[547] European Parliament. (2024). Serafin Written Questions and Answers. Available at https://hearings.elections.europa.eu/documents/serafin/serafin_writtenquestionsandanswers_en.pdf

[548] European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf

One of the reasons why Member States struggled to integrate financial instruments in operational programmes in the 2014-2020 period (apart from procedural complexity and capacity barriers) was the need to carry a compulsory "ex-ante" assessment.[549] This assessment required untangling the investment needs in a particular sector, and providing evidence for existing market failures or sub-optimal investment situations that rendered the need for financial instruments over grants. At Member State request, the ex-ante assessment could be carried out by the EIB, but countries were reluctant to delegate such control to EU-level instruments where, due to their design, local authorities had no capacity to influence their scope and implementation. For certain asset classes, e.g. home renovations, solar panels, EV chargers, heat pumps etc. there can be standard templates and instruments that are pre-approved.

With the EU FIaaS templates, ready to be activated on an "off-the-shelf" basis, the "ex ante" assessment can be simplified and streamlined. All Member States would need to do is identify in their Single Plan: a) where a climate investment gap exists, b) the specific asset that should be deployed, c) the maturity level of the asset, and d) the end-beneficiary. Then the most relevant EU FIaaS can fill in this gap - if the asset is mature and if an opportunity exists to leverage private investments from the end-beneficiary. The Commission should also consider **integrating or expanding EU FIaaS within every EU fund under direct management, in line with the project scope of the EU fund in question and targeted to specific sectors and assets.** This approach would facilitate the matching process between instrument and climate investment gap during the planning stage at the Member State level, as it reinforces existing and known instruments, instead of creating new ones that may lead to delays.

For instance: **a) expanding the policy windows under InvestEU to Sustainable Housing, to Sustainable Transport, and to Sustainable Agriculture, to be activated by the MS compartment, b) expanding "as a service" auctions and other innovative instruments to specific cleantech products under the Innovation Fund, c) including FIaaS for cleantech scale-up in the EIC.** Each of these EU funds target different project stages and TRLs (e.g. user uptake under InvestEU, cleantech demonstration under the Innovation Fund, and cleantech scale-up under the EIC accelerator). The new pockets or compartments in directly-managed EU programmes can then be activated with national contributions from EU-sourced funds from the shared management programmes (Cohesion Policy, Modernisation Fund, Social Climate Fund, Common Agricultural Policy, etc.). **The ultimate goal would be supporting an efficient delivery and impactful outcomes of EU funds under shared management**.

EU FIaaS for Member States address the concerns around the unequal outcomes of some of the more centralised funds under direct EU management, **as they enable the deployment of locally-tailored financial instruments that are exclusive to the specified region.** The regional economic inequalities between the highly industrial Western Europe and the less developed countries in South, Central and Eastern Europe partly explain why the latter seem to be less successful in receiving funds from the Innovation Fund or the EIC Accelerator.[550] For lower income countries, access to the shared management funds like Cohesion Policy or the Modernisation funds is easier, and they could choose to implement part of their national allocations via EU-level instruments. The extra investment capacity, simplicity and stability offered by levering these EU funds through EU FIaaS can also grow the green project pipeline and climate innovation ecosystems in these regions.

[549] Ibid.
[550] Start-ups in central and eastern European start-ups developing risky and game-changing innovations are struggling to get products to market due to poor access to private funding. These disparities are also evident when it comes to public money from the EU, with the EIC Accelerator, While companies in France received €200 million from the EIC Accelerator, start-ups in Bulgaria and Croatia got less than €2 million, and other countries in the region nothing at all, according to data published in 2021. Stanislawska said one of the reasons for this is a shortage of consultants to assist companies in drawing up business plans and helping founders to understand what will be expected of them.
Science Business. (2022). Start-Ups in Central and Eastern Europe Face Challenges in Profiting from Innovations. Available at https://sciencebusiness.net/news/start-ups/start-ups-central-and-eastern-europe-find-it-hard-profit-their-innovations

EU-level instruments can quickly fill technical capacity gaps in managing authorities and for lower-income countries, who tend to have less well developed capital markets and banking networks[551]. The "as a service" nature of EU financial instruments allows Member States to develop financing schemes that are targeted and adapted to the climate challenges in the region, taking into account the needs of mature climate assets and local deployment conditions. These come with **the benefits of the lower borrowing costs at EU-level and taking advantage of the knowledge support of EU institutions** - like the EIB and the 16 InvestEU implementing partners in the case of the MS compartment, or CINEA in the case of the hydrogen auction as a service. Due to an overall risk diversification based on a highly granular portfolio, the use of **the InvestEU budget guarantee also achieves a higher leverage factor than is typical with locally-managed financial instruments** (11.4x average leverage for InvestEU[552] versus an average 3.8x leverage for financial instruments under ERDF and CF).

For newer funds like the Just Transition Fund or the Modernisation Fund, EU FIaaS can help simplify administration and streamline deployment for specific classes of end-beneficiaries. **With these new funds, risks exist of increased or duplicative administrative complexity due to new or updated governance and administrative structures (as already reported by Member States).[553] End-beneficiaries also face administrative duplications due to overlapping investment objectives of some funds** (like the just transition or cleantech development), which create a complex patchwork of applications processes and criteria. EU FIaaS can streamline all these funds into a single process and can deliver simplification benefits. They can also help **address the slow absorption rates of many EU funds**, as some managing authorities struggle to design and deploy financial instruments due to inadequate internal finance capacity and experience.[554]

EU-level instruments can quickly fill technical capacity gaps in managing authorities and for lower-income countries, who tend to have less well developed capital markets and banking networks

Several features from the InvestEU MS compartment address the reluctance that Member States found in the EU-level instruments from the prior programming period. These characteristics should serve as important design criteria of EU FIaaS to ensure national uptake. First, **enabling local adaptation and local distribution channels** is essential for Member States to have enough control over the financing process to offer the political visibility of the successes of the final outcomes, and to ensure the financial instruments target the correct local conditions and needs. Second, the portfolio of EU FIaaS must be established as Member States begin drafting their operational plans, or the Single Plan proposed by the Commission, so as to **align timings and make sure they consider and integrate the use of these instruments in their national funding strategies**. Finally, **excluding the impact of contributions to the EU FIaaS from the national debt calculus** will be important to ensure that national investment capacity in the transition is enhanced and Member States are incentivised to make more use of FIaaS.[555]

[551] Eurofi. (2020). Capital Market Development in Central and Eastern Europe. Available at https://www.eurofi.net/wp-content/uploads/2020/04/capital-market-development-in-cee_zagreb_april2020.pdf

[552] However, it must be noted that the InvestEU leverage varies depending on the policy window and type of projects and intermediaries involved, and while it is high when guaranteeing financial intermediaries' lending to SMEs, it is lower when targeting large energy infrastructure projects and manufacturing facilities. European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

[553] One of the main dilemmas was whether to distribute the JTF using a new OP or whether to use one or more of the existing programs (Employment+, Environment, etc.), which fall under different ministries. If the state chose to use the established OPs, it could benefit from existing administrative structures and their experiences and avoid duplication both in structure and in areas supported. "We sometimes tend to create new structures even though the old ones already exist and have a proven track record. Some departments then must build everything from scratch. Then it takes time to attract officials and start up the program," commented Rostislav Mazal, who oversees the established Integrated Regional Operational Program (IROP) operational program at MRD (Interview with Mazal, 2023). Europeum Institute. (2023). How Czechia Can Utilize the Just Transition Fund. Available at https://europeum.org/data/articles/umi-cesky-stat-cerpat-fond-spravedlive-transformace-final3-en.pdf

[554] European Court of Auditors (2012), Financial Instruments for SMEs co-financed by the European Regional Development Fund" special report 2/2012; European Commission (2012), Financial Instruments in Cohesion Policy, SWD(2012) 36 final, 27.2.2012

[555] In the InvestEU MS compartment, while the country will assume a contingent liability, it will be small and in principle excluded from the national debt calculus.Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf

DG REFORM should have a mandate to raise the awareness of the use of these instruments with Member States and support their integration within national strategies. Close engagement can bring to light the benefits of these instruments in enhancing the investment capacity of national and local authorities and help them understand their key role in the set-up and follow-up process of these schemes. Moreover, and pending on the outcome of the next MFF negotiations and the final management structure of EU funds within Member States, it will be important that central-local coordination is facilitated when activating EU FIaaS. **DG Reform can also support this coordination mission to involve all necessary local stakeholders and ensure transparency and civil society monitoring of EU funds.**

The next MFF, and potentially the restructuring of directly-managed EU funds under the new ECF, is an opportunity to fully integrate EU FIaaS for Member States in EU programmes. **A new programme or fund doesn't have to reinvent structures and instruments, many of which are already in place, tested and working.** This would only add complexity for local administrations and end-beneficiaries - meaning new application procedures, evaluators and criteria. National authorities have already warned of the bottlenecks and delays that can come with the set up of new governance structures for new funds, instead of taking advantage of already existing structures with a proven track record.[556] The European Court of Auditors has also cautioned about the creation of new instruments with inefficient design choices due to lack of strong ex-ante impact assessments, leading to a "patchwork arrangement" that becomes "a source of complexity, and entails the risk of duplication."[557]

Instead, the next MFF could send more resources, via the new ECF, to those existing instruments doing a demonstrably good job to fill the sectoral climate investment gaps, and set up more targeted EU FIaaS to increase their efficiency. The ECF should function as part of a new and reinforced EU budget, and not reinvent it, bringing in the necessary additional public funding for the energy transition (estimated at €230-260 billion annually),[558] and integrating "risk absorbing" measures to leverage private investments[559] - such as EU FIaaS. The next chapter offers specific recommendations on how this budget reinforcement and risk-absorbing measures could be deployed for cleantech scale-up and manufacturing, as the initial mandate for the ECF was to amplify the investment capacity in strategic technologies like cleantech.[560]

EU FIaaS can be trialled in the current programming period (through InvestEU and other instruments) to test their design features and gather feedback from all national and local stakeholders. Greater engagement and consultation with users and beneficiaries in the development of EU FIaaS should help identify the most optimal design features and necessary improvements to existing ones, thus encouraging a greater uptake in the next MFF.

---

[556] Europeum Institute. (2023). How Czechia Can Utilize the Just Transition Fund. Available at https://europeum.org/data/articles/umi-cesky-stat-cerpat-fond-spravedlive-transformace-final3-en.pdf
[557] European Court of Auditors. (2023). EU Financial Landscape Report. Available at https://www.eca.europa.eu/Lists/ECADocuments/SR23_05/SR_EU-financial-landscape_EN.pdf
[558] Based on Institute Rousseau (2024) and European Central Bank. Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692 ; European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf and European Investment Bank. (2020). Investment Report 2020: Building a Smart and Green Europe in the COVID-19 Era. Available at https://www.eib.org/en/publications/investment-report-2020. *In the EIB report, data for some countries are missing
[559] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[560] Ibid.

Chapter Conclusions

Integrating EU Financial Instruments as a Service (FIaaS) in the most relevant EU funds for clean asset deployment is an opportunity to scale the (historically low) use of financial instruments by Member States and harmonise the "patchwork" of EU funding sources that complicates access to end-beneficiaries. An EU FIaaS is a template, off-the-shelf EU-level instrument designed to deliver an efficient blended finance structure tailored to a specific clean asset, for the decarbonisation of a specific sector, and ring-fenced to a region or Member State. EU FIaaS can be trialled in the current programming period to build the full scale-up in the next MFF.

This chapter highlights several case studies of EU FIaaS used in Industry (the Innovation Fund Hydrogen Auction) and the Energy sector (the Renewable Energy Finance Mechanism), as well as opportunities to develop more EU FIaaS for: buildings renovation (e.g. Renovation Loan as a Service), retail energy investments (e.g. the Solar Rooftop Loan as a Service), shifting to sustainable private transport methods (e.g. the Electric Vehicle Charger Loan as a Service), and supporting small and younger farmers in adopting sustainable agriculture practices (e.g. the Electric Truck Loan as a Service). When the clean asset involves a public good, (e.g. rail), a low-income, energy poor household, or a new clean technology, grant-schemes may be more fitted to deliver socially-just outcomes and strategic investments.

The "EU added value" of the EU budget should be in part geared towards establishing the mechanisms that simplify and harmonise fund disbursement for Member States, such as EU FIaaS. New and early Commission thinking on the post-2027 MFF considers a potential high-level merger or pooling of EU funds under direct management of the Commission (InvestEU, Innovation Fund, EIC, etc.) via a new European Competitiveness Fund (ECF). Moreover, the Commission wants to enhance Member States' investment planning of shared management funds under single, national plans that link reforms to investments and are targeted to where EU action is most needed. Independently of the final form of the ECF, and whether the proposed merger may take place, integrating EU FIaaS in the next MFF will support the strategic steer needed towards a more impactful and simplified EU budget that effectively levers private investments in the climate transition. **EU FIaaS can be positioned as useful instruments to fill in the sectoral climate investment gaps that Member States' national plans may identify for the deployment of mature clean assets.** A new programme or fund must not reinvent structures and instruments, many of which are already in place and working, but instead it can reinforce them via increased budget allocations and more efficiency with EU FIaaS.

EU FIaaS for Member States can **address the concerns around the unequal outcomes of some of the more centralised funds under direct EU management**, as they enable the deployment of locally-tailored financial instruments that are exclusive to the specified region. **EU-level instruments can quickly fill technical capacity gaps in managing authorities, and especially for lower-income countries** (who tend to have less well developed capital markets and banking networks) to accelerate fund absorption via an activation of the EIB services, National Promotional Banks and retail channels. **These come with the benefits of the lower borrowing costs at EU-level and higher leverage factors than local instruments.** Lessons learned from previous programming period show the necessary design features to ensure Member State demand of EU FIaaS, such as enabling local adaptation of instruments and local empowerment, aligning the timings of national investment plans with the operationalisation of EU FIaaS, and excluding the impact of contributions to the EU FIaaS from the national debt calculus. **DG Reform can also support in raising the interest of Member States in EU FIaaS and in their planning and deployment.**

Chapter 7

A forward-leaning and proactive EU budget to boost EU industrial competitiveness

Chapter 7: A forward-leaning and proactive EU budget to boost EU industrial competitiveness

To address the global competitiveness challenges that EU industry faces in view of significant clean investment programs in the US and China, the new Commission looks to implement a Clean Industrial Deal funded by an European Competitiveness Fund (ECF). In this race to deliver global EU cleantech champions and decarbonise industry, **the young and fast growing companies that are developing cleantech solutions need specific attention and a targeted public-private funding approach to enable them to grow from lab to scale**. On this journey, small cleantech players need specific financial instruments (seed capital, VC, First-of-a-kind finance) and scale-ups need order books, guarantees, green premium support and finance to build factories and to deliver EU-wide. Those emerging European companies need the certainty that "the next stage" of capital will be visible to enable their growth, if successful, and Europe needs to mentally move from investing in "selecting unicorns" to ensuring that more would-be entrepreneurs see a clear financial pathway to turning their business into one.

Grants are a key public funding tool and are indispensable in research, early-stage product development and the trial and innovation phases of cleantech development,[561] when companies have little to no revenues. This is why Mario Draghi's report on competitiveness calls on the Commission to **double the Framework Program's research and innovation budget (from €100 to €200 billion) and to make a strategic "refocusing" on a smaller number of technologies that are key to European cleantech leadership**.[562]

Grants are a key public funding tool and are indispensable in research, early-stage product development and the trial and innovation phases of cleantech development.

However, the scale-up phase is capital intensive, as it is when new companies build first factories or take a new technology to market. **This requires smart financial instruments that de-risk private investments at a scale that is sufficient for market commercialisation.** Several EU funding instruments already address this challenge, including the Innovation Fund, the EIC Accelerator and the EIB and EIF portfolio of dedicated instruments. Unsurprisingly, these instruments are highly solicited and often oversubscribed. Mario Draghi highlights a **"risk-averse" conservative attitude in the EU budget, and within the EIB Group and among implementing partners**, that prevents increased investment in the scale-up of breakthrough technologies.[563] The next MFF may bring together these cleantech-relevant EU funds under a new European Competitiveness Fund.[564] The goal would be to improve their strategic focus, cover gaps in project development, and facilitate and accelerate access to funding. **The question remains whether the right approach for beneficiaries (and for Europe) is to simplify on paper by combining funds and plans, or to simplify in practice by designing instruments that work better for the specifics of each beneficiary class, asset type and region.**

This chapter looks specifically at the existing EU funds supporting cleantech scale-up and manufacturing, where EU Financial Instruments as a Services (FIaaS) have already been tried and tested (e.g. the Hydrogen Auction). It shows how a set of improvements, enablers and conditions are needed to amplify their impact and build a proactive EU budget for the cleantech race. **Specifically, the current access and delivery of EU funding via de-risking instruments is evaluated to consider how to increase leverage of private investments in young cleantech scale-ups in Europe, supported with an enhanced EIB role**. The recommendations provided derive from the frame of EU FIaaS and the lessons learned from unpicking barriers to faster absorption of EU funds by SMEs. **A dedicated final section on green lead markets highlights the importance of continuing to work on regulatory levers to make EU funding efforts in cleantech a success.**

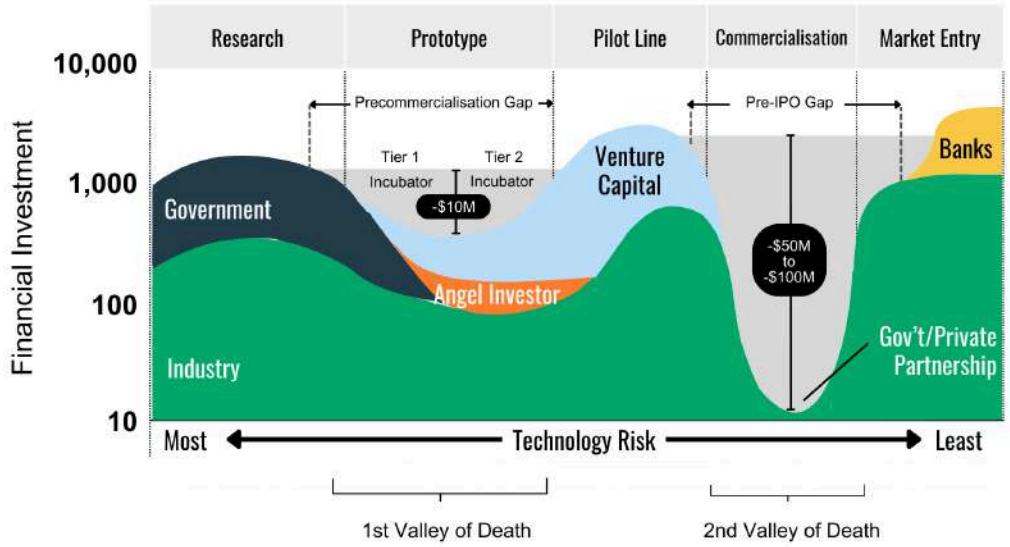
[561] Early-stage innovations are more vulnerable to technological risks, regulatory risks and competition from more mature technologies. Targeted support must be provided for technologies the European Union deems instrumental to achieving its policy goals when private investors consider the risk too high or the time to market too long. For this reason, governments need to expand direct investment to scientists and innovators for R&D, and enhance synergies between industry and research centres and universities. Funding through grants and equity-like instruments will give new technologies time to develop and enable losses to be tolerated at this early stage. European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

[562] European Commission (2024). Draghi Report Part A - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf

[563] Ibid.

[564] Science Business. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund

Graph 21: The Cleantech Valley(s) of Death[565]

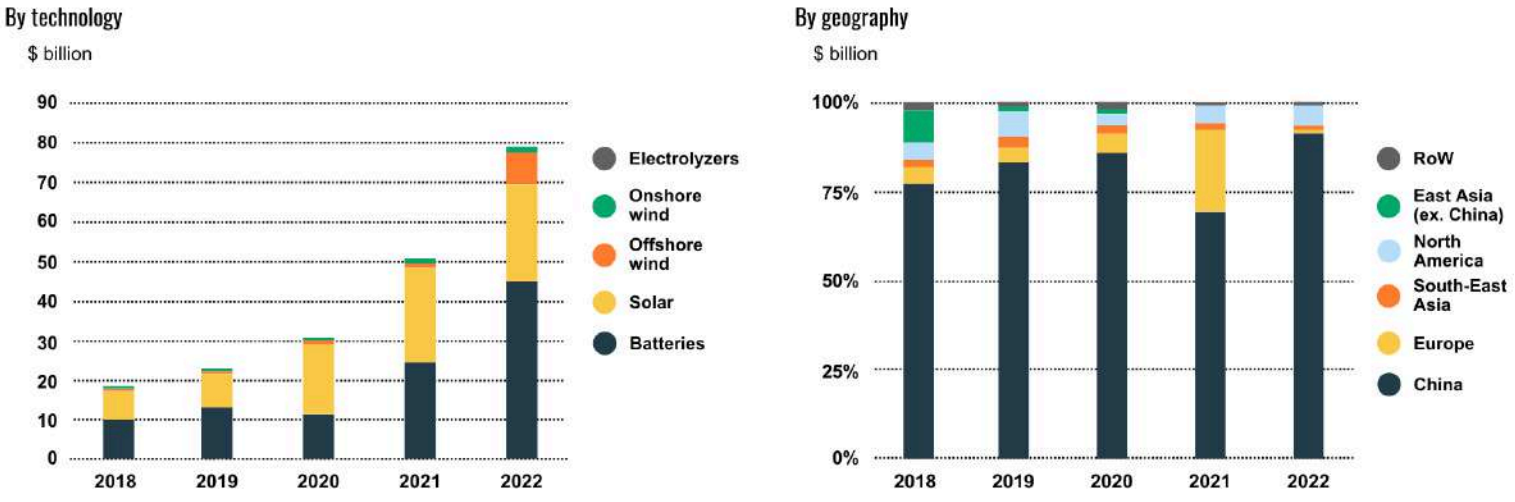


Source: U.S. Department of Energy. (2016).

A fragmented EU landscape for cleantech hinders global leadership

The EU's global competitors, like the US and China, recognise the geopolitical and economic advantages that cleantech leadership can bring, and have increased their public funding and aid to strategic clean sectors commensurately.[566] In response to this, and in particular to the US Inflation Reduction Act, the EU launched a Green Deal Industrial Plan that sought to make Europe the "home of cleantech". **So far, this Plan has not delivered a sufficient and comprehensive investment plan for EU cleantech** and, instead, existing and new innovation funding sources for cleantech have been cut, like Horizon Europe, or reallocated to other priorities, like in the Strategic Technologies for Europe Platform.[567]

Graph 22: Investments in manufacturing of clean energy technologies[568]



Source: BloombergNEF 2023

[565] U.S. Department of Energy. (2016). 3rd Annual Green Investment Financing Forum (GIFF). Available at https://www.slideshare.net/slideshow/oecd-giff-2016-kenneth-alston/71919354.
[566] Carbon Brief (2023). Analysis: Clean Energy Was Top Driver of China's Economic Growth in 2023. Available at https://www.carbonbrief.org/analysis-clean-energy-was-top-driver-of-chinas-economic-growth-in-2023/ ; Cleantech Group (2023). Scaling Cleantech Manufacturing: A Look at the European Union's Net Zero Industry Act and the U.S. Inflation Reduction Act. Available at https://www.cleantech.com/scaling-cleantech-manufacturing-a-look-at-the-european-unions-net-zero-industry-act-and-the-u-s-s-inflation-reduction-act/
[567] Cleantech for Europe. (2024). Open Letter: EU Needs to Up Its Investment Game if It Wants to Become the Home of Cleantech. Available at https://www.cleantechforeurope.com/policy/open-letter-eu-needs-to-up-its-investment-game-if-it-wants-to-become-the-home-of-cleantech
[568] BloombergNEF. (2023). Global Low-Carbon Energy Technology Investment Surges Past $1 Trillion for the First Time. Available at https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/.

Cleantech manufacturing investments can surely boost the EU's global competitiveness and help European firms deliver into growing green industrial markets, while decarbonisation brings down energy prices and increases the resilience of industry. This is why Draghi proposes a Joint Decarbonisation and Competitiveness Plan,[569] which is then reflected in President von der Leyen's Clean Industrial Deal (CID). **This new Deal can build on the Net Zero Industry Act and help build more competitive and clean industries that deliver high quality green jobs.**[570] The CID should support and build the right conditions for companies to reach the EU's common goals and prioritise investments in the scale-up of cleantech. A European Competitiveness Fund, delivered via the next MFF using FIaaS, could become the investment arm of the CID.

The lack of a Capital Markets Union is hampering increased investments that deliver EU strategic priorities in the clean industrial race.[571] However, **the next MFF is an opportunity to evaluate and reconsider pathways and to redesign the current EU budget with an "efficiency first" approach based on strengthened EU FIaaS to grow European cleantech manufacturing.** EU-level de-risking instruments for cleantech, scaled across Member States and supported with national and EU-sourced contributions, are essential harmonising tools to address the shallow and fragmented EU capital markets.

Landmark reports by Enrico Letta[572] and Mario Draghi[573] raise concerns about the fragmentation of the EU single market that is jeopardising its global competitiveness. The Letta report notes that the EU holds €33 trillion of private savings (34% of which is held in current accounts) that could - if re-deployed via the capital markets - substantially advance the achievement of the EU's green and digital transitions.[574] Approximately €300 billion of EU savings are being diverted annually to invest in the US (directly and via US asset managers) due to, in part, the economic growth inspired by US technology led-firms supported by deeper institutional debt markets. Europe's arcane and slow bankruptcy procedures in various Member States have also been a deterrent to faster scale-up and investor risk appetite.[575] **It is expected that the Capital Markets Union could unlock €470 billion of extra private investment per year and make the EU a more attractive destination for foreign savings**.[576] These are the funds that should be the targets for leverage in the design of EU FIaaS.

This pattern was identified by the Commission, which in 2023 concluded that a fragmented single market for capital and an underdeveloped banking union was impeding EU savings being invested in future growth.[577] As a result, successful European start-ups and scale-ups struggle to raise the capital they need to grow in the EU.[578] If they do grow in the EU, they have to source capital from the US. Banks are not well incentivised, nor sufficiently resourced (with cleantech deal teams), to make riskier investments in new green technologies. **Given their novelty, technical complexity and higher technology risks, and a long time-to-market,[579] European cleantech start-ups face higher financing costs and constraints than other innovative companies.**[580] The fragmentation of the EU capital markets impacts the amounts of venture capital deployed in Europe, which although closer to the US in volume, still falls short, especially in later-stage funding.[581]

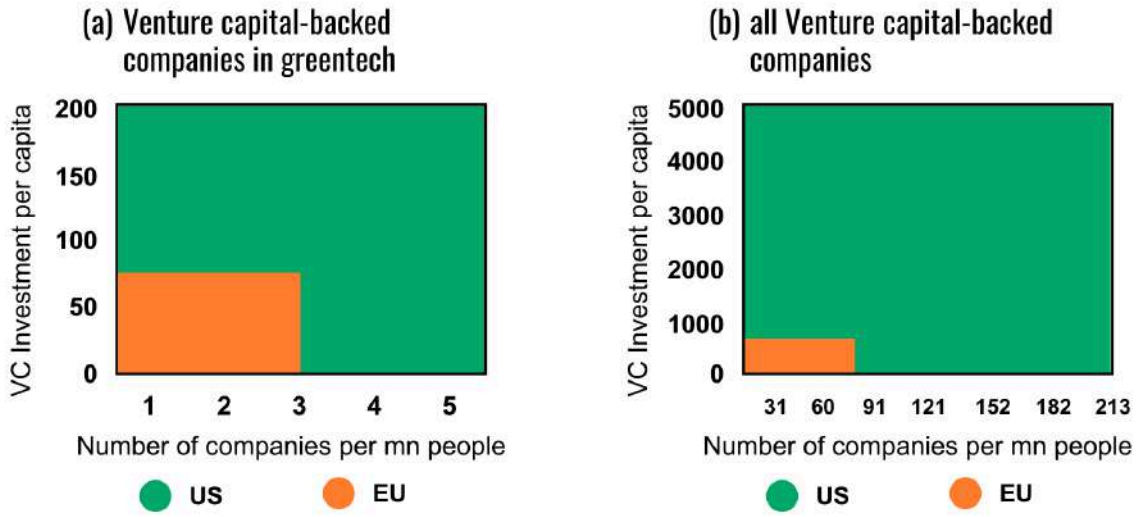
The EIB (2024) finds that the cleantech financing gap in Europe is most worrying in the later-stage, scale-up funding phase. The EIB uncovered that as companies grow in the EU, their financial constraints widen, and that after ten years in operation, European scale-ups have raised 50% less capital than their San

[569] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[570] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[571] Ibid.
[572] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[573] European Commission. (2024). Draghi Report Part A - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf
[574] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[575] European Commission. (n.d.). Civil and Commercial Law: Insolvency Proceedings. Available at https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/civil-justice/civil-and-commercial-law/insolvency-proceedings_en.
[576] European Commission. (2024). Statement by Commissioner Reynders on the Proposed Insolvency Law Package. Available at https://ec.europa.eu/commission/presscorner/detail/en/statement_24_2148.
[577] The surplus of domestic savings over domestic investments in the EU averaged almost EUR 300 billion over the last 10 years. European Commission. (2023). Strategic Foresight Report 2023. Available at https://commission.europa.eu/document/download/ca1c61b7-e413-4877-970b-8ef619fc6b6c_en?filename=SFR-23-beautified-version_en_0.pdf.
[578] European Commission. (2023). Strategic Foresight Report 2023. Available at https://commission.europa.eu/document/download/ca1c61b7-e413-4877-970b-8ef619fc6b6c_en?filename=SFR-23-beautified-version_en_0.pdf.
[579] Planet A (n.d.). Capital Stack. Available at https://planet-a.notion.site/4-Capital-Stack-174ea18bcd7a497ab8a739c8a5657d0e.
[580] European Investment Bank (2024). Financing and Commercialisation of Cleantech Innovation. Available at https://www.eib.org/attachments/lucalli/20240003_financing_and_commercialisation_of_cleantech_innovation_en.pdf.
[581] European Commission. (2023). Strategic Foresight Report 2023. Available at https://commission.europa.eu/document/download/ca1c61b7-e413-4877-970b-8ef619fc6b6c_en?filename=SFR-23-beautified-version_en_0.pdf.

Francisco peers, independently of industry, year of establishment and business cycle.[582] The scarcity of EU institutional investors in growing firms with new technologies is a structural risk to the continent's industrial competitiveness as it pushes younger EU companies to seek funding abroad and, at exit, look for a foreign buyer, or list outside Europe.[583]

At an economy-wide level, scale-ups are important drivers of growth[584]. In the case of cleantech, they hold the key to the deployment of decarbonisation solutions in the priority energy intensive sectors (steel, aluminium, cement, fertiliser, ceramics etc.), transport (batteries and sustainable fuels) and buildings (heat pumps and smart integration)**. Since the launch of the EU Green Deal, venture capital for early stage cleantech has risen in the EU to match the "scale" of VC investment levels in the US[585] - unlike in other non-cleantech sectors** (Graph 22). This is a reaction to the EU's ambitious climate and energy policy objectives and regulations, which are triggering a rising demand for decarbonisation solutions from industry, and that are supported with a set of subsidies and promotional bank instruments.

Graph 22: Venture capital investment in greentech in 2023[586]



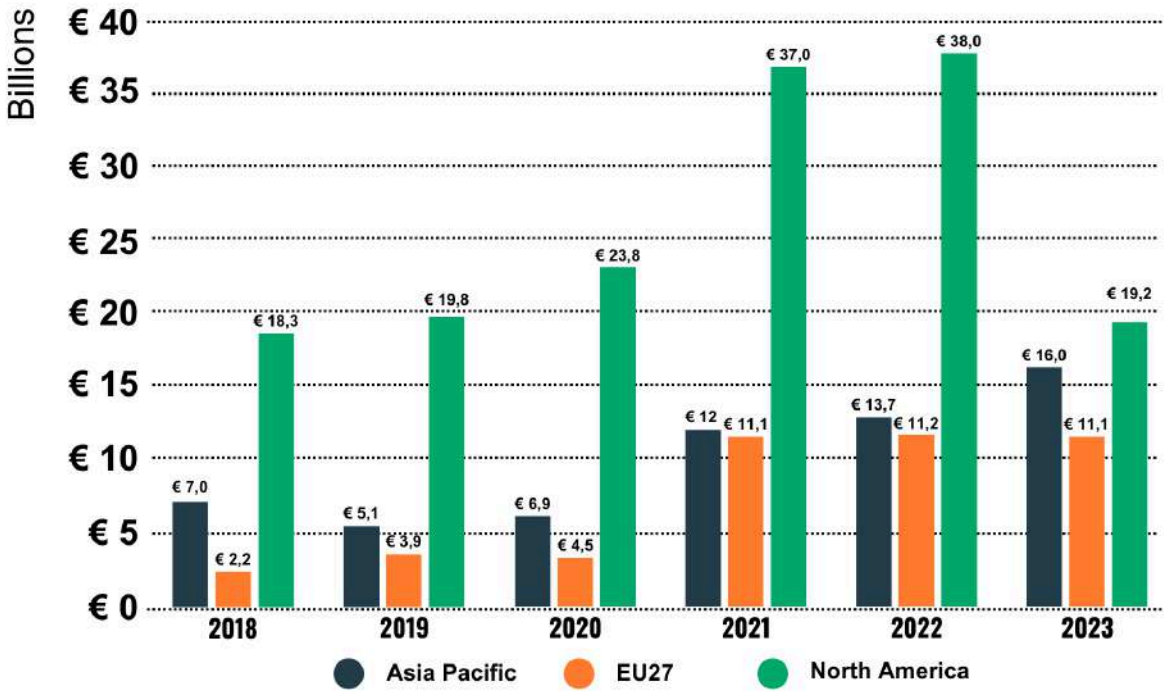
Source: Authors' calculations based on data from PitchBook Data, Inc.
Notes: The number of companies refers to the number of venture capital-backed companies headquartered in the European Union and the United States that completed at least one deal between 2013 and 2023. Venture capital investment is the aggregate amount invested in those companies during the samples period. Number of companies and venture capital investment were rescaled by the population of the two regions. The data have not been reviewed by PitchBook analysts.

Source: European Investment Bank (2024).

Still, Cleantech for Europe (2023) finds that venture and growth investment in the EU has plateaued for the last three years, it lags significantly behind that of the US, and is insufficient to boost a European cleantech industry at scale.[587] Unlike digital businesses, cleantech companies are highly capital-intensive, they face greater technological and regulatory risks, and take a longer time to reach market, with a longer and deeper "valley of death".[588] This is why the EIB's survey reveals lack of finance as a major obstacle for the commercialisation of cleantech more often than for other innovative companies in the broader economy.[589]

[582] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[583] Ibid.
[584] Ibid.
[585] Ibid.
[586] Ibid.
[587] Cleantech for Europe. (2023). Cleantech Annual Briefing 2023. Available at https://www.cleantechforeurope.com/publications/cleantech-annual-briefing-2023.
[588] Death valley represents a crucial phase in a startup's journey, characterised by a substantial decline in valuation before it has secured an additional funding round. typically occurs after the initial investment and before reaching the next significant milestone. European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[589] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

Graph 23: Cleantech Venture Capital invest by Region, 2018-23[590]



Source: Cleantech for Europe (2023).

In its next mandate, the EU Commission is expected to propose more risk-absorbing measures to make it easier for commercial banks, investors and venture capital to finance fast-growing companies.[591] Risk-absorbing instruments will need to actively target institutional capital and debt providers to enable them to staff-up and become participants in this growing segment of the EU's economy[592]. **An "efficiency first" approach to EU resources needs to identify the structural problems at the interface between public funding and private investment and offer instruments that align these resources and interests.** Letta notes that few public funding instruments target the three main funding constraints green-tech hardware scale-ups face: equity funding for growth (R&D, expanding operations, hiring talent), project finance for first of a kind deployments, and debt financing for commercial rollouts without diluting ownership.[593] Therefore, a granular assessment of EU financial instruments is required to identify gaps, best practices, and future avenues for improvement.

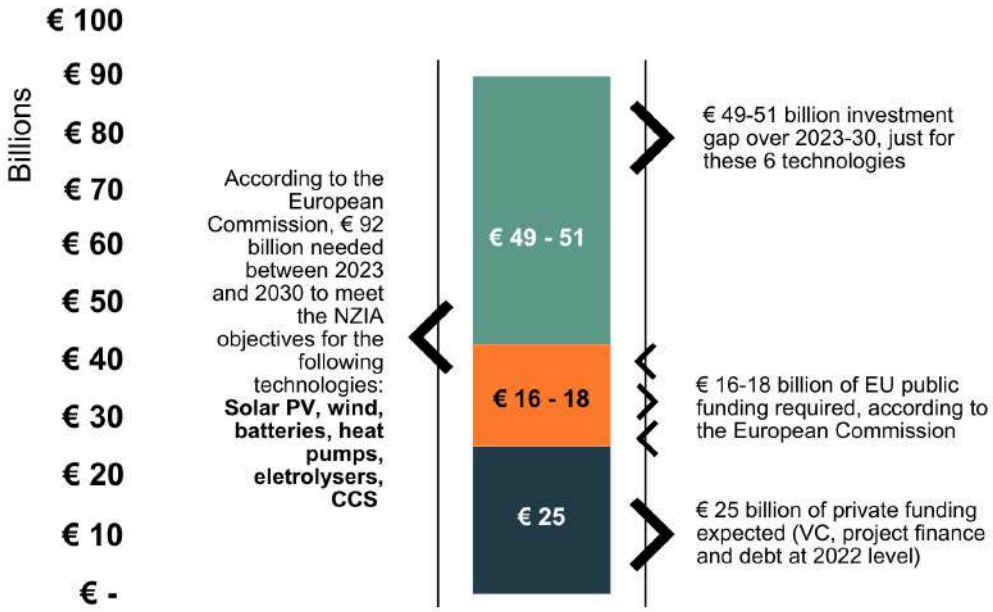
At the EU-level, the Innovation Fund (IF) and the EIC Accelerator are designed to support scale-ups and cleantech deployment, but they are heavily oversubscribed. The EIC Accelerator received €675 million in 2024[594], and €634 million in 2025,[595] as an allocation from the overall €10 billion budget of the EIC for the 2021-2027 period. The Accelerator provides support for innovation in SMEs with grants and equity investments, and has a 35% earmark for climate projects (meaning €236 million in 2024). In the 2025 EIC Work Programme, a new scale-up scheme has been introduced with a €300 million budget, following the Strategic Technologies Europe Platform (STEP) regulation. The new scheme aims to provide additional equity funding to SMEs, start-ups, spin-offs and small mid-caps to help them secure larger private co-investment for further scaling their businesses.[596]

[590] "Despite the drop in US cleantech VC investment, the US is forging ahead in cleantech manufacturing and deployment investment, where in large part thanks to the Inflation Reduction Act, US public and private investment in the first 9 months of 2023 reached $176 billion, a 40% increase compared to that period in 2022. Note that IRA funds predominantly support fairly mature technologies, whereas venture funding predominantly supports technologies that have not yet reached maturity/wide commercial availability." Cleantech for Europe. (2023). Cleantech Annual Briefing 2023. Available at https://www.cleantechforeurope.com/publications/cleantech-annual-briefing-2023.
[591] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[592] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[593] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[594] European Innovation Council. (2024). Work Programme 2024. Available at https://eic.ec.europa.eu/eic-2024-work-programme_en.
[595] Ibid.
[596] "It will provide investments of between €10 and €30 million through the EIC Fund per company to leverage private co-investment, achieving at least €50 to €150 million in total. The EIC STEP Scale-up scheme will help address a market gap in deep tech scale-up funding in Europe, targeting digital technologies, clean and resource-efficient technologies including net-zero, and biotechnologies." European Innovation Council. (2024). Work Programme 2025. Available at https://eic.ec.europa.eu/eic-2025-work-programme_en.

The IF works on later stage development and provides grants and auctions to support the demonstration of breakthrough clean technologies linked to production and an explicit green premium.[597] The IF is funded by the sale of EU emissions allowances and, based on the current ETS carbon price (€74/ton), it is expected to be able to deploy around €40 billion from 2020-30.[598] This might increase to €82 billion between 2025-30 if the ETS carbon price rises in line with some forecasts.[599]

When launching the Net Zero Industry Act (NZIA), the Commission found that the investment needed from 2024 to 2030 in six strategic clean technologies (wind, solar PV, heat pumps, batteries, electrolysers and CCS) was €92 billion. Of this, approximately 20% (€16-18 billion) is expected from public sources.[600] The Commission estimates that a total of €8 billion *could be* activated from the MFF to support net zero manufacturing capacities between 2021 and 2027[601] from the Innovation Fund (€4 billion), the InvestEU programme (€600 million from the European Guarantee), RRF[602] and the REPowerEU package[603] (€3.3 billion). This is over 40% of the estimated €18 billion that should come from public sources for just six clean technologies. **However, at the current rate of private investment in these sectors, this still leaves a €50 billion investment gap by 2030[604], and this gap could double[605] when the other technologies needed to deliver a net-zero emissions economy are included** (such as long duration energy storage, grid upgrades, green steel and cement, etc.). This is why the Commission recently concluded that the current EU budget is insufficient alone to support the objectives of the Net-Zero Industry Act and to ensure a level-playing field between Member States.[606]

Graph 24: The EU cleantech investment gap[607]



Source: Cleantech Group (2024)

[597] European Commission (n.d.). What is the Innovation Fund? Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/what-innovation-fund_en.
[598] Ibid.
[599] Institute for Climate Economics. (2023). Sharpest Tool in the Box: EU Climate Report. Available at https://www.i4ce.org/wp-content/uploads/2023/09/The-sharpest-tool-in-the-box_report.pdf
[600] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF
[601] However, the Commission also notes that this 8 billion is "**a theoretical maximum**, that does not fully account for the fact that the programmes in question are demand-driven and/or target a wide range of policy objectives. Accordingly, for several programmes, assumptions had to be made regarding the amount that might be allocated to the net zero technologies targeted by this document, as the actual amount will depend on the choices by the Member States' authorities managing the funds concerned or the demand coming from applicants." European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[602] This includes an estimate of the RRF support to manufacturing capacities in clean-tech.
[603] Based on an assumption that Member States will allocate a share (i.e. 4,4%) of the budget to support Net-zero manufacturing capacities equivalent to what has been observed under the currently adopted national Recovery and Resilience Plans
[604] Cleantech for Europe. (2024). A Cleantech Investment Plan for European Competitiveness. Available at https://s3.amazonaws.com/i3.cleantech/uploads/additional_resources_pdf/49/349/EU_Cleantech_Investment_Plan_Report.pdf.
[605] Ibid.
[606] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[607] Cleantech for Europe. (2024). A Cleantech Investment Plan for European Competitiveness. Available at https://s3.amazonaws.com/i3.cleantech/uploads/additional_resources_pdf/49/349/EU_Cleantech_Investment_Plan_Report.pdf. ; European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF. ; Cleantech Group (2023). Scaling Cleantech Manufacturing: A Look at the European Union's Net Zero Industry Act and the U.S. Inflation Reduction Act. Available at https://www.cleantech.com/scaling-cleantech-manufacturing-a-look-at-the-european-unions-net-zero-industry-act-and-the-u-s-s-inflation-reduction-act/

The investment gap for industrial decarbonisation between 2024 and 2050 (€16 billion annually) is just 5% of the total climate investment gap,[608] and **the estimated €18 billion of total public funding for manufacturing six strategic clean technologies until 2030 is just 0.01% of the total public gap in climate by 2030** (over €1,400 billion until 2030, based on the estimated €230-260 billion annually according to ECB and Institut Rousseau). These amounts can potentially be delivered through the more proactive use of existing cleantech-targeted EU funds, a greater use of EU FIaaS for allocating and coordinating Member States' resources, greater risk capital allocation to the EIB's innovative financial instruments, and an increased focus on building more transparent, EU-wide green end-markets. The elements of this approach are developed in the following subsections, in turn: 1) Finding more money to scale the EU cleantech industry; 2) An enhanced role for the EIB; and 3) Building transparent EU markets for greentech.

Finding more money to scale the EU cleantech industry

The next MFF is an opportunity to review relevant EU funding sources for cleantech, listen to the feedback from cleantech entrepreneurs and other users, and **identify where to provide budget boosts, integrate measures for instrument improvement, and strengthen de-risking mechanisms.** Boosting budget allocations to build European cleantech champions can bring many co-benefits for European growth and jobs, and can derive from multiple sources. This assessment should avoid leading to an inefficient repackaging exercise where existing and well-performing funds - which may just need more capital and some design fixes or improvements - are overhauled.

For instance - **both the EIC Accelerator and the IF are oversubscribed and require complex application procedures for small cleantech start-ups.** The 2021 calls for the EIC Accelerator had a success rate of 5.4% with just 65 out of an estimated 1,196 applicants having been successful.[609] **An EIC Board statement regretted the budget cuts to the EIC in the 2024 mid-term review of the EU budget, despite the high oversubscription rates**.[610] In the first two rounds of applications for the large-scale call of the IF, projects applied for €33.8 billion of funding, for a total budget of EUR 1.1 billion (that is, 30 times more than the available budget).[611] The success rate for a company applying in the Fund's first large-scale call was just 2.3%, and this success rate has crept up to 10.6% as an average over three large-scale calls.[612] For the small-scale call, the success rate is much better with an average of 21% for the 2021-2023 calls.

The application procedures for EIC and IF are non-trivial, and many smaller firms find the process complex and administratively heavy (or costly).[613] While many institutional investors have their own criteria and processes, a typical fundraising process involves the production of a set of standard marketing collateral, a pitch deck, projections and a virtual due diligence room. The due diligence process itself can be exhaustive, risky and time consuming, but the provision of information and bilateral engagement of investor and investee allows both to assess "progress" and therefore judge how much resources to mutually assign. The public application process is usually more opaque, it has less to and fro, and ends up being more "hit or miss", which makes it relatively harder to manage than a classic fundraising round.

---

[608] Averages from European Commission. (2023). Investment needs assessment and funding availability to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF. ; European Commission. (2020b). Communication on Europe's moment: Repair and Prepare for the Next Generation. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0098 ; European Commission. (2022). Communication towards a green, digital and resilient economy:our European Growth Model. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0083 ; Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

[609] Segler Consulting (2021). The June 2021 EIC Accelerator Results and the Stabl Energy GmbH Success Story. Available at https://seglerconsulting.com/the-june-2021-eic-accelerator-results-and-the-stabl-energy-gmbh-success-story/.

[610] European Innovation Council (2024). Board Statement on the 2024 Work Programme. Available at https://eic.ec.europa.eu/system/files/2023-12/EIC%20Board%20statement%20on%20the%202024%20work%20programme.pdf.

[611] European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

[612] The Fund success rate for the first large scale call results (311 projects applied and 7 were successful) is 2.3%. This number has been going up: Second large scale call: 139 applications, but 17 projects selected (12.23% success rate). Third large scale call: 239 applications, but 41 projects selected (17.2% success rate). So for the three calls, the average is a 10.6% success rate. European Commission. (2024). Large-scale Projects Calls under the Innovation Fund. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/calls-proposals/large-scale-calls_en.

[613] This complexity has been raised by experts, cleantech associations and individual companies. This is why the Innoenergy one-stop-shop for funding was created, being trialled in the battery sector. European Battery Alliance (n.d.). One-Stop Shop. Available at https://www.eba250.com/one-stop-shop/.

The next MFF doesn't need to reinvent the wheel by creating new funding infrastructures or instruments, and hence more complexity for end-beneficiaries - meaning new application procedures, evaluators and criteria. Instead, the next MFF can send more resources to those existing instruments doing a demonstrably good job to fill the cleantech investment gaps. This should include the Innovation Fund, the EIC Accelerator and selected EIB-managed programs (EIB financing is specifically dealt with in the next section). It goes without saying that budgetary allocations to instruments which offer guarantees to crowd-in other private capital sources or underpin the development of markets are more efficient ways to deploy public capital to support scale-ups and mature clean technologies - which appears to be where the EU is falling behind its global competitors.

The next MFF should therefore enhance EU financial instruments to increase the efficiency of EU funding in clean technologies that come with revenues. **An efficiency-first funding approach can be supported in a harmonised and tailored manner by integrating sector-specific, asset-tied EU FIaaS in EU funds that are relevant for cleantech.** EU FIaaS would drive more Member States' resources from EU-sourced funds to cleantech and scale the use of financial instruments across the EU to crowd-in private investments. For instance (and reflecting many of Mario Draghi's recommendations for enhancing EU competitiveness): by expanding the model of the Innovation Fund hydrogen auction as a service to other cleantech sectors;[614] developing as a service schemes of Contracts for Difference and Carbon Contracts for Difference[615] (such as the H2 Global Foundation); including EU FIaaS for cleantech scale-up in the EIC (such as in the new STEP programme); and developing a cleantech manufacturing policy window in InvestEU that can be activated by the Member State compartment; enhancing EIB counter-guarantee facilities for cleantech manufacturing (which are already a service to Member States).[616] The EIB's own new and self-identified "Strategic Tech-EU" initiative[617] seems to indicate a greater level of institutional ownership over the supply chain to cleantech finance, but still has no specific budget attached to it, so it may also be a good recipient of new resources, possibly through an increased budget guarantee for InvestEU.[618]

[614] Draghi recommends reviewing the results of the hydrogen auctions to consider expansion to strategic cleantech sectors. Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
T&E has asked for a quick operationalisation of the EU Battery Fund providing at least €7.7 billion of direct support by 2030 (Op-Ex and Cap-Ex), and a total of €25 billion by 2030 via Member States' co-financing via the Member State compartment.
[615] Proposed by Mario Draghi: Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
T&E finds CCFDs under the Innovation Fund to be key for e-fuel scale-up
[616] Climate Strategy & Partners. (2024). Joint Letter in Response to EIB Strategic Roadmap. Available at https://www.climatestrategy.es/press/JointLetterEIB19062024noemb.pdf.
[617] European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf
[618] Climate Strategy & Partners. (2024). Joint Letter in Response to EIB Strategic Roadmap. Available at https://www.climatestrategy.es/press/JointLetterEIB19062024noemb.pdf.

H2 Global Foundation: An innovative Contract for Difference mechanism, "as a service" to Germany, to add transparency to hydrogen green premia

The H2 Global Foundation was established in June 2021 with the objective of kickstarting the green hydrogen industry and its international market ramp-up.[619] **H2Global looked to create a business case for supply and demand of green hydrogen by offering price and transparency to the market.** The H2 Global Foundation is composed of 71 corporate donors (like Deutsche Bank, RWE and Lindt) which sit alongside the German Government and philanthropic organisations such as the Bezos Earth Fund (which committed US$1 million in 2024 to support the H2Global Foundation).[620]

The H2Global Foundation launched a Contract for Difference (CfD) mechanism implemented through a physical intermediary placed between supply and demand side called HintCo (which is owned entirely by the foundation). **HintCo buys green products at relatively high prices and sells them at much lower prices, where the price difference is compensated by the CfD scheme funded by the government.** In 2021, the German Government provided a total of €900 million for the first auction, and in 2023 they provided €3.53 billion in support from the Federal Budget.

The model behind H2 Global is called the "double-auction model", which looks to close the gap between the high prices at which green hydrogen is traded in the international market and the lower prices at which regular hydrogen is sold and used in regional markets.[621] In this regard, **HintCo tenders long term green hydrogen offtake agreements of 10 years with a fixed set of criteria.** These contracts are resilient to regulatory changes and avoid uncertainties as they are bilaterally backed by the government. The H2 Global offtake provides investors with the necessary investment security and bankability to finance these projects, as any losses resulting from the difference between supply prices and demand prices are compensated by the federally allocated grants.[622]

The first auction of this model is an international one where to purchase green hydrogen or its derivatives. The lowest bid price wins the call but to be eligible the partner's products must be sold to Europe, to ensure that the hydrogen imports come from regions that have plenty of sunshine and wind.[623] The first pilot auction concluded in July 2024, where the only auction winner was the largest producer of nitrogen fertilisers in the MENA region called Fertiglobe.[624] This resulted in a 7 year offtake contract with Hintco for the delivery of at least 259,000 tons of green ammonia between 2027 and 2033 with a budget of up to €394 million, that will cover the gap between the production cost (€811 per metric ton of ammonia) and the sales price (€1000 per metric ton of ammonia).[625] In the second auction, the hydrogen that will be delivered to the EU is auctioned and awarded to the highest bidder, for which Hintco will open a second auction in 2025/2026 to find potential buyers for this green ammonia.[626]

The H2Global Foundation provides a helpful model for the scaling-up of green hydrogen production and consumption in Europe that can be extended to other sectors, and used "as a service" in other Member States. The European Commission recognises its importance, to the point where there have been discussions to link the new European Hydrogen Bank with Germany's H2Global.[627] Nevertheless, there is still much work to be done as the green ammonia resulting from this project will only cover 1% of Germany's annual ammonia demand while also costing twice as much as grey ammonia.[628]

[619] BMWK (2022). Newsletter on German Energy Transition: H2Global. Available at https://www.bmwk-energiewende.de/EWD/Redaktion/EN/Newsletter/2022/01/Meldung/direkt-account.html.
[620] H2Global (n.d.). Our Supporters. Available at https://www.h2-global.org/our-supporters.
[621] BMWK (2022). Newsletter on German Energy Transition: H2Global. Available at https://www.bmwk-energiewende.de/EWD/Redaktion/EN/Newsletter/2022/01/Meldung/direkt-account.html.
[622] H2Global. (2022). How to Deliver on the EU Hydrogen Accelerator. Available at https://files.h2-global.de/H2Global_How-to-deliver-on-the-EU-Hydrogen-Accelerator.pdf. (p.8)
[623] BMWK. (2022). Newsletter on German Energy Transition: H2Global. Available at https://www.bmwk-energiewende.de/EWD/Redaktion/EN/Newsletter/2022/01/Meldung/direkt-account.html.
[624] H2Global. (2024). Results of the Pilot Auction. Available at https://www.h2-global.org/news/results-of-the-pilot-auction-lot-1.
[625] Pearce, O. (2024). Fertiglobe Success in H2Global Pilot Auction Marks Milestone in Renewable Ammonia Supply for EU. Available at https://ammoniaenergy.org/articles/fertiglobe-success-in-h2global-pilot-auction-marks-milestone-in-renewable-ammonia-supply-for-eu/.
[626] Date according to information from Bloomberg New Energy Finance. Erneuerbare Energien Hamburg. (2024). H2Global auction results: Groundbreaking for renewable ammonia. Available at https://www.erneuerbare-energien-hamburg.de/de/blog/details/h2-global-auction-results-groundbreaking-for-renewable-ammonia.html.
[627] European Commission. (2023). Joint Statement by Commissioner Simson and German Minister Habeck on Energy Issues. Available at https://energy.ec.europa.eu/news/joint-statement-commissioner-simson-and-german-minister-habeck-energy-issues-2023-05-31_en.
[628] The auction green's ammonia import price to Europe cost €1,000 per ton while the gray ammonia cost €465 per ton (data according to information from Bloomberg New Energy Finance). Erneuerbare Energien Hamburg. (2024). H2Global auction results: Groundbreaking for renewable ammonia. Available at https://www.erneuerbare-energien-hamburg.de/de/blog/details/h2-global-auction-results-groundbreaking-for-renewable-ammonia.html.

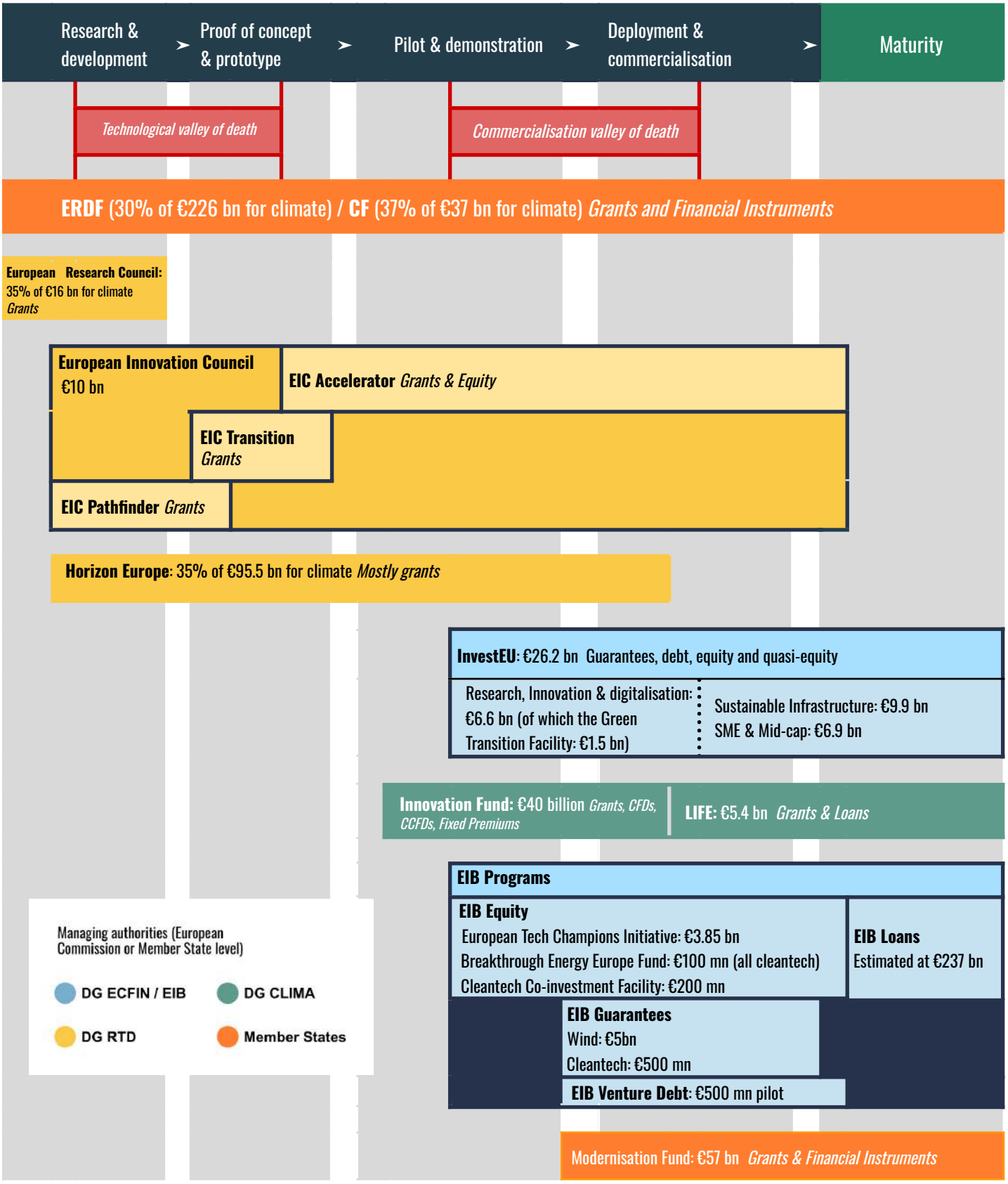
The next MFF is also an opportunity to consider how to address the complexities of accessing EU funds for young, small cleantech companies, and the governance of overall funding for cleantech, which is fragmented. The new initiative of a Competitiveness Coordination Tool mandated in Commissioner Sejourne's mission letter can support this governance assessment to simplify the lab to scale journey of European cleantech companies.[629] In the words of the EIB: "public funding for startups is patchy" and greater efforts are needed to enhance speed of access, link different stages of financing throughout the project's life-cycle, improve predictability and increase EU-national coordination.[630] As the EIB[631] and Mario Draghi[632] reports flag, the US Inflation Reduction Act tax credits have many of these simplification advantages. The EU must make a greater effort to build them into its own funding schemes.

There are multiple EU-level funds, managed by different EU authorities, with different application procedures and timelines, that support the development of clean technologies depending upon the degree of technology readiness, as illustrated in Graph 25. This complexity is increased when considering the Member State-level programs from Cohesion Policy, Modernisation Fund, etc.

Draghi notes that this complex and fragmented European funding framework, particularly in relation to global counterparts, disincentivizes parts of strategic value chains to apply to EU funds.[633] Entrepreneurs and experts on the ground report that the identification and application to EU funds can be administratively heavy, and that different funds require dramatically different applications and differently presented information when compared to the private sector fundraising process. This is one reason why the EIB survey finds that a lack of speedy access to funding is for European cleantech enterprises with less than 250 employees the leading barrier to growth.[634]

[629] European Commission. (2024). Mission Letter for Séjourné. Available at: https://commission.europa.eu/document/download/6ef52679-19b9-4a8d-b7b2-cb99eb384eca_en?filename=Mission%20letter%20-%20S%C3%89JOURN%C3%89.pdf
[630] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[631] Ibid.
[632] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[633] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[634] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

Graph 25: Overview of EU Financing Programmes and Funds (for 2021-2027 period) according to the targeted TRL levels and the Managing Authorities[635] (Source: Climate Strategy creation with input from European Commission (2024))



[635] European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

Potentially adding more complexity, the European Commission is introducing three new labels for selected "strategic projects" to provide them signalling advantages in EU funds, each of them managed by different authorities. These include one label for "Strategic Projects" under the Critical Raw Materials Act,[636] another one under the Net Zero Industry Act,[637] a "Sovereignty Seal" under the STEP for the Innovation Fund and four other programmes,[638] and a "Seal of Excellence" shared by five EU programmes,[639] where the list of eligibility criteria is long, and the additional process and administration is yet to be fully developed.[640] This is directionally correct, but runs the risk of adding greater complexity and delays to an already complex European fundraising process, as the market has to learn to understand, differentiate and use a plethora of new terms and labels. It may be possible to identify common criteria for excellence and allow fund managers (public and private) to report on those more transparently, and yet different funds cater to different audiences and risks, and harmonisation may not serve a practical purpose.

EU FIaas tailored to cleantech, adapted at the local level, and using local distribution channels (such as banks) to deliver blended finance instruments, with speed and at scale, can partly address the access difficulties that smaller cleantech companies face. If this integration is done within existing EU funds that are working relatively well for cleantech, it can avoid increased complexity and administrative bottlenecks. Cleantech-specific EU FIaaS serve to **harmonise, coordinate and align Member States' resources for cleantech programs in their territories.** This will require improved NECPs that provide detailed investment assessments determining relevant funding sources for cleantech and strategies to lever private investments.[641] Solid investment assessments have systematically failed to flourish under NECPs and hamper strategic investment planning for the EU clean industry.[642] Under the new MFF, EU FIaaS can be positioned as useful one-stop-shops for Member States to deploy national structural funds from Cohesion Policy, the Modernisation Fund, and other programs to accelerate the usually slow absorption rates, and to improve the impact of EU money with targeted funding for clean industrial diversification.

The sale of ETS allowances is an important Member State climate investment resource (which generated €30 billion in revenues for countries in 2022[643]) where a significant potential to improve climate impact exists through EU FIaaS. The European Parliament position on NZIA recommended that Member States use at least 25% of their ETS revenues for cleantech manufacturing,[644] a recommendation also echoed by Draghi[645] and various stakeholders.[646] In the past, these revenues have not been used to their maximum potential - according to a report by Bellona (2024), a total of €11 billion national ETS revenues from 2022 were misused in non-climate relevant expenditure,[647] and according to Draghi no evidence exists that they have meaningfully contributed to the manufacturing of cleantech.[648] The revised ETS directive mandates Member States to spend all ETS revenues in climate action, but with the exception of 25% for indirect carbon costs compensation.[649] This is a risky loophole and missed opportunity with no contribution to decarbonisation. Instead, this 25% of revenues could be used for supporting cleantech manufacturing,[650] and could contribute to, for instance, the InvestEU Member State compartment or the Innovation Fund Auction as a Service to support national cleantech projects.

[636] European Commission. (2024). Call for Strategic Projects under the Critical Raw Materials Act. Available at https://single-market-economy.ec.europa.eu/calls-expression-interest/call-applications-strategic-projects-under-critical-raw-materials-act_en.
[637] European Commission. (n.d.). Strategic Projects under the Net-Zero Industry Act. Available at https://single-market-economy.ec.europa.eu/industry/sustainability/net-zero-industry-act/strategic-projects-under-nzia_en.
[638] European Commission. (n.d.). Sovereignty Seal: Strategic Technologies Europe Platform. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/strategic-technologies-europe-platform/sovereignty-seal_en.
[639] European Commission. (n.d.). Seal of Excellence. Available at https://commission.europa.eu/funding-tenders/find-funding/seal-excellence_en.
[640] Strategic Technologies Europe Platform (n.d.). STEP Seal. Available at https://strategic-technologies.europa.eu/about/step-seal_en.
[641] Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal
[642] European Commission. (2023). Proposal for a Council Recommendation on Economic Policy Reforms. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2023%3A796%3AFIN
[643] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[644] European Parliament. (2023). Report on the proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act). Available at https://www.europarl.europa.eu/doceo/document/A-9-2023-0343_EN.html.
[645] "Use EU ETS revenues to invest in manufacturing capacity. This should be achieved by incentivising Member States to devote a share of their ETS revenues to the manufacturing of clean technologies and providing technical support to this end." Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[646] Bellona. (2024). Joint Letter – Earmarking ETS revenues to deliver clean industrial competitiveness. Available at https://eu.bellona.org/2024/10/08/joint-letter-eu-ets-revenues/.
[647] Bellona (2024). EU Brief: Clean Energy Transformation. Available at https://network.bellona.org/content/uploads/sites/6/2024/04/Brief.pdf.
[648] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[649] ETS directive - article 10a(6). European Commission. (2023). Directive (EU) 2023/959 establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023L0959
[650] Bellona. (2024). Joint Letter – Earmarking ETS revenues to deliver clean industrial competitiveness. Available at https://eu.bellona.org/2024/10/08/joint-letter-eu-ets-revenues/.

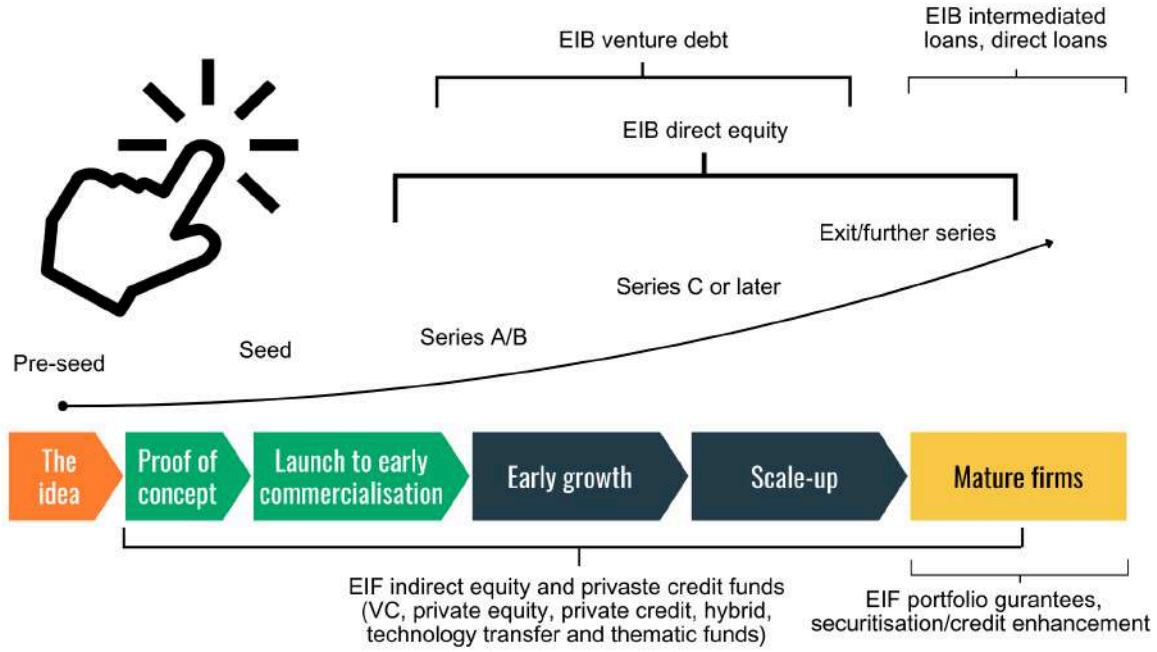
An enhanced role for the EIB in EU cleantech

The European Investment Bank is a critical source of support for EU cleantech projects and as the European Climate Bank has increasing investments in the green transition as its number one priority.[651] The EIB also plays a significant role as a lead investor and manager of a set of EU-funded programs and instruments with which it de-risks cleantech projects and looks to lever private investments. This role can only increase as indicated in the new political guidelines for the Commission[652] and the European Council's Strategic Agenda for 2024-2029.[653] **A strengthened and proactive EIB that unifies national efforts towards industrial competitiveness is a determinant step in the build-up to a Capital Market Union by "pioneering pan-European financial instruments."[654]** An enhanced EIB role in building EU cleantech can be improved both at the programme level and at the governance level.

Increasing the size and efficiency of EIB cleantech programs

The EIB Strategic Roadmap 2024-2027 highlights the need to **"maximise the impact of every euro invested"** in disruptive cleantech and the scale-up of clean industrial capabilities that will take the EU to a global leadership position.[655] Levering its own capital, managing specific EC investment mandates and accessing deep pools of AAA-rated debt via the capital markets allows the EIB Group to catalyse private investment to support companies throughout their lifecycle and close the capital gap that start-ups face.
The EIB has a suite of programs and technical expertise[656] targeting cleantech scale-ups as illustrated in the Graph 26 below. Its operational directorate provides the technical expertise of an extensive pool of experts to manage a high quality investment and diligence process and lead more general investors and banks.[657] According to its own research, "the EIB Group's intervention in the venture capital and venture debt markets has a statistically significant impact on exit outcomes, innovation and access to finance."[658]

Graph 26: EIB Group support throughout a company's lifecycle[659]



Source: European Investment Bank (2024).

[651] European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf.
[652] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.
[653] Council of the European Union. (2024). Strategic Agenda (2024-2029). Available at https://www.consilium.europa.eu/media/4aldqfl2/2024_557_new-strategic-agenda.pdf.
[654] European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf.
[655] Ibid.
[656] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[657] Ibid.
[658] Ibid.
[659] Ibid.

In February 2023, the EIB launched the **European Tech Champions Initiative (ETCI) with an initial budget of €500 million and contributions from several Member States to reach a total capital of €3.85 billion.**[660] In a recent meeting with EU finance ministers, EIB President Calviño presented a plan to increase the size of the ETCI.[661] This fund-of-funds invests in large-scale venture capital funds, which will in turn provide growth financing to European tech champions in their late-stage growth phase. ETCI seeks to mobilise more than €10 billion of investments in these tech companies, **and yet it doesn't have a specific cleantech focus**. Draghi's report specifically points out the importance of creating more EIB equity funds to incentivise institutional investors to invest in cleantech manufacturing and therefore recommends adequate support of the ETCI for this purpose.[662] With a €50 million contribution from Breakthrough Energy Ventures and another €50 million from the EIB, **the Breakthrough Energy Europe Fund is another equity program managed by the EIB and exclusively earmarked for breakthrough clean technologies with significant GHG reduction potential.[663]**

In January 2024, a cleantech-specific co-investment programme was announced with an initial budget of €200 million.[664] In this **Cleantech Co-investment Facility** that will operate over the next 4 years, the EIF will participate in equity funding rounds alongside EIF-backed fund managers, co-investing on equal market terms and conditions into EU-based SMEs and Midcaps (equity investments of between EUR 5-15 million). The Facility specifically targets the "second equity gap" that companies often face when moving beyond start-up stage and into the growth phase of their lifecycle.[665] However, both this program and the ETCI are considered **small compared to the needs for manufacturing scale-up of just six strategic clean technologies** (around €4 billion in total, which is 22% of the €18 billion public investment gap from 2023-30[666]).

For the EIB to become an effective "bridge to bankability" for cleantech scale-ups, it must grow its role providing sizable amounts of debt to clean energy and manufacturing projects. The **Venture Debt program**[667] **provides loans to early-stage companies to provide liquidity in between equity funding rounds.** Over the 10 years since its creation, it has delivered €6.8 billion to about 300 companies (not exclusively cleantech).[668] However, some market commentators see the lack of significant scale common equity as driving start-ups to accept venture debt products which provide investors downside protection and significant upside with conversion rights into equity when things go well. This may be fine for the investor, but it limits the company's speed of growth and caps the ability for scale-ups to raise more market debt or reach scale. The EIB is also developing a dedicated €500 million scale-up debt pilot for direct support to EU technology champions in their late stage of growth that are beyond established venture debt criteria, but still require growth financing.[669]

In addition to the above, under the REPowerEU package the EIB has set to provide €45 billion in additional financing by 2027, which is expected to mobilise over €150 billion in investment, and has expanded this financing for the manufacturing in state-of-the-art Strategic Net-Zero Technologies.[670] **The EIB new Strategic Roadmap 2024-28 highlights a new "Strategic Tech-EU" program which appears to provide a good opportunity to address the funding gap in cleantech**. Through this new initiative, the EIB Group aims to actively participate in the European Commission's industrial alliances and initiatives, investing in the whole value chain of net zero and supporting disruptive technological innovation and promoting investment in Europe's industrial capacity.[671]

[660] Germany, France, Spain, Italy, Belgium and the Netherlands.
[661] Science Business Europe. (2024). European Investment Bank hatches plans to keep start-ups in Europe. Available at https://sciencebusiness.net/news/r-d-funding/start-ups/european-investment-bank-hatches-plans-keep-start-ups-europe.
[662] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[663] European Investment Bank. (2019). The European Commission, European Investment Bank and Breakthrough Energy Ventures establish a new EUR 100 million fund to support clean energy investments. Available at: https://www.eib.org/en/press/all/2019-141-the-european-commission-european-investment-bank-and-breakthrough-energy-ventures-establish-a-new-eur-100-million-fund-to-support-clean-energy-investments.
[664] European Investment Bank. (2023). Cleantech EIB-EIF Co-Investment Programme. Available at https://www.eib.org/en/projects/pipelines/all/20220444
[665] Ibid.
[666] European Commission. (2023). Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.
[667] European Investment Bank. (n.d.). Venture Debt: Supporting Innovative Companies. Available at https://www.eib.org/en/products/equity/venture-debt/index.htm.
[668] European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[669] European Investment Bank. (2023). EIB Group Operational Plan (2023-2025). Available at https://www.eib.org/attachments/lucalli/20220289_eib_group_operational_plan_2023_en.pdf.
[670] European Investment Bank. (2023). EIB to Support Green Deal Industrial Plan with EUR 45 Billion in Additional Financing. Available at https://www.eib.org/en/press/all/2023-270-eib-to-support-green-deal-industrial-plan-with-eur45-billion-in-additional-financing.
[671] European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf.

To maximise the leverage and impact of the Strategic Tech-EU initiative and other EIB programs, a greater use of manufacturing and performance guarantees would be a step forward. **The Strategic Roadmap proposes guarantees as one of the EIB instruments that can efficiently address the financing gap of cleantech scale-ups by crowding-in private investments.**[672] As example, in 2023[673], the EIB announced a counter-guarantee of €5 billion to support the manufacturing of wind turbines that is expected to lever €80 billion in investment.[674] This guarantee instrument aims to de-risk and speed-up investments in wind manufacturing, as wind projects face complex permitting procedures creating difficulties in forecasting demand for wind turbines, together with increased pressure from international competitors like China.[675] The instrument (which works "as a service" to the European wind industry in wind assets) kick-started in August 2024 with the first €500 million counter-guarantee deal with Deutsche Bank, which should allow the Bank to set up a €1 billion guarantee facility to support new wind projects.[676] Sensing the importance of the instrument, the Commission also included electricity grids to qualify for these guarantees through a Grid Action Plan.[677]

As a part of a group of 39 European cleantech innovators, investors, industry associations, researchers and NGOs, Climate Strategy **called on the EIB to support the expansion of its guarantees for other strategic cleantech sectors.**[678] The letter's signatories noted that "European cleantech manufacturers are being forced to turn down orders for lack of bank guarantees, which greatly limits the growth of these clean industries in Europe."[679] A few months later, **the EIB unveiled a new €500 million program in bank guarantees for cleantech**.[680]

The International Chamber of Commerce reported the average ultimate loss rate for performance and financial guarantees was between 0.2% and 1.7% between the years 2000 and 2018.[681] The 39 signatories recommended the EIB expand its manufacturing guarantees for cleantech, and include performance[682] and manufacturing[683] loan guarantees, so that commercial banks can cover 20-30% of a project's financing needs, and provide additional safety for customers, lenders, EPC contractors and operators if suppliers fail to meet their obligations.

Mario Draghi also calls for an expansion of EIB public guarantees and counter-guarantee schemes by suggesting to replicate the wind manufacturing scheme.[684] The idea to increase the EIB's role in providing green guarantees also appears in Enrico Letta's landmark report as a component of a "A Savings and Investments Union" and to help unlock the potential of the Single Market and make a more efficient use of private capital.[685] **Letta proposes that the Commission and the EIB develop a framework for a European Green Guarantee by 2025.** Letta believes that with a resource multiplier of around 12 (like the original EFSI), between Euro 25 and 30 billion in guarantees would support Euro 300-350 billion in investments.[686]

As for the EFSI, the EIB evaluates the specific proposals from commercial banks and national financial institutions and awards guarantees. European banks can then allocate resources to the cleantech companies and, with the new European Green Guarantee, they would be able to neutralise the so-called "green transition risk" or "green premium", which prices the inherent risk of lending to green companies.

[672] Ibid.
[673] European Commission. (2023). Questions and Answers on the European Wind Power Package. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_5186.
[674] European Investment Bank. (2023). EIB Commits EUR 5 Billion to Support Europe's Wind Manufacturers and Approves Over EUR 20 Billion in Financing for New Projects. Available at https://www.eib.org/en/press/all/2023-510-eib-commits-eur5-billion-to-support-europe-s-wind-manufacturers-and-approves-over-eur20-billion-in-financing-for-new-projects.
[675] European Commission. (2023). Questions and Answers on the European Wind Power Package. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_5186.
[676] Machado, B. (2024). EIB and Deutsche Bank Join Forces to Lift EU Wind Production. Available at https://www.euractiv.com/section/energy-environment/news/eib-and-deutsche-bank-join-forces-to-lift-eu-wind-production/.
[677] European Commission. (2023). Commission sets out actions to accelerate the roll-out of electricity grids. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6044.
[678] Climate Strategy & Partners. (2024). Joint Letter in Response to EIB Strategic Roadmap. Available at https://www.climatestrategy.es/press/JointLetterEIB19062024noemb.pdf.
[679] Ibid.
[680] Bloomberg. (2024). EIB to Unveil EUR 500 Million in Bank Guarantees for Clean Tech. Available at https://www.bloomberg.com/news/articles/2024-11-14/eib-to-unveil-500-million-in-bank-guarantees-for-clean-tech.
[681] International Chamber of Commerce. (2022). Performance Guarantees Study. Available at https://iccwbo.org/wp-content/uploads/sites/3/2022/04/icc-document-icc-gcd-performance-guarantees-study.pdf.
[682] To free up expensive cash from start-up delivery obligations.
[683] To support the building of new industrial facilities.
[684] Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf
[685] Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf
[686] Ibid.

Recommendations to boost the EIB Cleantech Guarantee Program into Strategic EU sectors

Cleantech for Europe proposes[687] that the size of any new guarantee scheme should reflect the opportunity set. **An initial scheme should cover at least €5 billion euros of cleantech manufacturing guarantees** (for instance up to €200 million for 25 companies), **and if successful expand to €20 billion euros** (for instance up to €200 million for 100 companies) by 2027. The next Multiannual Financial Framework (starting in 2028) would be an opportunity to scale by another order of magnitude. Public guarantees should only be used as a bridge to bankability. For instance, by capping the number of similar projects that a company can have guaranteed to 2, or progressively reduce the share of collateral counter-guaranteed. However, there shouldn't be a cap on the size of each transaction as companies grow and credit metrics improve.

The design and focus of the guarantee facilities should be for cleantech scale-ups instead of large industrials. The smaller scale-ups are by definition worse credits and it is they who don't have easy access to traditional bank guarantees. These new counter-guarantees should be able to be offered in conjunction with existing funding instruments, such as EIB's Venture Debt product, for maximal impact.

Boosting EIB internal resources to enable proactive funding of cleantech

Looking towards the US, the governance model of the Department of Energy's Loan Programs Office (LPO) stands out as a benchmark for the EIB approach to cleantech support. **The IRA added $11.7 billion to the LPO's existing programmes, thus boosting LPO's loan authority to approximately $100 billion**[688] to act as the "bridge for bankability" for scaling up demonstrated clean technologies with financial needs. This is at least twice as much as the EIB budget for the cleantech programs outlined above.

It is believed that a significant majority of the LPO transactions in cleantech projects are sourced by proactive outreach driven by a well-staffed team (120 federal employees and 60 contractors).[689] LPO staff are dedicated to engaging and identifying target innovators and potential funding recipients, and to proactively engage with all prospects and ensure that the companies are well informed about the DOE LPO's products and offers. The EIB has approximately 10 permanent staff members of the Operations division in Luxembourg focused on equity, growth capital and project finance. In addition, its Projects division is focused on monitoring and advisory to project development counts with around 30 permanent staff members focused on different sectors (energy, mobility, innovation, etc.).[690] This appears to be three times less than the LPO staff.

[687] Cleantech for Europe. (2023). Scaling Cleantech Manufacturing. Available at https://assets-global.website-files.com/626fd2b7495a6f980eab20c8/656dad1b9339313ae2e3eab2_CTFE_cleantech_manufacturing_vf03.pdf.
[688] U.S. Department of Energy. (2022). Inflation Reduction Act (IRA) of 2022. Available at https://www.energy.gov/lpo/inflation-reduction-act-2022#:~:text=Within%20its%20energy%20and%20climate,programs%20by%20approximately%20%24100%20billion.
[689] According to interviews with LPO officials.
[690] These numbers do not include local EIB offices: European Investment Bank (n.d.). Governance and Structure. Available at https://www.eib.org/en/about/governance-and-structure/organisation/index.htm.

U.S. Department of Energy Loan Programme Office: A Benchmark for scale-up financing for Cleantech deployment

The U.S. Department of Energy Loan Programme Office (LPO) offers debt financing on high-impact programs that support clean, innovative and energy infrastructure related projects in the United States.[691] Its mission is to establish itself as the "premier public financing partner that accelerates high-impact energy and manufacturing investments to advance America's economic future".[692] In order to fulfil its mission, the LPO partners with the private sector as a "bridge to bankability" for scaling up demonstrated technologies with financial needs.[693]

Under the Title 17 Clean Energy Financing Program, the LPO can finance private projects that support the deployment of both innovative and clean energy technologies, including projects that already receive financial support from a state agency or financial authority.[694] Furthermore, the Inflation Reduction Act (IRA) also introduced the possibility of providing financial help to projects that re-invest in legacy energy infrastructure with alternative solutions that are less GHG intensive.[695] With the latest data available from June 2024, the LPO has issued loans for a total amount of $42.1 billion, which included ten of the first utility-scale solar projects in the United States and the largest wind farm in the U.S.[696] Furthermore, with the introduction of the IRA, the loan authority in LPO's existing loan programs has been increased by approximately $100 billion, which includes a specific $250 billion allocation for energy infrastructure reinvestment projects. [697]

In order to get financing assistance, projects need to demonstrate that they involve technically viable and commercially ready technology, which means that the Technology Readiness Level (TRL) necessary should be at least 8.[698] Nevertheless, the LPO can also support projects with less TRL if they can provide a clear path toward commercial readiness over the course of the application process.[699] In this sense, the LPO targets small and large scale capital projects where the cheapest loan that the programme can offer will be around $2 million, which can't represent more than 80% of the project costs. One example to highlight that received funding from the LPO is Tesla, where in 2010 with a direct loan of $465 million loan they started to develop their Model S vehicle and a manufacturing facility in California.[700]

Regarding the application process, it is always open and interested companies can request a pre-application request with no fee or commitment.[701] In this sense, the DOE is characterised by having a large number of employees working at the LPO programme, employing between 120 federal employees and 60 contractors (engineers, scientists, loan specialists). This allows the LPO to adopt a proactive approach when looking for new projects to support financially, where the employees will proactively contact companies that fit their portfolio requirements to offer them information about the different LPO financial support programs. Furthermore, during the application process, the LPO specific outreach and business development division will dive into each approved application during the application and due-diligence process (which can take over a year) that will overview the viability of the project in a variety of areas thanks to their expertise (technically, financially, legally…).[702] With this process, the LPO looks to properly identify and manage risks, but also to ensure that there is a reasonable prospect of repayment.[703]

A better resourced EIB team for cleantech financing would enable a more proactive outreach to cleantech companies to make financial instruments more visible and help them navigate the journey from lab to scale through the "patchwork" of EU funding. This can also be done taking advantage of the InvestEU Advisory Hub, which aims to be the central entry point for project promoters and intermediaries seeking advisory support and technical assistance related to centrally managed EU investment funds.[704] Working towards a more proactive approach is in line with the "efficiency reforms" that EIB President Nadia Calviño has pointed out to reduce bureaucratic processes like questionnaires and remove procedural steps for companies.[705]

---

[691] U.S. Department of Energy (n.d.). Loan Programs Office Overview. Available at https://www.energy.gov/lpo/overview.
[692] Ibid.
[693] U.S. Department of Energy. (2024). How the DOE Loan Programs Office Understands and Manages Portfolio Credit Risk. Available at https://www.energy.gov/lpo/articles/how-doe-loan-programs-office-understands-and-manages-portfolio-credit-risk
[694] U.S. Department of Energy. (n.d.). Title 17 Clean Energy Financing. Available at https://www.energy.gov/lpo/title-17-clean-energy-financing.
[695] Ibid.
[696] U.S. Department of Energy. (n.d.). LPO Portfolio Performance Summary as of 09/30/24. Available at https://www.energy.gov/lpo/portfolio
[697] U.S. Department of Energy. (2022). Inflation Reduction Act (IRA) of 2022. Available at https://www.energy.gov/lpo/inflation-reduction-act-2022#:~:text=Within%20its%20energy%20and%20climate,programs%20by%20approximately%20%24100%20billion.
[698] U.S. Department of Energy. (n.d.). Title 17 Frequently Asked Questions. Available at https://www.energy.gov/lpo/title-17-frequently-asked-questions#trll
[699] Ibid.
[700] U.S. Department of Energy. (n.d.). Loan Programs Office - Tesla. Available at https://www.energy.gov/lpo/tesla
[701] Ibid.
[702] Ibid.
[703] Ibid.
[704] "The support of the InvestEU Advisory Hub does not require its beneficiaries to apply for financing through the InvestEU Fund, nor does it entitle them to receive such financing support, although most advisory initiatives are linked and support specific InvestEU financial products." European Commission. (n.d.). InvestEU Advisory Hub. Available at https://investeu.europa.eu/investeu-programme/investeu-advisory-hub_en
[705] European Commission. (2024). Annual EU Budget Conference: Looking Ahead at the EU Budget's Future. Available at https://commission.europa.eu/ec-events/annual-eu-budget-conference-2024-looking-ahead-eu-budget-future-2024-04-29_en

The EIB can also provide more proactive support, and awareness raising, to Member States looking to use EU Financial Instruments as a Service without waiting for them to demand these (like the InvestEU Member State compartment or the Innovation Fund auctions). The lack of Member State demand for these instruments is why they are under-used (as explained in Chapter 4) and the EIB can play a significant role in "activating" this demand by pointing at the benefits of tailored instruments for cleantech manufacturing ring-fenced to national territories.

The novelty and high level specialisation required to develop cleantech projects has proved to be a disincentive for investors, worsening the "asymmetric information inefficiencies" in the market.[706] The EIB, as the European Climate Bank, has more experience in investing in cleantech, thus it has useful data on the quality and risk of these investments, and has built specialised and technical teams in the different cleantech sectors that conduct thorough due diligence processes. **This data and knowledge would be useful for national public development banks, retail banks, funds and other private investors, particularly in lower-income EU countries with less mature bank networks.** A WWF report also highlights this opportunity for the EIB to "play an enhanced strategic and coordinating role in bringing national banks together and fostering collaboration and knowledge exchange for supporting the transition both at EU and national and sectoral level."[707] A Capital Market Union can only be constructed based on shared resources and knowledge among all the national financial institutions.

This report highlights the efficiencies available through a greater use of retail channels for mature and standardised clean investments in SME - but this is even more of a challenge in new cleantech sectors where retail banks do not have the technical expertise to assess these riskier investments. An interesting example from Canada provides some ideas to address this challenge: to try and expand the knowledge base for clean technologies, the public export development corporation is piloting **shared due diligence rooms and expert analysis to encourage co-investments by lenders who do not have such developed internal teams in those growing sectors**. The EIB could follow this shared due diligence model through the InvestEU Advisory Hub to support capacity-building in national financial intermediaries of EU funds.

Within its new Strategic Tech-EU program, the EIB can take advantage of industrial alliances and extend initiatives to map strategic elements of cleantech supply chains and proactively build greater inhouse cleantech expertise. This will be supportive of and aligned with upcoming sectoral one-stop-shops that are being created to facilitate project outreach, support and access to funding, such as EIT Innoenergy's new one-stop-shop for the battery supply chain, which may be soon extended to other sectors. This can also help bring national players to the table through the pooling of data and a curated and shared due diligence platform for EU investments in cleantech. **Greater data collaboration across national financial institutions, and proactive contact with EU-level and national clean industrial alliances, can lead the EIB as the pioneer of the much needed build-up to a Green Capital Market Union.**

EIB is working on Efficiency: to cut down questionnaires, remove steps in processes, no gold plating, standardise smaller investments or less risky investment to accelerate those and focus resources where we need deeper analysis (building renovation for instance), green checker is a good way to streamline online for companies

[706] European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

[707] WWF. (2024). Investing in Europe's Prosperity: Green Growth Strategy. Available at https://www.wwf.eu/?13320416/Investing-in-Europes-prosperity

EIT Innoenergy's one-stop-shop: Streamlining finance to the Battery Supply Chain

EIT Innoenergy, the world's largest sustainable energy innovation ecosystem, launched in April 2024 a new pilot project called "One-Stop-Shop to EU Finance" for the battery supply chain. This initiative aims to establish the EU as a hotspot for battery investment by simplifying the access to public funding for startups and scale-ups across the battery value chain. It was launched under the framework of the European Battery Alliance (EBA) to support the alliance's objective of developing an innovative, competitive and sustainable battery value chain in Europe.

The EIT one-stop-shop is specifically designed to first do an investor readiness assessment and then provide guidance to SMEs in the battery industry on how to get access to public funding more efficiently. This focus on SMEs looks to benefit from their greater ability to adapt and innovate compared to large companies' established processes and systems that are harder to change, as explained by the EBA Program Director at EIT InnoEnergy. Despite the program being only open for companies with less than 250 employees, EIT Innoenergy confirms that they will look to open the service to larger companies in the future.

The program covers the finance opportunities from relevant EU investment instruments in the full battery value chain, from raw materials extraction to recycling. It includes within its scope EU funding programmes with direct management from the EU (EIC Accelerator and Innovation Fund grants and competitive bidding tools) and indirect management from the EU (EIB advisory services, EIB venture debt, EIC equity, EBRD grants and debt-financing). The one-stop-shop evaluates the suitability of the different funds to each submitted project, looking at the likelihood of getting funding, the potential cost of opportunity and other variables. Furthermore, they also offer online training materials to help participants get a better sense of how EU financing programmes work and how to better identify fundraising opportunities.

Innoenergy adopts a reactive approach, that is, they wait for companies to apply to this program, but exceptionally they have contacted some about this opportunity. Companies that participate in this initiative will need to submit some data points that summarise their activity, which will then be the subject of an eligibility evaluation by EIT Innoenergy to assess their maturity level, their business case potential in the battery value chain and their potential eligibility to receive EU funding. Based on this evaluation, EIT Innoenergy will re-direct the company to the funding source accordingly. More immature companies will also receive an investment reading improvement with further guidance on prerequisites and on how to develop an investors plan before engaging with potential financiers.

Lastly, once all the different EU funding opportunities are reviewed, EIT Innoenergy could also offer (depending on the company) its own direct investment opportunities. Participating companies will also be invited to join as a member of the European Battery Alliance. EIT Innoenergy is considering whether to implement similar programs in the other strategic European initiatives where they participate, such as the European Green Hydrogen Acceleration Centre (EGHAC) and the European Solar Photovoltaic Industry Alliance (ESIA).

Building transparent EU markets for cleantech

Building a Capital Markets Union to deliver EU clean industrial competitiveness requires more than just bulk funding to "fill gaps" - it also requires the defragmentation[708] of national markets, coherent EU green product standards, the ambitious transposition of the Green Deal's Directives, extensive and committed green public procurement and the delivery of deep and stable demand for the final green products.

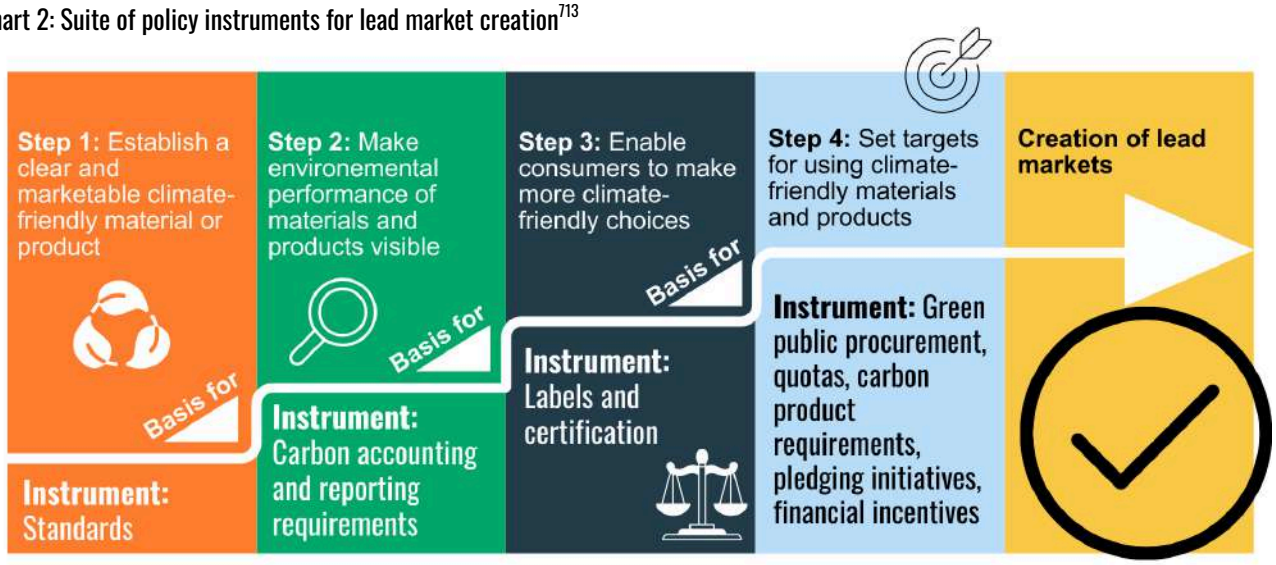
Successful EU funding efforts to take cleantech scale-ups to commercial market scale depend on the creation of predictable markets that deliver the sales in the business case for investments. Without the demand for green products, and without clarity on the prices and quantities required, cleantech investments and manufacturing cannot take off. Creating the demand for these clean products is designed to align their prices with conventional products, accelerating market growth and thereby reducing the need for financial support for the industrial transition on the supply side.[709] The fundamental challenge in the industry sector is not public (or private) funding (as the sector contains many large companies with good access to finance), but the challenge is de-risking investments in cleantech and lowering the green premium so that these industrial companies invest and deploy the clean technologies.

[708] European Environment Agency. (2023). Investments into the Sustainability Transition: leveraging green industrial policy against emerging constraints. Available at https://www.eea.europa.eu/publications/investments-into-the-sustainability-transition/
[709] Agora Industry. (2023). Exploring the Future of Lead Markets for Climate-Friendly Basic Materials. Available at https://www.agora-industry.org/news-events/exploring-the-future-of-lead-markets-for-climate-friendly-basic-materials.

The EIB writes that regulation can create new markets and stimulate investment in strategic industries and technologies, and that the European Green Deal provides the architecture for this.[710] **However, more requirements and greater exigence is needed in green public procurement and in the creation of forward-looking standards for products that align with a scientific decarbonisation trajectory.** This is particularly important in energy-intensive industries - steel, plastics, aluminium and cement - where the demand from end-users of green products is insufficient.[711] **The new EU policy agenda focused on simplification should avoid the de-regulation route by undoing the strong market signals put forward to investors** in the previous mandate with the Fit for 55 package and the sustainable finance agenda.

A recent Agora (2024) report identifies the policy, standards and regulatory mix needed: "First, clear standards establish a distinct, marketable product. Second, stringent carbon accounting and reporting provide the required trust and transparency for businesses and consumers. Third, labels and certification enable businesses and consumers to make more climate-friendly choices. Fourth, instruments such as green public procurement and embodied carbon limits create a specific market demand for climate-friendly materials."[712]

Chart 2: Suite of policy instruments for lead market creation[713]



Source: Agora Industry (2024).

Public procurement is a tool with significant potential to speed investments in the transition: in the EU, governments spend over €2 trillion per annum, over 13% of EU GDP.[714] A clear example is in basic materials in buildings and construction, which account for a significant portion of public procurement and around 30% of overall industrial emissions in the EU.[715] Ensuring rapid transposition and compliance with the revised Construction Products Regulation and the recast Energy Performance in Buildings Directive should be a priority as they are the "starting points for demand-side instruments."[716] To make the next European Commission the "investment Commission",[717] **the Public Procurement Directive recast would seem like a strategic step to build the EU markets for cleantech.**

[710] European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf
[711] Agora Industry. (2024). Creating markets for climate-friendly basic materials. Potentials and policy options. Available at https://www.agora-industry.org/fileadmin/Projekte/2023/2023-29_IND_Lead_Markets/A-IND_330_Lead_Markets_WEB.pdf
[712] Agora Industry. (2024). Creating markets for climate-friendly basic materials. Potentials and policy options. Available at https://www.agora-industry.org/fileadmin/Projekte/2023/2023-29_IND_Lead_Markets/A-IND_330_Lead_Markets_WEB.pdf
[713] Ibid.
[714] OECD. (2023). OECD Public Procurement Policy Principles. Available at https://www.oecd.org/content/dam/oecd/en/about/programmes/grc/grc-see/integrity/OECD-Public-Procurement-Policy-Briefing-Note.pdf.
[715] Stockholm Environment Institute. (2023). Green Public Procurement in the EU. Available at https://www.sei.org/wp-content/uploads/2023/02/green-public-procurement-eu.pdf.
[716] Agora Industry. (2024). Creating markets for climate-friendly basic materials. Potentials and policy options. Available at https://www.agora-industry.org/fileadmin/Projekte/2023/2023-29_IND_Lead_Markets/A-IND_330_Lead_Markets_WEB.pdf
[717] European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.

Green Public Procurement and the Push for Sustainability in Public Sector Spending: A Comparative Case Study of the EU and the US.

Green Public Procurement (GPP) was introduced in a communications document by the European Commission in 2008 that defined it as a policy instrument "whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle".[718] In the same document, the Commission suggested as an initial measure that **at least 50% of all public tendering procedures should be green by 2010.**[719]

Currently, **this is a voluntary practice in the EU, where Member States can determine to which policies and criteria it is applied**.[720] In the Public Procurement Directive from 2014, GPP was recognised as a key instrument in the EU's efforts to become a more resource-efficient economy.[721] The Directive encourages public authorities to not focus only on the purchase price, but to also take into consideration the lifecycle cost of a product while giving preference to superior environmental performance projects.[722] Most Member States have adopted some voluntary requirements, but **a Commission report (2021) shows that only one third has adopted legal environmental obligations for contracting authorities in procurement procedures**.[723]

In the Political Guidelines for 2024-2029, the European Commission recognised the need to do **a revision of the Public Procurement Directive to develop innovative solutions and create lead markets in clean and strategic technologies**.[724] For this purpose, the Commission has recently announced a new three-year mandate of the Public Procurement Stakeholder Expert Group, that was initially created in 2011, to assist the Commission in shaping the reviewed public procurement policy. [725]

Because of the lack of comprehensive mandatory targets at the EU level, there are also regional disparities in the inclusion of green criteria - while some countries have not yet addressed it at all, others like the Netherlands aim to include this criteria in 100% of all public procurement contracts.[726] Nevertheless, there are **some mandatory requirements introduced in sectoral-specific directives**, such as in the Energy Performance of Buildings (EPBD), the Energy Efficiency (EED), the Clean and Energy-Efficient Road Transport Vehicles and the Battery Directive.

In the US, the Federal Buy Clean Act is an initiative that was included in the Federal Sustainability Plan launched in 2021, that aims to **prioritise the use of American-made, low carbon construction materials in federal procurement and funded projects**.[727] Specifically, this program commits to purchasing low carbon steel, concrete, asphalt and flat glass, which account for 98% of purchased construction materials and nearly half of all U.S. manufacturing emissions.[728] This legislation sets a series of **requirements that includes the prioritisation of federal government's purchase of steel, concrete, asphalt and flat glass that have lower levels of emissions**.[729] In order to do so, a Buy Clean Task Force was created to foster the demand of this product, which incorporates different federal agencies that account for 90% of all federally-financed and purchased construction materials.[730] Furthermore, from 2023, **all federal purchasing agencies are required to obtain Environmental Product Declarations (EPDs) for concrete building materials used on federal projects.**[731] The Inflation Reduction Act (IRA) also incorporates clean material requirements and, in 2023, the U.S. General Services Administration (GSA) announced that it will apply them to 150 IRA related projects with an investment of $2 billion in low-carbon materials.[732]

In the U.S, the States can voluntarily apply this act in their constituencies in order to create a stronger and more consistent market for lower-carbon materials.[733] There is some movement in the US to expand the federal initiative throughout the territory, as with the Federal-State Buy Clean Partnership with 12 leading states as a way to send a harmonised demand signal to the marketplace.[734] One example is the BlueGreen Alliance (an organisation of labour unions and environmental organisations fighting climate change) that launched a multi-state campaign to expand Buy Clean work to Washington, Oregon, Minnesota and Colorado.[735] **The Buy Clean initiative was firstly developed and introduced in the state of California in 2017, with a set of requirements for GHG emissions associated with construction materials in public procurement**.[736] These requirements encouraged the local markets to promote the development and use of low-carbon materials, which also fostered the creation of a local value chain with new companies and suppliers.

[718] European Commission. (2008). Communication on Public procurement for a better environment. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008DC0400
[719] Ibid.
[720] Stockholm Environment Institute. (2023). Green Public Procurement in the EU. Available at https://www.sei.org/wp-content/uploads/2023/02/green-public-procurement-eu.pdf.
[721] European Commission. (2014). Directive 2014/24/EU on public procurement and repealing Directive 2004/18/EC Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024
[722] Ibid.
[723] European Commission. (2021). Report on the implementation and best practices of national procurement policies in the Internal Market. Available at https://op.europa.eu/en/publication-detail/-/publication/26d28258-b959-11eb-8aca-01aa75ed71a1/language-en. (p.9)
[724] European Commission. (2024). Commission stakeholder expert group on public procurement . Available at https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupID=2807&fromCallsApplication=true
[725] Ibid.
[726] Bouwer, H., & Nielson, L. (2022). Green Public Procurement: A Neglected Tool in the European Green Deal Toolbox. Intereconomics. Available at https://www.intereconomics.eu/contents/year/2022/number/3/article/green-public-procurement-a-neglected-tool-in-the-european-green-deal-toolbox.html.
[727] Office of Federal Sustainability. (2021). Federal Sustainability Plan. Available at https://www.sustainability.gov/pdfs/federal-sustainability-plan.pdf. (p.8)
[728] Office of Federal Sustainability. (2023). Federal-State Buy Clean Partnership Principles. Available at https://www.sustainability.gov/pdfs/federal-state-partnership-principles.pdf.
[729] Ibid.
[730] The White House (2022). Fact Sheet: Biden-Harris Administration Announces New Buy Clean Actions to Ensure American Manufacturing Leads in the 21st Century. Available at https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-buy-clean-actions-to-ensure-american-manufacturing-leads-in-the-21st-century/
[731] CarbonCure (2022). Impact of Federal Buy Clean Requirements on the Concrete Industry. Available at https://www.carboncure.com/concrete-corner/impact-of-federal-buy-clean-requirements-on-the-concrete-industry/.
[732] Office of Federal Sustainability. (n.d.). Federal Buy Clean Initiative. Available at https://www.sustainability.gov/buyclean/.
[733] Office of Federal Sustainability. (2023). Federal-State Buy Clean Partnership Principles. Available at https://www.sustainability.gov/pdfs/federal-state-partnership-principles.pdf.
[734] Office of Federal Sustainability. (n.d.). Federal Buy Clean Initiative. Available at https://www.sustainability.gov/buyclean/.
[735] BlueGreen Alliance. (n.d.). Buy Clean in the States. Available at https://www.bluegreenalliance.org/site/buy-clean/buy-clean-in-the-states/.
[736] Third Way. (2022). Lessons Learned from California Buy Clean. Available at https://www.thirdway.org/memo/lessons-learned-from-california-buy-clean.

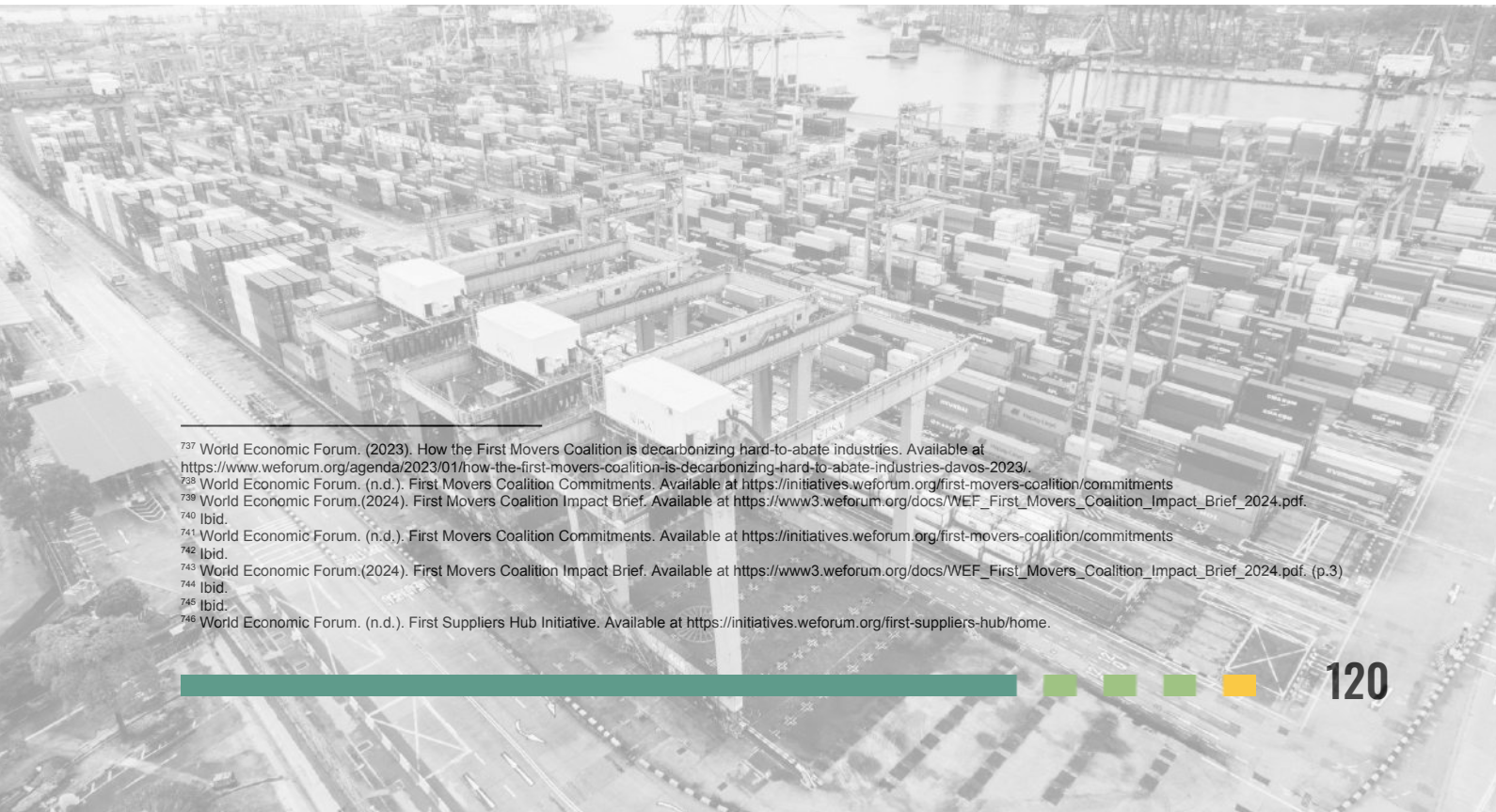
First Movers Coalition: Pioneering Market Demand for Clean Technologies in Hard-to-Abate Sectors to Drive Global Decarbonization

The First Movers Coalition (FMC) is a global initiative aimed at accelerating the development and deployment of advanced technologies to reduce greenhouse gas emissions, which was launched at COP26 by President Biden in collaboration with the World Economic Forum.[737] **The FMC aims to build an early market demand for technologies that are not yet at scale but that will be fundamental for reaching net zero by 2050**.[738] To do so, the coalition aims to leverage the collective procurement power of its 96 member companies (Amazon, Coca-Cola, Boeing….) to reach an annual demand of $16 billion for emerging climate technologies and 31 million tonnes (Mt) CO2e in annual emissions reductions.[739]

By creating and guaranteeing a future market demand, the coalition helps to improve the procurement process, attract more supply and de-risk investments in R&D for new technologies in seven hard-to-abate sectors known for their high emissions: Aluminium, Aviation, Chemicals, Concrete, Shipping, Steel and Trucking.[740] The companies participating in this initiative have made over 120 commitments that include the purchase of near-zero emission products or services within their respective sectors.[741] This percentage varies among sectors due to the different current technological developments, from the 5% commitment of aviation and shipping companies to use zero-emission fuels by 2030, to the 30% (heavy duty) and 100% (medium duty) target of trucking companies to have zero-emission trucks by 2030.[742] **In 2023, FMC members collectively signed 35 offtake agreements that secured carbon reductions across all the participating sectors**.[743]

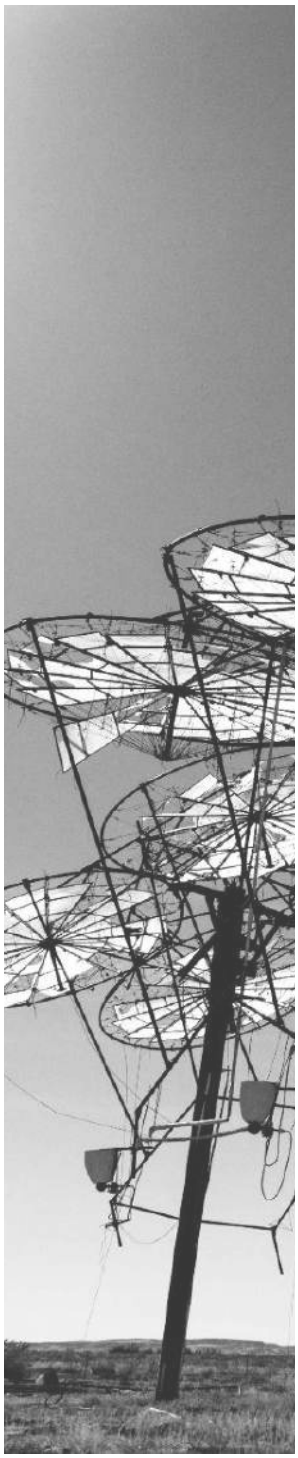
The FMC also helps their members to bring these commitments into action by collaborating with other global initiatives and actors such as NGOs, which helps to amplify the impact of the FMC commitments with their expertise, solutions, network, and technology, both sector-specifically and across sectors.[744] Furthermore, **FMC supports driving local cleantech supply by organising in-country workshops with domestic suppliers, FMC members, financial entities and government** as a way to foster the adoption and expansion of clean technologies from these local supply chains.[745]

Lastly, the FMC has also created **the First Suppliers Hub as a global repository of the current and future supply of products needed to decarbonize the world by 2050**. This Hub includes a database with suppliers that are producing, or working towards producing, near-zero emission products.[746]



[737] World Economic Forum. (2023). How the First Movers Coalition is decarbonizing hard-to-abate industries. Available at https://www.weforum.org/agenda/2023/01/how-the-first-movers-coalition-is-decarbonizing-hard-to-abate-industries-davos-2023/.
[738] World Economic Forum. (n.d.). First Movers Coalition Commitments. Available at https://initiatives.weforum.org/first-movers-coalition/commitments
[739] World Economic Forum.(2024). First Movers Coalition Impact Brief. Available at https://www3.weforum.org/docs/WEF_First_Movers_Coalition_Impact_Brief_2024.pdf.
[740] Ibid.
[741] World Economic Forum. (n.d.). First Movers Coalition Commitments. Available at https://initiatives.weforum.org/first-movers-coalition/commitments
[742] Ibid.
[743] World Economic Forum.(2024). First Movers Coalition Impact Brief. Available at https://www3.weforum.org/docs/WEF_First_Movers_Coalition_Impact_Brief_2024.pdf. (p.3)
[744] Ibid.
[745] Ibid.
[746] World Economic Forum. (n.d.). First Suppliers Hub Initiative. Available at https://initiatives.weforum.org/first-suppliers-hub/home.

Chapter Conclusions



European industry is facing the global competitiveness challenges posed by significant clean investment programs in the US and China. Young and fast growing European companies that are developing cleantech solutions need specific attention and a targeted public-private funding approach to enable them to grow from lab to scale in the EU. Grants are a key public funding tool and need to be doubled for net-zero aligned R&I investments in early-stage cleantech development. For the capital-intensive scale-up phase, **smarter financial instruments are needed to de-risk private investments at a scale that is sufficient for market commercialisation.**

Given their novelty and technical complexity, European cleantech companies face higher financing costs and constraints than other innovative companies, particularly at the scale-up phase where the financing gap is most worrying, and underserved, in Europe. The lab to scale journey of a European cleantech company is not a smooth one, as it has to deal with **fragmented EU capital markets, a patchwork of funding at the EU level, which is too small to bridge the cleantech investment gap and mostly oversubscribed, complicated and diverse application procedures**, **and a "risk-averse" conservative attitude** in the EU budget, and within the EIB Group and implementing partners.

The Green Deal Industrial Plan published by the Commission in 2023 didn't deliver a sufficient and comprehensive investment plan for EU cleantech. The next MFF is an opportunity to change this, with a strategic boost to European cleantech via the new Clean Industrial Deal, reinforced with the European Competitiveness Fund increasing investment volumes as its "investment arm". The next MFF doesn't need to reinvent the wheel by creating new funding infrastructures or instruments, and thereby deliver more complexity for end-beneficiaries. Instead, it should take the opportunity provided by these new Commission initiatives to **boost existing well-performing instruments (particularly the Innovation Fund, the EIC and EIB programs), integrate measures for improvement, develop tested financial instruments as a service and strengthen de-risking mechanisms.**

Developing asset-focused EU Financial Instruments as a Service (FIaaS) within these EU funds is one of the "risk absorbing" measures that should be considered to increase the efficiency of EU funding for cleantech**.** EU FIaaS tailored to cleantech, adapted at the local level, and using local distribution channels (such as banks) to deliver blended finance instruments, with speed and at scale, can partly **address the difficulties that smaller cleantech companies face in accessing EU finance.** Cleantech-specific EU FIaaS also serve to **harmonise, coordinate and align Member States' resources (such as ETS revenues) for expanding cleantech programs in their territories.**

The EIB as the Climate Bank can support unifying national efforts towards industrial competitiveness by pioneering pan-European financial instruments, taking a more proactive financing approach (following the US example), supporting Member States' banking networks with strengthened data and due diligence collaborations, and reaching out more to industrial alliances and one-stop-shops. Strengthening and **expanding counter-guarantees for cleantech manufacturing** (which already can function as a service for Member States) should serve to maximise the leverage and impact of the EIB programs.

Finally, **building transparent lead markets for cleantech with the implementation of the European Green Deal, which has already triggered private investments, and continuing to work on regulatory levers, is key to make EU funding efforts in cleantech a success.** This will require a review of the Public Procurement Directive, the development of forward-looking standards, and more transparent company commitments to purchase cleantech.

Chapter 8

Conclusions and Policy Recommendations

Chapter 8: Conclusions and Policy Recommendations

Europe's climate and energy security, and the competitiveness of its industry, hinge on developing a long-term, detailed and predictable investment plan that provides additional public money and crowds-in private capital. Around half of the transition investments needed are missing to deliver the EU 2030 climate targets and position the EU on a net zero trajectory to 2050. **This climate investment gap falls between €340-477 billion annually, with the public component representing 30-60% of this** (over €200 billion annually), depending on the sector, source, prosperity of the target region, the type of asset being built and the end-beneficiary.

In 2025, the European Commission will propose a new EU budget and is working on design fixes to make it more strategic and policy-aligned, and boost its performance and impact to make the most of every euro spent and leverage more private resources into the EU common goals. The Commission may also propose a more outcome-focused approach in Member States' investments with planning coordinated under a stronger industrial policy within a new Clean Industrial Deal, and reinforced investment capacity with a new European Competitiveness Fund in the next MFF to invest in strategic technologies like cleantech. This report provides a set of principles and recommendations to support the Commission's thinking in **making the EU budget more efficient and faster at distributing EU funds to crowd-in the necessary private investments to fill 40-70% of the climate investment gap.**

An "efficiency-first" approach in the EU budget requires **a sector-specific, asset-tied funding strategy that also assesses the most effective distribution channels and form of financing (grants, loans, equity or guarantees) depending on the end-beneficiary.** The bulk of pre-2030, and even pre-2040, climate investments are in mature commodity assets that come with revenues that pay back private sector contributions in full, or in part. A successful de-risking strategy with greater use of financial instruments leaves **more scarce EU grants to be better used for where the "EU added value" is most needed: a) providing clean public goods and infrastructure, b) supporting low-income European families participating in the benefits of the transition, and c) boosting R&I investments in early stage technologies to sustain Europe's future leadership in net zero value chains.** Public funding is best in certain circumstances, and desirable, to make the transition (and the shift to clean services provision) more affordable, fair, speedier and of higher quality. On the other hand, grant funding, except as used for project development and technical assistance, is likely to be an inefficient way to deploy mature technologies.

An "efficiency-first" approach in the EU budget requires a sector-specific, asset-tied funding strategy

Based on existing EU funding instruments and best practices at country-level, the concept of **EU Financial Instruments as a Service (FIaaS) is developed for Member States to address the significant inefficiencies in the EU budget, that both Draghi and Letta identified**. An assessment of the most relevant EU funds for the deployment of mature clean assets shows a historical low uptake of financial instruments (in part due to lack of capacity and expertise), and slow absorption rates, with some further research suggesting that higher-income households and larger companies may benefit more than is necessary from EU-funded grants.

EU FIaaS are positioned to address inefficiencies in the EU budget by scaling the use of financial instruments and harmonising instrument design across the EU, providing simplified set-up procedures to Member States and speeding funds distribution via retail channels with scale and reach to millions of households and SMEs. **With Member States' contributions from EU shared management funds, EU FIaaS can deliver tailored financing schemes for a specific clean asset, for the decarbonisation of a specific sector, and ring-fenced to a particular region.** EU FIaaS provide higher leverage than local instruments, lower borrowing costs at EU level, and access to knowledge support from EU institutions (e.g. EIB, CINEA) and other implementing partners, who may have access to more resources and technical knowledge to deliver financial instruments for clean assets. Greater harmonisation of cleantech funding via EU FIaaS can also support **greater streamlining of EU funding for young and small cleantech companies that struggle with the "patchwork" of programs with different, long and complex application procedures.**

Different forms of EU FIaaS have been tried and tested, including the InvestEU Member State compartment, different EIB programmes and the Innovation Fund Hydrogen Auction. Several lessons are learned from country-experiences in delivering Recovery Funds to SMEs via the Member State compartment, and from the EIB-led cleantech programs. These point to **the benefits of an enhanced role of the EIB Group as the Climate Bank and the distribution support of implementing partners**. As the EU budget looks to integrate some of the benefits of the RRF model based on a "reforms for investments" logic, **the EIB advisory services and DG REFORM can support Member States in establishing the enabling conditions and institutional framework for more efficient funding practices via FIaaS and retail distribution channels.**

EU FIaaS can be actively positioned in the reporting templates of Member States investment plans, which could also be linked to conditionalities on efficiency and improved management of EU-sourced funds in order to activate Member State demand for these instruments. **To facilitate the planning phase, and avoid reinventing the wheel, and delays with new funds and structures, EU FIaaS could be integrated within those existing EU funds under direct management by the Commission that are performing relatively well for climate investments.** This report provides a set of sectoral suggestions on how this could be operationalised, such as the creation of additional policy windows in InvestEU to provide an EU Renovation Loan as a Service, a Solar Rooftop Loan as a Service, an Electric Tractor Loan as a Service, a Cleantech Manufacturing Guarantees as a Service; a Cleantech Scale-up as a Service equity program under the EIC; or by expanding the Auctions as a Service model to other cleantech segments.

EU FIaaS can be trialled in the current programming period to test their design features and gather feedback from all national and local stakeholders before their full-scale integration in the next MFF. The lessons learned from previous programming periods show what an optimal design of EU FIaaS should be, particularly the need to **provide a good balance between the local empowerment in the design of the scope and implementation of EU FIaaS, and the technical and simplification benefits of an EU-level approach that delivers greater speeds.** In its new mandate, the Commission has the ambition to become an "investment Commission" that delivers competitive and clean industrial champions, while ensuring a just transition for households that limits its costs and amplifies the benefits of greater energy security and more green jobs. **The following policy recommendations should serve as a guide to integrate an "efficiency-first" approach in the EU budget via EU FIaaS** to increase Member States' investment capacity in the climate transition, mobilise private investments and accelerate the delivery of EU funds to those that need them the most.

Policy Recommendations directed at the EU and Member States for efficient investments in the deployment of clean assets and solutions

"Efficiency first" principles and recommendations for the EU budget	**Boost and expand EU FIaaS for Member States to accelerate the delivery of EU funds** for mature clean assets and solutions with opportunities for revenue-making and savings. Reinforce existing instruments and models like the InvestEU Member State compartment and the Innovation Fund Auctions as a Service. **Actively position EU FIaaS in Member States' investment planning procedures.** **Prioritise the use of grants and subsidies** to 1) decarbonise public goods (e.g. public transport and infrastructure), 2) support low-income, energy poor households in the transition and 3) strengthen R&I projects in early-stage, low TRL cleantech **Include efficiency-first conditions and reforms** in the management of EU funds to boost Member States' demand for EU FIaaS, possibly in a shift to a performance- and policy-based governance model. **Provide a mandate to DG REFORM and their Technical Support Instrument** to accompany Member States in the activation and implementation of these instruments. **Guarantee the Do no Significant Harm is mainstreamed** in the EU budget to prevent harmful investments that are counterproductive to the climate transition and environmental protection. **Monitor the use of financial instruments by Member States, using relative output and impact measures for the same instruments**, in the delivery of all EU funds with more regular and granular reports to bridge the current data gaps. **NECPS can also be improved by providing national investment needs and gaps for specific clean assets** and hence indicating which financial instruments can be used for EU fund deployment.
Buildings Sector	**Increase EU funds for social investments in the renovation of energy-poor homes via grants** (approximately €480 billion between 2023 and 2030) from the Social Climate Fund and Cohesion Policy funds. Under the EIB-led "pan-European investment platform for affordable and sustainable housing", work in collaboration with retail lenders to **build a template EU Renovation Loan (ERL) with an EU budgetary guarantee**. This may be initially collateralised by a Social Climate Fund contribution to address the enormous home renovation finance gap. **The ERL can then be offered to Member States "as a service" using the mechanism set-up for Member State Compartment contributions to InvestEU** - "Renovation Loan as a service to Member States". Channel the national allocations from Cohesion funds, RRF and other EU funds for **renovating commercial buildings via the InvestEU Member State compartment** to streamline financing for SMEs.
Energy Sector	**Increase the budget of the Connecting Europe Facility for Energy** to promote cross-border and national grid development. For small-scale energy generation through rooftop PVs, **prioritise the use of grants for the energy poor home**. Make use of **blended finance for means tested households and dedicated financial schemes for SMEs**, taking advantage of the opportunities for simplification and streamlining that EU FIaaS can bring.
Transport Sector	**Increase the budget of the Connecting Europe Facility for Transport** to build national and cross-border rail infrastructure. **For private modes of transport, blended finance instruments (from EIB lending and InvestEU budget guarantee) should be operationalised via EU FIaaS** to develop national financing schemes for massive retail deployment (EVs, HDVs, charging infrastructure). **Design a €20 billion social leasing scheme under the Social Climate Fund** to increase EV adoption through affordable leasing options for vulnerable households.

Agriculture	**Create an Agriculture guarantee envelope, possibly following the InvestEU Member State compartment and via an expansion of a dedicated policy window for Sustainable Agriculture**, which allows Member States to contribute with funds from the European Agriculture Fund for Rural Development. This should enable the creation of targeted EU FIaaS that enhance access to finance for small and young farms, and to activate capacity support from the InvestEU Advisory Hub. **Develop equity and venture debt programs, under the lead of the EIB**, to support the scale-up of innovative cleantech firms developing sustainable agri and food products.
SMEs and Industry	**Increase the InvestEU budget guarantee and boost the SME Window with Member State contributions** from Cohesion Policy, the Just Transition Fund, RRF, ETS Revenues and other relevant EU funds via the Member State compartment to accelerate the absorption rate and build national financing schemes for clean asset uptake among local SMEs. **Integrate reforms and conditions for improving the national institutional environment to activate competitive retail channels** in the distribution of EU funds for SMEs. Special attention should be provided to **increasing support via the EIB to Member States, their national promotional banks and private bank networks** during the implementation of EU FIaaS for SMEs. **Amplify the role of local networks** (such as local chambers of commerce, sectoral associations and accountancy associations) as awareness-raising tools and support actors for SMEs during the transition. **Kick-start collaborations with the main software providers of accountancy tools** in Europe to integrate automated solutions to streamline EU funding opportunities for decarbonisation to SMEs.
Cleantech scale-up and manufacturing	Ensure the next EU budget provides **new sources of funding and de-risking instruments for cleantech manufacturing** in Europe to: • Send more resources to existing EU funds targeting cleantech manufacturing (particularly the Innovation Fund, the EIC Accelerator and EIB programs), **prioritising de-risking strategies via the integration and enhancement of sector-specific, asset-tied EU FIaaS**. • **Simplify the governance of EU funding of cleantech and facilitate access to young and small cleantech companies**, taking advantage of retail distribution channels activated via EU FIaaS. • **Improve coordination and optimise Member States' cleantech programs** by positioning EU FIaaS as one-stop-shops for national structural funds and ETS revenues to build national cleantech champions. **Enhance the role of the EIB** in building a competitive EU cleantech industry by: • **Increasing the size and efficiency of EIB programs for cleantech**, with reinforced guarantee facilities for strategic cleantech sectors, delivered "as a service" to Member States and national cleantech innovators. • **Boosting EIB internal and human resources to enable a proactive outreach** to cleantech projects (modelling the US Department of Energy Loan Programme Office) and support for Member States to activate EU FIaaS for cleantech investments. • **Establish shared due diligence and cleantech data collaboration networks** with national public and private financial institutions in collaboration with industrial alliances. Continue building **transparent EU markets for cleantech** with: • An effective **implementation of the agreed targets, standards and Delegated Acts** under the Fit for 55 package, • **Ambitious regulatory signals in the new mandate** (particularly a review of the Public Procurement Directive to integrate mandatory green criteria) and forward-leaning standards • **Increased transparency of private pledges** to buy cleantech with voluntary reporting under the CSRD.

Acronyms list

AT - Austria
BG - Bulgaria
BMWK - Federal Ministry for Economic Affairs and Climate Action of Germany
BN - Billion
CAN - Climate Action Network
CAP - Common Agricultural Policy
CBA - Cohesion Budget Appropriation
CBAM - Carbon Border Adjustment Mechanism
CCS - Carbon Capture and Storage
CEF - Connecting Europe Facility
CF - Cohesion Fund
CfD - Contract for Difference
CFD - Contracts for Difference
CID - Clean Industrial Deal
CINEA - European Climate, Infrastructure and Environment Executive Agency
CO2 - Carbon Dioxide
COP - Conference of the Parties
CSP - Common Strategic Policy
CSRD - Directive on corporate sustainability reporting
CY - Cyprus
CZ - Czechia
CZK - Czech Koruna
DE - Germany
DG CLIMA - Directorate-General for Climate Action
DG ECFIN - Directorate-General Economic and Financial Affairs
DG REFORM - Directorate-General for Structural Reform Support
DK - Denmark
DNSH - Do No Significant Harm
DOE - US Department of Energy
EAFRD - European Agricultural Fund for Rural Development
EAGF - European Agricultural Guarantee Fund
EC - European Commission
ECA - European Court of Auditors
ECB - European Central Bank
ECF - European Competitiveness Fund
EE1st - Energy Efficiency First Principle
EECA - Energy Efficiency Capital Advisors
EED - Energy Efficiency Directive
EEFIG - Energy Efficiency Financial Institutions Group
EFA - European Free Alliance
EFSI - European Fund for Strategic Investments
EIB - European Investment Bank
EIC - European Innovation Council
EIF - European Investment Fund
EPBD - Energy Performance of Buildings Directive
EPC - Energy Performance Certificates
ERDF - European Regional Development Fund
ERL - EU Renovation Loan
ES - Spain
ESABCC - European Scientific Advisory Board on Climate Change
ESC0 - Energy Service Company
ETCI - European Tech Champions Initiative
ETS - Emissions Trading System
EU - European Union
EUR - Euro
EV - Electric Vehicle
FI - Finland
FIaaS - EU Financial Instruments as a Service
FIs - Financial institutions
FMC - First Movers Coalition
FR - France
FTE - Full-Time Equivalent
G20 - Group of Twenty
GDIP - Green Deal Industrial Plan
GDP - Gross Domestic Product
GHG - Greenhouse Gas
GPP - Green Public Procurement
GR - Greece
GSA - US General Services Administration
GWh - Gigawatt hours
H2 - Hydrogen

HDV - Heavy Duty Vehicle
I4CE - Institute for Climate Economics
ICO - the Spanish national promotional bank (Instituto de Crédito Oficial)
IE - Ireland
IEA - International Energy Agency
IEEP - Institute for European Environmental Policy
IEMD - Internal Electricity Market Directive
IRA - US Inflation Reduction Act
LDV - Light Duty Vehicle
LNG - Liquefied natural gas
LPO - US Department of Energy's Loan Programs Office
LT - Lithuania
MENA - Middle East and North Africa
MFF - Multiannual Financial Framework
MS - Member State
Mt - Million tonnes
NECPs - National Energy and Climate Plans
NGO - Non-Governmental Organization
NL - Netherlands
NZIA - Net Zero Industry Act
PCI - Projects of Common Interest
PF4EE - Private Finance for Energy Efficiency
PL - Poland
PPP - Public-Private Partnership
PT - Portugal
PV - Photovoltaic
R&I - Research and Innovation
RED II - Renewable Energy – Recast to 2030
REFM - Renewable Energy Financing Mechanism
RMI - Rocky Mountain Institute
RRF - Recovery and Resilience Facility
RRP - Recovery and Resilience Plans
SCF - Social Climate Fund
SE - Sweden
SGI - Service of General Interest
SI - Slovenia
SK - Slovakia
SMEs - Small and Medium Enterprises
SRSS - Structural Reform Support Service
STEP - Strategic Technologies for Europe Platform
SVn - Stimulation Fund for Housing of Dutch Municipalities
T&E - Transport & Environment
tCO2 - Tonne of carbon dioxide
TILT - Transforming in a Low Carbon Transition
TRL - Technology Readiness Level
TSI - Technical Support Instrument
UK - United Kingdom
UN - United Nations
US - United States
WBCSD - World Business Council for Sustainable Development

Bibliography

ACCE. (2023). Best Practice Report on Community Energy Financing Schemes. Available at https://acce.rescoop.eu/resources/best-practice-report-on-community-energy-financing-schemes (p.20)

ACCE. (n.d.). Community Energy Financing Schemes. Available at https://acce.rescoop.eu/cefs

Agora Energiewende. (2024). Investing in the Green Deal: Financing Tools for a Climate-Neutral Economy. Available at https://www.agora-energiewende.org/publications/investing-in-the-green-deal

Agora Industry. (2023). Exploring the Future of Lead Markets for Climate-Friendly Basic Materials. Available at https://www.agora-industry.org/news-events/exploring-the-future-of-lead-markets-for-climate-friendly-basic-materials.

Agora Industry. (2024). Creating markets for climate-friendly basic materials. Potentials and policy options. Available at https://www.agora-industry.org/fileadmin/Projekte/2023/2023-29_IND_Lead_Markets/A-IND_330_Lead_Markets_WEB.pdf

Allenbach-Ammann, J. (2024). Exception to debt rules strengthens EU programs. Table Europe Professional Briefing. Available at https://table.media/en/europe/feature/exception-to-debt-rules-strengthens-eu-programs/

Bankwatch. (2023). Second and Third Pillars of the Just Transition Mechanism. Available at https://bankwatch.org/wp-content/uploads/2023/03/2023_03_The-second-and-third-pillars-of-the-Just-Transition-Mechanism_final.pdf

Bankwatch. (2024). From Theory to Practice: A Case-Based Analysis of the EU's DNSH Principle. Available at https://bankwatch.org/wp-content/uploads/2024/07/2024_07_From-theory-to-practice_A-case-based-analysis-of-the-EUs-do-no-significant-harm-principle.pdf

Bellona (2024). EU Brief: Clean Energy Transformation. Available at https://network.bellona.org/content/uploads/sites/6/2024/04/Brief.pdf.

Bellona. (2024). 16 Civil Society Organisations, Cleantech Innovators, Investors, Industry Associations, and Researchers Urge EU Member States to Allocate ETS Revenues More Efficiently Towards Climate Goals. Available at https://eu.bellona.org/2024/10/08/press-release-16-civil-society-organisations-cleantech-innovators-investors-industry-associations-and-researchers-urge-eu-member-states-to-allocate-ets-revenues-more-efficiently-towards-climate-go

Bellona. (2024). Joint Letter – Earmarking ETS revenues to deliver clean industrial competitiveness. Available at https://eu.bellona.org/2024/10/08/joint-letter-eu-ets-revenues/.

BELTRAN, M.M. et al. (2023) The implementation of the ‘do no significant harm’ principle in selected EU instruments, JRC Publications Repository. Available at: https://publications.jrc.ec.europa.eu/repository/handle/JRC135691

Benchora,I. & Galanti,S. (2024). "Verified carbon emissions and stock returns in the EU Emissions Trading System." Energy Policy. Available at https://www.sciencedirect.com/science/article/abs/pii/S0301421524002842

BEPA. (2023) EU Battery Manufacturing Boost. Available at

Bloomberg. (2024). EIB to Unveil EUR 500 Million in Bank Guarantees for Clean Tech. Available at https://www.bloomberg.com/news/articles/2024-11-14/eib-to-unveil-500-million-in-bank-guarantees-for-clean-tech.

BloombergNEF. (2023). Global Low-Carbon Energy Technology Investment Surges Past $1 Trillion for the First Time. Available at https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/.

BlueGreen Alliance. (n.d.). Buy Clean in the States. Available at https://www.bluegreenalliance.org/site/buy-clean/buy-clean-in-the-states/.

BMWK (2022). Newsletter on German Energy Transition: H2Global. Available at https://www.bmwk-energiewende.de/EWD/Redaktion/EN/Newsletter/2022/01/Meldung/direkt-account.html.

Bouwer, H., & Nielson, L. (2022). Green Public Procurement: A Neglected Tool in the European Green Deal Toolbox. Intereconomics. Available at https://www.intereconomics.eu/contents/year/2022/number/3/article/green-public-procurement-a-neglected-tool-in-the-european-green-deal-toolbox.html.

Bruegel (2023). "When Will the European Union Finally Get the Budget It Needs?" Available at https://www.bruegel.org/analysis/when-will-european-union-finally-get-budget-it-needs

Buti, M. , Darvas, Z. and Steinbach, A. (2024). Bruegel: Memo to the commissioner responsible for the European Union budget. Available at https://www.bruegel.org/sites/default/files/2024-08/Memos%20budget.pdf

Cagliero, R., Vassallo, M., Pierangeli, F., Pupo D’Andrea, M. R., Monteleone, A., Camaione, B., & Tarangioli, S. (2023). The Common Agricultural Policy 2023-2027. How do member states implement the new delivery model?. Italian Review of Agricultural Economics (REA), 78(1), 49–66. https://doi.org/10.36253/rea-14318

CAN Europe. (2024). Rooftop Solar PV Report Update. Available at https://caneurope.org/content/uploads/2024/04/Rooftop-Solar-PV-Report-Update_April-2024.pdf

Capgemini Research Institute. (2020). Net Zero 2020: How Companies Can Hit Their Bold Climate Goals. Available at https://www.capgemini.com/wp-content/uploads/2020/10/Net-zero-main-report-2020.pdf

Carbon Brief (2023). Analysis: Clean Energy Was Top Driver of China's Economic Growth in 2023. Available at https://www.carbonbrief.org/analysis-clean-energy-was-top-driver-of-chinas-economic-growth-in-2023/

CarbonCure (2022). Impact of Federal Buy Clean Requirements on the Concrete Industry. Available at https://www.carboncure.com/concrete-corner/impact-of-federal-buy-clean-requirements-on-the-concrete-industry/.

Centre for Research on Energy and Clean Air (2023). "Financing Putin's War." Available at https://energyandcleanair.org/financing-putins-war/.

Cleantech for Europe. (2022). Cleantech Annual Briefing 2022. Available at https://cleantechforeurope.webflow.io/publications/cleantech-annual-briefing-2022

Cleantech for Europe. (2023). Cleantech Annual Briefing 2023. Available at https://www.cleantechforeurope.com/publications/cleantech-annual-briefing-2023.

Cleantech for Europe. (2023). Scaling Cleantech Manufacturing. Available at https://assets-global.website-files.com/626fd2b7495a6f980eab20c8/656dad1b9339313ae2e3eab2_CTFE_cleantech_manufacturing_vf03.pdf.

Cleantech for Europe. (2024). A Cleantech Investment Plan for European Competitiveness. Available at https://s3.amazonaws.com/i3.cleantech/uploads/additional_resources_pdf/49/349/EU_Cleantech_Investment_Plan_Report.pdf.

Cleantech for Europe. (2024). Open Letter: EU Needs to Up Its Investment Game if It Wants to Become the Home of Cleantech. Available at https://www.cleantechforeurope.com/policy/open-letter-eu-needs-to-up-its-investment-game-if-it-wants-to-become-the-home-of-cleantech

Cleantech Group (2023). Scaling Cleantech Manufacturing: A Look at the European Union's Net Zero Industry Act and the U.S. Inflation Reduction Act. Available at https://www.cleantech.com/scaling-cleantech-manufacturing-a-look-at-the-european-unions-net-zero-industry-act-and-the-u-s-s-inflation-reduction-act/

Climate Strategy & Partners. (2022). Mobilising SMEs in the face of the Climate and Energy Crisis: Analysis and Best Practices in Spain. Available at https://www.climatestrategy.com/en/informe_24.php

Climate Strategy & Partners. (2022). The EU Renovation Loan: a new instrument to fund the EU Renovation Wave. Available at https://www.climatestrategy.com/en/informe_23.php

Climate Strategy & Partners. (2023) Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at https://www.climatestrategy.com/en/informe_27.php

Climate Strategy & Partners. (2023). 4-step guide for climate action in SMEs. Available at https://www.climatestrategy.com/en/informe_26.php (annex 1)

Climate Strategy & Partners. (2023). Creating a sustainability network to support SMEs in their ecological and energy security. Available at https://www.climatestrategy.com/en/informe_28.php

Climate Strategy & Partners. (2023). Engaging Retail Lenders in Home Renovation: Turning Sustainable Finance Commitments into Household Energy Savings and Climate Resilience. Available at

Climate Strategy & Partners. (2023). Pact Activating SMEs x CLIMATE & RESILIENCE. Available at https://www.climatestrategy.com/en/descargarInforme.php?cual=136

Climate Strategy & Partners. (2024). Joint Letter in Response to EIB Strategic Roadmap. Available at https://www.climatestrategy.es/press/JointLetterEIB19062024noemb.pdf.

Council of the European Union. (2023). Draft Addendum to the Council Conclusions on the approval of the evaluation of the recovery and resilience plan for Spain. Available at https://data.consilium.europa.eu/doc/document/ST-13695-2023-ADD-1-REV-1/es/pdf.

Council of the European Union. (2024). Strategic Agenda (2024-2029). Available at https://www.consilium.europa.eu/media/4aldqfl2/2024_557_new-strategic-agenda.pdf.

Curtin, J. (2023). Financial Instruments for Community Energy Projects. Energy Policy, 171, Article 113. Available at https://www.sciencedirect.com/science/article/pii/S0301421523000587?ref=pdf_download&fr=RR-2&rr=8bd5ae274e11c905 (p.6)

Czechia's Renovation Program. (2024). Funding Fixer-Upper Homes: Policy Guide. Available at https://www.expats.cz/czech-news/article/czechia-s-new-subsidy-program-lets-homeowners-secure-funds-for-fixer-uppers

Di Carlo, D., Eisl, A. & Zurstrassen, D. (2024): EU Industrial Policy Report 2024 - Together we trade, divided we aid: EU industrial policy, state aid, and the loosening of the EU competition regime. Available at https://leap.luiss.it/wp-content/uploads/2024/09/20240919_Luiss_Rapporto-LUHNIP_v6.pdf

Dobre,D. & Stępień,M. (2024). Following the Money from the Just Transition Fund. Available at https://www.just-transition.info/following-the-money-from-the-just-transition-fund/

Dreamville. (2024). The "Renovate the Grandma's House" programme. Available at https://www.dreamville.cz/en/the-renovate-the-grandmas-house-programme/

E3G & Renovate Europe. (2022). Renovate2Recover One Year On: What progress on buildings renovation?. Available at https://www.renovate-europe.eu/renovate2recover-one-year-on-what-progress-on-building-renovation/;

ECB Occasional Paper Series (2023). The climate change challenge and fiscal instruments and policies in the EU. European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf

ECCO Climate. (2024). European Climate Fund Letter. Available at https://eccoclimate.org/wp-content/uploads/2024/02/European-Climate-Fund-letter-signed.pdf

Energie Samen. (n.d.). Realisatie Fonds for Energy Cooperatives. Available at https://energiesamen.nu/pagina/106/realisatiefonds-voor-energiecooperaties

Energy Monitor. (2022). Building Renovation during Crisis: Long-Term Vision. Available at https://www.energymonitor.ai/opinion/opinion-building-renovation-eyes-to-the-horizon-during-a-crisis/

Enrico Letta. (2024). Much More Than a Market. European Council. Available at https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf

Erneuerbare Energien Hamburg. (2024). H2Global auction results: Groundbreaking for renewable ammonia. Available at https://www.erneuerbare-energien-hamburg.de/de/blog/details/h2-global-auction-results-groundbreaking-for-renewable-ammonia.html.

Esade EcPol. (2022). Emergency Energy Response in Europe. Available at https://www.esade.edu/ecpol/wp-content/uploads/2022/05/AAFF_ENG_EsadeEcPol_Insight35_EmergencyEnergy_DEF.pdf

EU Climate Advisory Board. (2024) Focus on Climate Implementation to achieve 2040 goals. Available at https://climate-advisory-board.europa.eu/news/eu-climate-advisory-board-focus-on-immediate-implementation-and-continued-action-to-achieve-eu-climate-goals

EU Funding Portal. (2024). Developing Support Mechanisms for Energy Communities. Available at https://eufundingportal.eu/developing-support-mechanisms-for-energy-communities/

Euractiv (2023). Energy Poverty on the Rise in Europe, Statistics Show. Available at https://www.euractiv.com/section/energy/news/energy-poverty-on-the-rise-in-europe-statistics-show/

Eurofi. (2020). Capital Market Development in Central and Eastern Europe. Available at https://www.eurofi.net/wp-content/uploads/2020/04/capital-market-development-in-cee_zagreb_april2020.pdf

Euro-Funding. (2023). European Decarbonisation and Hydrogen Auction Opportunities. Available at https://euro-funding.com/en/blog/new-2023-european-decarbonisation-call-for-projects-and-hydrogen-auction-opens/

European Battery Alliance. (n.d.). One-Stop Shop. Available at https://www.eba250.com/one-stop-shop/.

European Central Bank. (2023). Climate-Related Risks to Financial Stability. ECB Occasional Paper Series, No. 315. Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op315~c279c7c290.en.pdf

European Climate Action Journal. (2021). European Added Value: What Does It Mean? Available at https://medium.com/ecajournal/european-added-value-what-does-it-mean-b7a325e8906e.

European Commission (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.&qid=1653033742483 and

European Commission (2023). Loan Facility - Largest Measure in the Greek Recovery and Resilience Plan. Available at https://commission.europa.eu/projects/loan-facility_en

European Commission (2023). Recovery and Resilience Scoreboard - Country Overview. Available at https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html?lang=en

European Commission (2024). Draghi Report Part A - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf

European Commission (2024). Draghi Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf

European Commission (2024). Sustainable Mobility: Thematic Analysis of the Recovery and Resilience Scoreboard. Available at https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/assets/thematic_analysis/scoreboard_thematic_analysis_sustainable_mobility.pdf

European Commission (n.d.). What is the Innovation Fund? Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/what-innovation-fund_en.

European Commission. (2008). Communication on Public procurement for a better environment. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008DC0400

European Commission. (2011). Commission Staff Working Paper - The Added Value of the EU Budget. Available at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:0867:FIN:EN:PDF

European Commission. (2014). Commission Implementing Regulation (EU) No 964/2014 laying down rules for the application of Regulation (EU) No 1303/2013 as regards standard terms and conditions for financial instruments. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02014R0964-20190216

European Commission. (2014). Directive 2014/24/EU on public procurement and repealing Directive 2004/18/EC Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024

European Commission. (2020). Commission Staff Working Document - Stepping up Europe's 2030 climate ambition. Available at https://eur-lex.europa.eu/resource.html?uri=cellar:749e04bb-f8c5-11ea-991b-01aa75ed71a1.0001.02/DOC_2&format=PDF

European Commission. (2020). Communication on Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0562.

European Commission. (2020). European Green Deal: New Financing Mechanism to Boost Renewable Energy. Available at https://commission.europa.eu/news/european-green-deal-new-financing-mechanism-boost-renewable-energy-2020-09-17_en

European Commission. (2020). Regulation (EU) No 1294/2020 on the Union renewable energy financing mechanism . Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1294

European Commission. (2020). Supporting the European Climate Pact. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1835.

European Commission. (2020b). Communication on Europe's moment: Repair and Prepare for the Next Generation. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0098

European Commission. (2021). Cohesion Policy support for small and medium-sized enterprises. Available at https://cohesiondata.ec.europa.eu/stories/s/n4ee-2h83

European Commission. (2021). Commission Recommendation (EU) 2021/1749 on Energy Efficiency First: from principles to practice. Guidelines and examples for the implementation in decision-making in the energy and non-energy sectors. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749

European Commission. (2021). Delegated Regulation (EU) 2021/1078 setting out the investment guidelines for the InvestEU Fund. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1078

European Commission. (2021). Do No Significant Harm (DNSH) Principle: Explanatory Note. Available at https://www.anpal.gov.it/documents/552016/1098881/06_EGESIF_21-0025-00_DNSH_expl_note.pdf/23bd2ac2-a422-a570-599e-e976c7eb33d5?t=1634727397571

European Commission. (2021). Member State Compartments: Questions and Answers. Available at https://investeu.europa.eu/document/download/1cf63ce1-08e8-4730-8574-f84ee4c73b7a_en?filename=Member%20States%20compartments_Questions%20and%20Answers_March%202021_EN_0.pdf

European Commission. (2021). Regulation (Eu) 2021/241 establishing the Recovery and Resilience Facility. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241

European Commission. (2021). Regulation (EU) 2021/523 establishing the InvestEU Programme and amending Regulation (EU) 2015/1017. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0523

European Commission. (2021). Regulation on the Governance of the EU Emissions Trading System. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32021R0783

European Commission. (2021). Report on the implementation and best practices of national procurement policies in the Internal Market. Available at https://op.europa.eu/en/publication-detail/-/publication/26d28258-b959-11eb-8aca-01aa75ed71a1/language-en. (p.9)

European Commission. (2021). Standard Briefing Slides for Experts in Horizon Europe Funding Tenders. Available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/experts/standard-briefing-slides-for-experts_he_en.pdf

European Commission. (2021). Terms and Conditions for Off-the-Shelf Financial Instruments. Available at https://eur-lex.europa.eu/EN/legal-content/summary/terms-and-conditions-for-off-the-shelf-financial-instruments.html

European Commission. (2022). Communication on the REPowerEU Plan. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN.

European Commission. (2022). Communication towards a green, digital and resilient economy:our European Growth Model. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0083

European Commission. (2022). Eurobarometer: EU SMEs working towards sustainability. Available at https://single-market-economy.ec.europa.eu/news/eurobarometer-eu-smes-working-towards-sustainability-2022-03-28_en#:~:text=The%20EU%20counts%2023%20million,CO2%20emissions%20by%20companies.

European Commission. (2022). Report from the Commission to the European Parliament and the Council on the Implementation of the Recovery and Resilience Facility. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=comnat%3ACOM_2022_0438_FIN

European Commission. (2022). Summary Data of Financial Instruments 2014-2020. Available at https://ec.europa.eu/regional_policy/sources/funding/financial-instruments/summary_data_fi_1420_2022.pdf

European Commission. (2023). A Green Deal Industrial Plan for the Net-Zero Age. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0062

European Commission. (2023). Annual Management and Performance Report for the EU Budget - Financial Year 2022. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023DC0401

European Commission. (2023). Bidding Battery Options Paper. Available at https://climate.ec.europa.eu/document/download/a36b3195-cf28-4628-83f3-ba51b3b0a00e_en?filename=policy_funding_if_bidding_battery_options_paper_en_0.pdf

European Commission. (2023). Cohesion Policy: Financial Instruments Implementation 2014-2020. Available at https://cohesiondata.ec.europa.eu/dataset/ESIF-2014-2020-Financial-Instruments-implementatio/dcsc-7x87/about_data

European Commission. (2023). Commission sets out actions to accelerate the roll-out of electricity grids. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6044.

European Commission. (2023). Communication on A Green Deal Industrial Plan for the Net-Zero Age. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52023DC0062

European Commission. (2023). Concept Paper: Auctions as a Service for Policy Funding and Innovation. Available at https://climate.ec.europa.eu/system/files/2023-11/policy_funding_innovation_conceptpaper_auctionsasaservice.pdf

European Commission. (2023). DG REFORM - Support to REPowerEU. Available at https://reform-support.ec.europa.eu/document/download/c58a5fce-0504-4852-89bb-f51a16131c5a_en?filename=REPowerEU%20TSI_Final%20synthesis%20report_0.pdf

European Commission. (2023). Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1749&qid=1643799901520

European Commission. (2023). Directive (EU) 2023/959 establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023L0959

European Commission. (2023). Energy Transition Financing Mechanisms. Available at https://commission.europa.eu/document/1c203799-0137-482e-bd18-4f6813535986_en

European Commission. (2023). EU Budget Performance: Regional Policy Overview. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/regional-policy-performance_en#budget-performance--implementation

European Commission. (2023). EU Renewable Energy Financing Mechanism: First Tender Oversubscribed. Available at https://energy.ec.europa.eu/news/eu-renewable-energy-financing-mechanism-first-tender-oversubscribed-2023-09-29_en

European Commission. (2023). Investment needs assessment and funding availability to strengthen EU's Net-Zero technology manufacturing capacity. Available at https://single-market-economy.ec.europa.eu/system/files/2023-03/SWD_2023_68_F1_STAFF_WORKING_PAPER_EN_V4_P1_2629849.PDF.

European Commission. (2023). Joint Statement by Commissioner Simson and German Minister Habeck on Energy Issues. Available at https://energy.ec.europa.eu/news/joint-statement-commissioner-simson-and-german-minister-habeck-energy-issues-2023-05-31_en.

European Commission. (2023). Launch and facilitate the implementation of new EEFIG Working Group: Applying the Energy Efficiency First principle in sustainable finance. Available at https://op.europa.eu/en/publication-detail/-/publication/20330c99-7df5-11ee-99ba-01aa75ed71a1/language-en

European Commission. (2023). New Energy Efficiency Directive published. Available at https://energy.ec.europa.eu/news/new-energy-efficiency-directive-published-2023-09-20_en

European Commission. (2023). Press Release on Green Financing and SMEs. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_4756

European Commission. (2023). Proposal for a Council Recommendation on Economic Policy Reforms. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2023%3A796%3AFIN

European Commission. (2023). Proposal for a Regulation of the European Parliament and of the Council establishing the Strategic Technologies for Europe Platform ('STEP'). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52023PC0335

European Commission. (2023). Proposal for a Regulation on an Open, Sustainable and Autonomous Europe. Available at https://single-market-economy.ec.europa.eu/document/download/8b64cc33-b9d9-4a73-b470-8fae8a59dba5_en?filename=COM_2023_535_1_EN_ACT_part1_v12.pdf

European Commission. (2023). Questions and Answers on European Energy Infrastructure. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_6045

European Commission. (2023). Questions and Answers on the European Wind Power Package. Available at https://ec.europa.eu/commission/presscorner/detail/en/qanda_23_5186.

European Commission. (2023). Regulation (EU) 2023 establishing a Social Climate Fund and amending. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2023.130.01.0001.01.ENG

European Commission. (2023). Results of the EU's Hydrogen Subsidy Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5823

European Commission. (2023). Strategic Foresight Report 2023. Available at https://commission.europa.eu/document/download/ca1c61b7-e413-4877-970b-8ef619fc6b6c_en?filename=SFR-23-beautified-version_en_0.pdf.

European Commission. (2023). Summary of CAP Strategic Plans for 2023-2027. Available at https://agriculture.ec.europa.eu/document/download/6b1c933f-84ef-4b45-9171-debb88f1f757_en?filename=com-2023-707-report_en.pdf

European Commission. (2023). Technical Screening Criteria for the DNSH Principle. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023XC00111

European Commission. (2024). Annual EU Budget Conference: Looking Ahead at the EU Budget's Future. Available at https://commission.europa.eu/ec-events/annual-eu-budget-conference-2024-looking-ahead-eu-budget-future-2024-04-29_en

European Commission. (2024). Call for Strategic Projects under the Critical Raw Materials Act. Available at https://single-market-economy.ec.europa.eu/calls-expression-interest/call-applications-strategic-projects-under-critical-raw-materials-act_en.

European Commission. (2024). Commission Staff Working Document - Part 1 (SWD/2024/70/1). Available at https://commission.europa.eu/document/download/17c82840-518c-4c3d-ba98-7dae436b3a70_en?filename=SWD_2024_70_1_EN_autre_document_travail_service_part1_v4.pdf

European Commission. (2024). Commission stakeholder expert group on public procurement . Available at https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupID=2807&fromCallsApplication=true

European Commission. (2024). Communication on Climate Transition Finance: COM(2024) 359 Final. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2024%3A359%3AFIN

European Commission. (2024). Communication on strengthening the EU through ambitious reforms and investments. Available at https://commission.europa.eu/document/download/f953f881-5a01-4040-804c-16be479ed3c4_en?filename=COM_2024_82_1_EN_ACT_part1_v5.pdf ;

European Commission. (2024). Consultation on the Application of the DNSH Principle under the Social Climate Fund. Available at https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/social-climate-fund/consultation-application-dnsh-principle-under-social-climate-fund_en

European Commission. (2024). Covenant of Mayors - Financing Models and Opportunities for Energy Communities. Available at https://eu-mayors.ec.europa.eu/en/What-are-the-financing-model-and-opportunities-to-set-up-and-run-energy

European Commission. (2024). Directorate-General for Structural Reform Support Delivering on Reforms. Available at https://reform-support.ec.europa.eu/document/download/10fb2012-bb59-4183-bec7-52d13e32a839_en?filename=Legacy%20Publication%20Report.pdf

European Commission. (2024). ETS Modernisation Fund: Financial Reporting and Updates. Available at https://modernisationfund.eu/wp-content/uploads/2023/03/MF_IC_Annual_Report_2022.pdf

European Commission. (2024). EU Decarbonisation Call for Projects and Hydrogen Auction. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_24_2333

European Commission. (2024). EU Regulation 024/1263 on the effective coordination of economic policies and on multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97. Available at https://eur-lex.europa.eu/eli/reg/2024/1263/oj

European Commission. (2024). Financial Instruments and Models for Energy Production. Available at https://op.europa.eu/en/publication-detail/-/publication/e34f2a42-ab7a-11ee-b164-01aa75ed71a1/language-en

European Commission. (2024). Focus on Protecting and Empowering Energy Consumers. Available at https://energy.ec.europa.eu/news/focus-protecting-and-empowering-energy-consumers-2024-06-18_en

European Commission. (2024). Impact Assessment on Europe's 2040 climate target. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024SC0063

European Commission. (2024). Innovation Fund: Competitive Bidding Process. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/competitive-bidding_en

European Commission. (2024). Large-scale Projects Calls under the Innovation Fund. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/calls-proposals/large-scale-calls_en.

European Commission. (2024). Mission Letter for Albuquerque. Available at

European Commission. (2024). Mission Letter for Jorgensen. Available at

European Commission. (2024). Mission Letter for Séjourné. Available at

European Commission. (2024). Mission Letter for Serafin. Available at

European Commission. (2024). Modernisation Fund. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/modernisation-fund_en

European Commission. (2024). Private Finance for Energy Efficiency (PF4EE). Available at https://climate.ec.europa.eu/document/download/b843fa66-9a2a-4e54-8c1b-c95fe893c4e3_en

European Commission. (2024). Recovery and Resilience Facility for clean energy. Available at https://energy.ec.europa.eu/topics/funding-and-financing/recovery-and-resilience-facility-clean-energy_en

European Commission. (2024). Regional Policy Performance Overview. Available at https://ec.europa.eu/regional_policy/funding/erdf_en

European Commission. (2024). RENEWFM 2025: Multi-Investment Opportunities. Available at https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/renewfm-2025-invest-multi?order=DESC&pageNumber=1&pageSize=50&sortBy=startDate&keywords=renewfm&isExactMatch=true&status=31094501,31094502

European Commission. (2024). Report on the Mid-Term Evaluation of Climate Action Programs. Available at https://commission.europa.eu/document/download/3bcfd746-83c4-445b-a4e2-6227d780580e_en?filename=report-on-the-mid-term-evaluation_swd_355_en.pdf

European Commission. (2024). Statement by Commissioner Reynders on the Proposed Insolvency Law Package. Available at https://ec.europa.eu/commission/presscorner/detail/en/statement_24_2148.

European Commission. (2024). Strategic Dialogue on the Future of EU Agriculture. Available at https://agriculture.ec.europa.eu/document/download/c9fdbb7b-10c9-405f-9be8-427ef6ad7614_en?filename=strategic-dialogue-report-executive-summary-2024_en.pdf

European Commission. (2024). Strategic Dialogue Report 2024. Available at https://agriculture.ec.europa.eu/document/download/171329ff-0f50-4fa5-946f-aea11032172e_en?filename=strategic-dialogue-report-2024_en.pdf

European Commission. (2024). Strategic Technologies for Europe Platform. Available at https://strategic-technologies.europa.eu/document/download/8bb5ac5f-48db-48a4-b098-a8d0964c4b19_en?filename=Brochure%20for%20STEP%20National%20Contact%20Points%20and%20Managing%20Authorities_0.pdf&prefLang=sl

European Commission. (2024). Von der Leyen - Political Guidelines for the European Union (2024-2029). Available at https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf.

European Commission. (n.d.) Innovation Fund Calls for Proposals. Available at https://climate.ec.europa.eu/eu-action/eu-funding-climate-action/innovation-fund/calls-proposals_en

European Commission. (n.d.) Multiannual Financial Framework 2021-2027 (in Commitments) - Current Prices. Available at https://commission.europa.eu/system/files/2021-01/mff_2021-2027_breakdown_current_prices.pdf

European Commission. (n.d.). CINEA - About the EU Renewable Energy Financing Mechanism. Available at https://cinea.ec.europa.eu/programmes/eu-renewable-energy-financing-mechanism/about-eu-renewable-energy-financing-mechanism_en

European Commission. (n.d.). Civil and Commercial Law: Insolvency Proceedings. Available at https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/civil-justice/civil-and-commercial-law/insolvency-proceedings_en.

European Commission. (n.d.). Cohesion Policy. Available at https://ec.europa.eu/regional_policy/policy/what/investment-policy_en

European Commission. (n.d.). Energy Communities. Available at https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumers-and-prosumers/energy-communities_en

European Commission. (n.d.). EU Renewable Energy Financing Mechanism. Available at https://energy.ec.europa.eu/topics/renewable-energy/financing/eu-renewable-energy-financing-mechanism_en

European Commission. (n.d.). Frequently Asked Questions about the InvestEU Fund. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/frequently-asked-questions-about-investeu-fund_en

European Commission. (n.d.). InvestEU Advisory Hub. Available at https://investeu.europa.eu/investeu-programme/investeu-advisory-hub_en

European Commission. (n.d.). InvestEU Fund - Performance. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/investeu-performance_en

European Commission. (n.d.). InvestEU Fund - The Member State compartment. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/member-state-compartment_en

European Commission. (n.d.). Seal of Excellence. Available at https://commission.europa.eu/funding-tenders/find-funding/seal-excellence_en.

European Commission. (n.d.). Sovereignty Seal: Strategic Technologies Europe Platform. Available at https://commission.europa.eu/strategy-and-policy/eu-budget/strategic-technologies-europe-platform/sovereignty-seal_en.

European Commission. (n.d.). Strategic Projects under the Net-Zero Industry Act. Available at https://single-market-economy.ec.europa.eu/industry/sustainability/net-zero-industry-act/strategic-projects-under-nzia_en.

European Commission. (n.d.). Technical Support Instrument (TSI). Available at https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/technical-support-instrument/technical-support-instrument-tsi_en

European Commission. 2020 Commission Staff Working Document. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0176

European Council. (2023). Council Document on Economic and Fiscal Policy coordination (PE/99/2023). Available at https://data.consilium.europa.eu/doc/document/PE-99-2023-INIT/en/pdf

European Court of Auditors. (2020). Journal of the European Court of Auditors. Available at https://www.eca.europa.eu/Lists/ECADocuments/JOURNAL20_03/JOURNAL20_03.pdf

European Court of Auditors. (2020). Realising European added value. Available at https://www.eca.europa.eu/Lists/ECADocuments/JOURNAL20_03/JOURNAL20_03.pdf

European Court of Auditors. (2021). CAP and Climate: Special Report. Available at https://op.europa.eu/webpub/eca/special-reports/cap-and-climate-16-2021/en/

European Court of Auditors. (2021). Special Report 22/2021: Sustainable finance: More consistent EU action needed to redirect finance towards sustainable investment. Available at https://www.eca.europa.eu/en/publications?did=59378

European Court of Auditors. (2021). Sustainable Finance: Funding the EU's Climate Transition. Available at https://www.eca.europa.eu/lists/ecadocuments/sr21_22/sr_sustainable-finance_en.pdf

European Court of Auditors. (2022). Special report 09/2022: Climate spending in the 2014-2020 EU budget – not as high as reported. Available at https://www.eca.europa.eu/en/publications?did=61103

European Court of Auditors. (2023). EU Financial Landscape Report. Available at https://www.eca.europa.eu/Lists/ECADocuments/SR23_05/SR_EU-financial-landscape_EN.pdf

European Court of Auditors. (2023). Report on Cohesion Policy. Available at https://www.eca.europa.eu/en/publications/SR-2023-06

European Court of Auditors. (2024). Annual Review of EU Policies. Available at https://www.eca.europa.eu/en/publications/RV-2024-03

European Court of Auditors. (2024). Irregular EU spending increases. Available at https://www.eca.europa.eu/en/news/NEWS-AR-2023

European Court of Auditors. (2024). Special Report 14/2024 . Unclear contribution from the Recovery and Resilience Facility. Available at https://www.eca.europa.eu/ECAPublications/SR-2024-14/SR-2024-14_EN.pdf

European Economic and Social Committee (EESC). (2022). Public Investment in Energy Infrastructure as a Climate Solution. Available at https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/public-investment-energy-infrastructure-part-solution-climate-issues

European Environment Agency. (2023). Fossil Fuel Subsidies. Available at https://www.eea.europa.eu/en/analysis/indicators/fossil-fuel-subsidies

European Environment Agency. (2023). Investments into the Sustainability Transition: leveraging green industrial policy against emerging constraints. Available at https://www.eea.europa.eu/publications/investments-into-the-sustainability-transition

European Environment Agency. (2024). Auctioning Revenues and Reported Usage. Available at https://www.eea.europa.eu/en/analysis/maps-and-charts/auctioning-revenues-and-reported-usage-1?activeTab=6fbd444d-c422-4a78-8492-fd496bd61b7a

European Environmental Bureau. (2024). Letter to MEPs on the EU Transformation Fund. Available at https://eeb.org/wp-content/uploads/2024/09/20092024-Letter-MEPs-EU-Transformation-Fund.pdf

European Innovation Council (2024). Board Statement on the 2024 Work Programme. Available at https://eic.ec.europa.eu/system/files/2023-12/EIC%20Board%20statement%20on%20the%202024%20work%20programme.pdf.

European Innovation Council. (2024). Work Programme 2024. Available at https://eic.ec.europa.eu/eic-2024-work-programme_en.

European Innovation Council. (2024). Work Programme 2025. Available at https://eic.ec.europa.eu/eic-2025-work-programme_en.

European Investment Bank (2020). ICO COVID-19 Response for SMEs and Midcaps Spain. Available at https://www.eib.org/en/projects/all/20200190

European Investment Bank (2023). Final Questions and Answers – RRF Spain. Available at https://www.eib.org/files/procurement/tender/final-questions-and-answers-ceoi-2407-rrf-spain-i.pdf.

European Investment Bank (2023). Questions and Answers Document. Available at https://www.eib.org/attachments/documents/ceoi-1683-qa-vf.pdf.

European Investment Bank (2023). Recovery and Resilience Facility (RRF): Italy Overview. Available at https://www.eib.org/en/products/mandates-partnerships/rrf/italy.htm

European Investment Bank (2024). Financing and Commercialisation of Cleantech Innovation. Available at https://www.eib.org/attachments/lucalli/20240003_financing_and_commercialisation_of_cleantech_innovation_en.pdf.

European Investment Bank (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

European Investment Bank (n.d.). Governance and Structure. Available at https://www.eib.org/en/about/governance-and-structure/organisation/index.htm.

European Investment Bank (n.d.). Recovery and Resilience Facility (RRF): Financial instruments in Spain. Available at https://www.eib.org/en/products/mandates-partnerships/rrf/index

European Investment Bank. (2020). Investment Report 2020: Building a Smart and Green Europe in the COVID-19 Era. Available at https://www.eib.org/en/publications/investment-report-2020.

European Investment Bank. (2022). EIB Group and Greece Take Next Steps in Implementing RRF Investments with Additional €400M to Be Managed by EIF. Available at https://www.eib.org/en/press/all/2022-501-eib-group-and-greece-take-next-steps-in-implementing-rrf-investments-with-additional-eur-400m-to-be-managed-by-eif

European Investment Bank. (2023). Cleantech EIB-EIF Co-Investment Programme. Available at https://www.eib.org/en/projects/pipelines/all/20220444

European Investment Bank. (2023). EIB Commits EUR 5 Billion to Support Europe's Wind Manufacturers and Approves Over EUR 20 Billion in Financing for New Projects. Available at https://www.eib.org/en/press/all/2023-510-eib-commits-eur5-billion-to-support-europe-s-wind-manufacturers-and-approves-over-eur20-billion-in-financing-for-new-projects.

European Investment Bank. (2023). EIB Group Operational Plan (2023-2025). Available at https://www.eib.org/attachments/lucalli/20220289_eib_group_operational_plan_2023_en.pdf.

European Investment Bank. (2023). EIB to support Green Deal Industrial Plan with €45 billion in additional financing. Available at https://www.eib.org/en/press/all/2023-270-eib-to-support-green-deal-industrial-plan-with-eur45-billion-in-additional-financing#:~:text=At%20its%20meeting%20this%20week,eligible%20sectors%20in%20the%20EU.

European Investment Bank. (2023). EIB to Support Green Deal Industrial Plan with EUR 45 Billion in Additional Financing. Available at https://www.eib.org/en/press/all/2023-270-eib-to-support-green-deal-industrial-plan-with-eur45-billion-in-additional-financing.

European Investment Bank. (2024). EIB Group 2023 Climate Bank Roadmap Progress Report. Available at https://www.eib.org/attachments/lucalli/20240145_eib_group_2023_climate_bank_roadmap_progress_report_en.pdf

European Investment Bank. (2024). EIB Group 2024–2027 Strategic Roadmap. Available at https://www.eib.org/attachments/lucalli/20240198_eib_group_2024_2027_strategic_roadmap_en.pdf.

European Investment Bank. (2024). EIB Moves to Support Romanian Businesses and Municipalities as Vice-President Tsakiris Visits Bucharest. Available at https://www.eib.org/en/press/all/2024-226-eib-moves-to-support-romanian-businesses-and-municipalities-as-vice-president-tsakiris-visits-bucharest

European Investment Bank. (2024). The Scale-Up Gap: An Analysis. Available at https://www.eib.org/attachments/lucalli/20240130_the_scale_up_gap_en.pdf

European Investment Bank. (n.d.). How does the Fund work?. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/about-investeu-fund/how-does-fund-work_en

European Investment Bank. (n.d.). InvestEU Fund Overview. Available at https://www.eib.org/en/products/mandates-partnerships/investeu/index#:~:text=At%20least%2030%25%20of%20the,will%20go%20up%20to%2060%25

European Investment Bank. (n.d.). Venture Debt: Supporting Innovative Companies. Available at https://www.eib.org/en/products/equity/venture-debt/index.htm.

European Investment Bank. The EIB Climate Adaptation Plan. Available at https://www.eib.org/en/publications/the-eib-climate-adaptation-plan

European Investment Fund. (2023). EIF and Leading Romanian Banks Join Forces to Empower SMEs for Sustainable Growth. Available at https://www.eif.org/what_we_do/guarantees/news/2023/eif-and-leading-romanian-banks-join-forces-to-empower-smes-for-sustainable-growth

European Investment Fund. (2024). EIF Provides Credit Guarantees to Leading Greek Banks to Unlock Up to €4.5 Billion of SME Lending. Available at https://www.eif.org/what_we_do/guarantees/news/2024/eif-provides-credit-guarantees-to-leading-greek-banks-to-unlock-up-to-4-5-billion-of-sme-lending.htm

European Investment Fund. (2024). Romanian banks to get an additional €500 million in financing under new EIF guarantee agreements. Available at https://www.eif.org/InvestEU/news/2024/romanian-banks-to-get-an-additional-eur500-million-in-financing-under-new-eif-guarantee-agreements.htm

European Investment Fund. (n.d.). InvestEU Guarantees. Available at https://engage.eif.org/investeu/guarantees

European Investment Fund. (n.d.). SME Initiative. Available at https://www.eif.org/what_we_do/guarantees/sme_initiative/index.htm

European Parliament Think Tank. (2023). Regional Policy and Performance: IPOL Study. Available at https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747284/IPOL_STU(2023)747284_EN.pdf

European Parliament. (2020). Study on Strategy implications for agriculture and the CAP. Available at https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/652206/IPOL_IDA(2020)652206_EN.pdf

European Parliament. (2023). Report on the proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act). Available at https://www.europarl.europa.eu/doceo/document/A-9-2023-0343_EN.html.

European Parliament. (2024). European Added Value in the Budgetary Process [Report]. Available at European Parliament. (2024). European Added Value in the Budgetary Process. Available at https://www.europarl.europa.eu/RegData/etudes/IDAN/2024/755722/IPOL_IDA(2024)755722_EN.pdf

European Parliament. (2024). Hoekstra Written Questions and Answers. Available at https://hearings.elections.europa.eu/documents/hoekstra/hoekstra_writtenquestionsandanswers_en.pdf

European Parliament. (2024). Serafin Written Questions and Answers. Available at https://hearings.elections.europa.eu/documents/serafin/serafin_writtenquestionsandanswers_en.pdf

European Parliament. (2024). Targeted CAP amendments on environmental conditionality. Available at https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2024)760414

European Parliamentary Research Service. (2019). EU Industrial Policy and Innovation: Boosting Growth and Cohesion in EU Regions. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/642214/EPRS_BRI(2019)642214_EN.pdf

European Round Table for Industry (ERT). (2024). Strengthening Europe's Energy Infrastructure. Available at https://ert.eu/wp-content/uploads/2024/04/ERT-Strengthening-Europes-energy-infrastructure_March-2024.pdf.

European Trade Union Confederation. (2023). Joint Call: Ban on Deregulation for SMEs. Available at https://www.etuc.org/en/document/joint-call-ban-deregulation-smes

European Trade Union Confederation. (2024). Navigating Constraints for Progress: Examining the Impact of EU Fiscal Rules on Social and Green Investments. Available at https://www.etuc.org/sites/default/files/publication/file/2024-04/Publication%20-%20Fiscal%20Rules%20Report.pdf

European Union Council. (2023). Infographic – Energy price rise since 2021. Available at https://www.consilium.europa.eu/en/infographics/energy-prices-2021/

European Union. (2018). Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ:L:2018:328:TOC&uri=uriserv:OJ.L_.2018.328.01.0001.01.ENG.

European Union. (2024).Directive on the energy performance of buildings (recast). Available at https://data.consilium.europa.eu/doc/document/PE-102-2023-INIT/en/pdf

Europeum Institute. (2023). How Czechia Can Utilize the Just Transition Fund. Available at https://europeum.org/data/articles/umi-cesky-stat-cerpat-fond-spravedlive-transformace-final3-en.pdf

Eurostat. (2021). 8% of EU population unable to keep home adequately warm. Available at https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211105-1

EUSEW. (2023). Fredrik Nilzen intervention in panel: Strengthening energy efficiency for the clean energy transition and energy independence. Available at https://interactive.eusew.eu/eusew-2023/sessions/3305191a-6c82-44c1-802f-145d622bfdc5

Fi-Compass. (2014). Financial instruments in 2014-2020: Learning from 2007-2013. Available at https://fi-compass.eu/sites/default/files/publications/Financial%20instruments%20in%202014_20_learning_from_2007-13%20_wishlade_and%20michie_0.pdf

Fi-compass. (2018). SME Initiative under the EAFRD. Available at https://www.fi-compass.eu/sites/default/files/publications/SME_Initiative_under_the_EAFRD.pdf

Fi-Compass. (2020). SME Financing Gap Analysis in the EU. Available at https://www.fi-compass.eu/library/market-analysis/gap-analysis-small-and-medium-sized-enterprises-financing-european-union

Fi-Compass. (2021). Combination of financial instruments and grants. Available at https://www.fi-compass.eu/sites/default/files/publications/Combination%20of%20financial%20instruments%20and%20grants_1.pdf

Fi-Compass. (2023). Financing gap in the agriculture and agri-food sectors in the EU. Available at https://www.fi-compass.eu/sites/default/files/publications/FinancingGapAgricultureAgrifood_RTW_0.pdf

Fi-compass. (n.d.). InvestEU Programme: Outlook for the upcoming period. Available at https://www.fi-compass.eu/sites/default/files/publications/InvestEU%20Programme%20-%20Outlook%20for%20the%20upcoming%20period.pdf

Financial Times (2024). The $9tn question: how to pay for the green transition. Available at https://www.ft.com/content/6873d96e-3e40-45c6-9d84-8ce27b7b23e1?desktop=true&segmentId=7c8f09b9-9b61-4fbb-9430-9208a9e233c8#myft:notification:daily-email:content

Financial Times. (2023). EU Recovery and Resilience Facility Mid-Term Challenges. Available at https://www.ft.com/content/53323bbe-90d6-4cef-9a5e-98f60ed0e82f

Florence School of Regulation. (2023). Insights on the EU's Hydrogen Subsidy Auction. Available at https://fsr.eui.eu/three-thoughts-on-the-eus-inaugural-hydrogen-subsidy-auction/

French Government. (2017). Note du Gouvernement Français sur le Budget UE 2020-2027. Available at https://www.terre-net.fr/ulf/data/001-arno/180110-notegouvernementsurbudgetUE2020-2027.PDF

Friends of the Earth Europe. (2022). Energy Communities in the EU: Opportunities and Barriers to Financing. Available at https://friendsoftheearth.eu/wp-content/uploads/2022/09/Energy-Communities-in-the-EU-opportunities-and-barriers-to-financing.pdf (p.30)

Gabor, D., & Braun, B. (2023). Green macrofinancial regimes. Available at https://doi.org/10.31235/osf.io/4pkv8

German Federal Ministry for Economic Affairs and Climate Action (BMWK). (2023). H2 Pilot Program in EU Innovation Fund. Available at https://www.bmwk.de/Redaktion/DE/Downloads/H/h2-pilotausschreibung-eu-innovationsfonds.html

Good Food Institute Europe. (2024). Alternative Protein Investment in Europe. Available at https://gfieurope.org/blog/european-investment-figures-point-to-an-evolving-alternative-protein-sector/

Government of Greece (2021). National Recovery and Resilience Plan: Greece 2.0. Available at https://greece20.gov.gr/wp-content/uploads/2021/07/NRRP_Greece_2_0_English.pdf

Government of Ireland. (2022). New Planning Permission Exemptions for Rooftop Solar Panels. Available at https://www.gov.ie/en/press-release/9ba0e-new-planning-permission-exemptions-for-rooftop-solar-panels-on-homes-and-other-buildings/

Grant Thornton. (2024). Repairing a house inherited from your grandmother with a favourable loan from the new year. Available at https://www.grantthornton.cz/en/news/repairing-a-house-inherited-from-your-grandmother-with-a-favourable-loan-from-the-new-year/

GreenOmeter. (2024). Second Party Opinion Trigema - Green Bond Framework Reenometer. Retrieved from https://cbaonline.cz/upload/3181-metodika-top15-2024-02-05-en.pdf

H2Global (n.d.). Our Supporters. Available at https://www.h2-global.org/our-supporters.

H2Global. (2022). How to Deliver on the EU Hydrogen Accelerator. Available at https://files.h2-global.de/H2Global_How-to-deliver-on-the-EU-Hydrogen-Accelerator.pdf. (p.8)

H2Global. (2024). Results of the Pilot Auction. Available at https://www.h2-global.org/news/results-of-the-pilot-auction-lot-1.

Icebreaker One. (n.d.). Executive Summary of Perseus Initiative. Available at https://ib1.org/perseus/executive-summary/

Institut Rousseau. (2024). Road to Net Zero: Bridging the Green Investment Gap. Available at https://extranet.greens-efa.eu/public/media/file/1/8692.

Institute for Climate Economics. (2023). Greener, better, stronger: Factors for the successful implementation of green budgeting in EU Member States. Available at https://www.i4ce.org/en/publication/greener-better-stronger-factors-for-successful-implementation-green-budgeting-in-eu-member-states-climate/

Institute for Climate Economics. (2023). Sharpest Tool in the Box: EU Climate Report. Available at https://www.i4ce.org/wp-content/uploads/2023/09/The-sharpest-tool-in-the-box_report.pdf

Institute for Climate Economics. (2024). European Climate Investment Deficit report. Available at https://www.i4ce.org/wp-content/uploads/2024/02/20240222-i4ce3859-Panorama-EU_VA-40p.pdf

Institute for European Environmental Policy. (2023). Environmental and climate assessments of CAP Strategic Plans. Available at https://ieep.eu/publications/environmental-and-climate-assessments-of-cap-strategic-plans/

Institute for European Environmental Policy. (2023). Who Took the Burden of the Energy Crisis?. Available at https://ieep.eu/publications/who-took-the-burden-of-the-energy-crisis/

International Chamber of Commerce. (2022). Performance Guarantees Study. Available at https://iccwbo.org/wp-content/uploads/sites/3/2022/04/icc-document-icc-gcd-performance-guarantees-study.pdf.

International Energy Agency. (2020). Energy Efficiency in 2019: Report Highlights. Available at https://www.iea.org/reports/energy-efficiency-2020/energy-efficiency-in-2019

International Energy Agency. (2020). Luxembourg 2020: Energy Policy Review. Available at https://iea.blob.core.windows.net/assets/8875d562-756c-414c-bc7e-5fc115b1a38c/Luxembourg_2020_Energy_Policy_Review.pdf

International Energy Agency. (2023). COP28: Tripling Renewable Capacity Pledge. Available at https://www.iea.org/reports/cop28-tripling-renewable-capacity-pledge.

International Energy Agency. (2023). Energy Technology Perspectives 2023: Executive Summary. Available at https://www.iea.org/reports/energy-technology-perspectives-2023/executive-summary

International Energy Agency. (2024). World Energy Investment 2024: China. Available at https://www.iea.org/reports/world-energy-investment-2024/china.

International Energy Agency. (n.d.). Clean Energy is Boosting Economic Growth. Available at https://www.iea.org/commentaries/clean-energy-is-boosting-economic-growth.

InvestEU Steering Board. (2022). InvestEU Leverage and Multiplier Effect Calculation Methodology. Available at https://investeu.europa.eu/document/download/21e274de-9e54-4909-8db5-05760d72f16d_en?filename=InvestEU%20Steering%20Board%20-%20InvestEU%20Leverage%20and%20Multiplier%20Effect%20Calculation%20Methodology.pdf

InvestEU. (2023). InvestEU SME Competitiveness Guarantee Presentation Slides. Available at https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/22890/sme_competitiveness_slides.23b5c827de9c.pdf

InvestEU. (2023). InvestEU Sustainability Guarantee. Available at https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/22890/sustainability_guarantee_layout_update_dec23.033a6810f03b.pdf

InvestEU. (2023). SME Competitiveness Guarantee Romania Member State Compartment. Available at https://investeu.europa.eu/document/download/679411fe-983f-48be-8696-b60fbcadebe9_en?filenam

InvestEU. (2023). Sustainability Guarantee – Greece: InvestEU Member State Compartment (Capped Guarantee). Available at https://investeu.europa.eu/document/download/00e3f4db-c7ff-4a4d-82b4-fa126beb9614_en. (p.4)

InvestEU. (n.d.). About the InvestEU Fund. Available at https://investeu.europa.eu/investeu-programme/investeu-fund/about-investeu-fund_en

Investopedia. (2021). What Is a Zero-Coupon Mortgage?. Available at https://www.investopedia.com/terms/z/zero-coupon-mortgage.asp

Jacques Delors Centre. (2023). European Green Deal funding. Available at https://www.delorscentre.eu/en/publications/european-green-deal-funding

Jacques Delors Centre. (2023). Green Deal and Industrial Policy: Navigating the Transition. Available at https://www.delorscentre.eu/fileadmin/2_Research/1_About_our_research/2_Research_centres/6_Jacques_Delors_Centre/Publications/20230525_SMack_FFindeisen_GreenDeal.pdf

Jacques Delors Centre. (2024). How to Refocus Regional Policies in the EU. Available at https://www.delorscentre.eu/en/publications/detail/publication/how-to-refocus-regional-policies-in-the-eu#:~:text=Based%20on%20data%20from%20more,end%20of%20the%20income%20distribution

Jacques Delors Institute. (2011). The Added Value of the EU Budget. Available at https://institutdelors.eu/wp-content/uploads/2018/01/bref28_addedvalue_en.pdf

Jacques Delors Institute. (2020). InvestEU Fund: A Proposal for the Future of Europe. Available at https://institutdelors.eu/wp-content/uploads/2020/08/PP247_InvestEUFund_Rubio-EN-1-1.pdf

Jacques Delors Institute. (2020). InvestEU Fund: Policy Analysis. Available at https://institutdelors.eu/wp-content/uploads/2020/03/PP247_InvestEUFund_Rubio-EN-1.pdf

Lane, P., Carreras, A., & Castañeda, G. (2023). Chapter 8: Economic Sovereignty in the Digital Era. In P. Lane et al., Sovereignty and Digitalization. Open Book Publishers. Available at https://www.openbookpublishers.com/books/10.11647/obp.0328/chapters/10.11647/obp.0328.08.

Le Monde. (2024). The Draghi Report and Public-Private Roles. Available at https://www.lemonde.fr/idees/article/2024/09/20/le-rapport-draghi-evite-la-question-epineuse-du-partage-des-roles-entre-public-et-prive_6325337_3232.html

Machado, B. (2024). EIB and Deutsche Bank Join Forces to Lift EU Wind Production. Available at https://www.euractiv.com/section/energy-environment/news/eib-and-deutsche-bank-join-forces-to-lift-eu-wind-production/.

Mario Draghi. (2024). European Commission Report Part B - "EU Competitiveness: Looking Ahead." Available at https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf

Mazzucato, M. & Semieniuk, G. (2023). The European Derisking State: Creating Markets for a Green Economy. UWE Repository. Available at https://uwe-repository.worktribe.com/output/11044798/the-european-derisking-state

New Economics Foundation. (2023). New EU fiscal rules jeopardise investment needed to combat the climate crisis. Available at

New Economics Foundation. (2023). Strong Public Services for a Prosperous Europe. Available at https://neweconomics.org/uploads/files/Strong-public-services-for-a-prosperous-Europe_NEF.pdf

OECD. (2018). The theory and practice of financial instruments for small and medium-sized enterprises. Available at https://www.oecd-ilibrary.org/docserver/a16242ca-en.pdf

OECD. (2023). Are Industrial Policy Instruments Effective?. Available at https://www.oecd-ilibrary.org/science-and-technology/are-industrial-policy-instruments-effective_57b3dae2-en

OECD. (2023). OECD Public Procurement Policy Principles. Available at https://www.oecd.org/content/dam/oecd/en/about/programmes/grc/grc-see/integrity/OECD-Public-Procurement-Policy-Briefing-Note.pdf.

Office of Federal Sustainability. (2021). Federal Sustainability Plan. Available at https://www.sustainability.gov/pdfs/federal-sustainability-plan.pdf. (p.8)

Office of Federal Sustainability. (2023). Federal-State Buy Clean Partnership Principles. Available at https://www.sustainability.gov/pdfs/federal-state-partnership-principles.pdf.

Office of Federal Sustainability. (n.d.). Federal Buy Clean Initiative. Available at https://www.sustainability.gov/buyclean/.

Pahle, M. , Sitarz, G. , Osorio,S. , Görlach,B. & Merschel,P. (2023). MSR through 2030: impact on market liquidity and considerations for the 2026 reform. Available at https://ariadneprojekt.de/media/2023/12/Ariadne-Documentation_ETSWorkshopBruessel_December2023.pdf

Pearce, O. (2024). Fertiglobe Success in H2Global Pilot Auction Marks Milestone in Renewable Ammonia Supply for EU. Available at https://ammoniaenergy.org/articles/fertiglobe-success-in-h2global-pilot-auction-marks-milestone-in-renewable-ammonia-supply-for-eu/.

Planet A. (n.d.). Capital Stack. Available at https://planet-a.notion.site/4-Capital-Stack-174ea18bcd7a497ab8a739c8a5657d0e.

Politico (2023). EU Red Tape Regulation: Ursula von der Leyen's Commission. Available at https://www.politico.eu/article/eu-red-tape-regulation-ursula-von-der-leyen-commission/

Politico. (2024). European Commission's Budget and Economic Reforms Plan Raises Power Concerns. Available at https://www.politico.eu/article/european-commission-budget-economic-reforms-conditions-power-grab/

Profile Solar. (n.d.). Solar Energy Projects in Finland. Available at https://profilesolar.com/countries/FI/

Profile Solar. (n.d.). Solar Energy Projects in Luxembourg. Available at https://profilesolar.com/locations/Luxembourg/Luxembourg/

Renovate Europe. (2018). Renovate to Recover: Full Study. Available at https://www.renovate-europe.eu/wp-content/uploads/2018/09/Renovate2Recover_Full-Study-1.pdf

Renovate Europe. (2023). 2021-2027 Cohesion Policy Support for Energy Efficiency and Building Renovation. Available at https://www.renovate-europe.eu/2021-2027-cohesion-policy-support-for-energy-efficiency-and-building-renovation/#:~:text=What%20is%20the%20break%2Ddown,subject%20to%20energy%20efficiency%20requirements

Renovate Europe. (2024). Multiannual Financial Framework Report 2021–2027. Available at https://www.renovate-europe.eu/wp-content/uploads/2024/01/23-04-24_MFF_21-27_Report_without_annex.pdf

REScoop.eu. (n.d.). Recovery and Resilience Funds: Financing Tracker. Available at https://www.rescoop.eu/policy/financing-tracker/recovery-resilience-funds

Rocky Mountain Institute. (2023). "On the Climate Bill's Second Birthday: Surging Successes but a Split Reality." Available at https://rmi.org/on-the-climate-bills-second-birthday-surging-successes-but-a-split-reality/

S&P Global (2023). TRL 4-7 Out of 11 Based on IEA Spectrum. Available at https://www.spglobal.com/_assets/documents/ratings/research/101595057.pdf

S&P Global Ratings. (2023). EU RRF at Half-Time: Italy and Spain Will Likely Need Extra Time to Spend Their Funds. Available at https://www.spglobal.com/ratings/en/research/articles/230719-eu-rrf-at-half-time-italy-and-spain-will-likely-need-extra-time-to-spend-their-funds-12790825

Sage. (n.d.). Sage Earth: Business Cloud Solutions. Available at https://www.sage.com/en-gb/sage-business-cloud/sage-earth/

Science Business Europe. (2024). European Investment Bank hatches plans to keep start-ups in Europe. Available at https://sciencebusiness.net/news/r-d-funding/start-ups/european-investment-bank-hatches-plans-keep-start-ups-europe.

Science Business. (2022). Start-Ups in Central and Eastern Europe Face Challenges in Profiting from Innovations. Available at https://sciencebusiness.net/news/start-ups/start-ups-central-and-eastern-europe-find-it-hard-profit-their-innovations

Science Business. (2024). Commission Prepares to Bundle All Research and Innovation Money into Competitiveness Fund. Available at https://sciencebusiness.net/fp10/commission-prepares-bundle-all-research-and-innovation-money-competitiveness-fund

Segler Consulting. (2021). The June 2021 EIC Accelerator Results and the Stabl Energy GmbH Success Story. Available at https://seglerconsulting.com/the-june-2021-eic-accelerator-results-and-the-stabl-energy-gmbh-success-story/.

SMEunited. (2024). SMEs ask InvestEU to be better tailored to their needs. Available at https://www.smeunited.eu/news/smes-ask-investeu-to-be-better-tailored-to-their-needs

Spanish Ministry of Economic Affairs and Digital Transformation. (2024). Green Paper on Sustainable Finance. Available at https://portal.mineco.gob.es/RecursosArticulo/mineco/ministerio/participacion_publica/audiencia/ficheros/Libro_Verde_Finanzas_Sostenibles.pdf

Statista. (2024). Average carbon price projections worldwide 2022-2050, by region. Available at https://www.statista.com/statistics/1334906/average-carbon-price-projections-worldwide-by-region/#:~:text=The%20average%20EU%20ETS%20carbon,International%20Emissions%20Trading%20Association%20members.

Stockholm Environment Institute. (2023). Green Public Procurement in the EU. Available at https://www.sei.org/wp-content/uploads/2023/02/green-public-procurement-eu.pdf.

Strategic Technologies Europe Platform (n.d.). STEP Seal. Available at https://strategic-technologies.europa.eu/about/step-seal_en.

Suárez-Bustamante.A, Pérez-Cejuela-L, & Cinca,R. (2023). Brussels approves Spain's revised recovery plan and brings 93.5 billion more in funds. Available at https://euroefe.euractiv.es/section/fondos-europeos/news/bruselas-aprueba-el-plan-de-recuperacion-revisado-de-espana-y-acerca-93-500-millones-mas- en-funds/

Suárez-Bustamante.A, Pérez-Cejuela-L, & Cinca,R. (2024). Spain's proposal: using AI to facilitate SMEs' access to recovery funds. Available at https://euroefe.euractiv.es/section/fondos-europeos/news/propuesta-espana-usar-ia-acceso-pymes-fondos-recuperacion/

SVN. (n.d.). Realisatie Fonds Loan Program for Energy Cooperatives. Available at https://www.svn.nl/verenigingen-stichtingen-en-cooeperaties/op-zoek-naar-een-lening/realisatiefonds/

The White House (2022). Fact Sheet: Biden-Harris Administration Announces New Buy Clean Actions to Ensure American Manufacturing Leads in the 21st Century. Available at https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-buy-clean-actions-to-ensure-american-manufacturing-leads-in-the-21st-century/

Third Way. (2022). Lessons Learned from California Buy Clean. Available at https://www.thirdway.org/memo/lessons-learned-from-california-buy-clean.

TILT SME. (n.d.). Transforming SMEs for a Sustainable Future. Available at https://www.tiltsmes.org/

Transport & Environment. (2024). Investment Needs for a Green Transition in Transport. Available at https://www.transportenvironment.org/uploads/files/202411_investment_needs_study.pdf

Transport & Environment. (2024). Investment Plan: Transforming Transport for Sustainability. Available at https://www.transportenvironment.org/uploads/files/TE_-Investment-Plan_April-2024.pdf

U.S. Department of Energy (n.d.). Loan Programs Office Overview. Available at https://www.energy.gov/lpo/overview.

U.S. Department of Energy. (2016). 3rd Annual Green Investment Financing Forum (GIFF). Available at https://www.slideshare.net/slideshow/oecd-giff-2016-kenneth-alston/71919354.

U.S. Department of Energy. (2022). Inflation Reduction Act (IRA) of 2022. Available at https://www.energy.gov/lpo/inflation-reduction-act-2022#:~:text=Within%20its%20energy%20and%20climate,programs%20by%20approximately%20%24100%20billion.

U.S. Department of Energy. (2024). How the DOE Loan Programs Office Understands and Manages Portfolio Credit Risk. Available at https://www.energy.gov/lpo/articles/how-doe-loan-programs-office-understands-and-manages-portfolio-credit-risk

U.S. Department of Energy. (n.d.). Loan Programs Office - Tesla. Available at https://www.energy.gov/lpo/tesla

U.S. Department of Energy. (n.d.). LPO Portfolio Performance Summary as of 09/30/24. Available at https://www.energy.gov/lpo/portfolio

U.S. Department of Energy. (n.d.). Title 17 Clean Energy Financing. Available at https://www.energy.gov/lpo/title-17-clean-energy-financing.

U.S. Department of Energy. (n.d.). Title 17 Frequently Asked Questions. Available at https://www.energy.gov/lpo/title-17-frequently-asked-questions#trll

UNIFE. (2021). TEN-T Networks Completion Needs EUR 500 Billion. Available at https://www.unife.org/wp-content/uploads/2021/03/For-completion-TEN-T-networks-needs-EUR-500-billion-RailwayPRO.pdf

Valtioneuvosto (Finnish Government). (2024). Seven Solar Park Projects Receive EUR 27.5 Million in Luxembourg-Funded Aid. Available at https://valtioneuvosto.fi/en/-/1410877/seven-solar-park-projects-receive-eur-27.5-million-in-luxembourg-funded-aid

Wolff, G. B., Sapir, A., & Tagliapietra, S. (2021). Promoting EU Industrial Policy through Strategic Sovereignty. Bruegel Policy Contribution, 18. Available at https://www.bruegel.org/sites/default/files/private/wp_attachments/PC-2021-18-0909.pdf.

World Economic Forum. (2023). How the First Movers Coalition is decarbonizing hard-to-abate industries. Available at https://www.weforum.org/agenda/2023/01/how-the-first-movers-coalition-is-decarbonizing-hard-to-abate-industries-davos-2023/.

World Economic Forum. (2024). First Movers Coalition Impact Brief. Available at https://www3.weforum.org/docs/WEF_First_Movers_Coalition_Impact_Brief_2024.pdf.

World Economic Forum. (n.d.). First Movers Coalition Commitments. Available at https://initiatives.weforum.org/first-movers-coalition/commitments

World Economic Forum. (n.d.). First Suppliers Hub Initiative. Available at https://initiatives.weforum.org/first-suppliers-hub/home.

WWF, ShareAction & E3G. (2024). Investing in Europe's Prosperity: The Role of Responsible Investment. Available at https://wwfeu.awsassets.panda.org/downloads/e3g-shareaction-wwf-report-investing-in-europes-prosperity.pdf

WWF. (2024). Investing in Europe’s Prosperity: Green Growth Strategy. Available at https://www.wwf.eu/?13320416/Investing-in-Europes-prosperity

Picture credits

Page 1, photo by Joana Abreu on Unsplash
Page 1, photo by Ryan Lau on Unsplash
Page 1, photo by Matt Artz on Unsplash
Page 1, photo by Stijn Te Strake on Unsplash
Page 1, photo by Taiki Ishikawa on Unsplash
Page 4, photo by Jacek Dylag on Unsplash
Page 5, photo by Anna on Unsplash
Page 6, photo by Justin Lim on Unsplash
Page 9, photo by Chris Leboutillier on Unsplash
Page 10, photo by Christian Lue on Unsplash
Page 13, photo by Jakub Zerdzicki on Unsplash
Page 16, photo by Cartist on Unsplash
Page 17, photo by Jimmy Nilsson on Unsplash
Page 19, photo by Wolfgang Weiser on Unsplash
Page 21, photo by Carla Martinesi on Unsplash
Page 22, photo by Frederica Diamanta on Unsplash
Page 27, photo by Dan Meyers on Unsplash
Page 28, photo by Geoff Brooks on Unsplash
Page 30, photo by Jeshoots on Unsplash
Page 31, photo by Sarah Brown on Unsplash
Page 33, photo by This is Engineering
Page 34, photo by Karsten Wurth on Unsplash
Page 36, photo by Guillaume Perigois on Unsplash
Page 38, photo by Arno Senoner on Unsplash
Page 39, photo by Ben Wicks on Unsplash
Page 43, photo by Jakub Zerdzicki on Unsplash
Page 44, photo by Markus Spiske on Unsplash
Page 45, photo by John Vid on Unsplash
Page 46, photo by Ryoji Iwata on Unsplash
Page 47, photo by Markus Spiske on Unsplash
Page 49, photo by Leonhard Niederwimmer on Unsplash
Page 52, photo by Anton Hulenko on Unsplash
Page 54, photo by Nick Page on Unsplash
Page 56, photo by Jacek Dylag on Unsplash
Page 57, photo by Amy Hirschi on Unsplash
Page 58, photo by Microsoft 365 on Unsplash
Page 59, photo by Giorgio Trovato on Unsplash
Page 60, photo by East Riding Archives on Unsplash
Page 61, photo by Kat von Wood on Unsplash
Page 63, photo by Olivier Darbonville on Unsplash
Page 64, photo by Cemrecan Yurtman on Unsplash
Page 65, photo by Ryoji Iwata on Unsplash
Page 66, photo by Patrick Perkins on Unsplash
Page 68, photo by Johannes Schenk on Unsplash
Page 70, photo by Nick Night on Unsplash
Page 71, photo by Wu Yi on Unsplash
Page 72, photo by Ryan Lau on Unsplash
Page 74, photo by Eduardo Soares on Unsplash
Page 77, photo by This is Engineering on Unsplash
Page 79, photo by Arno Senoner on Unsplash
Page 80, photo by Guillaume Perigois on Unsplash
Page 81, photo by Marius Oprea on Unsplash
Page 82, photo by Clever Sparkle on Unsplash
Page 89, photo by Sid Ramirez on Unsplash
Page 92, photo by Erwan Hesry on Unsplash
Page 92, photo by Absolutvision on Unsplash
Page 94, photo by Zaptec on Unsplash
Page 95, photo by Radission US on Unsplash
Page 96, photo by Natalya Letunova on Unsplash
Page 97, photo by Ricardo Gomez Angel on Unsplash
Page 98, photo by Victor on Unsplash
Page 105, photo by Proxyclick on Unsplash
Page 106, photo by Carl Gruner on Unsplash
Page 108, photo by Memento Media on Unsplash
Page 110, photo by Pierre Bamin on Unsplash
Page 111, photo by Fachy Marin on Unsplash
Page 112, photo by Markus Spiske on Unsplash
Page 113, photo by Darren Halstead on Unsplash
Page 114, photo by Arjan de Jong on Unsplash
Page 116, photo by Museums Victoria on Unsplash
Page 117, photo by Jan Huber on Unsplash
Page 119, photo by Chuttersnap on Unsplash
Page 120, photo by Patrick Hendry on Unsplash
Page 121, photo by Mwangi Gatheca on Unsplash
Page 123, photo by Mark Wilkinson on Unsplash
Page 143, photo by Possessed Photography on Unsplash

@climatest

CLIMATE STRATEGY & PARTNERS

www.climatestrategy.com

Supported by European Climate Foundation