

EIB Group 2023 Climate Bank Roadmap Progress Report

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1 Introduction

The European Investment Bank (EIB) Group introduced the [EIB Group Climate Bank Roadmap 2021-2025](#) (the roadmap) in November 2020, establishing an operational framework for meeting the following commitments made in 2019:

- to increase the share of annual EIB financing dedicated to climate action and environmental sustainability (green finance) to over 50% by 2025 and beyond;
- to support €1 trillion of green investment from 2021 to 2030;
- to align all new operations with the principles and goals of the Paris Agreement by the start of 2021.

This edition of the annual EIB Group Climate Bank Roadmap progress report, which follows the [2022 progress report](#), provides an update on the progress made in 2023 in implementing the roadmap. It should be read in conjunction with the [mid-term review of the roadmap](#), published in November 2023, which took stock of progress made under the roadmap's four workstreams during the first half of its implementation period and considered the necessary adjustments for the remainder of the period.

The following chapter of this report presents a summary of the progress made in 2023 in delivering the roadmap's high-level commitments, an update on developments following the roadmap's mid-term review and a review of the latest evidence relating to the shadow cost of carbon — an important technical parameter used in [The economic appraisal of investment projects at the EIB](#) — as indicated in the 2022 progress report.

The report also includes three annexes. The first presents an overview of the support provided by the EIB Group in 2023 for the sectoral focus areas of the European Green Deal. The second provides the annual update to the roadmap's results framework and constituent indicators. The third provides extra information about the EIB shadow cost of carbon.

The EIB Group will continue to deliver on its climate bank commitments in 2024 through the roadmap's four workstreams and initiatives identified in its mid-term review. It will also conduct a broader assessment of the roadmap, with recommendations for the post-2025 period.

In addition, the EIB Group will prepare contributions to the 29th Conference of the Parties (COP29), which will take place in Baku, Azerbaijan, in November 2024. These will include contributions to joint multilateral development bank initiatives, such as climate finance reporting, the new common approach on reporting climate results, developments relating to country-led platforms and the long-term strategy programme, and the EIB Group's broader contributions to furthering the sustainable finance agenda in the European Union and globally.

2 Progress in 2023

High-level results

1. Table 1 presents the high-level results of roadmap delivery since 2021. These results reflect the EIB Group's ambition to support climate action and environmental sustainability.

Table 1: EIB Group high-level commitments and results¹

Commitment indicator		Results			Target
		2021	2022	2023	
1	Share of EIB finance dedicated to climate action and environmental sustainability	51%	58%	60%	More than 50% by 2025
2	Share of climate adaptation in EIB climate action finance	4.9%	5.4%	6.4%	15% by 2025
3	Volume of climate action and environmental sustainability investment supported by the EIB Group ²	€75bn	€190bn	€354bn	€1tn by 2030
4	Carbon footprint of EIB finance ³				
	Absolute emissions in MtCO ₂ e/year	2.3	1.6	1.2	Associated with Paris alignment framework
	Relative emissions in MtCO ₂ e/year	-2.3	-4.6	-5.2	

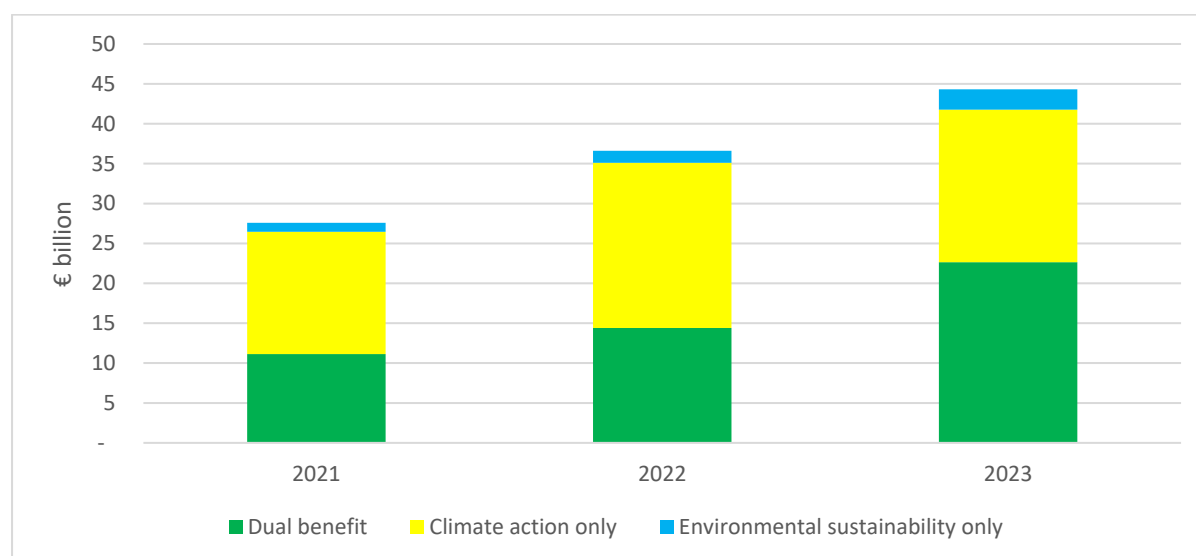
2. The first row of Table 1 shows the progress made towards achieving the 50% green finance target by 2025, with the longer-term trend illustrated in Figure 1. In 2023, the EIB provided approximately €44.3 billion of climate action and environmental sustainability finance, up 21% from the €36.6 billion provided in 2022. Measured as a share of total EIB own-resource finance, this represents 60% for 2023. It reflects the EIB's concerted efforts to build and execute a strong pipeline of green finance and advisory operations (including through engagement with stakeholders such as the European Commission, public authorities, and other partners and counterparties) and to enhance the EIB Group's financial product and advisory offerings (for example via the Green Bond Purchasing Programme and Green Loan and Green Gateway offers).

¹ Targets determined in the roadmap and subsequent EIB Climate Adaptation Plan.

² Reported to reflect a ten-year cumulative target. A review of the data in 2023 identified an isolated error in the 2022 investment-supported figure published in the previous progress report, which has now been corrected. MtCO₂e = megatonnes of carbon dioxide equivalent.

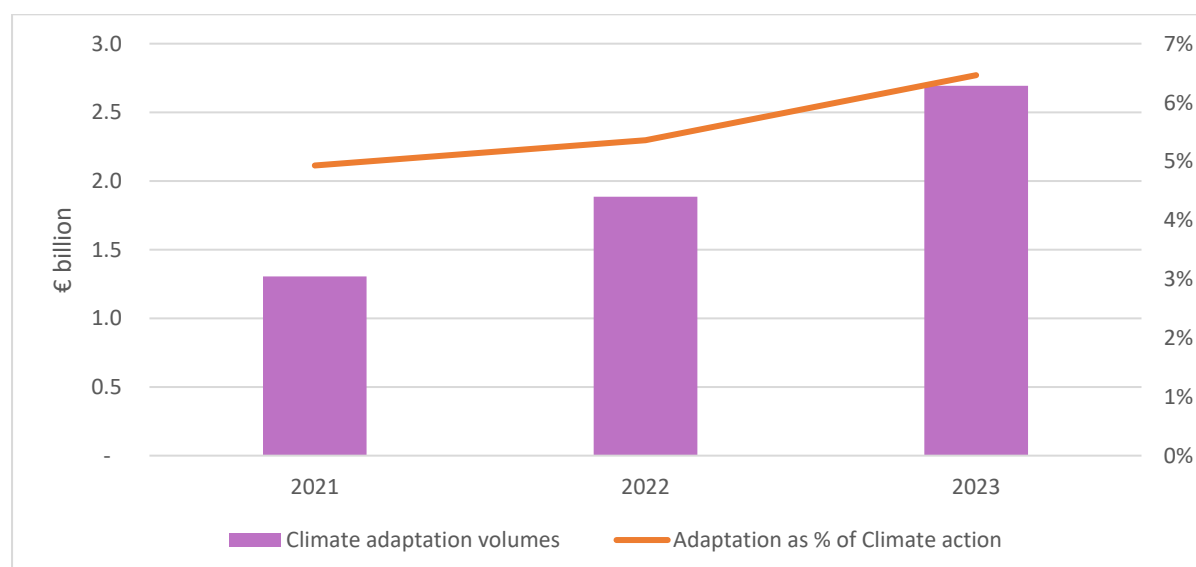
³ Greenhouse gas emission figures are reported according to the [EIB carbon footprint methodologies](#). The EIB's Carbon Footprint Exercise includes direct investment loans and large framework loan allocations that cross the significant emission thresholds defined in Section 5 of these methodologies. Other intermediated lending is not currently included because of the limited information available for carrying out a meaningful calculation for numerous sub-projects. Financing from the European Investment Fund (EIF) is intermediated and is also not included in carbon footprinting.

Figure 1: EIB climate action and environmental sustainability finance⁴



- The second row of Table 1 and Figure 2 focus on climate change adaptation. Under the [EIB Climate Adaptation Plan](#), in 2021 the EIB raised the level of ambition for adaptation finance by aiming to dedicate 15% of overall climate action finance to adaptation by 2025, tripling the pre-2021 climate adaptation share. In 2023, the share was 6.4%, up 19% from 2022; in volume terms, adaptation finance rose by over 40%, to €2.7 billion in 2023 from €1.9 billion in 2022. As outlined in the roadmap's mid-term review, the EIB is strengthening its adaptation efforts inside and beyond the European Union to reach the 15% target by 2025. However, this remains challenging because climate adaptation investments often do not generate revenue and the share of EIB finance allocated to climate mitigation, driven by the EIB's ongoing support of REPowerEU, is also increasing substantially. The first section of Annex 1 provides more information on EIB support for building climate change resilience during 2023.

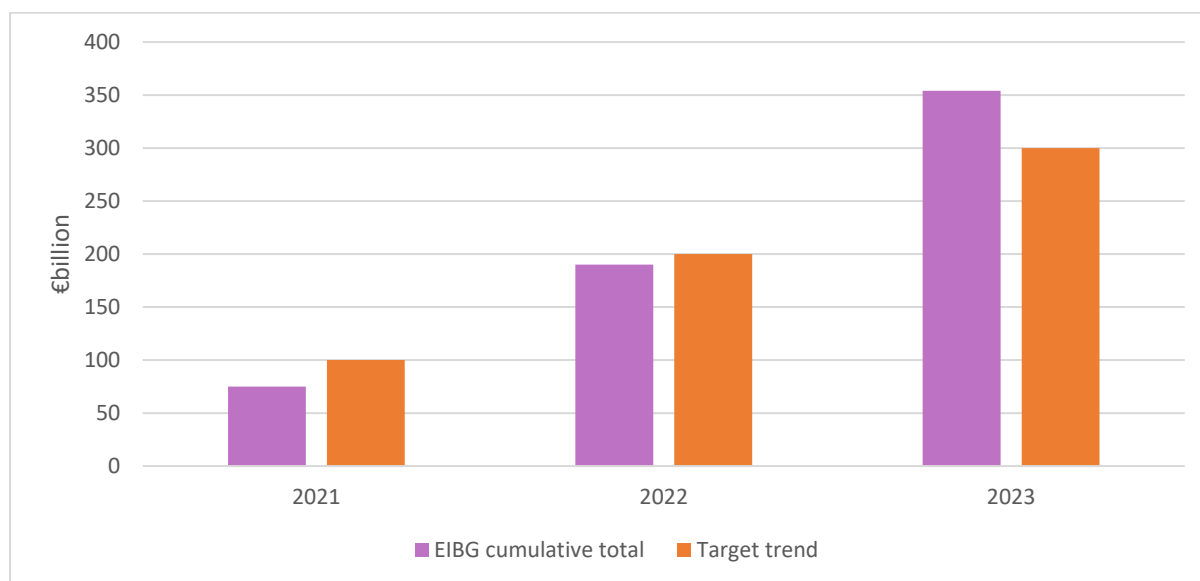
Figure 2: EIB climate adaptation finance



⁴ Many projects contribute to achieving the climate action objectives (mitigation/adaptation) and one or more of the other environmental objectives (for example, a reforestation project may help sequester carbon and protect biodiversity). In total, €25.2 billion of EIB lending in 2023 contributed to achieving the other four environmental objectives of the EU taxonomy, and €22.7 billion of this also supported climate action. A total of €2.5 billion of financing contributed solely to the other four environmental objectives without co-benefits for climate.

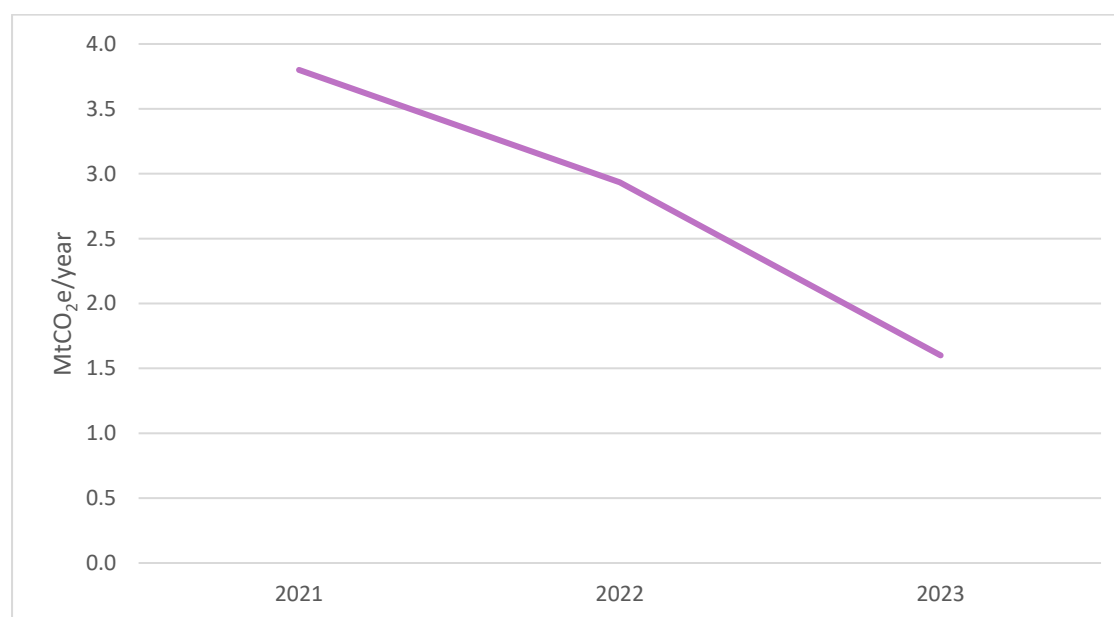
4. EIB climate action and environmental sustainability finance also delivers on social development, showing the intricate relationship between climate action and development goals. In 2023, the Bank increased the share of climate action and environmental sustainability projects with a positive gender impact from 8% in 2022 to 12% in 2023. It also provided over €500 million of green finance in fragile and conflict-affected countries.
5. As indicated in the third row of Table 1 and in Figure 3, the cumulative volume of green investment supported between 2021 and 2023 was €354 billion. This indicates that the EIB Group is on track to meet the €1 trillion target for green investment over the 2021-2030 period (which explains why the cumulative totals are higher than the target trend volumes in Figure 3).

Figure 3: EIB Group climate action and environmental sustainability investment supported



6. The fourth row of Table 1 presents the results of the annual Carbon Footprint Exercise, which tracks absolute and relative emissions from EIB-financed projects signed each year that are subject to the EIB's Carbon Footprint Exercise. A decrease in absolute emissions from projects compared with the previous year can be seen in 2022 and 2023. However, annual reported emissions can vary year to year depending on the mixture of projects financed. Therefore, further analysis was undertaken using three-year rolling average data. This analysis also indicates a declining trend in absolute emissions.
7. As indicated in Figure 4, in the three-year period up to and including 2021, average annual absolute emissions for signed projects included in the annual Carbon Footprint Exercise was 3.8 megatonnes of carbon dioxide equivalent (MtCO₂e)/year, compared with 1.6 MtCO₂e/year for the three-year period up to and including 2023. Trends in emissions from financed projects will continue to be monitored to assess the impact of policies, including the Paris alignment framework for new projects introduced by the roadmap at the end of 2020. Further analysis of the emissions from the EIB portfolio was conducted during 2023. Results of this analysis are presented in the 2023 EIB Group sustainability report.

Figure 4: Three-year rolling absolute emissions from signed projects



Post-mid-term review developments

8. The EU Taxonomy Regulation [Environmental Delegated Act](#), which covers technical screening criteria for substantial contributions to the four non-climate taxonomy objectives, and [amendments to the Climate Delegated Act](#) were published in November 2023.
9. The Environmental Delegated Act includes the first technical screening criteria in the taxonomy for determining whether economic activities make a substantial contribution to the transition to a circular economy, the protection and restoration of biodiversity and ecosystems, pollution prevention and control, and the sustainable use and protection of water and marine resources. The activities cover a range of sectors, including manufacturing, water supply, wastewater, and the construction and renovation of buildings.
10. The updates to the Climate Delegated Act include the addition of extra technical screening criteria for the transport sector and its value chain under the climate mitigation objective, for activities enabling adaptation to climate change, including desalination, and for services aimed at preventing and/or responding to climate-related disasters.
11. The [EIB Climate Action and Environmental Sustainability: List of eligible sectors and eligibility criteria were therefore updated](#) to include the new and updated “substantial contribution” criteria and apply to new direct loan signatures from January 2024. The updated criteria document includes comments, where relevant, on how criteria have been implemented by the EIB.
12. The EIB Group’s [Paris alignment framework — Low carbon](#) was updated in November 2023, as part of the roadmap’s mid-term review, and has been implemented since January 2024 for direct operations. The monitoring of new developments relating to “do no significant harm” to climate change mitigation criteria continues. Further work is also underway to implement the updated climate action and environmental sustainability criteria and Paris alignment framework low-carbon criteria in intermediated products.

Review of the EIB shadow cost of carbon

13. The shadow cost of carbon is a technical parameter used in the economic appraisal of projects supported by the EIB. It estimates the cost at the margin of meeting a given emission reduction target for the economy as a whole.
14. The current EIB shadow cost of carbon, approved as part of the roadmap in 2020, is derived from modelling results presented as part of an Intergovernmental Panel on Climate Change (IPCC) [special report on global warming of 1.5°C](#), published in 2018. In adopting the EIB shadow cost of carbon values, the roadmap stressed the need to monitor emerging modelling evidence on this topic. As already noted in the 2022 progress report, the publication of the [IPCC's Sixth Assessment Report](#) in 2022 provided extra evidence to support a review of the EIB shadow cost of carbon.
15. In 2023, the Bank conducted a detailed assessment of the modelling results employed in the Sixth Assessment Report. Two points are striking compared with the evidence from 2018. First, the number of scenarios and the quality of the modelling approaches have increased significantly. Second, as global greenhouse gas emissions have not yet peaked, the results of the Sixth Assessment Report scenarios that limit warming to 1.5°C by the end of the century, and those that also achieve net zero carbon by 2050, differ more than in the 2018 report. This is because in 2018, ambitious pathways projected more significant cuts in the 2018-2022 period than were achieved in reality.
16. As a result, the current EIB shadow cost of carbon values lie between the interquartile range of the Sixth Assessment Report scenarios that meet these differing targets. Given the relatively small number of scenarios used to identify the median values, the new evidence emerging from the Sixth Assessment Report does not make a compelling case for adjusting the current EIB shadow cost of carbon values.
17. To conclude, based on the in-depth review:
 - The current EIB shadow cost of carbon values will be maintained, as approved under the roadmap.
 - The EIB will continue to monitor emerging evidence and best practices, notably with respect to the European Commission and French and other EU Member State cost-benefit methodologies.
 - The results of the Sixth Assessment Report database remain nevertheless relevant for the economic assessment of EIB projects. In particular, the Sixth Assessment Report values may be used as a valid reference point for sensitivity analysis.

Annex 1 Support for the European Green Deal — focus areas

1. This annex highlights key areas of EIB Group support for the European Green Deal. It is structured according to the nine sector-based focus areas outlined in the roadmap's workstream 1 on accelerating the transition through green finance. The annex provides an overview of specific developments in 2023, as well as projects and investments supported. Related outputs and outcomes from the results framework are presented in Annex 2.

Building greater resilience to climate change

2. The year 2023 was the warmest on record by a wide margin, with an alarming increase in global temperatures driving unprecedented extreme weather events across the globe. Deadly heatwaves brought extreme temperatures to Europe, North America and China, while the wildfire season in Canada was the worst ever recorded, and heavy rainfalls linked to Storm Daniel burst two dams in Libya, killing thousands of people in subsequent flooding. At the same time, the landmark [Loss and Damage Fund for Developing Countries](#) became operational in 2023, as announced at the 28th Conference of the Parties (COP28), and progress was made towards a collective measurement of the Paris Agreement's [global goal on adaptation](#), through the [United Arab Emirates Framework for Global Climate Resilience](#).
3. Within Europe, the [Mission on Adaptation to Climate Change](#), which focuses on adaptation measures at the local and regional levels, is progressing, with over 300 regions and communities being signatories, covering 40% of the European Union. However, a 2023 European Commission evaluation of adaptation policies at the national level found that policies for building the resilience of communities, economic assets and nature to the increasing impacts of climate change were not consistently effective.
4. The EIB made progress in 2023 in implementing its [Climate Adaptation Plan](#), developed in 2021 to enhance the EIB's support for adaptation by targeting smarter, faster and more systemic adaptation and international action. In 2023, the EIB lent €2.7 billion in support of climate change adaptation, of which 71% was in the European Union. Investments focused on water, agriculture and forestry, infrastructure, transport networks, urban development and disaster risk management. This record volume will help build resilience against the effects of climate change.
5. Examples of projects from 2023:
 - The EIB helped the city of Krakow, Poland, implement its climate adaptation plan, with investments in flood protection schemes and nature-based solutions aimed at addressing urban heatwaves and extreme precipitation events.
 - It also helped Berliner Wasserbetriebe, Germany's largest water utility company, to address increasing water stress caused by climate change in Berlin and surrounding communities through investments in water supply and wastewater collection and treatment.
 - The EIB financed the European seed specialist KWS SAAT SE & Co. KGaA to support its research, development, innovation and commercialisation of new field crop and vegetable seed varieties that are more resistant to the stresses of climate change.
6. Beyond the European Union, EIB Global, the EIB's development arm, adopted a new approach to supporting the just transition and just resilience efforts. Just resilience efforts aim to strengthen the ability of countries and people most affected by climate change to adapt to it. EIB Global provided €380 million in just resilience finance in 2023. For example, it financed a project to protect and develop the coastline in Mauritania's capital, Nouakchott, where nature-based solutions and rainwater drainage address coastal erosion and groundwater flooding accelerated by climate change. EIB Global also supported the International Fund for Agricultural Development to help small-scale farmers adapt to climate change and improve food security.

7. The EIB's commitment to adaptation includes a stronger focus on early engagement with clients and advisory services under the dedicated [Climate Adaptation Investment Advisory Platform \(ADAPT\)](#). This includes advisory services provided under the [Joint Assistance to Support Projects in European Regions \(JASPERS\)](#):
- JASPERS advised Portugal's national transport network manager Infraestruturas de Portugal during the first stage of its climate change resilience plan on climate risk assessment and on the mapping of road, rail and associated telematic networks.
 - In Spain, JASPERS is helping the national railway manager ADIF to prepare a climate adaptation investment plan and identify actions necessary for ensuring climate resilience.
 - JASPERS is also advising the Spanish Ministry of Transport on developing a national roads climate resilience plan, including a climate risk assessment of the network.
 - JASPERS also advised the region of Andalusia on the inclusion of climate adaptation considerations in its transport plans.
 - On the island of Ischia in Italy, EIB advisory services supported a comprehensive climate risk and vulnerability assessment to inform post-disaster reconstruction following devastating landslides in November 2022.
8. In 2023, EIB finance helped to reduce vulnerability to drought for approximately 1.5 million people. It also supported the construction of over 20 km of flood protection infrastructure, helping to reduce flood risk for about 1.5 million people.

Boosting energy efficiency

9. Energy efficiency is one of the key principles of EU energy policy. In 2023, the European Union introduced the [Global Renewables and Energy Efficiency Pledge](#) together with 118 COP28 countries. The initiative set the target of doubling the rate of global energy efficiency improvements to 4% annually by 2030. Reaching these annual targets will support the transition to a decarbonised energy system and help phase out unabated fossil fuels.
10. In 2023, total EIB finance for energy efficiency projects amounted to €8.3 billion, and most of this was for projects within the European Union. This is the highest support on record, being nearly 20% higher than 2022 and over 40% higher than the average of the previous three years. Approximately 65% of this lending targeted energy efficiency in buildings. Lending to industry and small and medium-sized enterprises also increased significantly, reaching €650 million in 2023, nearly 50% higher than in 2022.
11. These volumes were achieved despite tighter financial conditions, rising construction costs and the slowdown of construction activities across the European Union. These constraints were partially offset by new EIB Group initiatives supporting energy efficiency in industry and buildings, as well as the enabling measures implemented as part of the [EIB's support for REPowerEU](#), an initiative designed to reduce Europe's dependence on fossil fuels and accelerate the green transition.
12. Renovating buildings continued to be a finance priority, in line with the roadmap priorities and the [EU Renovation Wave](#). For example, the EIB has backed a project to renovate more than 200 schools in Rome, Italy, and improve their energy efficiency. This renovation is supported by Italian government grants, EU funds under Italy's national plan for metropolitan cities and a €150 million EIB credit line. The city also requested advisory support from the Bank to improve its planning capacity and optimise the use of its available resources.
13. The EIB also continues to support the highest standards in new building construction. For example, the Bank provided €100 million in finance to the municipal housing company WIRO in Rostock, Germany, to support the construction of new housing units that exceed the European Union's high energy efficiency standards and Germany's KfW standards by at least 20%. A total of 561 apartments are being built, including 118 social housing units.
14. Energy efficiency investments are complex, often involving split incentives arising from complicated ownership and tenancy arrangements, and technical design and scope considerations. One possible solution to the issue of split incentives is to secure a loan with the property tax, thereby linking it to the property rather than to the owner(s), as in the Property Assessed Clean Energy model. The EIB took this approach in a pilot operation with AMB, the metropolitan public administration of Catalonia, Spain.

Advisory support and technical assistance also continue to play a key role in accelerating these investment projects through instruments backed by the European Commission such as the [European Local Energy Assistance \(ELENA\)](#) facility, [Private Finance for Energy Efficiency \(PF4EE\)](#), JASPERS, the [Horizon Europe](#) facility and the [InvestEU Advisory Hub](#).

15. Once implemented, EIB green projects signed in 2023 will save an estimated 6 700 GWh/year globally. EIB lending also supported the energy-efficient renovation of over 171 000 housing units and the installation of 13 million smart energy meters.
16. In 2023, the European Investment Fund (EIF) signed 65 transactions under its flagship [Sustainability Guarantee](#) product for a total portfolio volume of €1 billion. Future loan portfolios backed by the guarantee are expected to focus largely on energy efficiency improvements in buildings, industry and the residential sector. The EIF also committed €125 million in 2023 to the Sustainable Development Capital LLP Green Energy Solutions Fund, which invests primarily in new energy-efficient infrastructure and equipment and decentralised assets for renewable energy generation.
17. In 2023, the EIF and the EIB also signed a synthetic securitisation transaction with Santander that should mobilise €161 million in new finance for energy efficiency projects in Portugal. An €81 million unfunded guarantee will enable Santander to finance new energy efficiency investments in residential properties for twice the amount of the provided guarantee.

Promoting clean energy

18. Recent [European Environment Agency analysis](#) indicates that 23% of the energy consumed in the European Union in 2022 had been generated from renewable sources. This increase, from 21.9% in 2021, was the result of strong growth in solar power generation. The [revised Renewable Energy Directive](#) that came into force in all EU countries in November 2023 raises the European Union's binding renewable target for 2030 to a minimum of 42.5% (with an aspiration of reaching 45%) from the 32% level set in 2018. Meeting this target would require the European Union to nearly double its share of renewable energy.
19. In 2023, the EIB published the mid-term review of its 2019 [Energy Lending Policy](#), which concluded that the policy's objectives remained valid, with the expectation of a further increase in lending in the coming years, in line with the measures adopted by the EIB to support the Commission's REPowerEU plan. The review also demonstrated the policy's integration of the EU taxonomy and alignment with the Climate Bank roadmap.
20. Under REPowerEU, the EIB financed a record €9.1 billion in renewable energy in 2023, an increase of over 25% from 2022, driven by investments in solar photovoltaics and on-shore and off-shore wind farms, and an extra €3.8 billion in electricity networks, again underlining the Bank's commitment to ensuring access to clean energy.
21. In July 2023, the EIB increased its finance targets under the [REPowerEU+](#) initiative by 50% to €45 billion by 2027. It also broadened the scope of eligible sectors to boost the financing of EU manufacturing in state-of-the-art strategic net zero technologies and the extraction, processing and recycling of critical raw materials, in line with the [Green Deal Industrial Plan](#). A lending envelope for counter-guarantees to improve access to finance for the wind power sector was also put in place as part of the [European wind power package](#).
22. Examples of EIB-financed investments in the renewable energy sector include (i) an InvestEU-backed loan of up to €1.7 billion for the construction of 120 solar photovoltaic power plants in Spain, Italy and Portugal for a total capacity of about 5.6 GW and the estimated production of 9.29 TWh of energy a year, and (ii) a €200 million loan to roll out a large-scale programme to install rooftop solar panels across European industrial and logistics buildings. The EIB is also co-financing the construction of Poland's first off-shore wind farm, one of the largest in the world, with a loan of up to €610 million. In addition, through InvestEU, the Bank supported the development of electricity transmission in Spain by acquiring the inaugural green hybrid bonds issued by the Spanish national transmission system operator. This was the first public transaction under the EIB Green Bond Purchasing Programme.
23. Beyond the European Union, EIB Global supported independent photovoltaic projects in Uzbekistan — which were tendered by the government and benefited from the World Bank's [Scaling Solar](#) programme

and from the Asian Development Bank's public-private partnership transaction advisory services — for a total of nearly 1 GW. EIB Global also supported the construction of a 50 MW wind farm in Vlasic, Bosnia and Herzegovina, under the Global Gateway initiative, with co-finance from the German development bank KfW and grant support from the Western Balkans Investment Fund. The Bank is also supporting the ELMED interconnector, which will comprise some 224 km of electricity cables between Italy and Tunisia at a depth of up to 800 m under the Mediterranean Sea, enabling the cross-border trade of electricity between Tunisia and Italy. This will reduce generation costs and renewable curtailment in Italy and, in the long run, is expected to enable Tunisia to export renewable energy to Europe.

24. Examples of EIF clean energy equity finance provided in 2023 include commitments of €60 million to two funds that invest in early-stage companies: SET Fund IV, a pan-European fund targeting digital technologies for a carbon-free energy system, and Future Energy Ventures Fund I, which invests in companies with clear decarbonisation impacts supporting the energy transition. The EIF also committed €50 million to HITEC Vision II, a dedicated energy transition fund that supports renewable energy and value chain electrification, sustainable fuels for hard-to-abate sectors, and circular, efficient energy systems. In addition, the EIF committed €75 million to the Clean Energy Infrastructure Fund, which targets greenfield solar photovoltaic and on-shore wind projects in Central and Eastern Europe.
25. In terms of securitisation, the EIF has signed a third transaction on behalf of the EIB Group since 2020 with Landesbank Baden-Württemberg in Germany. This will enable the Bank to lend €350 million to 100% clean power projects. This is expected to support the development of additional capacity to generate electricity from renewable sources amounting to about 340 MW, enough to serve 1 million homes. Under InvestEU, in 2023, the EIF signed a portfolio guarantee of €10.5 million with 123 Investment Managers, a marketplace lender providing tailor-made debt finance to small independent renewable energy entities addressing identified market finance gaps.
26. In 2023, EIB Group-financed projects supported the installation of over 31.5 GW of extra renewable energy capacity globally, which is expected to generate over 67 TWh of green power per year. To deliver this power to people and businesses, electricity transmission and distribution networks need to be improved. The EIB therefore also supported the construction and upgrading of over 38 000 km of power lines.

Smarter, more sustainable transport

27. In 2023, the rebound in transport activity continued, following a sharp decline in 2020 because of COVID-19. Although 2023 emissions for the sector have not yet been published, the International Energy Agency (IEA) [reported in July 2023](#) that there had been a 3% increase in carbon dioxide emissions from transport in 2022 compared with the previous year. This compares with the annual average growth rate in transport emissions of 1.7% from 1990 to 2022, which was faster than any other end-use sector except for industry, which grew at a similar rate to transport. To get on track with the [IEA Net Zero Emissions by 2050 Scenario](#), carbon dioxide emissions from transport must fall by more than 3% per year to 2030.
28. The European Environment Agency reported a similar development for [greenhouse gas emissions from transport in the European Union](#). The study, published in October 2023, shows a 2.7% growth in European transport emissions in 2022, compared with the previous year.
29. At the same time, the [European Automobile Manufacturers' Association](#) reports that battery-electric car sales have increased and now make up nearly 15% of the market share. In 2023, the EIB lent a record €13.3 billion to support climate change mitigation in the transport sector, €12.3 billion of which was for investments in the European Union. The total amount was up from €10.1 billion in 2022, including €8.7 billion in the European Union. The 2023 volumes include investments in urban mobility, described in the section on sustainable cities and regions below.
30. An example of the EIB supporting sustainable transport is the finance it is providing to SFBW, the rolling stock provider of the German state of Baden-Württemberg. The EIB will provide up to €750 million for the purchase of trains to operate primarily in Baden-Württemberg's regional network. In addition to 60 traditional electrical multiple units, which can be used on only electrified tracks, the project will involve the purchase of 60 more innovative battery-electric multiple units. The trains are equipped with batteries for use on non-electrified track sections and can therefore replace diesel multiple units. The project will

support the state's short-term aim of discontinuing the purchase of diesel units, although the electrification of its full network remains an expensive and long-term prospect.

31. The EIB also signed an €18 million quasi-equity agreement supported by InvestEU with the electric vehicle charging innovator Rocsys to finance the development and deployment of next-generation robotic charging systems. The Rocsys system can be used to upgrade existing chargers to an automated system, which will involve the use of robotics to connect charging cables to vehicles.
32. An example of EIF investments in funds targeting sustainable transport is Rockton Sustainable Aviation Fund I, to which the EIF committed €75 million in 2023. This fund targets assets and companies supporting the decarbonisation of aviation and aviation-based climate change adaptation efforts. Investments in the decarbonisation of aviation are expected to support the development of alternative aviation fuels and the electrification of aviation, while investments in climate change adaptation will target assets such as aerial fire fighters and environmental surveillance assets.
33. In 2023, the EIB Group contributed to financing over 2 900 km of new or renovated tracks and bus lanes, more than 3 400 stops and stations, over 15 000 electric vehicle charging stations and more than 1 700 green vehicles and rolling stock units. It is estimated that, annually, these investments will result in more than 250 million additional passenger trips on public transport and 9.5 million tonnes of additional cargo being transported by rail.

Striving for greener industry

34. In 2023, the European Commission took a significant step towards enhancing competitiveness and supporting a rapid green transition for European industry with the introduction of the [Green Deal Industrial Plan](#). This plan aims to make European green businesses more competitive by simplifying rules, providing additional financial support and improving education and training in relevant fields. At the same time, the European Commission's [Circular Economy Action Plan](#) has led to a wide range of initiatives, with a focus on the sustainable management of waste and materials and on the circularity of consumer products.
35. The EIB also continued its support for the transition to a sustainable, low-carbon and circular industrial sector, providing over €4 billion of finance to support green industry investments. This finance was distributed across a range of key sectors, with an emphasis on battery manufacturing and electrification technology, which received approximately 80% of overall EIB green industry finance. The emphasis on batteries and electrification aligns with the broader EU objectives of improving energy security by reducing dependency on carbon-intensive energy sources, supporting the electrification of transport and fostering innovation in energy storage solutions.
36. Investments in innovative deep decarbonisation, renewable energy technologies and circular economy initiatives accounted for the remaining 20% of EIB green industry finance. In 2023, this investment category included support for investments in (i) first-of-a-kind deployment of green hydrogen-based steel manufacturing, (ii) eco-friendly construction materials and technologies that reduce the climate and environmental impacts of construction and improve resource efficiency, and (iii) the use of renewable materials in the chemicals industry.
37. Supporting the green industrial transition and increasing competitiveness are among the core objectives of EIF debt and equity investments. For example, in 2023, the EIF committed €60 million to GET Fund I, a venture capital fund aiming to scale up European climate technology startups that significantly reduce greenhouse gas emissions in high-emitting sectors. The EIF also invested €51 million in Alder III, a private equity fund focusing on sustainable industries, targeting a range of investments, including in projects promoting circular industrial processes and low-carbon materials.
38. In terms of infrastructure investment, the EIF committed €150 million to the White Summit Capital Infrastructure Decarbonisation Fund II, a fund focusing on greenfield investments in the decarbonisation of European industries (recycling facilities, heat recycling, etc.), renewables integration (renewable energy generation, hydrogen, battery storage, energy efficiency, etc.) and sustainable transport (vehicle electrification, biofuels, etc.).
39. In support of the circular economy, the EIF also committed €50 million to the Circular Plastics Fund, one of the first European venture capital funds to focus on scaling up advanced plastics recycling technologies

that enable the transformation of plastic waste back to its original state for use as raw materials. Under the Sustainability Guarantee, the EIF and Swedish financing platform [Lisa & Friends](#) signed a guarantee agreement to make some €25 million available to Swedish companies with a circular (product-as-a-service) business model.

Eliminating pollution

40. Following the adoption of the [EU Zero Pollution Action Plan](#) in 2021 and of a [legislative package on industrial emissions](#) and the European Commission's proposal on [stronger rules for cleaner air and water](#) in 2022, a new [proposal to ban all remaining uses of mercury in the European Union](#) was introduced in 2023. Several other initiatives on microplastics [were also adopted in 2023](#). The EIB continued to support investments that prevent pollution of water, soil and air.
41. In 2023, the EIB lent more than €2 billion for wastewater collection and treatment projects, approximately 75% of which was for projects beyond the European Union. The outcomes of these projects can be quantified in reduced pollution in water bodies of over 7.5 million population-equivalent per day. In addition, since the wastewater treatment facilities covered by the project include secondary treatment facilities, the discharge of microplastics could also be reduced by up to 80%.
42. Having doubled the finance target of the Clean Oceans initiative in 2022 from €2 billion to €4 billion by December 2025, the EIB, in partnership with several European multilateral and national development banks, had reached more than 80% of the new target by the end of 2023, including an EIB contribution of over €830 million. It is estimated that EIB-supported projects will help at least 4 million people by improving wastewater, stormwater and waste management, with associated positive impacts on urban and marine environments and public health.
43. To increase the pipeline of projects that contribute to reducing ocean plastic pollution, EIB Global continued the Clean Ocean Project Identification and Preparation programme, known as [COPIP](#), for sub-Saharan Africa. The programme has identified 20 projects, eight of which have been selected for pre-feasibility studies. These range from integrated urban solid waste management projects in Gabon, Kenya and Benin to solid waste and wastewater projects in Ghana and Cameroon and circular economy investments in Togo. The goal is to select six projects for which feasibility studies will be prepared as the basis for EIB Global financing.
44. In 2023, the EIB also supported the reduction of pollution, notably of soil and water, in Hungary and Spain, through co-financing Common Agricultural Policy strategic plans with the European Agricultural Fund for Rural Development. The EIB's co-financing of these plans included providing support for measures aimed at reducing dependency on the use of chemicals, for instance agrochemicals and fertilisers in agriculture and antimicrobials in livestock breeding.
45. Reducing fossil fuel combustion in transport is essential for reducing air pollution, particularly in urban areas. Air pollution remains the most significant environmental health risk in Europe, according to a [World Health Organization report published in 2023](#). It is said to have caused 569 000 deaths in Europe in 2019. However, [research by the European Environment Agency](#) published in 2023 indicates that the EU policy measures introduced in recent decades have led to a decrease in emissions of most air pollutants from transport in the European Union.
46. The EIB provided approximately €12 billion of finance in 2023 for transport projects promoting zero tailpipe emissions. This includes investments in electric systems for trains, trams, metro systems and road transport, as well as in infrastructure supporting electrified transport.

Protecting nature

47. The year 2023 was the first full year of implementation of the [EIB Environment Framework](#). Therefore, the focus was on setting the enabling conditions and developing tools to increase the EIB's efforts and activities contributing to achieving target 19 of the 2022 [Kunming-Montreal Global Biodiversity Framework](#), namely mobilising at least \$200 billion in biodiversity finance per year by 2030. Activities included the development and publication at COP28 of the [MDB common principles for tracking nature-positive finance](#), as well as the signing of a [joint declaration on and the introduction of a global task force](#) to boost sustainability-linked sovereign finance for nature and climate.

48. In 2023, the EIB provided over €154 million in finance to projects protecting, conserving and restoring biodiversity and ecosystems. However, this amount is an underestimation of the level of EIB support to nature finance, which will be more accurately represented once the joint multilateral development bank methodology for tracking nature finance is operational, including co-benefits to biodiversity and ecosystems.
49. In the European Union, the EIB's co-financing of regional development funds and the European Agricultural Fund for Rural Development accounted for a large portion of the support it provided for the protection of nature. In 2023, the EIB co-financed operations in Hungary (at the national level) and Spain (at the regional level in Extremadura, Andalusia, and Castile and León), supported by the EU Member States' Common Agricultural Policy strategic plans, to halt and reverse biodiversity loss, enhance ecosystem services and preserve habitats and landscapes.
50. Cities are at the forefront of the causes and the effects of climate change, pollution and biodiversity loss. However, they are also at the forefront of responses to these challenges and provide opportunities for biodiversity conservation and enhancement. The European Union has developed a range of policies and initiatives to promote urban biodiversity, recognising the important role of urban green spaces and nature-based solutions in enhancing the resilience and sustainability of urban areas.
51. As a result, finance for urban biodiversity and ecosystem services increased in 2023 through the implementation of nature-based infrastructure, either as part of cities' integrated urban development strategies or their climate adaptation/resilience strategies, for example in Poland, Spain, Lithuania and Cyprus. The implementation of blue/green infrastructure and nature-based solutions in cities focus specifically on (i) stabilising temperature, (ii) reducing traffic noise and improving air quality, (iii) improving soil drainage and (iv) controlling pest populations.
52. Beyond Europe, the forestry and agriculture sectors accounted for most financing of nature. One example is the inclusive and sustainable forests project in Morocco, through which EIB Global will provide up to €100 million in co-finance to support investments in national parks, species reintroduction programmes and watershed management in mountainous areas, alongside contributions from the European Union, the African Development Bank and the government of Morocco.
53. The project involves (i) watershed management to rehabilitate forests, reduce erosion, conserve water resources, preserve soil fertility, provide ecosystem services, protect basic infrastructure against flooding and promote income-generating agricultural and silvopastoral activities; (ii) development of national parks through the conservation and rehabilitation of forest areas, biodiversity management and ecotourism; and (iii) technical assistance to the Moroccan Agence Nationale des Eaux et Forêts in preparing and implementing projects. The project aims to plant more than 55 000 hectares of new forests, improve the management of over 6 000 hectares of existing forests, and improve the productivity and the biodiversity of 47 000 hectares of pasture in eight watersheds across Morocco.

Farm to fork

54. The EIB supports global food security, the supply of renewable fibre, climate action and the protection of the environment by financing investments in bioeconomy subsectors, including in agrifood and forestry and in bio-based industries producing renewable energy and fibre. In 2023, the EIB provided €1.4 billion in direct lending to climate action and environmental sustainability investments in the bioeconomy sector. EIB climate action lending in the sector can be broken down across the value chain, with some 31% going to agriculture, 42% to agrifood and forest industries, 22% to related wholesale and retail, 4% to forestry, and the remainder to fisheries, aquaculture and bioenergy.
55. An example of an innovative project supported by the EIB is a first-of-a-kind facility in Poland that upcycles waste and food industry by-products as inputs for the production of insects, which are then processed into high-value animal feed ingredients (protein and oil). In Sweden, the EIB supported a recirculating aquaculture system and a processing facility for the sustainable production of certified premium arctic char with minimal environmental impact.
56. The bioeconomy sector also plays a critical role in helping food producers in vulnerable regions to adapt to climate change. In addition to the examples provided above (in the section "Building greater resilience to climate change"), the EIB supported agricultural water management improvements like the restoration

of overexploited aquifers in Greece, and EIB Global supported the adoption of modern irrigation technologies in Argentina. Overall lending for agricultural water management projects totalled about €200 million in 2023.

57. The agrifood industry is the EIF's most important climate and environmental equity investment market after the energy sector. The EIF works closely with partners across Europe to finance the development of agritech solutions, while also supporting farmers and small and medium-sized enterprises in the sector. For example, in 2023, the EIF committed €40 million to Tikehau, one of the first large-scale private equity funds dedicated to regenerative agriculture.
58. The EIF also committed €20 million to the Blue Revolution Fund, which focuses on early-stage sustainable aquaculture technologies and alternative seafood and targets investments in next-generation technologies and farms that present a system-level change to current industry practices and address the sector's sustainability and production challenges.
59. In the area of private credit, the EIF committed €20 million to Heavy Finance Fund I, a diversified debt fund providing senior finance to small and medium-sized European firms active in the agriculture sector, supporting the reduction of greenhouse gas emissions and regenerative and sustainable land management practices. The EIF also signed a €40 million commitment with INOKS Capital's European Agri Transition Fund financing small and medium-sized enterprises and small mid-cap firms, mainly in eastern and southern EU countries, which focus on sustainable input supply, production, processing, distribution and reuse of waste.
60. Following a successful securitisation transaction with the EIF, Deutsche Leasing Romania committed to providing €439 million in new lending to small businesses and mid-cap firms in Romania. This new finance, in the form of leases and loans, will support the replacement of harvesters and tractors, the modernisation of irrigation systems, the acquisition of no-tillage equipment and the promotion of energy efficiency in agriculture and other industries.

Sustainable cities and regions

61. Progress was made in 2023 in the activities developed by the [EU climate-neutral and smart cities mission](#). The first group of cities presented their Climate City Contracts, which include an overall plan for climate neutrality across all sectors, including energy, buildings, waste management and transport, as well as related investment plans covering the public and private sectors. The first ten cities also received their EU mission labels, intended to facilitate access to EU, national and regional funding and finance sources, particularly private investment. The EIB contributed to the European Commission's review of the city investment plans, which form part of each city's Climate City Contract, and may provide further support for the implementation of those plans.
62. In 2023, EIB climate action and environmental sustainability finance for urban projects amounted to €17.3 billion, or 89% of the EIB's urban direct lending.
63. Projects include the Krakow urban development framework loan, supporting the city's 2030-2050 urban strategy. The project covers urban development, regeneration and renewal, including new construction, refurbishment and upgrade of urban infrastructure. It comprises public buildings (education facilities, healthcare centres, nursing homes, public sports facilities, cultural facilities, etc.), open spaces and green areas, flood protection, renewable energy and energy efficiency investments, sustainable mobility schemes, and the modernisation of urban roads, including road safety and climate measures.
64. The EIB kept up its support for low-carbon urban transport on trains, trams and metros in 2023. For example, the Bank is supporting the city of Tours, France, with its tram network and the ongoing implementation of its sustainable urban mobility plan. The project includes the extension of the first tram line and the development of a second line, a maintenance and storage centre and a cycling network. The project will reduce the general cost of transport in the city and improve the comfort, availability and reliability of the services. This will lead to a reduction of greenhouse gas emissions, noise and air pollution, and road accidents.
65. Beyond Europe, EIB Global supported projects like the Sarajevo urban transport project to replace obsolete vehicles, including trolleybuses and trams, and to refurbish and modernise their infrastructure. The project is expected to increase the urban transport capacity by some 3 million passengers per year.

It should cut back travel time, operational costs and air and noise pollution, and reduce carbon dioxide emissions by about 50 Mt per year, equivalent to a 50 MWh reduction in energy consumption.

66. 2023 was the Cities Climate Gap Fund's third year of operations. Twelve assignments were approved for climate-smart investments in 16 cities in Africa and South America.

Annex 2 Results framework

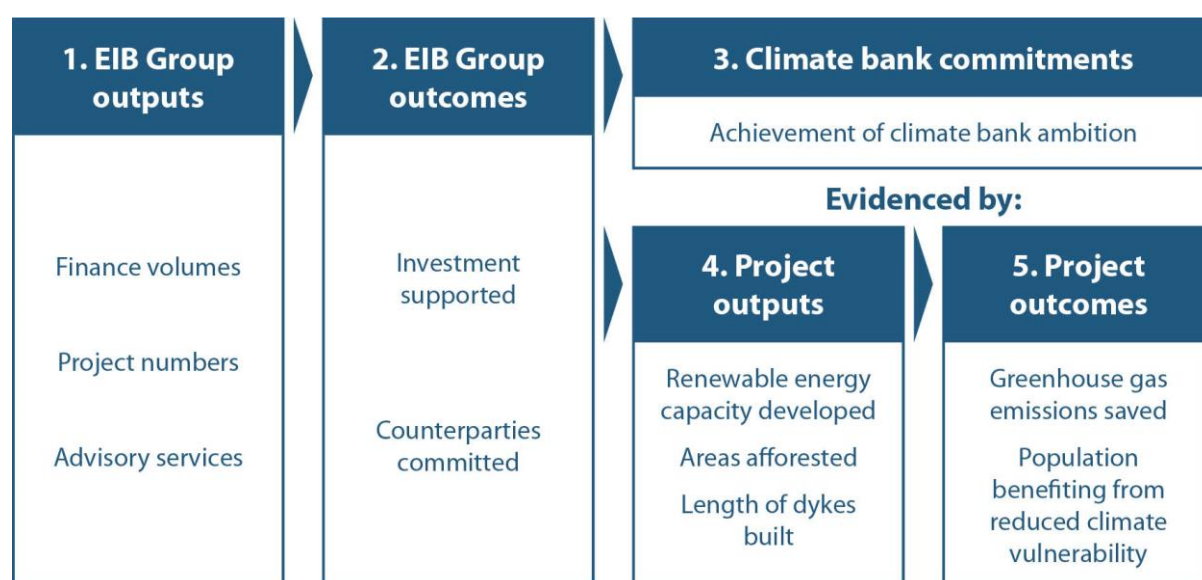
Introduction

1. The roadmap provided for the establishment of a results framework to assess, manage and monitor progress, and to evaluate and transparently report on the outcomes of roadmap implementation activities to EIB Group shareholders and other stakeholders. The framework helps the EIB Group to continuously improve its practices and policies over time, adapting activities to take account of lessons learnt, changing political and legal requirements, best banking and market practices, and scientific knowledge.¹

Approach and structure

2. The monitoring and assessment tools used for the results framework build on existing EIB Group tools. Additional indicators, studies and analyses will be included later to provide a comprehensive portrayal of progress.

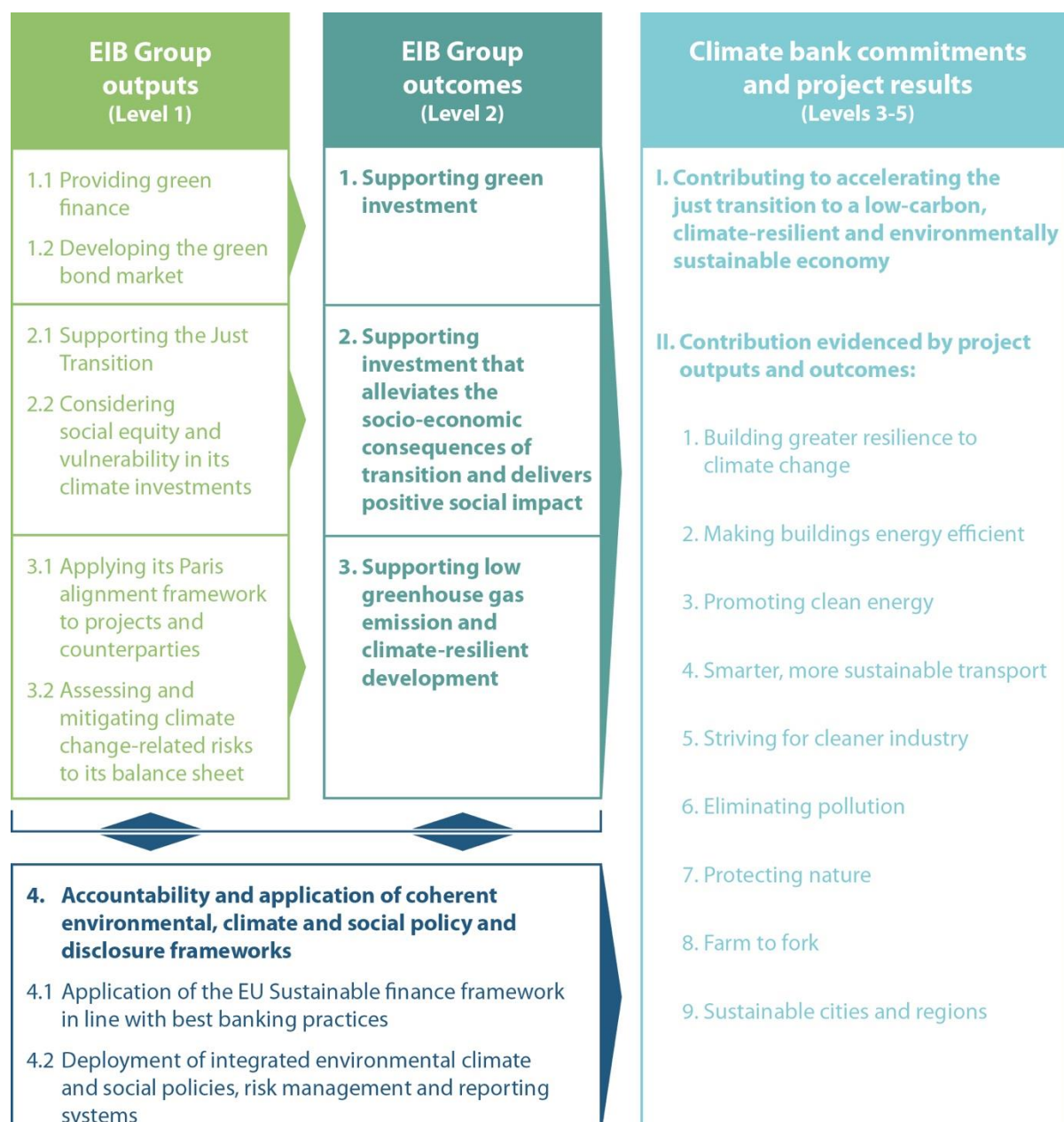
Results framework overview



3. The logic of the results framework is set out in the figure above. It illustrates that, through financial support and advisory services (level 1), the EIB Group supports additional green investment and influences the broader corporate activities of counterparties (level 2), thus supporting achievement of the EIB Group's climate bank commitments (level 3).
4. The EIB Group's green finance and advisory activity and the additional investment it supports (at levels 1 and 2) is also expected to result at the project level (level 4) in outputs such as renewable energy capacity and flood protection infrastructure. These will, in turn, generate broader project outcomes, such as lower greenhouse gas emissions and reduced climate vulnerability (level 5).
5. The results framework logic model is presented in more detail below.

¹ [EIB Group Climate Bank Roadmap 2021-2025](#), Chapter 5, paragraphs 5.35-5.39: "Climate Bank Roadmap monitoring and assessment."

Results framework logic model



6. The results framework defines indicators at each stage of the logic model. For the first three roadmap workstreams, EIB Group outputs and outcomes are distinct, and progress can be measured largely through quantitative indicators.
7. The fourth workstream, covering EIB Group application of the EU sustainable finance framework and harmonised multilateral development bank approaches, is broader and reflects the policy and disclosure aspects of the preceding three workstreams. It is also distinguished by more qualitative indicators, such as the establishment and application of policies and frameworks, from which broader market outcomes are less quantifiable.
8. Project-level outputs and outcomes (levels 4 and 5) are structured around the sectoral focus areas of the roadmap, reflecting the thematic areas of the European Green Deal.

2021-2023 indicators

Table 1: EIB Group outputs 2021-2023

Outcome		Output		Indicator	Figures		
					2021	2022	2023
1. Supporting green investment	1.1	Providing green finance	1.1.1	EIB climate mitigation finance (€ billion)	25.1	33.2	39.1
			1.1.2	EIB climate adaptation finance (€ billion)	1.3	1.9	2.7
			1.1.3	EIB environmental sustainability finance (€ billion)	12.3	15.9	25.2
			1.1.4	EIF climate action and environmental sustainability finance (€ billion)	0.4	2.0	5.1
			1.1.5	EIB climate action and environmental sustainability finance (inside the European Union) (€ billion)	24.8	32.4	40.3
			1.1.6	EIB climate action and environmental sustainability finance (beyond the European Union) (€ billion)	2.8	4.2	4.0
			1.1.7	EIB climate action and environmental sustainability manufacturing finance (€ billion)	1.9	3.7	4.1
			1.1.8	Proportion of EIF finance dedicated to climate action and environmental sustainability	13%	21%	34%
			1.1.9	Number of EIB green loan operations	N/A	19	28
			1.1.10	Number of projects contributing 100% to climate adaptation (EIB)	1	3	2
			1.1.11	Number of intermediated (debt, equity) transactions including a dedicated climate action and/or environmental sustainability contribution (EIF)	12	88	206
			1.1.12	Number of multi-beneficiary intermediated loans (MBILs) signed including a dedicated climate action and/or environmental sustainability window (EIB)	19	39	59
			1.1.13	Proportion of MBIL operations signed including a dedicated climate action and/or environmental sustainability window (EIB)	27%	75%	65%
			1.1.14	Proportion of MBIL finance committed to climate action and/or environmental sustainability windows (EIB)	12%	29%	26%
	1.2	Developing the green bond market	1.2.1	Total volume of annual sustainability funding/total volume of annual funding	21%	45%	29%
			1.2.2	Total volume of annual sustainability funding/total volume of annual Climate Awareness Bond- and Sustainability Awareness Bond-eligible disbursements	96%	115%	77%
2. Supporting investment that alleviates the socioeconomic consequences of transition and delivers a positive social impact	2.1	Considering social equity and vulnerability in climate-related investments	2.1.1	Number of projects signed that have climate and/or environment-related positive gender impacts	8	29	37
			2.1.2	Share of climate action and environmental sustainability projects with a positive gender impact	2.4%	8.2%	12.0%
			2.1.3	Climate action and environmental sustainability finance in fragile and conflict-affected countries (€ million)	437	22	576
			2.1.4	Finance supporting a just transition inside the European Union (€ million)	N/A	N/A	1 075
			2.1.5	Finance supporting just resilience beyond the European Union (€ million)	N/A	N/A	380
			2.1.6	Number of new advisory assignments supporting a just transition	25	11	36

Outcome	Output	Indicator	Figures				
			2021	2022	2023		
3. Supporting low greenhouse gas emissions and climate-resilient development	3.1	Applying its Paris alignment framework to projects and counterparties	3.1.1	Number of EIB projects with low residual physical climate risk	190	177	248
			3.1.2	Number of EIB projects with medium residual physical climate risk	43	23	2
			3.1.3	Number of projects with high residual physical climate risk	0	0	0
			3.1.4	Absolute emissions of EIB finance in MtCO ₂ e/year by sector:*			
				• Industry	1.1	0.4	0.1
				• Energy	0.4	0.3	0.2
				• Mobility	0.7	0.5	0.6
				• Other (water, sewerage, forestry, food and agriculture)	0.2	0.5	0.2
			3.1.5	Relative emissions of EIB finance in MtCO ₂ e/year by sector:*			
				• Industry	-0.1	-0.1	-0.3
		• Energy	-1.7	-3.9	-4.5		
		• Mobility	-0.3	-0.2	-0.3		
		• Other (water, sewerage, forestry, food and agriculture)	-0.2	-0.4	-0.1		
	3.1.6	Number of corporates screened into the PATH framework	N/A	19	41		
	3.1.7	Number of financial intermediaries screened into the PATH framework	N/A	64	95		
	3.1.8	Number of corporates screened into PATH framework for high emissions	N/A	15	33		
	3.1.9	Number of corporates screened into PATH framework for climate vulnerability	N/A	9	22		
	3.1.10	Number of corporate counterparties engaged in incompatible activities	N/A	1	3		
	3.2	Assessing and mitigating climate change-related risks to its balance sheet	3.2.1	EIB Group portfolio (signed exposure in € billion) as of 31 December	626.0	666.9	683.7
			3.2.2	Share of overall EIB Group portfolio covered by climate risk screening tool, of which:	81%	89%	89%
3.2.3			• Share rated as medium and high risk for physical risk	18%	19%	21%	
3.2.4			• Share rated as medium and high risk for transition risk	53%	49%	38%	
4. Accountability and application of coherent environmental, climate and social policy and disclosure frameworks	4.1	Gradual application of the EU sustainable finance framework in line with best banking practices	4.1.1	Total volume of annual Climate Awareness Bond- and Sustainability Awareness Bond-eligible signatures/total volume of annual signatures	25.3%	34.7%	44.8%
			4.1.2	Total volume of annual Climate Awareness Bond- and Sustainability Awareness Bond-eligible disbursements/total volume of annual disbursements	29.7%	31.7%	35.6%
	4.2	Deployment of integrated environmental, climate and social policies, risk management and reporting systems	4.2.1	Publication of Task Force on Climate-related Financial Disclosures report	Yes	Yes	Yes
			4.2.2	EIB Group internal carbon footprint (absolute emissions in tCO ₂ e)	7 708	21 962	22 251
			4.2.3	EIB Group internal carbon footprint (net emissions in tCO ₂ e)	4 356	16 815	17 393
			4.2.4	EIB Group carbon footprint per employee (internal operations)	0.99	3.62	3.50
			4.2.5	EIB Group roadmap results framework and reporting operational	Yes	Yes	Yes

* Emissions and carbon sequestration are prorated to the EIB lending volume prior to aggregation. Total project emissions (absolute) and savings (relative) would be significantly larger.
Mt CO₂e = mega-tonnes of carbon dioxide equivalent.

Table 2: EIB Group outcomes 2021-2023

Outcome				Figures		
				2021	2022	2023
1	Supporting climate action and environmentally sustainable investments	1.1	Volume of EIB climate action investment supported (€ billion)**	57	91.9	115.1
		1.2	Volume of EIB environmental sustainability investment supported (€ billion)**	30.6	38.5	63.3
		1.3	Volume of EIF climate action and environmental sustainability investment supported (€ billion)	5.5	19.3	40.7
		1.4	Volume of Climate Awareness Bond- and Sustainability Awareness Bond-eligible signatures (€ billion)	22.0	21.7	33.1
2	Supporting investment that alleviates the socioeconomic consequences of transition and delivers a positive social impact*	2.1	Just transition investment supported (European Union) (€ billion)	-	-	-
		2.2	Global climate action and environmental sustainability investment supported with a positive social impact (gender) (€ billion)	-	-	-
3	Supporting low greenhouse gas emissions and climate-resilient development	3.1	Number of corporates screened into PATH framework that commit to improve their decarbonisation plans	N/A	5	6
		3.2	Number of corporates screened into PATH framework that commit to improve their resilience plans	N/A	1	6
		3.3	Number of financial intermediaries screened into PATH framework that commit to report according to the Task Force on Climate-related Financial Disclosures	N/A	48	56
		3.4	Number of corporate counterparts receiving advisory support to develop corporate decarbonisation and/or resilience plans	N/A	2	2
		3.5	Number of financial intermediaries supported in climate action and environmental sustainability lending through advisory assignments	10	13	12

* Reporting on indicators under point 2 anticipated from 2024, see paragraph 18, below.

** Many projects contribute to climate and environmental objectives (for example, reforestation may help sequester carbon and protect biodiversity). The total volume of climate action and environmentally sustainable investment supported is presented in Table 3.

*** Review of data in 2023 identified an isolated error in the 2022 investment supported figure published in the previous progress report that has now been corrected.

Table 3: EIB Group commitments 2021-2023

Commitment indicator		Figures		
		2021	2022	2023
1.1	Share of EIB finance dedicated to climate action and environmental sustainability	51%	58%	60%
1.2	Share of climate adaptation in EIB climate action finance	4.9%	5.4%	6.4%
1.3	Volume of climate action and environmental sustainability investment supported by the EIB Group (€ billion)*	75	190	354
1.4	Carbon footprint of EIB finance:			
	<ul style="list-style-type: none"> Absolute emissions in MtCO₂e/year Relative emissions in MtCO₂e/year 	2.3 -2.3	1.6 -4.6	1.2 -5.2

* Reported cumulatively to reflect ten-year cumulative target, therefore the figure presented in the 2022 results column is for 2021 and 2022. Review of data in 2023 identified an isolated error in the 2022 investment supported figure published in the previous progress report that has now been corrected.

Table 4: Project results (outputs and outcomes) 2021-2023

Roadmap focus area	Indicator type	Indicator*	Figures*		
			2021 (EIB)	2022 (EIB Group)	2023 (EIB Group)
1 Building greater resilience to climate change	Outcome	People with reduced exposure to drought risk (million)	0.3	11.2	1.5
	Outcome	People facing reduced risks of flooding (million)	0.6	0.2	1.5
	Output	Construction and rehabilitation of dykes, flood barriers and flood retention basins (kilometres)	230	60	20
	Output	Capacity of reservoirs or raw water storage facilities constructed or rehabilitated (cubic metres)	0.35	0.18	0.06
	Output	Capacity of retention structures constructed or rehabilitated (cubic metres)	5.36	0.29	0.02
2 Making buildings energy efficient	Outcome	Energy savings from EIB-financed green projects (million megawatt hours per year)	3.0	2.1	6.7
	Outcome	Smart energy meters installed (million)	2.1	2.4	13.0
	Output	Households in renovated energy-efficient housing units	163 000	93 500	171 000
3 Promoting clean energy	Output	Additional electricity generation capacity from renewable energy sources (megawatts)	11 300	19 700	31 500
	Outcome	Additional electricity produced from renewable energy sources (gigawatt hours per year)	27 900	38 800	67 200
	Output	Additional heat production capacity from renewable energy sources (megawatts)	18	61	450
	Outcome	Additional heat produced from renewable energy sources (gigawatt hours per year)	124	46	1 520
	Output	Power lines installed or upgraded (kilometres)	62 800	29 400	38 100
4 Smarter, more sustainable transport	Outcome	Additional annual trips made on EIB-financed public transport (million)	346	517	250
	Outcome	Additional annual demand for goods served by the rail freight services generated (million tonnes per year)	1.2	2.6	9.5
	Output	Tracks and lanes for trains, trams, metros and buses (kilometres)	530	2 500	2 900
	Output	Stations or stops constructed or upgraded	100	1 030	3 400
	Output	Vehicles and rolling stock purchased or rehabilitated	6 350	23 600	1 700
	Output	Electric vehicle charging, other alternative refuelling, stations	N/A	1 530	15 000
5 Striving for greener industry	Output	Patent applications	0	70	37
	Output	Patents granted	435	30	13
6 Eliminating pollution	Outcome	Wastewater treated to acceptable standards (million-person equivalent)	2.1	6.6	7.5

* Aggregated annual values are rounded down to provide a conservative estimate of overall anticipated project outputs and outcomes supported.

Indicator development in 2023

9. The framework also includes the possibility for additional indicators, studies and analyses to provide a comprehensive portrayal of progress. In addition, as the policy and regulatory environment relating to sustainable finance evolves through to 2025, the results framework and its indicators are subject to refinement. Recognising the importance of demonstrating climate results and impact, the multilateral development banks committed in their [COP28 joint statement](#) to develop a common approach for reporting climate results and impact, and continue close collaboration to harmonise and improve methodologies for climate indicators. This workstream will continue through 2024. The following sections provide an update on indicator development in the course of 2023, as also reflected in the indicator tables that follow.

EIB Group outputs: level 1 indicators

10. EIB Group output indicators (Table 1) reflect the direct results of EIB Group activities supporting the roadmap. They are structured according to the four roadmap workstreams and provide an indicative view of EIB Group activities by roadmap workstream. Indicators for the years 2021 to 2023 are listed in Table 1. EIB Group output indicators for volumes financed reflect levels of finance signed by the EIB and committed by the EIF in the reporting year.
11. The EIF has committed to raise the share of its annual funding dedicated to climate action and environmental sustainability to 16% in 2022, to 22% in 2023 and to 30% in 2024.¹ While the figures reported for EIB finance supporting climate action and environmental sustainability reflect EIB own-resource finance, EIF finance consists primarily of managed and advised resources.
12. EIB financial support for the delivery of the EU Just Transition Mechanism began at the end of 2022, as most of the territorial just transition plans were approved in the final quarter of the year. The implementation of reporting systems for related output indicators began in 2023.
13. The EIB also began tracking its just resilience finance in 2023. These volumes reflect climate adaptation finance (i) in countries beyond the European Union that are particularly vulnerable to the physical impacts of climate change (least developed countries, small island developing states and fragile states) and (ii) supporting groups particularly affected by the negative physical impacts of climate change (smallholders, women, young people, indigenous people, etc.).
14. The EIB also introduced the indicator “Number of corporate counterparties engaged in incompatible activities” in 2023, to reflect counterparties engaged in activities incompatible with the goals of the Paris Agreement (for example new investments in high-carbon oil production techniques or routine methane flaring) that fall under either the exception in paragraph 4.28 of the [EIB Group Paris Alignment for Counterparties \(PATH\) framework](#) (oil and gas companies financing low-carbon technologies with excellent innovation content) or the exception in paragraph 4.29 of the framework (companies seeking EIB finance for renewable energy projects and electric vehicle charging infrastructure, as long as they do not plan new greenfield investments in coal power plants or mines). Such counterparties are required to develop and publicly disclose decarbonisation and/or resilience plans that meet the PATH framework requirements.
15. EIB Group data availability continues to improve, and the scope of climate risk coverage—significantly increased for the 2023 reporting period and now includes also EIF risk portfolio and EIF other resources. 2022 figures have been restated for comparability purposes.
16. In 2023, the EIB Group conducted an in-depth review of its internal carbon footprint to improve calculation methodologies and data accuracy, and to correct errors. The Group also expanded its operational reporting boundary by adding scope 3 emission categories relating to emissions produced throughout the lifecycle of goods or services, of any type of energy consumed. As a result, and to consistently track the Group’s carbon footprint over time and enable meaningful comparisons, the Group

¹ The 2024 EIF target is based on the average level expected for the next three years and has been revised upwards from the initial 25% target set in 2021.

2022 internal carbon footprint was recalculated and restated with the same (revised) reporting perimeter and methodological parameters applied to calculate the 2023 carbon footprint. Details of the observed changes and their impact can be found in the [Carbon footprint report 2023](#).

EIB Group outcomes: level 2 indicators

17. EIB Group outcome indicators (Table 2) reflect the wider market outcomes resulting from direct EIB Group outputs and are also structured by roadmap workstream. These include levels of investment supported through EIB finance, including equity investments and other sources of debt finance.
18. As explained in relation to EIB Group output indicators in paragraph 12, reporting on EIB just transition finance began in 2023. Relevant outcome indicators reflecting EIB climate action and environmental sustainability investment supported with a positive social impact remain under consideration.

Climate bank commitments: level 3 indicators

19. The climate bank commitment indicators (Table 3) reflect progress on delivery of the three 2019 commitments in the roadmap, as well as the quantitative commitment made in the 2021 EIB Climate Adaptation Plan.
20. The carbon footprint of EIB finance consists of three components: “absolute emissions,” “carbon sequestration from forestry” and “relative emissions.” EIB-financed carbon sequestration from forestry was less than 0.1 MtCO₂e/year in the 2021-2023 period and is not therefore referenced in the results framework tables.

Project results: level 4 and 5 indicators

21. Project output indicators represent the estimated direct physical outputs of supported project investments, while project outcome indicators represent the wider benefits to local populations and society. Project output and outcome indicators are presented in Table 4, and Annex 1 provides further information on the contribution of EIB Group projects and investments signed during 2023 to the roadmap sectoral focus areas and the European Green Deal.
22. The level of information available at the time of appraisal depends on the finance product in question. The contribution of intermediated finance to project output and outcome metrics, for example, is challenging to predict, as the underlying investments supported are not identified at the time of appraisal.
23. Contributions from EIF-supported infrastructure funds to project-level results indicators have been reported since 2022. In 2023, EIF infrastructure fund investments assessed at appraisal stage contributed to a number of the indicators under roadmap focus areas 3 and 4, that is, “Promoting clean energy” and “Smarter, more sustainable transport,” respectively.
24. The EIB will continue to work in 2024 to develop indicators for the “Protecting nature” focus area, building on targets and objectives set by the 2022 Global Biodiversity Framework, as well as the recommendations from the Task Force on Nature-related Financial Disclosures.
25. The EIB Group also continues to work to provide more specific information on its contributions in extra focus areas, such as climate adaptation, eliminating pollution, farm to fork and sustainable cities and regions, including through its interaction with other multilateral development banks, and will report as indicators are determined and systems are established.

Annex 3 The EIB shadow cost of carbon

Background

1. The shadow cost of carbon is a technical parameter used in the economic appraisal of projects supported by the EIB. As explained in Annex 5 of the [EIB Group Climate Bank Roadmap 2021-2025](#),¹ the shadow cost of carbon estimates the cost at the margin of meeting a given emission reduction target for the economy as a whole. In other words, a new project resulting in additional carbon emissions requires costly abatement measures elsewhere in the economy.
2. Estimates of the shadow cost of carbon are drawn from large-scale climate and economic models. In the case of the roadmap, the shadow cost of carbon values are drawn from modelling work performed by a range of international scientific consortia in the context of the [IPCC's 2018 special report on global warming of 1.5°C](#), known as SR1.5.
3. In adopting these values, the roadmap stresses the importance of continuing to monitor emerging evidence relating to the shadow cost of carbon. New modelling results were collected and published by the IPCC in 2022 as part of its [Sixth Assessment Report](#), known as AR6. The need to conduct a full assessment of these new results was flagged in the [EIB Group 2022 Climate Bank Roadmap progress report](#).
4. In 2023, the EIB commissioned a review of the latest evidence, including the Sixth Assessment Report, which was conducted by the same academic team² that assisted the Bank at the time of drafting the Climate Bank Roadmap. The review proceeds in two steps. It starts by summarising the AR6 findings and then draws conclusions on what they mean for the current shadow cost of carbon values used by the EIB.

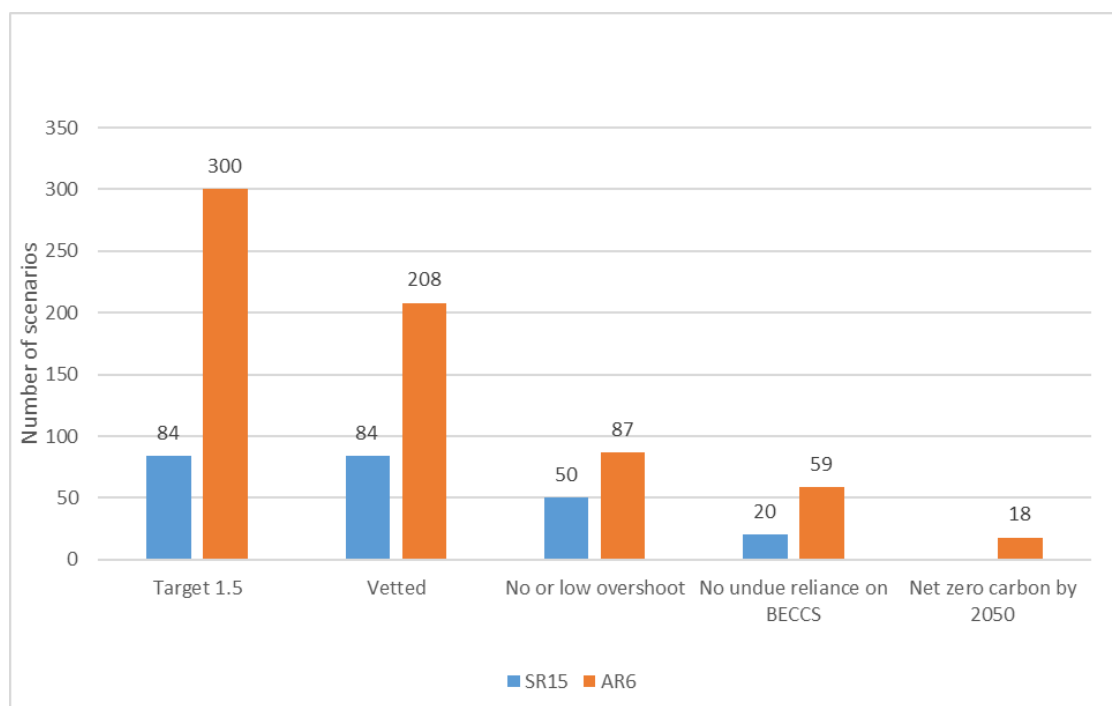
Findings of the Sixth Assessment Report

5. As part of the Sixth Assessment Report process, quantitative, model-based scenarios related to the mitigation of climate change were collected and assessed. The resulting database (or scenario ensemble) includes only scenarios that have been published in peer-reviewed journals. The scenario ensemble contains over 3 000 quantitative scenarios, derived from almost 200 unique modelling frameworks. The ensemble is available online in the [AR6 Scenario Explorer and Scenarios Database](#).
6. To analyse the scenario ensemble, the same set of filters was adopted as applied previously in the Climate Bank Roadmap with respect to the SR1.5 database. This involves identifying scenarios that (i) limit global warming by the end of the century to 1.5°C, (ii) have no or limited overshoot, and (iii) do not rely unduly on a particular negative emission technology — bioenergy with carbon capture and storage, not least given the resulting effects on global land use and food security.
7. Figure 1 shows the impact of applying this filtering process to the overall sample size — with respect to the analysis of the SR1.5 and AR6 databases. For example, at the time of drafting the Special Report on global warming of 1.5°C (blue bars), 84 scenarios consistent with the overall 1.5°C target were available, but only 50 achieved the target with no or limited overshoot, and only 20 of those did so without relying on bioenergy with carbon capture and storage.

¹ Annex 5 to the Climate Bank Roadmap performs three functions. First, it sets the shadow cost of carbon values to 2050, measured in 2016 euros. Second, it clarifies the concept of the shadow cost of carbon, that is, the **shadow** cost of limiting global warming to 1.5°C degrees by the end of the century, rather than the **social** cost (that is, damage) associated with emitting a tonne of carbon. Third, as described in Chapter 4 of [The economic appraisal of investment projects at the EIB](#), the Climate Bank Roadmap highlights how the shadow cost of carbon values are applied in economic appraisal in practice, covering projects in a wide variety of carbon regulatory settings across the globe. This annex focuses on the first issue only, that is, the best available evidence on the shadow cost of carbon parameter values.

² Knut Einar Rosendahl is a professor at the School of Economics and Business at the Norwegian University of Life Sciences and Paal Wangsness is a senior research economist at the Institute of Transport Economics in Norway.

Figure 1: The number of scenarios in the AR6 database³



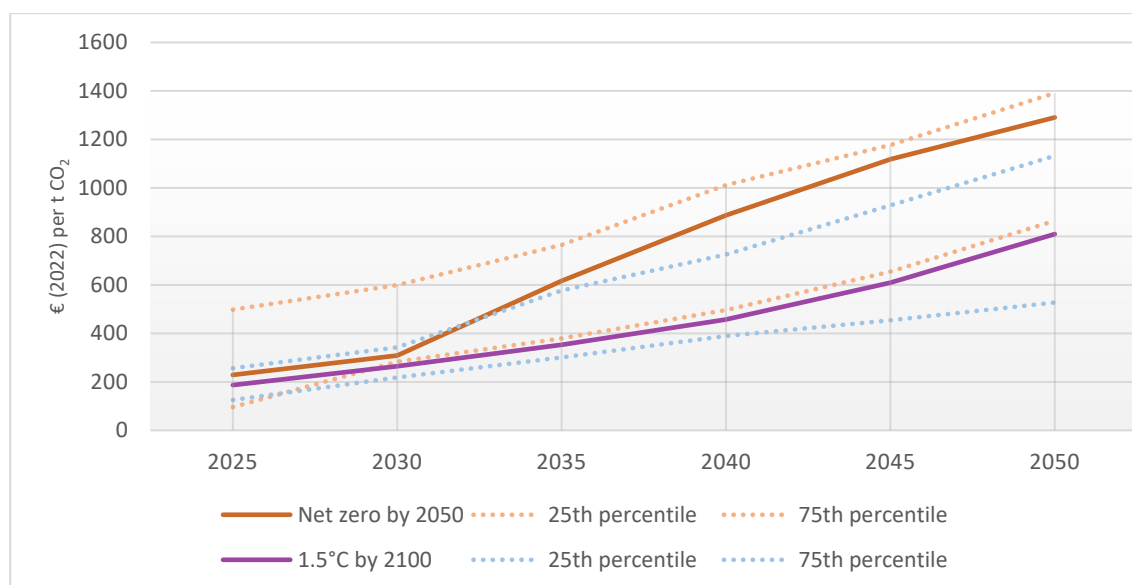
9. Several observations on the AR6 database are as follows. First, the AR6 database contains many more scenarios than the SR1.5 database and includes a significant vetting process. The Sixth Assessment Report contains 300 scenarios consistent with the 1.5°C target, considerably more than the 84 scenarios available at the time of drafting the Special Report on global warming of 1.5°C. Moreover, under the AR6 process, model outputs under any scenario are vetted against recent observed data, and models with unrealistic projections in the recent past are excluded. This important quality check removes nearly 100 scenarios from the AR6 database, including some with very high results. Since this vetting process was not carried out at the time of drafting the Special Report on global warming of 1.5°C, the AR6 scenarios are more reliable than those of the Special Report.
10. Second, in comparison with the Special Report on global warming of 1.5°C, relevant AR6 scenarios increasingly rely on negative net emissions in the second half of the century. Only 40% of vetted AR6 scenarios limit peak warming throughout the century to less than 1.6°C, that is, achieve the target with no or limited overshoot. This explains the large drop in the orange bar between the second and the third columns in Figure 1. The equivalent filter in the blue bar (at the time of drafting the Special Report) was less significant. That said, in absolute terms, the AR6 database still contains almost 90 scenarios meeting this filter — compared with 50 in the Special Report.
11. Third, AR6 scenarios seem less reliant on large-scale bioenergy with carbon capture and storage to deliver emission removals (in Figure 1 the orange bar drops less than the blue bar between the third and the fourth columns). This may reflect the mounting concerns about the implications of this technology for land use and global food security.
12. Finally, analysis of the AR6 database highlights the distinction between scenarios that limit global warming to 1.5°C by 2100 and those that, in addition, reduce carbon emissions to net zero by 2050. Only about

³ The figure shows the number of scenarios available in the SR1.5 database (blue) and AR6 database (orange) once several filters are applied. The first column (“Target 1.5”) depicts the number of scenarios that limit global temperature rise to 1.5°C by the end of the century. The second column (“Vetted”) shows the results of a vetting process under the Sixth Assessment Report to ensure that scenarios are consistent with recent observed data (this was not done with the SR1.5 database). The third column (“No or low overshoot”) excludes scenarios that overshoot the end-of-century target. The fourth column (“No undue reliance on BECCS”) excludes scenarios with undue reliance on bioenergy with carbon capture and storage (BECCS). Finally, the fifth column (“Net zero carbon by 2050”) shows the remaining scenarios in the AR6 database after also requiring net zero carbon by 2050.

one-third of filtered scenarios in the Sixth Assessment Report deliver net zero carbon by 2050. This distinction was not made at the time of drafting the Climate Bank Roadmap, for the SR1.5 database.

13. This choice of target — net zero carbon by 2050 vs. 1.5°C by the end of the century— has a significant impact on the shadow cost of carbon. Figure 2 shows the median results of the relevant scenarios. Meeting net zero carbon targets globally by 2050 (brown line) requires systematically higher carbon values beyond 2030 compared with meeting 1.5°C by the end of the century (blue line). As shown in Figure 1, the net zero carbon by 2050 scenario is a subset of 18 scenarios from the overall set of 59 scenarios limiting warming to 1.5°C by the end of the century.

Figure 2: AR6 median values — net zero carbon by 2050 and limiting warming to 1.5°C by 2100⁴



14. To conclude this section, the AR6 database includes many more scenarios than the SR1.5 database and benefits from a more robust vetting process. As a result, this helps build overall confidence in any results drawn from the Sixth Assessment Report over the Special Report on global warming of 1.5°C.
15. Since global greenhouse gas emissions have not yet peaked, some decarbonisation pathways modelled under the Special Report on global warming of 1.5°C are no longer feasible. This is reflected in the AR6 scenarios, which tend to reach net zero carbon about five years after the SR1.5 scenarios do⁵ and rely more on negative emission technologies in the second half of the century to meet the target. Within the relevant AR6 ensembles, the median shadow cost of carbon value for scenarios strictly reaching net zero carbon by 2050 is higher than those that meet 1.5°C by the end of the century.

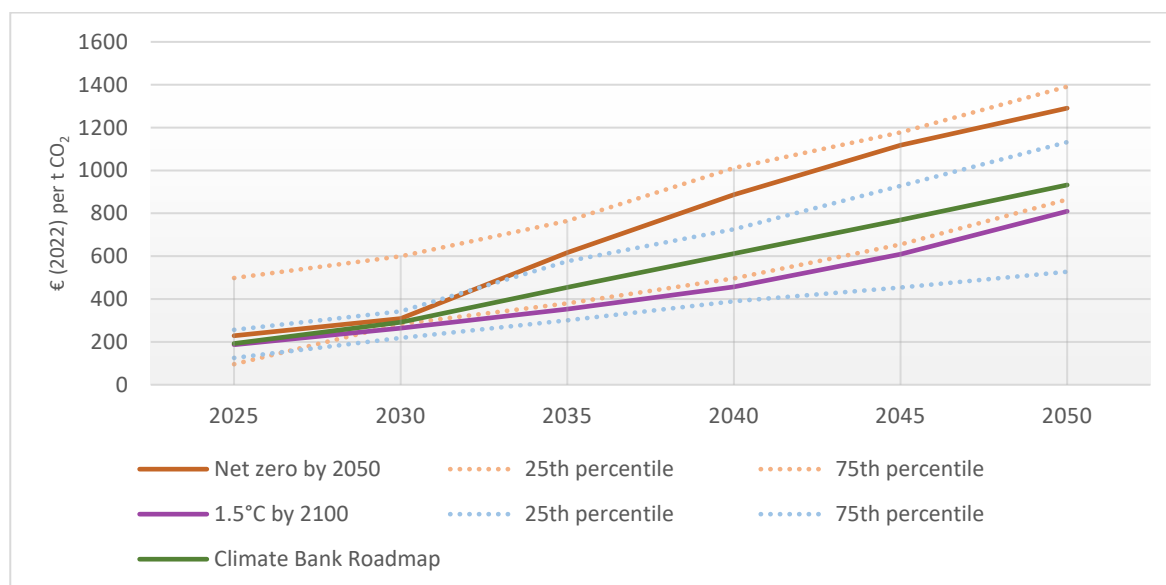
⁴ The blue line depicts the median values of the 59 scenarios that limit warming to 1.5°C by the end of the century. The brown line depicts a subset of 18 scenarios that are also consistent with net zero carbon emissions by 2050. Dotted lines indicate the respective interquartile range.

⁵ The Sixth Assessment Report is explicit on this point: “Emissions are on average higher in the Sixth Assessment Report in the near term (e.g. 2030) and the time of net zero CO₂ is later by about five years compared to the Special Report on global warming of 1.5°C” (IPCC [Sixth Assessment Report](#), Annex 3, page 1889).

Implications for the EIB shadow cost of carbon

16. The shadow cost of carbon used by the EIB, approved as part of the Climate Bank Roadmap, is derived from the SR1.5 database. Figure 3 shows the current EIB values in green — presented in 2022 euros — alongside the results from the Sixth Assessment Report under two targets: limiting warming to 1.5°C (blue) and reaching net zero carbon by 2050 (brown). Figure 3 shows that the current EIB values (green) fall within the range of AR6 results.

Figure 3: EIB values compared with AR6 results



17. The 2022 progress report⁶ noted that the EIB shadow cost of carbon (green in Figure 3) appears somewhat higher than the median values of AR6 scenarios limiting temperature increases to 1.5°C (blue in Figure 3). However, further investigation has highlighted that the EIB shadow cost of carbon is also somewhat lower than the subset of AR6 scenarios that achieve net zero carbon globally by 2050 (brown in Figure 3).
18. In light of these new findings, the following points are worth considering. First, the EIB shadow cost of carbon is an important reference point in European Commission guidance for climate proofing EU-funded projects and is used by the Bank to appraise projects, and by JASPERS to prepare projects for EU funding. Therefore, changes in the EIB shadow cost of carbon need to be introduced carefully and in a managed process, also for auditing purposes.
19. Second, the current EIB shadow cost of carbon values used to assess projects across the globe are nestled within the interquartile range of AR6 scenarios limiting temperature increase to 1.5°C (the global target) and net zero carbon by 2050 (the EU target). When recognising the relatively small number of scenarios used to identify the median values, the new evidence emerging from the Sixth Assessment Report is not considered. Sufficient to make a compelling case for adjusting the current EIB shadow cost of carbon values.
20. Third, this is an evolving field. It is important to continue the dialogue with key partners, such as the European Commission and France, which recently began reviewing the 2019 report [The value for climate action — A shadow price of carbon for evaluation of investments and public policies](#). The Bank will continue to collaborate closely with these partners and others at the Member State level on this important topic.
21. In the meantime, in line with the general principles set out in [The economic appraisal of investment projects at the EIB](#), the latest findings from the Sixth Assessment Report can be used by project economists

⁶ Paragraph 2.44 states: “The median values in 2030 and 2050 under warming scenario C1 appear to be somewhat lower — 12% and 32% respectively — than previous estimates reported in the IPCC SR1.5, which were very influential in deriving the EIB shadow cost of carbon.”

as part of sensitivity testing.⁷ In other words, when the economic case is marginal under the EIB shadow cost of carbon values, the EIB board's decision can be informed also by analysis using AR6 values. For example, in the case of a power-to-x project in Europe, in addition to presenting results under EIB shadow cost of carbon, an analyst may also present results using the net zero by 2050 scenario (in other words, the brown curve in Figure 3). By contrast, if, for example, a new road project in sub-Saharan Africa is not economically viable under the standard shadow cost of carbon values, the analyst may present results using the AR6 results limiting warming to 1.5°C by the end of the century (the blue curve in Figure 3).

22. To conclude, based on this in-depth review of the new AR6 database:

- The current EIB shadow cost of carbon values will be maintained, as approved under the Climate Bank Roadmap.
- We will continue to monitor emerging evidence and best practices, notably with respect to the European Commission and France and other Member States with regard to their own cost-benefit manuals.
- The results of the AR6 database remain nevertheless relevant for the economic assessment of EIB projects. In particular, the AR6 values may be used as a valid reference point for sensitivity analysis.

⁷ This may be material. Adopting the concept of the levelised cost of electricity from the energy economics field, the levelised cost of the EIB shadow cost of carbon (5%; 2025-2050) is €458. The equivalent value under the Sixth Assessment Report is €376 and €611 for limiting warming to 1.5°C and net zero carbon by 2050, that is, about 20% lower and 30% higher than the EIB shadow cost of carbon, respectively.

EIB Group 2023 Climate Bank Roadmap Progress Report

