Investing in Times of Climate Change

Climate Fund Assets Hit Record Highs, Led by Transition-Focused Strategies

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Key Takeaways

Global Climate Fund Assets Hit Record Highs of USD 644 billion

- Global assets in mutual funds and ETFs with a climate-related mandate rose by 8.5% in the first half of 2025, reaching USD 644 billion at the end of June.
- Europe, representing 86% of climate fund assets, remains as the primary growth driver, while China and the United States saw more moderate increases.

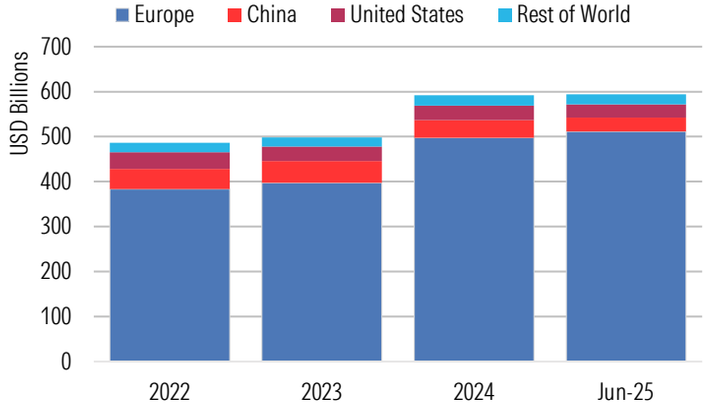
Climate Transition and Green Bond Funds Continue to Gain Ground

- Climate Transition funds, which invest in or tilt towards companies better prepared for the low-carbon transition, grew by 16% in 1H 2025, totaling USD 318 billion globally.
- Green bond funds were another bright spot in 1H 2025, with assets up 14% to USD 44 billion, matching the level of Clean Energy/Tech funds, whose assets fell 1.8%, despite that segment's strong performance after four years of poor returns.

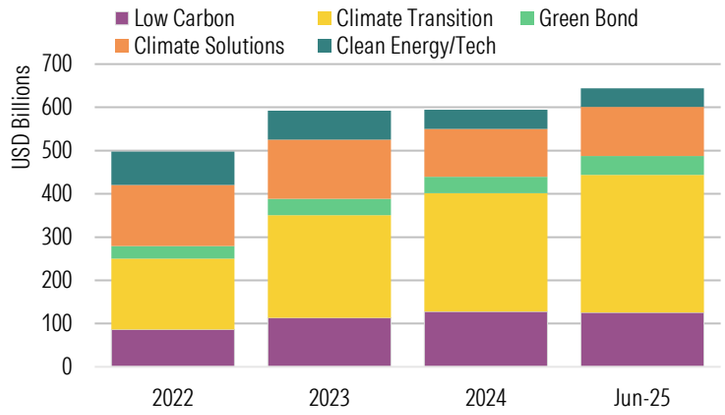
Transition Funds Stand Out as Bright Spot Amid Broader Fund Outflows

- Investors allocated USD 2.5 billion to Climate Transition funds across all regions, making this category stand out amid broader climate fund outflows of USD 13.8 billion in 1H 2025.
- Investors redeemed almost USD 12 billion from Climate Solutions and Clean Energy/Tech funds. Despite the price recovery in green energy stock prices, investor appetite remained muted against a backdrop of economic and regulatory uncertainties as well as escalating geopolitical tensions.

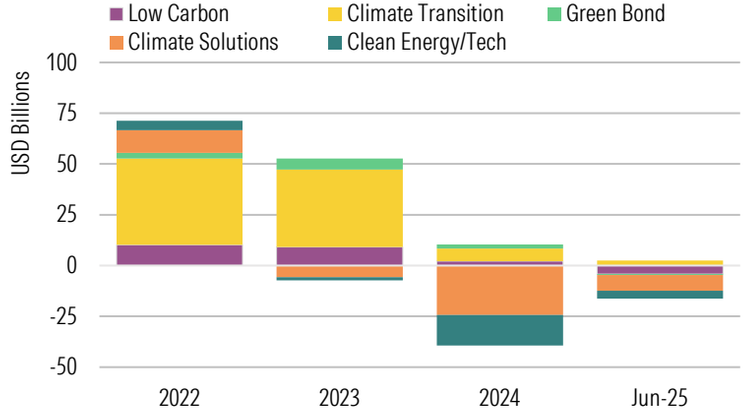
Climate Fund Assets by Region



Climate Fund Assets by Category



Global Flows Into Climate Funds



Key Takeaways (continued)

Transition Funds – Investors Turn to Active Strategies

- While passive funds tracking Paris-aligned benchmarks (PAB) continue to dominate the landscape of Climate Transition strategies, they experienced redemptions of USD 1.7 billion in 1H 2025.
- By contrast, actively managed transition funds continued to register inflows, totaling nearly USD 2 billion in 1H 2025.

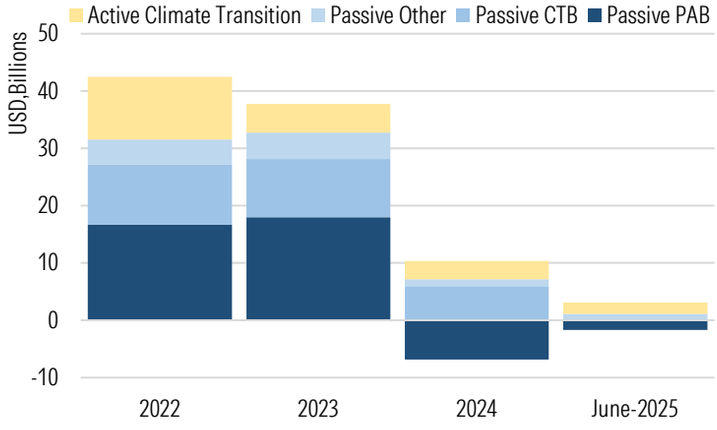
Outflows from Climate Solutions Funds Ease

- All Climate Solutions fund subcategories (except for Energy Transition) continued to bleed assets, but outflows eased. 1H 2025 redemptions totaled USD 7.8 billion, compared with USD 10 billion over the same period last year.
- Energy Transition funds gathered a modest USD 0.4 billion in 1H 2025.

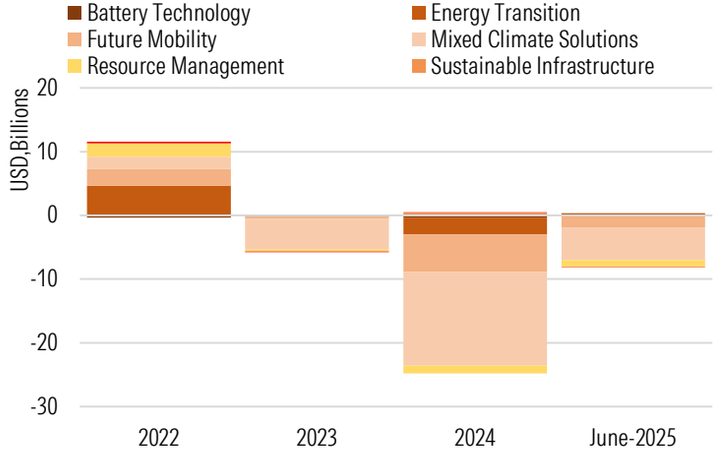
Clean Energy/Tech Fund Performance Recover

- Clean Energy/Tech funds in all regions (except China) posted strong gains in 1H 2025, following four years of underperformance. For example. European-domiciled Clean Energy/Tech funds returned an average 11.8%, compared to 9.9% for the Morningstar Global Index.
- The rebound in green energy stocks has been driven by rising energy demand, particularly from data centers powering AI, and lower interest rates. This rebound occurred despite new headwinds, including an anti-climate policy stance in the US and broader economic uncertainty.

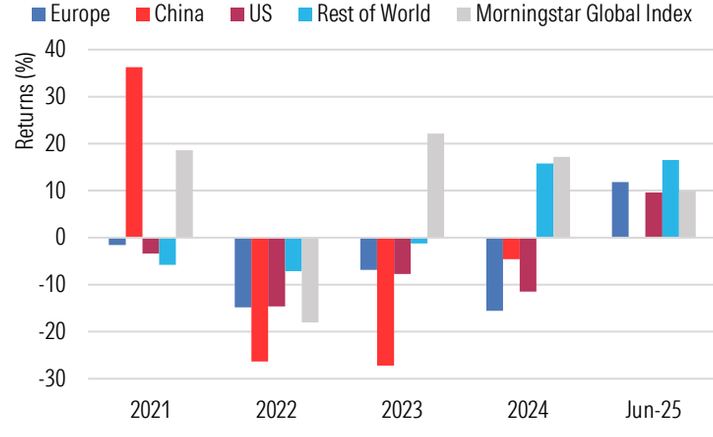
Flows Into Climate Transition Fund Subcategories



Flows Into Climate Solutions Funds Subcategories



Average Returns of Clean Energy/Tech Funds



Key Takeaways (continued)

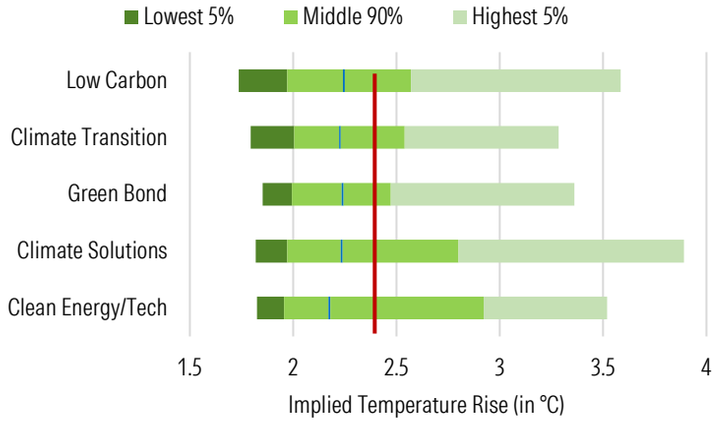
84% of Climate Funds Are Better Aligned to a Net Zero Pathway Than the Average Fund in the Global Universe

- No fund is aligned to a net zero pathway consistent with a 1.5-degree Celsius global warming scenario, but the vast majority (84%) are better aligned than the average peer in the global fund universe.
- The five climate fund types have similar median implied temperature rise (ITR) scores, ranging from 2.2°C to 2.4°C, all below the global average of 2.5°C.
- Clean Energy/Tech strategies exhibit the lowest median ITR score (2. 2°C).

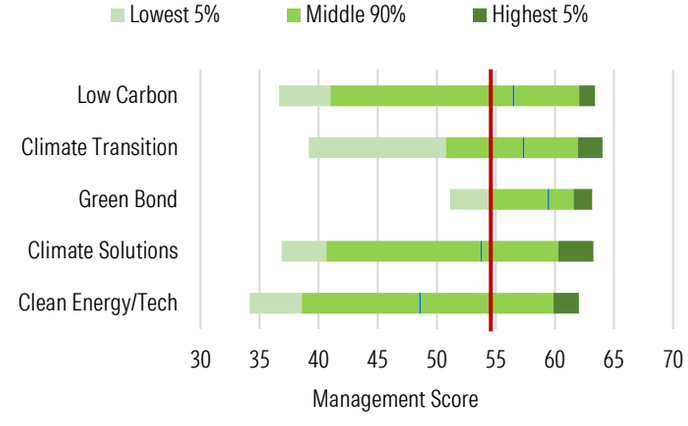
Green Bond and Transition Funds Invest in Companies With the Best Emissions Management Practices

- Green Bond funds and Climate Transition funds, which typically focus on companies that are more advanced in their transition journey, have the highest median emissions management scores, at 59 and 57, respectively, while Clean Energy/Tech funds have the lowest, at 49.
- Clean Energy/Tech and Climate Solutions funds tend to have the lowest management scores.

Distribution of ITR Scores Across Climate Fund Types



Distribution of Management Scores Across Fund Types



The Global Climate Funds Landscape

Introduction

In this edition of **Investing in Times of Climate Change**, we provide an update on the rapidly evolving landscape of open-end funds and ETFs that have a climate-related mandate. As of June 2025, we identified at least 1,700 such funds globally. These products represent a wide and growing range of strategies* that aim to meet varying investor objectives and preferences, from reducing climate-related risks in portfolios to investing in climate-related solutions.

Climate change is no longer a distant threat. Record high temperatures, more frequent and severe weather events, and biodiversity loss are already materially impacting economies. Total global economic losses from natural catastrophes rose to USD 162 billion in the first half of 2025, up from USD 156 billion the previous year, according to the World Economic Forum. The United States alone accounted for a staggering USD 126 billion of that total — marking the costliest first half for the US on record.

Climate change is also among the top systemic and material risks for investment portfolios. Some investments risk being disadvantaged in the transition to a low carbon economy because of changes in regulation, technology, and consumer behavior, among other factors. If mitigation efforts do not accelerate, as temperatures keep rising and extreme weather events become more frequent, investments are expected to face higher physical risks.

Yet, despite growing awareness of the risks, the global decarbonization trajectory remains off course. Global greenhouse gas emissions rose again in the first half of 2025, extending a multi-year upward trend that underscores the widening gap between climate ambition and real-world outcomes. The net zero movement, once a unifying force for financial institutions, has been under pressure. Several high-profile members of the Glasgow Financial Alliance for Net Zero (GFANZ) have exited the coalition, citing legal risks and political backlash — particularly in the US, where the new administration has reversed key climate policies, including the Inflation Reduction Act, and has dropped environmental regulations.

Meanwhile, according to Morningstar's latest Voice of the Asset Owner 2025 survey, investors put climate transition readiness (56%), energy management (48%), and physical climate risks (42%) at the top of their list of the most material environmental factors. Over 70% of respondents indicated that climate change plays a central role in their investment strategy. Most are adopting multipronged approaches — combining decarbonization targets, thematic allocations, stewardship, and selective divestment — to align portfolios with long-term climate goals.

In this report, we discuss the wide range of climate funds available to all types of investors. We subdivide this universe into five mutually exclusive categories: Low Carbon, Climate Transition, Green Bond, Climate Solutions, and Clean Energy/Tech. We examine the continued asset growth, flows, and products in each grouping. We assess their level of alignment to a 1.5°C world using Sustainalytics' Low Carbon Transition Rating metrics. We examine their emissions management score and other indicators. We also discuss how each of strategy types fit into an investor's portfolio. Finally, we look under the hood of these funds and analyze the most common holdings.

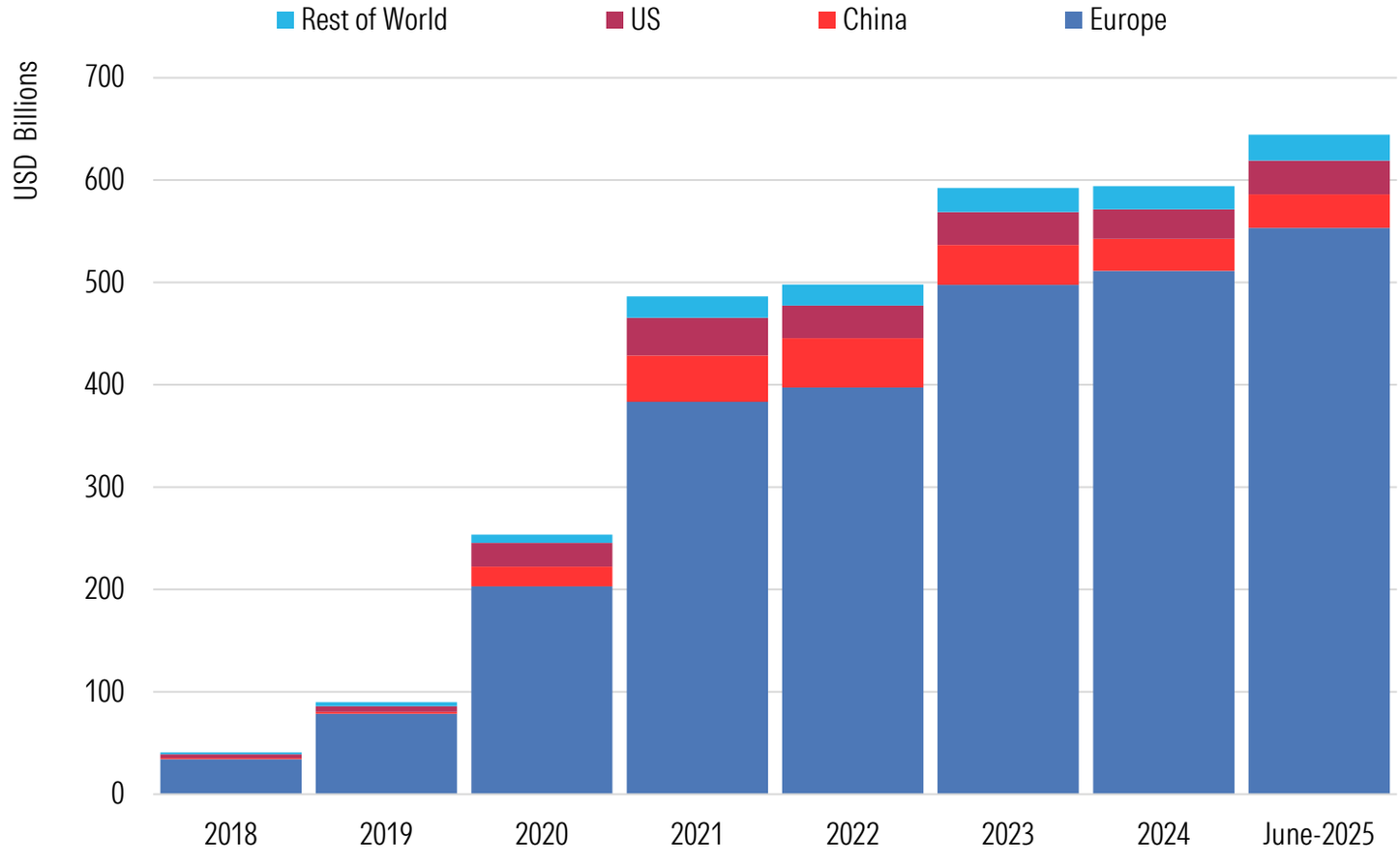
Fund lists and data underlying charts are available on demand.

* See Appendix for definitions.

Global Climate Fund Assets Bounce Back in 2025 Across All Regions

- As of June 2025, we identified at least 1,700 open-end and exchange-traded funds globally pursuing investment strategies related to the climate-change theme.*
- Global Climate fund assets grew 14-fold between 2018 and 2023. While growth stalled in 2024, assets rebounded in the first half of 2025, rising by 8.5%, to USD 644 billion.
- Asset growth was recorded across all regions, benefiting from favorable stock market conditions. For context, the Morningstar Global Target Market Exposure (TME) Index rose by 11.4%.
- Europe remains by far the largest climate fund market, holding an 86% share, supported by its commitment to achieving net zero emissions by 2050.
- China and the United States trail far behind, each holding around 5% of total assets, while the rest of the world accounts for 4%, with South Korea, Canada, and Australia among the top markets.

Global Assets in Climate Funds (By Region)

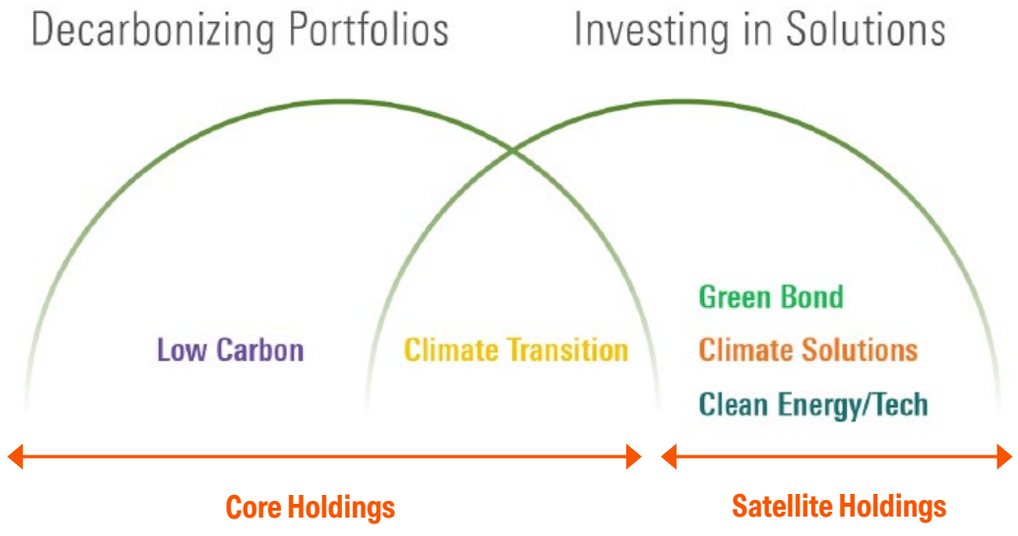


* See Appendix for details on how we define climate-related funds.

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

The Universe of Climate Funds: From Reducing Climate Risks in Portfolios to Investing in Climate Solutions*

Mutual funds with a climate-related mandate represent a wide and growing range of strategies* that aim to meet varying investor objectives and preferences, from reducing climate risks in portfolios (decarbonizing portfolios) to investing in climate solutions.



Low Carbon
Invest in companies with low carbon footprints

Climate Transition
Invest in or lean toward companies that will transition better to a low carbon economy

Green Bond
Invest in bonds that finance projects facilitating the transition

Climate Solutions
Invest in companies whose products and services contribute to the transition

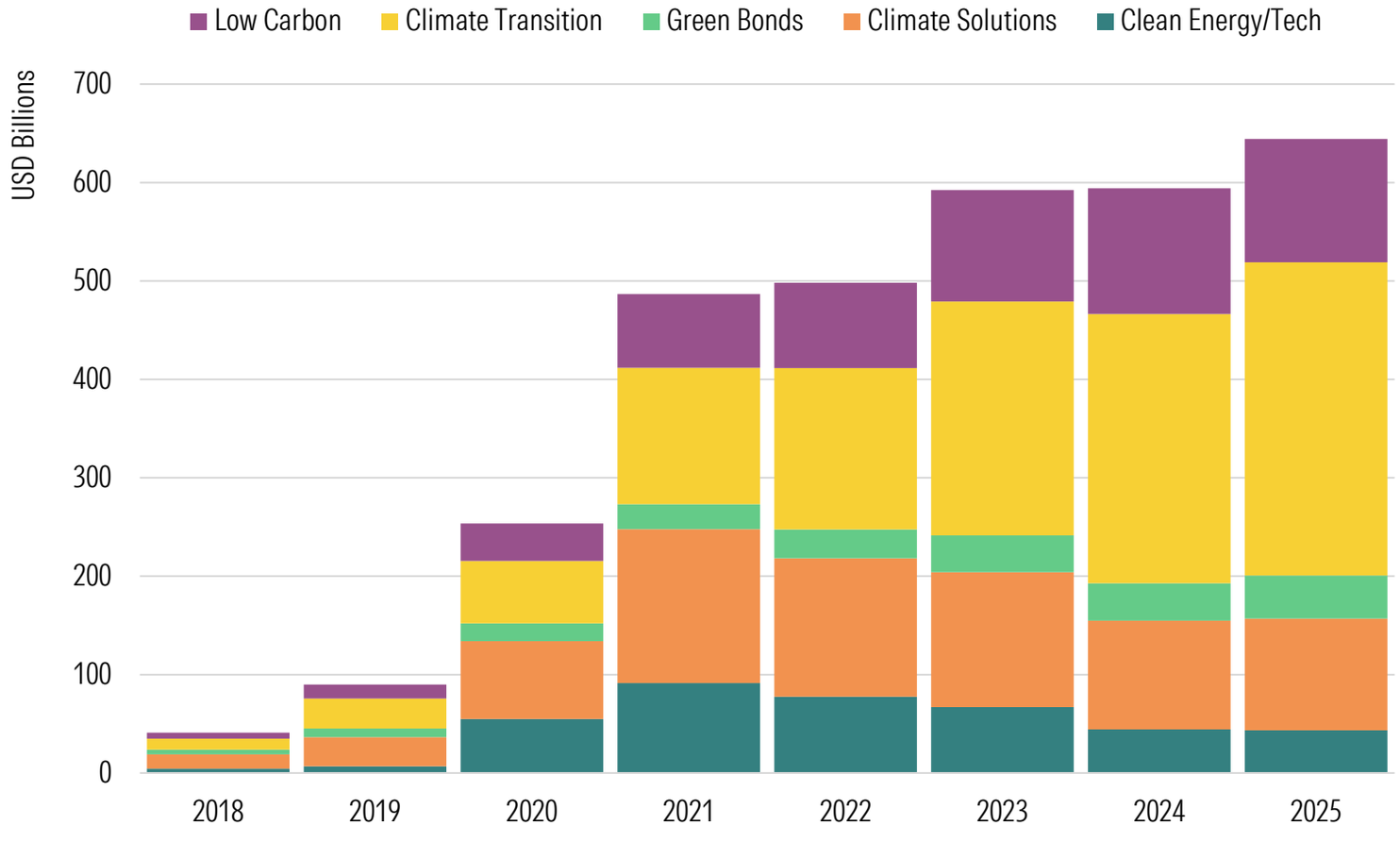
Clean Energy/Tech
Invest in companies whose products contribute to or facilitate the energy transition

* See Appendix for more details.

Climate Transition Funds Drive Growth, Now Representing Half of Total Climate Fund Assets

- Climate Transition fund assets rose 16% in 1H 2025 to USD 318 billion, now accounting for nearly half of total climate fund assets.
- Climate Transition funds focus on companies better prepared for the low-carbon transition, targeting low-emission and transitioning businesses. These funds provide broad, diversified market exposure and have benefited from stock market gains.
- Green bond funds were another bright spot, with assets rising 14% in 1H 2025 to reach USD 44 billion, matching the level of Clean Energy/Tech funds.
- Meanwhile, Clean Energy/Tech fund assets continued to decline, though the reduction slowed to –1.8% in 1H 2025, compared with the 34% drop over the full 2024, leaving aggregate assets largely unchanged from the previous year at USD 44 billion. Thanks to resilient demand and better-than-expected earnings, the Morningstar Global Markets Renewable Energy index rose by 14.8% in 1H 2025.
- Low Carbon funds also dropped by 1.9% in 1H 2025 while Climate Solutions funds posted a modest 2.6% gain.

Global Assets in Climate Funds (By Category)

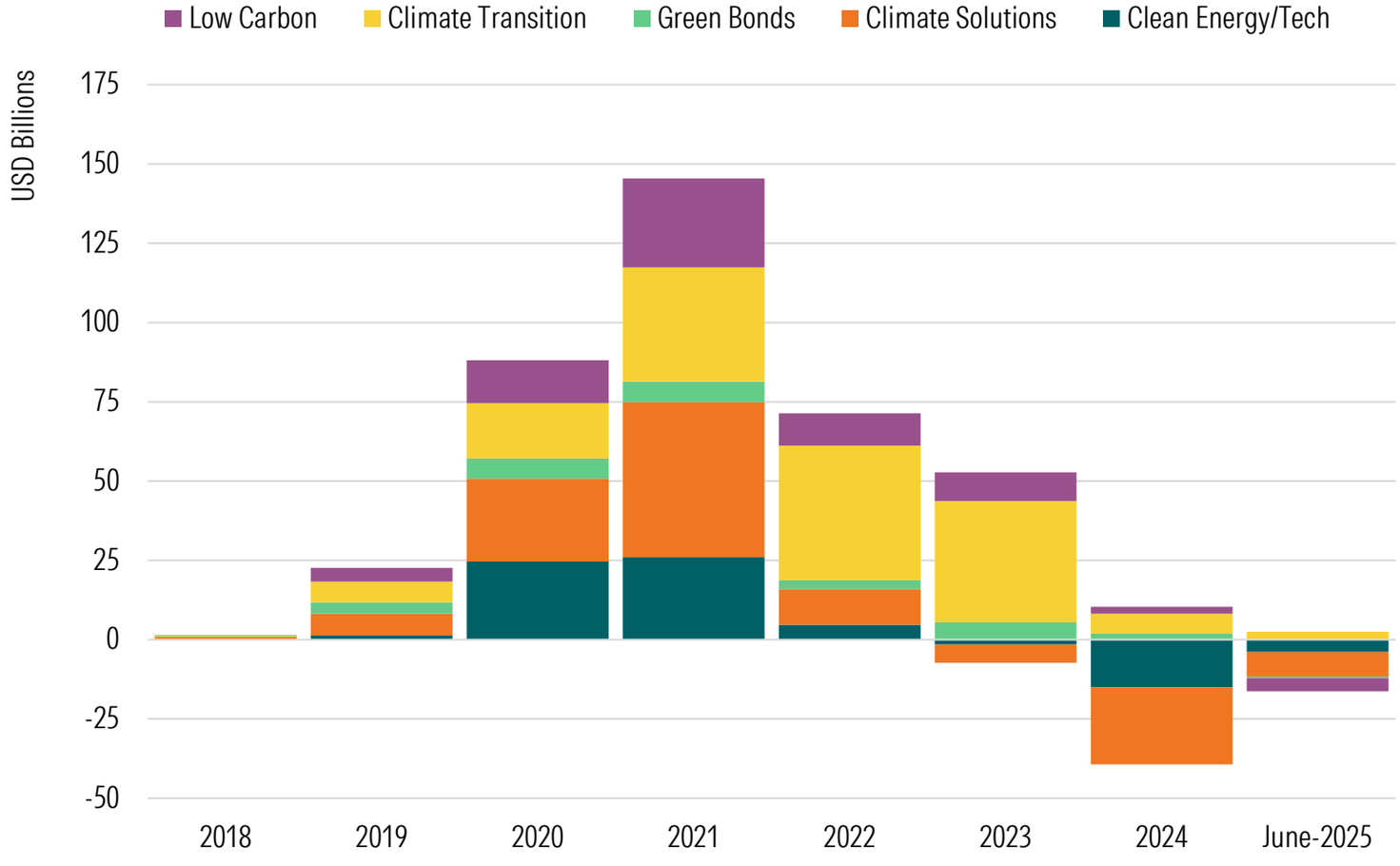


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Climate Transition Funds Stand Out the Only Category Attracting New Money Amid Broad Fund Outflows

- In 1H 2025, investors allocated USD 2.5 billion to Climate Transition funds across all regions, making this category stand out amid broader fund outflows of USD 13.8 billion over the period.
- Over the past 18 months, Climate Transition funds have attracted a total of USD 8.8 billion, underscoring investors' focus on cutting portfolio carbon emissions and, increasingly, driving real-world reductions by backing companies in transition.
- Climate Solutions funds saw the highest redemptions, with investors withdrawing USD 7.8 billion in 1H 2025, a moderate reduction compared to the nearly USD 10 billion in outflows recorded over the same period of last year.
- Outflows from Clean Energy/Tech strategies dropped to USD 3.9 billion in 1H 2025, down from USD 7.4 billion in redemptions recorded in the same period of 2024.

Annual Flows Into Global Climate Funds

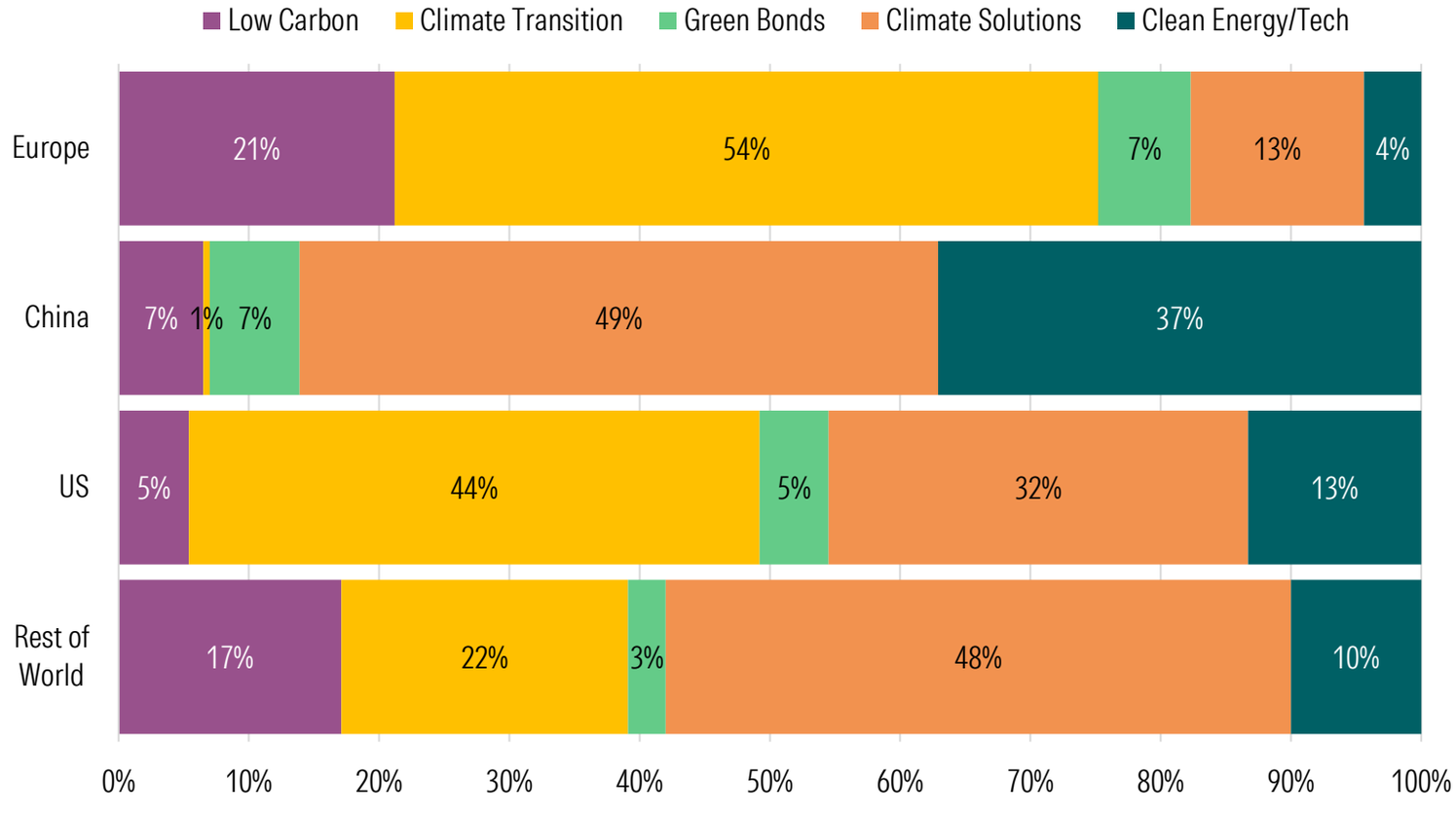


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Regional Breakdown Shows Different Investor Preferences

- In relative terms, European investors tend to favor Climate Transition and Low Carbon strategies as these account for 54% and 21% of European climate fund assets, respectively. Climate Solutions and Clean Energy/Tech funds represents 13% and 4%, respectively.
- In the US, investors' focus has shifted toward Climate Transition funds, with declining appetite for Clean Energy/Tech and Climate Solutions funds. As a result, Climate Transition now represents the largest (44%) climate fund category.
- The rise of Climate Transition strategies reflects a growing intent among investors to not only decarbonize their portfolios, but also contribute to real-world emission reductions by supporting companies actively navigating the shift to a low carbon economy. Increasingly, traditional core holdings are being replaced with strategies designed to remain resilient in a world in transition. This shift is consistent with investors' net zero commitments.
- Meanwhile, Chinese investors remain heavily concentrated in Clean Energy/Tech and Climate Solution funds, which together account for 86% of the country's total climate fund assets.

Regional Breakdown of Climate Funds by Climate Category

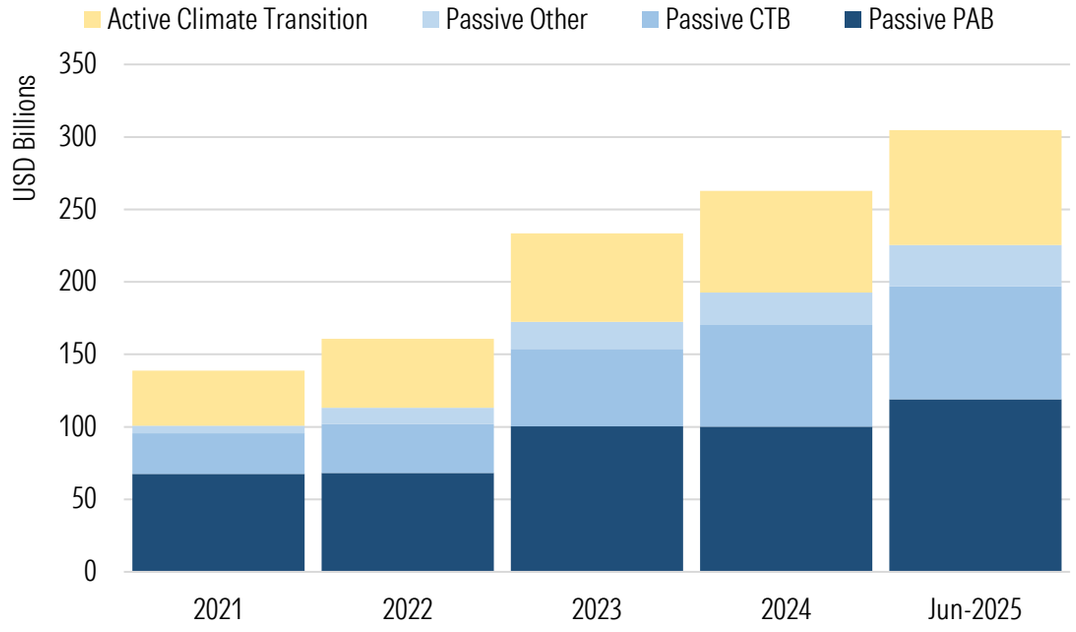


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

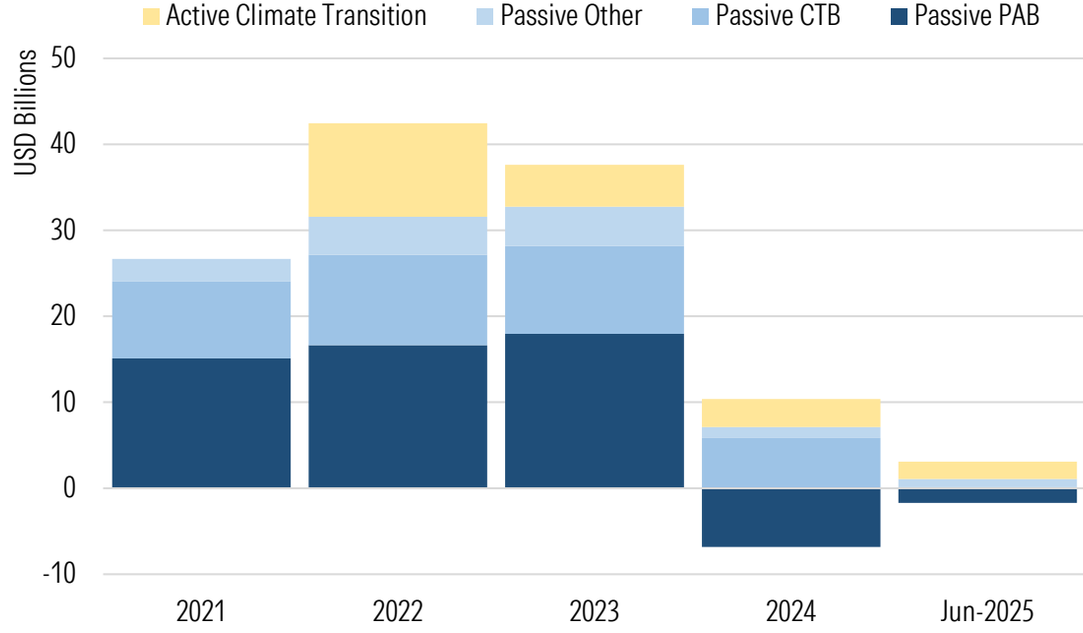
Climate Transition Funds: Passive Strategies Dominate, But Investors Favor Active Strategies This Year

- The global Climate Transition funds category is dominated by passive funds (74%), including funds that track Paris-Aligned Benchmarks (PABs) and Climate Transition Benchmarks (CTBs) and other strategies, which together reached USD 225 billion in assets as of June 2025, up nearly 17% from year-end 2024.
- Meanwhile, actively managed strategies, which account for 26% of Climate Transition fund assets, rose by 13% over the past six months to USD 79 billion.
- PAB-tracking funds have experienced outflows over the last 18 months, including USD 1.7 billion in 1H 2025. Structural factors, including tracking error, fossil fuel exclusions, turnover, as well as competition from other transition strategies, have contributed to reduced investor appetite for these products.
- By contrast, actively managed transition funds have continued to register inflows, totaling nearly USD 2 billion in 1H 2025, following subscriptions of USD 3.2 billion in 2024.

Assets in Climate Transition Funds Sub-Categories*



Flows into Climate Transition Funds Sub-Categories*



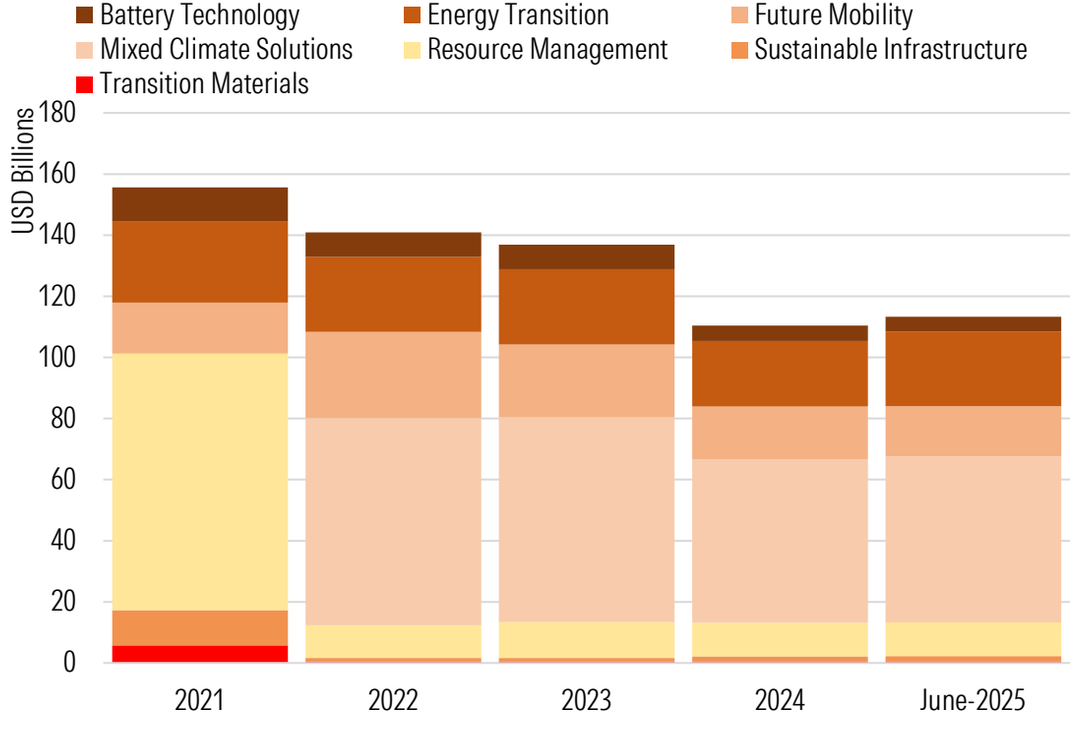
* **Passive CTB**: Funds that track an EU climate-transition benchmark. **Passive PAB**: Funds that track an EU Paris-aligned benchmark. **Other Passive Climate Transition**: Funds that track a climate index that is neither a PAB nor a CTB. **Active Climate Transition**: Actively managed funds that invest in companies that contribute to the global decarbonization (by being aligned/aligning with the Paris Agreement or providing solutions).

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

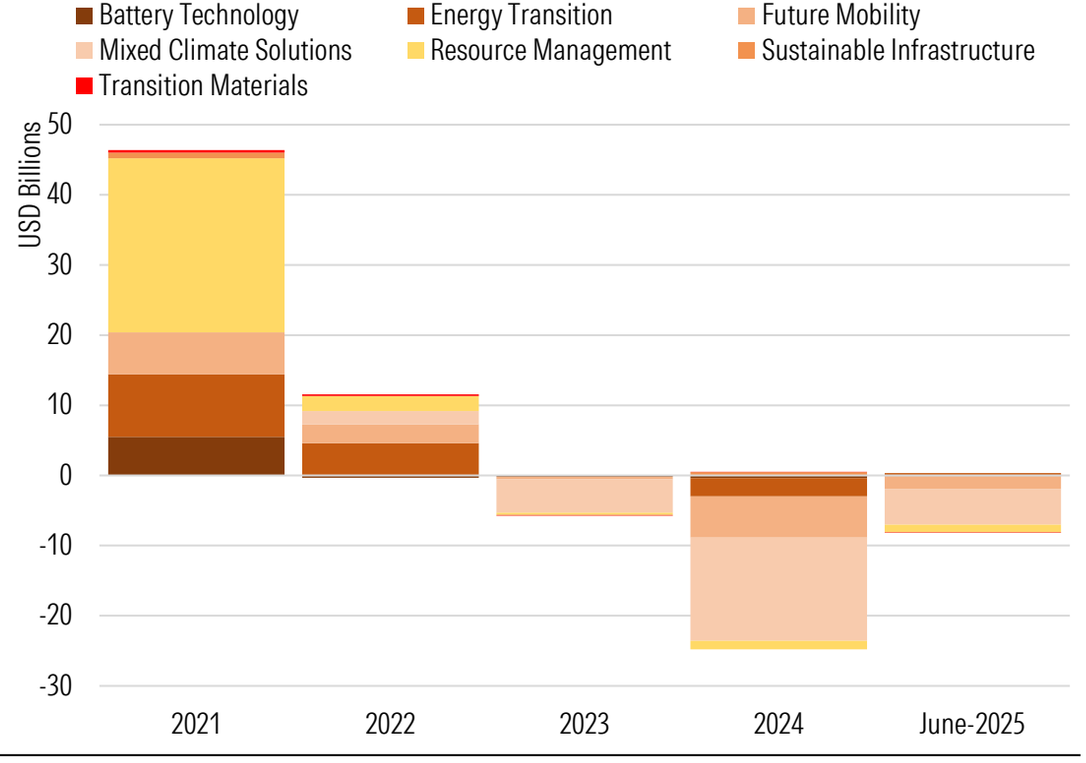
Climate Solutions Funds: Outflows From All Subcategories Persist, Except From Energy Transition

- Among all the Climate Solutions funds subcategories, Mixed Climate Solutions and Energy Transition remain the most prominent themes, with USD 54 billion and USD 24 billion of assets, respectively, as of June 2025.
- However, Mixed Climate Solutions funds bled the most money in 1H 2025, with USD 5.1 billion of redemptions. This was followed by Future Mobility funds (which include Electric Vehicles), with aggregate outflows of USD 1.8 billion.
- Performance in this market segment also lagged the broader market. For example, in the first six months of 2025, the Morningstar Global Electric and Autonomous Vehicles Select index advanced by only 4.6%, compared to the 9.9% gain of the Morningstar Global Markets Index.
- Other Climate Solutions fund sub-categories, except Energy Transition, also experienced outflows. Energy Transition funds garnered a modest USD 0.4 billion in 1H 2025.

Assets in Climate Solutions Funds Sub-Categories



Flows into Climate Solutions Funds Sub-Categories

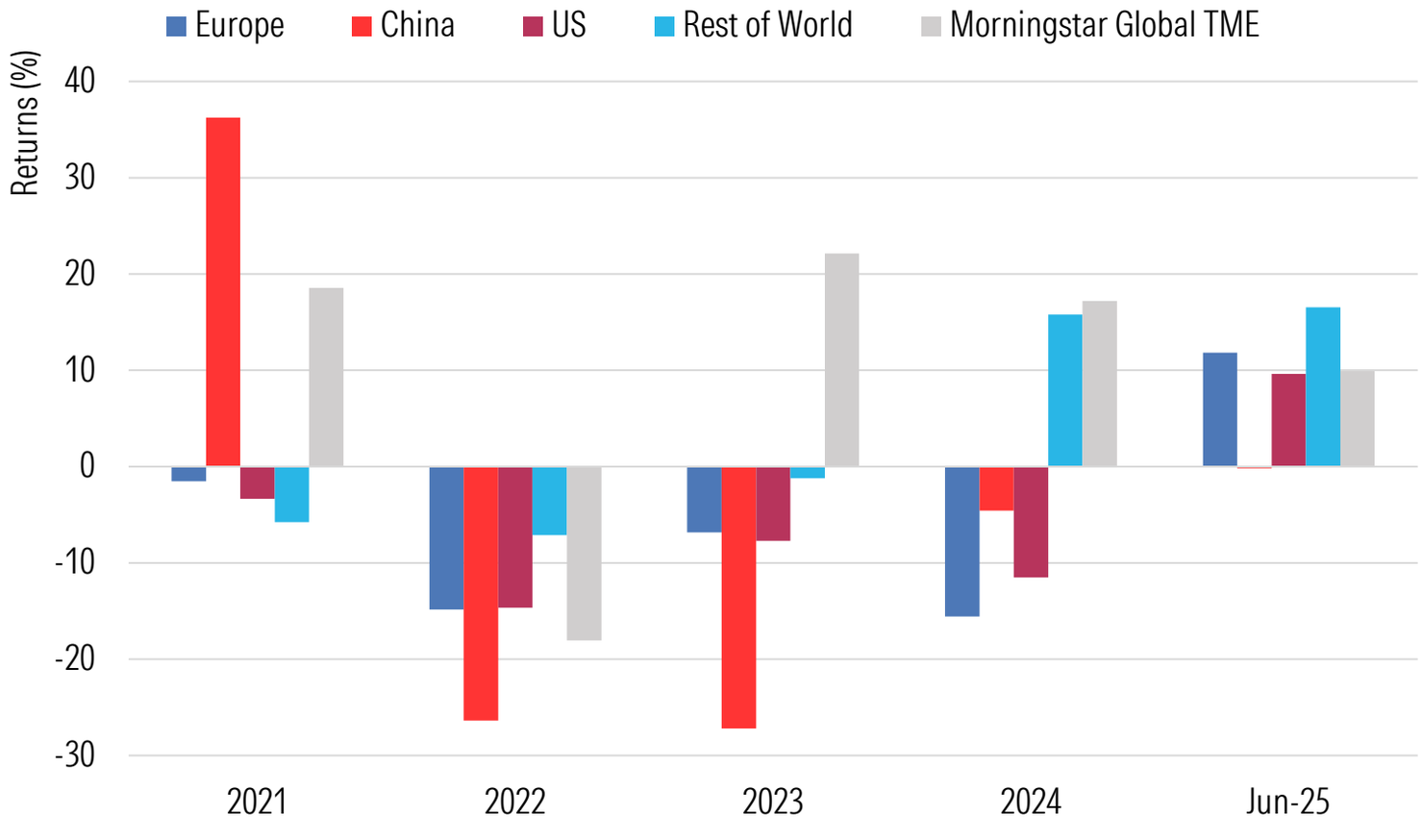


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025. See Appendix for a detailed definition of Climate Solutions funds subcategories

Clean Energy/Tech Funds Post Strong Gains Following Extended Downturn

- Clean Energy/Tech funds in all regions (except China) posted strong gains in 1H 2025, following four years of poor performance.
- For example, European-domiciled Clean Energy/Tech funds registered an average return of 11.8%, compared to 9.9% for the Morningstar Global Total Market Exposure Index. This marks a strong comeback after last year's negative return for the group at 15.6%.
- Several factors contributed to the extended (2021-2024) underperformance of green energy stocks, including high interest rates, materials inflation, supply chain disruptions, and project delays.
- In 2025, green energy companies have, on average, seen their stock price improve, driven by rising energy demand, particularly from the data centers powering AI, and lower interest rates. This rebound occurred despite new headwinds, including tariffs, an anti-climate policy stance in the US, and broader economic uncertainty.
- Renewable energy stocks also beat their traditional peers. Through June of this year, The Morningstar Global Markets Renewable Energy Index gained 12.5%, while the Morningstar Global Energy Index rose by just 5%.

Simple Average Returns of Clean Energy/Tech Funds Compared to Morningstar Global Markets Index (%)

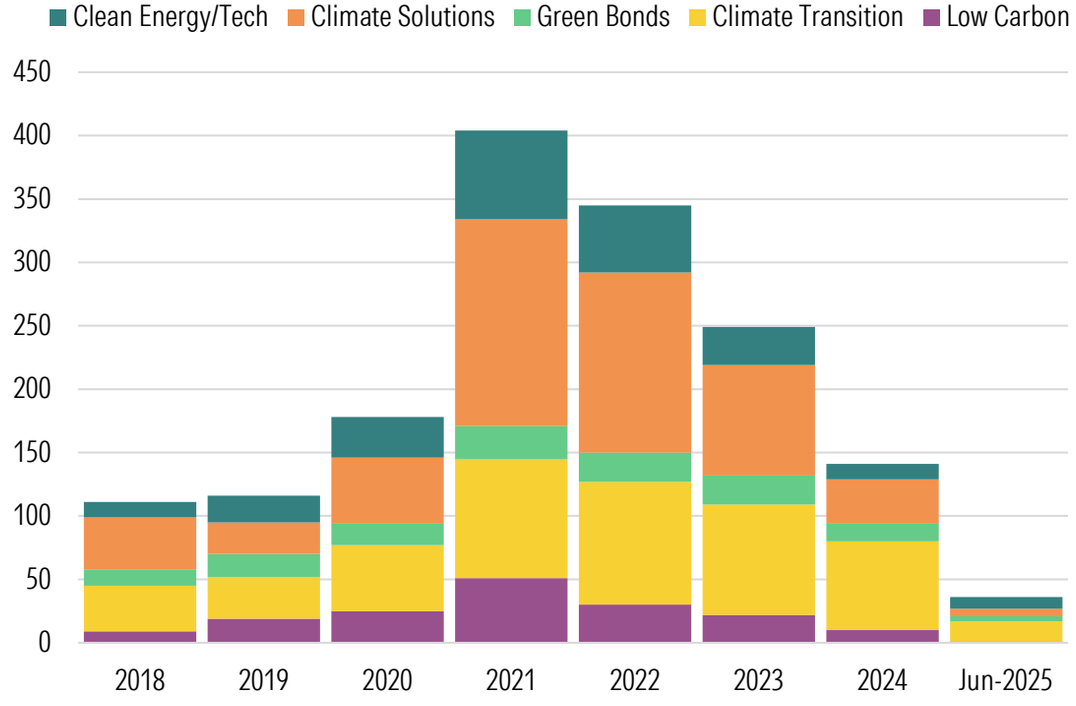


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

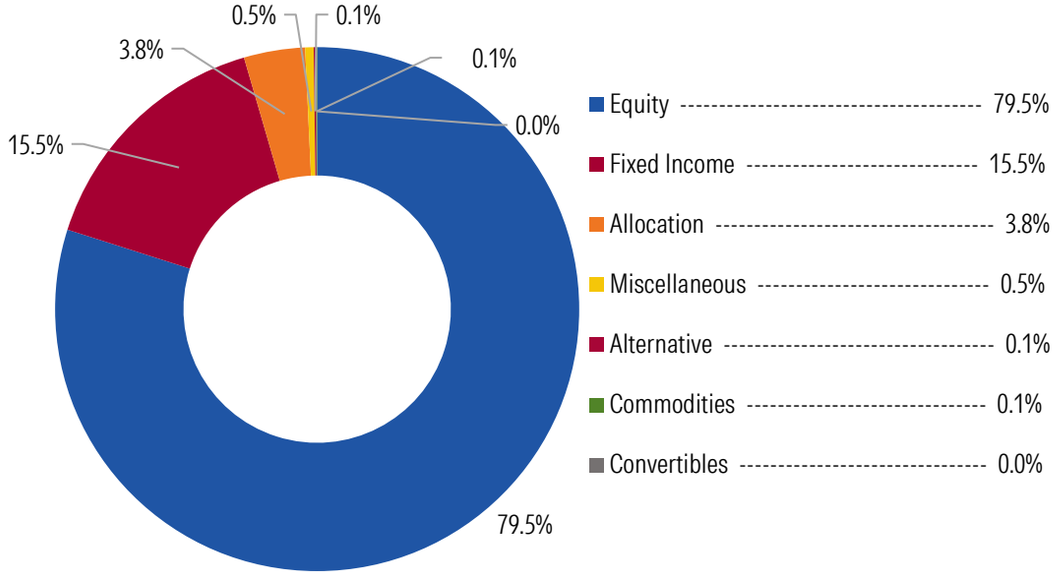
Product Development Faces New Lows, While Equity Strategies Remain Overwhelmingly Represented

- New climate strategies of all types continued hitting the shelves in 2025, driven by investor demand and asset managers' net zero commitments.
- However, the number of launches fell significantly to just 35 during 1H 2025, though this number is likely to be revised upward as additional launches are identified.
- The slowdown reflects a normalization of the climate-related product development activity after several years of high growth. But it is also the result of regulatory uncertainty in some parts of the world.
- The new offerings this year remain concentrated in Climate Transition and Clean Energy/Tech strategies.
- As is customary with sustainable funds, equity strategies dominate the climate funds universe, representing almost 80% of climate-offering assets as of June 2025. Fixed income products account for about 15% of total offerings.

Number of Global Climate Fund Launches



Asset Class Breakdown of Global Climate Funds



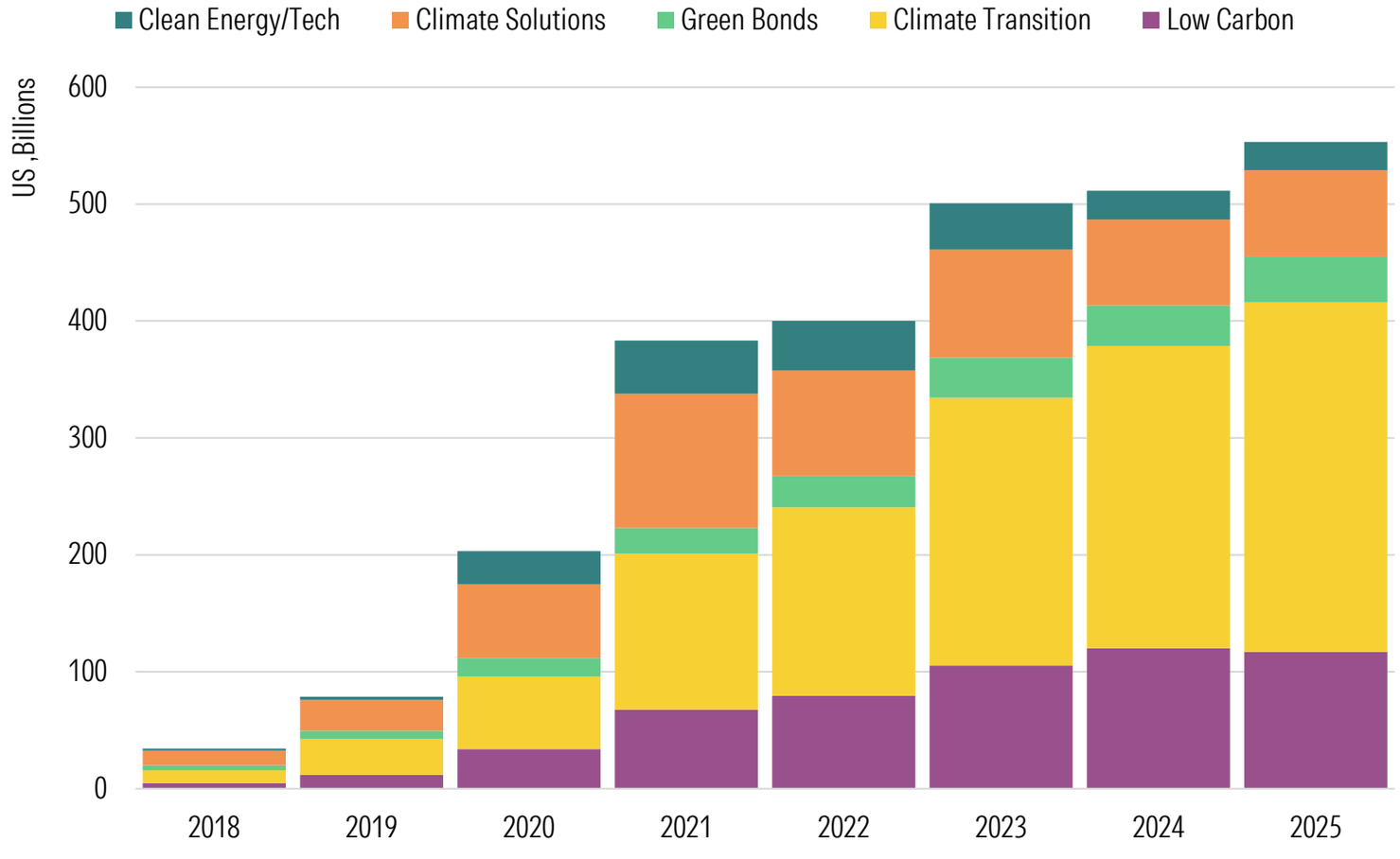
Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

The European Climate Funds Landscape

Assets in European Climate Funds Climb to New Highs, Supported by Market Price Appreciation and New Entrants

- After nearly stagnant growth in 2024, assets in European-domiciled climate funds expanded by 8% in 1H 2025, reaching a new high of USD 553 billion. This universe includes 1,047 (61%) of the 1,716 climate funds identified globally, underscoring Europe's continued leadership in climate-focused investing.
- The most significant asset growth was observed among Climate Transition strategies, which expanded by 16% to nearly USD 300 billion, driven by market price appreciation and new entrants. In 1H 2025, close to 120 funds were added to the category, bringing combined assets of almost USD 23 billion. These additional funds include newly incepted ones and those that have shifted into a climate-related mandate, by adding decarbonization criteria for example.
- Assets of Green Bond funds also rose notably by 12% to USD 39 billion. Meanwhile, assets in Clean Energy/Tech and Climate Solutions strategies remain largely unchanged compared to Dec 2024, despite the improved performance of these sectors. As we will see on the next slide, European investors have continued to pull money from these two categories.

Assets in European Climate Funds

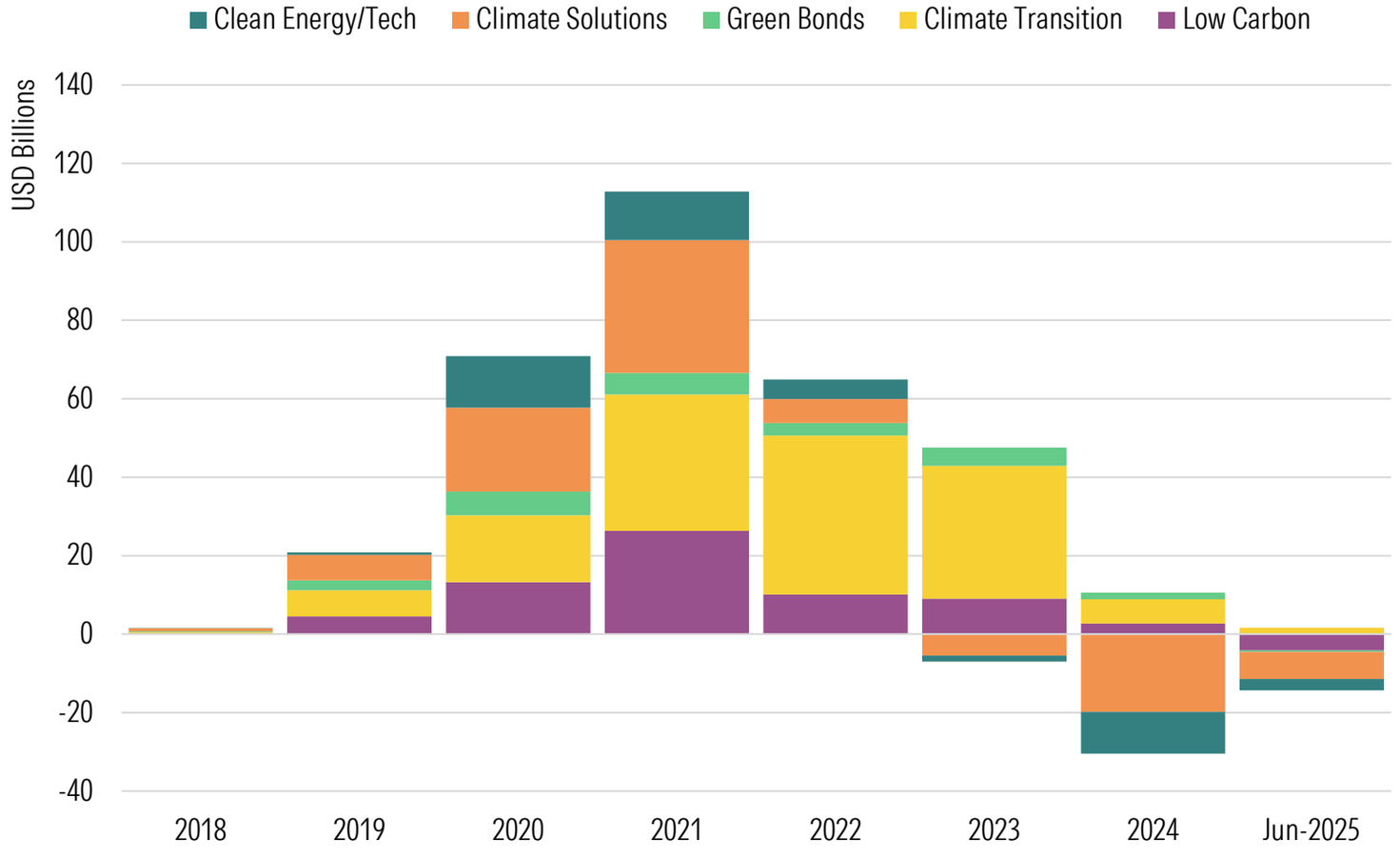


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Climate Transition Funds Gather Inflows, While Other Strategies Face Redemptions

- European Climate funds recorded net outflows of USD 13 billion in 1H 2025, after bleeding almost USD 20 billion over the full 2024.
- Climate Transition funds stood out as the only category attracting new money, totaling a modest USD 1.6 billion in 1H 2025, following net subscriptions of USD 6.2 billion in 2024.
- Redemptions from Climate Solutions (USD 7 billion) and Clean Energy/Tech (USD 2.9 billion) funds in 1H 2025 were more subdued than in 1H 2024, when outflows were USD 8.1 billion and USD 5.1 billion, respectively. Companies in these sectors have, on average, seen their stock price improve, despite facing new headwinds such as tariffs, US restrictions on technology transfers to China, an anti-climate policy stance in the US, and broader economic uncertainty.
- Low Carbon funds bled USD 4.2 billion, compared with inflows of USD 2 billion in 1H 2024. Low Carbon strategies are steadily losing ground to more sophisticated Transition strategies.

Annual Flows Into European Climate Funds



Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Climate Transition Funds Top the Flow Leader Table

YTD 2025 Flow Leaders and Laggards – European Climate Funds

Name	Net Flows YTD (USD mn)	AUM (USD bn)	Climate Category
UBS Equities World excl. CH Climate Aware NSL	872	3.6	Climate Transition
UBS Global Equity Climate Transition Fund	870	5.5	Climate Transition
Mercer Passive Sustainable Global Equity CCF	759	7.2	Climate Transition
NTCM World Low Carbon Plus Equity Index Fund	740	6.4	Low Carbon
Handelsbanken Europa Index Criteria	737	2.2	Climate Transition
iShares Env. & Low Carbon Tilt Real Estate Index Fund (UK)	-3,048	6.3	Low Carbon
Xtrackers MSCI USA ESG ETF	-1,344	8.2	Low Carbon
Xtrackers MSCI World ESG ETF	-1,132	7.2	Low Carbon
Pictet Global Environmental Opportunities	-1,037	6.5	Climate Solutions
Handelsbanken Norden Index Criteria	-1,023	4.4	Climate Transition

- Four out of the five best-selling climate funds in 1H 2025 were Climate Transition strategies, led by **UBS Equities World ex CH Climate Aware NSL**. The passive fund targets a net-zero pathway and seeks a 50% carbon-intensity reduction by 2030 and net zero by 2050, aiming for a 7% annual decrease in weighted average carbon intensity. To achieve these goals, the fund favors companies with lower carbon intensity, renewable energy or green technology exposure, and higher ESG scores than the benchmark.

- Another bestseller following a similar approach is **Mercer Passive Sustainable Global Equity CCF**. The fund tracks a Paris-Aligned index that targets a 70% reduction in scope 1, 2, and 3 carbon emissions relative to its parent index.

- By contrast, **iShares Environment & Low Carbon Tilt Real Estate Index Fund (UK)** registered the largest outflows among European climate funds. This passive Low Carbon fund tracks an index that adjusts constituent stocks' weights based on green building certification, energy usage and carbon emissions.

- Other major flow laggards include two DWS low carbon ETFs, namely **Xtrackers MSCI World ESG ETF** and **Xtrackers MSCI USA ESG ETF**. The underlying indexes exclude companies with high exposures to carbon-intensive operations products, while targeting a 50% reduction in carbon intensity relative to their parent indexes.

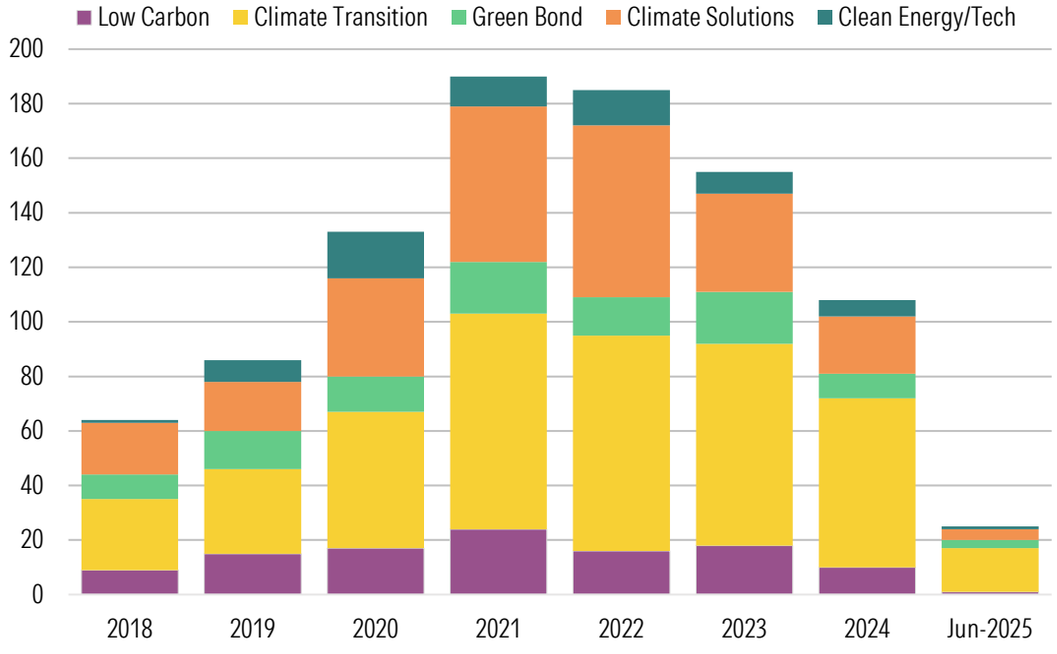
- In total, the three Low Carbon strategies bled more than USD 5.5 billion in 1H 2025.

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Sharp Decline in Product Development Amid Regulatory Uncertainty and Market Normalization

- Product development in Europe remained subdued in 1H 2025, with new climate fund launches reaching a historical low of 25, compared with 62 during the same period in 2024. The Climate Transition category accounted for the highest number (16) of launches.

Number of European Climate Fund Launches



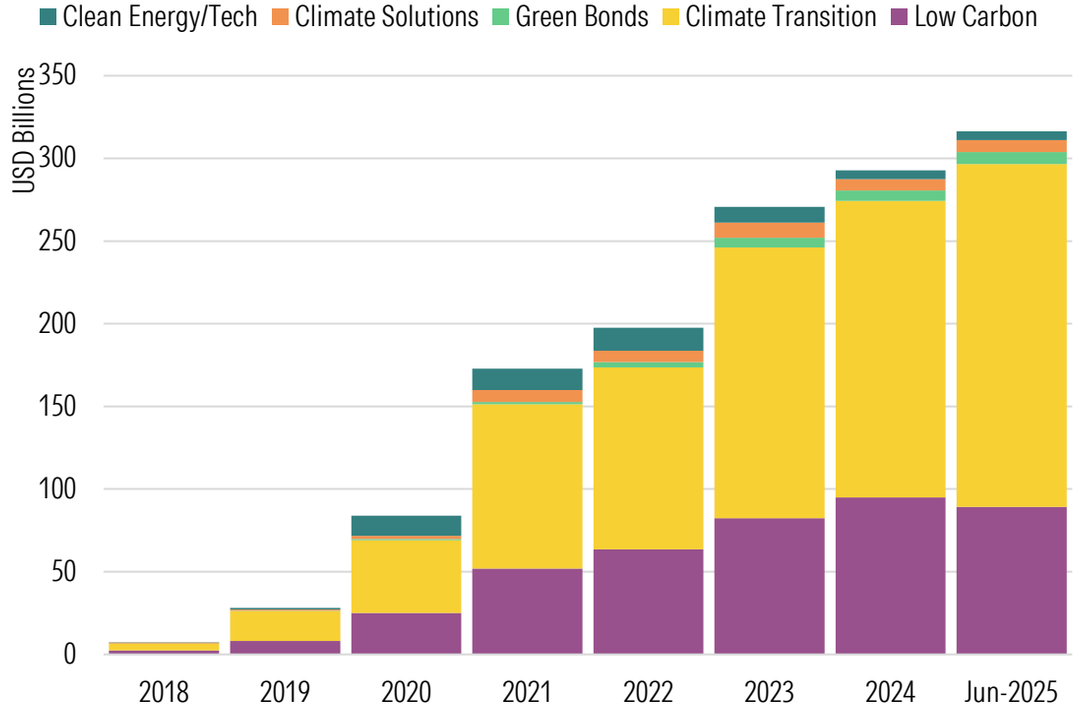
- This slowdown partly reflects a normalization of the climate-related product development activity after several years of high growth. It is also attributable to regulatory uncertainty, particularly around SFDR 2.0, prompting market participants to adopt a wait-and-see approach. Under review since September 2023, the Commission has proposed the creation of product categories to potentially replace the Article 8 and Article 9 disclosure regime. Proposed new categories include "sustainable" and "transition" strategies.
- In 1H 2025, Allspring launched two new fixed income funds, **Climate Transition Buy and Maintain Plus 2025-2029 fund and Climate Transition Buy and Maintain Plus 2030-2034 fund**, both primarily investing in a portfolio of debt and debt-related securities and aim to decarbonize the portfolios by tilting the funds' exposure towards companies better positioned to contribute to the climate transition.
- Other launches included passive strategies such as **iShares Energy Storage & Hydrogen ETF**, which targets low-carbon technologies and solutions, **Invesco S&P 500 CTB Net Zero Pathway ESG ETF**, which selects and weighs companies to form a portfolio compatible with the transition to a low carbon and climate resilient economy. Meanwhile, **Amundi Euro Government Low Duration Tilted Green Bond** invests in impact-driven issuers while applying sector exclusions.
- Additional new launches include two actively managed Green Bond funds, **Nykredit Invest Engros Grønne Obligationer KL** and **Zurich Global Green Bond Fund**.
- In total, roughly 80% of the new climate launches were active strategies, while the remaining 20% were passively managed.

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025

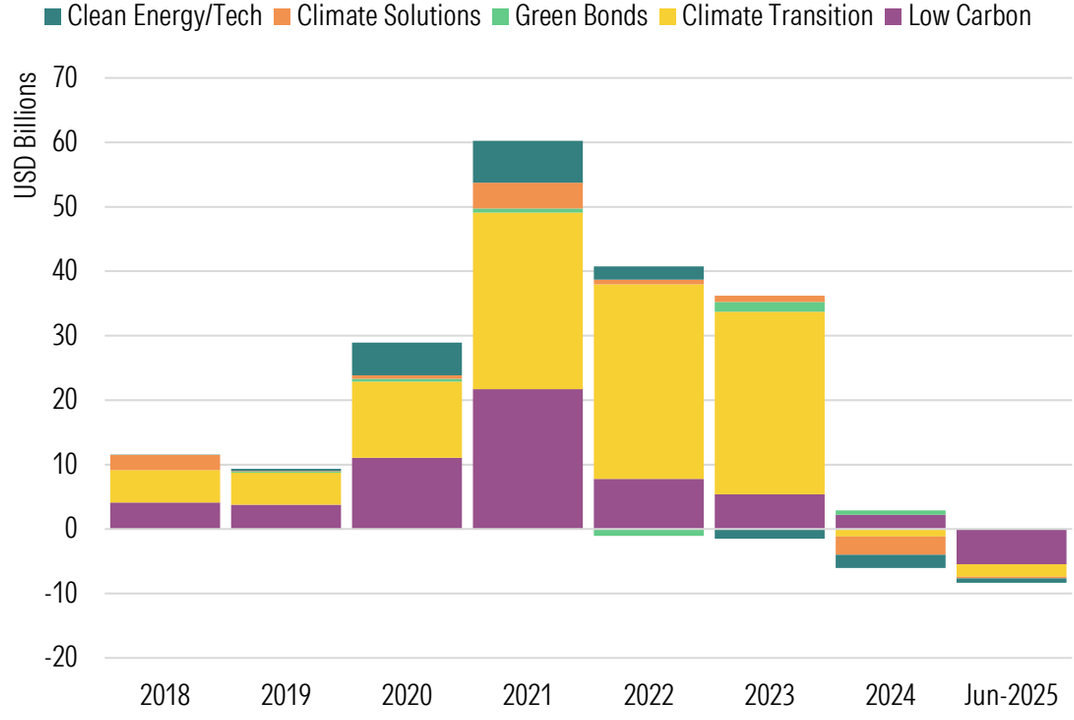
Passive Funds Account for Over Half of the Assets, Driven by Continued Innovation in Indexing and Improved Data

- In Europe, passive strategies comprise 53% of total assets in climate funds. Their proliferation can be explained by the continued innovation in indexing and improved ESG data quality.
- Passive funds with a climate theme totaled USD 316 billion as of June 2025, expanding by 8% from 2024. The Climate Transition grouping boasts the highest share (66%) of passive climate strategies, driven by the Regulation on the EU Climate Transition Benchmarks (2019).
- Redemptions from index funds and ETFs with a climate theme rose to USD 8.3 billion in 1H 2025, dragged mostly by Low Carbon funds' outflows of USD 5.5 billion.
- Passive Climate Transition strategies bled USD 2 billion, compared to the full-year outflows of USD 600 million in 2024. In comparison, outflows from other passive climate fund categories have been smaller thus far in 2025, compared to 2024.

Assets in European Passive Climate Funds



Flows Into European Passive Climate Funds

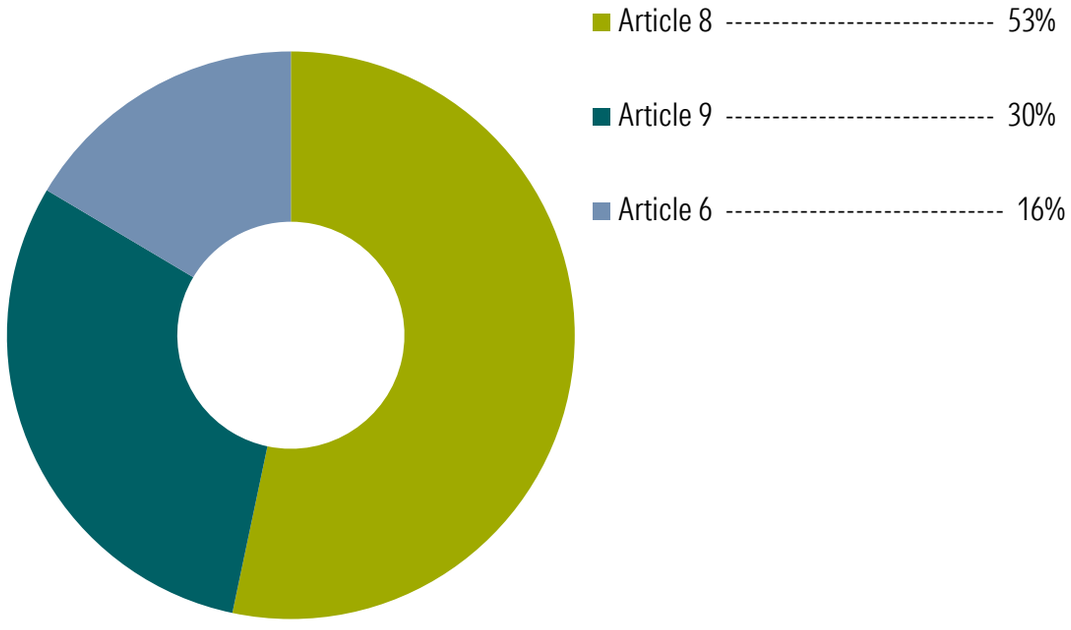


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

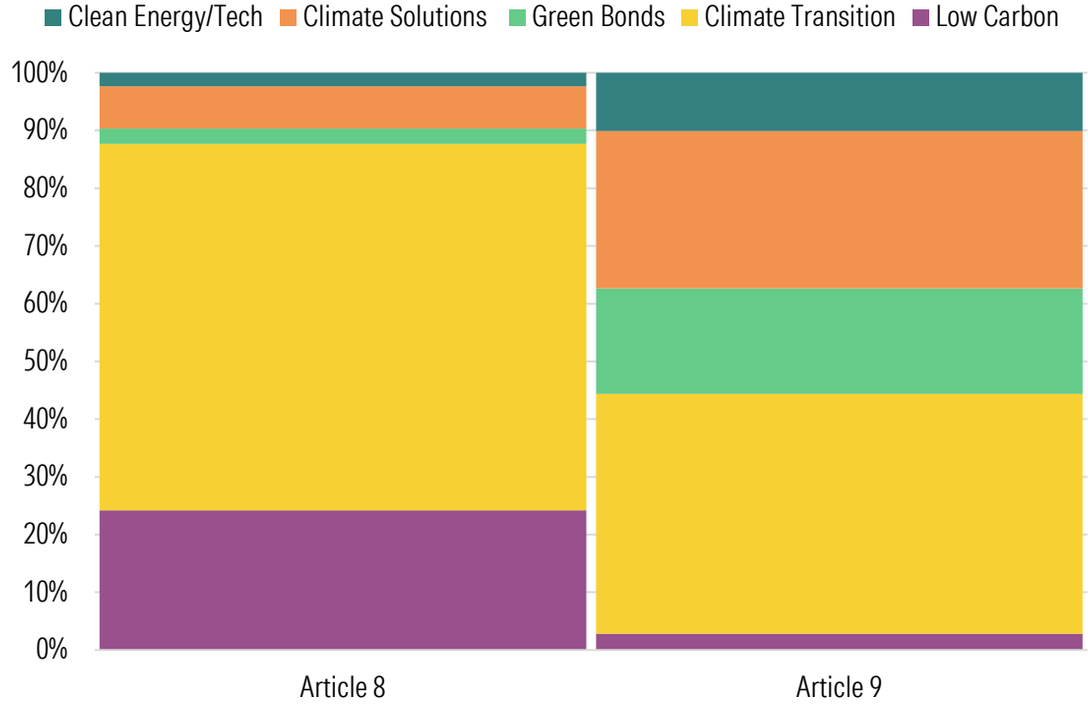
EU SFDR: 53% of Climate Funds Are Article 8 and 30% Are Article 9

- Focusing on funds in scope of the Sustainable Finance Disclosure Regulation, as of June 2025, Article 8 funds accounted for over half (52%) of the EU climate fund universe (USD 302 billion).
- Despite the price recovery of renewable energy stocks, slow product development and continued redemptions in Climate Solutions and Clean Energy/Tech funds reduced the market share of Article 9 climate funds slightly to below 30% (USD 166 billion) as of June 2025, down from 33% at the end of December 2024.
- As of June 2025, Climate Transition funds took up 63% and 42% of the Article 8 and Article 9 climate funds, respectively.
- In terms of number of funds, the Article 9 category consists of 79 and 61 active and passive Climate Transition funds, respectively. This is followed by 118 Climate Solution funds, 94 Green Bond funds, and 29 Clean Energy/Tech funds.

European Climate Funds Broken Down by SFDR Fund Type



European Climate Funds by SFDR Type



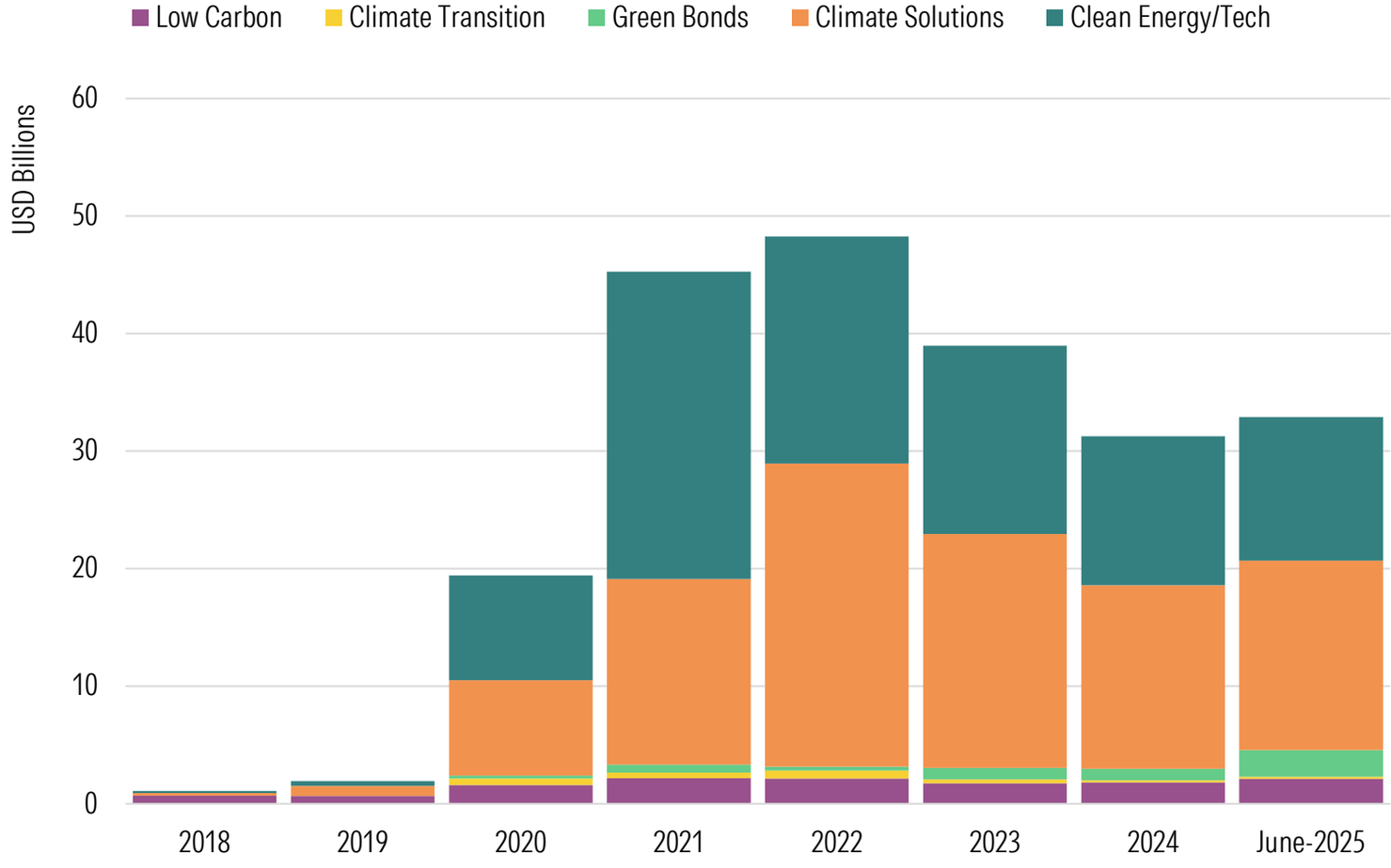
Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

The Chinese Climate Funds Landscape

Uptick in Asset Growth, Driven by Green Bond Funds

- Assets of China-domiciled climate funds rose by 5% in 1H 2025, reaching nearly USD 33 billion. The uptick was driven primarily by Green Bond funds, which recorded a noticeable growth of 65% to USD 2.3 billion. In 1H 2025, China's central bank implemented interest rate cuts, boosting demand for credit bonds.
- Assets in Climate Solutions and Clean Energy/Tech funds remain broadly stable, yet continue to dominate China's climate fund landscape, with an 86% market share.
- Along with production overcapacity, sluggish household consumption — driven by high precautionary savings, low confidence, a fragile property market, and an underdeveloped welfare system — has weighed on companies favored by Climate Solutions and Clean Energy/Tech funds, particularly those in the electric vehicle sector.
- Despite the small rebound of Chinese climate fund assets as of June 2025, they remain 29% below the peak of USD 48 billion recorded in 2022.

Assets in Chinese Climate Funds

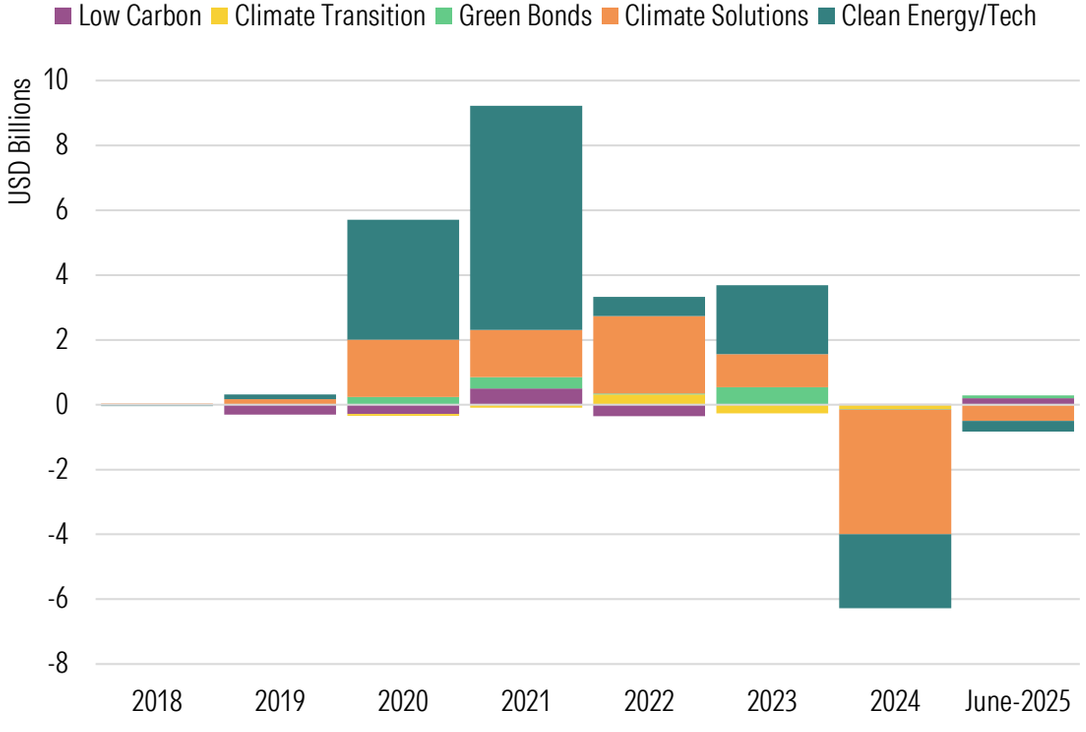


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

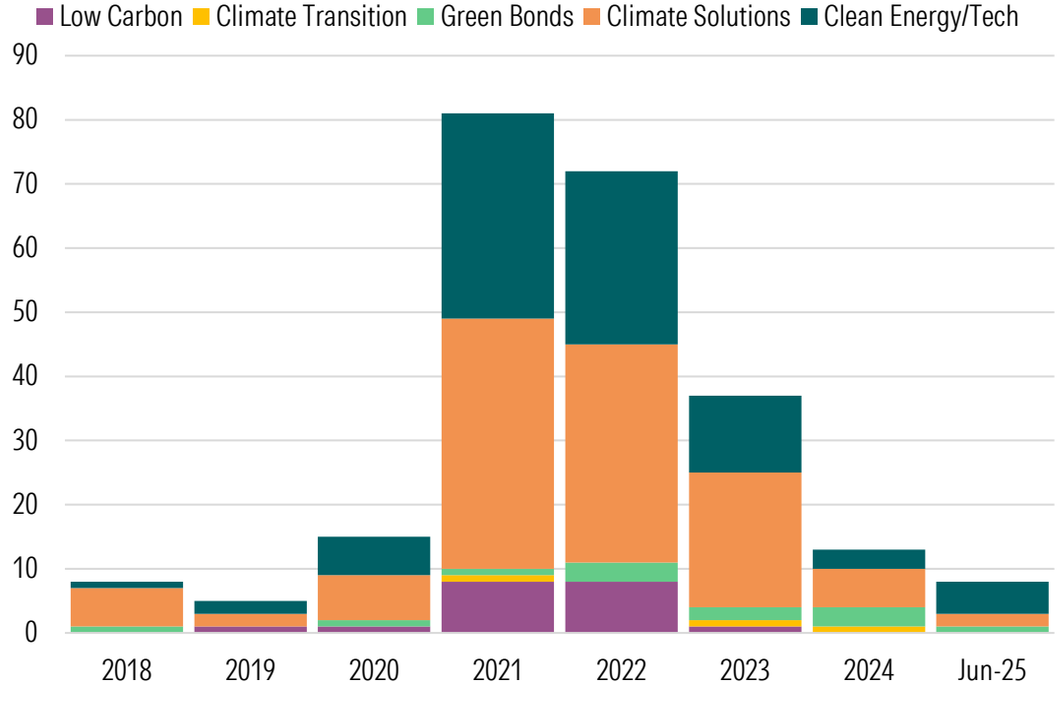
Redemptions from Climate Solutions and Clean Energy/Tech Funds Stabilize

- Redemptions from Chinese climate funds eased in 1H 2025, amounting to USD 550 million, following outflows of USD 6.3 billion over the whole of 2024. Outflows in 1H 2025 were driven almost entirely by two categories: Climate Solutions (USD 480 million) and Clean Energy/Tech (USD 330 million).
- Flows in the Chinese market continue to show significant volatility, largely driven by the speculative behavior of local retail investors.
- Only nine new Chinese climate funds were launched in 1H 2025, beleaguered by weak economic indicators. Although Clean Energy/Tech funds accounted for the majority (six) of new launches, their average size was much smaller than that of new Climate Solutions funds.
- **ChinaAMC ChiNext New Energy ETF** was the largest newly incepted fund. The ETF tracks an index launched by the Shenzhen Stock Exchange's Growth Enterprise Market which includes a wide range of technology and material suppliers related to the renewable energy sector.

Annual Flows Into Chinese Climate Funds



Launches of Chinese Climate Funds



Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Divergent Flow Attraction Amid Climate Solutions and Clean Energy/Tech Dominance

2025 YTD Flow Leaders and Laggards, Chinese Climate Funds

Name	Net Flows YTD (USD mn)	AUM (USD bn)	Climate Category
Penghua Carbon Neutralization Mixed Securities Investment Fund	1,373	1.5	Climate Solutions
Huatai-PB CSI Photovoltaic Industry ETF	288	1.4	Clean Energy/Tech
GF CSI Fully Electronic Power ETF	241	0.5	Clean Energy/Tech
CMF CFETS Interbank Green Bond Index	159	0.9	Green Bonds
Maxwealth Low-Carbon Environment Protection Srt Mix	139	0.3	Low Carbon
ChinaAMC New Energy Fund	-318	1.1	Clean Energy/Tech
Orient Secs Green Energy Car Alloc	-178	1.1	Climate Solutions
Fullgoal New Power Alloc	-171	0.4	Clean Energy/Tech
China Universal New Eneg Car Ind Index LOF	-165	1.1	Climate Solutions
ABC-CA New Energy Theme Hybrid Fund	-141	1.1	Clean Energy/Tech

Largest Chinese Climate Funds

Name	AUM (USD bn)	Climate Category
Penghua Carbon Neutralization Mixed Securities Investment Fund	1.5	Climate Solutions
Huatai-PB CSI Photovoltaic Industry ETF	1.4	Clean Energy/Tech
China Universal New Eneg Car Ind Index LOF	1.1	Climate Solutions
Orient Secs Green Energy Car Alloc	1.1	Climate Solutions
ChinaAMC New Energy Fund	1.1	Clean Energy/Tech
ABC-CA New Energy Theme Hybrid Fund	1.1	Clean Energy/Tech
Cinda New Energy Ind Stk Fd	1.0	Clean Energy/Tech
TianHong CSI Photovoltaic Industry Index	0.9	Clean Energy/Tech
Fullgoal China Secs new energy vehicles	0.9	Climate Solutions
CMF CFETS Interbank Green Bond Index	0.9	Green Bonds

- As in previous years, Climate Solutions and Clean Energy/Tech strategies have led both the top and bottom of the flow rankings in 2025. All major laggards share heavy exposure to China's domestic EV sector, where most plants are operating well below capacity and dealership inventories continue to build.
- **CMF CFETS Interbank Green Bond Index** was a rare example of a Green Bond strategy in the largest climate fund list. Boosted by a marked inflow in 1H 2025, **Penghua Carbon Neutralization Mixed Securities Investment Fund** topped the league with total AUM of USD 1.5 billion. The active strategy adheres to the "dual carbon neutrality goals" set by the Chinese government, focusing on providers of decarbonization technologies and services across electricity generation, transportation, industrial emission reduction, building materials, and power supply, as well as eco-friendly agricultural production.
- This year's key regulatory milestone in China's green and climate finance was the revision of the "Measures for the Administration of the Development and Construction of Distributed Photovoltaic Power Generation", designed to steer the renewable energy market toward market-driven competition. Previously, most renewable projects operated under fixed-price contracts pegged to coal-fired power rates, offering little incentive to align output with real-time electricity demand. The new rules address this by allowing compliance through offtake agreements with standalone projects of equal capacity or by enabling co-located storage to participate in power markets, provided technical standards are met — paving the way for a more market-oriented approach to renewable deployment.

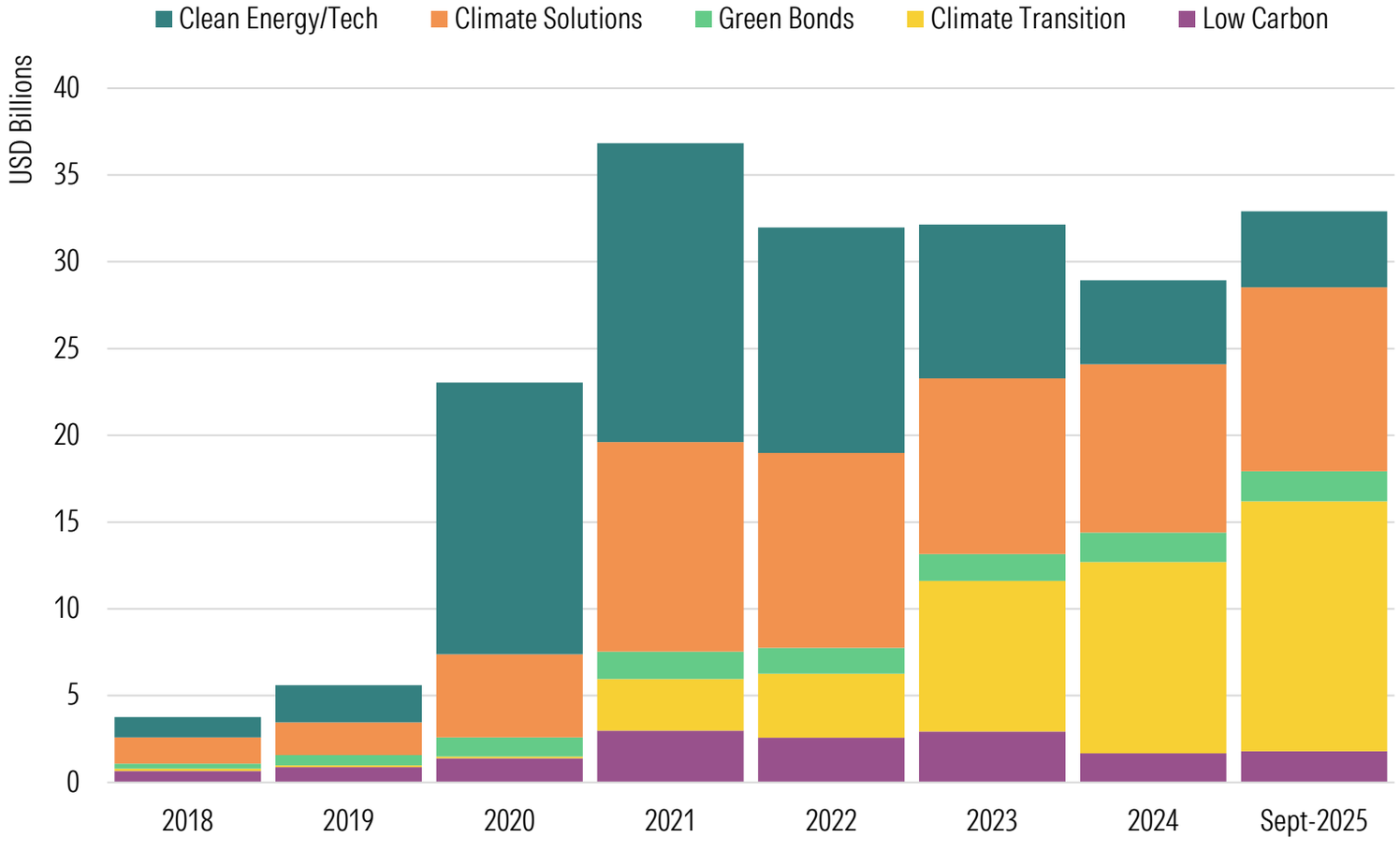
Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

The US Climate Funds Landscape

US Climate Fund Assets Rise Led by Transition Strategies, Even as Clean Energy/Tech Funds Falter

- Assets in US climate funds increased by almost 14% in 1H 2025, reaching USD 33 billion by the end of June.
- Assets in Climate Transition funds rose the most (by 31%), driven by a continued appetite for this type of strategy and by market price appreciation. At USD 14.4 billion, Climate Transition strategies have become the dominant segment in the US climate fund space, accounting for 44% of the total climate fund assets in the country. Climate Solutions ranks second, with a 32% market share. In 1H 2025, Climate Solutions fund assets grew by only 9% to USD 10.6 billion.
- The only category facing contraction in 1H 2025 was Clean Energy/Tech, which recorded a decline of more than 9%, falling to USD 4.4 billion. This sector has shrunk by 75% since the peak in 2021, weighed down by high interest rates, materials inflation, project delays and, more recently, political resistance to climate policy in the US.
- Despite the rebound of US climate fund assets so far this year, they remain 11% below the peak recorded in 2021.

Assets in US Climate Funds

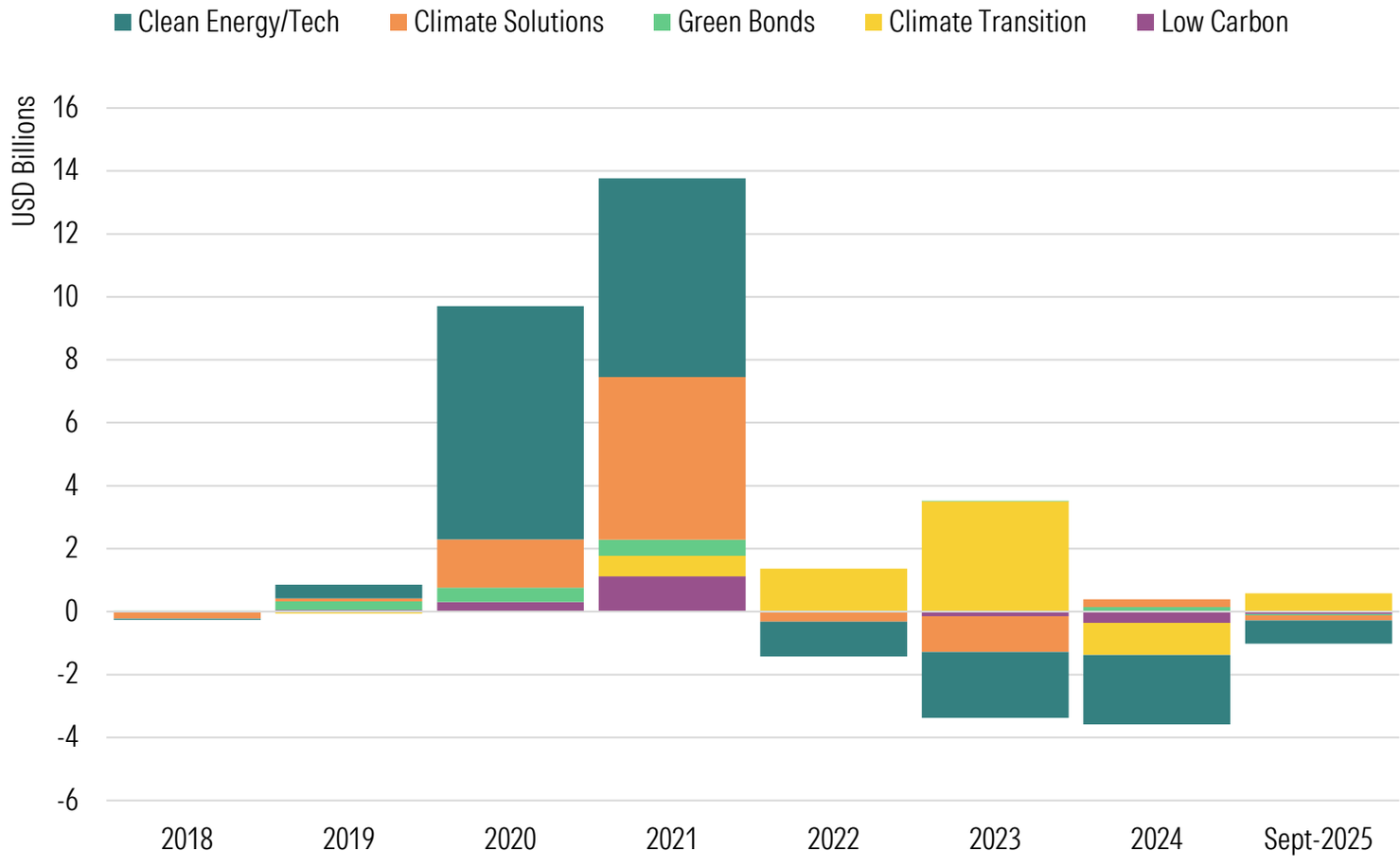


Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Outflows From Clean Energy/Tech Funds Ease, While Climate Transition Funds Show Modest Recovery

- Outflows from US-domiciled climate funds eased in 1H 2025 to USD 440 million, compared with USD 3.1 billion over the whole of 2024, helped by Climate Transition funds, which garnered USD 580 million in the six months to June 2025, after bleeding more than USD 1 billion over the whole of 2024.
- Climate Transition strategies are the only category to have recorded positive net flows (USD 4.4 billion) since the peak in inflows in 2021.
- Clean Energy/Tech continued to register the largest redemptions, totaling USD 740 million in 1H 2025, though this was half of the USD 1.4 billion in outflows recorded during the same period in 2024. Clean Energy/Tech funds have bled more than USD 6 billion since the end of 2021.
- Redemptions from Climate Solution strategies also fell in 1H 2025 to USD 170 million.
- Green stocks have faced multiple headwinds since 2021, including high financing costs, materials inflation, project delays and, more recently, political resistance to climate policy in the US.

Flows into US Climate Funds



Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

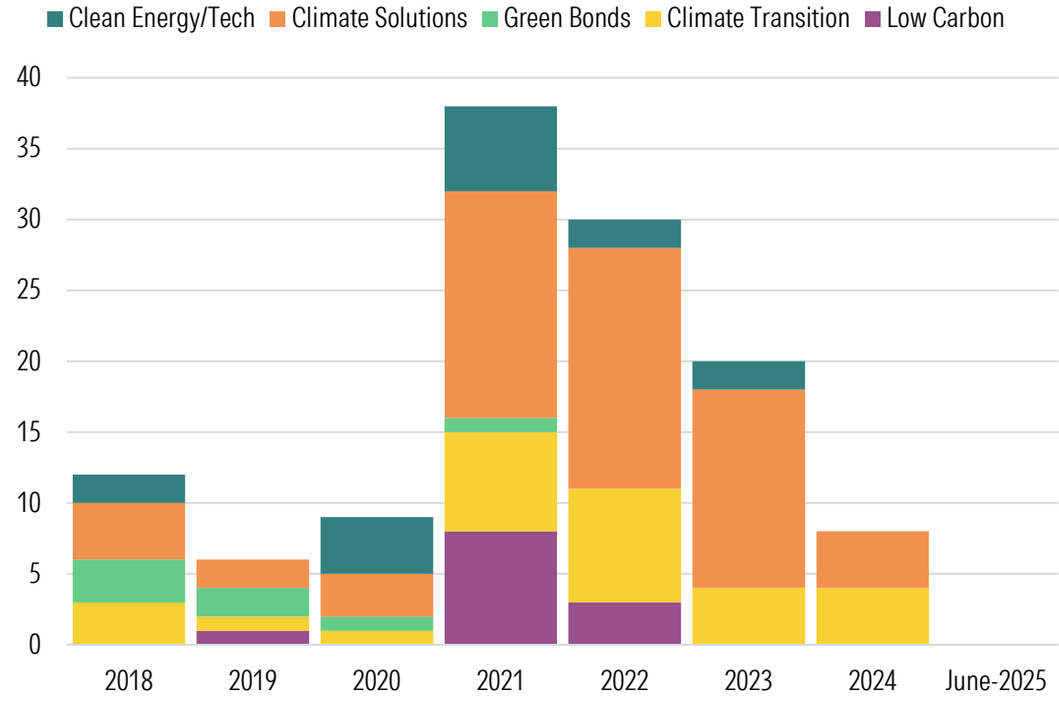
Product Development Has Stalled

- Three Climate Transition funds rank among the five best-selling US climate funds in 1H 2025. These are **Xtrackers USA Climate Action Equity ETF**, **Xtrackers Emerging Markets Climate Selection ETF**, and **Invesco North America Climate ETF**. The top-selling fund is **VanEck Uranium and Nuclear Energy ETF**, which continues to benefit from a renewed interest in nuclear power since the war in Ukraine. Additionally, major US tech companies including Microsoft, Google, Amazon, and Meta have signed nuclear energy contracts or made strategic investments to secure stable, carbon-free power for their data centers. Nuclear remains politically supported in the US, with key tax provisions preserved for existing plants. Another top-selling fund is **First Trust NASDAQ® Clean Edge® Smart Grid Infrastructure Index Fund** , driven by the need to modernize and upgrade grid infrastructure.
- Following a peak in activity in 2021, product development in the space has gradually declined, leading to a stall this year. No new climate fund was launched in the first half of 2025, reflecting both the lack of investor appetite for new climate strategies in the US, and the cautious stance that asset managers have adopted due to the new administration's anti-climate policy agenda.

2025 Flow Leaders & Laggards US Climate Funds

Name	Net Flow YTD (USD mn)	AUM (USD bn)	Climate Category
VanEck Uranium and Nuclear ETF	603	1.7	Climate Solutions
Xtrackers USA Climate Action Equity ETF	472	3.0	Climate Transition
Xtrackers Emerging Markets Climate Selection ETF	288	0.5	Climate Transition
First Trust NASDAQ® Clean Edge® Smart Grid Infrastructure Index Fund	252	2.6	Climate Solutions
Invesco North America Climate ETF	207	2.6	Climate Transition
Invesco Global Climate 500 ETF	-527	1.3	Climate Transition
Impax Global Environmental Markets Fund	-435	2.1	Climate Solutions
Invesco Solar ETF	-207	0.6	Clean Energy/Tech
iShares Global Clean Energy ETF	-198	1.4	Clean Energy/Tech
Global X Lithium & Battery Tech ETF	-192	0.8	Climate Solutions

Launches of US Climate Funds



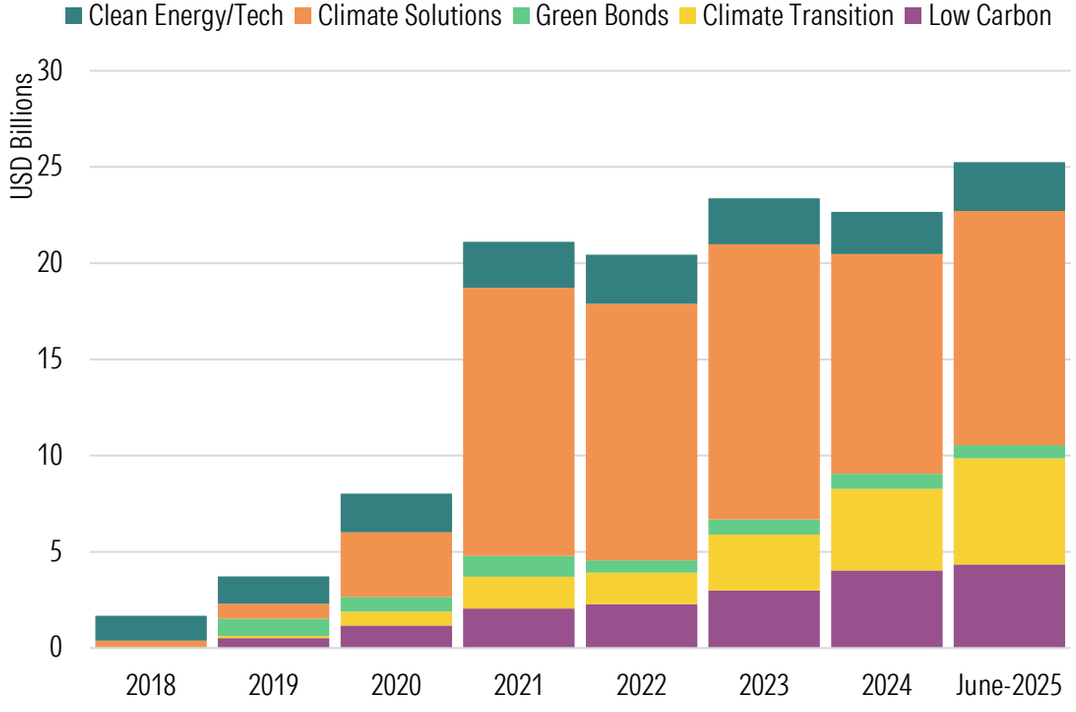
Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

The Climate Funds Landscape in the Rest of the World

Assets Hit New Highs in a Space Dominated by South Korea and Canada

- Assets in climate funds outside Europe, China, and the US grew modestly, by more than 11% in 1H 2025, to reach a new high of USD 25.3 billion, driven mostly by 30% asset growth among Climate Transition strategies. This marked a significant recovery from 2024, when assets in the Rest of the World dipped by 3% from the previous year.
- Climate Solutions remain the dominant strategy, making up almost half (48%) of assets in this universe. In a distant second is Climate Transition (22%), where assets totaled almost USD 5.5. billion as of June 2025.
- In terms of geographical distribution, South Korea keeps its place at the top of the list, both by number (132) and assets (USD 8.7 billion), reflecting commitment by the government and businesses to the energy transition.
- Meanwhile, Canada, which overtook Australia last year and moved to second place, saw its assets in climate funds rise to USD 6.5 billion, from USD 6.1 billion in 2024.

Assets in Climate Funds in the Rest of the World



Climate Funds in the Rest of the World

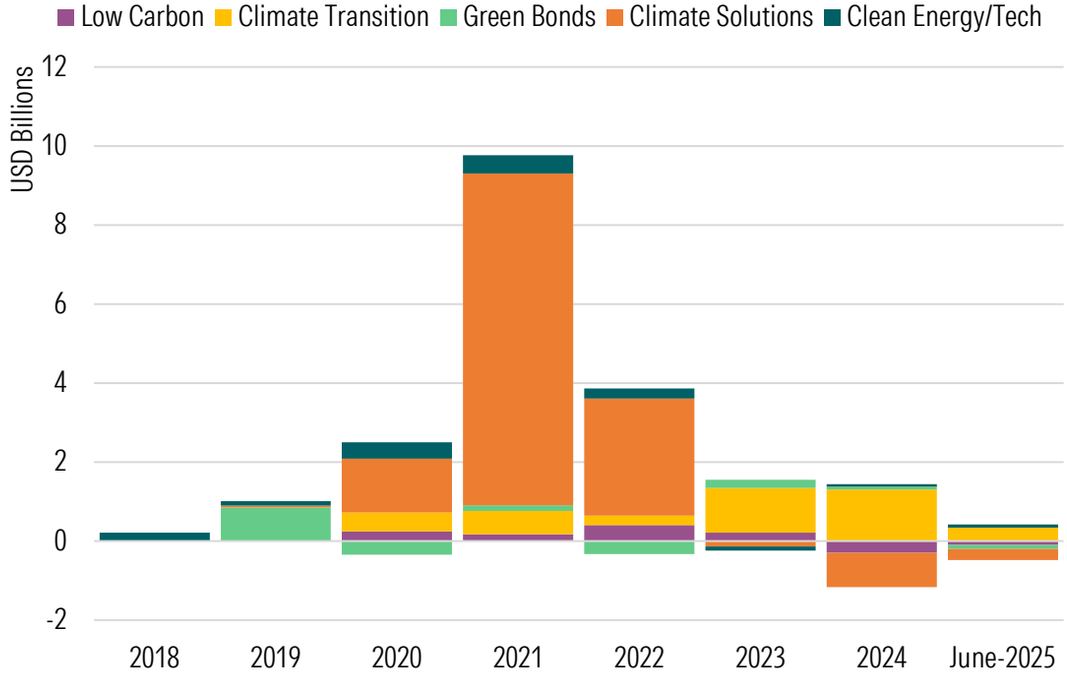
Country	Number of Climate Funds	AUM (USD mn)
South Korea	131	8,748
Canada	60	6,512
Australia	42	3,690
Japan	38	2,027
Taiwan	26	2,165
Singapore	7	1,696
New Zealand	5	35
Malaysia	3	125
Thailand	2	97
Indonesia	2	0
India	1	153

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Climate Transition Funds Drive Uptick in Flows

- The Rest of the World group experienced minor outflows of USD 60 million in 1H 2025, compared with inflows of USD 270 million during all of 2024.
- Bucking the trend, Climate Transition and Clean Energy/Tech strategies attracted net new money of USD 300 million and USD 100 million, respectively.
- Two of the five best-selling funds in 1H 2025 were Transition strategies, including **NEXT FUNDS Global Climate 500 Japan Selection Index ETF**, which tracks an index that aims for annual reductions in emissions intensity and overweighs companies with SBTi targets.
- The best seller so far this year is **KIM ACE Tesla Value Chain Active ETF**, which focuses on companies that are part of, or directly support, Tesla's value chain. Though the fund returned 39.4% in 2024, its year-to-date return slid to minus 17%.

Annual Flows into Climate Funds in the Rest of the World



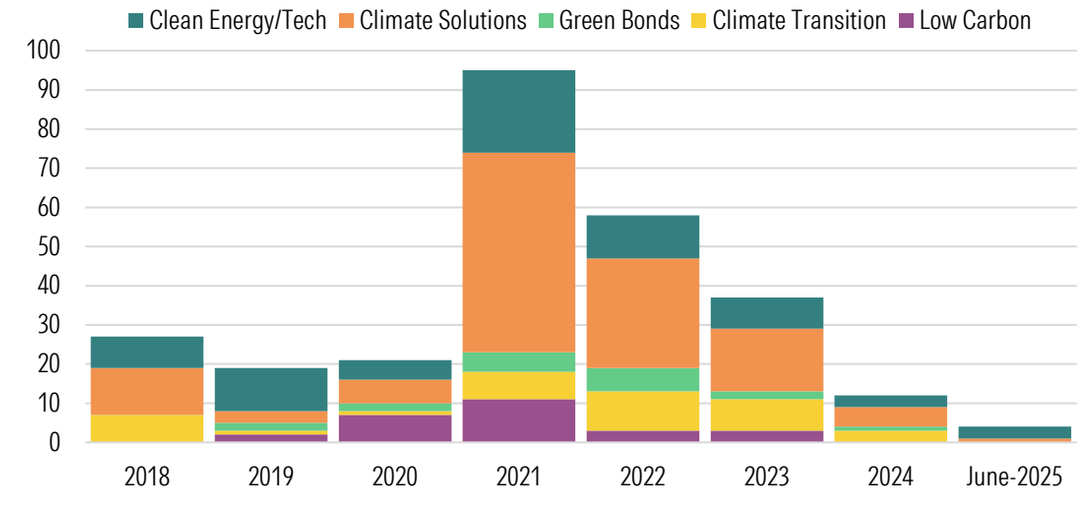
Leaders and Laggards Climate Funds in the Rest of the World

Name	Country	Climate Category	Net Flows YTD (USD mn)	AUM (USD bn)
KIM ACE Tesla Value Chain Active ETF	South Korea	Climate Solutions	304	0.8
NEXT Global Climate 500 Japan Selection Index ETF	Japan	Climate Transition	241	0.8
NH-Amundi HANARO Nuclear Power ETF	South Korea	Climate Solutions	157	0.2
KB RISE Global Nuclear Power ETF	South Korea	Climate Solutions	80	0.2
Global X MSCI Japan Climate Change ETF	Japan	Climate Transition	64	0.1
Mackenzie Greenchip Global Environmental All Cap Fund	Canada	Climate Solutions	-289	1.7
NH-Amundi ESG Mobility Infra Private Special Asset 1	South Korea	Climate Solutions	-136	-
KB RISE Fn Hydrogen Economy ETF	South Korea	Climate Solutions	-133	0.1
MiraeAsset TIGER China Electric Vehicle Solactive ETF	South Korea	Climate Solutions	-132	1.1
NEI Clean Infrastructure Fund	Canada	Climate Solutions	-115	0.2

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Cooldown in Product Development

Number of Climate Fund Launches in the Rest of the World



Largest Climate Funds in the Rest of the World

Name	AUM (USD mn)	Domicile	Climate Category
Mackenzie Greenchip Global Environmental All Cap Fund	1,699	Canada	Climate Solutions
iShares MSCI Asia ex Japan Climate Action ETF	1,428	Singapore	Climate Transition
Russell Investments Low Carbon Australian Shares Fund	1,240	Australia	Low Carbon
MiraeAsset TIGER China Electric Vehicle Solactive ETF	1,147	South Korea	Climate Solutions
NEI Environmental Leaders Fund	1,123	Canada	Climate Solutions
KIM Global Electric Car & Autonomous Driving Equity	859	South Korea	Climate Solutions
NEXT FUNDS MSCI Global Climate 500 Japan Selection Index ETF	809	Japan	Climate Transition
KIM ACE Tesla Value Chain Active ETF	773	South Korea	Climate Solutions
iShares MSCI Japan Climate Action ETF	716	Japan	Climate Transition
Samsung KODEX Secondary Battery Industry ETF	673	South Korea	Climate Solutions

- Similar to other regions, product development of climate funds in the rest of the world has dropped to a new low, with only three Clean Energy/Tech and one Climate Solutions fund launches recorded so far this year.
- Climate Solutions strategies took up the majority (six) of the top 10 largest climate funds in the region.
- At the top of the league table of the largest climate funds, Canada-domiciled **Mackenzie Greenchip Global Environmental All Cap Fund** invests primarily in environmental sectors, including clean energy, energy efficiency, clean technology, water, sustainable agriculture, and transportation.
- In addition to the two new launches — **iShares Asia ex Japan Climate Action ETF** and **NEXT Global Climate 500 Japan Selection Index ETF** — another newcomer was **NEI Environmental Leaders Fund**, which focuses on companies that provide products or services that address a range of environmental challenges, including energy efficiency, alternative energy, resource recovery, pollution control, waste management, environmental support services, transport solutions, and sustainable food, agriculture and forestry.

Source: Morningstar Direct and Morningstar Sustainalytics. Data as of June 2025.

Assessing Climate Funds Through the Lens of Transition Metrics

Implied Temperature Rise, Management Score, Value at Risk — Three Metrics in Focus

- In this section, we examine the transition risk and climate action profiles of the five climate fund categories through the lens of five transition metrics, including three proprietary ones: Implied Temperature Rise, Management Score, and Value at Risk. These metrics were developed by Morningstar Sustainalytics as part of its Low Carbon Transition Rating.

- **Implied Temperature Rise (ITR)** is a science-based and forward-looking assessment of a company's current alignment to a net zero pathway that limits global warming to 1.5°C above preindustrial levels. It is based on the principle that each company is expected to limit its fair share budget of emissions. A company's ITR also signifies the expected level of global warming if the global economy had the same proportion of emissions misaligned to the net zero budget of the company.

- **Management Score**: A company's ITR comprises two assessments: the exposure assessment, which evaluates how the company would be expected to perform if it took no actions to reduce emissions; and the management assessment, which evaluates how prepared the company is to manage its emissions. Company management receives a score ranging from Very Weak to Very Strong and is based on indicators such as the use of an internal carbon price, programs to support customers' reduction of energy or water consumption, and management incentives to reduce emissions.

- For funds' ITR and Management Scores, Morningstar aggregates the ITR and Management Scores of the portfolio's covered holdings on an asset-weighted basis.

- The **Value at Risk (VaR)** metric signals the potential loss in value that an issuer may experience due to the risk posed by the transition to a low carbon economy between now and 2050. The VaR considers the most material transition risks to generate a dollar value impact that shows the potential value impact of not transitioning to a low carbon economy. It is based on both the future projected carbon pricing impact on expected emissions, and for companies in the Oil and Gas sector, the impact of changes in market demand. Thus, the VaR provides a forward-looking metric that demonstrates how such transition risk may impact the future value of a company. For funds, the VaR is expressed as a percentage of the portfolio's covered holdings, in US dollars, on a 2050 time horizon, stemming from both policy and market risks. For the purposes of this analysis, the VaR assumes an orderly transition scenario under the Inevitable Policy Response (IPR) Net Zero pathway.

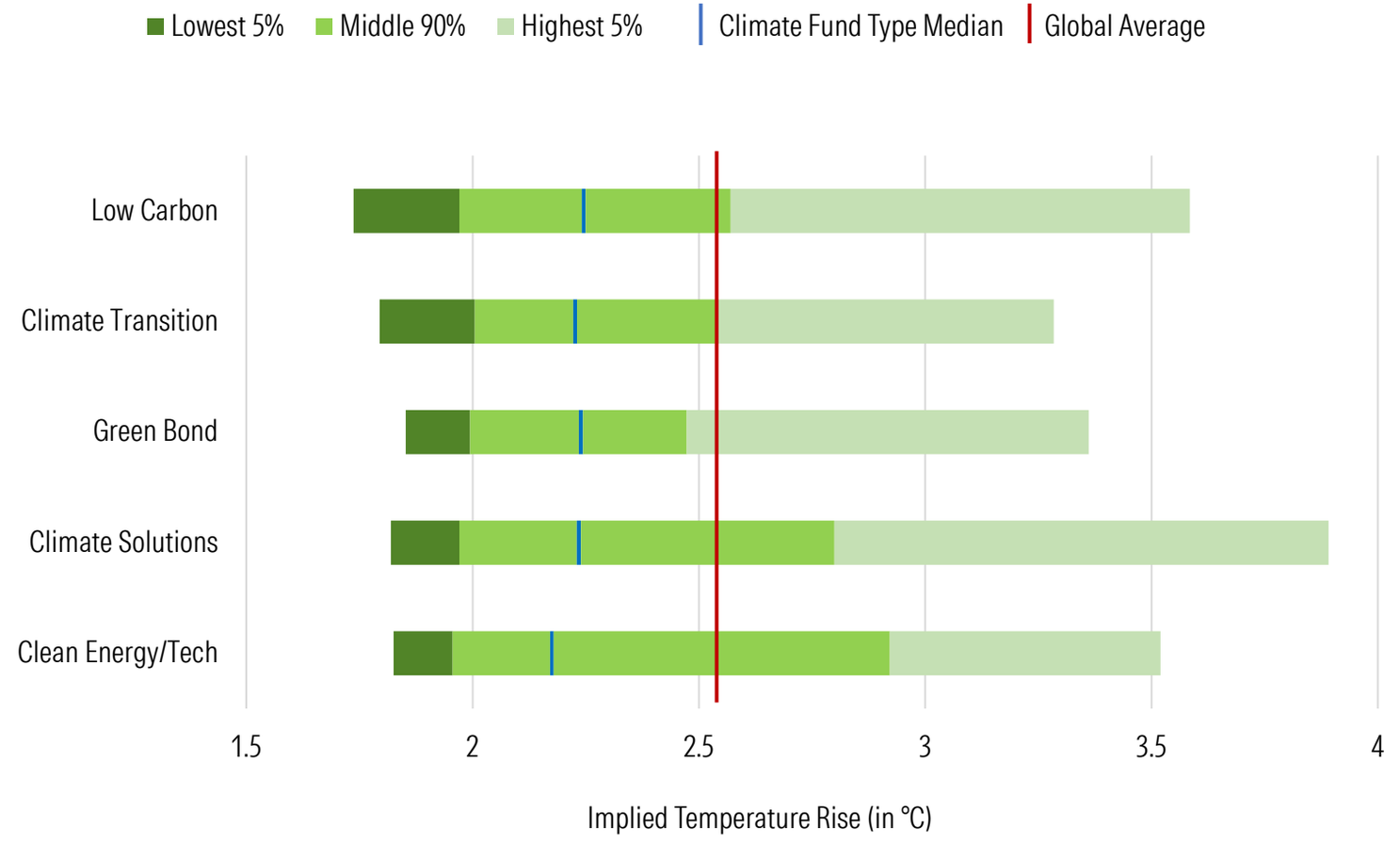
- The methodology for the three metrics can be found here.

- More detailed analysis can also be found here.

84% of Climate Funds Are Better Aligned to a Net Zero Pathway Than the Average Fund in the Global Universe

- No fund is aligned to a net zero pathway consistent with a 1.5-degree Celsius global warming scenario, but the vast majority (84%) are better aligned than the average peer in the global fund universe. The five climate fund types have similar median Implied Temperature Rise (ITR) scores, ranging from 2.2°C to 2.4°C, all below the global average of 2.5°C.
- Clean Energy/Tech strategies exhibit the lowest median ITR score (2. 2°C), while Climate Transition strategies exhibit the second lowest (just above 2.2°C).
- For Low Carbon and Climate Transition funds, this is largely due to their typical underweight positions in heavy-emitter sectors such as Coal, Oil & Gas, Steel, and Cement.
- Climate Solutions funds exhibit the highest median ITR score of 2.4 °C and the largest variation in scores. As seen earlier, many companies that offer product and services aimed at addressing climate change operate in the industrial sector, which entails heavy emissions profiles.

Distribution of Implied Temperature Rise Scores Across Climate Fund Types



Source: Morningstar Direct and Morningstar Sustainalytics. Based on 210 Low Carbon funds, 537 Climate Transition funds, 129 Green Bonds funds, 483 Climate Solutions funds, and 183 Clean Energy/Tech funds with available data. The global average is calculated using all open-end funds and ETFs with ESG ratings in Morningstar Direct.

Low Carbon Funds Lead the Top ITR Performers

- The higher presence of Low Carbon funds (four) in the top 10 performers in terms of ITR score is unsurprising, given their typical use of carbon-intensity reduction approaches in portfolio construction.
- In contrast, the dominance of Climate Solutions and Clean Energy/Tech funds in the worst 10 performers, including four Chinese-domiciled strategies, can be explained by their investment in companies that focus on producing climate solutions/tech and less on reducing their own operational carbon emissions.
- As shown earlier, these funds are almost exclusively exposed to domestic industrial, utilities, and information technology sectors that remain heavily dependent on coal and other fossil fuels for power generation and industrial processes such as steel, cement, and chemicals. This reliance results in higher baseline emissions per unit of output, which in turn drives up their projected temperature trajectories.

Top and Bottom Performers in Implied Temperature Rise Scores

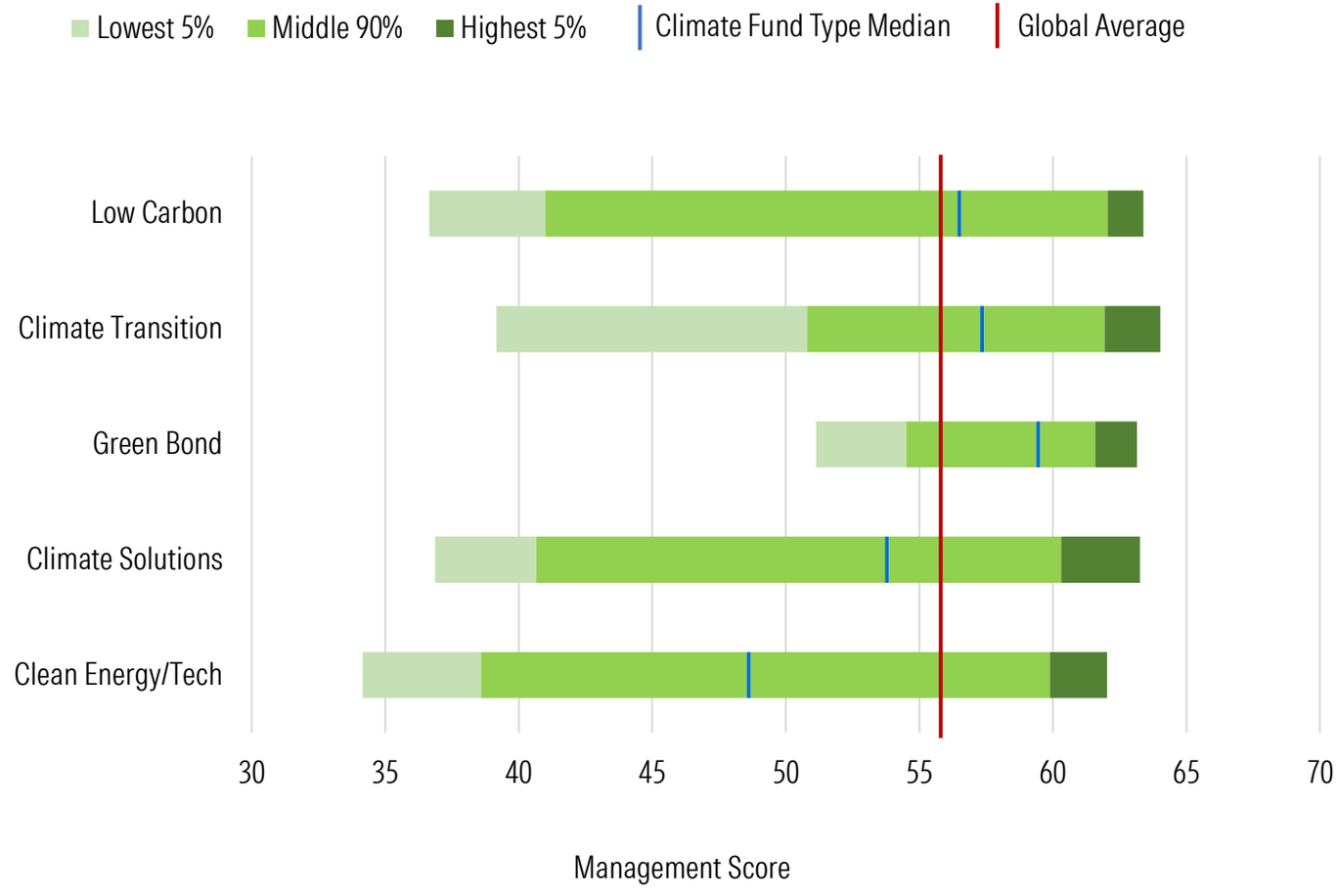
Fund Legal Name	ITR Score (°C)	Climate Fund Type	Global Category	Domicile	Fund Size (USD mn)
Top 10					
Union Low Carbon Target Multiple Asset Fund	1.7	Low Carbon	Moderate Allocation	Taiwan	5
LBBW Global Warming	1.8	Climate Transition	Global Equity Large Cap	Germany	2,490
Penghua Carbon Neutralization Mixed Securities Invest.	1.8	Climate Solutions	Aggressive Allocation	China	1,516
Goldman Sachs Bloomberg Clean Energy Equity ETF	1.8	Clean Energy/Tech	Energy Sector Equity	United States	10
Artesian Green & Sustainable Bond Fund	1.9	Green Bonds	AUS. & NZL. Fixed Income	Australia	-
Matthews Asia Sustainable Future Fund	1.9	Clean Energy/Tech	Asia ex-Japan Equity	Luxembourg	5
Capital Tip Customized Taiwan ESG Low Carbon 50 ETF	1.9	Low Carbon	Greater China Equity	Taiwan	595
Theam World Climate Navigator 90% Protected	1.9	Low Carbon	Guaranteed	Luxembourg	14
Schroders Greencoat Global Renewables+ LTAF	1.9	Climate Solutions	Miscellaneous	UK	82
Scotia Low Carbon Canadian Fixed Income Fund	1.9	Low Carbon	Canada Fixed Income	Canada	30
Bottom 10					
ICBCCS New Material New Energy Ids Eq	3.9	Climate Solutions	Greater China Equity	China	166
UBS MSCI China Universal UCITS ETF	3.6	Low Carbon	Greater China Equity	Luxembourg	491
Harvest CSI GX Cntrl-SOEs Mdrn Enrgy ETF	3.5	Clean Energy/Tech	Greater China Equity	China	13
Bosera CSI GX Cntrl-SOEs Mdrn Enrgy ETF	3.5	Clean Energy/Tech	Greater China Equity	China	6
ICBCCS CSI GX Cntrl-SOEs Mdrn Enrgy ETF	3.5	Clean Energy/Tech	Greater China Equity	China	6
Middlefield ActivEnergy Dividend	3.4	Climate Solutions	Energy Sector Equity	Canada	1
CI Global Green Bond Fund	3.4	Green Bonds	Global Fixed Income	Canada	15
KSM Active (4C) Energy IL	3.3	Clean Energy/Tech	Energy Sector Equity	Israel	5
JPMorgan Carbon Transition China Equity (CTB) ETF	3.3	Climate Transition	Greater China Equity	Ireland	10
Morningstar Global Energy	3.2	Clean Energy/Tech	Energy Sector Equity	United States	-

Source: Morningstar Direct and Morningstar Sustainalytics. Based on 210 Low Carbon funds, 537 Climate Transition funds, 129 Green Bonds funds, 483 Climate Solutions funds, and 183 Clean Energy/Tech funds with available data.

Green Bond and Climate Transition Funds Invest in Companies With the Best Emissions Management Practices

- Green Bond funds and Climate Transition funds have the highest median emissions management scores, at 59 and 57, respectively, while Clean Energy/Tech funds have the lowest, at 49.
- Green bond issuers are typically more advanced in their transition journey, given the stringent eligibility criteria required to issue green bonds and the greater investor and regulatory scrutiny.
- Meanwhile, Clean Energy/Tech and Climate Solutions funds tend to have lower management scores. This is because they invest primarily in companies providing products that enable the transition to a low carbon economy, rather than in companies focused on improving their manufacturing processes or reducing carbon emissions. Additionally, some of these companies operate in hard-to-abate sectors, where no viable alternatives currently exist for producing essential goods in a less carbon-intensive manner.

Distribution of Management Scores Across Climate Fund Types



Source: Morningstar Direct and Morningstar Sustainalytics. Based on 210 Low Carbon funds, 537 Climate Transition funds, 129 Green Bonds funds, 483 Climate Solutions funds, and 183 Clean Energy/Tech funds with available data. The global average is calculated using all open-end funds and ETFs with ESG ratings in Morningstar Direct.

Chinese Companies Lag on Emissions Management Performance

- In terms of the quality of emissions management, the top performers concentrate mostly on Climate Transition (four) and Low Carbon (three) strategies, whereas those with poor management performance are found among Chinese Climate Solutions and Clean Energy/Tech strategies.
- The strong presence of Chinese companies in the bottom performer table suggest that holdings by Chinese climate funds are far from taking enough action to reduce their own carbon emissions.
- Along with a coal-dependent energy system and significant exposure to hard-to-abate sectors, China's national targets — peak emissions before 2030 and carbon neutrality by 2060 — are later than those of many developed markets. Corporate targets and implementation schedules often reflect this longer timeline, which can lower their scores in global rating models. In addition, outside of large state-owned or flagship companies, many firms have limited access to low-cost capital for energy-efficiency upgrades or renewable power procurement, which slows progress.

Top and Bottom Performers in Management Score

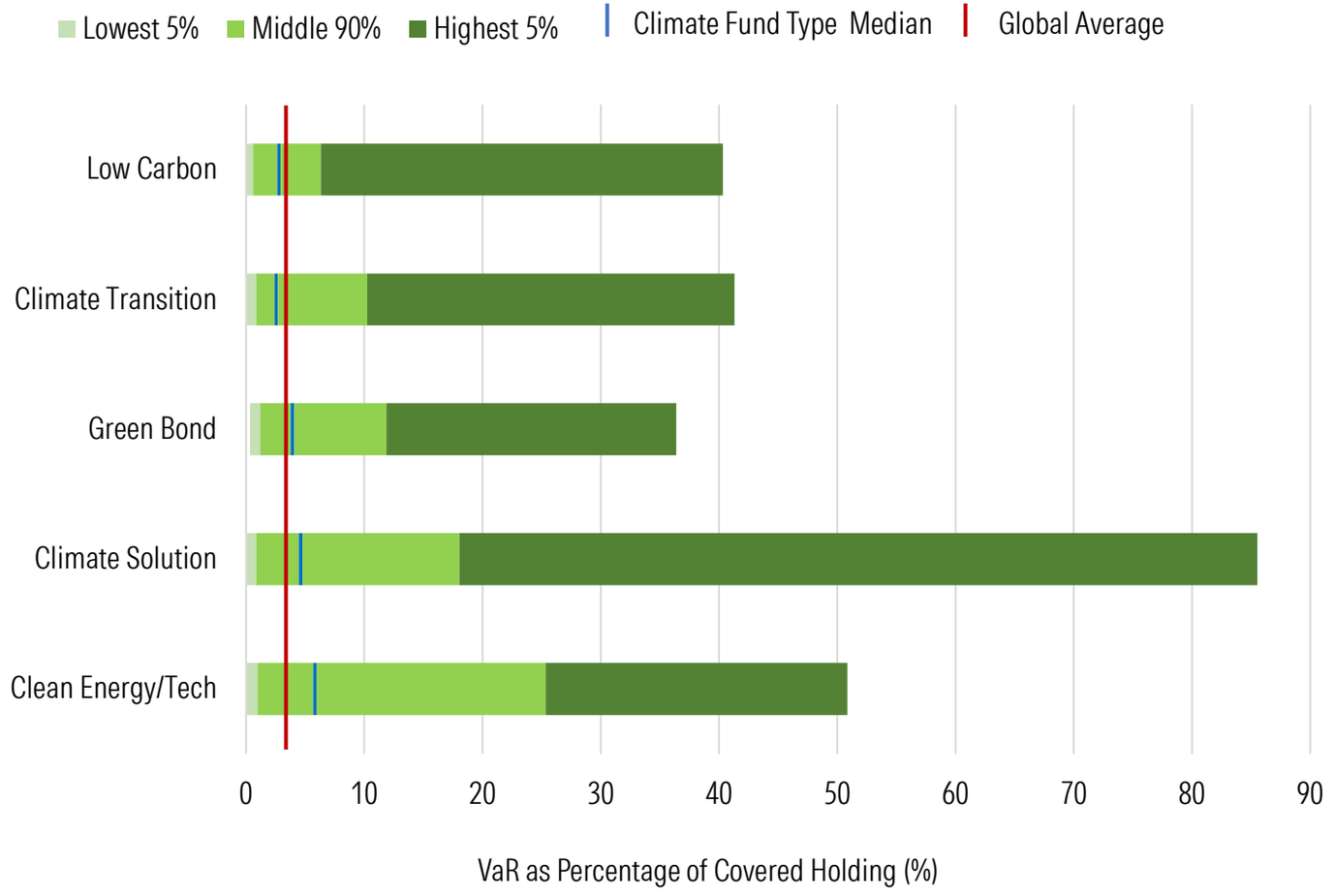
Fund Legal Name	Mgt Score	Climate Fund Type	Global Category	Domicile	Fund Size (USD mn)
Top 10					
Mutuafondo Transicion Energetica FI	64	Climate Transition	Equity Miscellaneous	Spain	46
Desjardins RI Active Canad. Bond Net-Zero Emis. Pathway ETF	63	Climate Transition	Canada Fixed Income	Canada	38
BNP Paribas Euro Climate Aligned	63	Climate Transition	Europe Equity Large Cap	France	724
HSBC Europe Ex UK Screened Equity UCITS ETF	63	Low Carbon	Europe Equity Large Cap	Ireland	95
Schroders Greencoat Global Renewables+ LTAF	63	Climate Solutions	Miscellaneous	UK	82
Artesian Green & Sustainable Bond Fund	63	Green Bonds	AUS. & NZL. Fixed Income	Australia	-
Amundi CAC Transition Climat UCITS ETF	63	Climate Transition	Europe Equity Large Cap	France	13
HSBC Europe Screened Equity UCITS ETF	63	Low Carbon	Europe Equity Large Cap	Ireland	35
FOS Focus Green Bonds	63	Green Bonds	Europe Fixed Income	Germany	30
Multipar Actions Euro Bas Carbone	63	Low Carbon	Europe Equity Large Cap	France	68
Bottom 10					
KSM Active (4C) Energy IL	34	Clean Energy/Tech	Energy Sector Equity	Israel	5
China Post Green Economy Flxbl Alloc	37	Low Carbon	Aggressive Allocation	China	5
ChinaAMC Energy-Conservation & Environ.I Protection Fund	37	Climate Solutions	Greater China Equity	China	36
Maxwealth Low-Carbon Envir Pro Srt Mix	37	Low Carbon	Aggressive Allocation	China	309
Fullgoal CSI Green Power ETF	38	Clean Energy/Tech	Greater China Equity	China	16
E Fund CSI Green Power ETF	38	Clean Energy/Tech	Greater China Equity	China	11
ChinaAMC CSI Green Power ETF	38	Clean Energy/Tech	Greater China Equity	China	19
Fullgoal Low Carbon New Economy mix	38	Low Carbon	Aggressive Allocation	China	187
Huatai-PB CSI Fully Electronic Power ETF	38	Clean Energy/Tech	Greater China Equity	China	78
Yinhua CSI All Share Electric Utlts ETF	38	Climate Solutions	Greater China Equity	China	7

Source: Morningstar Direct and Morningstar Sustainalytics. Based on 210 Low Carbon funds, 537 Climate Transition funds, 129 Green Bonds funds, 483 Climate Solutions funds, and 183 Clean Energy/Tech funds with available data.

Low Carbon and Climate Transition Funds Face the Lowest Values at Risk (VaR)

- Clean energy funds have shown higher Value at Risk (VaR) related to climate policies, on average, compared to other types of climate funds. This is unsurprising, as the performance of their holdings is highly sensitive to regulatory and policy changes, including shifts in government incentives and regulatory uncertainty.
- Additionally, these companies face technology and market risks, and their long-term project horizons mean that policy changes can significantly impact cash flows, further increasing VaR.
- By comparison, Low Carbon and Climate Transition strategies show relatively lower VaR, in general, given the widely adopted targets related to carbon emissions reduction. As of June 2025, the median VaRs for Low Carbon and Climate Transition strategies stayed below the global average of 3.6%, at 2.6% and 2.4%, respectively.

Distribution of Value at Risk Across Climate Fund Categories

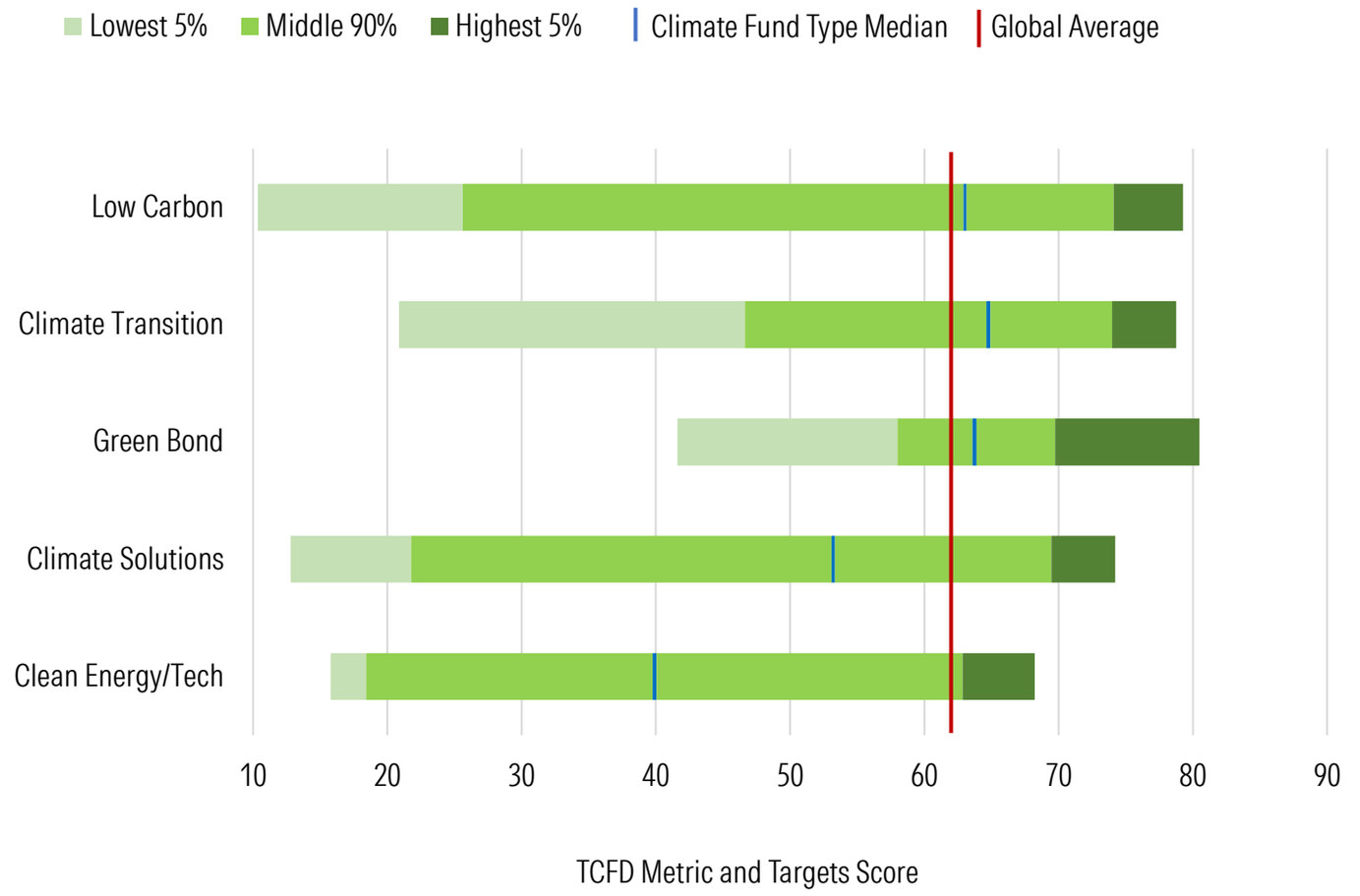


Source: Morningstar Direct and Morningstar Sustainalytics. Based on 210 Low Carbon funds, 537 Climate Transition funds, 129 Green Bonds funds, 483 Climate Solutions funds, and 183 Clean Energy/Tech funds with available data. The global average is calculated using all open-end funds and ETFs with ESG ratings in Morningstar Direct.

TCFD Metrics and Targets – Climate Transition and Green Bond Funds Are the Most Advanced

- Climate Transition, Green Bond, and Low Carbon funds exhibit similar and higher TCFD Metrics and Targets Scores than the average fund in the global universe.
- These funds invest in companies that are subject to more investor scrutiny. For example, issuers of green bonds must meet stringent eligibility criteria to ensure that bond proceeds are allocated to environmentally impactful projects. These criteria are often aligned with globally recognized standards, such as the Green Bond Principles, which mandate transparent disclosure, rigorous oversight, and measurable outcomes such as the reduction of greenhouse gas emissions. As a result, green bond issuers tend to be more advanced in setting and reporting climate-related metrics and targets.
- Clean Energy/Tech and Climate Solutions funds exhibit the lowest scores. These funds invest in companies that tend to focus on innovation and climate tech and less on decarbonizing their business. These companies also tend to be in jurisdictions with fewer disclosure requirements and/or less investor scrutiny (in the case of China).

Distribution of TCFD Metrics and Targets Score Across Climate Fund Categories

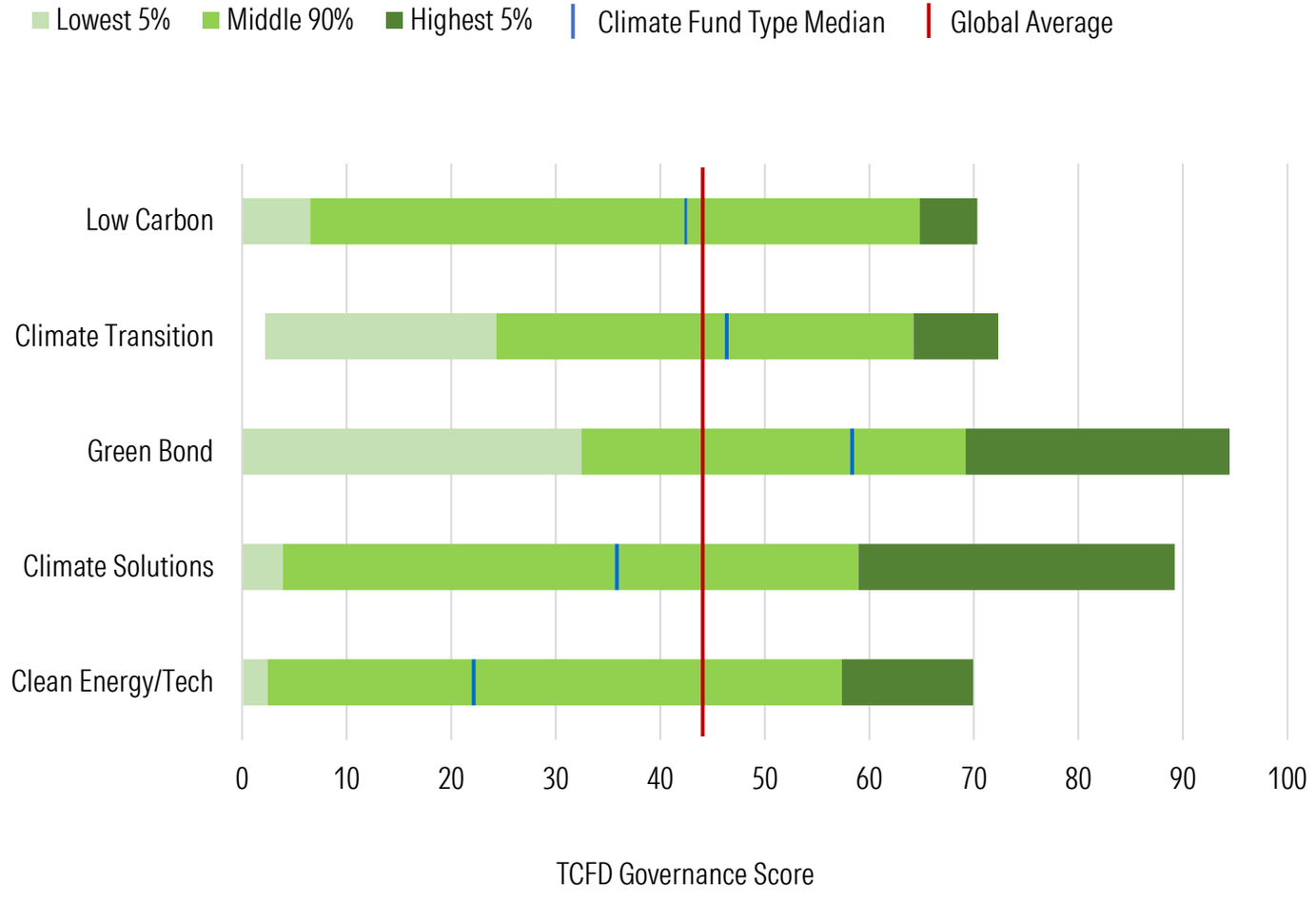


Source: Morningstar Direct and Morningstar Sustainalytics. Measuring Transition Risk and Climate Action in Portfolios Report. Based on 219, 591, 145, 522, and 198 climate funds from Low Carbon, Climate Transition, Green Bonds, Climate Solutions, and Clean Energy/Tech categories, respectively. The global average is calculated using all open-end funds and ETFs with ESG ratings.

TCFD Governance – Green Bond and Climate Transition Funds Exhibit the Highest Scores

- The picture for TCFD governance tells a similar story, except that we are seeing wider score dispersions here across the five climate fund groups, and Green Bond funds have, by far, the highest median score, at 58, followed by Climate Transition funds (46).
- Companies issue green bonds to finance their transition, so it is fair to expect these issuers to be more advanced in their transition governance journey. As previously mentioned, issuers of green bonds must meet stringent eligibility criteria, and governance is considered in the form of transparency, accountability, and oversight mechanisms. Additionally, many green bond issuers operate in high-emitting sectors, such as Utilities, which are subject to significant investor and regulatory scrutiny, and force these companies to transition faster.
- Clean Energy/Tech funds exhibit the lowest TCFD governance scores. As previously mentioned, these funds invest in companies that tend to prioritize innovation and climate tech over decarbonizing their business. These companies also tend to be in jurisdictions with less disclosure requirements and/or less investor scrutiny (in the case of China).

Distribution of TCFD Governance Score Across Climate Fund Categories



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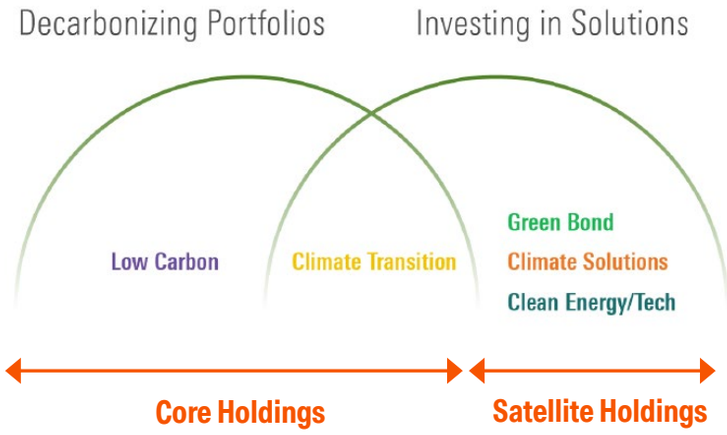
How Climate Funds Fit into an Investor's Portfolio

How Climate Funds Fit into an Investor's Portfolio



The five climate fund groupings we have identified represent a broad range of approaches globally that aim to meet different investor needs and preferences. The choice of one type over another largely depends on one's investment goals, risk appetite, and preferences.

Investors who simply want to protect their portfolios against climate change risks can use Low Carbon funds to "decarbonize" their portfolios. These approaches provide broad and diversified exposure to the market and are therefore suitable as part of a portfolio core allocation. They would, however, be less suitable for investors who want to benefit from the opportunities offered by the climate transition. For that, investors must choose from the remaining types.

Risk-conscious investors looking to also take advantage of this transition can turn toward Climate Transition funds. These typically exhibit low-carbon risk, like Low Carbon funds, with the added benefit of higher exposure to carbon solutions, in many cases. These are suitable for investors wanting to strike a balance between mitigating risk and looking to benefit from the green transition. Given their broad and diversified exposures, Climate Transition funds can also be used as substitutes for portfolio core allocations.

Further along the risk-opportunity spectrum, Climate Solutions and Clean Energy/Tech strategies can appeal to investors with a greater risk appetite and who consider climate change as an alpha-generating opportunity. Because of their narrower market exposure and often mid- and small-cap bias, Climate Solutions and Clean Energy/Tech funds represent more-volatile investments. Sharp price fluctuations in the clean energy sector over the past few years are testament to this. Since registering their best annual performance in 2020, with returns of more than 200%, Clean Energy/Tech funds lagged the market until the end of last year.

Climate Solutions and Clean Energy/Tech funds can also come with higher carbon intensity. This is likely to change gradually as transitioning companies implement their solutions. Given their less-diversified and higher risk profile, Climate Solutions and Clean Energy/Tech funds are more suitable as part of a satellite allocation to complement, rather than replace, existing core holdings.

Green Bonds may be inherently lower risk, but investors must be sure that the projects sitting within the bonds have positive environmental and/or climate benefits; many green-bond issuers operate in traditional "brown" sectors, including Utilities, Energy, and Industrials. Ideally, in the coming years, we would like to see increased disclosure on green bond projects and how they serve to lower the environmental impact of their issuer in a material way. For instance, a distribution company issuing a green bond to electrify its fleet has a greater impact on the issuer than an oil and gas firm issuing a green bond to electrify warehouse operations.

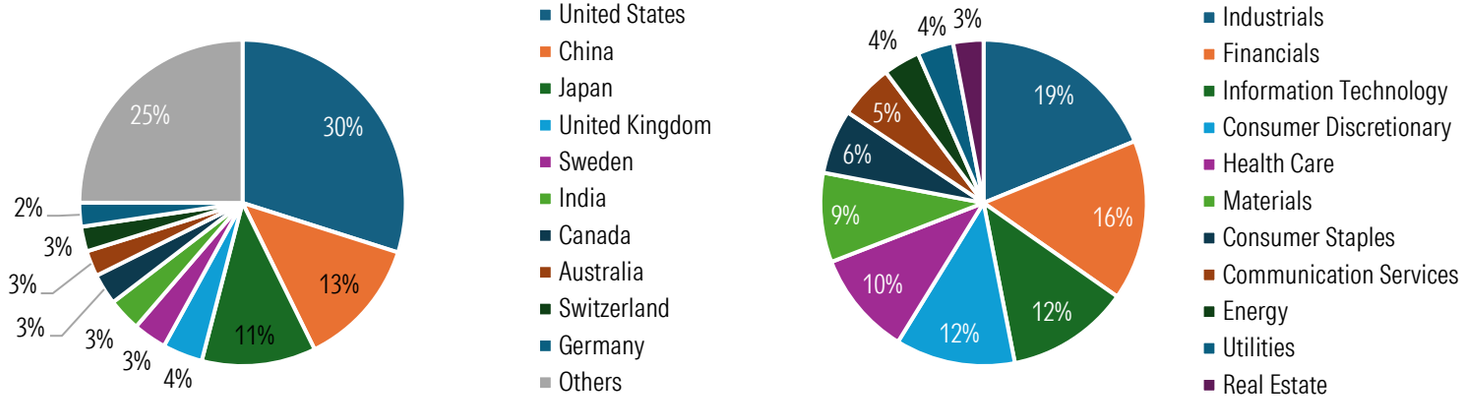
What Do Climate Funds Contain? Holdings-Based Analysis

What Do Europe's Climate Transition Funds Contain? A Majority of Non-European Companies

- Climate Transition funds are typically well-diversified, offering broad exposure across geographies and sectors.
- Measured by the number of holdings, the US accounts for the largest share of investments (30%), followed by China (13%), and Japan (11%). The UK (4%) and Sweden (3%) are the European countries in which European-domiciled Climate Transition funds invest the most.
- The most represented sectors (also in terms of number of holdings) are Industrials (19%), Financials (16%), Information Technology (12%), and Consumer Discretionary (12%).
- The 15 most common holdings are large-cap companies from the IT and Industrials sectors. The year-to-date performance of these companies is mixed. Within this list, France's Legrand is in the leading position.

Most Held Companies in European Climate Transition Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Schneider Electric	France	Specialty Industrial Machinery	Large Blend	-11.2	26.0	22.9
ASML	Netherlands	Semiconductor Equipment & Materials	Large Growth	-5.5	-5.8	10.6
Microsoft	United States	Software - Infrastructure	Large Blend	20.8	12.9	25.4
NVIDIA	United States	Semiconductors	Large Growth	29.7	171.2	126.0
Siemens	Germany	Specialty Industrial Machinery	Large Blend	28.2	6.6	35.4
SAP	Germany	Software - Application	Large Growth	-1.0	60.3	41.0
L'Oreal	France	Household & Personal Products	Large Blend	18.4	-27.5	6.7
Legrand	France	Electrical Equipment & Parts	Large Blend	40.7	-4.2	23.5
Apple	United States	Consumer Electronics	Large Blend	-7.0	30.6	14.3
Hermes International	France	Luxury Goods	Large Growth	-8.8	14.7	18.9
Deutsche Boerse	Germany	Financial Data & Stock Exchanges	Large Growth	14.9	13.7	16.0
Infineon Technologies	Germany	Semiconductors	Large Blend	12.5	-21.3	14.0
Cisco Systems	United States	Communication Equipment	Large Value	18.8	20.3	18.2
ServiceNow	United States	Software - Application	Large Growth	-13.5	50.1	28.3
RELX	United Kingdom	Specialty Business Services	Large Blend	-3.3	16.5	17.0



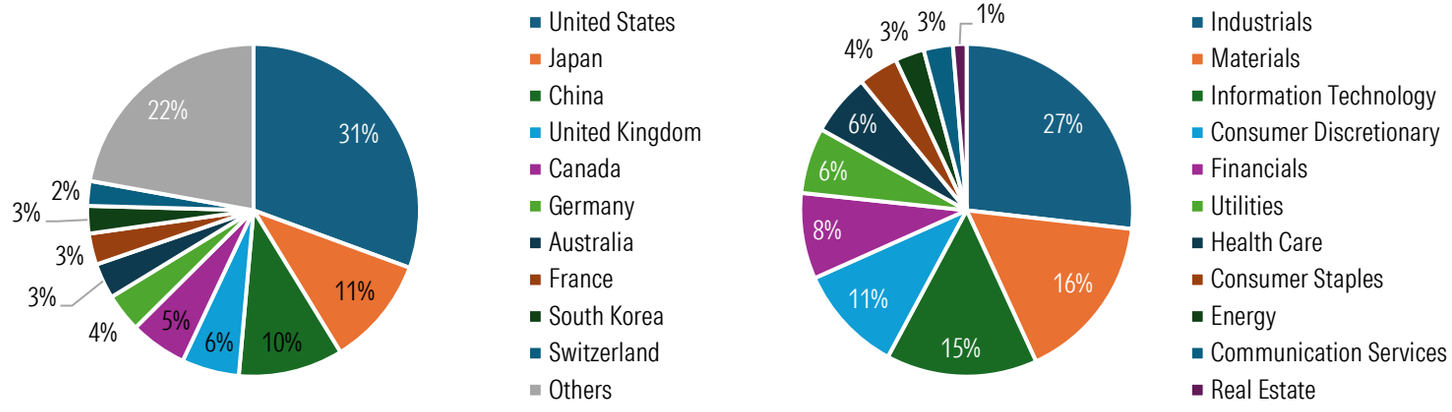
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Europe's Climate Solution Funds Contain? A Majority of Non-European Companies

- Compared to European-domiciled Climate Transition funds, Climate Solutions funds have similar exposure to US companies but have lower exposure to Chinese firms and higher exposure to Canada.
- European Climate Solutions funds are concentrated in the Industrials, Materials, and IT sectors and have a bias towards mid-caps.
- Among the 15 most common holdings in European Climate Solutions funds, Vestas Wind Systems emerges as the top performer in 1H 2025. The Danish firm, which specializes in the design, manufacture, installation, and servicing of wind turbines, gained 30%, following a loss of 57% in 2024.
- NVIDIA delivered the second-best performance at 29.7%. The company had already topped the 2024 performance league with a stellar 171% gain, far outpacing other semiconductor producers such as Infineon Technologies (-21%). The latter supplies power semiconductors that are critical in solar inverters (converting direct current from solar panels into alternating current for the grid) and wind turbine converters.

Most Held Companies in European Climate Solutions Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Schneider Electric	France	Specialty Industrial Machinery	Large Blend	-11.2	26.0	22.9
Xylem	United States	Specialty Industrial Machinery	Mid Growth	23.0	2.7	17.0
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Infineon Technologies	Germany	Semiconductors	Large Blend	12.5	-21.3	14.0
Waste Management	United States	Waste Management	Large Blend	13.0	14.3	11.6
NVIDIA	United States	Semiconductors	Large Growth	29.7	171.2	126.0
Prysmian	Italy	Electrical Equipment & Parts	Large Growth	22.5	42.0	35.9
Republic Services	United States	Waste Management	Mid Blend	17.2	23.0	19.0
Linde	United States	Specialty Chemicals	Large Blend	15.0	3.3	20.4
ASML	Netherlands	Semiconductor Equipment & Materials	Large Growth	-5.5	-5.8	10.6
Ecolab	United States	Specialty Chemicals	Large Blend	18.8	19.3	20.1
EDP Renovaveis	Spain	Utilities - Renewable	Mid Growth	0.8	-47.4	-24.0
Trane Technologies	United States	Building Products & Equipment	Large Blend	13.0	52.8	40.3
Vestas Wind Systems	Denmark	Specialty Industrial Machinery	Large Growth	30.0	-57.1	-11.9
Veolia Environnement	France	Waste Management	Large Value	9.2	-6.9	12.8



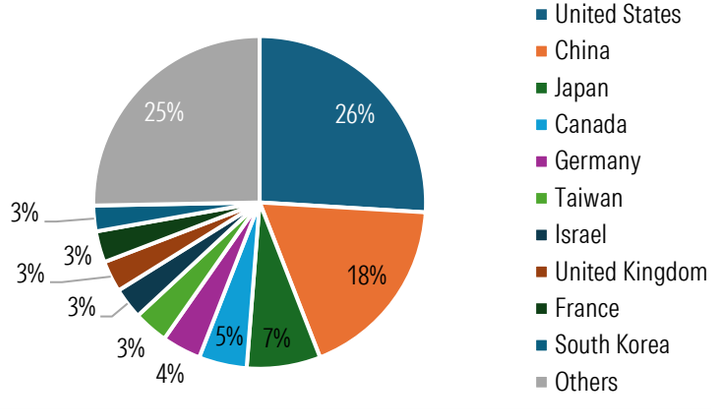
Source: Morningstar Direct. Manager Research. Data as of June 2025.

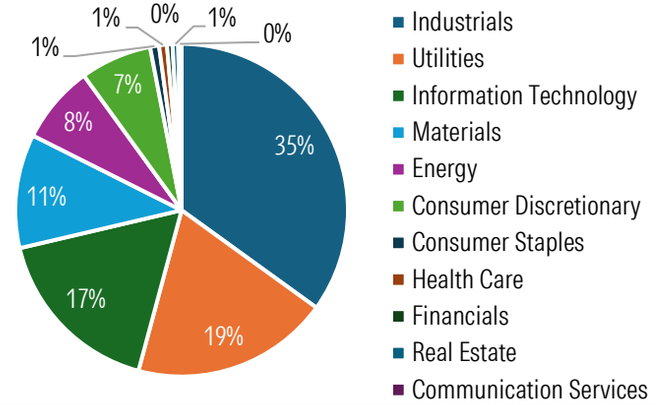
What Do Europe's Clean Energy/Tech Funds Contain? A Majority of Non-European Companies

- In terms of number of holdings within Europe's Clean Energy/Tech funds, China (18%) is the second most represented country, after the US (26%).
- Industrials (35%) is by far the most represented sector, followed by Utilities (19%), and IT (17%). The top three sectors account for over 70% of the stocks held by Clean Energy/Tech funds, versus 58% among Climate Solutions funds and 37% among Climate Transition funds, highlighting a more concentrated sectoral exposure.
- Unlike Europe's Climate Solutions and Climate Transition funds, the top 15 holdings of Europe's Clean Energy/Tech funds show a clear tilt toward small- and mid-cap companies.
- The median year-to-date return among the top 15 Clean Energy/Tech holdings rebounded to nearly 18% in 1H 2025, compared with the full 2024's negative return of 21%, despite significant variance within the group. Notable outliers this year include Enphase Energy (-45%), Orsted (-40%), Sunrun (+73%), and Nextracker (+84%).

Most Commonly Held Companies in Clean Energy/Tech Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Enphase Energy	United States	Solar	Small Blend	-45.1	-48.0	-49.1
Vestas Wind Systems	Denmark	Specialty Industrial Machinery	Large Growth	30.0	-57.1	-11.9
Schneider Electric	France	Specialty Industrial Machinery	Large Blend	-11.2	26.0	22.9
EDP Renovaveis	Spain	Utilities - Renewable	Mid Growth	0.8	-47.4	-24.0
Ormat Technologies	United States	Utilities - Renewable	Small Blend	36.2	-10.0	-0.1
Array Technologies	United States	Solar	Small Blend	49.2	-64.0	-24.5
Shoals Technologies	United States	Solar	Small Growth	17.7	-64.4	-37.3
Orsted	Denmark	Utilities - Renewable	Mid Value	-40.4	-18.8	-34.2
Prysmian	Italy	Electrical Equipment & Parts	Large Growth	22.5	42.0	35.9
Sunrun	United States	Solar	Small Value	72.6	-52.9	-21.5
Iberdrola	Spain	Utilities - Diversified	Large Blend	25.7	9.4	19.6
Boralex	Canada	Utilities - Renewable	Small Blend	2.3	-20.0	-14.6
Nextracker	United States	Solar	Small Growth	84.1	-22.0	-
Infineon Technologies	Germany	Semiconductors	Large Blend	12.5	-21.3	14.0





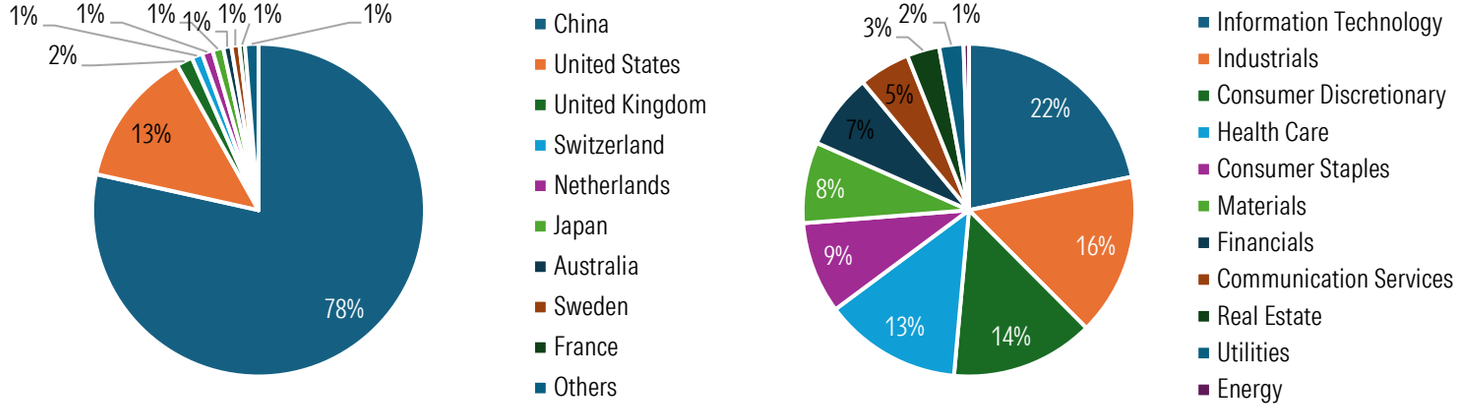
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Chinese Climate Transition Funds Contain? Primarily Chinese Companies

- In contrast to other regions, climate funds domiciled in China are almost exclusively invested in domestic companies.
- Chinese Climate Transition funds allocate only 13% of their portfolios to US companies, on average, and the rest to other countries, measured in number of companies.
- Chinese Climate Transition funds also demonstrate well-diversified sector exposure, with IT stocks accounting for 22% of holdings, followed by Industrials (16%) and Consumer Discretionary (14%). Fueled by an aging population and rising healthcare needs, healthcare stocks (13%) emerge as one of the most popular sectors.
- As expected, the top 15 holdings in Chinese Climate Transition funds are all Chinese companies with a growth profile. These include two medical-device suppliers — Hanbon Science and Technology, and Weigao Blood Purification Products. Notably, Weigao has implemented a Freon substitution project under the International Union for Conservation of Nature (IUCN), aiming to reduce Freon emissions by 50 tons annually, contributing to ozone layer protection.

Most Held Companies in Chinese Climate Transition Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Hanbon Science and Technology	China	Medical Devices	Small Growth	-	-	-
TFC Optical Communications	China	Communication Equipment	Large Growth	204.8	38.0	134.8
Zhejiang Tion Vanly Tech	China	Auto Parts	Mid Growth	-	-	-
Haiyang Technology	China	Specialty Chemicals	Mid Blend	-	-	-
Tianhe Magnetics Technology	China	Electrical Equipment & Parts	Mid Growth	-	-	-
Weigao Blood Purification Products	China	Medical Devices	-	-	-	-
Sinophorus Electronic Materials	China	Specialty Chemicals	Mid Growth	-	-	-
Sungrow Power Supply	China	Electrical Equipment & Parts	Large Growth	36.7	16.2	8.7
Contemporary Amperex Technology	China	Electrical Equipment & Parts	Large Growth	17.7	61.3	6.1
Shanjin International Gold	China	Other Precious Metals & Mining	Large Growth	30.1	1.4	21.5
Kente Catalysts	China	Specialty Chemicals	Small Growth	-	-	-
Zhongji Innolight	China	Communication Equipment	Large Growth	187.8	49.3	157.1
SG Micro	China	Semiconductors	Large Growth	23.9	-10.6	-6.2
Beijing HyperStrong Technology	China	Specialty Industrial Machinery	Mid Growth	-	-	-
Huizhou Desay SV Automotive	China	Auto Parts	Large Growth	16.5	-16.8	-5.4



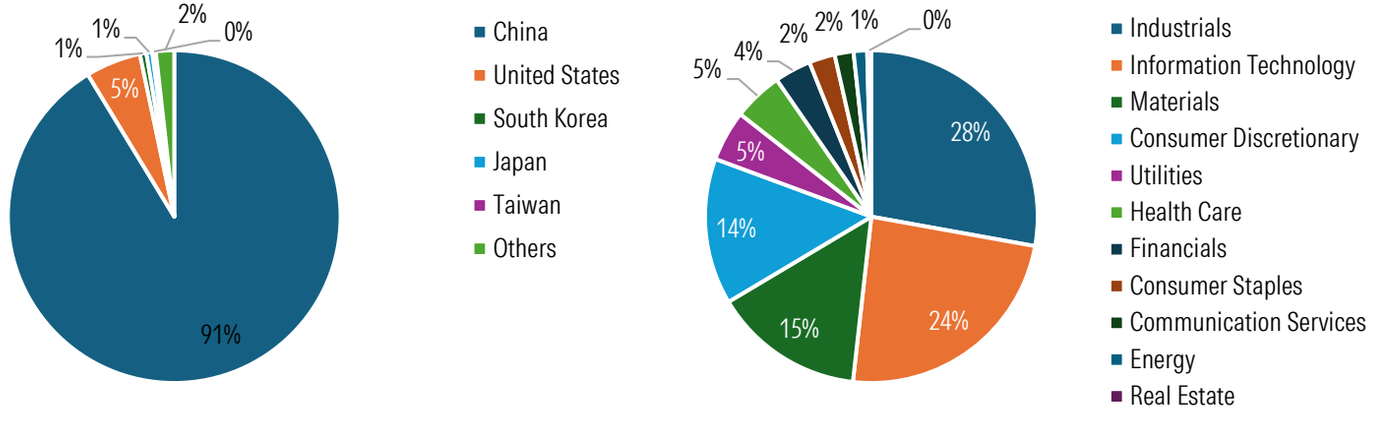
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Chinese Climate Solutions Funds Contain? Almost Exclusively Chinese Companies

- Chinese-domiciled Climate Solutions funds are even more concentrated, with 91% of holdings consisting of local companies. US companies account for only 5% of the portfolios, on average. Industrials, IT, and Materials make up two-thirds of the holdings.
- Contemporary Amperex Technology (CATL), which plays a key role in global battery production and supply, tops the list of the 15 most held companies. But many other firms, such as Shenzhen Kedali Industry, EVE Energy, and Putailai New Energy Technology, operate primarily in China.
- For example, Shenzhen Kedali Industry, which manufactures precision structural components for lithium batteries, generates 95% of its revenue from China, with the rest derived from facilities in Hungary and Germany, serving clients such as Tesla, LG, and Panasonic.
- Most of the top holdings exhibited a notable share price recovery in 2025, with a few exceptions, including CATL and Yuneng New Energy Battery Material. As a major supplier of lithium iron phosphate, Yuneng was affected by falling lithium carbonate prices (due to competition) and compressed profit margins.

Most Held Companies in Chinese Climate Solutions Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Contemporary Amperex Technology	China	Electrical Equipment & Parts	Large Growth	17.7	61.3	6.1
Shenzhen Kedali Industry	China	Electronic Components	Large Growth	44.2	14.1	8.4
EVE Energy	China	Electrical Equipment & Parts	Large Growth	23.4	8.8	-15.0
Wuxi Lead Intelligent Equipment	China	Specialty Industrial Machinery	Large Growth	77.7	-22.7	-12.9
Putailai New Energy Technology	China	Specialty Chemicals	Large Growth	42.0	-25.5	-19.2
Shenzhen Capchem Technology	China	Specialty Chemicals	Large Blend	27.1	-21.9	5.0
Henghui Technology	China	Electronic Components	Mid Growth	-	-	-
Tinci Materials Technology	China	Specialty Chemicals	Large Growth	9.6	-22.4	-22.1
Yuneng New Energy Battery Material	China	Electrical Equipment & Parts	Mid Blend	-19.8	30.9	-
Zhejiang Sanhua Intelligent Controls	China	Specialty Industrial Machinery	Large Growth	36.7	-21.1	8.6
Hongjing Optoelectronic Technology	China	Computer Hardware	Mid Growth	-	-	-
CAC Nantong Chemical	China	Agricultural Inputs	Mid Blend	-	-	-
Hengxin Life Science and Technology	China	Packaging & Containers	Mid Growth	-	-	-
Hanshow Technology	China	Software - Application	Mid Growth	-	-	-



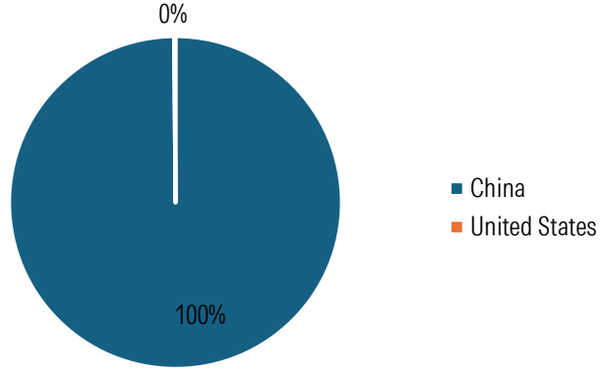
Source: Morningstar Direct. Manager Research. Data as of June 2025.

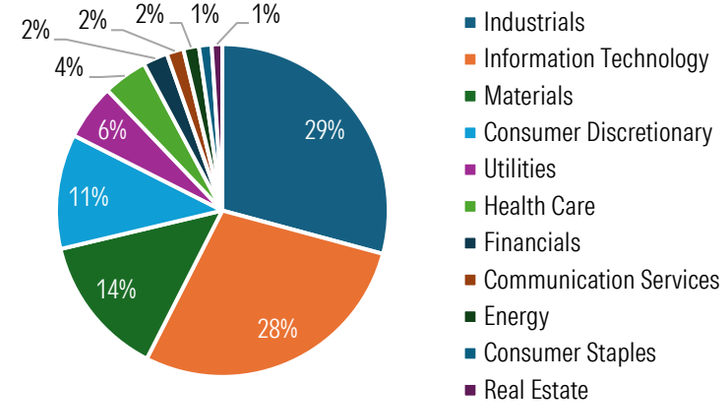
What Do Chinese Clean Energy/Tech Funds Contain? Solely Chinese Companies

- Chinese-domiciled Clean Energy/Tech funds invest almost solely in domestic stocks, and predominantly from the Industrials and IT sectors. Lithium batteries, solar, and wind power generation remain the key thematic focus under the country's "double carbon-neutrality" goals.
- However, stock performance has been mixed so far this year, highlighting that these sectors remain in a restructuring phase amid concerns over overcapacity and evolving regulation.
- For example, following the January 2025 revision of the "Measures for the Administration of the Development and Construction of Distributed Photovoltaic Power Generation," nine provinces now require solar power generation on farmland to achieve a self-consumption ratio of at least 50%. The aim is to curb oversupply and prevent the misuse of agricultural land for non-agricultural purposes. Previously, aggressive promotion of solar projects and generous subsidies had led to large-scale conversion of farmland into photovoltaic plants across many regions, raising concerns about national food security.

Most Held Companies in Chinese Clean Energy/Tech Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Sungrow Power Supply	China	Electrical Equipment & Parts	Large Growth	36.7	16.2	8.7
Contemporary Amperex Technology	China	Electrical Equipment & Parts	Large Growth	17.7	61.3	6.1
Ningbo Deye Technology	China	Furnishings, Fixtures & Appliances	Large Growth	9.8	41.9	-12.6
Arctech Solar Holding	China	Solar	Mid Growth	-33.5	47.1	-13.6
Ginlong Technologies	China	Electrical Equipment & Parts	Mid Growth	11.1	-14.8	-33.2
Weigao Blood Purification Products	China	Medical Devices	-	-	-	-
Tongwei	China	Solar	Large Blend	-0.4	-10.7	-21.3
Hangzhou First Applied Material	China	Semiconductor Equipment & Materials	Large Blend	3.2	-15.6	-22.1
CSI Solar	China	Solar	Large Blend	-18.7	-2.5	-
Shenzhen Kedali Industry	China	Electronic Components	Large Growth	44.2	14.1	8.4
CECEP Solar Energy	China	Utilities - Renewable	Mid Value	0.9	-14.6	-13.7
LONGi Green Energy Technology	China	Semiconductor Equipment & Materials	Large Value	9.3	-32.6	-29.8
JA Solar Technology	China	Solar	Large Blend	-7.9	-32.9	-34.1
Suzhou Maxwell Technologies	China	Semiconductor Equipment & Materials	Mid Growth	-13.5	-19.9	-31.5
Jinko Solar	China	Solar	Large Value	-20.3	-19.6	-29.0





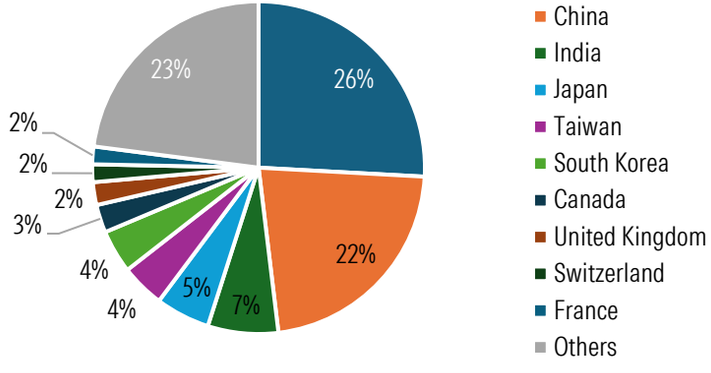
Source: Morningstar Direct. Manager Research. Data as of June 2025.

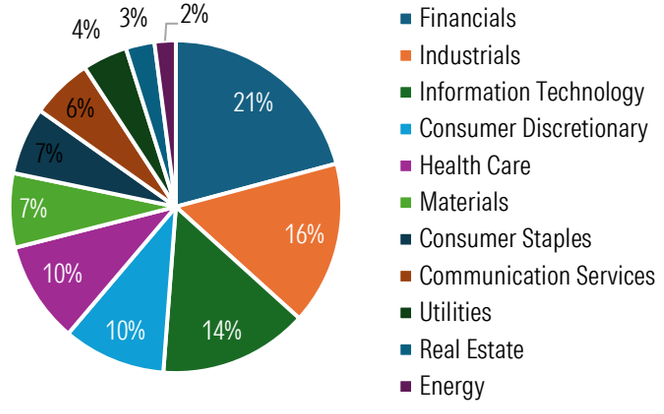
What Do US Climate Transition Funds Contain? Mostly US and Asian Companies

- Climate Transition funds are typically well-diversified, offering broad exposure across geographies and sectors.
- Measured by number of holdings, however, the US and China account for almost half of the stocks represented in US-domiciled Climate Transition funds. India ranks a distant third, with a 7% representation share.
- Also measured by number of holdings, US Climate Transition funds have the highest exposure to financial companies (21%), followed by Industrials (16%), and Information Technology (14%).
- US companies dominate the top 15 most common holdings, the vast majority of which are large-cap stocks.
- As of June 2025, the median year-to-date return of the top US Climate Transition holdings fell to 6.5%, down from 22% in 2024. Tesla and PayPal were the main drags, both experiencing a sharp decline with returns of -17.3% and -17.8%, respectively. Meanwhile, NVIDIA delivered the best performance, at 29.7%. The company had already topped the 2024 performance league with a stellar 171% gain.

Most Held Companies in US Climate Transition Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Alphabet	United States	Internet Content & Information	Large Blend	12.7	35.9	25.5
Tesla	United States	Auto Manufacturers	Large Blend	-17.3	62.5	6.6
Microsoft	United States	Software - Infrastructure	Large Blend	20.8	12.9	25.4
Amazon.com	United States	Internet Retail	Large Blend	4.4	44.4	21.8
ServiceNow	United States	Software - Application	Large Growth	-13.5	50.1	28.3
NVIDIA	United States	Semiconductors	Large Growth	29.7	171.2	126.0
Merck & Co	United States	Drug Manufacturers - General	Large Value	-13.8	-5.9	3.0
Starbucks	United States	Restaurants	Large Value	-1.3	-2.5	4.2
Trane Technologies	United States	Building Products & Equipment	Large Blend	13.0	52.8	40.3
Moodys	United States	Financial Data & Stock Exchanges	Large Blend	8.3	22.1	22.2
Autodesk	United States	Software - Application	Mid Growth	6.5	21.4	16.0
Thermo Fisher Scientific	United States	Diagnostics & Research	Large Value	-5.1	-1.7	-3.0
McDonald's	United States	Restaurants	Large Blend	9.4	0.1	9.5
PayPal Holdings	United States	Credit Services	Mid Blend	-17.8	39.0	-9.1
Visa	United States	Credit Services	Large Blend	11.9	22.2	21.7





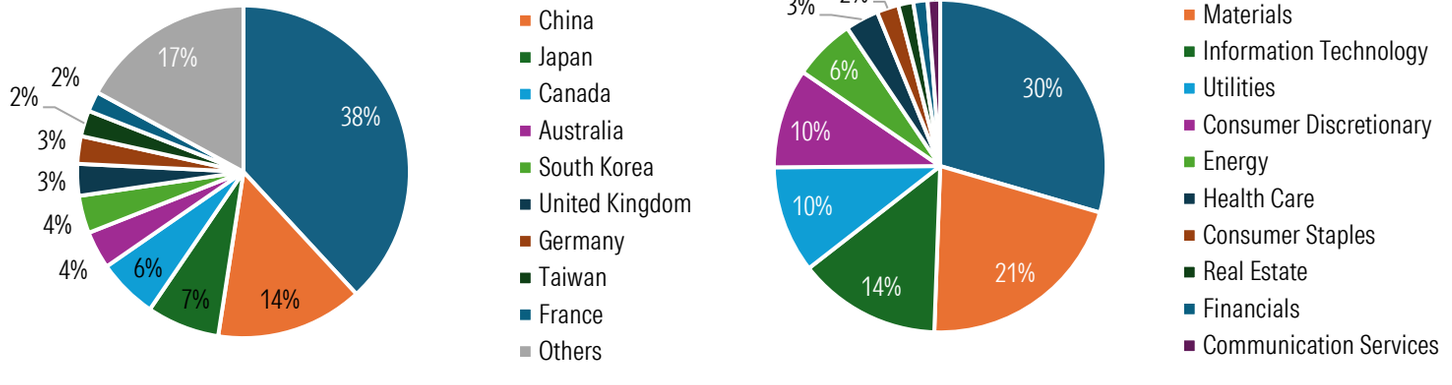
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do US Climate Solutions Funds Contain? More Mid- and Small-Caps

- Compared to Climate Transition funds, US-domiciled Climate Solutions funds allocate even more heavily to US and Chinese companies, with these two countries accounting for over half of their holdings (in number of companies).
- Industrials, Materials, and Information Technology are the most popular sectors among US Climate Solutions funds. This mirrors the sector exposure seen in European Climate Solutions strategies. Together, these top three sectors accounted for nearly two-thirds of total holdings, reflecting a similar level of sector concentration as their European counterparts.
- As of June 2025, the median return of the most popular holdings slipped to 2.3%, down from 6.1% in 2024. Performance also varied widely among small-cap stocks, ranging from a gain of more than 138% by Bloom Energy to a decline of 45% by Enphase Energy. Bloom Energy benefited from rising demand among data center operators seeking reliable, cleaner power sources, thanks to its fuel-cell technology.

Most Held Companies in US Climate Solutions Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Schneider Electric	France	Specialty Industrial Machinery	Large Blend	-11.2	26.0	22.9
Tesla	United States	Auto Manufacturers	Large Blend	-17.3	62.5	6.6
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Enphase Energy	United States	Solar	Small Blend	-45.1	-48.0	-49.1
Albemarle	United States	Specialty Chemicals	Small Blend	-0.4	-39.3	-30.6
BYD	China	Auto Manufacturers	Large Blend	30.4	26.6	13.3
Bloom Energy	United States	Electrical Equipment & Parts	Small Growth	138.4	50.1	27.7
Infineon Technologies	Germany	Semiconductors	Large Blend	12.5	-21.3	14.0
Samsung	South Korea	Electrical Equipment & Parts	Large Blend	-14.4	-53.9	-28.9
Contemporary Amperex Technology	China	Electrical Equipment & Parts	Large Growth	17.7	61.3	6.1
Rivian Automotive	United States	Auto Manufacturers	Mid Blend	2.0	-43.3	-25.4
NextEra Energy	United States	Utilities - Regulated Electric	Large Value	2.9	21.4	-2.8
Lucid	United States	Auto Manufacturers	Small Blend	-34.4	-28.3	-49.5
Xylem	United States	Specialty Industrial Machinery	Mid Growth	23.0	2.7	17.0
Plug Power	United States	Electrical Equipment & Parts	Small Value	-26.3	-52.7	-61.7



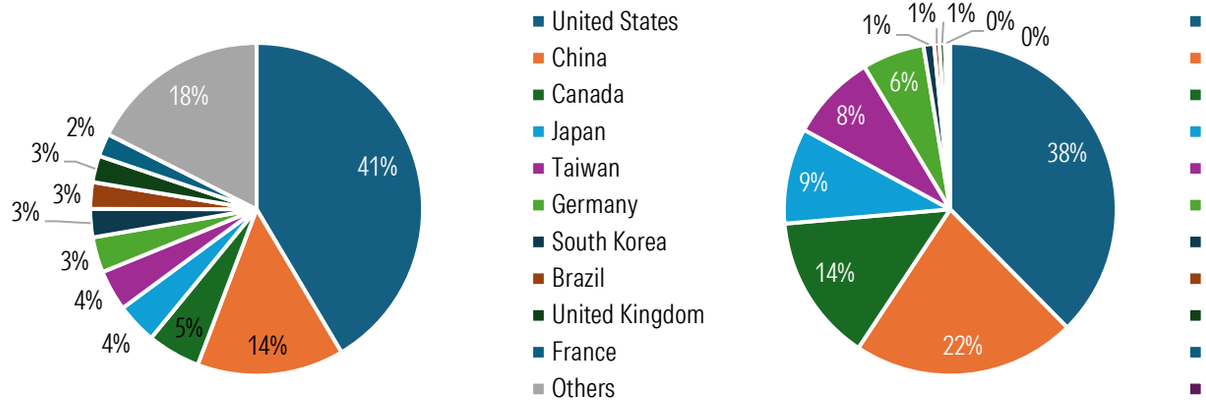
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do US Clean Energy/Tech Funds Contain? US Mid- and Small Caps Dominate

- Similar regional concentration is found among the holdings of US Clean Energy/Tech funds, with US firms taking up over 40% of the space, followed by China (14%) and Canada (5%).
- Sector concentration is also more pronounced among US Clean Energy/Tech funds, with 74% of all holdings clustered in three sectors: Industrials (38%), Utilities (22%), and IT (14%).
- The top 15 holdings are dominated by small-cap companies, most of them based in the US, helping explain the wide variance in return performance in 1H 2025. As of June 2025, the year-to-date return of the top holdings rebounded to 25.7% from negative 47.4% in 2024. SolarEdge Technologies (149%) and Bloom Energy (138%) stand out with three-digit gains.
- Rising energy demand — driven in part by the rapid expansion of AI-powered data centers — and the growing cost-competitiveness of renewables continue to support the sector's outlook. This positive long-term outlook, coupled with the prospect of lower interest rates, have helped support a recovery in renewable energy returns this year, despite the political setbacks.

Most Held Companies in US Clean Energy/Tech Funds

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Enphase Energy	United States	Solar	Small Blend	-45.1	-48.0	-49.1
Ormat Technologies	United States	Utilities - Renewable	Small Blend	36.2	-10.0	-0.1
Sunrun	United States	Solar	Small Value	72.6	-52.9	-21.5
Array Technologies	United States	Solar	Small Blend	49.2	-64.0	-24.5
Vestas Wind Systems	Denmark	Specialty Industrial Machinery	Large Growth	30.0	-57.1	-11.9
Nextracker	United States	Solar	Small Growth	84.1	-22.0	-
Iberdrola	Spain	Utilities - Diversified	Large Blend	25.7	9.4	19.6
SolarEdge Technologies	United States	Solar	Small Value	148.7	-85.5	-50.3
EDP Renovaveis	Spain	Utilities - Renewable	Mid Growth	0.8	-47.4	-24.0
Itron	United States	Scientific & Technical Instruments	Small Growth	13.2	43.8	37.2
Bloom Energy	United States	Electrical Equipment & Parts	Small Growth	138.4	50.1	27.7
Boralex	Canada	Utilities - Renewable	Small Blend	2.3	-20.0	-14.6
Canadian Solar	United States	Solar	Small Value	-12.1	-57.6	-40.0



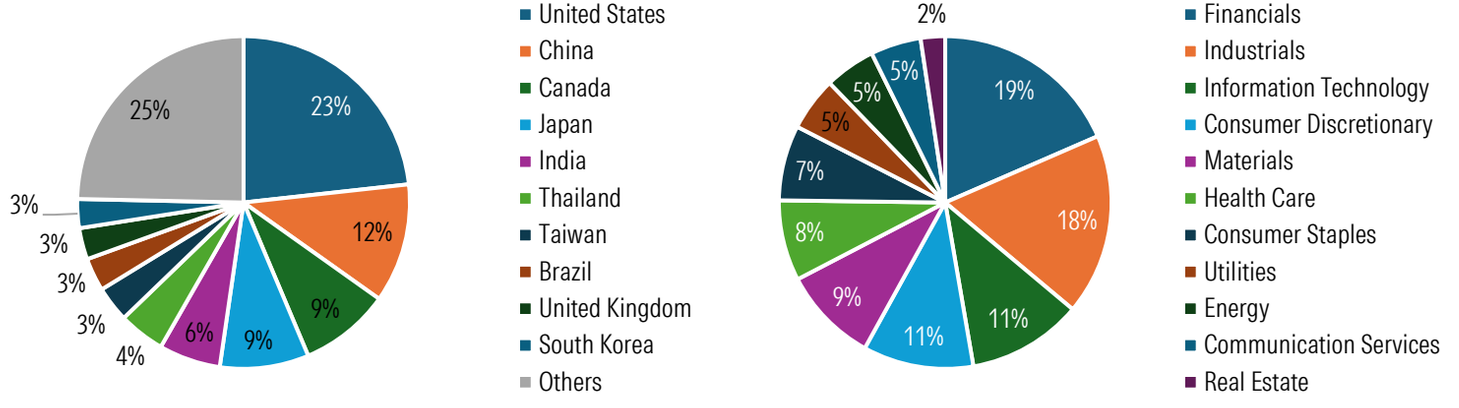
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Rest of the World Climate Transition Funds Contain? A Bias Towards Domestic Companies

- Climate Transition funds in the rest of the world look focused on their domestic markets, as evidenced by the relatively lower combined representation of US and Chinese companies (35%) in these portfolios.
- Overall, the sector exposure of these funds is similar to that of their counterparts in other regions. The top three sectors account for less than half (48%) of all holdings, with Financials (19%) and Industrials (18%) leading the category.
- In contrast to other regions, the year-to-date return performance of the top 15 most common holdings showed smaller variations. However, the median returns fell to 3.4%, down from nearly 20% in 2024, largely dragged by Tesla and Recruit.
- Broadcom and NVIDIA have also experienced notable return declines in 2025. Broadcom faced renewed regulatory headwinds when the US government implemented new licensing requirements on the export of advanced AI chips to China. This policy, which affected Broadcom and other semiconductor companies, raised concern about potential disruptions to the company's international sales.

Most Held Companies in Climate Transition Funds in Rest of the World

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
Broadcom	United States	Semiconductors	Large Growth	28.8	109.6	82.5
NVIDIA	United States	Semiconductors	Large Growth	29.7	171.2	126.0
Hitachi	Japan	Conglomerates	Large Growth	3.4	75.4	43.8
Microsoft	United States	Software - Infrastructure	Large Blend	20.8	12.9	25.4
Tokio Marine	Japan	Insurance - Property & Casualty	Large Blend	13.3	49.2	37.8
AstraZeneca	United Kingdom	Drug Manufacturers - General	Large Blend	15.0	-0.8	5.5
Keyence	Japan	Scientific & Technical Instruments	Large Growth	-11.9	-6.2	3.0
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Tesla	United States	Auto Manufacturers	Large Blend	-17.3	62.5	6.6
ServiceNow	United States	Software - Application	Large Growth	-13.5	50.1	28.3
Recruit	Japan	Internet Content & Information	Large Growth	-22.9	68.0	24.5
Intact Financial	Canada	Insurance - Property & Casualty	Large Blend	6.1	19.9	14.9
Elevance Health	United States	Healthcare Plans	Mid Value	-12.7	-20.4	-11.4
Fanuc	Japan	Specialty Industrial Machinery	Large Blend	1.3	-7.8	-0.3
Sekisui House	Japan	Residential Construction	Large Value	-8.1	12.0	16.2



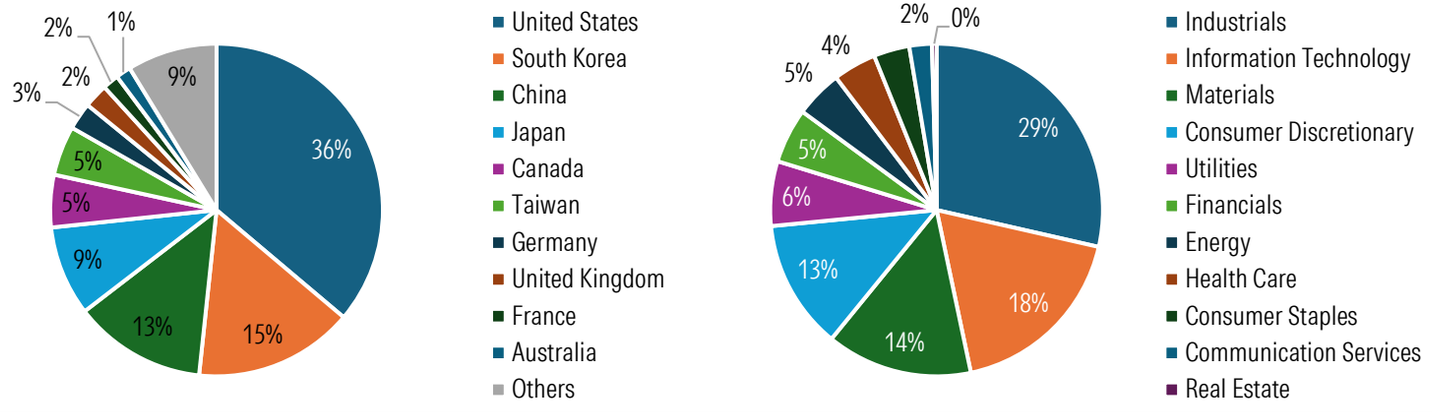
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Rest of the World Climate Solutions Funds Contain? A Bias Towards Domestic Companies

- After US firms (36%), South Korean companies (15%) are the second most represented in Climate Solutions portfolios in the rest of the world because of the dominance of Korean-domiciled funds in that category. China (13%) is the third most represented country.
- Industrials (29%) and IT (18%) companies dominate the portfolios, followed by Materials (14%). These three sectors make up just over 60% of all the holdings, which is lower than the sector concentration seen among Climate Solutions strategies domiciled in China and the US.
- The 15 most commonly held companies by Climate Solutions portfolios in the rest of the world are biased towards large caps, with only one mid cap and one small cap. The list also includes fewer growth-oriented companies than other regions.

Most Commonly Held Companies in Climate Solutions Funds in Rest of World

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3 Year Annualized Return %
Tesla	United States	Auto Manufacturers	Large Blend	-17.3	62.5	6.6
Samsung SDI	South Korea	Electrical Equipment & Parts	Large Blend	-14.4	-53.9	-28.9
NVIDIA	United States	Semiconductors	Large Growth	29.7	171.2	126.0
Infineon Technologies	Germany	Semiconductors	Large Blend	2.8	-21.3	14.0
LG Chem	South Korea	Chemicals	Large Blend	11.4	-56.2	-22.7
LG Energy Solution	South Korea	Electrical Equipment & Parts	Large Growth	1.1	-28.8	-8.7
Linde	United States	Specialty Chemicals	Large Blend	15.0	3.3	20.4
POSCO Holdings	South Korea	Steel	Large Value	15.6	-53.8	7.2
Schneider Electric	France	Specialty Industrial Machinery	Large Blend	-11.2	26.0	22.9
BYD	China	Auto Manufacturers	Large Blend	30.4	26.6	13.3
ON Semiconductor	United States	Semiconductors	Mid Blend	-21.3	-24.5	-10.3
NXP Semiconductors	Netherlands	Semiconductors	Large Blend	14.0	-7.7	14.4
NextEra Energy	United States	Utilities - Regulated Electric	Large Value	2.9	21.4	-2.8
Hyundai Motor	South Korea	Auto Manufacturers	Large Value	9.0	-2.7	9.1
Plug Power	United States	Electrical Equipment & Parts	Small Value	-26.3	-52.7	-61.7



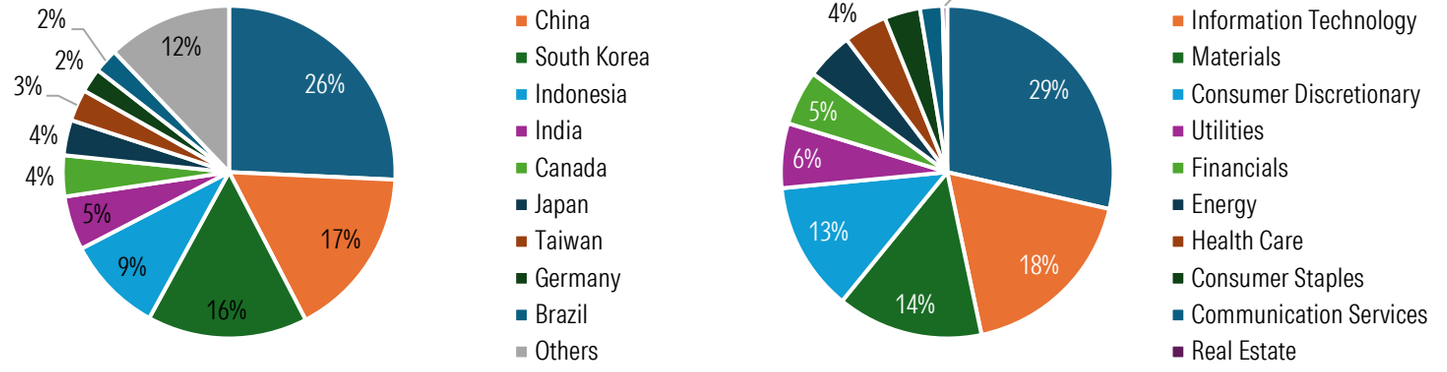
Source: Morningstar Direct. Manager Research. Data as of June 2025.

What Do Rest of the World Clean Energy/Tech Funds Contain? A Bias Towards Domestic Companies

- Similar to their European and US peers, Clean Energy/Tech funds in the rest of the world are dominated by US and Chinese companies. However, the allocation reflects a stronger presence of local equities from emerging markets, with South Korea (16%), Indonesia (9%), and India (5%) standing out. This highlights growing regional diversification as investors increasingly look beyond US and Chinese names for clean energy and technology opportunities.
- The sector make-up is similar to that of Climate Solutions funds.

Most Commonly Held Companies in Clean Energy/Tech Funds in Rest of World

Company	Country	Industry	Equity Style	YTD Return %	2024 Return %	3-Year Annualized Return %
First Solar	United States	Solar	Mid Growth	10.8	2.3	15.2
Enphase Energy	United States	Solar	Small Blend	-45.1	-48.0	-49.1
Boralex	Canada	Utilities - Renewable	Small Blend	2.3	-20.0	-14.6
Ormat Technologies	United States	Utilities - Renewable	Small Blend	36.2	-10.0	-0.1
Orsted	Denmark	Utilities - Renewable	Mid Value	-40.4	-18.8	-34.2
Sunrun	United States	Solar	Small Value	72.6	-52.9	-21.5
Bloom Energy	United States	Electrical Equipment & Parts	Small Growth	138.4	50.1	27.7
Array Technologies	United States	Solar	Small Blend	49.2	-64.0	-24.5
Plug Power	United States	Electrical Equipment & Parts	Small Value	-26.3	-52.7	-61.7
Xinyi Solar Holdings	China	Solar	Mid Blend	8.7	-25.3	-29.3
Vestas Wind Systems	Denmark	Specialty Industrial Machinery	Large Growth	30.0	-57.1	-11.9
Nordex	Germany	Specialty Industrial Machinery	Mid Growth	85.4	1.6	29.6
EDP Renovaveis	Spain	Utilities - Renewable	Mid Growth	0.8	-47.4	-24.0
Clearway Energy	United States	Utilities - Renewable	Small Blend	18.0	0.8	-2.6
Hanwha Solutions	South Korea	Solar	Mid Value	75.9	-63.6	-20.7



Source: Morningstar Direct. Manager Research. Data as of June 2025.

Appendix

APPENDIX

Defining the Universe of Climate Funds

The global universe of climate funds consist of open-end funds and ETFs that have investment strategies related to the climate change theme.

Morningstar's universe of climate funds is based on intentionality, rather than on holdings. For example, many sustainable portfolios score well on climate metrics, but if climate issues are not the focus of these funds' investment strategies, they are not included in our universe. To identify intentionality and understand the strategies, we relied on a combination of fund names (a strong indicator of intentionality) and information found in legal filings.

To identify these funds, we used a range of key terms in their names (or index names in the case of passive funds). Key terms include obvious words such as "climate", "carbon", "transition", and "green", but also words related to themes and sectors linked to climate change solutions such as "renewable energy", "electric vehicles", and "batteries". Using natural-language-processing technology to comb Morningstar's comprehensive global fund database, we made efforts to identify as many of these funds as possible. We used this sample to analyze the latest trends in terms of assets, flows, product development, and the climate-related profiles of these portfolios.

In this spirit, we did not include those funds whose sole climate-related mandate is to exclude fossil fuel companies. Globally, a small number of funds are branded ex-fossil fuel (with "ex-fossil fuel" or "fossil fuel-free" in their names), but many more unbranded funds similarly exclude fossil fuels. Fossil fuels have become part of a broader exclusion list for many asset managers, alongside weapons, tobacco, and other controversial activities.

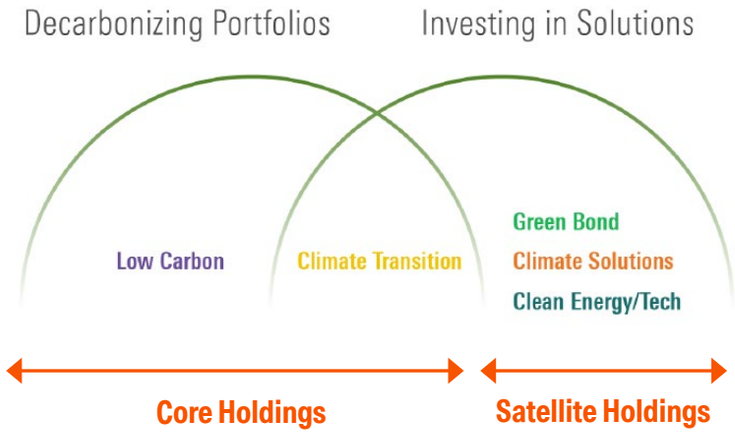
Moreover, the scope of fossil fuel exclusions varies greatly, from the limited omission of companies involved in thermal coal extraction and generation to full-scale removal of companies with fossil fuel reserves or any involvement in fossil fuel-related activities, including exploration, production, and distribution. Excluding fossil fuels is one way to decarbonize a portfolio, but we elected to exclude ex-fossil fuel funds from this study to ensure a well-defined and cohesive universe of climate funds.

Similarly, we did not include the growing number of funds that seek to maintain a lower carbon intensity relative to their investable universe without providing a specific carbon-reduction target. For most of these funds, climate considerations represent only a small part of the investment process.

Finally, we did not include funds that claim using investment stewardship as an approach to mitigate climate risks, unless it is the sole objective of the fund. We acknowledge the crucial role that proxy voting and engagement activities play in better understanding and managing climate risks and opportunities in portfolios. But these activities often complement other key objectives and cannot be considered the focus of the strategy. We have included only a couple of climate-engagement funds in our universe.

APPENDIX

Defining the Universe of Climate Funds



Low Carbon

Low Carbon funds seek to invest in companies with reduced carbon intensity and/or carbon footprint relative to a reference benchmark. These funds typically market themselves as low-carbon strategies and incorporate quantifiable targets related to carbon-emissions reduction. Low Carbon funds tend to offer broad market exposure across all sectors.

Within the portfolio, Low Carbon funds provide core allocation, featuring asset classes such as equity, fixed income, and real estate.

Climate Transition

Climate Transition funds select or tilt toward companies that consider climate change in their business strategy and therefore are better prepared for the transition to a low-carbon economy. Climate Transition funds tend to invest in a mix of companies: those that better align with the transition and those that provide climate solutions. Also included in this category are passive funds tracking EU Paris-aligned benchmarks (EU PAB) or EU climate-transition benchmarks (EU CTB). These benchmarks are designed to account for both risk mitigation and opportunity-seeking while generally replicating the broad market and matching the transition to a climate-resilient economy

Green Bond

Green Bond funds invest in debt instruments that finance projects facilitating the transition to a green economy. The Green Bond Principles, formulated by the International Capital Market Association, provide high-level categories for eligible green projects. The eligible categories include, but are not limited to, renewable energy, energy efficiency, pollution prevention and control, clean transportation, sustainable water and wastewater, climate change adaptation, eco-efficient and/or circular economy-adapted products, and green buildings.

Climate Solutions

Climate Solutions funds target companies that are contributing to the transition to a low-carbon economy through their products and services and that will benefit from this transition. Included in this category are funds that provide exposure to companies involved in industries and technologies such as hydrogen, nuclear, electric vehicles, batteries, critical raw materials, energy storage, carbon capture and storage, circular economy, and pollution control. Climate Solutions funds differ from Climate Transition funds in that they invest primarily in companies whose goods and services provide solutions for climate change mitigation and adaptation.

Clean Energy/Tech

Clean Energy/Tech funds invest in companies that contribute to or facilitate the clean energy transition. This includes renewable energies such as wind, solar, hydro, wave, and geothermal power along with grid infrastructure improvements, transmission, and distribution. Clean Energy/Tech funds are characterized as sector-specific, are typically more concentrated than the first three fund groupings above and often have a bias toward mid- and small caps.

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