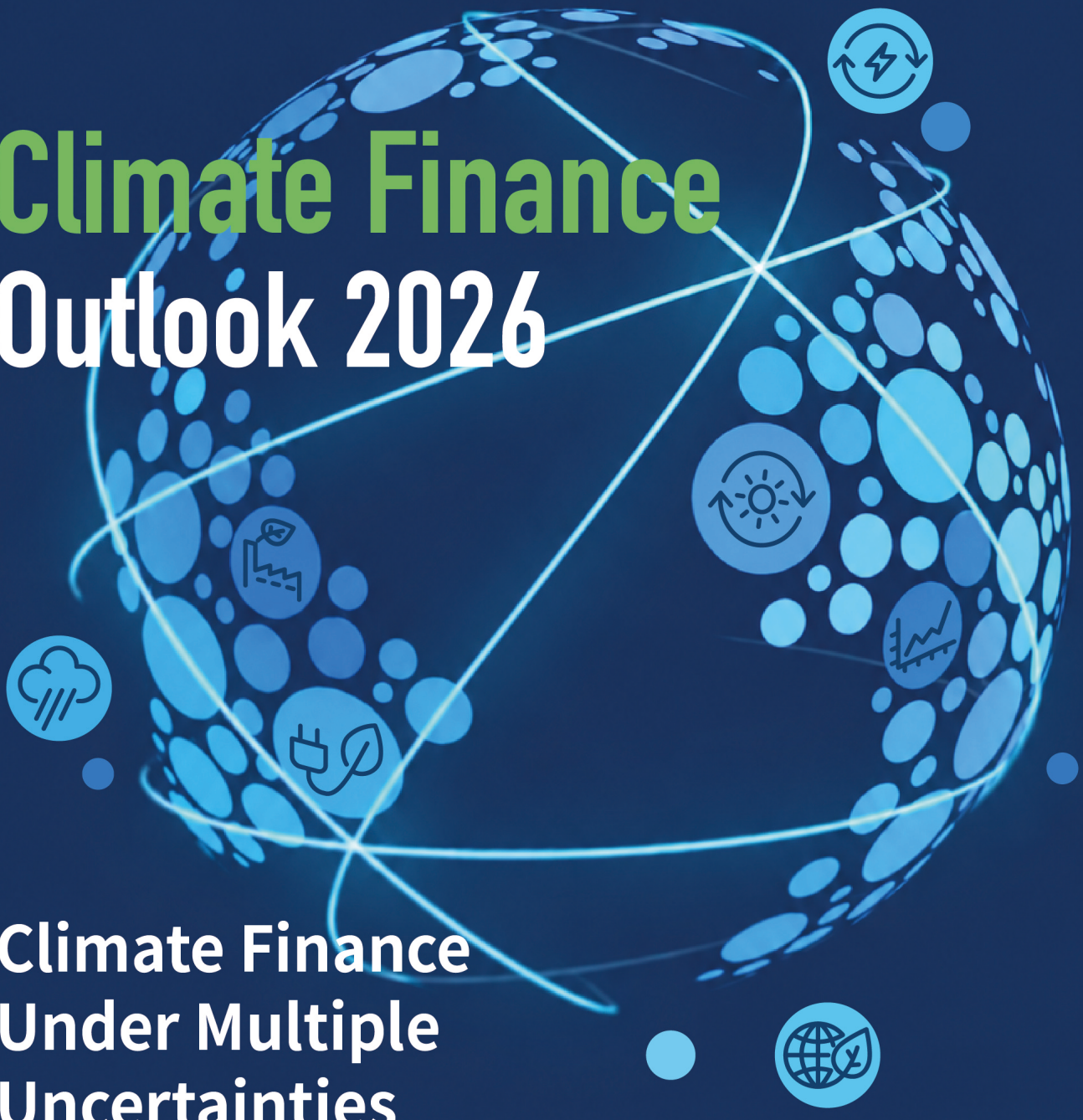
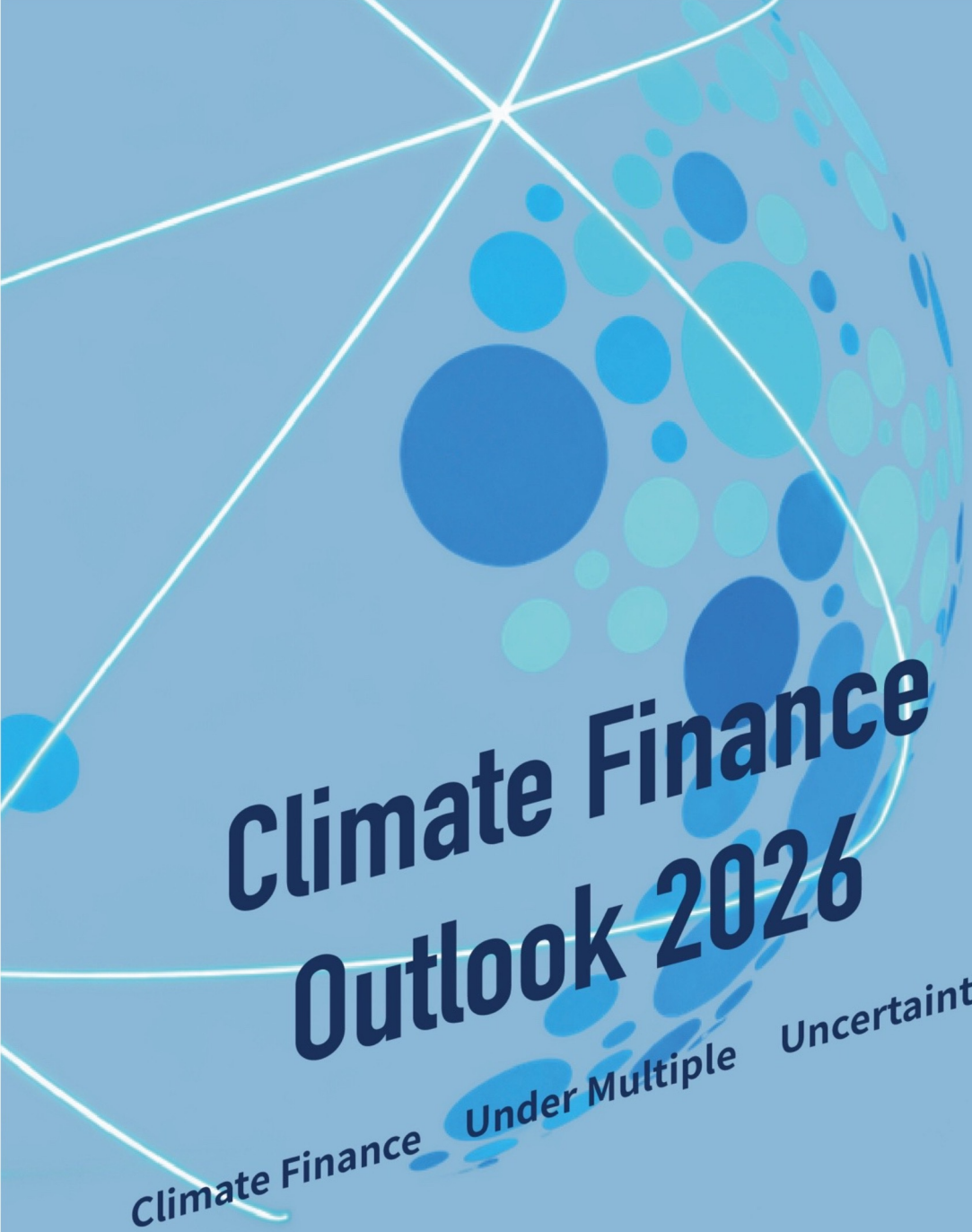
ISETS-EFN
Energy Finance Network



# Climate Finance Outlook 2026

## Climate Finance Under Multiple Uncertainties

ISETS Energy Finance Network / ECF30 Forum
Institute of Carbon Neutrality and Climate Finance



# Climate Finance Outlook 2026

## Climate Finance Under Multiple Uncertainties

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Climate Finance Under Multiple Uncertainties

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# Executive Summary

Climate Finance Outlook 2026 (the Outlook) draws on public data and information from international organizations, government agencies, financial institutions, and markets. It provides a comprehensive assessment of global climate finance across policy developments, capital mobilization, market performance, regional patterns, and constraints on capital allocation. In 2025, the number of global climate finance policies declined, while multilateral cooperation continued to advance. Public finance, carbon pricing revenues, and clean energy investment continued to grow, while the labelled bond market lost momentum. Development pathways across major economies diverged further. Supply-chain security, nature-related risks, and financing conditions played a greater role in shaping capital flows and access to project finance.




## Policy and Regulatory Trends

The number of climate finance policies worldwide declined overall, while multilateral cooperation continued to deepen. Policy documents submitted under the United Nations Framework Convention on Climate Change (UNFCCC) increased despite the broader decline, and sustainable finance policies shifted more rapidly toward coordinated coverage of the banking and non-bank financial sectors. The 30th Conference of the Parties (COP30) to the UNFCCC moved global climate finance from goal-setting toward implementation, with progress on the adaptation finance target and the operationalization of the Fund for Responding to Loss and Damage (FRLD). Carbon pricing mechanisms continued to expand in coverage, alongside higher carbon taxes and faster implementation of the Carbon Border Adjustment Mechanism (CBAM). Climate-related disclosures and risk regulation shifted from convergence toward divergence, while the rise in climate policy uncertainty was concentrated mainly in developing countries.




## Financial Market Developments

In 2025, global climate finance markets expanded overall but diverged markedly. Climate finance reported by both the World Bank Group (WBG) and the European Investment Bank (EIB) reached record highs, while the Asian Development Bank (ADB) achieved its 2030 target for the share of climate finance ahead of schedule. By contrast, the labelled bond market lost momentum. Annual issuance of Green, Social, Sustainability, and Sustainability-Linked bonds (GSS+) aligned with the Climate Bonds Initiative's (CBI) standards fell by 4.35%, although cumulative issuance still reached USD 6.75 trillion. Global carbon pricing revenues rose to USD 107.50 billion, driven mainly by emissions trading systems (ETSs). Explicit carbon pricing covered 27.90% of global greenhouse gas (GHG) emissions, while low-income countries remained uncovered. Clean energy investment exceeded USD 2 trillion for the first time, with China accounting for USD 646.18 billion.




## Regional Development Pathways

The United States (US), the European Union (EU), and China followed distinct policy and market pathways in climate finance. The US federal policy support weakened, alongside slower financing and investment activity. The EU's regulatory framework and public support remained resilient. Carbon market auction revenues and green financing by the EIB continued to grow, although environmental, social, and governance (ESG) bond issuance declined. In China, outstanding green loans and green bond issuance continued to increase. Assets under management in ESG mutual funds reached a record high, but new fund issuance declined. The national carbon market expanded to cover more emissions-intensive industries.




## Emerging Issues and Challenges

Energy security, nature-related risks, and macro-financial conditions are jointly reshaping the allocation of climate capital. Carbon border costs, critical mineral security, and geopolitical risks increasingly affect financing costs and access to finance for cross-border projects. Green investment is increasingly flowing to regions with stable policy expectations, strong manufacturing capacity, and secure supply chains. Disaster protection gaps, tighter insurance conditions, and shrinking fiscal space have raised financing barriers and costs for climate-vulnerable economies. Nature-related disclosure standards are bringing land, water, and biodiversity risks into project screening. Elevated interest rates and sovereign debt pressures continue to affect the valuation, financing structures, and refinancing capacity of long-term climate assets.




## Policy and Allocation Implications

In response to supply-chain risks, climate- and nature-related risks, and macro-financial constraints, climate finance allocation needs to adjust project screening, risk-sharing, and maturity management. Cross-border low-carbon projects need to verify whether carbon prices already paid in the country of origin are eligible for deduction and assess the concentration and delivery reliability of supply chains for critical inputs. Adaptation and resilience projects should quantify and verify loss-avoidance benefits and incorporate them into credit analysis. Parametric insurance and public risk-sharing arrangements can improve the terms of risk coverage for projects and ease financing constraints. Green asset screening needs to assess both emissions-reduction contributions and impacts on nature. Long-term climate asset management and the regulation of non-bank financial intermediation (NBFI) should strengthen look-through disclosure and valuation transparency. For emerging markets and early-stage technology projects, public guarantees, blended finance, and countercyclical liquidity arrangements can mitigate the impact of withdrawals of non-bank funding on long-term financing.



# INTRODUCTION

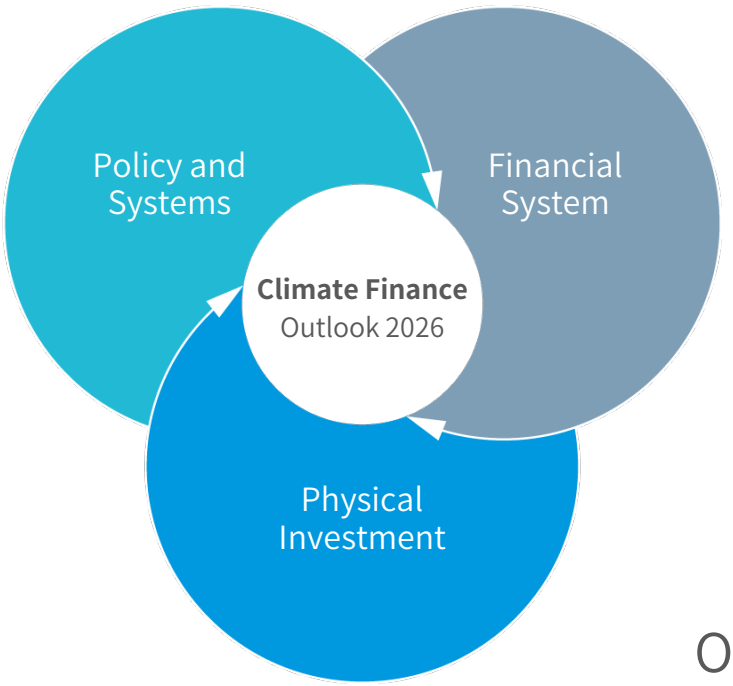
# 1.1 Purpose and Scope

The Outlook focuses on three core levels: policy and institutional frameworks, the financial system, and real-economy investment. It systematically analyses policy developments, finance mobilization, market activity, regional patterns, and constraints on capital allocation in global climate finance.

The Outlook retains the overall analytical framework of the Climate Finance Outlook 2025 while updating the annual data and comparative results. Building on this framework and incorporating newly available data sources, it expands the analysis to cover issues such as constraints on capital allocation. For earlier developments in global climate finance, see the previous edition.

The Outlook considers public funding, development finance, and private capital together. It analyses how finance mobilization, risk sharing, information disclosure, and price signals affect the allocation of climate finance. It also reviews the direction of policy support for mitigation, adaptation, loss and damage, and disaster risk management. Coverage includes multilateral development finance, labelled bonds, carbon pricing, clean energy investment, and major regional markets. The Outlook also analyses how supply chain security, physical risks, nature-related risks, interest rates, and debt conditions constrain the financing and allocation of climate assets.

On this basis, the Outlook assesses climate finance across three dimensions: scale, structure, and quality. Scale reflects changes in the number of policies, the volume of finance, and market size. Structure shows the sources of finance, financing instruments, investment areas, and regional distribution. Quality focuses on concessionality, financing costs, maturity matching, risk sharing, and access to finance. The Outlook is intended primarily for the public sector, development finance institutions, investors, and researchers. It provides a reference for aligning fiscal and financial policies with climate goals, planning financing arrangements and project pipelines, and assessing market opportunities and risks.




**Climate Finance** Outlook 2026

# 1.2 Basic Concepts



## Climate Finance

Climate finance refers to financial resources explicitly directed toward achieving climate objectives—including reducing GHG emissions, enhancing carbon sinks, and strengthening climate resilience (UNFCCC, 2024b). It encompasses public and private flows for mitigation and adaptation with a clear climate intent. Consistent with Climate Policy Initiative's (CPI) bottom-up methodology, this includes concessional and non-concessional lending, grants, equity, guarantees, and proceeds from labelled bonds. Secondary market trading, portfolio reallocations, and speculative activities are excluded (CPI, 2025).



## Mitigation, Adaptation, Loss and Damage, and Disaster Risk Management

Mitigation refers to human interventions to reduce emissions or enhance carbon sinks, including renewables deployment, energy efficiency, and carbon-sequestration technologies (IPCC, 2023). Adaptation describes adjustments in ecological, social, and economic systems to moderate or avoid climate-related harm (IPCC, 2022). Loss and damage covers irreversible impacts that occur when adaptation limits are exceeded, such as biodiversity loss, forced displacement, and ecosystem collapse (IPCC, 2022). Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk, and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses (UNDRR, 2017). Together, these pillars form the core operational framework for climate action in the Outlook.



## New Collective Quantified Goal on Climate Finance

In November 2024, Parties agreed on the New Collective Quantified Goal on Climate Finance (NCQG) at the 29th Conference of the Parties (COP29) to the UNFCCC in Baku, Azerbaijan. The NCQG sets a goal of at least USD 300 billion per year by 2035 for climate action in developing country Parties, with developed country Parties taking the lead. This finance may come from a wide variety of sources, including public and private, bilateral and multilateral, and alternative sources. The NCQG also calls on all actors to work together to scale up finance for developing country Parties from all public and private sources to at least USD 1.30 trillion per year by 2035 (UNFCCC, 2024a). The Outlook uses the NCQG as a key policy benchmark for tracking the scale, sources, and implementation of global climate finance.



## Multilateral and Public Finance

Multilateral and public finance channels form an important foundation of the global climate finance architecture. They mainly include the financial mechanism and related multilateral climate funds under the UNFCCC, multilateral development banks (MDBs), bilateral and national development finance institutions, and government finance. The UNFCCC-related funding architecture includes the Global Environment Facility (GEF), Green Climate Fund (GCF), Adaptation Fund (AF), Least Developed Countries Fund (LDCF), and Special Climate Change Fund (SCCF) (UNFCCC, 2024b). These funds and financial institutions support climate projects through grants, sovereign and non-sovereign loans, equity investment, guarantees, risk-sharing instruments, and technical assistance. They also strengthen project preparation, reduce financing risks, and mobilize private capital.



## Private Capital and Blended Finance

Private capital comprises market-based finance provided by corporations, commercial banks, institutional investors, investment funds, and households in support of climate goals. It is channelled into climate-related activities mainly through corporate capital expenditure, loans, bonds, equity investment, and insurance investment (CPI, 2025). Blended finance is a financing arrangement that uses development finance to mobilize additional commercial finance (OECD, 2025c). Public finance, concessional finance, or philanthropic capital may absorb or mitigate part of the risk through guarantees, first-loss capital, subordinated capital, project preparation support, and foreign exchange risk mitigation. These mechanisms improve project risk-return profiles and mobilize private capital. Blended finance can improve project bankability, but it cannot replace the public and highly concessional finance needed for adaptation, community resilience, and loss and damage.



## Carbon Pricing, Carbon Credits, and Carbon Border Adjustment

Explicit carbon pricing mainly takes the form of carbon taxes and ETSs. A carbon tax directly sets a tax rate per unit of emissions. ETSs set emissions limits and establish a price through allowance trading. Carbon credits are tradable units issued for emissions reductions or removals under government-administered, international, or independent mechanisms. A CBAM extends carbon costs to imported goods. The corresponding obligation is determined by the embedded emissions of the product and any carbon price already paid in the country of origin (WB, 2026b). Allowances, carbon credits, and border carbon costs differ in their legal status, how they are created, and how they are used.




## Labelled Bond Market

The labelled bond market mainly refers to the GSS+ market that conforms to the CBI data method. Green bonds fund projects with environmental benefits; social bonds target inclusive development; sustainability bonds combine both; and sustainability-linked bonds link financing terms to measurable sustainability performance targets (WB, 2025b).




## Clean Energy Investment

Clean energy investment includes capital expenditures to build low-emission energy systems and support transitions in end-use sectors. Under the International Energy Agency's (IEA) 2026 investment classification, it covers renewable power generation, nuclear power, grids, battery storage, low-emissions fuels, carbon capture, utilization and storage (CCUS), energy-efficiency upgrades, electric vehicles, and other end-use electrification (IEA, 2026). Clean energy investment reflects capital allocation to physical low-carbon assets. It is an important indicator of the extent to which climate finance translates into energy-system development and technology deployment.




## Climate-related Disclosures and Climate Risk Supervision

Climate-related disclosures provide information about climate-related risks and opportunities that could reasonably be expected to affect an entity's prospects. Their core content covers governance, strategy, risk management, and metrics and targets. Climate-related risks comprise physical and transition risks. Physical risks arise from extreme weather events or longer-term shifts in climate patterns. Transition risks arise from efforts to move to a lower-carbon economy and include policy, legal, technological, market, and reputational risks (IFRS Foundation, 2023). Climate risk supervision refers to the arrangements through which supervisors identify and assess climate-related financial risks and incorporate them into financial supervision. Key tools include supervisory reporting, public disclosure, scenario analysis, and stress testing (BCBS, 2022).




## Climate Policy Uncertainty

Climate policy uncertainty (CPU) refers to the risks arising from uncertainty over policy direction, implementation intensity, and long-term stability during the formulation and implementation of climate policies. The Global Climate Policy Uncertainty (GCPU) Index uses text analysis to measure such uncertainty based on the co-occurrence of three groups of keywords—climate, policy, and uncertainty—in news reports (Ji et al., 2024; Ma et al., 2024). The Outlook uses the index to compare trends at the global level, across major countries, and between developed and developing countries.




## Adaptation and Resilience Finance

Adaptation and resilience finance refers to funding that reduces climate hazards, exposure, and vulnerability and strengthens the capacity of economic, social, and infrastructure systems to withstand, absorb, and recover from climate shocks (IPCC, 2022; MDBs & IDFC, 2023). Some adaptation and resilience activities have strong public-good characteristics, and their benefits cannot be fully monetized. Public funding, grants, concessional finance, and multilateral development finance therefore play an important role (UNEP, 2025). Such finance may also use risk-sharing instruments, including guarantees, insurance, and disaster risk transfer.




## Nature-related Risks and Nature Finance

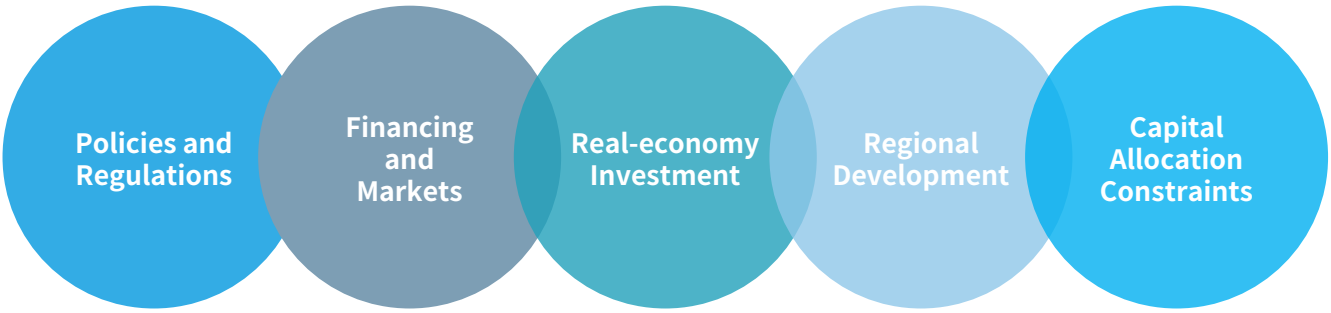
Nature-related risks arise from the ways in which economic activities depend on and affect nature, including land, water resources, biodiversity, and ecosystem services (TNFD, 2023). These risks can affect project cash flows and the cost of capital through permitting delays, compensation costs, supply chain disruptions, litigation, and asset impairment. Nature finance directs funding towards the conservation, sustainable use, and restoration of nature. It may use funds, nature credits, benefit-sharing arrangements, blended finance, and other mechanisms to support forest conservation and nature-based solutions (UNEP, 2023). Verification, the measurement of ecological outcomes, the allocation of returns, and cross-project comparability remain under development. The related financial instruments have yet to form a mature asset class governed by consistent standards (European Commission, 2025b).

# 1.3 Data Sources

The Outlook selects data on the basis of clearly identifiable sources, discernible statistical definitions, and verifiability. It establishes a data system covering policy and regulation, finance and markets, real-economy investment, regional development, and constraints on capital allocation. Depending on their statistical objectives and scope of application, the different types of data are used for identification of institutional arrangements, market measurement, investment analysis, and risk assessment.

Policy and regulatory data are used to identify the scale, structure, and direction of change in climate finance institutions (CCLW, 2026; SBFN, 2026). The Climate Change Laws of the World (CCLW) database provides classifications of climate policies by legal status, function, economic sector, and policy instrument. The Sustainable Banking and Finance Network (SBFN) is used to analyse sustainable-finance policies across banking and non-bank financial systems. UNFCCC and Conference of the Parties documents are used to track international climate finance goals and multilateral mechanisms (UNFCCC, 2025). Documents issued by the International Sustainability Standards Board (ISSB) and regulators in individual economies are used to analyse disclosure, risk management, and regulatory implementation. The Global Climate Risk Integration Database (GCRID) provides a CPU index (Ji et al., 2024; Ma et al., 2024).

Finance and market data are used to measure the scale, instruments, and allocation structure of public and private capital (CBI, 2026; EIB, 2026a; ICAP, 2026; WB, 2026b). Annual reports, climate-related disclosures, and institutional databases of MDBs provide data on climate- and green-finance commitments. Sustainable debt market data from the CBI are used to analyse the cumulative size, annual issuance, product composition, and regional distribution of GSS+. The World Bank (WB) Carbon Pricing Dashboard and related reports are used to assess carbon-pricing revenues, emissions coverage, and the issuance and retirement of carbon credits, while materials from the International Carbon Action Partnership (ICAP) provide supplementary information on the institutional and market features of ETSs.



Real-economy investment and regional data are used to examine the conversion of climate finance into low-carbon assets and differences across economies. The IEA's World Energy Investment report and accompanying datasets cover investment in clean power, nuclear energy, grids, storage, clean fuels, energy efficiency, and end-use electrification (IEA, 2026). Government statistics, financial regulatory materials, securities-market data, disclosures by public financial institutions, and carbon-market information from the US, the EU, and China are used to analyse green credit, labelled bonds, ESG funds, public development finance, and ETSs.

Supply-chain, physical-risk, and adaptation-finance data are used to assess climate-project costs, protection gaps, and access to finance (IEA, 2025a; Swiss Re Institute, 2020–2025; UNEP, 2025). European Commission and related government documents are used to analyse carbon border adjustment and carbon prices effectively paid. Data from the IEA, the Organisation for Economic Co-operation and Development (OECD), the World Trade Organization (WTO), and the WB's commodity databases are used to analyse critical minerals, supply-chain concentration, industrial policy, and energy prices. Data from Swiss Re, Marsh, and Howden are used to analyse disaster losses, insurance coverage, and underwriting conditions. Materials from the OECD, the United Nations Environment Programme (UNEP), and the United Nations Conference on Trade and Development (UNCTAD) are used to analyse adaptation-finance needs, public support, and fiscal space.

Nature-risk and macro-financial data are used to explain project screening, the cost of capital, and refinancing constraints (FSB, 2025; IFRS Foundation, 2026a, 2026b, 2026c; IMF, 2026; TNFD, 2026). Documents issued by the Taskforce on Nature-related Financial Disclosures (TNFD), the ISSB, the European Commission, and relevant funds and mechanisms are used to analyse nature-related disclosures, nature credits, forest finance, and benefit-sharing arrangements. Data from the International Monetary Fund (IMF), the WB, the Bank for International Settlements, the Financial Stability Board (FSB), and the European Systemic Risk Board (ESRB) are used to analyse policy rates, public debt, external debt, NBFI, and financial-stability risks.

# 1.4 Analytical Framework

The Outlook integrates cross-institutional data and multi-level analytical methods. By clearly defining the statistical boundaries of each data source, it enhances the transparency of the analytical process and the verifiability of the results. The report brings policy and regulation, public and private finance, financial markets, real-economy investment, and macro-financial conditions into a unified framework. It analyses the formation, allocation, and transmission of climate capital across dimensions including funding sources, instrument types, investment areas, regional distribution, and risk constraints.







## Multi-Source Data Integration

The Outlook combines policy and regulatory, finance and market, real-economy investment, regional development, and risk-constraint data to analyse climate finance from the perspectives of institutional signals, funding channels, market allocation, and project conditions. Policy documents and policy databases are used to identify institutional change. Multilateral development finance, labelled bond, and carbon-market data are used to measure financing channels and market instruments. Clean-energy investment and regional data are used to observe the allocation of capital to real assets. Macro-financial and risk indicators are used to explain changes in financing conditions and the cost of capital.

Data integration is based on the original definitions and applicable boundaries of each source. Indicators with comparable reporting periods, units of measurement, and classification methodologies are used for comparisons across years, regions, and instruments. Data that cannot be harmonized retain their original definitions and are presented separately; they are not aggregated where there is no methodological basis for doing so.




## Cross-Sector Analysis

Cross-sector analysis is used to identify linkages among policy and regulation, the financial system, and the real economy. Climate policy, carbon pricing, disclosure requirements, and risk regulation affect compliance costs, expected returns, and risk identification. Public finance and development finance improve financing conditions through loans, guarantees, concessional finance, and project preparation. The allocation of capital by banks, bond markets, carbon markets, and institutional investors is, in turn, linked to investment in clean energy, infrastructure, adaptation and resilience, and nature-related projects.

The Outlook further incorporates supply chains, energy security, physical risks, nature exposure, interest rates, and debt conditions into these transmission processes to explain why the same policy or financial instrument can produce different financing outcomes across industries and regions. Cross-sector analysis therefore compares not only the scale of finance, but also how policy signals translate into the cost of capital, access to finance, and constraints on project implementation.




## Multidimensional Comprehensive Assessment

The assessment of climate finance covers three dimensions: the scale of finance, allocation patterns, and financing effectiveness. The scale analysis measures changes in the number of policies, financing commitments, bond issuance, carbon-pricing revenues, and clean-energy investment to identify policy and market development trends. The structural analysis disaggregates data by funding source, financing channel, instrument type, investment area, and regional distribution to identify allocation patterns between public and private capital, mitigation and adaptation, and different regions.

The quality analysis further examines the degree of concessionality, financing costs, maturity and currency matching, risk sharing, private-capital mobilization, project financeability, and geographic accessibility. For adaptation, loss and damage, emerging markets, and long-duration infrastructure, nominal volumes alone do not adequately reflect actual support capacity. The cost of finance, debt implications, access conditions, and continuity of support jointly affect the conversion of finance into real investment. An integrated assessment of scale, structure, and quality helps distinguish growth in financing volumes from improvements in financing conditions and avoids substituting a single scale indicator for an assessment of climate finance effectiveness.




## Data Differences and Uncertainty

Data sources differ in conceptual definitions, coverage, reporting periods, currencies, and valuation methods. The annual number of documents included in policy databases reflects database coverage and classification outcomes; it does not directly represent policy stringency or implementation effectiveness. Multilateral development bank data are based on institutional disclosures. Institutions do not use fully consistent definitions of climate finance, green finance, or climate action and environmental sustainability finance, nor are their reporting currencies, fiscal years, and financing stages fully aligned. The figures are therefore not directly aggregated.

Market and regional data likewise differ in version, sample, and statistical methodology. Historical GSS+ data use the restated values in the latest CBI report. China adjusted the statistical scope and eligibility criteria for green loans from 2025; the relevant data are therefore used only to present the scale and structure for the current period and are not directly compared with earlier years. Indicators from regulatory statistics and market databases in different economies are used primarily to identify changes within each market rather than to compare market size directly across economies. Nature-related financing instruments remain at an early stage of development, and baselines, measurement of ecological outcomes, and return mechanisms have not yet been standardized. The relevant data are therefore not used to determine the overall size or maturity of the market. Missing values, non-comparable indicators, and funds or mechanisms that are still in the fundraising or start-up phase are not treated as zero, nor are target sizes used as substitutes for actual financial flows.




## Reproducibility

The Outlook seeks to improve data verifiability and the reproducibility of calculations. Figures and tables identify data sources, reporting periods, currencies, units of measurement, and necessary classification notes. Year-on-year changes, shares, and estimates are calculated from the listed source data. Authors' calculations and figures published by institutions are labelled separately. Where sample matching and market-value estimation are involved, the sample and calculation boundaries are specified. Where currency conversion is involved, the exchange-rate source and applicable date are stated.

Original databases, institutional disclosures, and accompanying reports provide the basis for verifying the analytical results. Where source institutions restate or update data, the corresponding version is used and the revision is explained. Where complete underlying data are unavailable, statistical scopes cannot be harmonized, or conclusions depend on specific assumptions, the limitations are stated explicitly in the main text and figure or table notes to avoid inference beyond the available evidence.

# 2

# POLICY AND REGULATORY ENVIRONMENT

# Highlights

Global climate finance policy activity declined in 2025. However, submissions to the UNFCCC increased despite the overall decline, while international cooperation continued to deepen.

The move towards coordinated policy coverage of the banking and non-bank financial sectors accelerated. A wider range of entities became involved in implementing sustainable finance policies.

COP30 moved global climate finance into the implementation phase. Support for adaptation finance and funding for loss and damage were further strengthened.

Carbon pricing mechanisms continued to expand worldwide. Increases in carbon tax rates and progress in CBAM emerged as important trends.

Global climate-related disclosure and climate risk regulation shifted from convergence to divergence. Differences in institutional approaches among major economies widened further.

The rise in CPU shifted towards developing countries. The global pattern of uncertainty showed structural divergence.

# 2.1 Global Climate Finance Policy

This section draws on data from the CCLW (2026) and the SBFN (2026) to compare changes in the number and structure of climate finance policies between 2024 and 2025. It focuses on distribution across continents, document type, policy function, economic sector, financial instrument, and industry coverage.

## 2.1.1 Overall Climate Policy

The number of global climate policies fell markedly in 2025. Figure 2-1 shows that the number of policies recorded in the CCLW database declined from 1123 in 2024 to 621 in 2025. This represented a decrease of 502 policies (44.70%). At the same time, COP30 continued to advance multilateral agendas, including the next round of Nationally Determined Contributions (NDCs), adaptation, and climate finance. However, geopolitical fragmentation made coordination in global climate governance more difficult (UNFCCC, 2025).

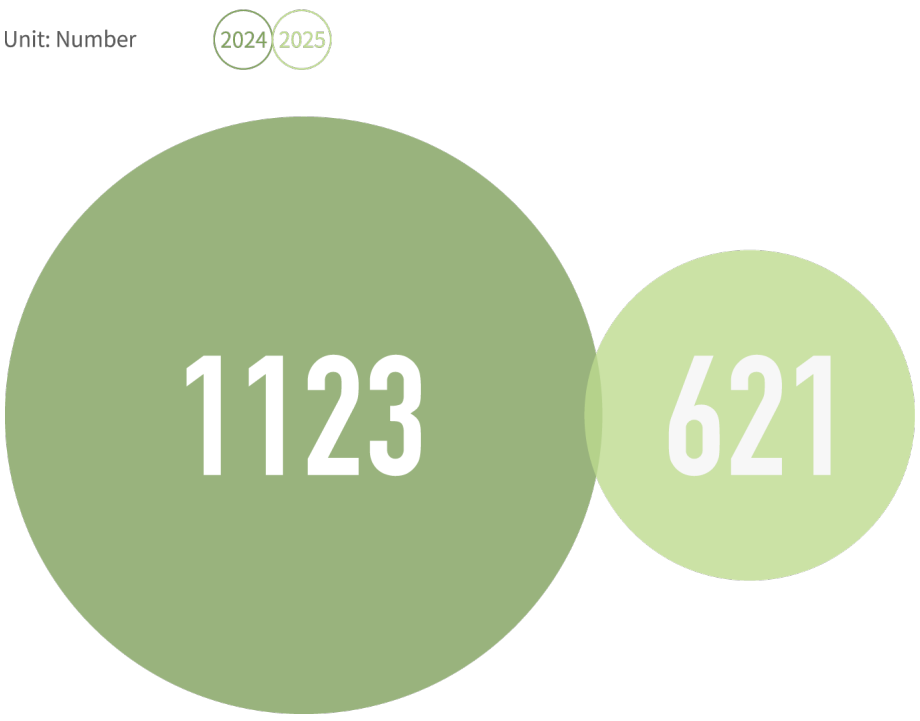



Figure 2-1. Annual Comparison of Global Climate Policies
(Source: Climate Change Laws of the World.)

## 2.1.2 Climate Finance Policy Trends

Climate finance policies are identified using the policy instrument categories in the CCLW database. These instruments include loans, insurance, tradable permits, direct investment, and feed-in tariffs. Sustainable finance policies are drawn from the SBFN database. Figure 2-2 shows that between 2024 and 2025, the number of climate finance policies fell from 454 to 322, while the number of sustainable finance policies declined from 140 to 105. The respective decreases were 29.07% and 25%, both smaller than the overall decline in global climate policies.

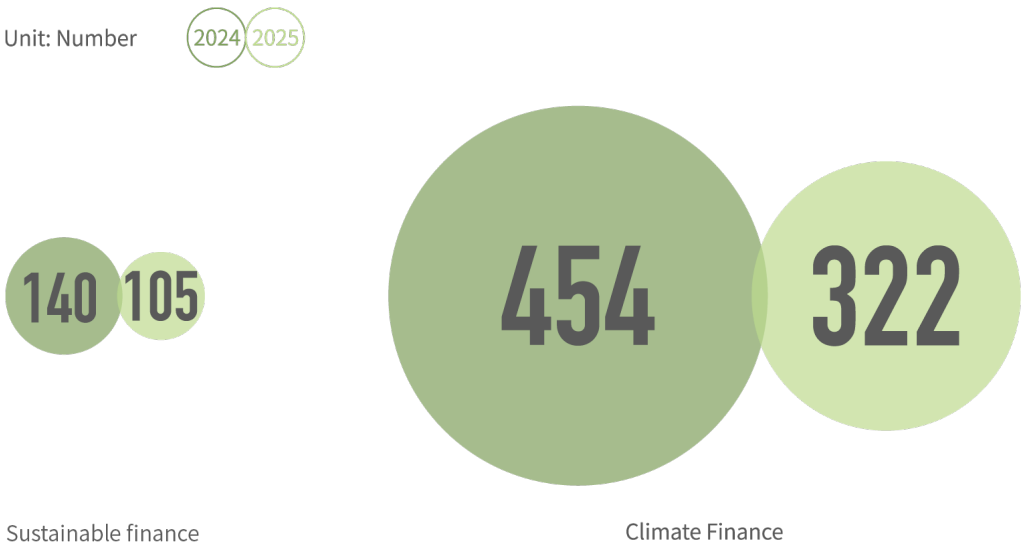



Figure 2-2. Annual Comparison of Global Climate Finance Policies
(Source: Climate Change Laws of the World, Sustainable Banking and Finance Network.)

From a regional perspective, changes in the number of climate finance policies varied markedly across continents. Figure 2-3 shows that Europe continued to record the largest number of policies, although the total fell from 172 to 102. South America registered the largest percentage decline, with the number falling from 56 to 17, or 69.64%. Asia changed little, with the count falling from 82 to 80.

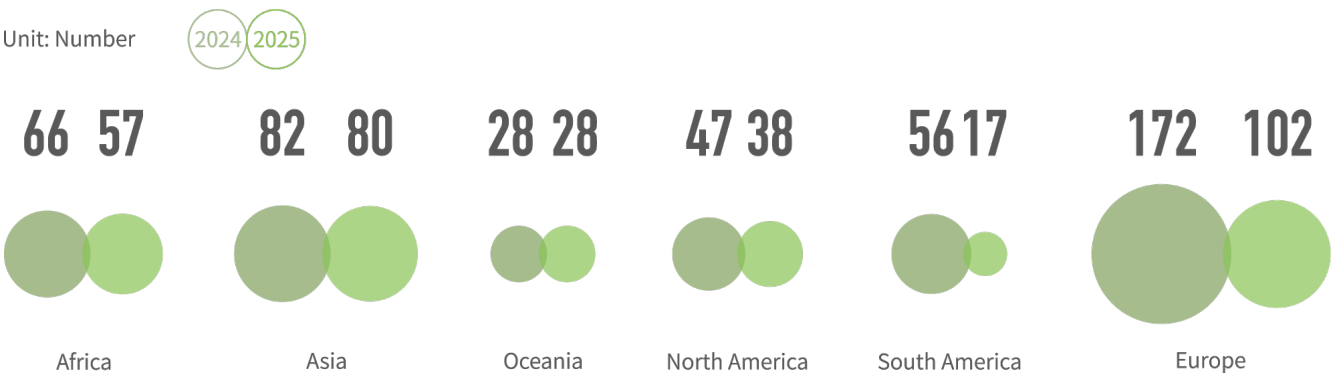



Figure 2-3. Annual Comparison of Climate Finance Policies by Continent
(Source: Climate Change Laws of the World.)

## 2.1.3 Climate Finance Policy Categories

### (1) Legal Status

A breakdown by legal status shows that the number of law and policy documents declined in 2025, while submissions under the UNFCCC continued to increase (Figure 2-4). Specifically, law documents fell from 56 to 11 and policy documents from 198 to 91, while UNFCCC submissions rose from 200 to 220.

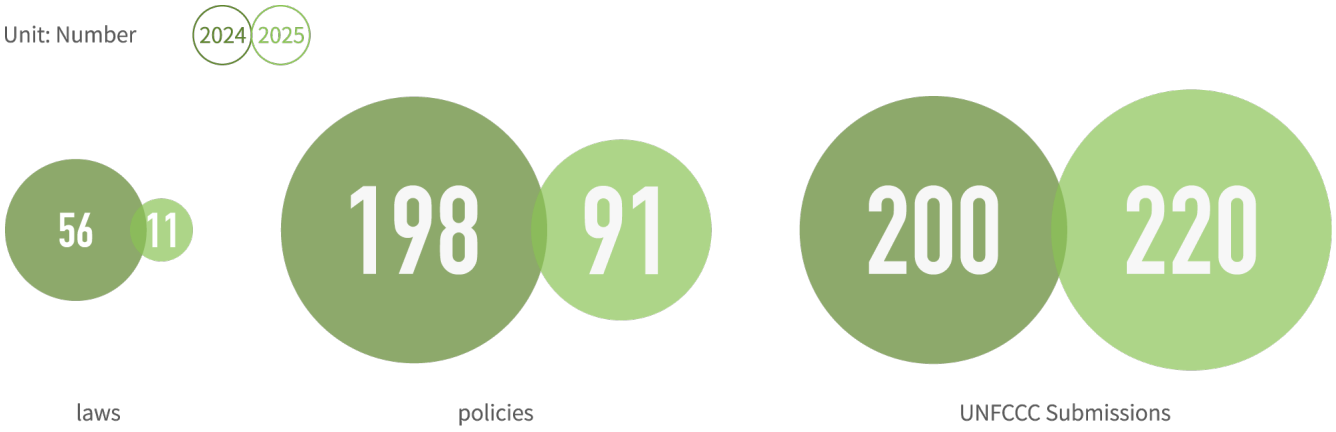



Figure 2-4. Annual Comparison of Climate Finance Policies by Legal Status
(Source: Climate Change Laws of the World.)

### (2) Functions

In terms of functional coverage, mitigation remained the main focus of climate finance policies. However, the numbers of policies addressing mitigation, adaptation, and disaster risk management all fell markedly in 2025. Figure 2-5(a) shows that mitigation policies declined from 215 to 86, adaptation policies from 100 to 44, and disaster risk management policies from 54 to 17. Policies addressing loss and damage remained unchanged at two.

Policies are classified as serving either a single function or multiple functions. Mitigation-only policies fell from 135 to 54, while multifunctional policies declined from 89 to 35. Both remained the main components of the functional structure of climate finance policies (Figure 2-5 b).




Figure 2-5. Annual Comparison of Climate Finance Policies by Function
(Source: Climate Change Laws of the World.
Note: Multiple functions are policy documents that serve two or more of the following four functions: adaptation, mitigation, disaster risk management, and loss and damage.)

## (3) Economic Sectors

Climate finance policy coverage across economic sectors declined overall, but finance and insurance remained the most widely covered sector. Figure 2-6(a) shows that the number of policies covering this sector fell from 264 to 183. Agriculture and energy supply also had relatively broad policy coverage, although their policy counts declined by 31 and 37, respectively.

Multi-sectoral policies remained the main form, with their number falling from 293 to 211. They accounted for about two-thirds of all climate finance policies in both years (Figure 2-6 b). Among single-sector policies, those targeting finance and insurance were the most numerous, followed by transport and logistics. Agriculture was one of the few single sectors to record an increase in the number of policies.

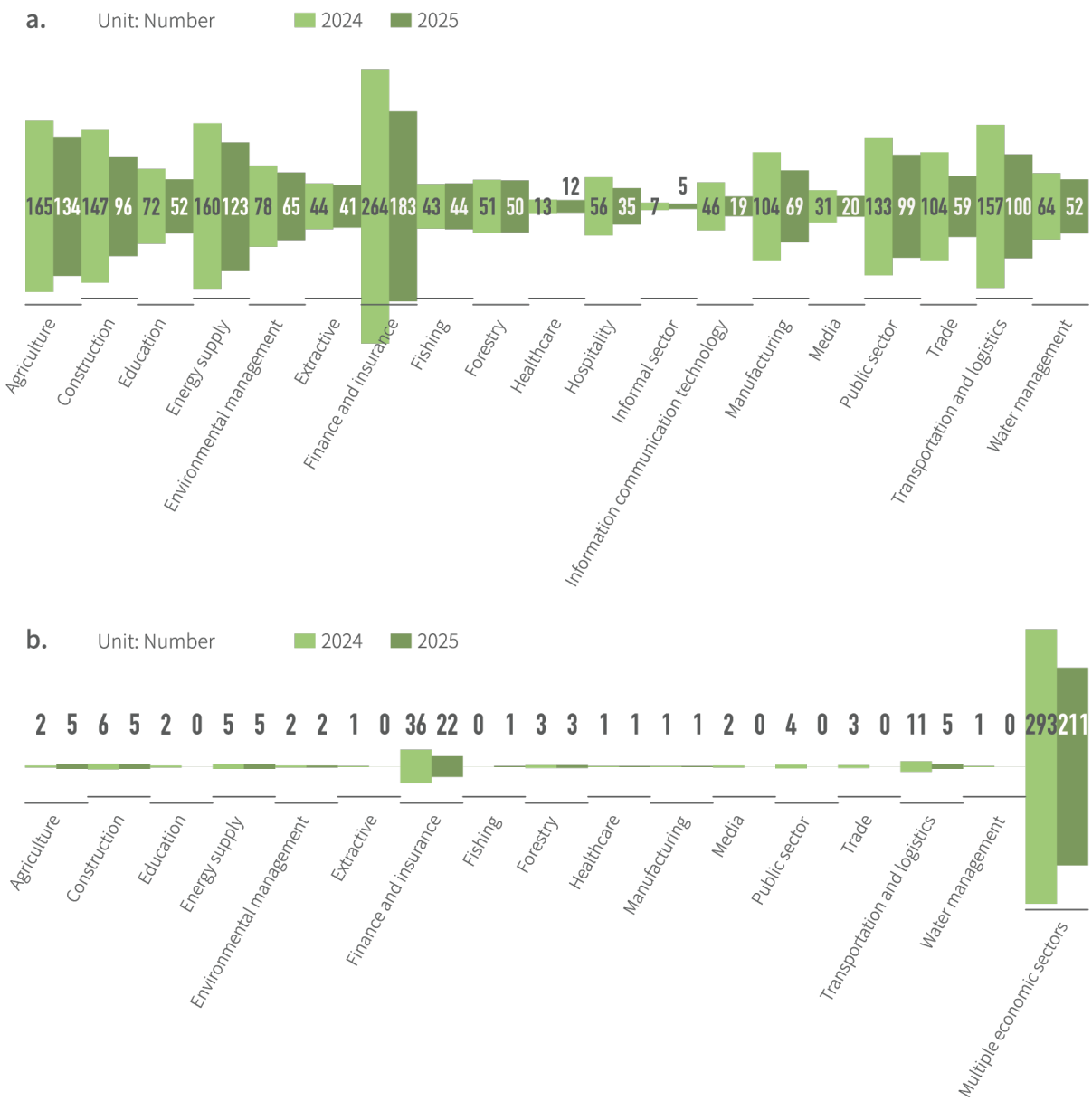



Figure 2-6. Annual Comparison of Climate Finance Policies by Economic Sector

(Source: Climate Change Laws of the World.

Note: Multiple economic sectors are policy documents that target two or more of the 19 economic sectors.)

## (4) Financial Instruments

Policy counts declined across all five financial instrument categories in 2025, while tradable permits remained the most widely used instrument. As shown in Figure 2-7(a), the number of policies using tradable permits fell from 285 to 221, a decline of 22.46%. This decrease was smaller than for any other instrument.

Combining multiple instruments remained the main approach to policy design (Figure 2-7 b). The number of policies using multiple instruments fell from 317 to 229, accounting for approximately 70% of all climate finance policies. Among single-instrument policies, those using tradable permits remained the most numerous.

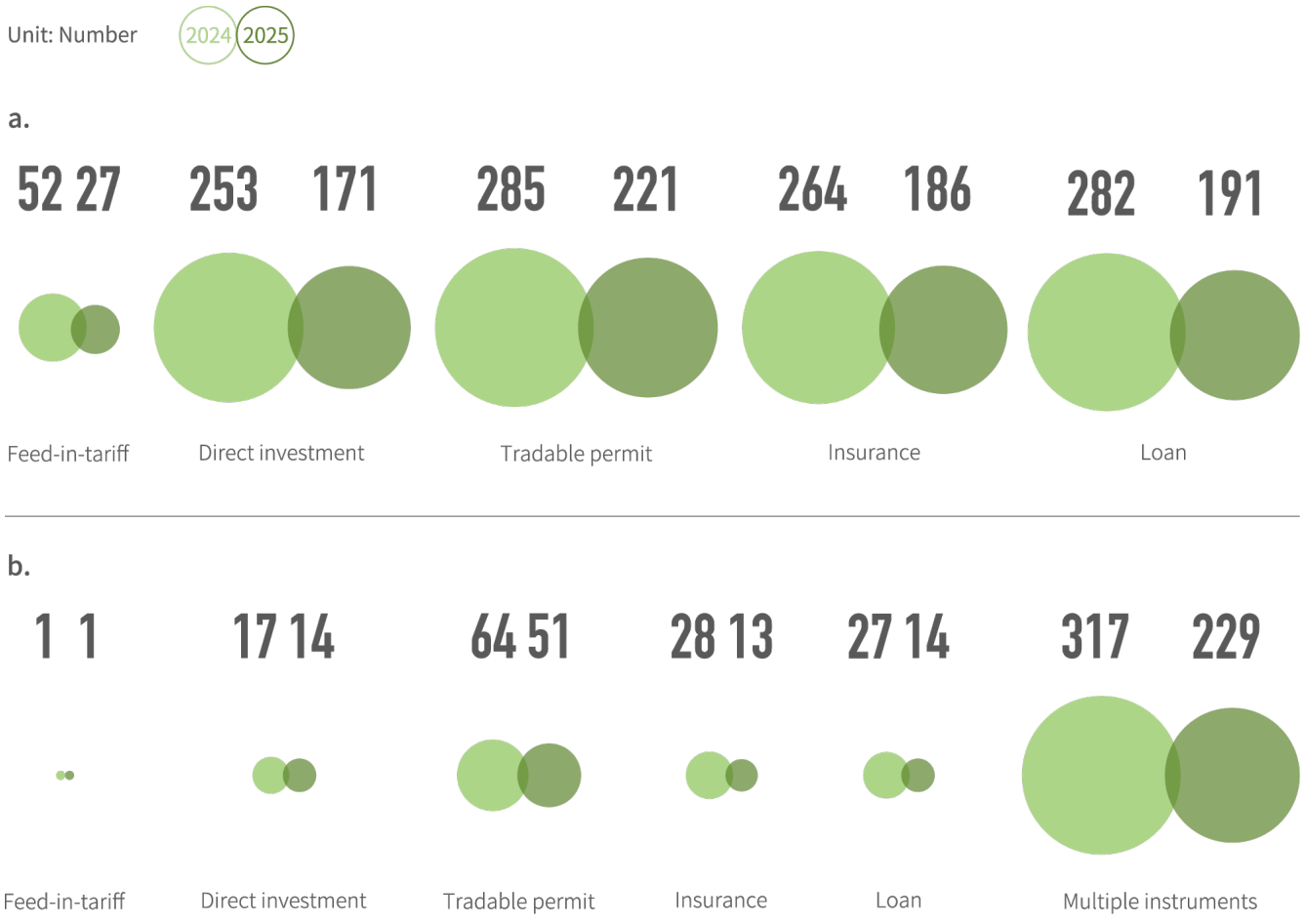



Figure 2-7. Annual Comparison of Climate Finance Policies by Instrument

(Source: Climate Change Laws of the World.

Note: Multiple instruments are policy documents that use two or more of the five policy instruments.)

## (5) Industry Coverage of Sustainable Finance Policies

In terms of industry coverage, the number of sustainable finance policies covering the banking sector remained higher than that covering the non-bank financial sector. Figure 2-8(a) shows that policies covering the banking sector fell from 83 to 76. Those covering the non-bank financial sector edged down from 54 to 53 and remained broadly stable.

In contrast to the overall decline, the number of policies covering both the banking and non-bank financial sectors increased (Figure 2-8 b). Policies covering only the banking sector fell from 50 to 35, while those covering only the non-bank financial sector declined from 21 to 12. Policies covering both sectors rose from 33 to 41, an increase of 24.24%, and became the largest coverage category in 2025.




Figure 2-8. Annual Comparison of Sustainable Finance Policies by Industry

(Source: Sustainable Banking and Finance Network.

Note: Both refers to policy documents that cover both the banking and non-bank financial sectors.)

# 2.2 Key Policies and Institutional Changes

## 2.2.1 The 30th Conference of the Parties

COP30 was held in Belém, Brazil, from November 10 to 21, 2025 (UNFCCC, 2025). The conference sought to expand climate finance support for developing countries, advance financing arrangements for loss and damage, reform the international financial system, reduce financing barriers, strengthen adaptation finance and concessional funding, and establish new climate finance work mechanisms. Despite these advances, the absence of the US, the rise of unilateralism, and intensifying geopolitical tensions also posed challenges to cooperation in global climate governance. The principal climate-finance-related institutional changes were as follows:




### The NCQG moved to implementation

COP30 reaffirmed the NCQG adopted at COP29. Under the goal, public and private sources should help scale climate finance for developing countries to at least USD 1.30 trillion per year by 2035. At the same time, developed countries should take the lead in providing and mobilizing at least USD 300 billion per year for developing countries. Compared with the previous collective target of USD 100 billion per year, the nominal amount is three times as large.

However, the USD 300 billion and USD 1.30 trillion figures do not represent financing obligations of the same nature. The former is a target for the provision and mobilization of climate finance led by developed countries, with relatively clear responsible parties. The latter is an overall mobilization target encompassing public finance from developed countries, MDBs lending, domestic resources in developing countries, private investment, and other sources.

COP30 moved the NCQG from target setting into implementation. The focus of discussion gradually shifted from “how much finance is needed” to “how it should be raised, allocated, and assessed for quality.” Future evaluations of international climate finance therefore cannot focus only on nominal aggregate volumes; they must also examine the shares of public finance, grants, and concessional loans, and whether the financing increases the debt burden of developing countries.

To implement the overall target of USD 1.30 trillion per year by 2035, the COP29 and COP30 presidencies jointly advanced the "Baku to Belém Roadmap to USD 1.30 Trillion." The roadmap seeks to bring financing sources at different levels into a unified framework, including fiscal resources from developed countries, MDBs financing, funding from international development finance institutions, private capital, domestic fiscal resources, and innovative financing instruments.




## Diversification of financing sources

The roadmap proposes increasing the lending capacity of MDBs, optimizing capital adequacy arrangements, developing guarantees and risk-sharing instruments, expanding local-currency financing, and reducing foreign-exchange risk to make climate projects in developing countries more attractive to private capital. It also stresses stronger project-preparation and financing-access capabilities in developing countries and fewer barriers arising from complex application procedures and high transaction costs. This reflects a shift in international climate finance from a model that traditionally relied mainly on fiscal appropriations from developed countries and multilateral funds toward blended finance involving public resources, multilateral development finance, and private capital. The role of public finance is also expanding from supplying project principal to absorbing early-stage risks, providing guarantees, improving projects' risk-return profiles, and mobilizing private capital.

COP30 further elevated the role of adaptation finance in the global climate finance system, proposing that adaptation finance be increased to at least three times its previous level by 2035 and urging developed countries to accelerate growth in adaptation finance for developing countries. The conference emphasized the need for more public finance, grants, and highly concessional loans for adaptation. Least developed countries, small island developing states, and other climate-vulnerable countries should receive priority because of their limited fiscal space, high financing costs, and severe exposure to climate change. Agriculture, water resources, coastal protection, public health, meteorological early-warning systems, and climate-resilient infrastructure are also likely to become major destinations for adaptation finance.




## The target of tripling adaptation finance

Nevertheless, the target leaves considerable room for interpretation and implementation. COP30 documents did not quantitatively allocate the tripling target among developed countries, nor did they establish a mandatory adaptation-finance sub-target independent of the NCQG. Because statistical definitions, baseline amounts, and financing attributes for "adaptation finance" may differ, institutions may also estimate the target's actual scale differently. Whether the target translates into genuinely new, predictable, and low-cost financial flows will therefore depend on subsequent accounting standards, allocation rules, and compliance-monitoring mechanisms.



## FRLD shifted to operational delivery

During COP30, the first funding application round for the FRLD was formally launched. The Board had previously approved the Barbados Implementation Modalities (BIM) and allocated USD 250 million in grant funding for the first interventions. Beginning December 15, 2025, developing countries were given six months to submit applications to the FRLD Board, with individual projects generally eligible to request USD 5 million to USD 20 million.

The BIM emphasize bottom-up, country-led, and country-owned financing arrangements. They support developing countries in addressing extreme weather events, sea-level rise, population displacement, post-disaster reconstruction and recovery, and non-economic losses. Funding may be accessed through national governments, MDBs, and entities accredited by the AF, GEF, or GCF, with priority arrangements for small island developing states and least developed countries.

This marks the Fund's transition from institutional establishment and rule negotiation to actual project implementation. For the first time, developing countries can apply through relatively concrete procedures for international finance dedicated specifically to loss and damage. This can strengthen recipient-country ownership and reduce problems such as lengthy project approval cycles and complex application procedures in traditional multilateral climate funds. However, the initial USD 250 million remains limited relative to the scale of losses and damages faced by developing countries and does not fundamentally resolve the shortage or unpredictability of funding.



## Two-year climate finance work programme

COP30 decided to establish a two-year climate finance work programme. Its scope includes the obligation of developed countries to provide financial resources under Article 9.1 of the Paris Agreement, considered within the broader framework of Article 9. The programme is co-chaired by one representative from a developed country and one from a developing country, creating a new institutional platform for continued discussion of public climate finance responsibilities, NCQG implementation progress, and financing structures.

The programme partly responds to developing-country concerns that developed countries' responsibility for public finance is being weakened. Although the NCQG emphasizes diversified financing sources, developing countries generally maintain that private capital, MDBs loans, and their own domestic resources cannot replace developed countries' financing obligations under the Paris Agreement. Including Article 9.1 in the follow-up work programme helps maintain political attention on developed-country public finance contributions.

The programme also signals the emergence of a more continuous tracking mechanism for climate finance negotiations. Previously, financing targets were often negotiated intensively at COPs without sufficient follow-up coordination. The new programme can support further discussion of financing volume, financing attributes, access channels, and transparency, and provide an institutional basis for assessing implementation of the core USD 300 billion target and the overall USD 1.30 trillion target. Because the programme itself does not immediately create new mandatory contribution obligations, however, its practical impact will depend on whether clear outputs, progress assessments, and accountability arrangements are established over the next two years. Without actionable annual pathways, country-level responsibilities, and indicators of financing quality, it may remain primarily a forum for dialogue and coordination.

## 2.2.2 Carbon Pricing Mechanisms

### (1) Global ETSs

Against a backdrop of constrained fiscal space and shifting political conditions, ETSs offer policy flexibility and economic efficiency. They can balance emissions-reduction goals with industrial competitiveness while generating stable fiscal revenue to finance climate transitions. As of April 2026, operating ETSs covered about 26% of global GHG emissions; their jurisdictions accounted for 63% of global Gross Domestic Product (GDP) and more than half of the world's population. ETS revenues reached a record of about USD 80 billion in 2025, increasingly serving as an important fiscal tool for governments to raise climate finance, advance clean-energy transitions, and ease transition pressures on households and industries. Figure 2-9 shows that the number of implemented ETSs worldwide rose to 40 by April 2026, up by two from 38 in 2025, reflecting the continuing steady expansion of ETS coverage.

Unit: Number

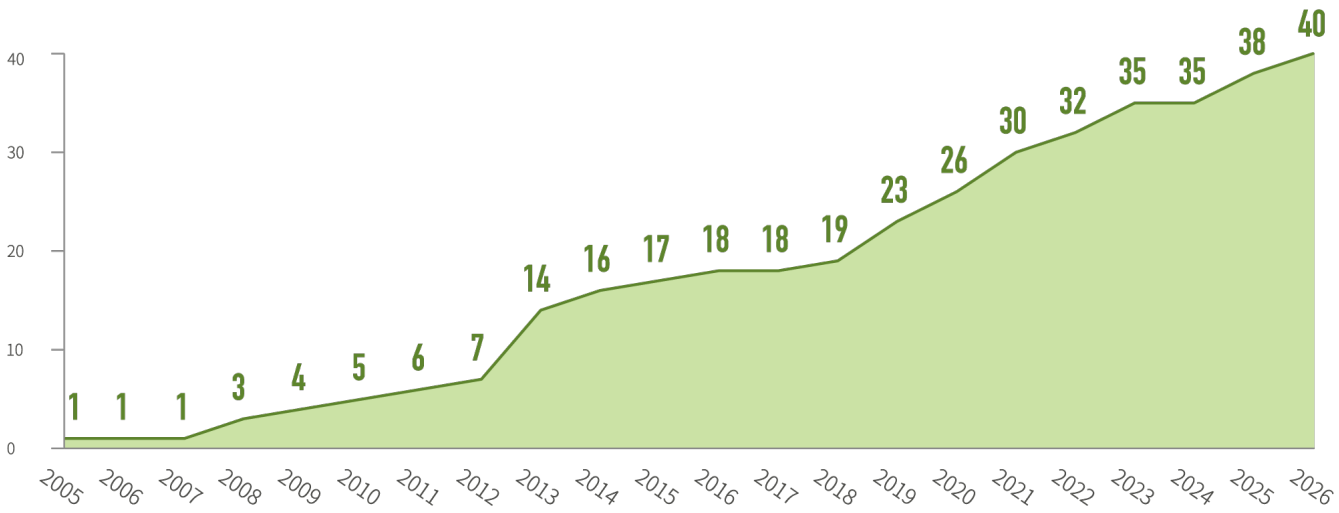



Figure 2-9. Trend in the Number of Implemented ETSs Worldwide
(Source: World Bank.)

Japan and India added two national ETSs in 2026. Japan moved from a voluntary mechanism to mandatory compliance, while India established a carbon credit trading system centred on emissions-intensity controls for industrial sectors. New systems generally begin with free allowances and intensity benchmarks, then gradually introduce auctions, broaden sectoral coverage, and improve market-stabilization mechanisms. This reflects a common approach among emerging economies: using gradual institutional design to reduce corporate transition pressures and cultivate carbon markets.

Existing ETSs are progressively tightening emissions reductions, expanding coverage, and strengthening policy coordination. China expanded coverage to steel, cement, and aluminium smelting and is shifting from intensity-based control toward an absolute cap. Korea increased the auctioning share for the power sector. The United Kingdom and the EU further incorporated maritime transport, waste, buildings, and road transport. California and the Regional Greenhouse Gas Initiative (RGGI) strengthened constraints by tightening emissions caps, improving market-stability mechanisms, and standardizing revenue use. Overall, the global focus has shifted from increasing the number of ETSs toward tightening allowance supply, expanding paid allocation, broadening sectoral coverage, and improving alignment with carbon border adjustment, just transition, and green investment policies.

## (2) Carbon tax

The OECD report Effective Carbon Rates 2025 notes that among 52 countries applying carbon pricing instruments, 43 use ETSs, 32 operate carbon taxes, and 23 use both. Globally, effective carbon tax rates generally remain low and far below the incentive levels needed to achieve the goals of the Paris Agreement (OECD, 2025b). Although ETS expansion has outpaced carbon tax in recent years, the absolute number of carbon tax mechanisms continues to rise steadily. Figure 2-10 shows that implemented carbon tax mechanisms increased from 39 in 2024 to 46 in 2025, an increase of about 18% and the most significant annual rise in recent years; by April 2026, the number had increased further to 47.

Since the second half of 2025, global carbon tax development has shown two main features: continued rate increases in countries with existing carbon taxes, and the EU CBAM entering a new implementation phase, representing a major extension of carbon tax from a domestic policy instrument into international trade rules.

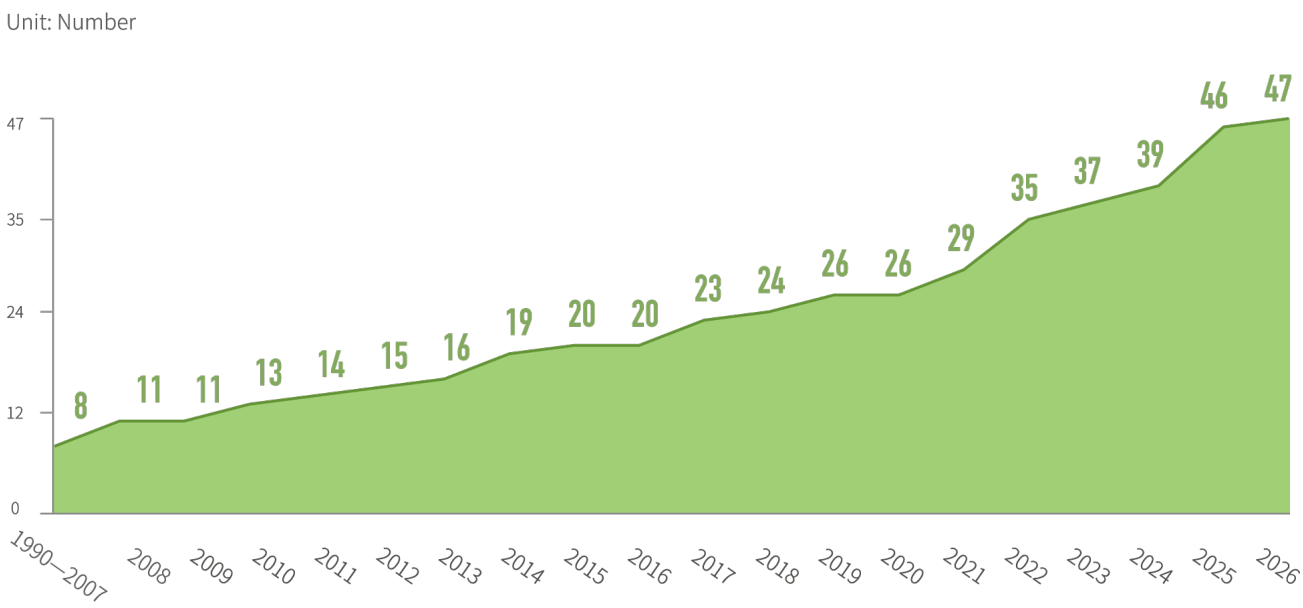



Figure 2-10. Trend in the Number of Implemented Carbon Tax Mechanisms Worldwide

(Source: World Bank.)

Carbon tax systems generally show trends toward higher rates, reform of offset mechanisms, stronger linkage with trade policy, and greater use of combined carbon pricing instruments. South Africa's carbon tax entered its second phase in 2026, with the nominal rate rising by about 31% alongside adjustments to tax allowances and carbon offset rules. Singapore increased its carbon tax from SGD 25 to SGD 45 per tonne, further strengthening the carbon price signal in Southeast Asia. Colombia and other countries are establishing more stable rate-escalation mechanisms, while Chile is gradually moving from a standalone carbon tax to a hybrid system combining a carbon tax and an ETS. The United Kingdom and the EU are extending carbon pricing from domestic emissions policy to imported goods and international trade through CBAM.

## 2.2.3 Development of Financing Mechanisms

Since 2025, global climate financing mechanisms have become more refined on the basis of existing multilateral climate funds and development finance systems. They are no longer limited to traditional grants or sovereign loans, but use guarantees, blended finance, debt swaps, foreign-exchange risk management, asset repackaging, results-based payments, and other approaches to address financing bottlenecks in developing countries' energy transitions, adaptation and resilience, forest conservation, infrastructure development, and public financial management.

Table 2-1. Climate Financing Mechanisms Introduced in 2025

| Project Name | Purpose and Scale | Implementation Status |
|---|---|---|
| Credit Guarantee Vehicle (CGV) (South Africa) | A joint initiative of the South African government and the WBG designed to mobilize private capital for high-voltage transmission infrastructure. Initial capitalization target: USD 500 million, with the South African Treasury expected to provide about 20% as first-loss capital. | Proposed in 2025; expected to launch in 2026. |
| Pro-Congo Initiative & Central African Forest Initiative (CAFI) (Africa) | Supports nature-positive, climate-resilient micro, small, and medium-sized enterprises in the Congo Basin through the Pro-Congo Initiative. Initial funding: USD 15 million; targeted total investment: USD 30 million. It prioritizes green business models that do not depend on deforestation and uses blended finance to reduce investment risk. | Announced in May 2025. |
| ClimateWorks Adaptation & Resilience Fund (Global) | A EUR 50 million adaptation and resilience fund involving more than 50 philanthropic organizations. It supports locally led adaptation solutions for vulnerable communities in low- and middle-income countries (LMICs), including projects addressing health and economic impacts, with particular attention to informal workers. | Launched and operational in 2025. |
| Seville Debt Swaps Hub (Global) | Promotes debt-for-development swaps that convert portions of sovereign debt into sustainable development investment. Spain committed EUR 3 million for technical assistance, knowledge sharing, and capacity building to help countries ease debt pressures and support Sustainable Development Goals (SDGs) investment. | Launched in July 2025. |

| Project Name | Purpose and Scale | Implementation Status |
|---|---|---|
| London Coalition on Sustainable Sovereign Debt (Global) | Promotes innovation in sustainable sovereign debt finance for developing economies. Priorities include natural-disaster clauses, majority-voting mechanisms, greater transparency, orderly debt restructuring, and stronger participation by private lenders. | Launched and operational in June 2025. |
| Pacific Resilience Facility (PRF) (Pacific Island Countries) | The first climate and disaster resilience financing facility led, owned, and managed by the Pacific region. It has two grant pillars—Climate and Disaster Resilience and Social and Community Resilience. Initial pledges reached USD 159 million, with a target capitalization of USD 500 million by 2026. | Agreement signed in September 2025; first call for community projects planned for 2026. |
| Emerging Market and Developing Economies (EMDEs) Investor Taskforce (Global) | An industry-led initiative convened jointly by the Foreign, Commonwealth & Development Office (FCDO) and Treasury ministers, bringing together about 15 major financial services institutions to increase investment in EMDEs. | Launched and operational in May 2025. |
| ReInvest+ (Latin America) | Seeks to transform local green-project loan assets into investment-grade securities to attract international institutional investors. Relevant loans in Latin America and the Caribbean total about USD 500 billion, with global potential possibly exceeding USD 3 trillion. | Officially launched on September 23, 2025. |
| Tropical Forest Forever Facility (TFFF) (Global) | A proposed long-term financing mechanism for tropical forest conservation. It plans to raise USD 25 billion in subordinated capital from governments and philanthropies to mobilize USD 100 billion in private investment, for a total of USD 125 billion. At least 20% of disbursements would go to Indigenous Peoples and local communities. | Launched at COP30 in Belém in November 2025. |
| Emerging Market Climate Investment Compact (EMCIC) Guarantee Facility (Global) | An EMCIC guarantee mechanism designed by the Atlantic Council to reduce investment risks in clean-energy infrastructure and nature-based solutions. It could potentially mobilize up to USD 500 billion over ten years. | Initial funding commitments are to be sought in 2026. |
| International Finance Corporation (IFC) Frontier Opportunities Fund (FOF) (Global) | An IFC-led blended finance fund intended to close early-stage financing gaps for climate solutions in developing countries and emerging markets. IFC committed USD 100 million of net income as anchor capital. Initial target size: USD 500 million; long-term target: USD 1 billion. | Launched in February 2025; currently in the resource-mobilization stage. |

(Source: Constructed by the authors.)

Overall, new climate financing initiatives in 2025 reveal three prominent trends. First, the focus is shifting from "capital provision" to "risk sharing," using guarantees, foreign-exchange liquidity instruments, credit enhancement, and project-preparation mechanisms to lower barriers to private capital. Second, initiatives are moving from single climate objectives toward coordination across climate, nature, debt, and development, with forest conservation, debt swaps, and public financial management becoming important areas. Third, greater emphasis is placed on regional and local leadership: mechanisms in the Pacific, Africa, and Latin America all stress local needs, community participation, and institutional capacity building. Collectively, these initiatives are moving global climate finance beyond traditional public financing systems toward a more diversified, replicable, leverageable, and public-private collaborative model.

In terms of implementing institutions, climate financing capacity continues to concentrate in MDBs and their affiliated fund platforms. WBG development finance with climate co-benefits reached USD 50.80 billion in 2025, up from USD 42.60 billion in 2024. This indicates that, even as new mechanisms emerge, large-scale delivery still depends mainly on the MDBs, national development finance institutions, and fund implementing entities.

On the first day of COP30 in November 2025, MDBs reaffirmed the commitment in their COP29 joint statement: by 2030, they would provide USD 120 billion in annual climate finance to LMICs, including USD 42 billion for adaptation, and USD 50 billion to high-income countries (HICs). Relative to the 2019 baseline, direct climate finance would increase by 25% and private-sector mobilization would double.

## 2.2.4 Disclosure and Supervision Policies

### (1) Climate Information Disclosure System

#### ① New developments in disclosure systems of international organizations

The ISSB disclosure system is moving from standard setting toward a new phase that combines implementation support with expansion into additional topics. On the one hand, the ISSB continues technical revisions to GHG emissions disclosure requirements and industry-based guidance under International Financial Reporting Standards (IFRS) S2 to improve operability, global applicability, and alignment with industry practice. On the other hand, it has begun adding nature-related disclosure to its work agenda and favours more flexible instruments, such as IFRS Practice Statements, to promote coordination with existing frameworks including the TNFD. This indicates that international sustainability disclosure rules are expanding from climate alone toward broader nature- and ecosystem-related risks.

In December 2025, the ISSB issued Amendments to Greenhouse Gas Emissions Disclosures, which amended IFRS S2 (ISSB, 2025). The main changes include narrowing the measurement and reporting of Scope 3 Category 15 emissions related to investments and providing companies with simplified pathways for GHG emissions disclosure. These were the first formal amendments since the ISSB issued its inaugural standards, marking the start of continuous refinement and iteration.

Table 2-2. Key Amendments to IFRS S2 GHG Emissions Disclosures

| Scope 3 Category 15 emissions focused on "financed emissions" | Use of the Global Industry Classification Standard no longer mandatory for industry breakdowns of financed emissions | Alternative global warming potential (GWP) values permitted in specified circumstances | Local GHG accounting methods permitted in specified circumstances |
|---|---|---|---|
| Accounting and disclosure for Category 15 GHG emissions may be limited to financed emissions as defined by IFRS S2. Emissions from non-financing activities such as derivatives, investment banking, and insurance underwriting need not be included in Scope 3. Entities must disclose total emissions, a financed-emissions subtotal, and the boundary of exclusions. This reduces data-collection burdens, although material financed emissions must still be disclosed. | Banks and insurers may use commonly applied or regulator-specified industry classification systems and disclose the system and rationale. Different systems may be used for different business lines. This improves alignment with existing regulatory reporting, but entities may need to explain how the system supports understanding of climate-related transition risks and comparability with peers. | Entities no longer need to use two different sets of GWP values to satisfy IFRS S2 and local requirements. They must still disclose the measurement method, GWP values used, and reasons for not using the latest Intergovernmental Panel on Climate Change (IPCC) values. | Entities may use accounting methods required by local regulators or exchanges. A parent applying IFRS S2 may consolidate data prepared under different legally prescribed methods across the group. Where a subsidiary is subject to different local GHG accounting requirements, the amendments reduce duplicate reporting. |

(Source: Constructed by the authors.
Note: The amendments apply to reporting periods beginning on or after January 1, 2027. Earlier application is permitted.)

Since 2026, the ISSB has further strengthened its global implementation-support system. In February, it issued a jurisdictional readiness assessment guide and supporting tools to help countries identify institutional, regulatory, and market-capacity gaps in adopting the standards. In March, it published exposure drafts of corresponding amendments to three Sustainability Accounting Standards Board (SASB) industry standards—Agricultural Products; Meat, Poultry and Dairy; and Electric Utilities—and to the IFRS S2 Industry-based Guidance, with the aim of improving the global applicability and consistency of industry metrics. The consultation closes on July 24, 2026.

At the same time, the ISSB has begun extending disclosure from climate-related matters to nature-related risks and opportunities. At its April 2026 meeting, it tentatively decided to propose nature-related disclosure requirements in a non-mandatory IFRS Practice Statement, drawing on the TNFD framework and the Locate, Evaluate, Assess and Prepare (LEAP) approach and complementing IFRS S1 and S2. An exposure draft is planned for October 2026. Overall, the ISSB is developing an institutional pathway characterized by continuous revision of core standards, parallel improvement of industry standards, capacity building for jurisdictional adoption, and gradual expansion into nature-related topics.

### ② National-level disclosure provisions and systems

Since 2025, sustainability disclosure systems in major economies have diverged significantly. The EU shifted from expanding regulatory coverage toward simplifying rules and reducing corporate compliance burdens. China accelerated development of a domestic system comprising general standards, specific standards, listed-company disclosure guidance, and assurance standards. The United Kingdom advanced implementation of UK Sustainability Reporting Standards (UK SRS) based on ISSB standards and explored a transition from voluntary use to mandatory disclosure. At the US federal level, climate disclosure regulation contracted markedly.

Table 2-3. Changes in Disclosure Provisions and Systems in Major Economies Since 2025

| | | |
|---|---|---|
| The "Omnibus Simplification Package" adjusted the Corporate Sustainability Reporting Directive (CSRD), Corporate Sustainability Due Diligence Directive (CSDDD), EU Taxonomy, CBAM, and related rules by narrowing the scope of some regulations, postponing implementation for certain companies, and simplifying reporting and due-diligence requirements. | EU | Regulatory burden reduction and rule integration: maintaining green-transition objectives while giving greater weight to corporate competitiveness, policy coordination, and compliance costs. |
| Issued implementation guidance for the general standards and the first climate-specific standard; improved sustainability reporting guidance for listed companies on the three major stock exchanges; and established general assurance standards for sustainability information, initially forming an integrated disclosure, supervision, and assurance system. | China | Systematic development of domestic standards: moving from an overall framework toward specific topics and implementation support, currently emphasizing pilots, voluntary application, and gradual rollout. |
| Issued UK SRS S1 and S2 based on IFRS S1 and S2 for voluntary corporate use at this stage. Financial regulators plan gradually to replace existing Task Force on Climate-related Financial Disclosures (TCFD) rules for listed companies with the UK SRS framework. | United Kingdom | International alignment and phased implementation: building market capability through voluntary application before considering expansion to mandatory reporters. |
| The US Securities and Exchange Commission (SEC) stopped defending the federal climate disclosure rule in court and subsequently proposed rescinding it. Federal banking regulators also reduced engagement on climate risk and international green finance cooperation. | US | Federal regulatory retrenchment: progress toward a nationwide climate disclosure framework has stalled, with greater emphasis likely shifting to state rules and market-led disclosure. |

(Source: Constructed by the authors.)

Overall, global sustainability disclosure is shifting from a path dominated by international convergence toward "differentiated implementation on a common standards foundation." The EU is placing greater emphasis on reducing regulatory burden; China is building a comprehensive standards system with domestic characteristics; the UK is taking a gradual implementation path aligned with the ISSB; and the US federal government is showing a clear deregulatory trend. Differences across economies in scope, degree of mandatoriness, disclosure content, and assurance requirements may widen further.

## (2) Climate Risk Regulation in the Financial Sector

### ① Development of regulatory frameworks led by international organizations

Since 2025, international financial regulatory organizations have continued integrating climate risk into banking and insurance supervision, but the institutional pathways have diverged: banking disclosure requirements have weakened, while climate risk has become more deeply embedded in insurance supervision.

On the one hand, the Basel Committee on Banking Supervision (BCBS) published a framework for the voluntary disclosure of climate-related financial risks in June 2025 (BCBS, 2025). The framework evolved from a previously proposed uniform disclosure approach under Pillar 3 of the Basel Framework into a voluntary framework that each jurisdiction may choose whether to implement, with greater flexibility in metrics, data, and implementation. This reflects a shift in international banking climate regulation from mandatory uniformity toward gradual and flexible implementation.

On the other hand, the International Association of Insurance Supervisors (IAIS) published comprehensive Application Paper on the supervision of climate-related risks in the insurance sector in April 2025 (IAIS, 2025). It systematically integrates climate risk into corporate governance, risk management, investment and valuation, supervisory reporting, public disclosure, scenario analysis, macroprudential supervision, and market conduct, covering 11 Insurance Core Principles. This shows that climate risk has moved from a supplementary issue in insurance regulation to an important component of routine prudential supervision.

Under the IAIS 2026–2027 Roadmap, the association will continue developing climate risk metrics, natural catastrophe models, and scenario-analysis tools over the next two years; support supervisory capacity building in emerging markets; strengthen monitoring of insurers' alternative assets, private credit, and asset-intensive reinsurance; and advance supervisory materials on operational resilience.

Overall, international climate-related financial regulation is moving from high-level principles toward concrete applications in risk management, disclosure, and supervisory tools. However, the strength of constraints differs across financial sectors: banking places greater emphasis on voluntariness and implementation flexibility, while insurance continues to substantively embed climate risk in core supervisory frameworks.

### ② Climate supervision policies in major economies

Since 2025, climate risk regulation in major economies has diverged markedly. The EU has moved from supervisory guidance toward enforcement and risk pricing. China continues to improve risk identification through stress testing. The UK uses exploratory scenario analysis and prudential guidance to strengthen institutional response capacity. The US federal regulation has weakened, while state-level systems continue to advance.

Table 2-4. Changes in Climate Supervision Policies in Major Economies Since 2025

| | | |
|---|---|---|
| **EU** | The European Central Bank (ECB) imposed recurring fines for the first time on a bank that failed to complete required climate and environmental risk assessments. It also decided to introduce a "climate factor" into the Eurosystem collateral framework from the second half of 2026, adjusting collateral values for eligible marketable assets issued by non-financial corporations. | Shift from supervisory requirements to enforcement and asset pricing; climate risk begins to affect banks' compliance costs, collateral values, and financing conditions directly. |
| **China** | The People's Bank of China organised climate risk assessments and stress tests involving 24 banks and selected regions and industries, focusing on high-emitting sectors and regional physical risks. Relevant authorities require banks and insurers gradually to conduct scenario analysis and stress testing. | Expansion of pilots and capacity building, mainly through research-oriented, guidance-based, and gradual approaches; no unified nationwide mandatory stress-testing regime yet. |
| **United Kingdom** | The Bank of England continues to use scenario analysis as a principal tool for assessing the climate resilience of banks and insurers and encourages institutions to improve climate risk identification, measurement, and management. | Primarily exploratory scenario analysis and prudential guidance; no routine climate stress-testing regime linked to capital constraints yet. |
| **US** | Federal regulators discontinued unified climate scenario analysis and withdrew principles for managing climate-related financial risks in banking in 2025. Meanwhile, California's corporate emissions and financial-risk disclosure regimes continue to advance, and some members of Congress continue to pursue related legislation. | Federal retrenchment alongside state-level progress, producing a fragmented national framework strongly influenced by political factors. |

(Source: Constructed by the authors.)

Overall, climate risk regulation in major economies has formed three broad pathways: the EU emphasizes enforcement and financial risk pricing; China and the UK emphasize stress testing and capacity building; and the US combines federal regulatory retrenchment with continued state-level action.

# 2.3 Climate Policy Uncertainty

This section uses the GCPU index (Ji et al., 2024; Ma et al., 2024), with data drawn from the GCRID. It compares the index for 2024 and 2025 at the global level, across major countries, and between developed and developing countries to present the overall trend and structural differences in CPU.

## 2.3.1 Global Annual Trends

Figure 2-11 shows that the GCPU Index rose under all three weighting methods in 2025. The measures based on GDP at current prices, purchasing power parity (PPP)-adjusted GDP, and equal weighting increased by about 45%, 74%, and 60%, respectively. The PPP-adjusted GDP-weighted measure recorded the largest increase.

During the same period, the US initiated the process of withdrawing from the Paris Agreement, countries submitted a new round of NDCs, and the EU's CBAM neared full implementation. International cooperation commitments, national emissions-reduction targets, and rules governing cross-border carbon costs were adjusted in parallel. The global climate policy environment showed more pronounced divergence and uncertainty.

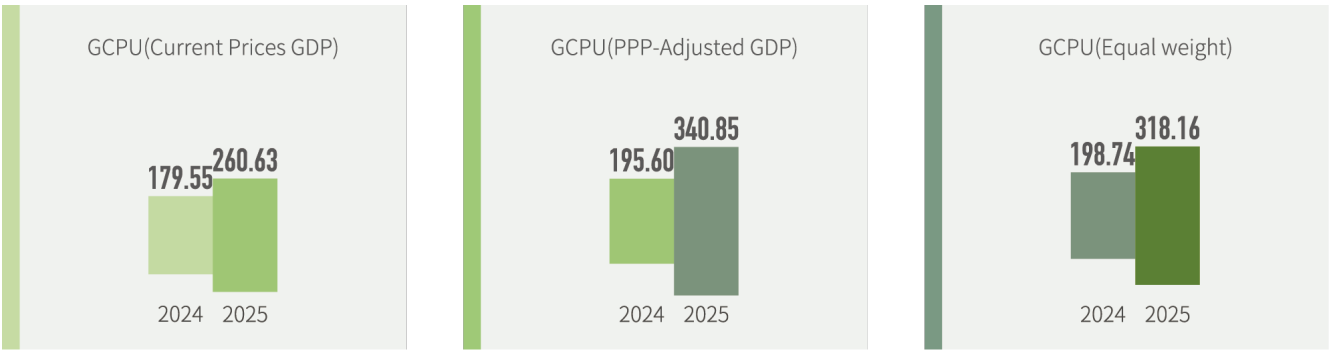



Figure 2-11. Annual Comparison of GCPU
(Source: Ji et al. (2024).)

## 2.3.2 Differences Across Countries and Economies

### (1) Annual Comparison of CPU across Major Countries

CPU rose in most major countries, but cross-country differences were pronounced. Figure 2-12 shows an increase in five of the six countries, while Brazil remained broadly stable. The United Kingdom's CPU rose from 5.53 to 6.02 and remained the highest. Australia recorded the largest increase, from 3.10 to 5.22, followed by China, from 2.68 to 4.23.

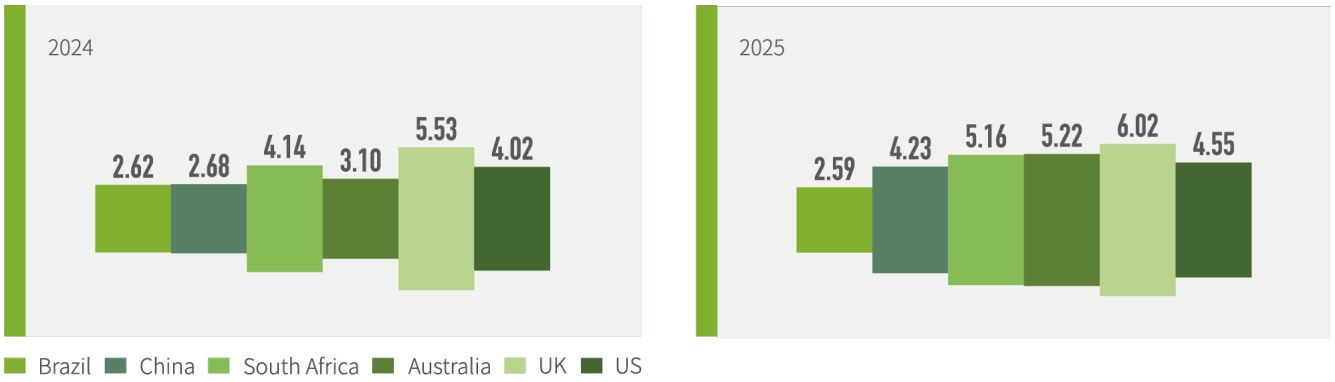



Figure 2-12. Annual Comparison of CPU across Major Countries

(Source: Ji et al. (2024).)

### (2) Differences in CPU between Developed and Developing Economies

CPU rose in both developed and developing economies, but the increase was larger in developing economies. Figure 2-13 shows that CPU for developing economies rose from 4.50 to 8.80, an increase of about 96%. For developed economies, it increased from 3.30 to 4.48, or about 36%. The gap between the two groups widened from 1.20 to 4.32.




Figure 2-13. Annual Comparison of CPU between Developed and Developing Countries

(Source: Ji et al. (2024).)

# 3

# MARKET DEVELOPMENT

# Highlights

MDB climate finance commitments reached a record high in 2025, while commitments to LMICs exceeded USD 100 billion for the first time.

The GSS+ bond market cooled in 2025, recording its first annual decline since 2022, driven mainly by lower green and social bond issuance.

Carbon pricing revenue reached a record USD 107.50 billion, of which ETS currently generates about three times the revenue of carbon taxes, and the relative revenue landscape of the two has reversed compared to 2016

Carbon pricing instruments covered 27.90% of global emissions in 2025, up 15.40 percentage points over the decade, and this growth is primarily attributable to the expansion of China's ETS coverage across industries.

Global clean energy investment exceeded USD 2 trillion for the first time, registering a substantial absolute increase despite a deceleration in the growth rate.

# 3.1 Multilateral Development Bank Climate Finance Commitments

## 3.1.1 Composition of Commitments

### (1) Distribution of MDBs Commitments by Income Level

MDBs total climate finance commitments reached a record USD 162.52 billion in 2025, up 18.97% year on year (EIB, 2026a). Commitments to LMICs exceeded USD 100 billion for the first time, reaching USD 102.59 billion, while commitments to HICs totaled USD 59.93 billion (Figure 3-1). The system retained a dual-leadership structure: the EIB and the WBG together accounted for two-thirds of total commitments, with a mirror-image regional distribution. Ninety-two percent of EIB commitments went to HICs, compared with 94% of WBG commitments directed to LMICs. Growth was nevertheless broad-based: the New Development Bank (NDB), Inter-American Development Bank Group (IDBG), and Asian Infrastructure Investment Bank (AIIB) recorded the fastest growth, while the Asian Development Bank (ADB) and WBG posted moderate growth. The Council of Europe Development Bank (CEB) was the only institution whose commitments were lower than in 2024.

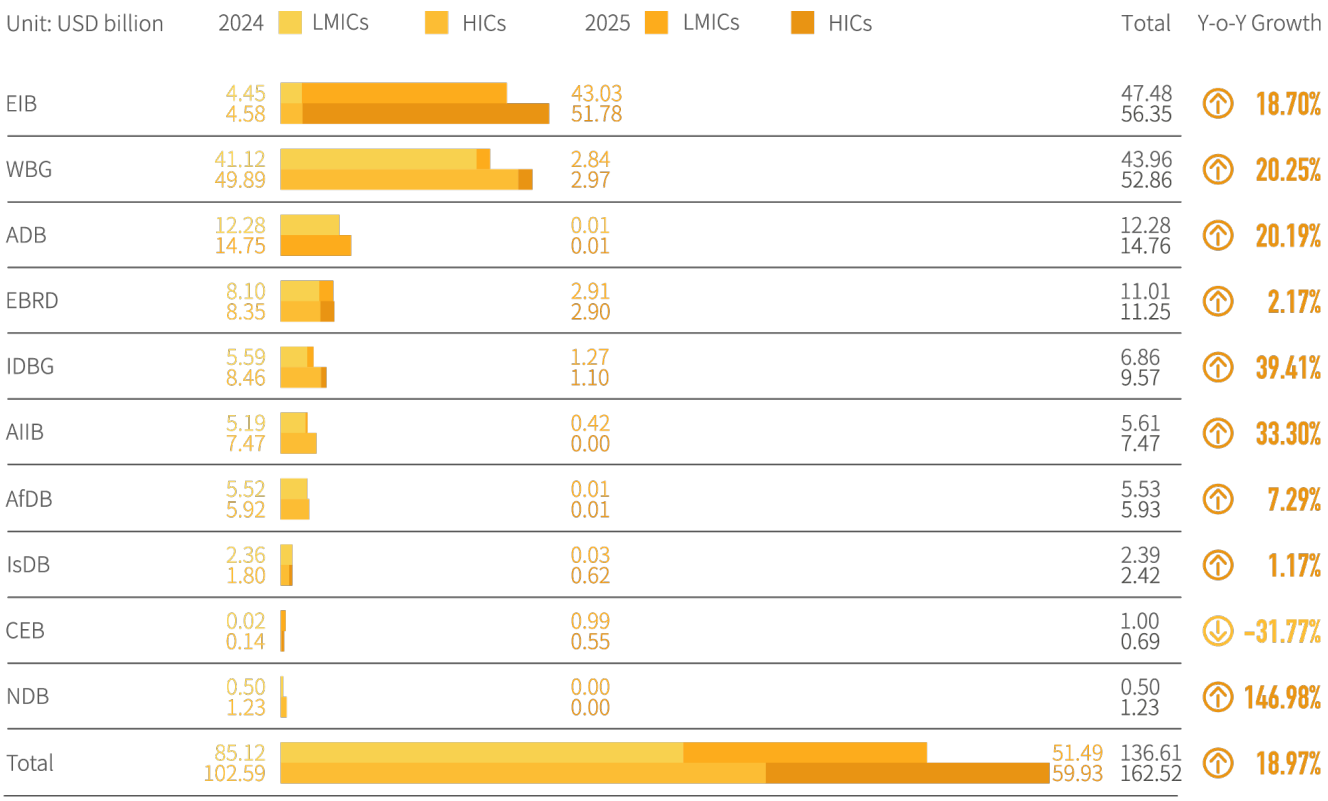



Figure 3-1. MDBs Commitments by Income Groups, 2024-2025

(Source: European Investment Bank.)

### (2) Distribution of MDBs Commitments by Use of Funds

The proportion of fund allocation by use of funds has undergone structural minor adjustments. Mitigation measures still occupy a dominant position, amounting to USD 120.86 billion (EIB, 2026a), but their proportion of total commitments has declined, while the proportion of adaptation financing has increased (Figure 3-2). This change is mainly concentrated in highly vulnerable areas: adaptation finance for LMICs increased by 31.47% to USD 34.59 billion, equal to 82.36% of the USD 42 billion annual adaptation level for LMICs that MDBs announced for 2030 at COP29. The fund allocation of HICs is still dominated by mitigation measures, accounting for as high as 88.22%, which is consistent with the requirements of large-scale decarbonization and energy security plans.

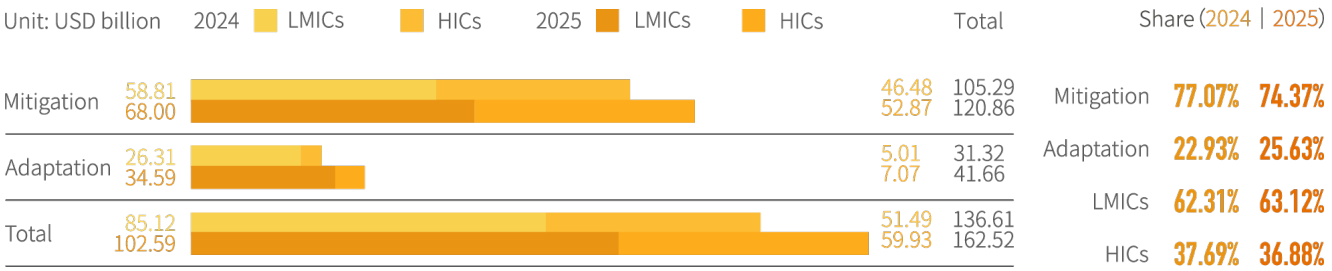



Figure 3-2. MDBs Commitments by Use of Funds, 2024-2025

(Source: European Investment Bank.)

## 3.1.2 Development Trends

MDBs climate finance has nearly doubled over the past five years since 2021. In 2025, it increased by USD 26.12 billion from the previous year (EIB, 2026a), the largest annual increase since 2023 (Figure 3-3). The LMIC share remained broadly stable throughout the period, indicating that expansion did not weaken the system's orientation toward developing countries. In 2025, commitments to LMICs increased by 20.69%, compared with 16.60% growth for HICs. This trajectory pushed MDB financing above the 2025 target set in 2019, while LMIC commitments reached approximately 85% of the USD 120 billion annual level projected for 2030 at COP29.

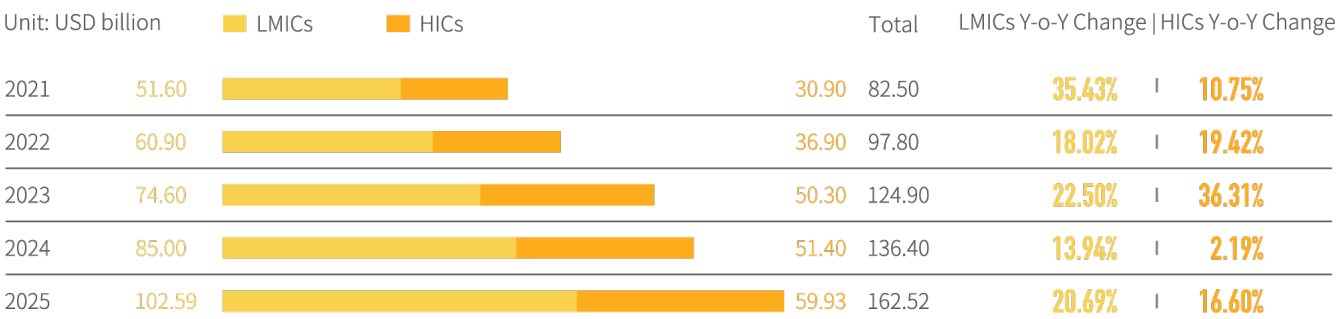



Figure 3-3. Trends of MDBs Commitments, 2021-2025

(Source: European Investment Bank.

Note: 2021-2024 values are from the five-year series in EIB (2026a) and differ slightly from Figures 3-1 and 3-2 due to rounding of records in the source files.)

The five-year composition shows that growth rested on a broad base rather than being concentrated in a small number of institutions (Figure 3-4). Every institution shown recorded higher commitments in 2025 than in 2021 (EIB, 2026a). ADB commitments tripled from 2021; the Islamic Development Bank (IsDB) grew by more than three times from a low base; and AIIB (2.77 times), the African Development Bank (AfDB) (2.47 times) exceeded the system average. The two largest institutions grew more slowly, but their starting bases were far larger than those of other institutions. Over the same period, EIB commitments increased by USD 24.85 billion and WBG commitments by USD 24.36 billion. Together, they accounted for more than 60% of the system's total five-year increase.

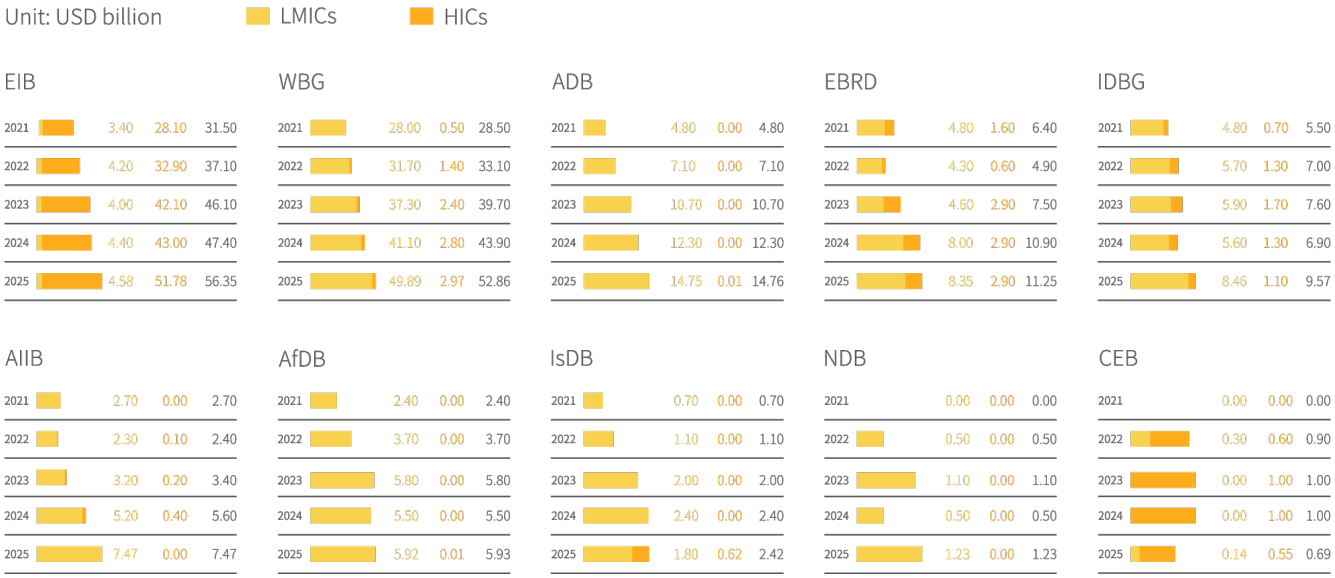



Figure 3-4. MDBs Commitments Composition Dynamics, 2021-2025

(Source: European Investment Bank.

Note: 2021-2024 values are from the five-year series in EIB (2026a) and differ slightly from Figures 3-1 and 3-2 due to rounding of records in the source files.)

## 3.1.3 Investment Instruments

Investment loans remain the backbone of MDB climate finance, at USD 110.23 billion and accounting for 67.83% of total commitments (EIB, 2026a), a share essentially unchanged from 2024 (Figure 3-5). Policy-based lending grew mainly in LMICs, which accounted for 81.79% of its increase. Grants rose by a third, with 99% of grant finance flowing to LMICs, but remained under 4% of total commitments. Equity, green bonds, advisory services and other instruments together accounted for 3.05%.

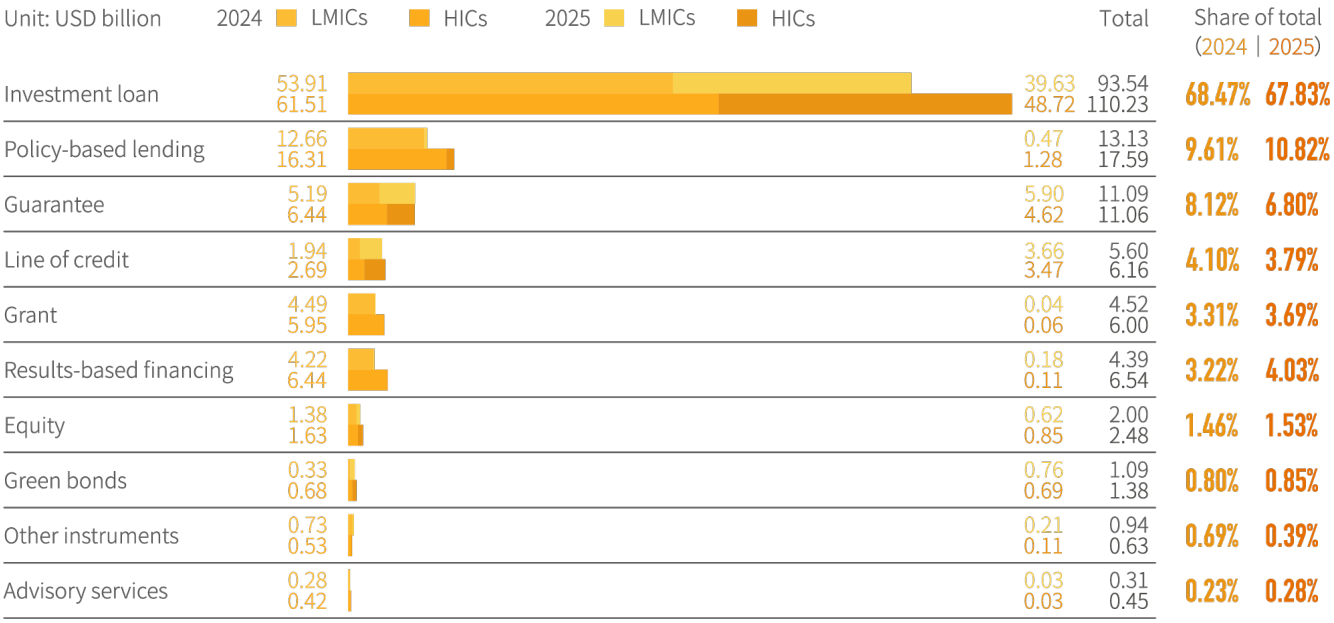



Figure 3-5. MDBs Commitments by Instruments, 2024-2025

(Source: European Investment Bank.)

## 3.1.4 Regional Distribution

The EU remained the largest destination for funding (EIB, 2026a), with its share stable at approximately one-third (Figure 3-6). Latin America and the Caribbean overtook Sub-Saharan Africa to become the largest destination among developing regions. The Middle East and North Africa nearly doubled and recorded the fastest growth in the dataset. Commitments to Sub-Saharan Africa increased, but its share of the total declined by 1.28 percentage points. In a record year, the relative position of the region facing the most severe climate impacts nevertheless deteriorated. Total commitments to South Asia and East Asia and the Pacific increased, while Central Asia remained broadly unchanged.

| Unit: USD billion | 2024 LMICs | 2024 HICs | 2025 LMICs | 2025 HICs | Total | Share of total (2024 \| 2025) | |
|---|---|---|---|---|---|---|---|
| Europe: EU | 0.00 | 45.22 | 45.22 | 33.10% | 32.85% | | |
| | 0.00 | 53.39 | 53.39 | | | | |
| Sub-Saharian Africa | 17.22 | 0.03 | 17.25 | 12.63% | 11.35% | | |
| | 18.41 | 0.03 | 18.45 | | | | |
| Latin America and the Caribbean | 13.26 | 2.52 | 15.78 | 11.55% | 13.98% | | |
| | 19.95 | 2.78 | 22.73 | | | | |
| South Asia | 14.96 | 0.00 | 14.96 | 10.95% | 9.83% | | |
| | 15.97 | 0.00 | 15.97 | | | | |
| Europe: Non-EU | 12.46 | 0.57 | 13.04 | 9.54% | 9.18% | | |
| | 14.72 | 0.19 | 14.92 | | | | |
| East Asia and the Pacific | 11.26 | 0.02 | 11.28 | 8.25% | 8.32% | | |
| | 13.53 | 0.00 | 13.53 | | | | |
| Central Asia | 5.51 | 0.00 | 5.51 | 4.03% | 3.40% | | |
| | 5.52 | 0.00 | 5.52 | | | | |
| Middle East and North Africa | 5.21 | 0.03 | 5.24 | 3.83% | 6.41% | | |
| | 9.62 | 0.79 | 10.41 | | | | |
| Multi-regional | 5.24 | 3.10 | 8.33 | 6.10% | 4.68% | | |
| | 4.86 | 2.74 | 7.60 | | | | |

Figure 3-6. MDBs Commitments by Regions, 2024-2025

(Source: European Investment Bank.)

# 3.2 Labelled Bond Market

## 3.2.1 Market Size

By the end of 2025, the cumulative GSS+ market had reached USD 6.75 trillion, up from USD 5.65 trillion a year earlier (CBI, 2026) (Figure 3-7). Green bonds exceeded USD 4 trillion and accounted for 61.53% of the cumulative total. Sustainability bonds overtook social bonds in cumulative issuance for the first time since 2019, reaching USD 1.27 trillion versus USD 1.26 trillion. Sustainability-linked bonds remained a small segment, accounting for about 1.10% of the market.

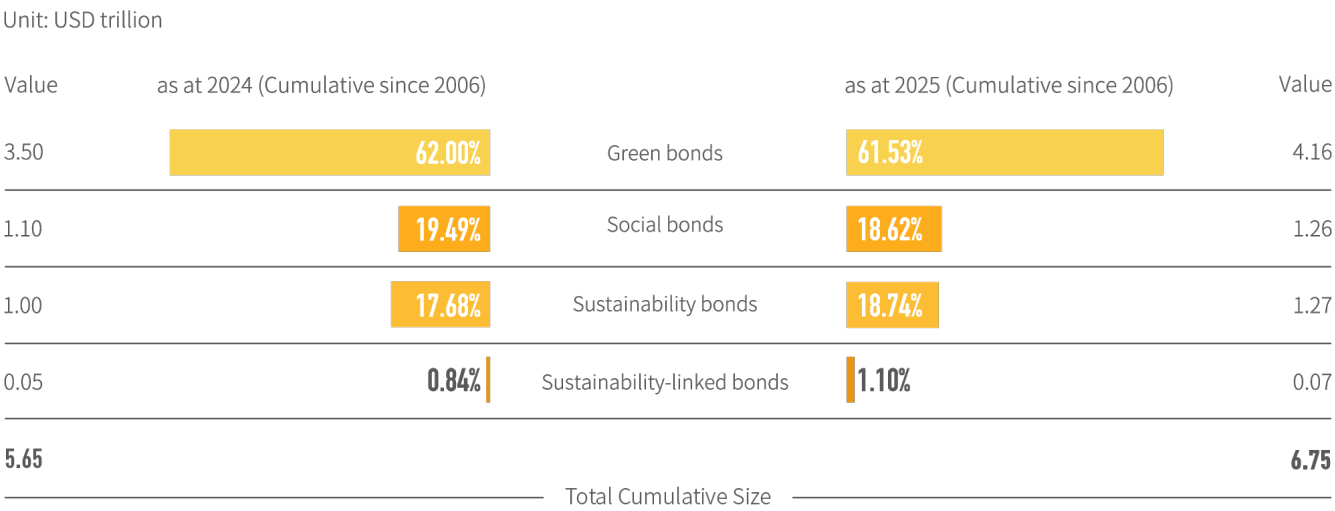



Figure 3-7. Cumulative Size of the Aligned GSS+ Market, 2024-2025

(Source: Climate Bonds Initiative.)

## 3.2.2 Market Growth

Aligned GSS+ issuance fell 4.35% to approximately USD 1.03 trillion in 2025 (CBI, 2026), the first annual decline since 2022 (Figure 3-8). The year still ranks third on record, behind 2024 (USD 1.07 trillion) and 2021 (USD 1.06 trillion), and marks the third time the annual volume has exceeded the trillion-dollar threshold. The pattern over the past five years is a plateau rather than a retreat: issuance has remained within a band of roughly USD 0.84–1.07 trillion since 2021.

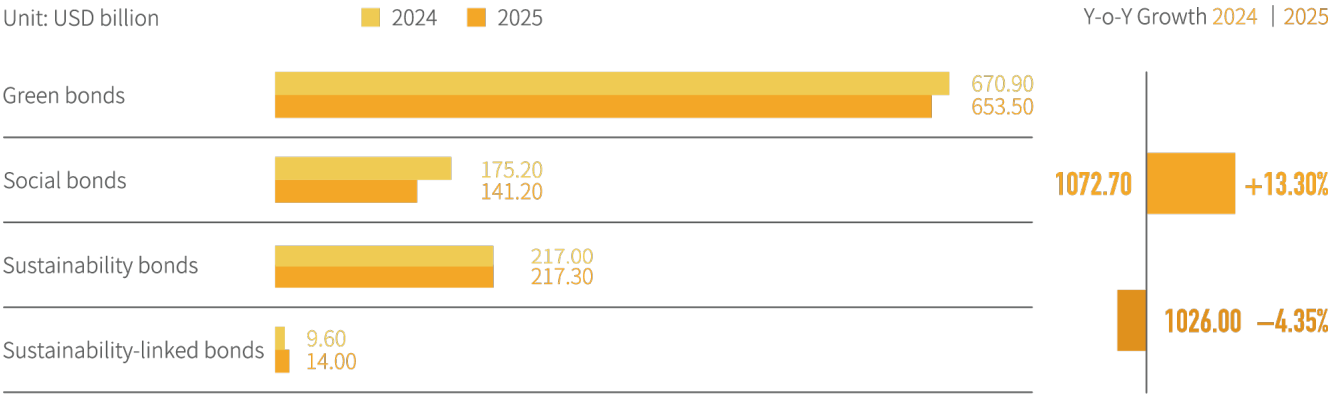



Figure 3-8. GSS+ Bond Market Growth, 2024-2025

(Source: Climate Bonds Initiative.)

## 3.2.3 Bond Composition

Green bonds remain the anchor of annual issuance at USD 653.50 billion (CBI, 2026), 63.69% of the 2025 total, down 2.59% from 2024 (Figure 3-9). The compositional story of the year is the divergence between the two social-purpose labels: sustainability bonds matched their 2024 record at USD 217.30 billion and now take 21.18% of annual issuance, while social bonds fell 19.41% to USD 141.20 billion, their lowest level since at least 2020. Sustainability-linked bonds grew 45.83% to USD 14 billion. Still, the label operates from a lower base and, at 1.36% of issuance, has yet to recover from the credibility concerns that followed its 2021 peak of USD 119 billion.

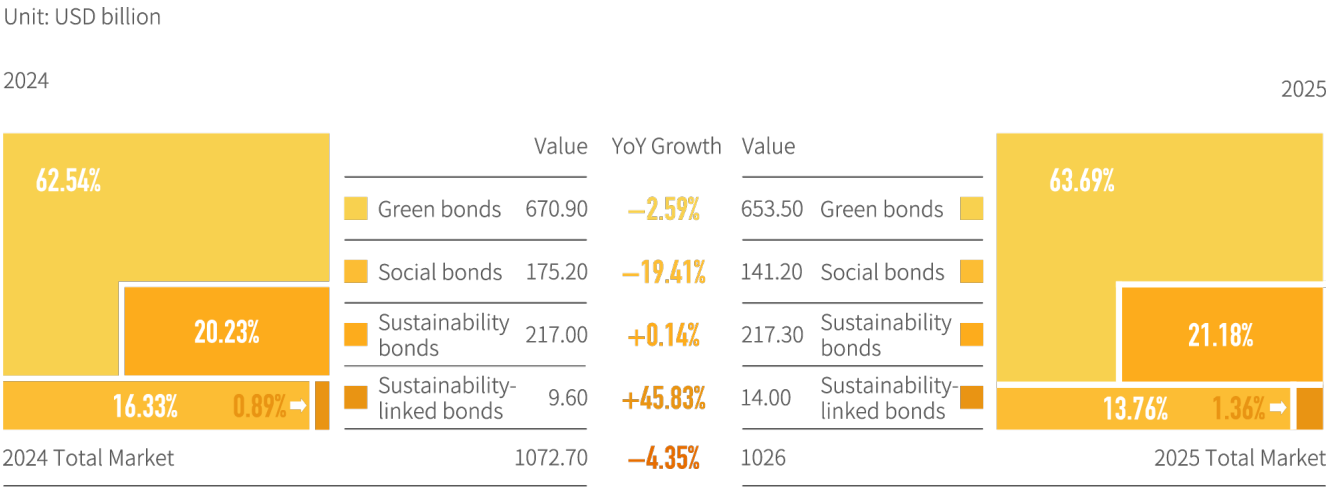


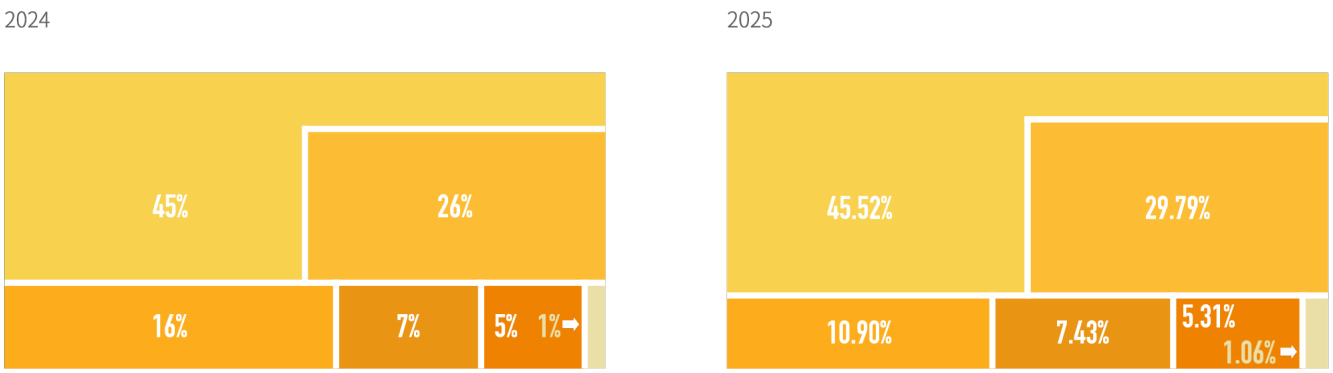

Figure 3-9. Composition of Annual Aligned GSS+ Issuance by Bond Type, 2024-2025

(Source: Climate Bonds Initiative.)

## 3.2.4 Regional Distribution

The main trend in the aligned GSS+ market in 2025 was weak performance in the United States. Issuance fell 34.86% to USD 111.80 billion (CBI, 2026), the largest regional decline, making the United States a major contributor to the global contraction (Figure 3-10). Europe remained the core market, with issuance of USD 467.00 billion, or 45.52% of the annual total, although issuance also fell by 3.25%. Asia-Pacific made the largest contribution to growth: issuance increased 9.57% to USD 305.60 billion and its market share rose to 29.79%. African issuance totaled only USD 10.89 billion, approximately 1% of the global total. Despite the region's high climate vulnerability, Africa remained the smallest regional market for labeled financing.

Unit: USD billion




| Market | Value | YoY Growth | Value | Market |
|---|---|---|---|---|
| Europe | 482.71 | −3.25% | 467.00 | Europe |
| Asia-Pacific | 278.91 | +9.57% | 305.60 | Asia-Pacific |
| USA | 171.63 | −34.86% | 111.80 | USA |
| SNAT | 75.09 | +1.54% | 76.25 | SNAT |
| LAC | 53.63 | +1.54% | 54.46 | LAC |
| Africa | 10.73 | +1.50% | 10.89 | Africa |
| 2024 Total Market | 1072.70 | −4.35% | 1026 | 2025 Total Market |

Figure 3-10. Regional Distribution of Annual Aligned GSS+ Issuance, 2024-2025

(Source: Climate Bonds Initiative.)

# 3.3 Carbon Pricing Mechanism

## 3.3.1 Carbon Pricing Compliance Revenues

Carbon pricing raised a record USD 107.50 billion in government revenue in 2025 (WB, 2026b) (Figure 3-11). The composition has inverted over the decade: in 2016, carbon tax revenue (USD 17.28 billion) was nearly three times ETS revenue (USD 5.85 billion); in 2025, ETS revenue (USD 80.30 billion) was approximately three times carbon tax revenue (USD 27.20 billion). ETS revenues grew by 13.10% in 2025, while carbon tax revenue fell by 20%, widening the divergence. For a growing group of governments, allowance auctions are now a consequential fiscal instrument rather than a marginal levy.

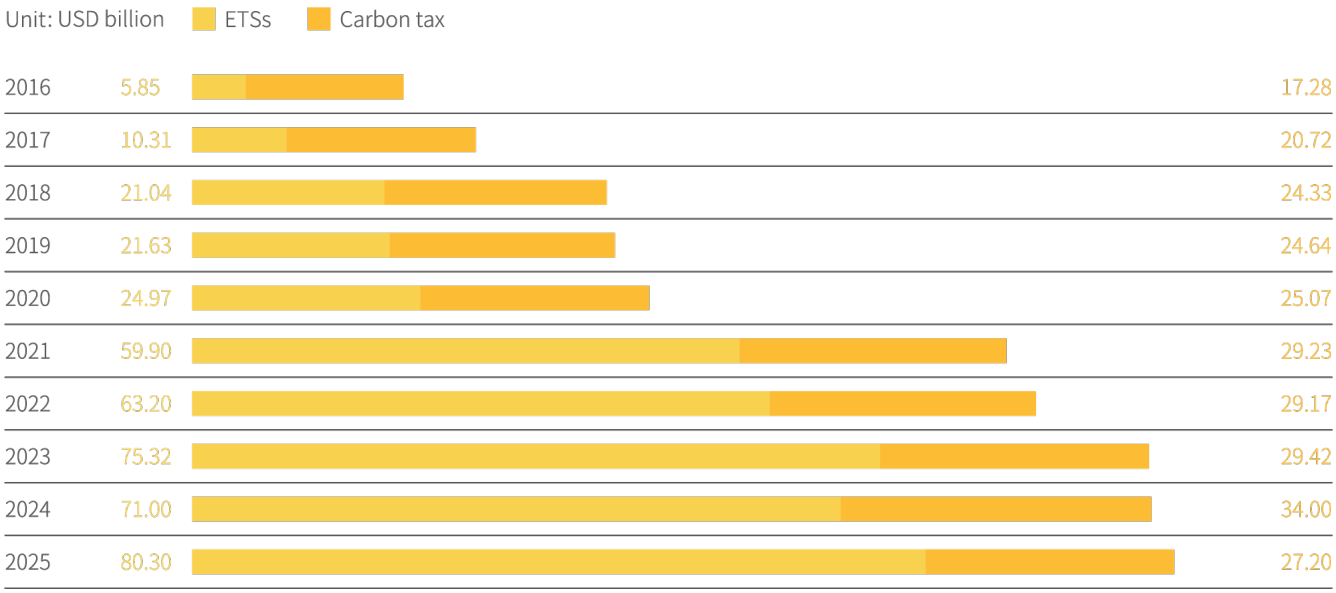



Figure 3-11. Carbon Pricing Revenues, 2016-2025

(Source: World Bank.)

## 3.3.2 Carbon Pricing Coverage

### (1) Overall Coverage and Instrument Composition

By 2025, carbon pricing instruments covered 27.90% of global GHG emissions (WB, 2026b), an increase of 15.40 percentage points over the past decade (Figure 3-12). Almost all of this increase came from emissions trading: ETS coverage rose from 8.40% of global emissions in 2016 to 23.40% in 2025, while carbon-tax coverage fell to 3.80%. Changes in coverage followed a phased rather than continuous pattern, with two increases in 2021 and 2024. In 2025, total coverage declined slightly by 0.60 percentage points from the previous year.

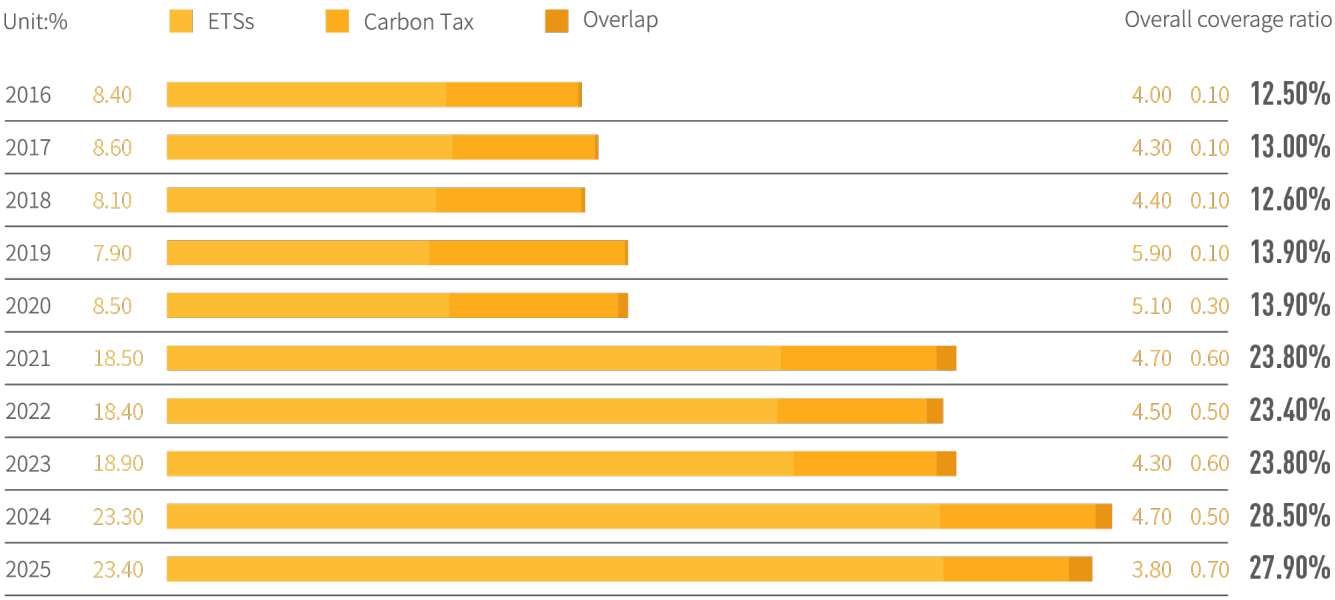



Figure 3-12. Emissions Coverage by Carbon Pricing Instrument, 2016-2025

(Source: World Bank.

Note: ETS coverage, carbon-tax coverage, and overlap between the two mechanisms are mutually exclusive. Total carbon pricing coverage is the sum of the three categories to avoid double counting.)

## (2) Emissions Coverage Distribution by Regions

Emissions coverage was concentrated in East Asia and the Pacific. In 2025, carbon pricing mechanisms in the region covered emissions equivalent to 20.30% of global GHG emissions, nearly three-quarters of total emissions covered by carbon pricing mechanisms worldwide (27.90%) (Figure 3-13). This concentration emerged only in recent years: the region's contribution was 5.20 percentage points in 2016, and the sharp increases in global coverage in 2021 and 2024 were driven mainly by substantial growth in the region. The contribution of Europe and Central Asia declined from 5.40 to 4.10 percentage points. This reflects the region's falling share of global emissions rather than the cancellation of relevant carbon pricing mechanisms. North America's contribution fell to 1.50 percentage points in 2025. South Asia's contribution remained zero. No economy in the region priced carbon emissions, meaning that India, the world's third-largest emitter, was not covered by the relevant mechanisms. The Middle East and North Africa achieved emissions coverage for the first time in 2025.

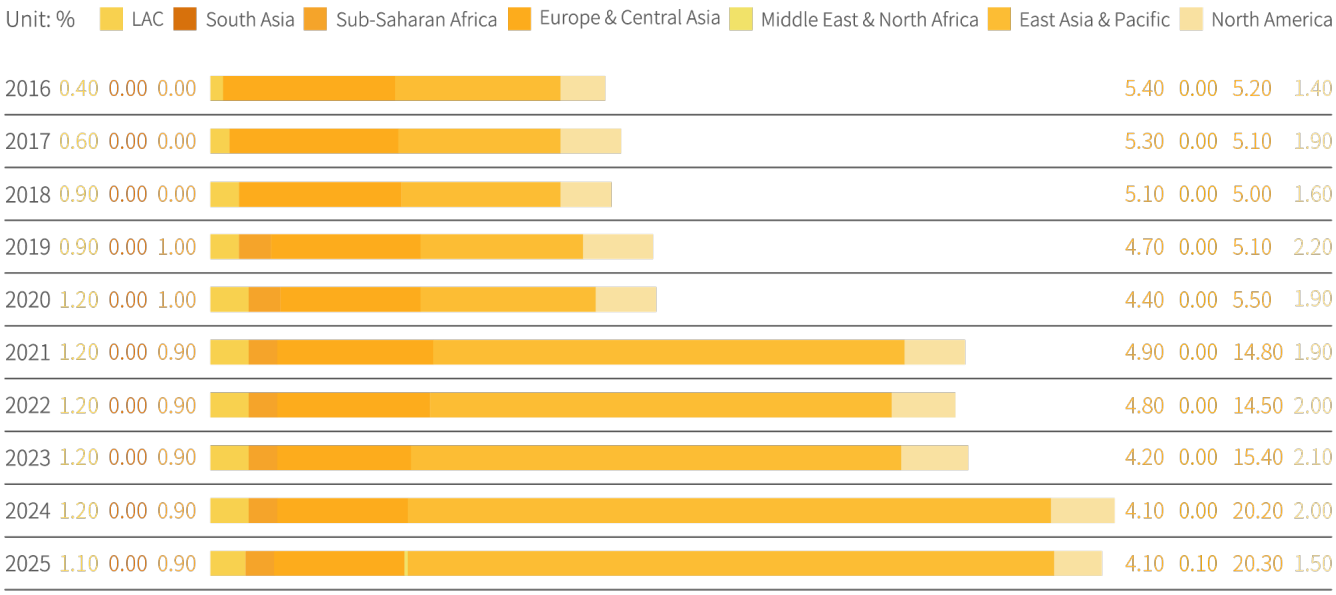



Figure 3-13. Emissions Coverage by Region, 2016-2025

(Source: World Bank.)

## (3) Emissions Coverage Distribution by Income Level

Distribution of carbon emission coverage by income group shifted decisively in 2021, when coverage in upper-middle-income economies overtook coverage in high-income economies for the first time; by 2025, the gap had widened to 10.10 percentage points (WB, 2026b) (Figure 3-14). Lower-middle-income economies registered coverage for the first time in 2025, at 0.50 percentage points, while low-income countries remained absent throughout the decade. Carbon pricing remains, in practice, an instrument of the rich and the rapidly industrializing.

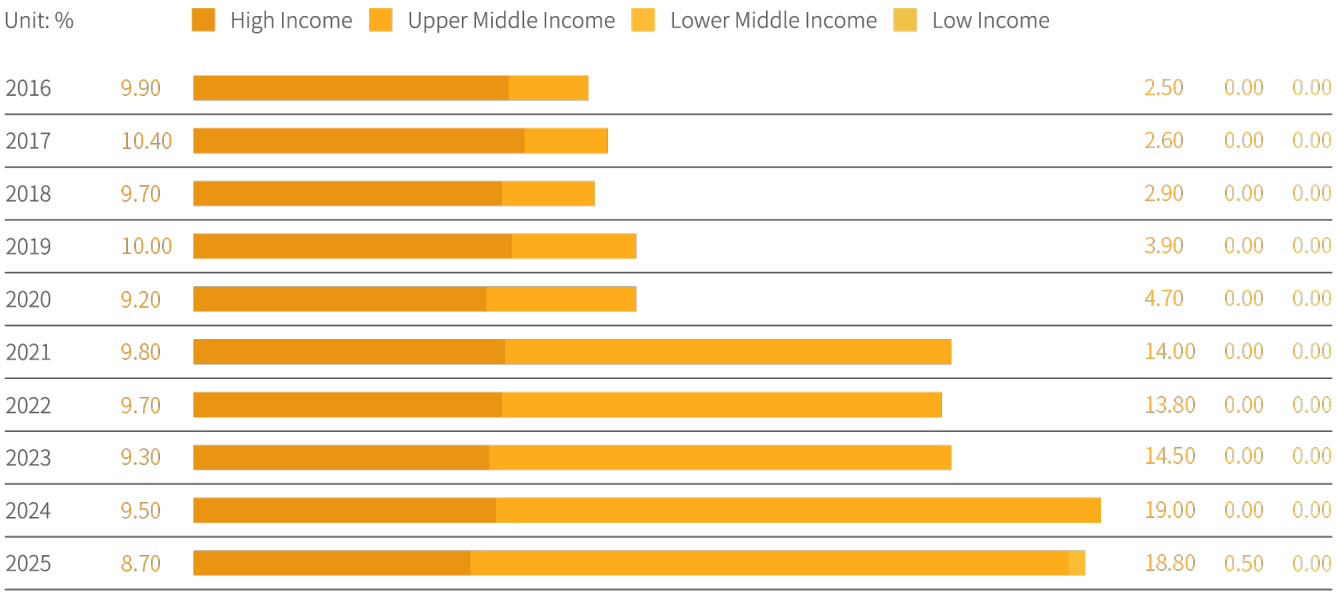



Figure 3-14. Emissions Coverage by Income Group, 2016-2025

(Source: World Bank.

Note: Income groups are classified by per capita GNI calculated using the World Bank Atlas method. The groups are mutually exclusive. The values show each income group's share of global GHG emissions covered by carbon pricing. The sum across groups is approximately equal to the global coverage rate.)

## 3.3.3 Carbon Credit Mechanisms

### (1) Trends in Carbon Credit Development

Carbon credit issuances grew in 2025 for the first time since 2022. A total of 433 million credits were issued across crediting mechanisms, up 8.52% from 2024 but still 22.54% below the 2022 record level (WB, 2026b) (Figure 3-15). The recovery was driven by governmental mechanisms, with a further pipeline of credits expected through the Paris Agreement Crediting Mechanism (PACM).

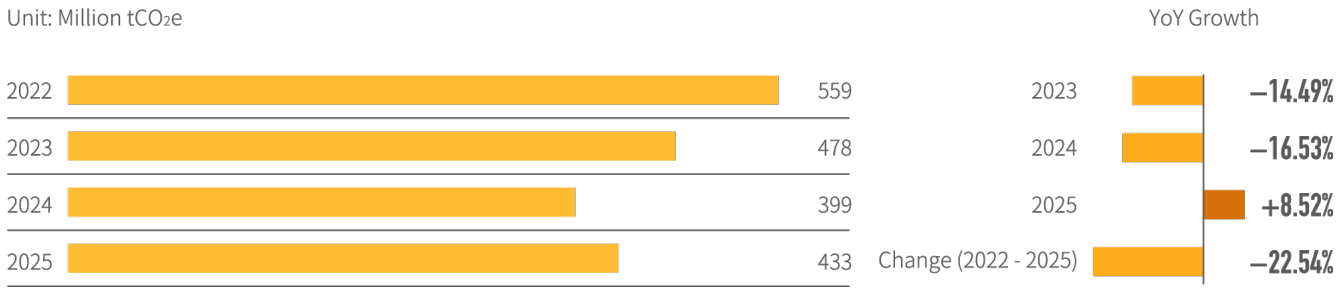



Figure 3-15. Total Carbon Credit Issuances, 2022-2025

(Source: World Bank.)

### (2) Trends in Carbon Credit Retirement

Carbon credit retirements declined in 2025. However, as various ETSs under development begin operating, market demand may stabilize. Global carbon credit retirements fell 10.51% from 2024 (WB, 2026b) (Figure 3-16). Voluntary retirements remained stable at approximately 188 million tonnes, while compliance retirements fell by about 37%, from 67 million tonnes to 42 million tonnes. The decline in compliance retirements was driven mainly by California's Cap-and-Trade Program: in 2024, companies retired credits in bulk to meet their obligations during the program's three-year compliance period, pushing the annual figure higher. In 2025, total retirements fell back to a level close to that of 2023. As a result, voluntary-use retirements accounted for 81.74% of total retirements in 2025, up significantly from 73.93% in 2024.

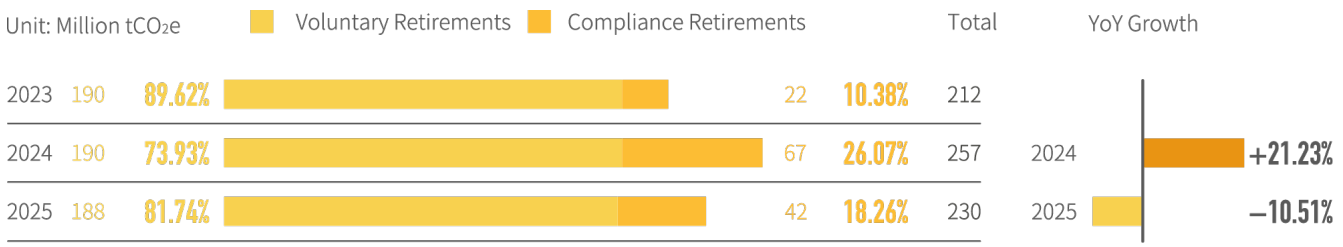



Figure 3-16. Carbon Credit Retirements by Purpose, 2023-2025

(Source: World Bank.)

# 3.4 Clean Energy Investment

## 3.4.1 Investment Scale

Global clean energy investment crossed USD 2 trillion for the first time in 2025, reaching USD 2.11 trillion (IEA, 2026) (Figure 3-17). The threshold caps a decade of two halves: investment was flat at around USD 1.20 trillion from 2016 to 2019, then rose for six consecutive years, adding nearly USD 878 billion (72%) since 2019.

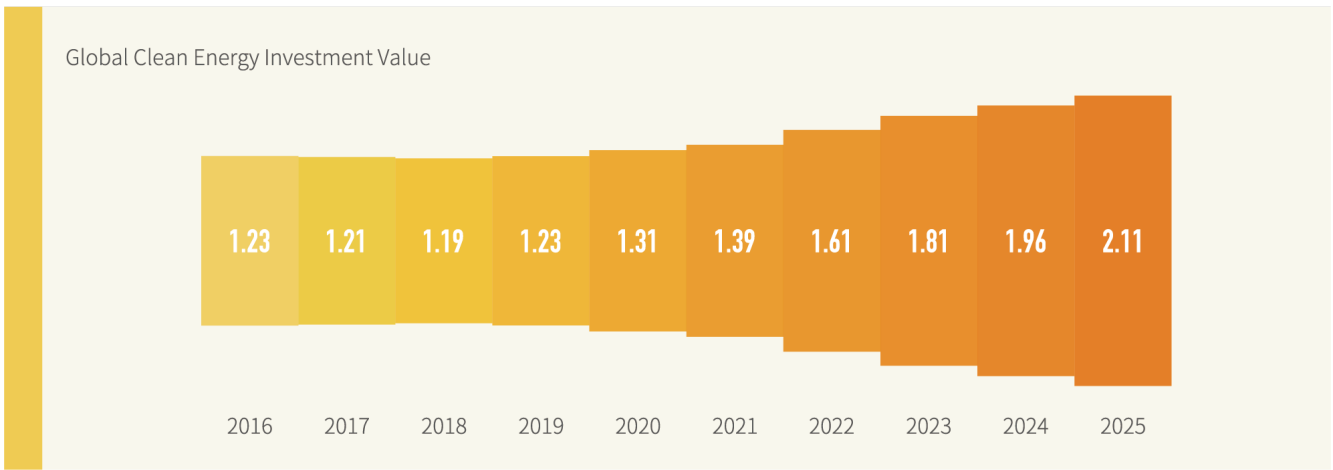



Figure 3-17. Global Clean Energy Investment, 2016-2025
(Source: International Energy Agency.)

## 3.4.2 Investment Growth Trends

Although investment reached a record level, its growth rate is slowing. Investment grew 7.29% in 2025, following growth of 15.61% in 2022, 12.63% in 2023, and 8.40% in 2024, marking a third consecutive year of deceleration (IEA, 2026) (Figure 3-18). The compound annual growth rate since 2016 was 6.17%, and the USD 143 billion increase in 2025 remained substantial in absolute terms. The rate of growth is nevertheless critical: the IEA Net Zero Emissions pathway requires annual global clean energy investment to rise to approximately USD 4.50 trillion by the early 2030s. An average annual growth rate of 7% alone would remain insufficient to reach that target (IEA, 2023).

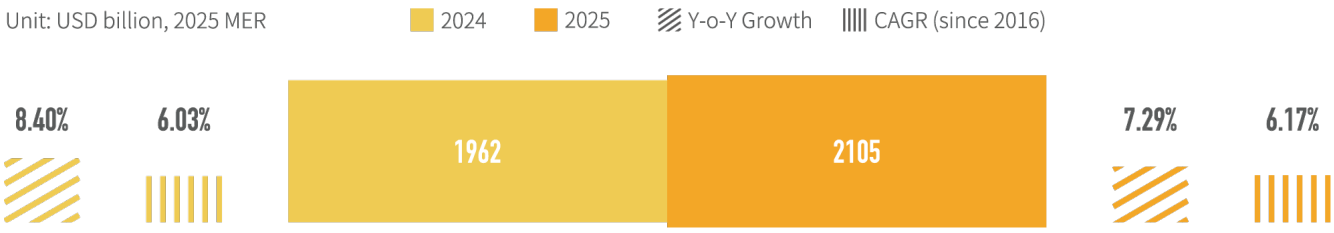



Figure 3-18. Global Clean Energy Investment Growth, 2024-2025

(Source: International Energy Agency.)

## 3.4.3 Sectoral Distribution of Investment

### (1) Distribution by Major Sectors

Clean energy investment is increasingly centered on the electricity sector. Here, electricity includes power generation, grids, and battery storage. Investment across these areas reached approximately USD 1.31 trillion in 2025 (IEA, 2026), or 62.08% of the total, up markedly from the 57%–58% range that prevailed for most of 2016–2022 (Figure 3-19). Investment in end-use applications totaled USD 762 billion, or 36.23% of the total. Although substantially smaller than electricity investment, it grew faster. Despite a rising share, clean-fuel investment remained marginal at approximately 1% of the total. Demand-side investment continued to grow relatively quickly, but its overall scale remained well below that of supply-side investment.

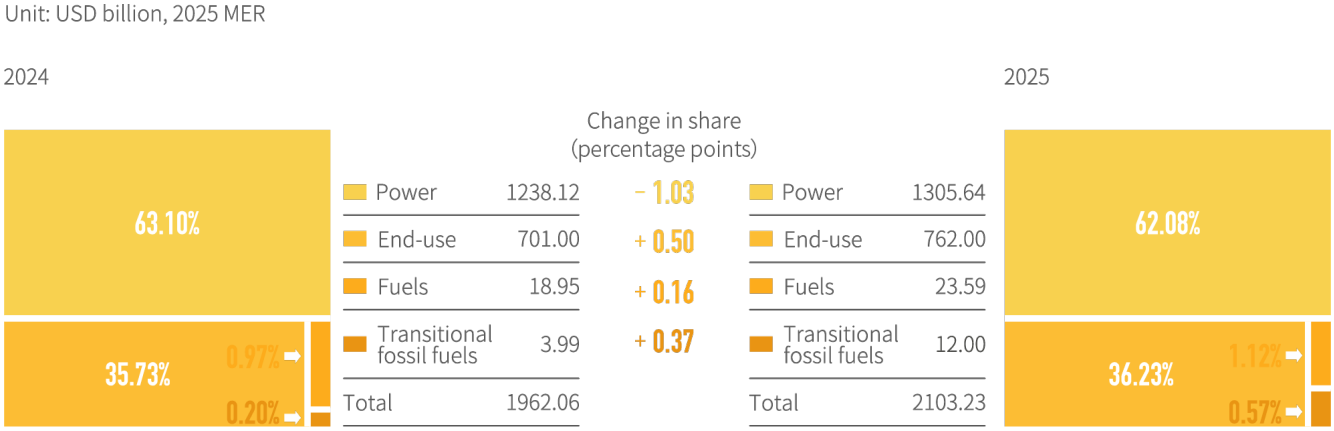



Figure 3-19. Global Clean Energy Investment by Main Sector, 2024-2025

(Source: International Energy Agency.

Note: Fuels comprise clean fuels and direct air capture (DAC) investment. DAC is a carbon-removal technology. Minor discrepancies in data across figures are due to rounding in calculations based on detailed data.)

## (2) Distribution by Subsectors

Within the power sector, growth in 2025 was driven by investment in transmission infrastructure rather than generation assets. Investment in generation was broadly stable, increasing 0.35% to USD 779.64 billion. Grid investment increased 11.17% to USD 448 billion, while battery-storage investment increased 34.02% to USD 78 billion (IEA, 2026) (Figure 3-20). Investment in other end-use applications increased 15.94% to USD 400 billion. Investment in transitional fossil fuels roughly tripled to USD 12 billion, while investment in direct air capture more than doubled but remained below USD 600 million. Both remain small relative to total clean energy investment. These changes indicate that generation investment remained stable in 2025, while capital allocation placed greater emphasis on grid and storage infrastructure.

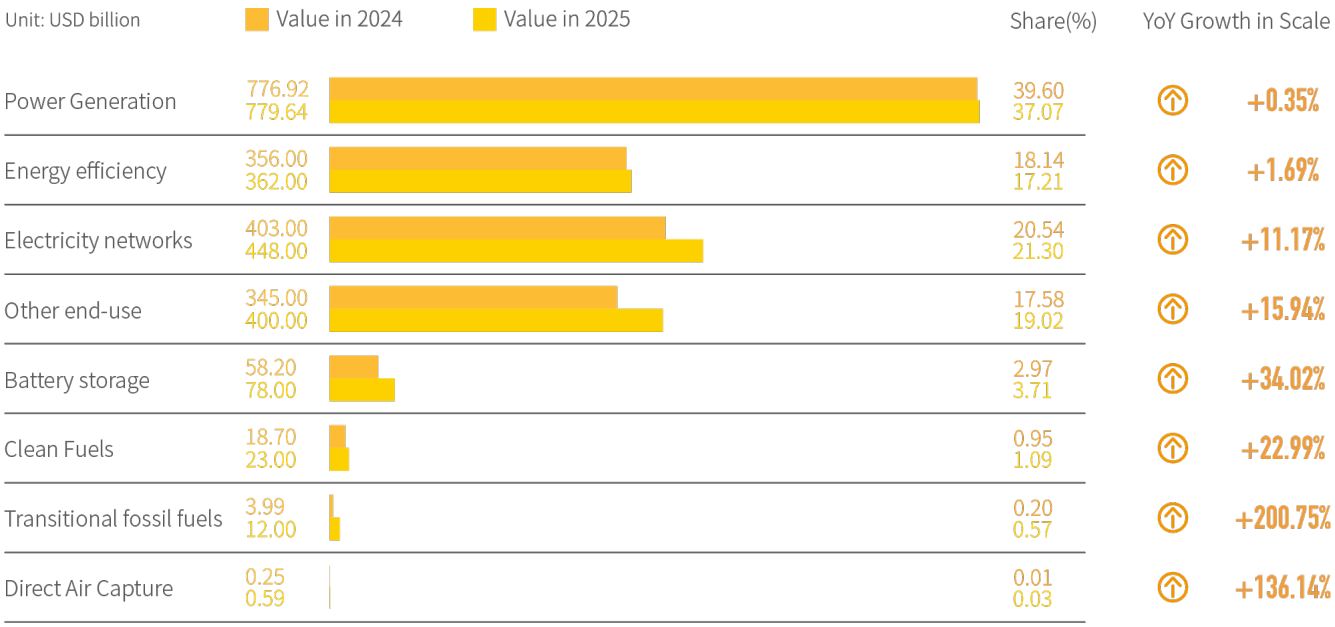



Figure 3-20. Global Clean Energy Investment by Subsectors, 2024-2025

(Source: International Energy Agency.)

## 3.4.4 Regional Distribution of Investment

Global clean energy investment was highly differentiated across regions in 2025 (Figure 3-21). Clean energy investment grew fastest in EMDEs outside China, increasing 12.37% year on year, compared with 7.55% in advanced economies and 2.35% in China (IEA, 2026). In absolute terms, China's investment exceeded the combined total of other EMDEs and accounted for more than 60% of total investment in advanced economies. Investment in advanced economies was the highest, at USD 1,046.29 billion, followed by China at USD 646.18 billion and other EMDEs at a combined USD 399.70 billion.

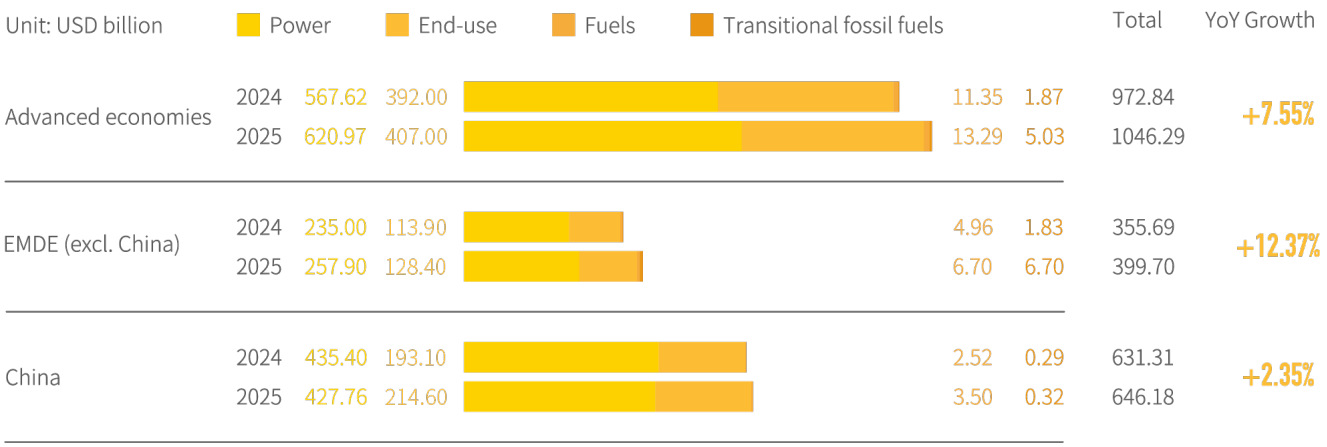



Figure 3-21. Global Clean Energy Investment by Region, 2024-2025

(Source: International Energy Agency.)

# 4

# REGIONAL DEVELOPMENT

# Highlights

This chapter compares how climate finance evolved in the US, the EU, and China between 2024 and 2025.

The US faced weaker federal policy support and pressure on both financing and investment.

The EU maintained institutional resilience through its regulatory framework, public finance and carbon market revenues.

China expanded climate investment and financing and further broadened carbon market coverage.

# 4.1 United States: Weaker Federal Support and Slower Investment Growth

In 2025, US climate finance was marked by weaker federal policy support and softer market conditions. The US withdrew from the Paris Agreement, reduced support for international climate finance and repealed the 2009 Greenhouse Gas Endangerment Finding. On the financing side, sustainable bond issuance declined. On the investment side, the share of sustainable investment assets and clean investment declined.

## 4.1.1 Sustainable Finance Activity Declined

Sustainable Bond Issuance Fell. The US saw a decline in sustainable bond issuance. Data from the Intercontinental Exchange (ICE) show that US labelled sustainable bond issuance fell from USD 100.41 billion in 2024 to USD 83.22 billion in 2025, a decline of 17.12%, which moved the US from the third-largest to the fifth-largest sustainable bond issuer (ICE, 2026). This decline was primarily attributable to anti-ESG sentiment and heightened financing scrutiny.

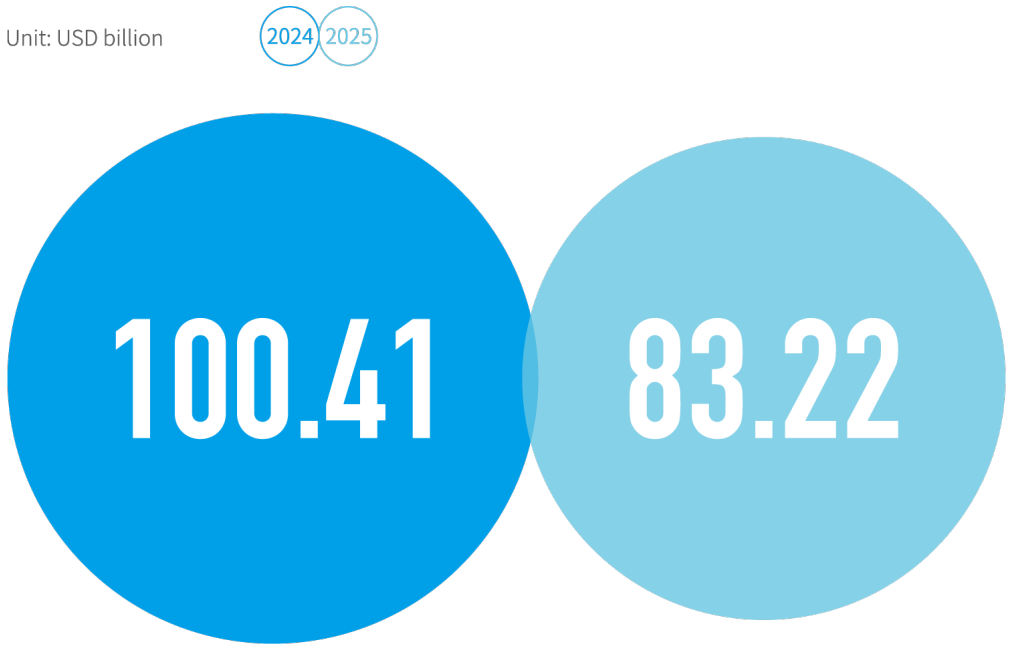



Figure 4-1. US Sustainable Bond Issuance, 2024 vs. 2025
(Source: Intercontinental Exchange, Sustainable Bonds Report.
Note: ICE includes green, blue, sustainability, social, sustainability-linked and transition-labelled bonds.)

Sustainable Lending Remained Stable. From July 2024 to June 2025, the volume of publicly disclosed sustainable loans in North America was USD 297.84 billion, accounting for 34.50% of global sustainable loan issuance over the same period and making it the second-largest market after Europe. The ten largest sustainable loans by size were all borrowed by US-headquartered companies, totaling USD 69.51 billion; eight were sustainability-linked loans and two were green loans (Environmental Finance Data, 2025).

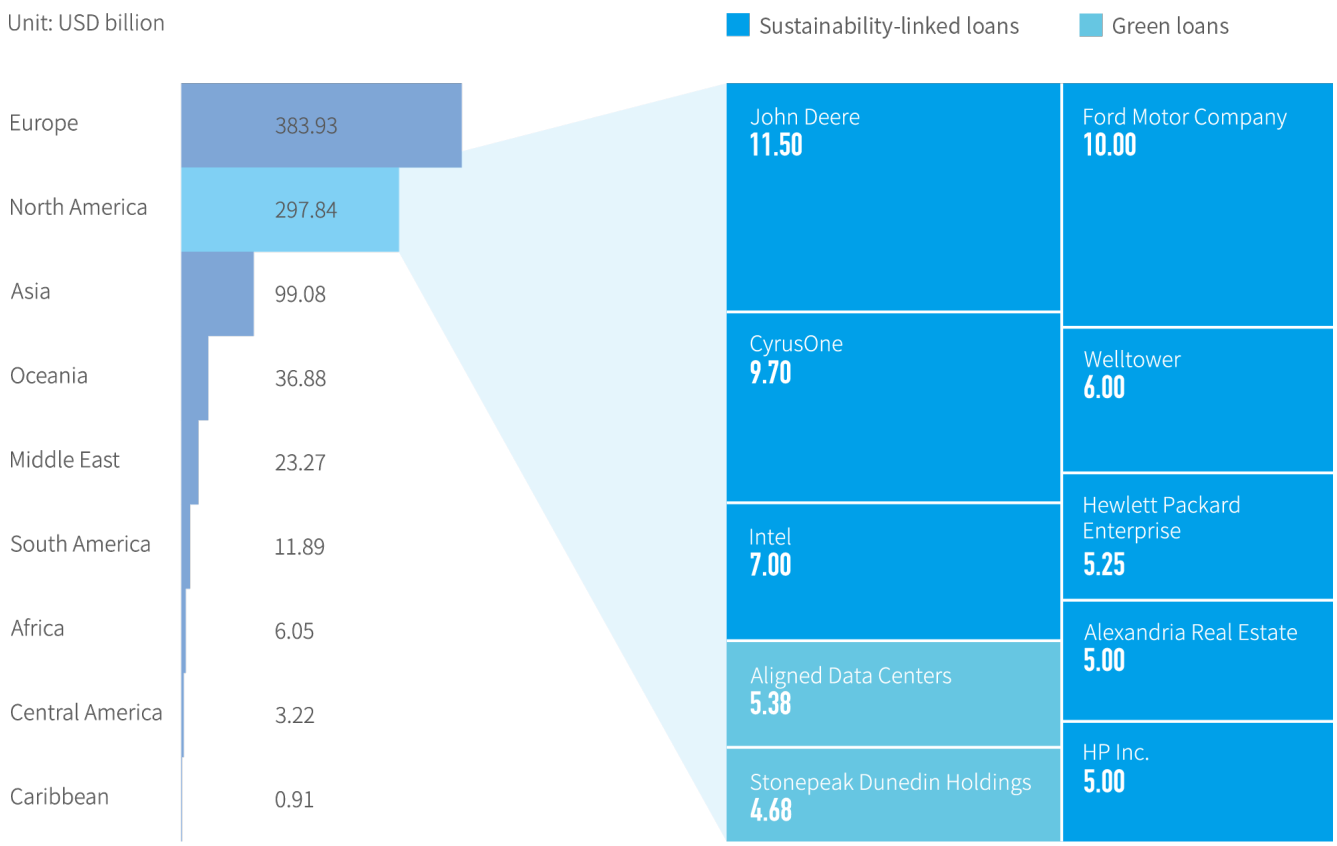



Figure 4-2. North American Sustainable Loans Value

(Source: Environmental Finance Data, Sustainable Loans Insight 2025.

Note: The reporting period is July 1, 2024 to June 30, 2025. Regions are classified by borrower headquarters.)

## 4.1.2 Sustainable Investment Growth Slowed

Sustainable Investment Market Share Declined. Although US sustainable or ESG investment assets increased slightly from USD 6.50 trillion in 2024 to USD 6.60 trillion in 2025, total US assets under management rose faster, from USD 52.50 trillion to USD 61.70 trillion, so the share of sustainable or ESG assets fell from 12.38% to 10.70% (US SIF Foundation, 2025).

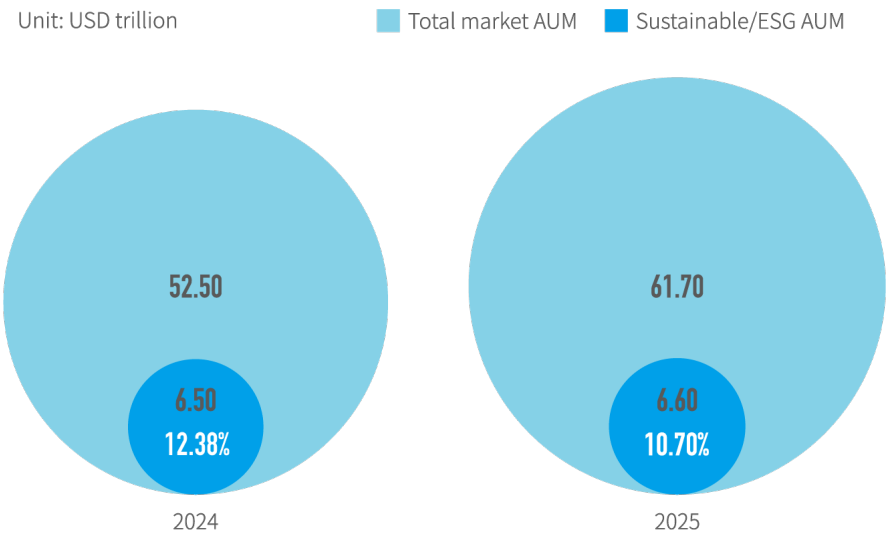



Figure 4-3. The Share of US Sustainable or ESG Investment, 2024 vs. 2025
(Source: US SIF Foundation, US Sustainable Investing Trends 2025/2026.)

Sustainable open-end funds and exchange-traded funds (ETFs) faced greater market pressure. US sustainable funds posted outflows for the third consecutive calendar year in 2025, with annual net outflows of about USD 21.40 billion. Year-end assets still rose from USD 343.74 billion at end-2024 to USD 367.53 billion at end-2025, mainly reflecting market price gains rather than new inflows. Product supply also contracted: 9 sustainable funds were launched and 55 were closed in 2024, while 9 were launched and 91 were closed in 2025 (Morningstar, 2026).

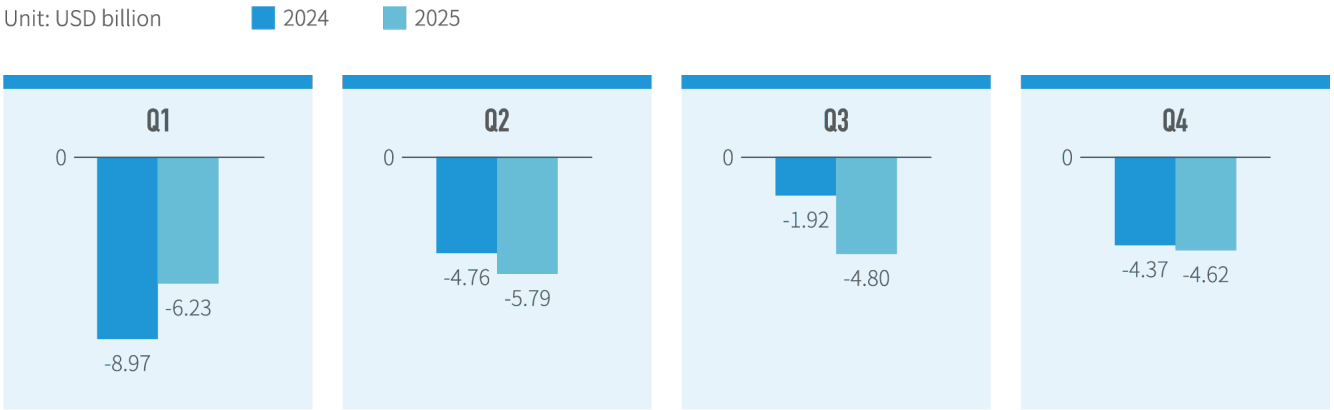



Figure 4-4. Quarterly Net Flows of US Sustainable Open-end Funds and ETFs, 2024 vs. 2025
(Source: Morningstar Direct.)

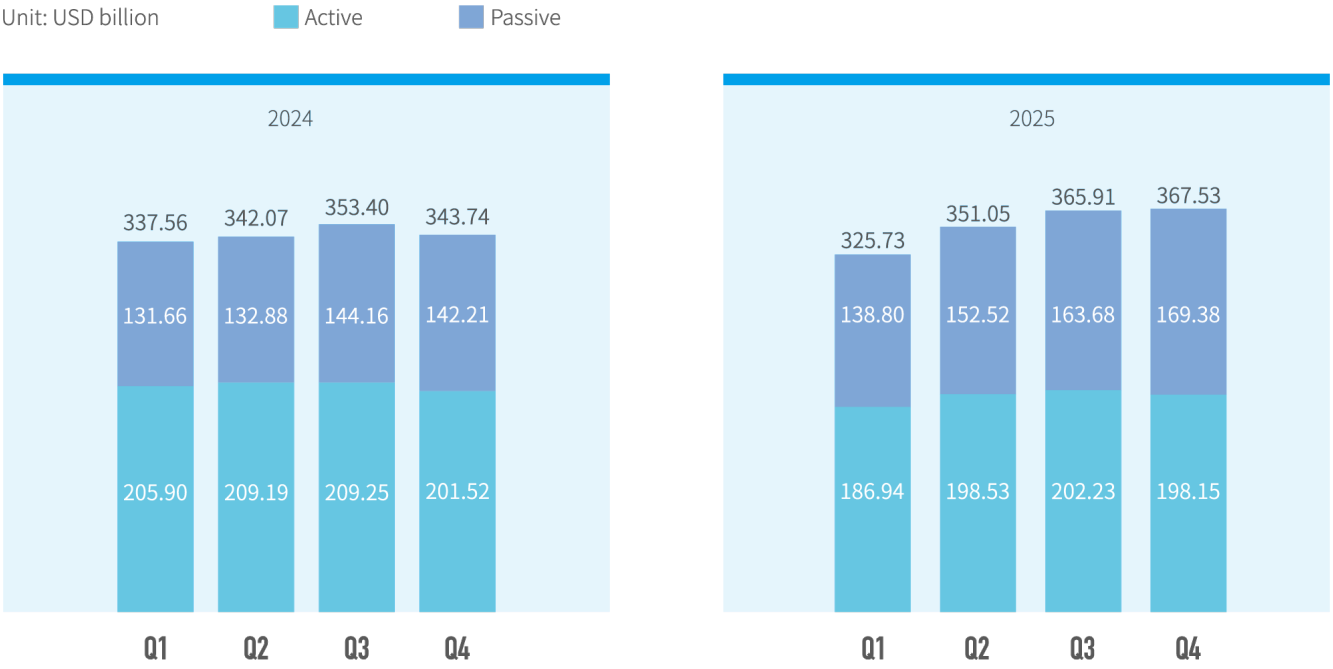



Figure 4-5. US Sustainable Fund Assets, 2024 vs. 2025

(Source: Morningstar Direct.)

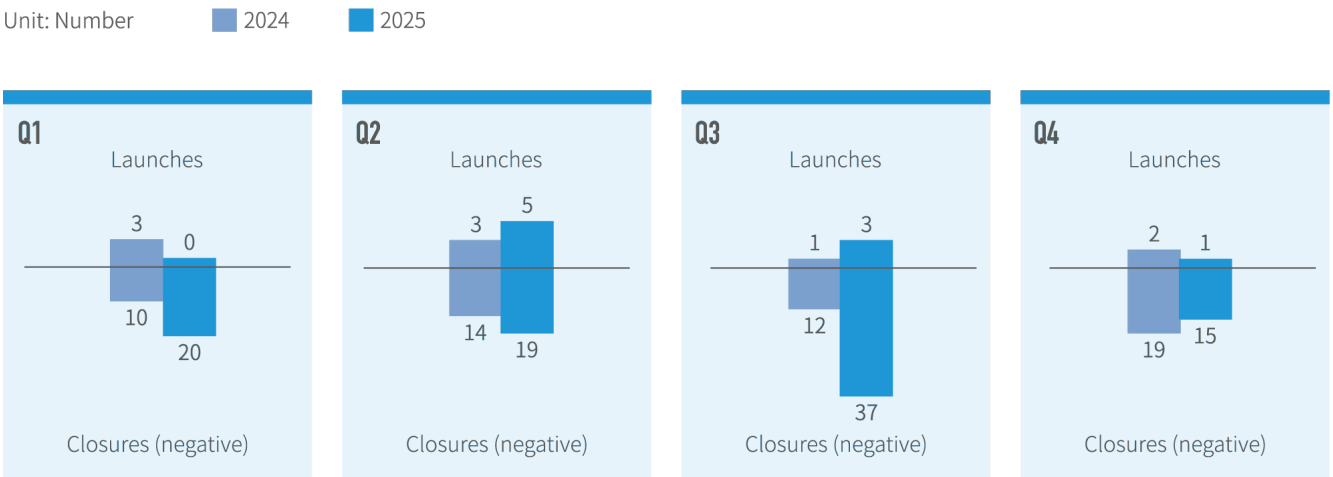



Figure 4-6. US Sustainable Fund Launches and Closures, 2024 vs. 2025

(Source: Morningstar Direct.)

Clean Investment Trends Diverged by Segment. Data from the Clean Investment Monitor (CIM) show that total clean investment rose from USD 266 billion in 2024 to USD 278 billion in 2025, an increase of about 5%. Of this total, retail investment increased from USD 130 billion to USD 135 billion; energy and industrial investment rose from about USD 85.60 billion to USD 101 billion; by contrast, investment in clean technology manufacturing fell from about USD 50.60 billion to USD 42 billion, a decline of about 17% (CIM, 2026).

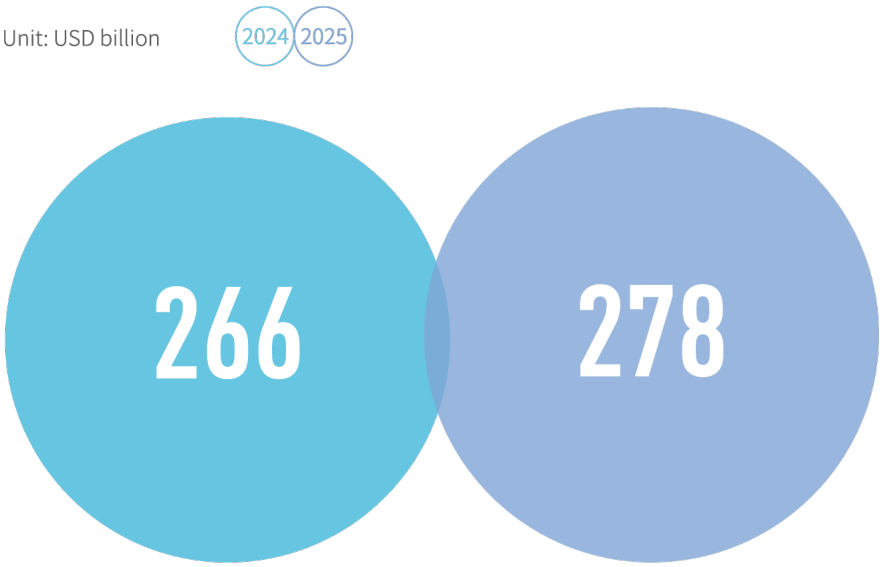



Figure 4-7. US Clean Investment, 2024 vs. 2025
(Source: Clean Investment Monitor, US Q4 2025 Update.)

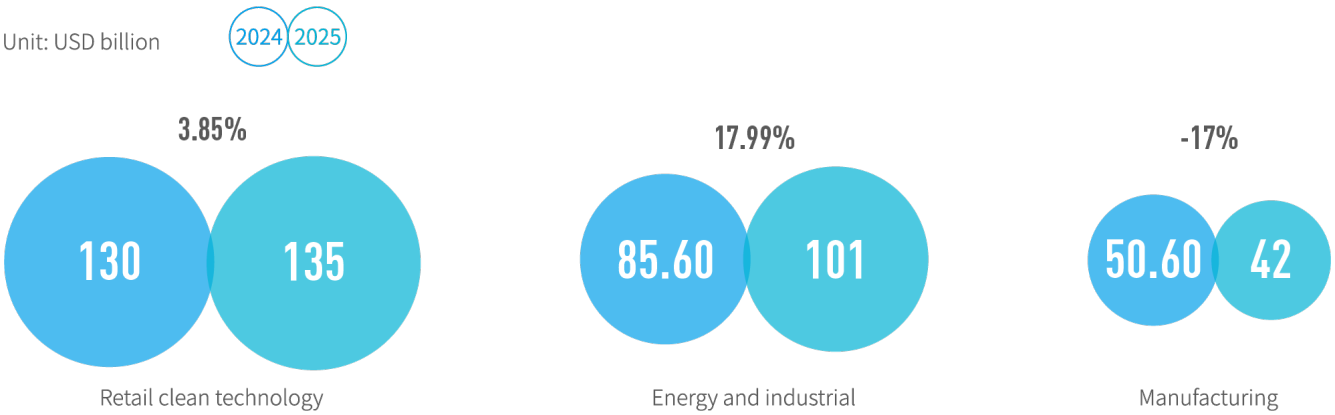



Figure 4-8. Changes in US Clean Investment by Segment, 2024 vs. 2025
(Source: Clean Investment Monitor, US Q4 2025 Update.)

Future clean energy investment commitments weakened. In 2025, announcements in manufacturing declined by around 26%, while announcements in utility-scale clean electricity and industrial decarbonization projects declined by around 46%. USD 23 billion in manufacturing investments was cancelled, which is five times higher than that in 2024. These changes indicate weaker expansion plans and a tightening future project pipeline (CIM, 2026).

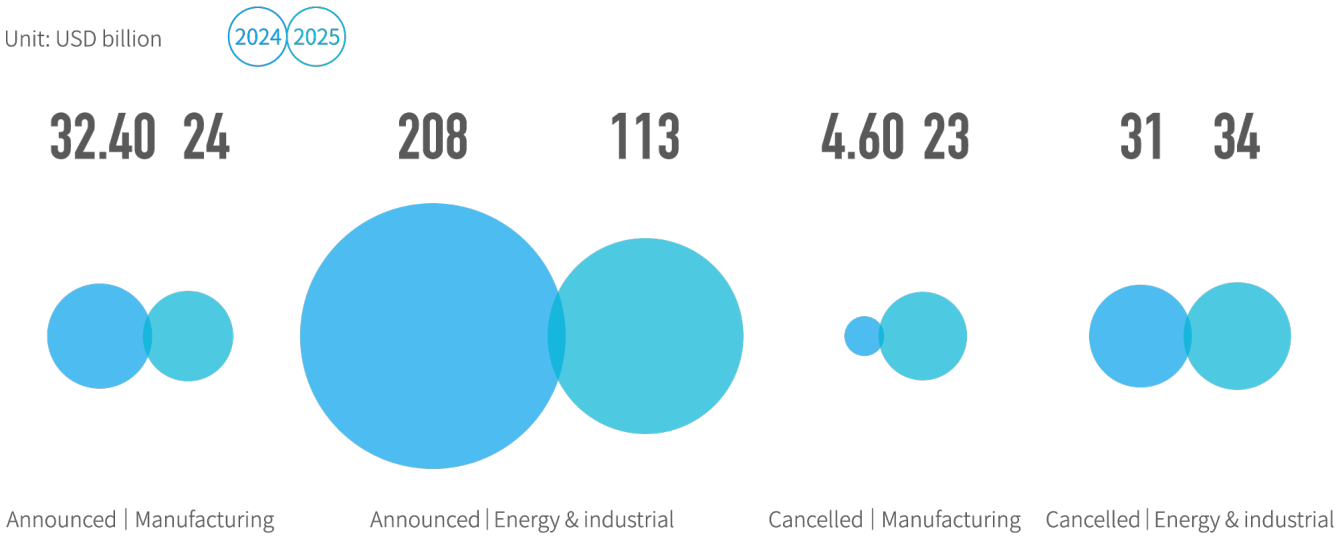



Figure 4-9. US Clean Investment Project Announcements and Cancellations, 2024 vs. 2025
(Source: Clean Investment Monitor, US Q4 2025 Update.)

## 4.1.3 Federal Climate Policy Support Weakened

The federal government retreated from climate goals. The climate-related disclosure rules (CRDR) issued by the SEC faced legal challenges after their adoption. The US withdrawal from the Paris Agreement and the Green Climate Fund also weakened the policy coordination of US and global climate action. Moreover, the US Environmental Protection Agency (EPA) rescinded the 2009 greenhouse gas endangerment finding and repealed federal vehicle emissions standards. These changes reduced expectations for federal climate policy continuity (Climate Action Tracker, 2025; EPA, 2026; GCF, 2026; SEC, 2025, 2026; The White House, 2025).

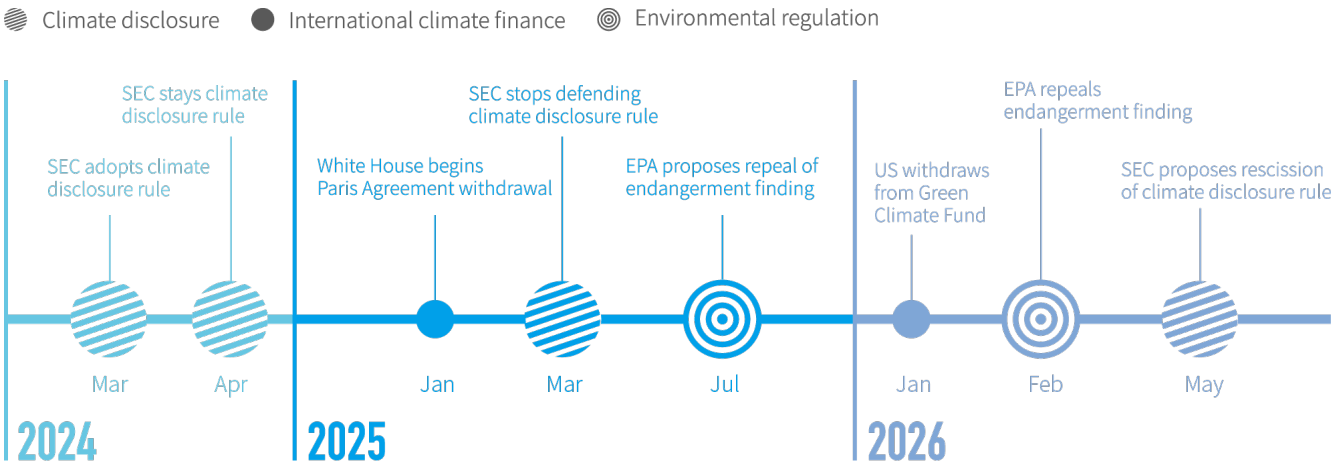



Figure 4-10. US Federal Climate Policy Changes

(Source: Constructed by the authors.)

# 4.2 European Union: Market Pressures and Stronger Institutional Support

In 2025, EU climate finance continued to follow a pathway based on rule-setting, public finance and complementary market instruments. Compared to 2024, the EU maintained a relatively high degree of continuity in climate finance policy, while public-sector financial support strengthened further. Market-based financing, however, showed a more mixed pattern, with ESG bond issuance cooling and green and sustainability-linked loan issuance recording only limited growth.

## 4.2.1 Sustainable Finance Markets Came Under Pressure

Sustainable Bond Issuance Diverged by Segment. Data from the Association for Financial Markets in Europe (AFME) show that European ESG bond issuance diverged across segments in 2025. Issuance of sustainability-linked and transition bonds, social bonds and green bonds declined by 30.43%, 14.55% and 3%, respectively. Among them, green bond issuance fell to EUR 291 billion, its first annual decline in the recorded series. Social bond issuance totalled EUR 47 billion, the lowest level since 2019. Sustainability-linked and transition bond issuance also fell to its lowest amount since 2019, at EUR 16 billion. Only sustainability bonds increased, from EUR 33 billion to EUR 38 billion, up 15.15% (AFME, 2026).

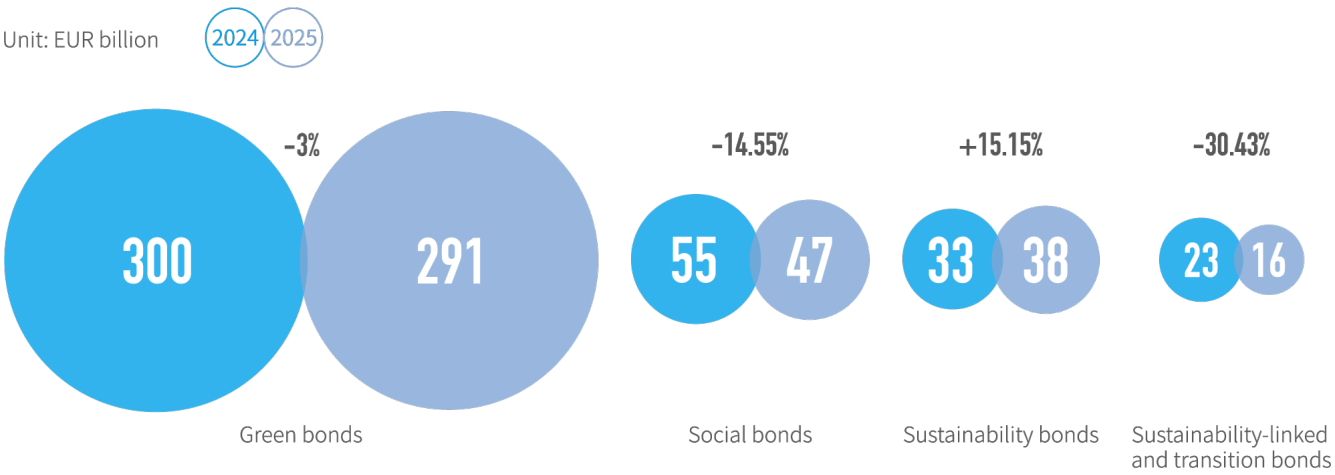



Figure 4-11. European ESG Bond Issuance Structure, 2024 vs. 2025
(Source: Association for Financial Markets in Europe, ESG Finance Report Q4 2025.)

Outstanding green and social bonds continued to grow. European green bond outstanding volume rose. Corporate bonds remained the largest component. Government, treasury and central bank-related bonds ranked next, while agency bonds and other government or supranational issuers also accounted for a certain share (AFME, 2026).

In terms of country distribution, Germany was the largest European green bond market. France ranked second, followed by the Netherlands, the United Kingdom and the EU institutions (AFME, 2026).

Outstanding social bonds were smaller than green bonds and more concentrated among sovereign and institutional issuers. Outstanding social bonds increased in 2025. By country, France was the largest market for outstanding social bonds, followed by EU institutions, well above the Netherlands, Germany, the United Kingdom and Italy (AFME, 2026).

Green loan issuance remained broadly stable. European green and sustainability-linked loan issuance increased from EUR 284 billion in 2024 to EUR 287 billion in 2025, representing growth of 1.06% (AFME, 2026).

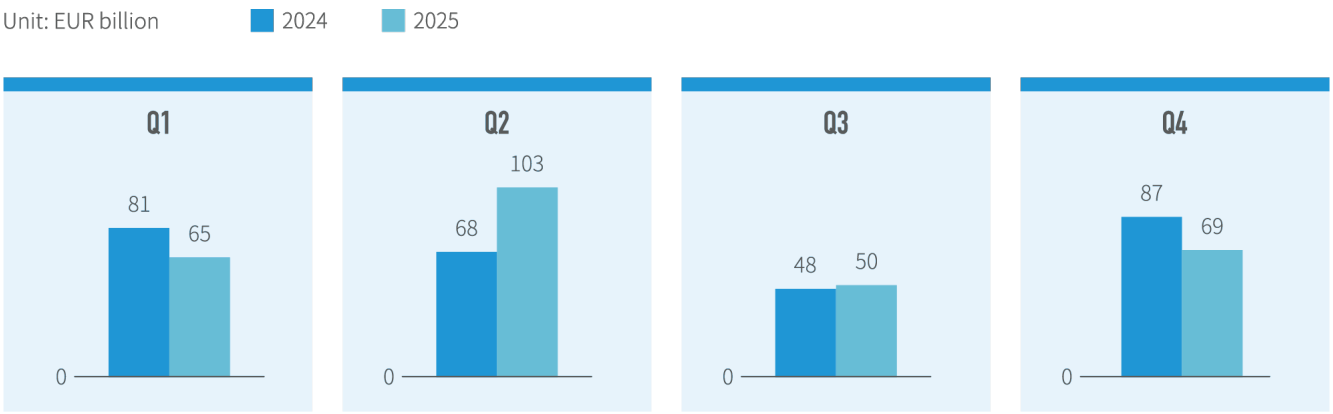



Figure 4-12. European Green and Sustainability-Linked Loans, 2024 vs. 2025
(Source: Association for Financial Markets in Europe, ESG Finance Report Q4 2025.)

In terms of loan structure, European green and sustainability-linked loans remained highly concentrated. By transaction type, investment-grade loans accounted for about 85%, while leveraged loans accounted for about 15%, indicating that issuance was still mainly driven by borrowers with stronger credit quality (AFME, 2026).

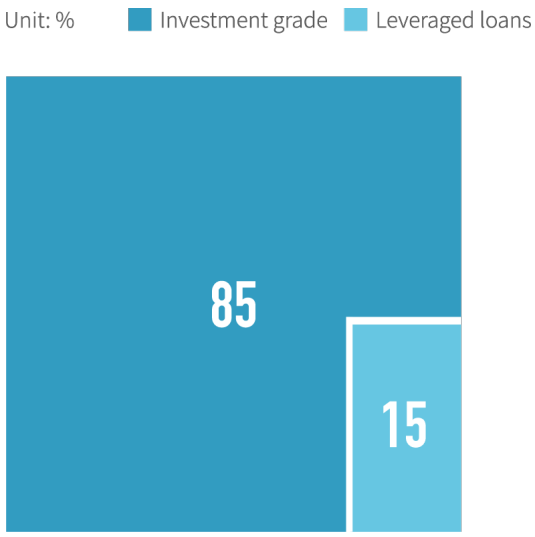



Figure 4-13. European Green and Sustainability-Linked Loan Transaction Structure, 2025
(Source: Association for Financial Markets in Europe, ESG Finance Report Q4 2025.)

France recorded the largest issuance volume in green and sustainability-linked loan, followed by Germany, the UK, Italy, and Spain (AFME, 2026). The euro was the dominant denomination, ahead of pound sterling- and US dollar-denominated issuance (AFME, 2026). Globally, Europe remained the leading market for green and sustainability-linked loans (AFME, 2026).

## 4.2.2 Sustainable Funds Recorded Net Outflows

European sustainable funds shifted from net inflows of USD 54 billion in 2024 to net outflows of USD 62 billion in 2025. This was the first annual net outflow for the European market since Morningstar began tracking the data in 2018 (Morningstar, 2026).

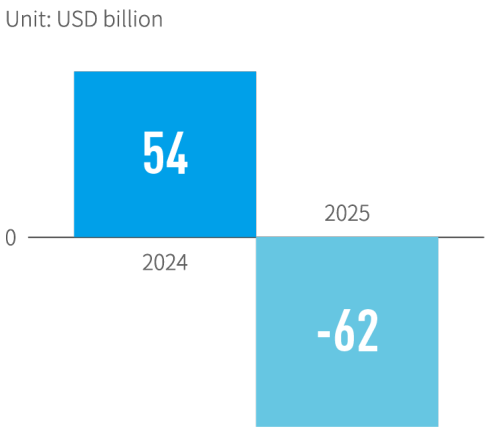



Figure 4-14. European Sustainable Fund Net Flows, 2024 vs. 2025
(Source: Morningstar Direct.)

## 4.2.3 Public Financial Support Strengthened

Public and quasi-public finance continued to support the European climate finance system. In 2025, the EIB Group signed EUR 100 billion in financing, of which EUR 57 billion supported green transition, climate action and environmental sustainability, up from EUR 50.70 billion in 2024. Another EUR 32.80 billion supported energy security, including energy efficiency, renewable energy, storage and grids. These operations are expected to support about EUR 108 billion in total investment (EIB, 2026b).

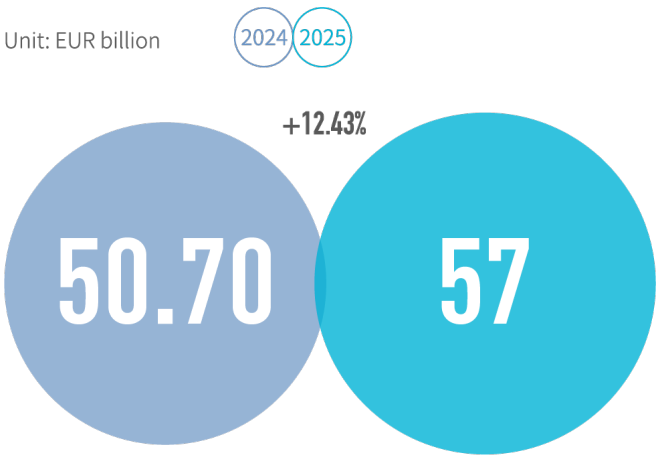



Figure 4-15. EIB Green Project Finance, 2024 vs. 2025
(Source: European Investment Bank Group, 2025 Annual Results and Key Figures.)

The EU ETS played a greater role. The EU ETS is one of the more representative instruments in the EU's climate finance system. In 2025, its average auction price, measured per tonne of carbon dioxide equivalent ($CO_2e$), increased from EUR 64.80/t$CO_2e$ in 2024 to EUR 73.40/t$CO_2e$, while auction revenues rose from EUR 38.80 billion to more than EUR 43 billion. Both the carbon price signal and revenue-generating function strengthened at the same time (EEA, 2026; ICAP, 2026).

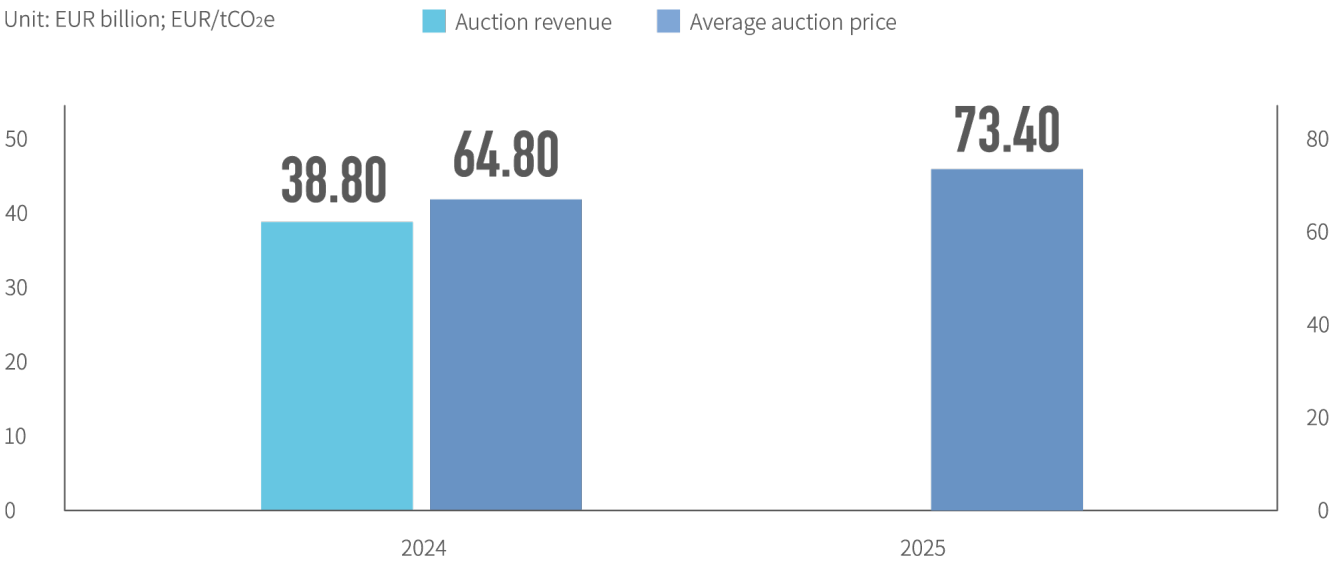



Figure 4-16. EU ETS Auction Revenue and Carbon Price Signal, 2024 vs. 2025
(Source: International Carbon Action Partnership.)

# 4.3 China: Expanding Green Finance and Strengthening Market Mechanisms

In 2024-2025, China's climate finance continued to rely mainly on bank credit and the bond market. On the one hand, green loan balances continued to expand, green bond issuance recovered, and the green fund market remained in its early stage. On the other hand, the expansion of the national carbon market provided a clearer institutional basis for subsequent fund identification, information disclosure and carbon asset management.

## 4.3.1 Green Finance Continued to Expand

Green Lending Continued to Expand. Green loans remained the largest financial instrument in China's climate finance system. Data from the People's Bank of China show that the outstanding balance of green loans in domestic and foreign currencies increased from RMB 36.60 trillion at the end of 2024 to RMB 44.77 trillion at the end of 2025. By structure, outstanding loans for green infrastructure upgrading, green and low-carbon energy transition, and ecological protection, restoration and utilization reached RMB 19.94 trillion, RMB 8.48 trillion and RMB 5.03 trillion, respectively, in 2025. By industry, the balance of green loans to the production and supply of electricity, heat, gas and water was RMB 8.98 trillion, while the balance for transportation, storage and postal services was RMB 8.26 trillion (People's Bank of China, 2025, 2026).

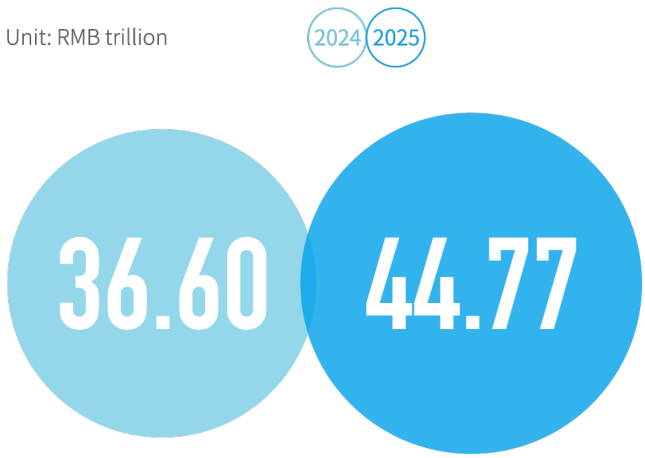



Figure 4-17. China's Green Loan Balance, 2024 vs. 2025

(Source: People's Bank of China, Financial Institution Loan Use Statistics Report.

Note: The People's Bank of China revised the green loan statistical system and recognition standards beginning in 2025; the figures are presented only to indicate scale and are not directly comparable.)

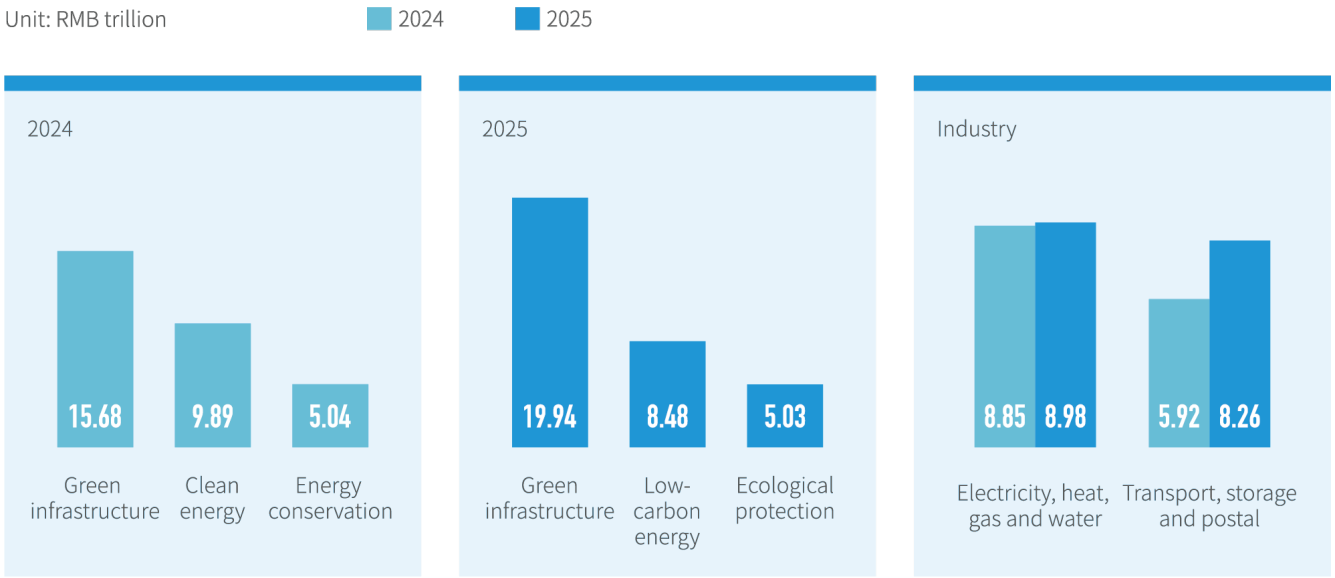



Figure 4-18. Structure of China's Green Loans, 2024 vs. 2025

(Source: People's Bank of China, Financial Institution Loan Use Statistics Report, Q4 2024 and Q4 2025.

Note: The 2025 green loan statistical categories were adjusted, so item names and coverage are not fully consistent with 2024.)

The primary market for green bonds recovered in 2025. China's green bond issuance increased from RMB 1,546.90 billion in 2024 to RMB 1,922.68 billion in 2025. Of this total, labelled green bond issuance rose from RMB 683.30 billion to RMB 1,078.43 billion, an increase of approximately 58% from 2024. By the end of 2025, the outstanding balance of labelled green bonds accounted for 1.20% of the bond market. Non-labelled green bond issuance declined slightly from RMB 863.60 billion to RMB 844.25 billion. The increase in green bond issuance came mainly from labelled green bonds. The market also relied more heavily on explicit green labels and information disclosure (China Bond, 2026).

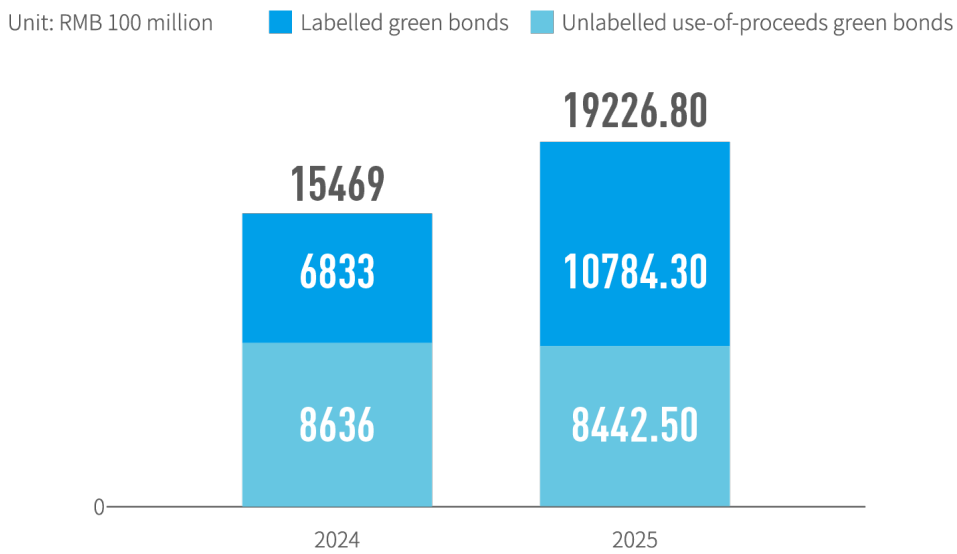



Figure 4-19. China's Use-of-Proceeds Green Bond Issuance, 2024 vs. 2025

(Source: China Bond, April 2026 issue.)

By bond type, financial bonds were the largest category of use-of-proceeds green bonds, all of which were labelled green bonds. Medium-term notes, corporate bonds and short-term commercial paper were issued as both labelled and non-labelled green bonds. Local government bonds also represented a relatively large volume. Asset-backed securities (ABS) were all labelled green bonds (China Bond, 2026).

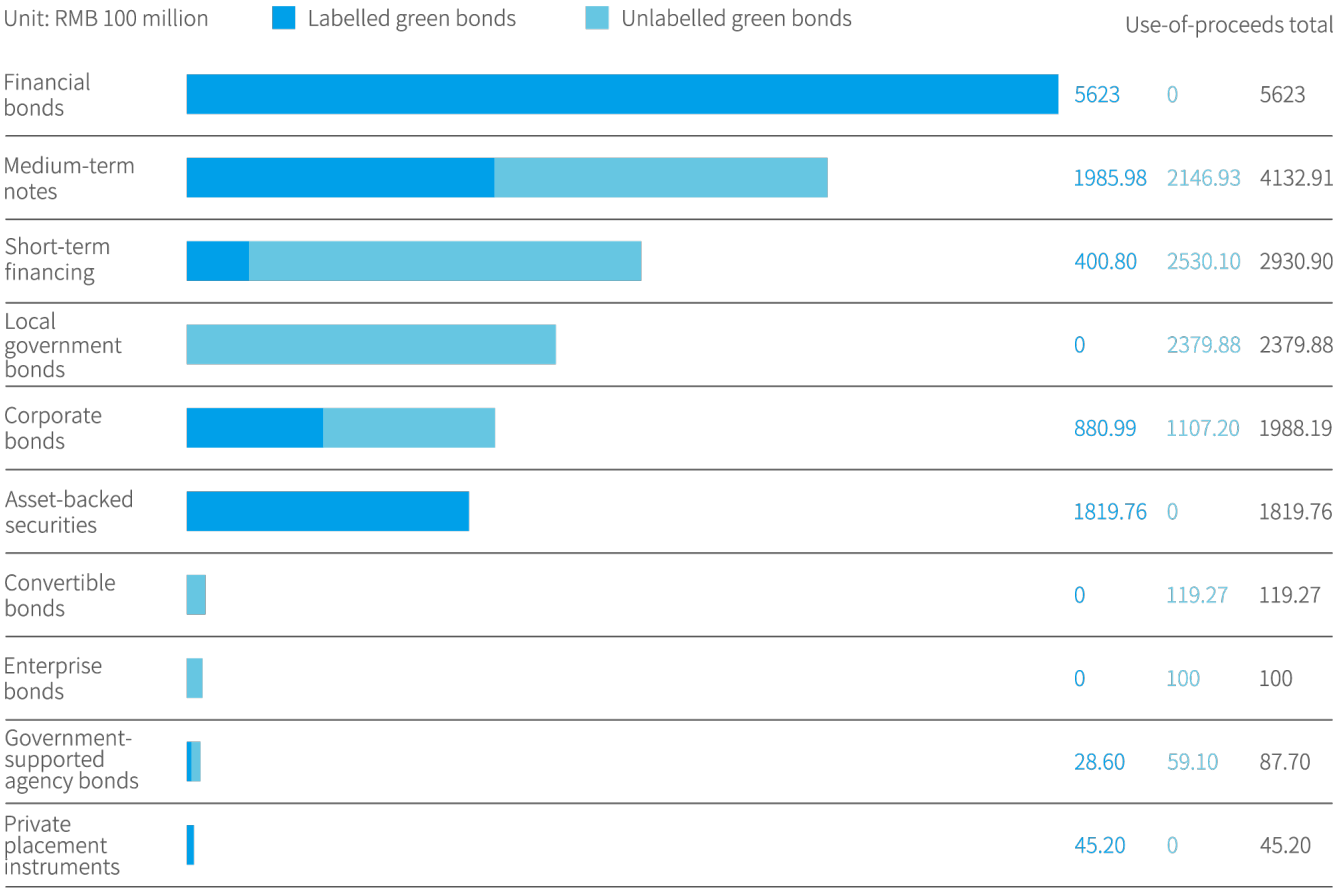



Figure 4-20. China's Use-of-Proceeds Green Bond Structure by Bond Type, 2025

(Source: China Bond, April 2026 issue.)

Green bond issuers were mainly concentrated in finance, utilities and industry. Among labelled green bonds, the largest issuing sectors were finance, utilities and industry, which together accounted for 94% of issuance. Combined issuance in the energy, materials, consumer discretionary, real estate, information technology and consumer staples sectors totaled RMB 65.80 billion, accounting for 6% (China Bond, 2026).

In the secondary market, green bond trading was relatively stable. Data from the Wind Financial Terminal show that in 2025, the ChinaBond Green Bond Composite Index followed an overall upward trend, rising from 137.80 points at the beginning of the year to 140.22 points at year-end, an increase of approximately 1.80%. Its 20-day volatility remained relatively high in the first half of the year but generally declined thereafter, falling to around 0.18% by year-end (Wind, 2026).

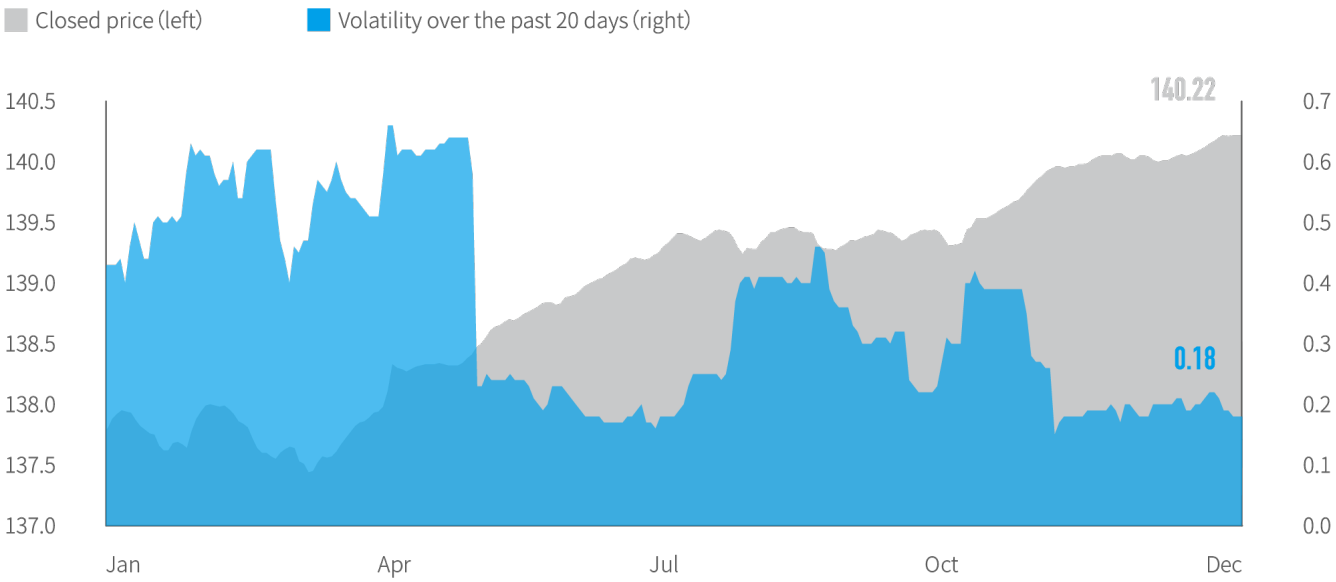



Figure 4-21. ChinaBond Green Bond Composite Index and 20-Day Volatility, 2025

(Source: Wind Financial Terminal.)

Green bond market infrastructure continued to improve. The outstanding balance of green bonds under collateral management exceeded RMB 65 billion, and the collateral pool exceeded RMB 700 billion. These developments broadened the basis for using green bonds as collateral, in liquidity management and in related applications. At the same time, the number of ChinaBond green and sustainable development indices reached 67, and the value of bonds recorded in the green and low-carbon transition bond database exceeded RMB 22 trillion. These supporting mechanisms provided a broader set of tools for green bond pricing, investment allocation and market monitoring (China Bond, 2026).

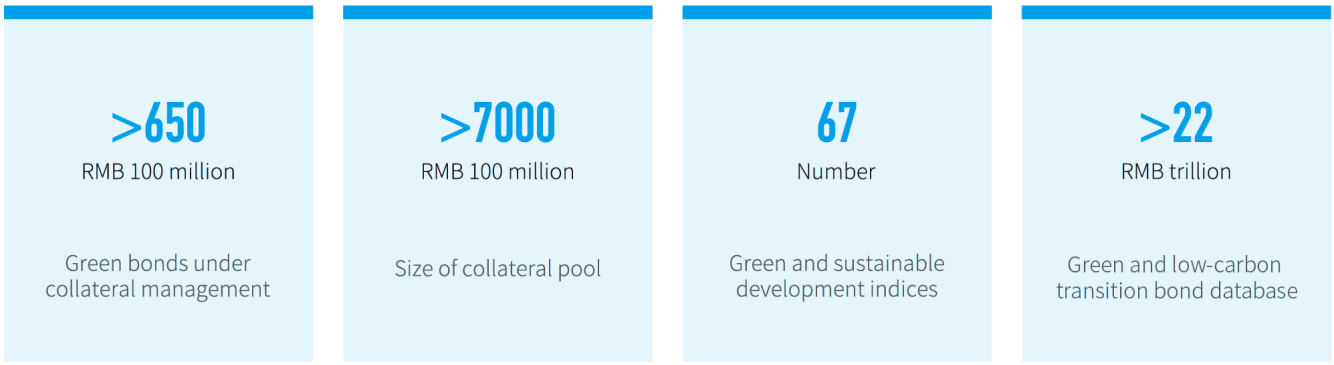



Figure 4-22. Green Bond Market Infrastructure in 2025

(Source: China Bond, April 2026 issue.)

## 4.3.2 Sustainable Fund Assets Continued to Grow

The outstanding assets of publicly offered ESG funds reached at a high level. China's publicly offered ESG fund assets continued to expand in 2025. The outstanding assets of publicly offered ESG funds reached about RMB 1,167.52 billion by the end of 2025, a year-on-year increase of 17.86% and a record high. In contrast, new issuance of publicly offered ESG funds totaled RMB 70.81 billion in 2025, down 61% year on year. New issuance slowed significantly, and market growth came mainly from the expansion of existing products. By issuance structure, ESG strategy funds had the largest issuance volume in 2025, at about RMB 43.41 billion, or 61.31% of total issuance. Issuance of social responsibility-themed funds totaled about RMB 16.75 billion, or 23.65% of total issuance, the second-largest share. In 2025, assets in China's publicly offered ESG funds increased, while new issuance slowed and remained concentrated in ESG strategy products (Ping An Securities (2025).

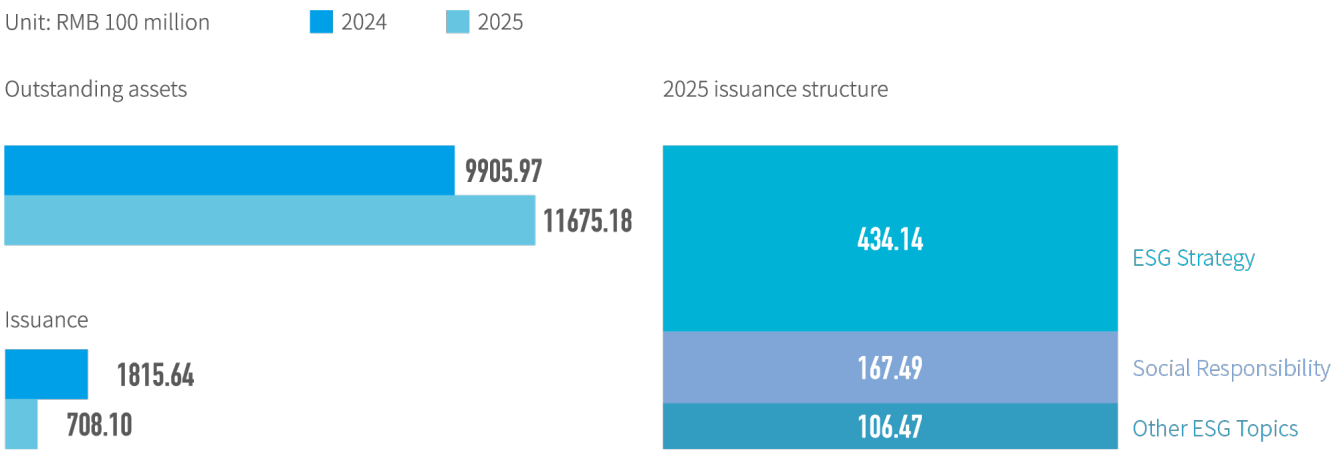



Figure 4-23. China's Publicly Offered ESG Funds: Outstanding Assets Increased While Issuance Declined

(Source: Ping An Securities.)

Sustainable thematic funds still faced identification and portfolio holding-consistency issues. Although green funds had made initial progress, their overall scale remained limited and the regulatory framework remained incomplete. A mismatch between actual fund holdings and fund themes remained one source of concern. As of October 31, 2025, 16 leading publicly offered fund managers had launched 436 equity and hybrid funds, of which only five were clearly classified as pure ESG or environmental protection-themed products; and all five were new-energy industry index ETFs (Greenpeace, 2025).

## 4.3.3 National Carbon Market Broadened Its Coverage

Sectoral Coverage Broadened. Data from the International Institute of Green Finance (IIGF) show that in 2025, the steel, cement and aluminium smelting industries were included in the national carbon market. After these industries were added, the market covered more than 60% of national emissions. The total amount of carbon allowances, trading scale and market liquidity are expected to increase further. In 2025, trading volume in the national carbon market increased, but both prices and transaction value declined. Trading volume reached 235 million tonnes, up 24.34% from 2024; transaction value was RMB 14.63 billion, down 19.23%; and the average transaction price was RMB 62.36 per tonne, down 35.06%. Across the eight local pilot markets, total transaction value declined overall in 2025. Average transaction prices were also lower than in 2024 in most pilots, except Hubei and Tianjin (ICAP, 2026; IIGF, 2026).

The carbon market mechanism also continued to improve. The 2025 policy document on advancing green and low-carbon transition and strengthening the national carbon market stated that, by 2027, the national emissions trading market should largely cover the main emitting industries in the industrial sector. By 2030, China aims to largely establish a national carbon market that combines an overall emissions cap with free and paid allocation of allowances (General Offices of the CPC Central Committee & the State Council, 2025).

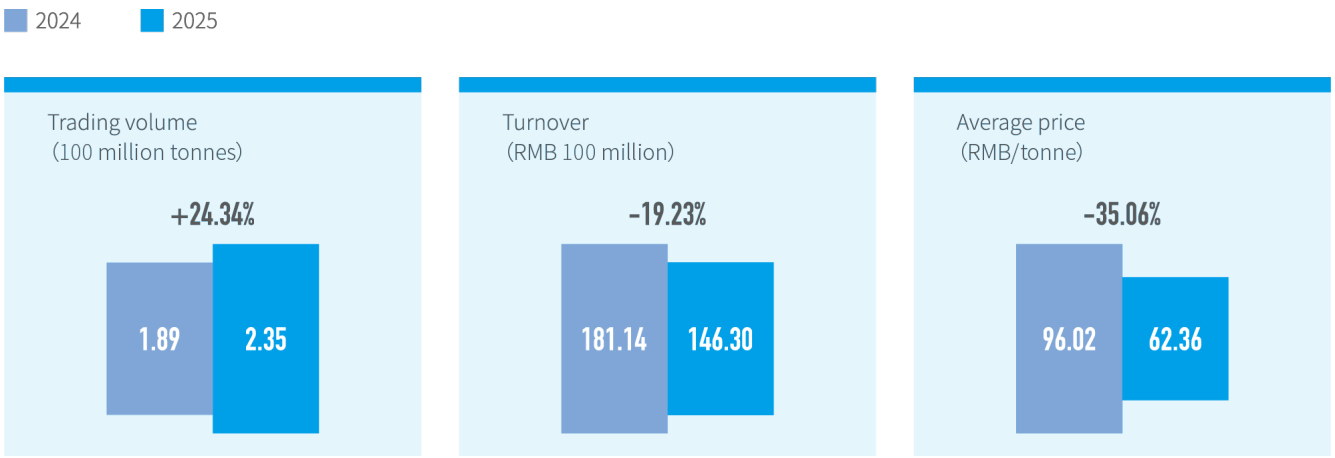



Figure 4-24. China's National Carbon Market: Higher Volume, Lower Transaction Value and Price
(Source: International Institute of Green Finance, 2025 China Carbon Market Annual Report.)

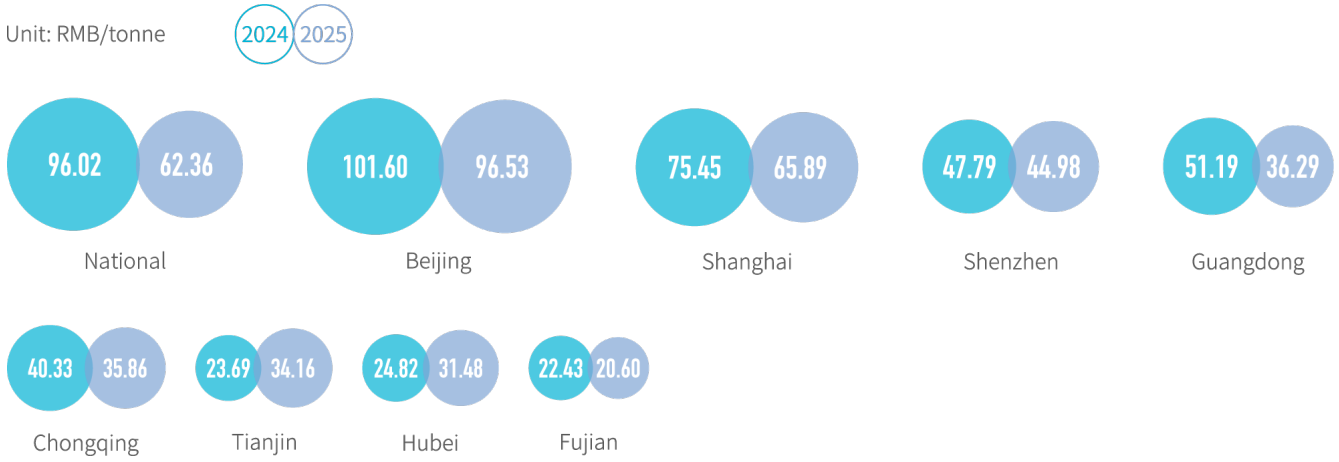



Figure 4-25. Average Transaction Prices in the National and Pilot Carbon Markets, 2024 vs. 2025
(Source: International Institute of Green Finance, 2025 China Carbon Market Annual Report.)

Certified Voluntary Emission Reduction Mechanism Made Further Progress. Registration of voluntary emission reduction projects and emission reductions progressed steadily. By the end of December 2025, 33 voluntary emission reduction projects had been registered, with emission reductions of 17.76 million tonnes. Cumulative trading volume of China Certified Emission Reductions (CCERs) reached 9.22 million tonnes, with transaction value of RMB 650 million and an annual average trading price of RMB 70.76 per tonne. The registration system had opened 6,106 accounts, covering project owners, key emitting entities, financial institutions and other legal entities (IIGF, 2026).

# 5

# EMERGING ISSUES

# Highlights

Security considerations are reshaping the direction of climate capital flows. In the first quarter of 2026, the EU CBAM certificate price was EUR 75.36 per $tCO_2e$, making border carbon costs, critical mineral security, and geopolitical risk central considerations in green capital pricing and cross-border allocation.

Regional differentiation in green investment is deepening, with more capital flowing to jurisdictions that offer stable policy expectations, well-developed manufacturing ecosystems, and stronger supply-chain security, rather than allocating capital solely on the basis of abatement efficiency.

Disaster protection gaps, tighter insurance conditions, and shrinking fiscal space are raising the threshold and cost of adaptation finance in climate-vulnerable economies. From 2020 to 2025, the annual global natural disaster protection gap ranged from about USD 109 billion to USD 181 billion.

The accelerated development of nature-related disclosure standards and financing instruments is broadening green-project assessment to include water, biodiversity and other material nature-related risks.

Persistently high interest rates are placing considerable pressure on climate projects, prompting further adjustments in project valuations and financing structures. As fiscal and sovereign-debt constraints intensify, emerging instruments such as blended finance may become increasingly important in improving access to finance for green projects.

# 5.1 Security Concerns Redirect Climate Capital Flows

## 5.1.1 Carbon-Price Barriers Raise Equipment Capitalization Thresholds

Since 2025, the EU CBAM has transformed the previously conceptual notion of "carbon cost equivalence" into a border obligation that can be explicitly priced. According to the European Commission, once the definitive phase begins on January 1, 2026, importers may deduct corresponding amounts from their CBAM payment obligations if they can demonstrate that an equivalent carbon price has already been paid in the country of origin. On April 7, 2026, the European Commission announced a CBAM certificate price of EUR 75.36 per tonne of $CO_2$ equivalent for the first quarter of 2026. Converted at the ECB exchange rate of June 17, 2026, Canada's 2026 federal carbon price is approximately EUR 58.49 per tonne, while Singapore's carbon tax is about EUR 30.25 per tonne. Even where paid carbon prices are fully recognized, the residual CBAM gap would still be about EUR 16.87 per tonne and EUR 45.11 per tonne, respectively; exporters unable to prove carbon-price payments would bear the full benchmark price (ECB, 2026; European Commission, 2026; Government of Canada, 2026; National Environment Agency, 2026) (Figures 5-1 and 5-2).

Differences in carbon pricing are now translated by policy design into financing constraints for cross-border procurement. Although CBAM currently applies directly to carbon-intensive basic products such as steel, aluminium, cement, fertilizers, electricity, and hydrogen, rather than directly to photovoltaic modules, wind turbines, or energy storage equipment, these basic products are important intermediate inputs in low-carbon equipment manufacturing. If border carbon costs cannot be adequately offset by carbon prices already paid in the country of origin, cash outlays at the import stage, working capital requirements, and price uncertainty will all rise, and these effects will in turn feed through into landed equipment costs, construction budgets, and completion-risk assessments.

CBAM is therefore not merely an extension of traditional tariff instruments; it embeds an assessment of carbon-price equivalence into cross-border investment and financing. In practice, financial institutions must assess three issues: whether border carbon costs will materially alter total equipment costs; whether carbon-price payments in the country of origin can be verified consistently and used for deduction; and whether the supplier's jurisdiction has a clear, verifiable explicit carbon-pricing and Monitoring, Reporting, and Verification (MRV) system. As a result, capital is increasingly allocated towards supply chains with transparent material carbon costs, complete compliance documentation, and controllable residual CBAM gaps. By contrast, export origins lacking explicit carbon-pricing arrangements or unable to provide robust proof of payment are more likely to face higher risk premia and tighter financing terms.

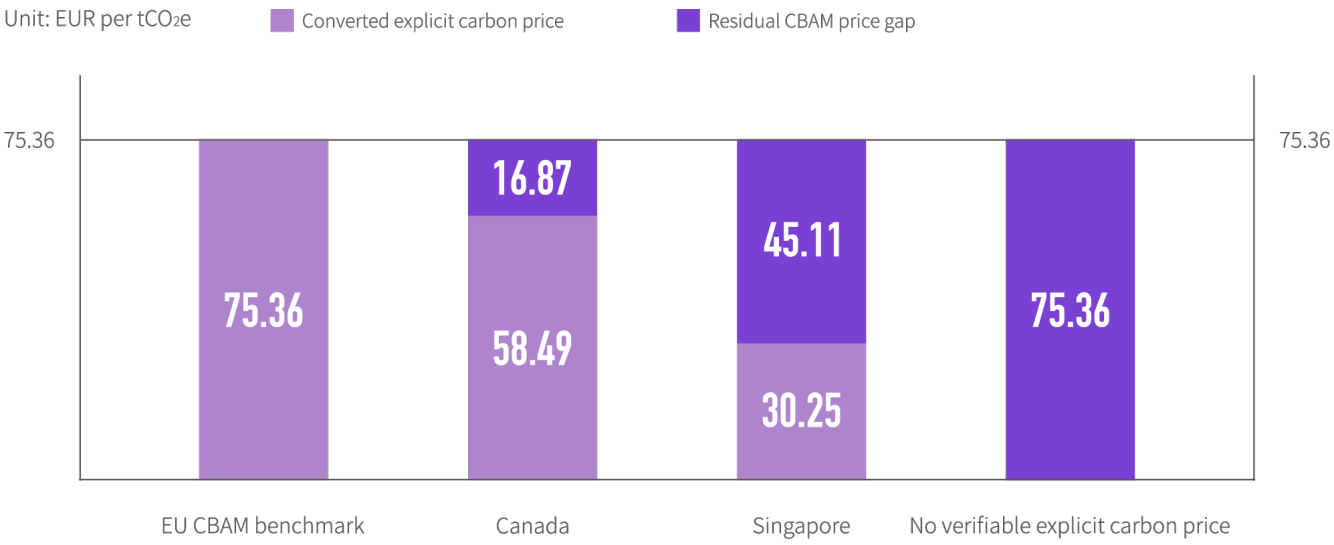



Figure 5-1. Comparison of the Q1 2026 CBAM Certificate Price and Explicit Carbon Prices in Selected Third Countries
(Source: European Commission; Government of Canada; National Environment Agency, Singapore; European Central Bank.
Note: Canada's and Singapore's 2026 explicit carbon prices are converted into euros using ECB reference exchange rates; the residual price gap is an illustrative estimate.)

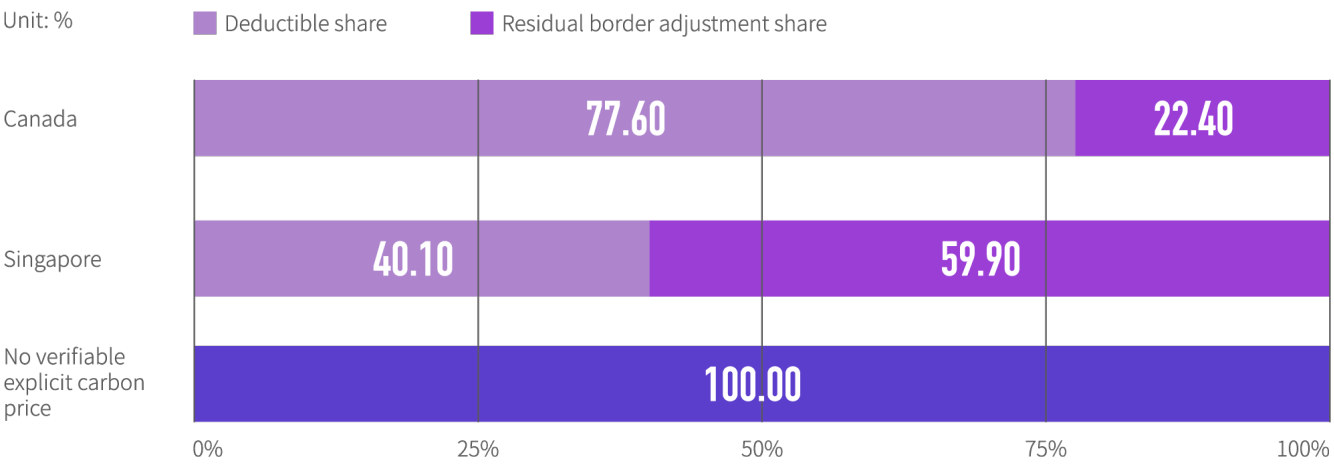



Figure 5-2. Residual CBAM Price Gap as a Share of the Benchmark Price under Different Paid-Carbon-Price Scenarios in Q1 2026
(Source: European Commission; Government of Canada; National Environment Agency, Singapore; European Central Bank.
Note: Shares are calculated using the Q1 2026 CBAM certificate price as the benchmark.)

## 5.1.2 Concentration in Critical Minerals Tightens Project Financing Constraints

The geographic concentration of critical mineral supply and processing capacity has become a constraint that climate finance pricing can no longer ignore. An OECD analysis published in 2025 shows that, in 2023, the combined output share of the top three producing countries reached 78%, 92%, 65%, and 90% for cobalt, lithium, nickel, and rare earths, respectively (OECD, 2025a). The IEA's Global Critical Minerals Outlook 2025 further notes that the average market share of the top three countries in key energy minerals rose from 73% in 2020 to 77% in 2024 at the mining stage, and from 82% to 86% (IEA, 2025a) at the refining stage (Figure 5-5). Over the same period, China remained a major supplier across several clean energy supply-chain segments (Figure 5-3), while mining investment in critical minerals continued to rise: diversified mining majors increased investment from USD 18.90 billion in 2021 to USD 28.80 billion in 2024, and specialized lithium developers from USD 2.90 billion to USD 9.10 billion (IEA, 2025a) (Figure 5-4).

This means that supply-chain risk is no longer merely an industrial policy issue; it has become a precondition in project finance screening. For battery manufacturing, energy storage facilities, photovoltaic supply chains, grid equipment, and end-use electrification infrastructure, financial institutions can no longer focus solely on end-market demand and technology pathways. They must also assess supplier concentration in critical inputs, substitutability, the robustness of long-term supply contracts, and the impact of policy changes in a single jurisdiction on project cash flow. In other words, upstream concentration has moved from the distant edge of the value chain into the core of financing due diligence.

Against this backdrop, capital increasingly prices in the capacity to diversify supply. Assets and business models that are better able to secure long-term funding are typically those that reduce single-point dependence and improve supply resilience, such as localized beneficiation and processing capacity, critical mineral recycling, alternative-material research, and vertically integrated platforms. The allocation logic of climate finance is therefore shifting from simply supporting downstream deployment toward jointly evaluating upstream security and delivery stability.

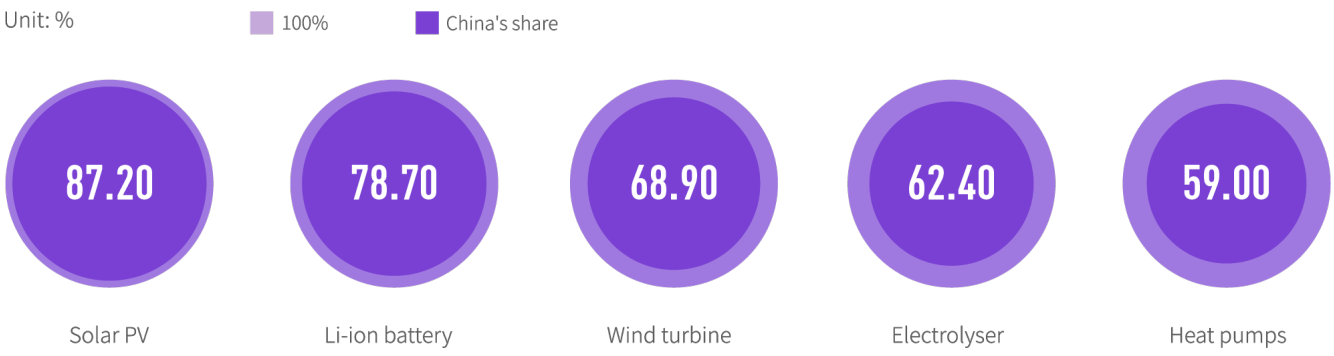



Figure 5-3. Share of Selected Clean Energy Supply Chains in 2024

(Source: International Energy Agency, Global Critical Minerals Outlook 2025.

Note: Values show China's share in selected clean energy supply-chain segments in 2024.)

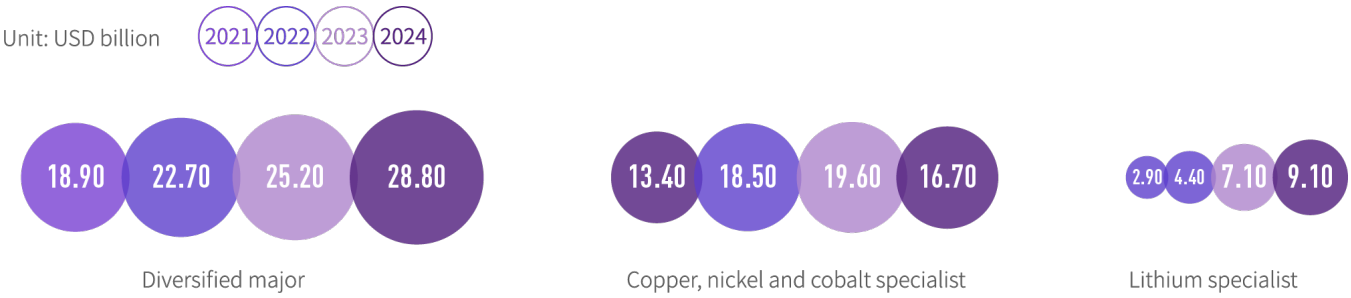



Figure 5-4. Mining Investment in Critical Minerals, 2021–2024

(Source: International Energy Agency, Global Critical Minerals Outlook 2025.

Note: Data are grouped by company type in critical mineral mining investment.)

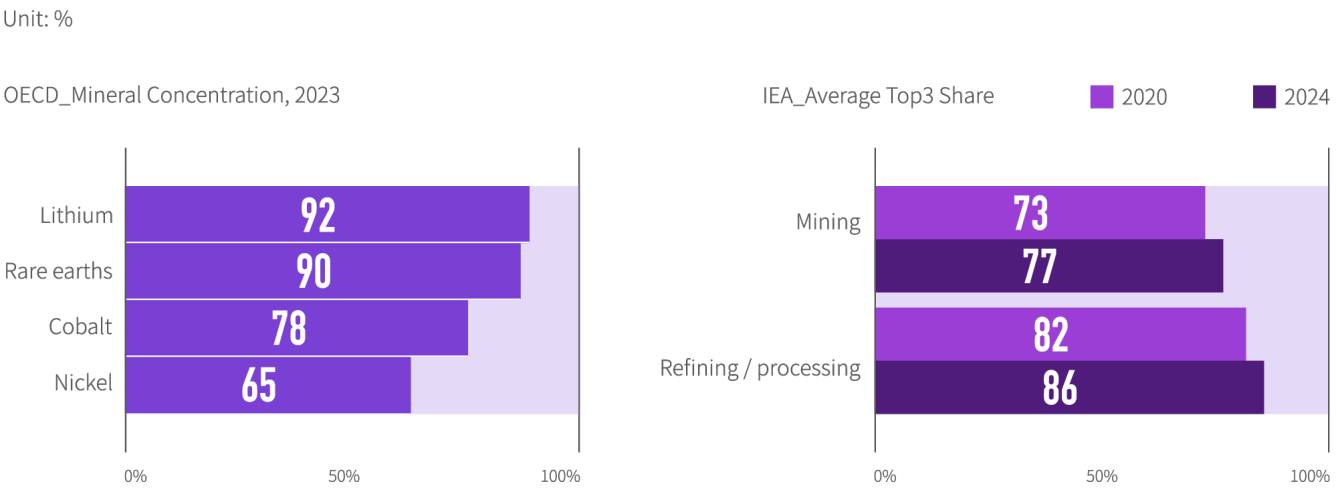



Figure 5-5. Official Measures Show Rising Concentration in Critical Mineral Supply Chains: Mineral-Level Concentration and Average Top-Three Shares

(Source: Organisation for Economic Co-operation and Development, Economic Security in a Changing World; International Energy Agency, Global Critical Minerals Outlook 2025.

Note: Mineral-level concentration refers to the output share of the top three producing countries; average Top 3 shares refer to leading mining and refining countries for key energy minerals.)

## 5.1.3 Energy-Risk Spillovers Deepen Regional Divergence in Capital Allocation

Geopolitical conflict in the Middle East and risks to key maritime corridors have pushed energy security back into the pricing chain for green assets. According to the WB commodity price database, after rebasing January 2024 to 100, both the Brent crude oil price index and the European natural gas price index rose markedly in the first quarter of 2026. In absolute terms, Brent crude increased from USD 62.70 per barrel in December 2025 to USD 103.70 per barrel in March 2026, while European natural gas rose from USD 9.48 per MMBtu to USD 17.91 per MMBtu (WB, 2026a) (Figure 5-6). These shocks are no longer confined to fossil energy markets; they are raising capital expenditure and operating costs for import-dependent equipment projects through transportation, insurance, warehousing, and engineering procurement.

Valuation pressure is transmitted mainly through two channels. The first is cost escalation, which directly compresses project budgets and cash flow. The second is an upward shift in discount rates, which raises the cost of capital for long-duration assets through persistent inflation and expectations of higher interest rates. IEA data show that capital costs for selected EMDEs clean energy projects were already substantially differentiated in 2024, and expectations for 2025 further indicate that financing conditions remain tight (IEA, 2025b) (Figures 5-7 and 5-8). Capital therefore tends to favour projects backed by long-term power purchase agreements (PPA), multilateral or sovereign credit support, and local-currency financing capacity, while demanding higher returns from assets highly sensitive to shipping rates, oil and gas prices, and currency mismatches.

As energy security constraints shift from short-term price shocks to a long-term allocation logic, security-oriented industrial policy is also reshaping the regional destination of green capital. Drawing on data from the New Industrial Policy Observatory (NIPO), the WTO reports that the number of new global industrial policy interventions reached 3820 in 2024, with another 1611 added in the first half of 2025. Among policies related to critical minerals, the share motivated by "supply security" rose from 20% to 27%, while "national security and geopolitical concerns" increased from 26% to 36%, and "climate change mitigation" fell from 29% to 10% (WTO, 2025) (Figure 5-9). In this context, green capital is increasingly concentrated in regions that can simultaneously offer predictable subsidies, local manufacturing ecosystems, and credible supply-chain security commitments. Regional differentiation in global green investment is therefore deepening further (IEA, 2025b) (Figure 5-10).

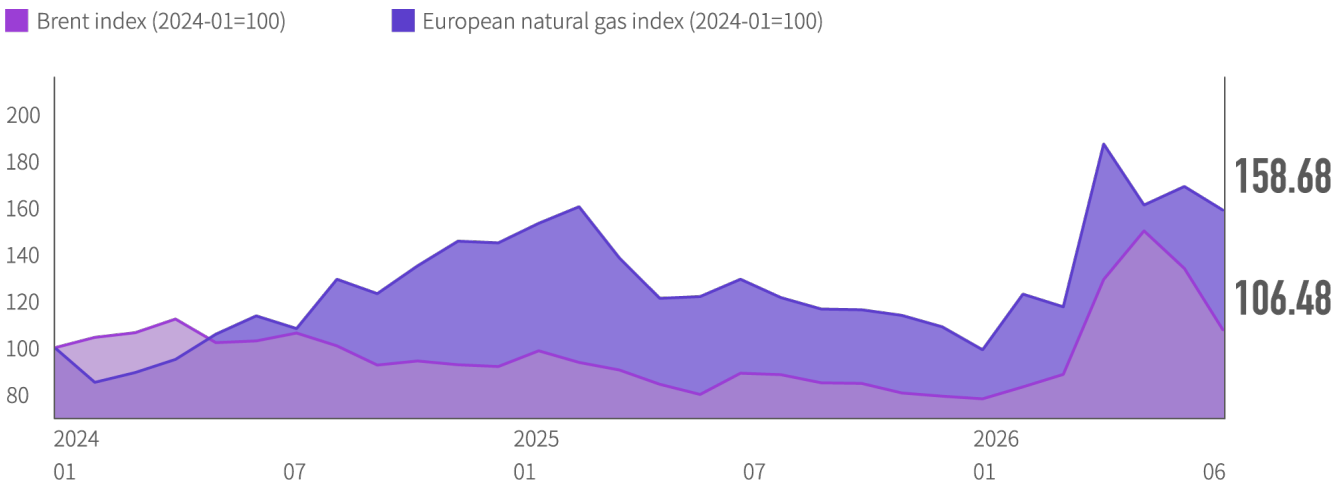



Figure 5-6. Brent Crude Oil and European Natural Gas Price Indices Rebased to January 2024 = 100

(Source: World Bank. Note: Brent crude oil and European natural gas price series are rebased to January 2024 = 100.)

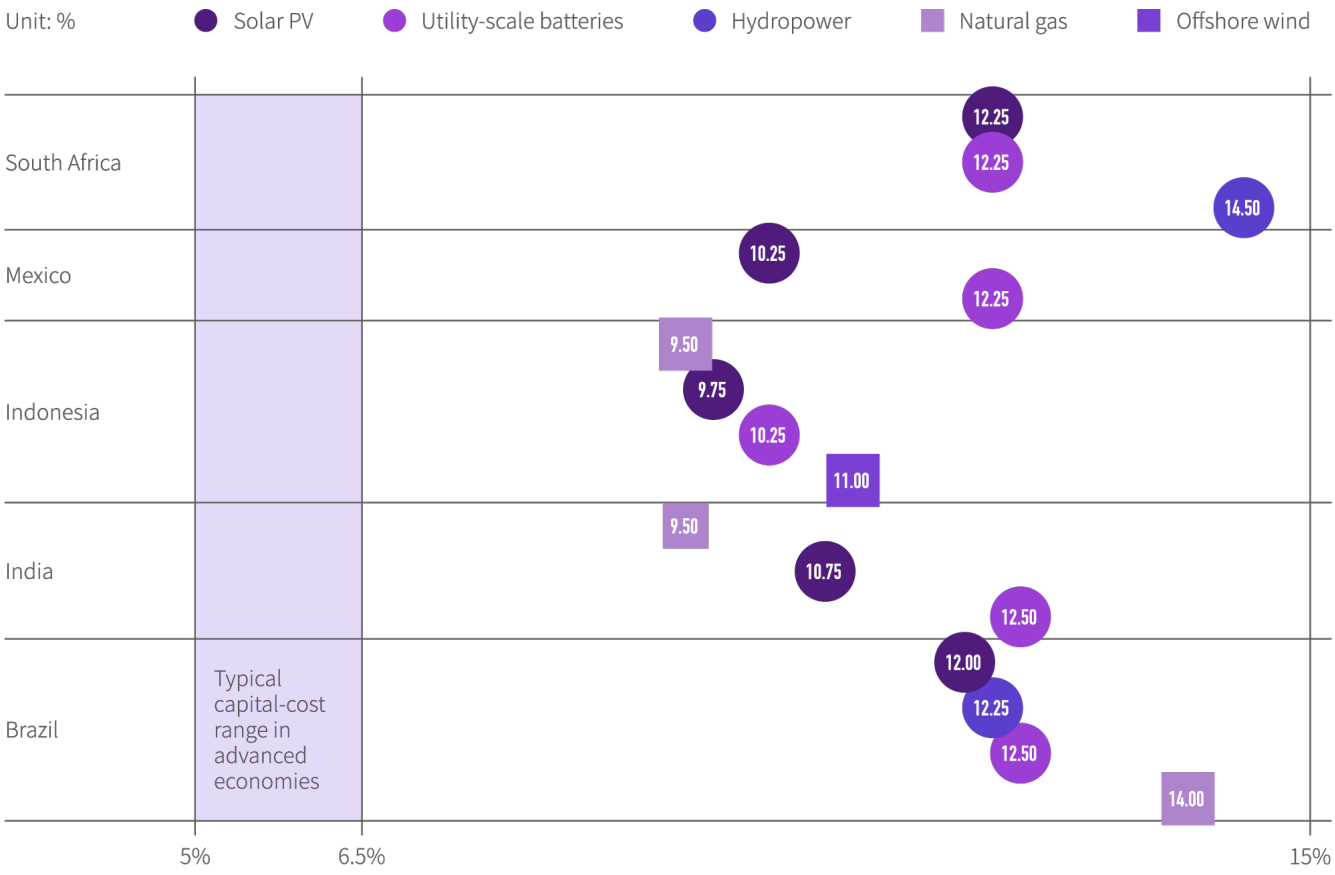



Figure 5-7. Capital Costs of Selected EMDEs Project Types in 2024

(Source: International Energy Agency, World Energy Investment 2025.

Note: The shaded band indicates the typical capital-cost range in advanced economies; colours distinguish technology types.)

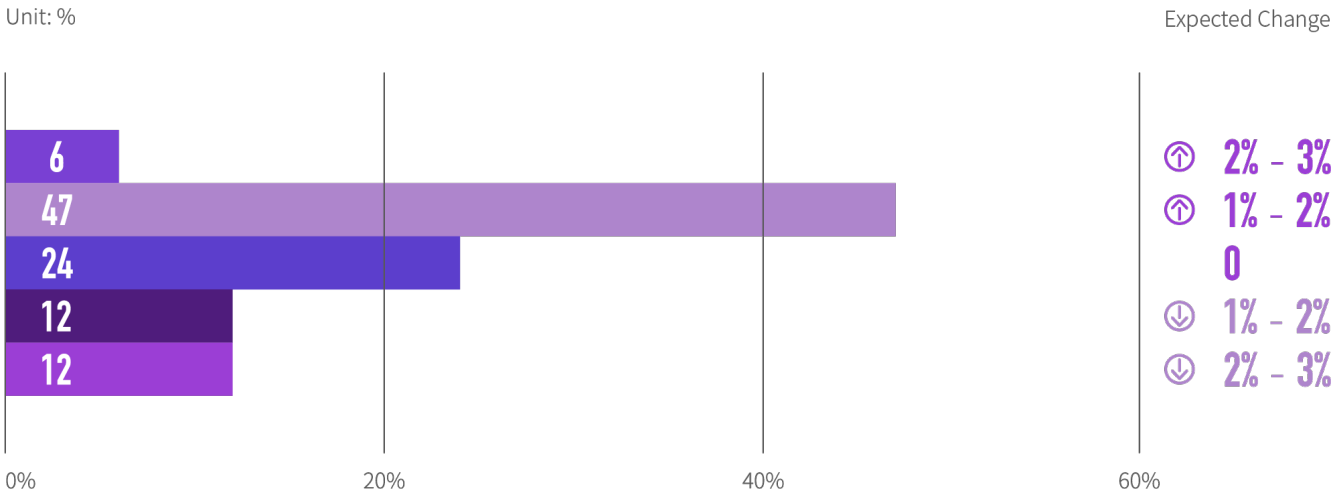



Figure 5-8. Expected Changes in EMDEs Capital Costs in 2025

(Source: International Energy Agency, World Energy Investment 2025.

Note: Category shares reflect expected changes in capital costs in EMDEs in 2025; totals may not equal 100 percent because of rounding.)




Figure 5-9. Changes in the Intensity and Motivation Structure of Security-Oriented Industrial Policies, 2024–2025

(Source: World Trade Organization.)

Unit: Ratio; USD billion

| | | Start period | Start value | End period | End value |
|---|---|---|---|---|---|
| European Union | Ratio of renewable-power investment to unabated fossil-power investment | 2015 | 6:1 | 2025 | 35:1 |
| Southeast Asia | Clean energy investment | 2015 | 30 | 2025 | 47 |
| Africa | Private-sector clean energy investment | 2019 | 17 | 2024 | nearly40 |

Figure 5-10. Representative Indicators of Regional Differentiation in Green Capital Allocation under the IEA Framework

(Source: International Energy Agency.)

# 5.2 Insufficient Resilience Finance Under a Widening Adaptation Gap

## 5.2.1 Disaster Losses Expand the Resilience Protection Gap

Global natural disaster losses have remained elevated, but insurance coverage has not improved in parallel. Swiss Re data show that cumulative global economic losses from natural disasters reached about USD 1.55 trillion between 2020 and 2025, of which insured losses were about USD 669 billion, implying an insurance coverage ratio of only 38.57%-48.64%. Over the same period, cumulative uninsured losses amounted to about USD 884 billion, averaging nearly USD 150 billion per year and reaching a period high of USD 181 billion in 2024 (Swiss Re Institute, 2020–2025) (Figures 5-11 and 5-12). For many years, the insurance mechanism has absorbed less than half of disaster losses, leaving households, firms, and public finance to bear a large share of the risk and thereby weakening the capacity for subsequent resilience investment through balance-sheet deterioration and higher fiscal expenditure.

This means that the adaptation finance challenge is no longer confined to insufficient post-disaster reconstruction funding; it has become a capital-formation constraint much earlier in the cycle. When local governments, infrastructure operators, and households must absorb a larger share of disaster losses themselves, their debt-servicing capacity, reinvestment capacity, and credit standing are all eroded, and the risk premium on new financing rises accordingly. Adaptation, once treated mainly as an issue of public finance and development assistance, is therefore moving into the core of loan pricing and credit-enhancement decisions.

An expanding protection gap is also reshaping the financing requirements of adaptation projects. Flood-control infrastructure, resilient grids, water-system upgrades, early-warning systems, and disaster risk-transfer mechanisms all imply stronger financing needs, but whether such projects attract mainstream capital still depends on whether the benefits of avoided future losses can be quantified, verified, and embedded in credit analysis. If these benefits cannot be translated into stable cash flow or identifiable risk-mitigation effects, adaptation investment will remain unable to form a large-scale, low-cost financing cycle.

Unit: USD billion

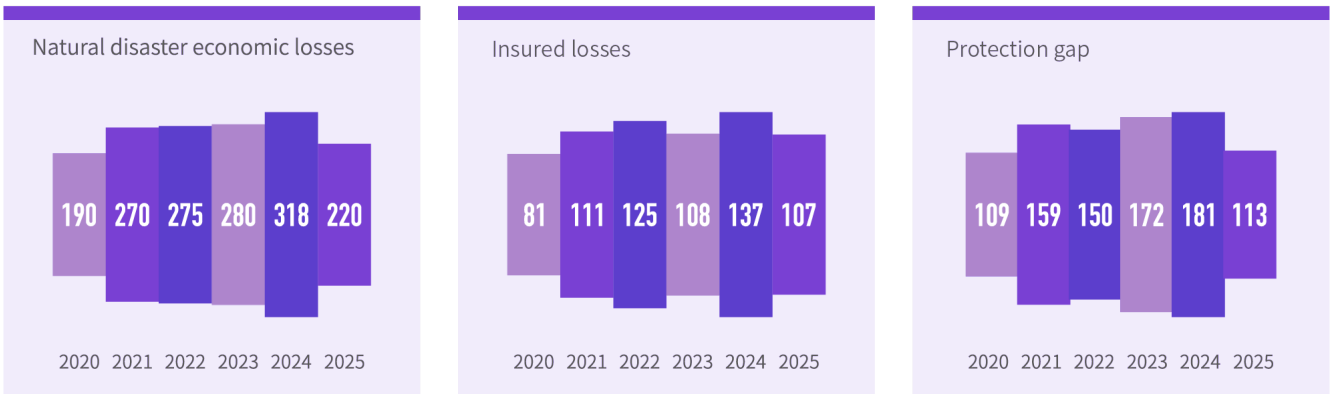



Figure 5-11. Natural Disaster Economic Losses, Insured Losses, and Protection Gap (2020-2025)

(Source: Swiss Re Institute.

Note: The 2025 data follow Swiss Re Institute's year-end estimate; figures for preceding years are derived from annual sigma reports.)

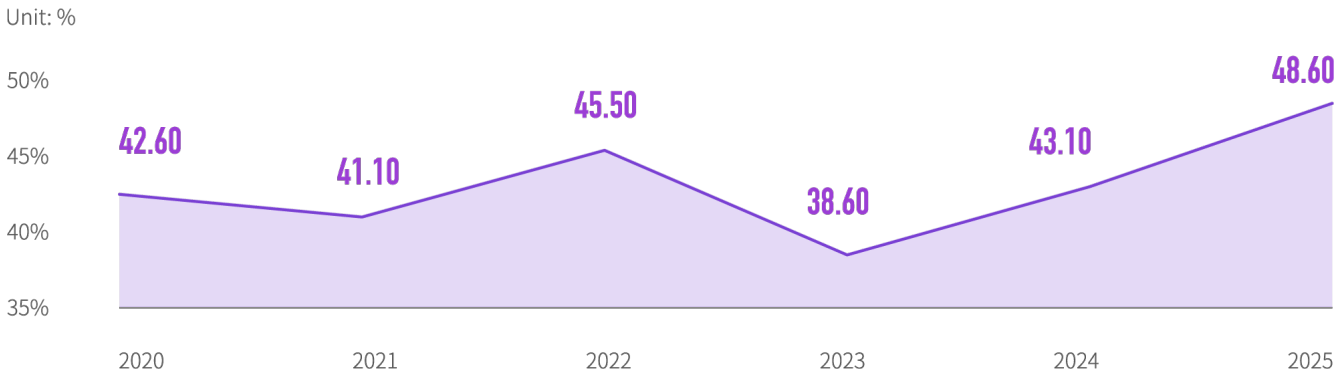



Figure 5-12. Insurance Coverage Ratio for Natural Disaster Economic Losses (2020-2025)

(Source: Swiss Re Institute.

Note: The insurance coverage ratio is defined as insured losses divided by natural disaster economic losses.)

## 5.2.2 Tighter Underwriting Conditions Raise Project Financing Costs

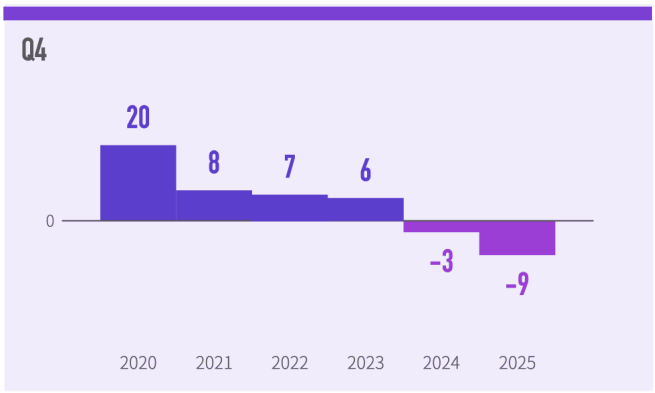
Evidence from the global insurance market shows that the transmission of physical risk into financing constraints is first reflected in the phased repricing of insurance and reinsurance. Marsh data show that the year-on-year increase in global property insurance rates narrowed gradually from 20% in the fourth quarter of 2020, turned negative in the fourth quarter of 2024, and deepened to a 9% decline in the same quarter of 2025. Under Howden's measure, the growth rate of the global catastrophe reinsurance risk-adjusted rate also continued to fall from a peak of 37% at the 2023 renewal, and by 2026 the decline had widened to 14.70% (i.e., a growth rate of -14.70%) (Howden, 2024–2026; Marsh, 2020–2025) (Figure 5-13). Together, these two indicators suggest that, under the combined influence of catastrophe losses, inflation, and higher capital costs, the insurance market went through a period of rapid rate increases and tighter underwriting conditions before entering a phase of price correction.

However, marginal declines in rates do not mean that underwriting conditions have returned to their earlier, more accommodative state. Howden notes that although prices for most major lines in the 2026 renewal had moved back toward levels seen four years earlier, higher deductibles and tighter terms remained in place. Its 2025 renewal report likewise emphasizes that the structural changes formed during the hard market have not disappeared. For infrastructure, energy equipment, and storage assets in highly exposed regions, this combination of falling prices and tighter terms means that a larger share of frequent losses and below-deductible losses is shifting back onto project balance sheets (Howden, 2024-2026).

For financing, the key issue is not merely the level of premiums, but the tightening of the insurability boundary itself. As insurance and reinsurance thresholds move upward, projects often need to carry higher retentions, larger liquidity reserves, and tighter loan covenants to cover layers of loss previously absorbed by insurance markets. Projects with resilience upgrades, parametric insurance, or public risk-sharing arrangements may still have scope to improve coverage conditions; high-exposure assets without such mitigation arrangements are more likely to face leverage compression, a higher overall cost of capital, and weaker refinancing capacity.

Unit: %

YoY change in global property insurance rates




Global catastrophe reinsurance risk-adjusted rate change

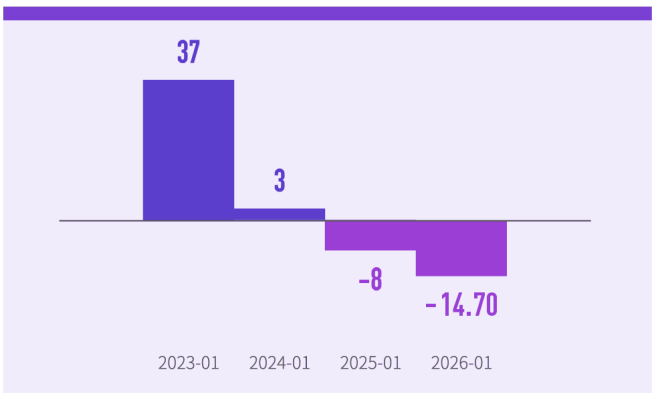



Figure 5-13. Global Property Insurance and Catastrophe Reinsurance Rate Changes

(Source: Marsh, Howden Group Holdings.

Note: The left panel reports year-on-year changes in global property insurance rates in the fourth quarter; the right panel reports risk-adjusted rate changes in global catastrophe reinsurance at January renewals.)

## 5.2.3 Fiscal and Credit Constraints Compress the Space for Adaptation Finance

Strain in fiscal and credit channels is first visible in the large shortfall of international public adaptation finance relative to need. OECD tracking data show that public adaptation finance provided by developed countries to developing countries rose from USD 18.80 billion in 2019 to USD 31.70 billion in 2024, but it still remained below the Glasgow Climate Pact target of doubling the 2019 level by 2025 (OECD, 2026). At the same time, UNEP's Adaptation Gap Report 2025 estimates that annual adaptation finance needs in developing countries will reach USD 310-365 billion by 2035 (UNEP, 2025) (Figure 5-14). Even if existing public support continues to grow, it remains insufficient to provide a stable, low-cost, and predictable long-term source of finance.

Against a backdrop of inadequate public support, fiscal pressures spill over further into macro-financial constraints. UNCTAD's A World of Debt 2025 shows that the median ratio of net interest payments to government revenue in developing economies rose from 4.20% in 2010 to 8.00% in 2024, while the ratio reached 10.50% in Latin America and the Caribbean and 10.10% in Africa. In the same year, 61 developing countries allocated more than 10% of government revenue to debt interest payments (UNCTAD, 2025) (Figure 5-15). As a growing share of public budgets is absorbed by debt service, the fiscal space for resilient infrastructure, early-warning systems, water governance, and public credit-enhancement arrangements is systematically squeezed.

Fiscal contraction also suppresses broader capital formation through the credit channel. The study by Ameli et al. (2021) shows that, under a 2°C pathway, replacing a uniform Weighted Average Cost of Capital (WACC) assumption for Africa with a region-specific WACC assumption that reflects actual financing differentiation would reduce green electricity output by about 35% (Figure 5-16; Ameli et al. (2021)). This suggests that, when concessional finance and risk-sharing mechanisms are insufficient, climate-vulnerable economies can only finance at higher risk premia, making adaptation and resilience investment more likely to remain locked into a high-cost, low-access financing environment.

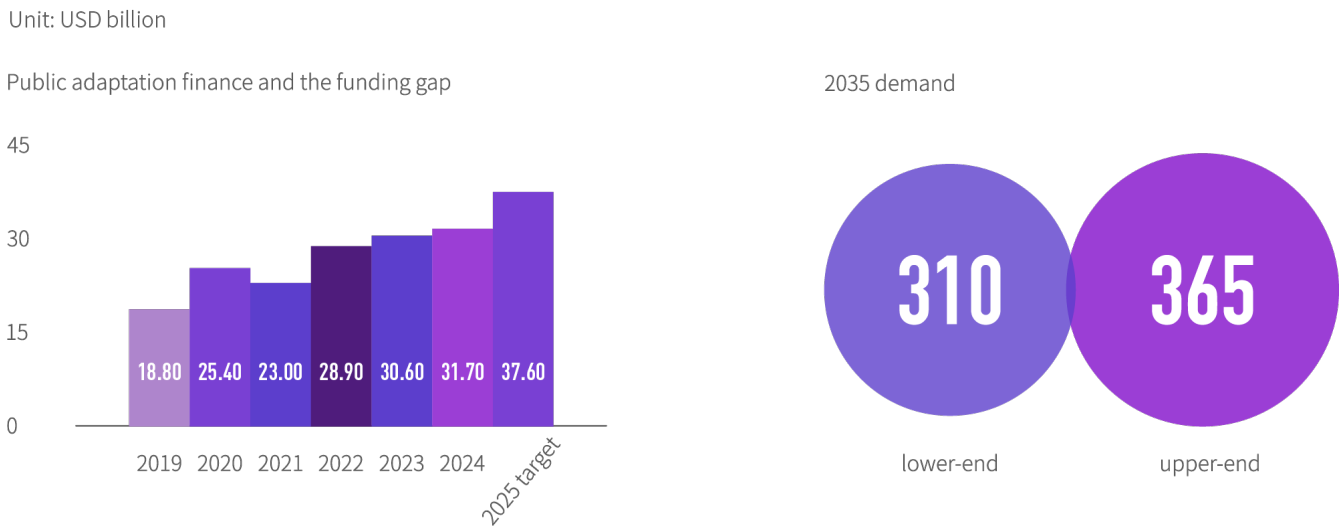



Figure 5-14. International Public Adaptation Finance (Uniformly Excluding Export Credits and Mobilised Private Finance)
(Source: Organisation for Economic Co-operation and Development, Climate Finance Provided and Mobilised by Developed Countries in 2013-2024; United Nations Environment Programme, Adaptation Gap Report 2025.
Note: Public adaptation finance uses bilateral public plus attributed multilateral public finance, excluding export credits and mobilised private finance; the 2035 needs range is estimated by the UNEP.)

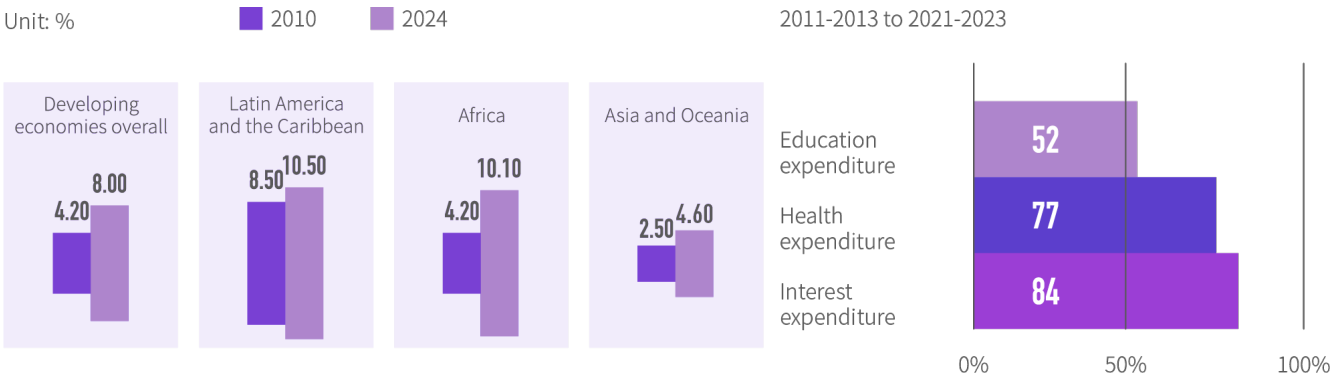



Figure 5-15. Debt Interest Payments Are Systematically Squeezing Fiscal Space in Developing Economies

(Source: United Nations Conference on Trade and Development, A World of Debt 2025.

Note: The left panel shows median net interest payments as a share of government revenue in developing economies; the right panel compares nominal growth in education, health, and interest expenditure.)

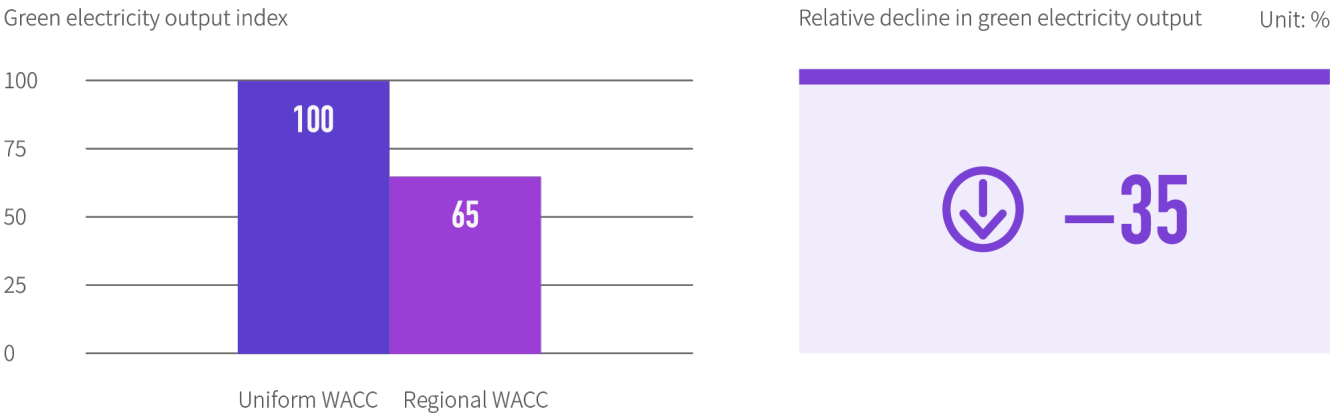



Figure 5-16. Divergence in Financing Costs Materially Reduces the Viability of Green Power Investment in Developing Regions

(Source: Ameli et al. (2021).

Note: The index sets the uniform weighted-average-cost-of-capital scenario that ignores regional differences to 100; the article reports that region-specific financing costs reduce African green electricity output by 35 percent.)

# 5.3 Nature-Related Constraints Reshape the Boundaries of Capital Allocation

## 5.3.1 Accelerating Implementation of Disclosure Standards

Nature-related disclosure advanced rapidly during the period covered by this Outlook. Ahead of COP30 in November 2025, the TNFD reported that more than 700 organizations across 56 countries and territories had committed to TNFD-aligned disclosure, including asset managers overseeing USD 22.40 trillion in assets and listed companies with a combined market capitalization of approximately USD 9.42 trillion (TNFD, 2025). As Figures 5-17 and 5-18 show, the number of TNFD adopters is expanding worldwide. For investors, this means that nature-related risks are increasingly becoming part of standard due diligence (TNFD, 2026). In the foreseeable future, the issuance and management of climate finance instruments, including green bonds, transition loans and climate funds, will need to identify the potential cash-flow and compliance implications of nature-related factors, such as land, water and biodiversity.

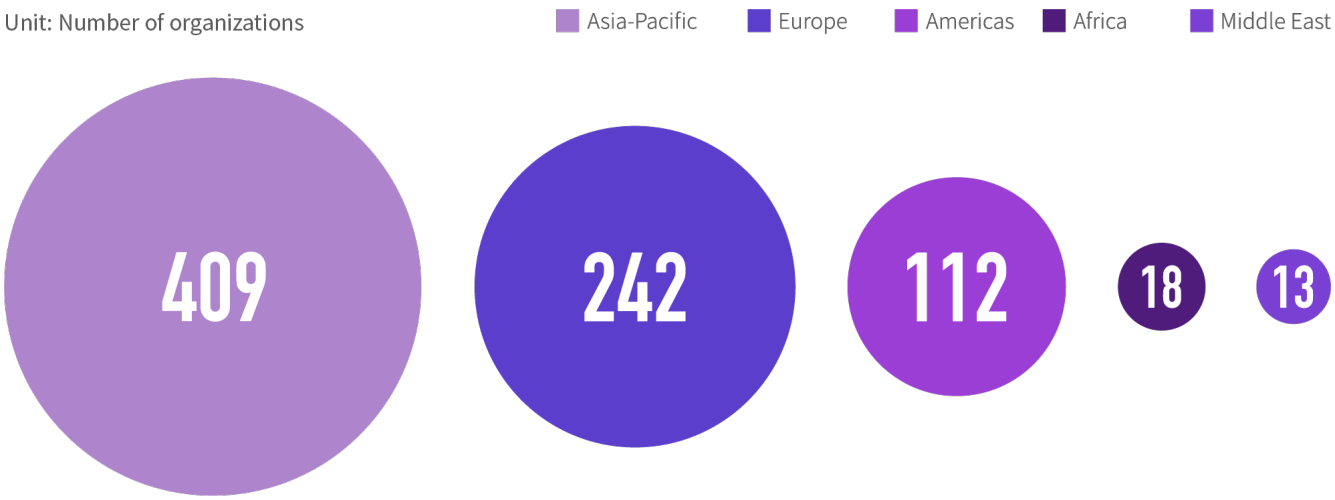



Figure 5-17. Regional Distribution of TNFD Adopters

(Source: Taskforce on Nature-related Financial Disclosures adopters list.)

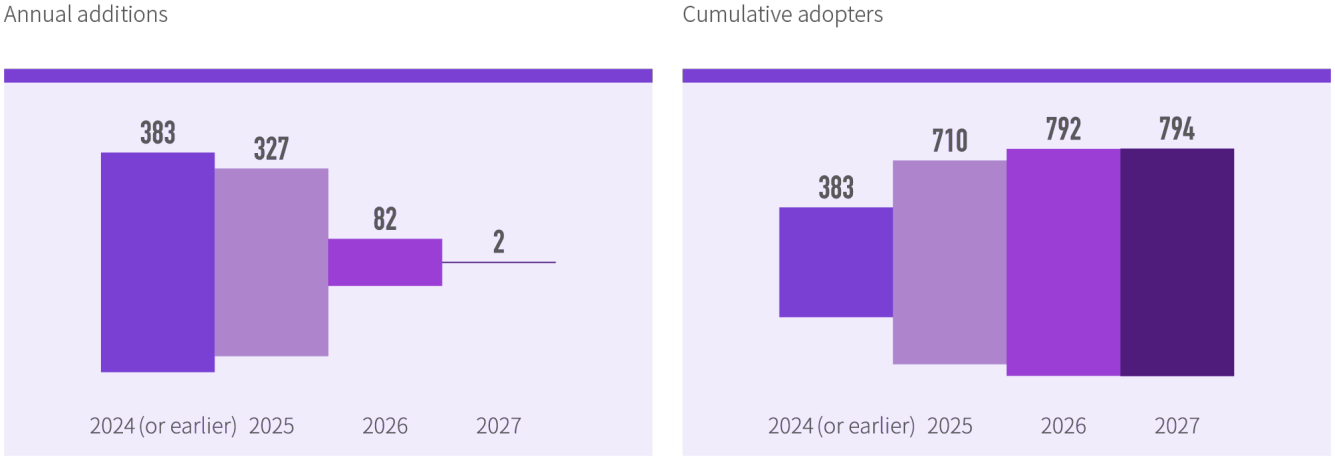



Figure 5-18. Annual Additions and Cumulative Number of Organizations Committing to TNFD-Aligned Disclosure from the Stated Year (as of June 2026)

(Source: Taskforce on Nature-related Financial Disclosures adopters list.)

Standards development has also reached a critical turning point. In January 2026, the ISSB moved its nature-related disclosures project from the research phase to standard-setting, and clarified that the project would not be limited narrowly to biodiversity, but would cover all material nature-related risks and opportunities that could affect an entity's prospects (IFRS Foundation, 2026a). In March 2026, the ISSB further discussed nature-related metrics, nature-related transition planning, target disclosures, and legal and regulatory commitments, placing the project within the existing disclosure architecture of IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures (IFRS Foundation, 2026b, 2026c). This suggests that nature-related risks are likely to be considered alongside climate-related information under IFRS S1 and IFRS S2 when assessing an entity's prospects.

For capital allocation, the practical effect will be to bring nature-related considerations into investment screening at an earlier stage. When assessing net-zero transition projects, asset managers, banks and listed companies will need to look beyond emissions-reduction pathways and policy support to examine dependencies on nature at project sites and across supply chains. Permitting, compliance costs, operating disruptions and asset useful lives may all be affected. Once these effects can be measured and linked to cash flows, they will be reflected in loan pricing, investment limits and contractual terms.

## 5.3.2 Nature-Related Financial Instruments Remain at an Early Stage of Development

Nature-related financial instruments are gradually moving into pilot programs. In July 2025, the European Commission published its Roadmap towards Nature Credits, setting out an ambition to attract private investment through verified ecological improvements, and to test measurement, governance and financing approaches in wetland, forest and biodiversity restoration projects (European Commission, 2025a). Meanwhile, Brazil's Ministry of Finance continued to advance the TFFF in 2025. Official materials indicate a potential conservation scale of up to 1 billion hectares across more than 70 tropical countries, with blended finance potentially mobilizing as much as USD 125 billion (Ministério da Fazenda, 2025). In addition, the Cali Fund under the Convention on Biological Diversity (CBD) marked its first anniversary in March 2026, signaling the gradual institutionalization of nature-related benefit-sharing mechanisms (CBD, 2026).

Nature credits, however, remain far from being a mature asset class. Projects differ in their treatment of baselines, additionality and permanence, while monitoring and verification, community rights and benefit sharing still lack consistent rules. With transaction volumes limited and secondary markets shallow, revenue from nature credits alone is generally insufficient to support long-term financing. Projects therefore still need to be combined with public procurement, long-term offtake agreements or concessional finance.

Existing pilots suggest that projects with better financing terms tend to share several features: ecological outcomes can be measured, property rights and beneficiaries are clearly defined, and revenue streams are relatively stable. Forest carbon sinks, nature-based adaptation projects and ecological restoration projects can generate supplementary revenue through nature credits or forestry funds, but such revenue is better used in combination with ecological compensation payments, product premiums or long-term procurement arrangements. Progress to date is still insufficient to conclude that natural assets have become standardized and tradable at scale.

### 5.3.3 Green Projects Face Additional Nature-Related Constraints

Emissions-reduction benefits do not capture the full environmental impact of green projects. In the past, many green projects were assessed primarily in terms of emissions reductions, energy substitution and climate adaptation, with nature-related factors treated mainly as supplementary considerations under environmental impact assessment or the "do no significant harm" principle (European Parliament and Council of the EU, 2020). This structure began to change during the outlook period. In its March 2026 discussions of nature-related metrics, transition planning and target disclosures, the ISSB explicitly included location-specific information, legal and regulatory commitments, and the scope of nature-related targets (IFRS Foundation, 2026b, 2026c). The EU Roadmap towards Nature Credits also creates a more direct link between nature-positive action and returns to private capital (European Commission, 2025a). Taken together, these signals imply that future appraisals of green projects will need to consider both climate benefits and impacts on nature.

The effects will be seen firstly in project boundaries and financing terms. For green projects, such as renewable energy, carbon removal, and forestry restoration, climate benefits alone will no longer be sufficient for asset screening. Nature-related factors, including competition for water, land-use conflicts, biodiversity loss and tighter nature-related regulation, can affect projects through specific financial channels. For example, permitting delays, ecological compensation requirements, litigation and work stoppages can raise construction costs and defer revenue, while water shortages or ecosystem degradation may reduce capacity, shorten asset lives and undermine the permanence of carbon sinks. Investors will respond by adjusting the financing conditions, such as cost of capital, loan tenor, debt-service coverage ratios and collateral requirements.

These additional nature-related constraints are also expected to raise the threshold for capital allocation. Rather than a simple division between "green" and "brown" assets, capital flows may increasingly distinguish between assets that combine climate benefits with effective management of nature-related risks and those that fit a low-carbon narrative but remain highly exposed to nature-related risks.

# 5.4 Financing for Climate Assets Remains Under Sustained Pressure

## 5.4.1 Elevated Policy Rates Weigh on Long-Term Valuations

Many green projects require substantial upfront investment and have long payback periods. Offshore wind, power grids, energy storage and hydrogen projects are capital-intensive during construction but have relatively low operating costs, making them particularly sensitive to discount rates and term premia. IMF data (Figure 5-19) show that although policy rates in advanced economies had eased from their earlier peaks by 2025, they remained well above the low-rate environment of 2015-2019 (IMF, 2025).

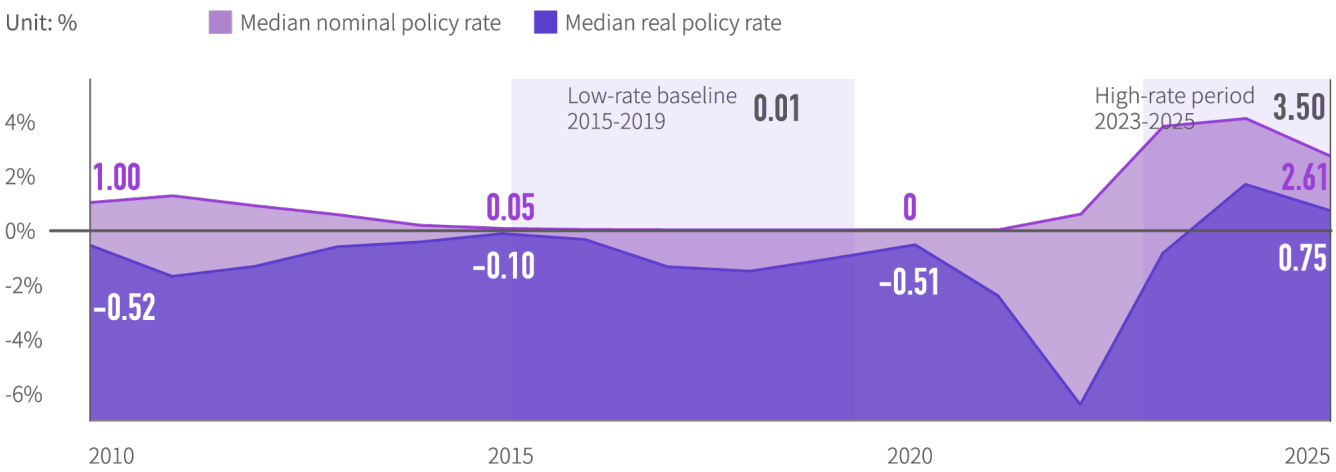



Figure 5-19. Annual Trend in Median Nominal and Real Policy Rates across Advanced Economies
(Source: International Monetary Fund.)

Persistently high interest rates affect both project valuation and financing structures. First, they put downward pressure on the net present value and internal rate of return of green projects, constrain the amount of leverage projects can support, and make it more difficult for long-term debt to absorb construction-period risk. Second, capital in this environment tends to favour projects with mature technologies, shorter construction periods and clearly defined revenue and cash flows, widening financing differentials across green technologies.

Long-duration climate assets are therefore expected to face higher discount rates, stricter project screening and more conservative capital structures. Even if policy objectives remain unchanged, climate projects with long construction periods, greater technological uncertainty or cash flows that depend heavily on policy arrangements will face revaluation and changes to their financing structures as long as the price of long-term capital and term premia remain elevated.

## 5.4.2 Rising Fiscal Pressures Increase Financing Costs

The impact of high interest rates on climate projects also depends on domestic fiscal conditions and sovereign creditworthiness. In April 2026, the IMF reported that global public debt had risen in 2025 to just under 94% of global GDP (Figure 5-20), while governments were simultaneously contending with higher social spending, defense expenditure, strategic-autonomy outlays and interest burdens (IMF, 2026). For many climate projects that rely on public guarantees, concessional finance, policy-bank co-financing or fiscal subsidies, this means that even where the climate rationale is sound, government debt pressures may prevent their financing needs from being fully supported.

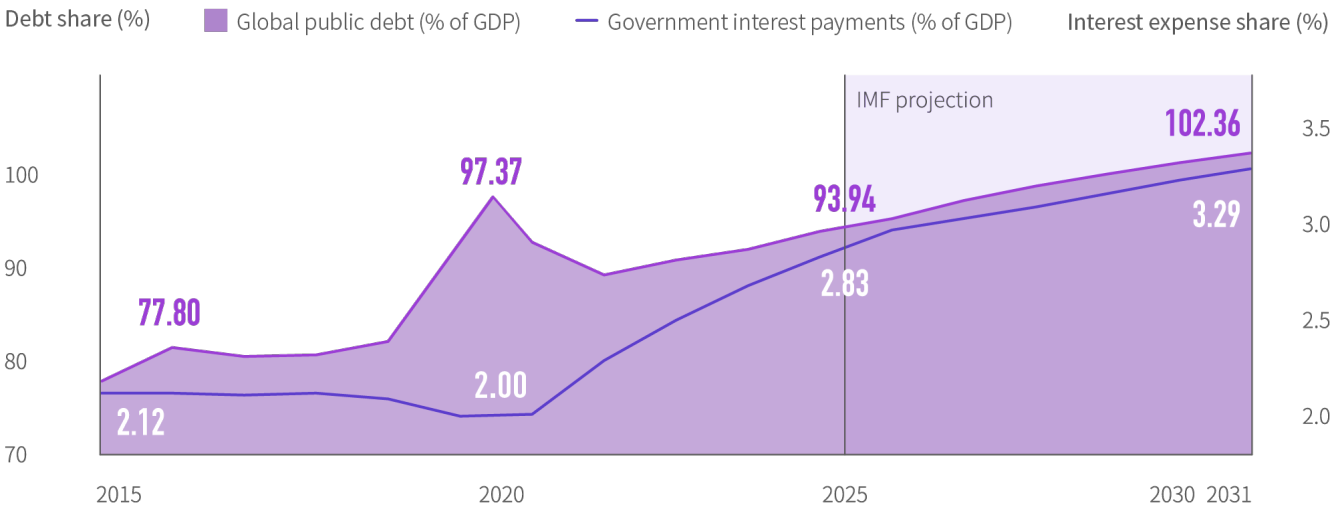



Figure 5-20. Trends in Global Public Debt and the Interest Burden
(Source: International Monetary Fund Fiscal Monitor, April 2026.)

In emerging markets and vulnerable economies, the climate finance gap may be even more pronounced. World Bank (WB) data (Figure 5-21) show that the external debt stock of low- and middle-income economies rose from an annual average of approximately USD 6.78 trillion in 2015-2019 to about USD 8.82 trillion in 2022-2024 (WB, 2025a). Markets are therefore likely to assess the viability of climate projects in emerging markets and vulnerable economies more cautiously.

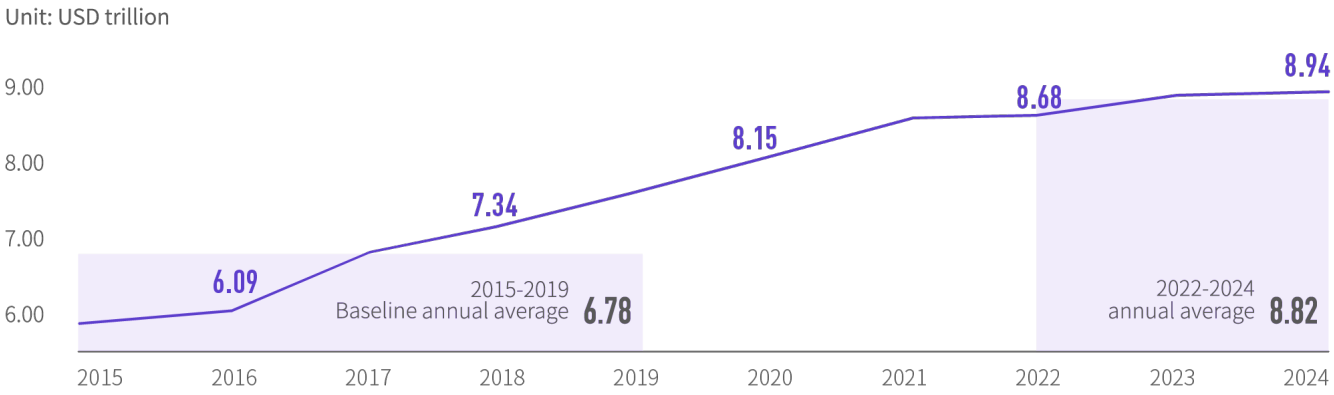



Figure 5-21. External Debt Stocks of Low- and Middle-Income Economies
(Source: World Bank.)

Accordingly, based on conditions observed during the outlook period, debt pressures are likely to become a material determinant of financing availability and risk premia for climate assets. Earlier discussions often attributed difficulties in financing climate projects to inadequate market awareness or incomplete policy design. Today, the more binding constraints are increasingly likely to be tighter fiscal space and diminished capacity for public credit support.

## 5.4.3 Changes in the Investor Base Heighten Volatility Risk

NBFIs are likely to play an important role as asset holders and sources of refinancing. The FSB's Global Monitoring Report on Nonbank Financial Intermediation 2025, published in late 2025, shows that assets in the NBFI sector grew by 9.40% in 2024, about twice the pace of the banking sector, and as shown in Figure 5-22, rose to 51% of global financial assets (FSB, 2025). In Europe, the ESRB's EU Non-bank Financial Intermediation Risk Monitor 2025 reports that assets held by EU investment funds and other financial institutions reached a record EUR 50.70 trillion in 2024, more than 20% above the size of the banking system (ESRB, 2025).

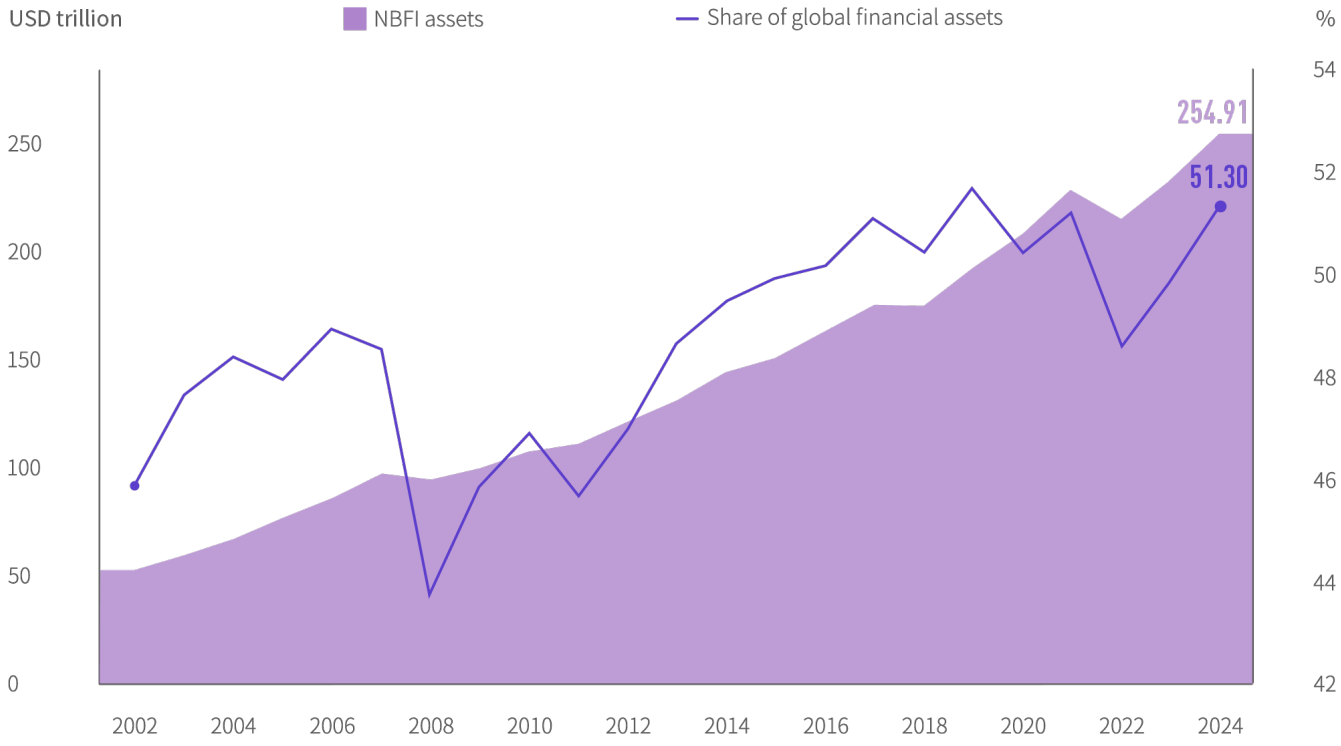



Figure 5-22. Global NBFI: Asset Scale and Share of Global Financial Assets
(Source: Financial Stability Board, Global Monitoring Report on Nonbank Financial Intermediation 2025.)

Given their own structural vulnerabilities, NBFI may amplify valuation volatility in climate assets under stress. Leverage, liquidity mismatches and interconnectedness are key sources of vulnerability in the NBFI sector (ESRB, 2025). Moreover, links between banks and NBFI can materially amplify shock transmission under stress (ECB & ESRB, 2026). If market volatility, margin calls or redemption pressures strain liquidity or leverage in the non-bank sector, long-duration climate assets - which tend to be less liquid and whose valuations depend on long-term policy stability and predictable cash flows - will be particularly exposed.

Policy should therefore focus on reducing the procyclicality of non-bank capital participating in climate finance. Regulators can strengthen liquidity management, leverage monitoring, stress testing and redemption arrangements for open-ended funds and leveraged investment vehicles, thereby reducing the risk of forced, concentrated sales of climate assets under stress. Market participants also need more granular look-through disclosure and greater valuation transparency so that investors can identify the key drivers of value, including asset duration, policy dependence, exposure to nature-related risks and refinancing maturity profiles. For emerging-market and early-stage technology projects, public guarantees, blended finance and countercyclical liquidity facilities can also help cushion the impact of withdrawals by non-bank investors on sustained long-term financing.

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# List of Abbreviations

| Abbreviation | Full Term |
|---|---|
| ADB | Asian Development Bank |
| AF | Adaptation Fund |
| AfDB | African Development Bank |
| AFME | Association for Financial Markets in Europe |
| AIIB | Asian Infrastructure Investment Bank |
| BCBS | Basel Committee on Banking Supervision |
| BIM | Barbados Implementation Modalities |
| CAFI | Central African Forest Initiative |
| CBAM | Carbon Border Adjustment Mechanism |
| CBD | Convention on Biological Diversity |
| CBI | Climate Bonds Initiative |
| CCLW | Climate Change Laws of the World |
| CEB | Council of Europe Development Bank |
| CGV | Credit Guarantee Vehicle |
| CIM | Clean Investment Monitor |
| COP | Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) |
| CPI | Climate Policy Initiative |
| CRDR | Climate-Related Disclosure Rule |

| | |
|---|---|
| CSDDD | Corporate Sustainability Due Diligence Directive |
| CSRD | Corporate Sustainability Reporting Directive |
| ECB | European Central Bank |
| EEA | European Environment Agency |
| EIB | European Investment Bank |
| EMDEs | Emerging Market and Developing Economies |
| EMCIC | Emerging Market Climate Investment Compact |
| EPA | US Environmental Protection Agency |
| ESG | Environmental, Social, and Governance |
| ESRB | European Systemic Risk Board |
| ETF | Exchange-Traded Fund |
| ETS | Emissions Trading System |
| EU | European Union |
| FCDO | Foreign, Commonwealth & Development Office |
| FOF | Frontier Opportunities Fund |
| FRLD | Fund for Responding to Loss and Damage |
| FSB | Financial Stability Board |
| GCF | Green Climate Fund |
| GCPU | Global Climate Policy Uncertainty |

| | |
|---|---|
| GCRID | Global Climate Risk Integration Database |
| GDP | Gross Domestic Product |
| GEF | Global Environment Facility |
| GHG | Greenhouse Gas |
| GSS+ | Green, Social, Sustainability, and Sustainability-Linked Bonds |
| GWP | Global Warming Potential |
| HICs | High-Income Countries |
| IAIS | International Association of Insurance Supervisors |
| ICAP | International Carbon Action Partnership |
| ICE | Intercontinental Exchange |
| IDBG | Inter-American Development Bank Group |
| IDFC | International Development Finance Club |
| IEA | International Energy Agency |
| IFC | International Finance Corporation |
| IFRS | International Financial Reporting Standards |
| IIGF | International Institute of Green Finance |
| IMF | International Monetary Fund |
| IPCC | Intergovernmental Panel on Climate Change |
| IsDB | Islamic Development Bank |

| | |
|---|---|
| ISSB | International Sustainability Standards Board |
| LDCF | Least Developed Countries Fund |
| LEAP | Locate, Evaluate, Assess and Prepare |
| LMICs | Low- and Middle-Income Countries |
| MDBs | Multilateral Development Banks |
| MRV | Monitoring, Reporting, and Verification |
| NBFI | Non-bank Financial Intermediation |
| NCQG | New Collective Quantified Goal on Climate Finance |
| NDB | New Development Bank |
| NIPO | New Industrial Policy Observatory |
| OECD | Organisation for Economic Co-operation and Development |
| PACM | Paris Agreement Crediting Mechanism |
| PPA | Power Purchase Agreement |
| PPP | Purchasing Power Parity |
| PRF | Pacific Resilience Facility |
| RGGI | Regional Greenhouse Gas Initiative |
| SASB | Sustainability Accounting Standards Board |
| SBFN | Sustainable Banking and Finance Network |
| SCCF | Special Climate Change Fund |

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| SDGs | Sustainable Development Goals |
| SEC | US Securities and Exchange Commission |
| TCFD | Task Force on Climate-related Financial Disclosures |
| TFFF | Tropical Forest Forever Facility |
| TNFD | Taskforce on Nature-related Financial Disclosures |
| UK SRS | UK Sustainability Reporting Standards |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDRR | United Nations Office for Disaster Risk Reduction |
| UNEP | United Nations Environment Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| US SIF | US Sustainable Investment Forum |
| WACC | Weighted Average Cost of Capital |
| WB | World Bank |
| WBG | World Bank Group |
| WTO | World Trade Organization |

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