
COP27: Investing in Times of Climate Change

The number of climate-themed funds reaches new highs as investors seek more options to manage climate risks and leverage opportunities.

Morningstar Manager Research

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Introduction

As COP27 begins its second week in Sharm el-Sheikh, Egypt, we take stock of the ever-expanding options available to climate-focused investors.

The scale of capital needed for the transition is significant. For example, the International Energy Agency's net-zero emissions scenario requires annual clean energy investment to triple by 2030. To limit warming to 1.5 degrees C, clean energy investment will need to run at 4 times the rate of fossil fuel investment, at minimum, by the end of the decade.

Mark Carney, special UN envoy for climate action and former Bank of England governor, calls the move to net zero the "greatest commercial opportunity of our time." Investors also need to take steps to protect their portfolios from climate risks: Some investments will be disadvantaged in the transition to net zero, while others will find themselves vulnerable to physical risks from extreme events caused by climate change.

Fund investors have a burgeoning number of choices to invest in climate-change-related opportunities, as well as to mitigate climate risk in their portfolios. In this article, [portions of which were published earlier this year](#), we provide an update on the global climate-focused fund landscape to help investors navigate what can be a confusing mix of offerings as they seek to decarbonize their investments and help finance the transition to a low-carbon economy.

Key Takeaways

- ▶ The number of mutual funds and exchange-traded funds with a climate-related mandate increased by 32% so far this year, reaching 1,140 globally at the end of September.
- ▶ This growth stemmed from continued strong product development as investors seek new approaches to manage climate risks in portfolios, take advantage of opportunities arising from the transition, and contribute to the reduction of real-world carbon emissions.
- ▶ Asset managers, particularly in Europe, have focused product development efforts on climate-conscious funds, which represented 37% of all climate fund launches, followed by climate-solutions funds (31%) and clean energy/tech funds (17%). Climate-conscious funds invest in companies that are better prepared for the transition to a low-carbon economy.
- ▶ Falling stock markets, lower inflows, and the strong dollar drove global assets in climate funds down almost 10% in the nine months through September 2022 to \$368 billion.

- ▶ Climate funds have not been immune to the challenging macro environment, but they have exhibited resilience, in aggregate. For context, global fund assets shrunk by 24% in over the period.

Defining the Universe of Climate Funds

We define the global universe of climate funds as those open-end funds and exchange-traded funds that have a branded, climate-focused mandate.

Morningstar's universe of climate funds is based on intentionality rather than 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 will not be included in our universe. To identify intentionality, we relied on a combination of fund names (a strong indicator of intentionality) and information found in legal filings.

The funds in our list are marketed as climate-themed funds, using a range of terms in their names (or index names in the case of passive funds), such as *climate*, *carbon*, *transition*, *green*, and *clean energy*, or environmental funds with a strong focus on climate-related issues. 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 market themselves as ex-fossil fuel (including *ex-fossil fuel* in their names), but many more unbranded funds similarly exclude fossil fuels. For many asset managers, fossil fuels have become part of a broader exclusion list, 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.

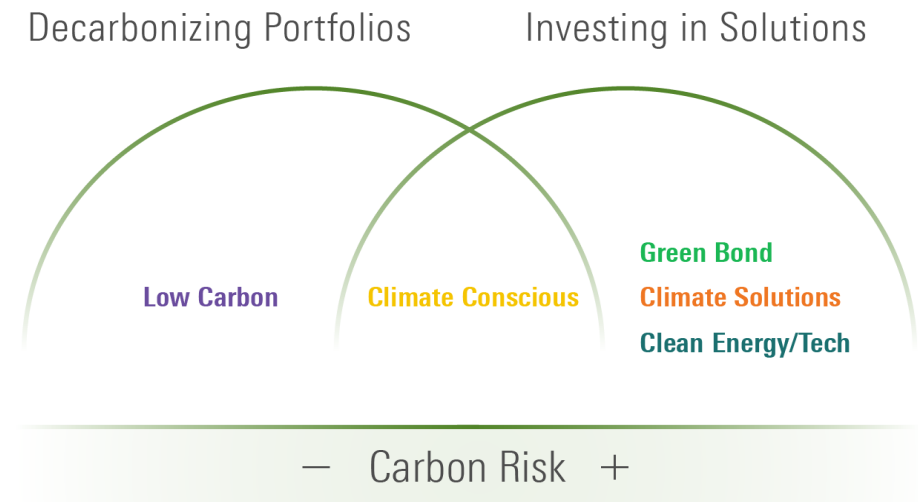
Similarly, we have excluded the growing number of funds that seek to maintain a lower carbon intensity than their investable universe without providing a specific carbon-reduction target. For most of these funds, climate considerations represent only a small part of the investment process. We have constrained our climate fund universe to those funds that use quantifiable binding climate-related criteria. Therefore, for example, we have included funds that aim to reduce their carbon intensity by at least 30% relative to their reference benchmarks.

Our universe of climate funds¹ is subdivided into five mutually exclusive groups based on investment objective and policy, diversification, and sector exposure: low carbon, climate conscious, climate

¹ Our list of funds spans all key asset classes, including equity, fixed income, allocation, and alternatives. We have excluded carbon credit (or carbon allowance) funds.

solutions, green bond, and clean energy/tech. Below is a representation of the five groupings, with the role they can play in an investment portfolio, from decarbonizing a portfolio to promoting the climate transition by investing in green solutions.

Exhibit 1 Climate Strategies and Their Role in Portfolios



Source: Morningstar Research.

► **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. Examples include strategies such as **Amundi IS Equity Europe Low Carbon** and **TIAA-CREF Social Choice Low Carbon Equity Fund**.

► **Climate Conscious**

Climate-conscious 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-conscious funds tend to invest in a mix of companies: those that positively align with the transition and those that provide climate solutions. Examples include **Aviva Investors Climate Transition European Equity** and **DNCA Invest Beyond Climate**. Also included in this category are passive funds tracking EU Paris-aligned benchmarks, or EU PAB, or climate-transition benchmarks, or EU CTB. These benchmarks are designed to account for both risk mitigation and opportunity-seeking, and to match the transition to a climate-resilient economy. An example is **Lyxor Net Zero 2050 S&P Eurozone Climate PAB ETF**. Climate-conscious funds share many characteristics with both low-carbon and climate solutions funds. As such, climate conscious represents a somewhat hybrid group.

► **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. We have also included in this grouping a few climate bond funds that have slightly broader mandates, including **LO Funds Global Climate Bond** and **DPAM L Bonds Climate Trends Sustainable**.

► **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. For example, **Candriam SRI Equity Climate Action Fund** invests in companies for which climate change solutions are central to their growth story and whose products, processes, technologies, and/or services address climate challenges. **Wellington Climate Strategy** has a similar strategy. Also included in this category are funds that provide exposure to companies engaged in the global hydrogen industry, including hydrogen producers, fuel cell manufacturers, or companies in the electrolysis sector.² An example is **L&G Hydrogen Economy ETF**. This category also encompasses several circular economy funds, such as **BlackRock Global Funds - Circular Economy Fund**, which invests in companies that contribute to the advancement of a circular economy across four predefined categories—that is, adopters, enablers, beneficiaries, and business model winners. Climate solutions funds differ from climate-conscious funds in that they invest primarily in companies whose goods and services provide solutions for climate change mitigation and adaptation. Their sector exposure is therefore more concentrated.

► **Clean Energy/Tech**

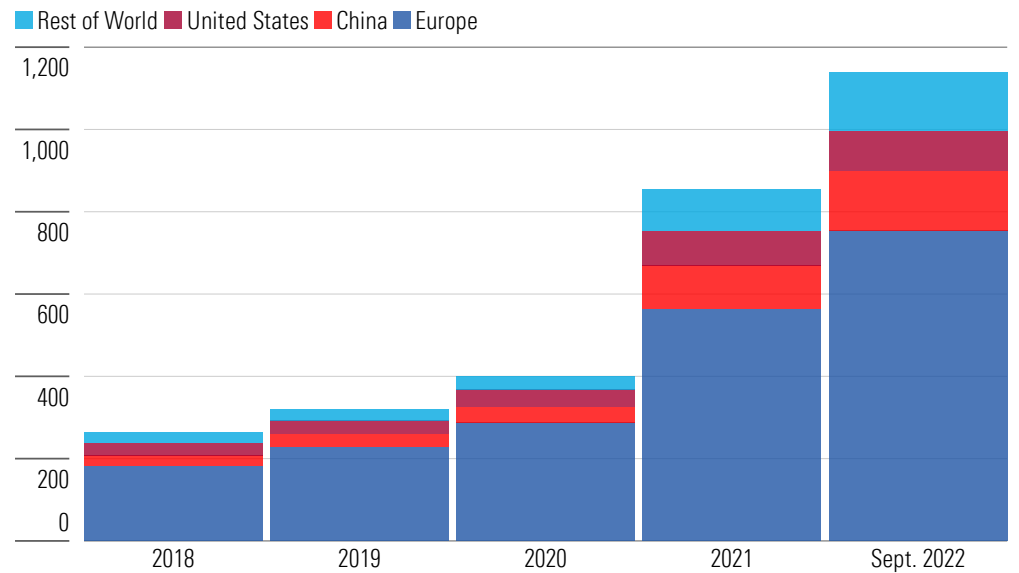
Clean energy/tech funds invest in companies that contribute to or facilitate the clean energy transition. This includes renewable energies such as wind, solar, hydro, wave, and geothermal power along with grid infrastructure improvements, transmission and distribution, energy storage, and innovative technologies such as carbon capture and storage. 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. Examples include **First Trust Nasdaq Clean Edge Green Energy Index Fund** and **RobecoSAM Smart Energy**, which invest across renewable energy enablers and producers, “smart-grid” distribution networks, energy-efficient storage and power management technologies, and the electrification of end-use applications.

² The hydrogen sector is undergoing a transitional stage, but currently, fossil fuels remain the primary source for hydrogen production, with 6% of global natural gas and 2% of global coal going to hydrogen production, according to IEA.

The number of climate funds reaches a record high of 1,140 globally

The menu of options for climate-focused investors across the globe expanded significantly during the first nine months of 2022, as the number of mutual funds and exchange-traded funds focused on a climate-related theme reached a record high of 1,140 at the end of September. There were 860 climate-themed funds globally at the end of last year.

Exhibit 2 Number of Climate Funds per Geography

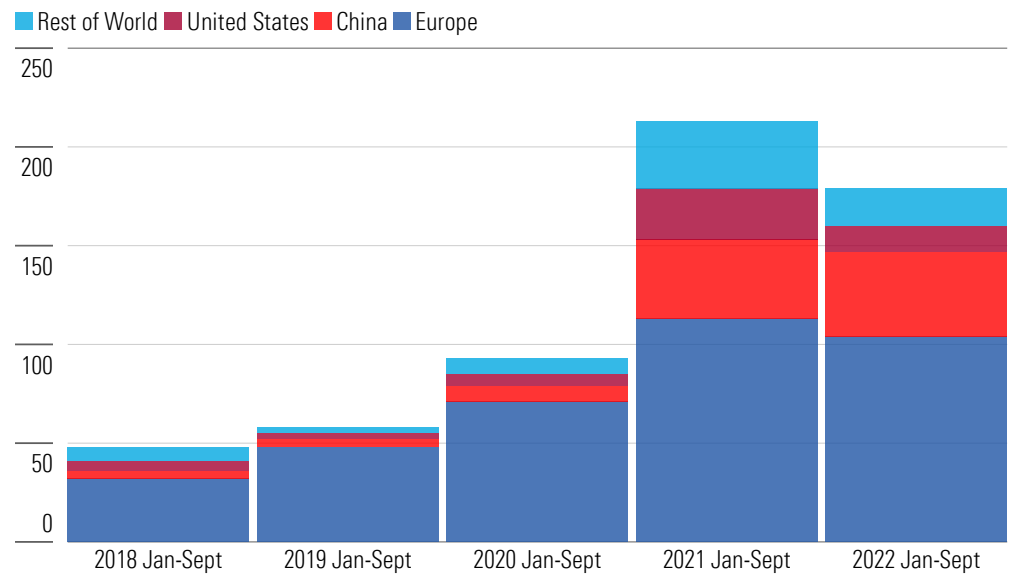


Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

This 32% growth stemmed from continued strong product development as investors seek new approaches to manage climate risks in portfolios, take advantage of opportunities arising from the transition to a low-carbon economy, and also contribute to the reduction of real-world emissions.

Close to 180 new climate-themed funds were launched globally in the first nine months of the year. While this is fewer than last year over the same period, more funds have been repurposed this year. At least 100 funds, predominantly in Europe, have switched mandates to adopt a climate-focused strategy or added Paris-aligned emission-reduction targets. Both the number of new launches and repurposed funds are likely to be revised upward in the coming months as we identify additional qualifiers.

Exhibit 3 Number of Climate Fund Launches per Geography

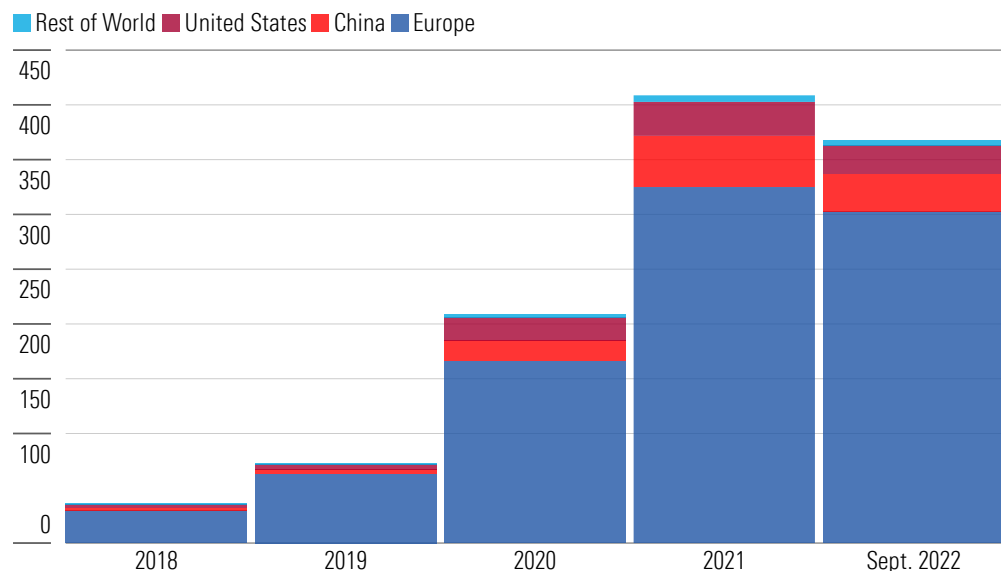


Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

In terms of assets under management, falling stock markets, lower inflows, and the strong dollar drove global U.S.-dollar-denominated assets in climate-themed funds down almost 10% in the nine months through September 2022 to \$368 billion. China experienced the largest drop (27.4%), followed by the United States (15.7%), while Europe shed 6.5%.

It’s worth pointing out that depending on the currency used for the calculation, the analysis differs. In U.S.-dollar-denominated terms, European assets fell from \$325 billion to \$303 billion during the first nine months of 2022, but in euros, European assets actually rose by 7.6% to EUR 309 billion from EUR 287 billion over the same period. In yuan terms, Chinese assets still fell by 14.3%.

Climate funds have not been immune to the challenging macro environment, but they have exhibited resilience, in aggregate. For context, global fund assets shrunk by 24% in dollar terms over the first nine months of the year.

Exhibit 4 Climate Fund Assets per Geography (\$ Billion)

Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

Unsurprisingly, given its greater commitment to a climate agenda, Europe remains the largest and most diverse climate funds market, followed by China, which last year overtook the United States as the second-largest climate funds market.

A Range of Approaches to Climate Solutions

Climate-themed funds span a range of approaches that aim to meet different investor needs and preferences. To help investors navigate what can be a confusing mix of offerings, we subdivide the universe into five mutually exclusive categories, shown in Exhibit 1.

Low-carbon and climate-conscious funds tend to focus on reducing climate-related risks in portfolios (decarbonising portfolios) and investing in companies that positively align with the transition to a low-carbon economy.

On the other hand, green bond, climate solutions, and clean energy/tech funds target companies whose products, services, or projects directly or indirectly address climate challenges and opportunities (for more details on the characteristics of the five approaches, read [Investing in Times of Climate Change](#)).

So far in 2022, asset managers, particularly in Europe, have focused their product development efforts on climate-conscious funds, which represented 37% of all climate fund launches, followed by climate-solutions funds (31%), and clean energy/tech funds (17%).

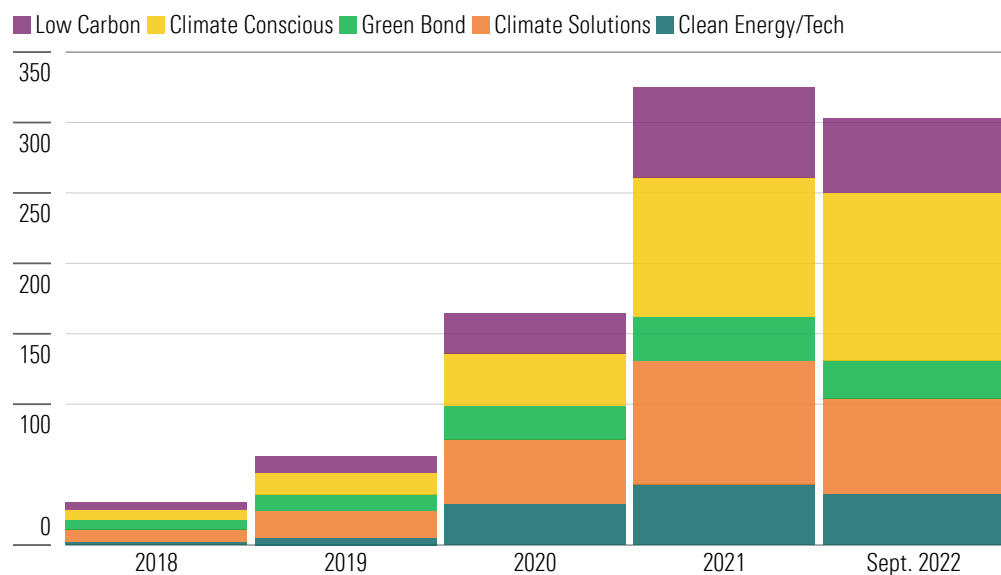
Climate-conscious and climate solutions strategies have grown the fastest in the past couple of years, now accounting for 34% and 23% of global climate fund assets, respectively. Still, clean energy/tech remains the dominant climate strategy outside of Europe.

Europe

Against a backdrop of continued geopolitical concerns with Russia's invasion of Ukraine, the energy crisis that followed, inflationary pressures, and a looming recession, assets in European open-end funds and ETFs with a climate-related theme dropped by 6.5% in the first nine months of the year to \$303 billion, after doubling in 2021. In euro terms, however, European assets actually rose by 7.6% to EUR 309 billion from EUR 287 billion from January to September 2022.

Both 2020 and 2021 were pivotal years for sustainable investing in Europe with the rollout of two groundbreaking classification and disclosure regulatory frameworks as part of the European Union's Action Plan for Financing Sustainable Growth:³ the [EU Taxonomy](#)⁴ and the [Sustainable Finance Disclosure Regulation](#).⁵ Both initiatives had a ripple effect across multiple areas, including climate investing. The number of European climate-themed funds has tripled over the past couple of years, reaching 754 at the end of September 2022.

Exhibit 5 Assets in European Climate Funds by Strategy Type (\$ Billion)



Source: Morningstar Direct. Morningstar Research. Data as of September 2022.

In U.S.-dollar-denominated terms, all but one type of climate fund registered lower assets at the end of September 2022, compared with December 2021.

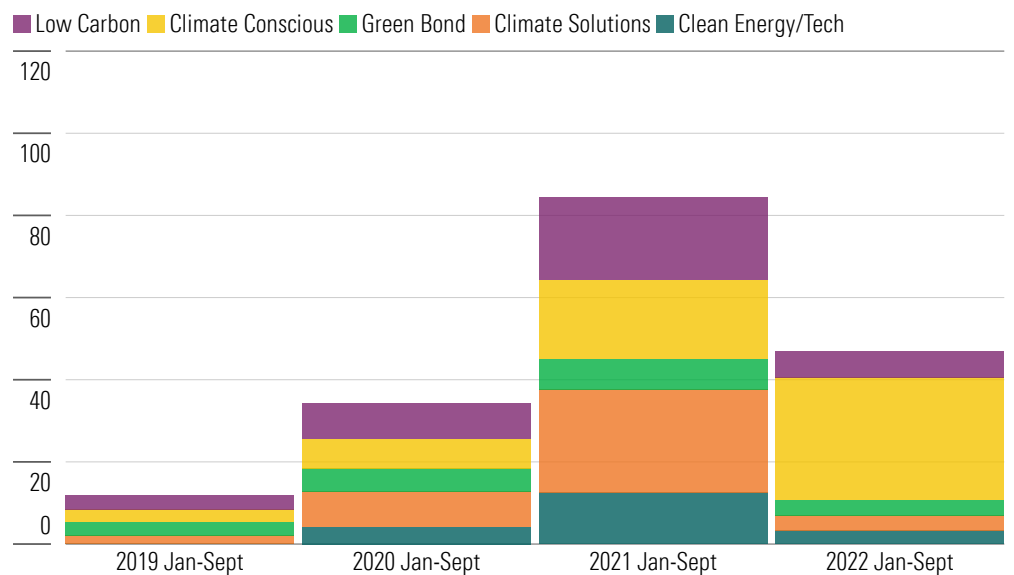
3 The EU Action Plan for Financing Sustainable Growth agreed in 2018 to lay the groundwork for a number of political agreements, which aim to define sustainable activities, create rules and increase disclosure related to sustainability products and sustainable investments, and provide climate benchmarks. This includes introducing amendments to existing regulatory frameworks (for example, the Markets in Financial Instruments Directive, or MiFID II), undertakings for the collective investment in transferable securities, or UCITS, the Alternative Investment Fund Managers Directive, or AIFMD, Solvency II, as well as introducing new regulations affecting the asset-management industry, such as the SFDR, the EU Taxonomy Regulation, and Benchmark Regulations for EU climate benchmarks and ESG disclosures.

4 The EU Taxonomy, agreed upon by the EU in 2019, is a classification system defining environmentally sustainable economic activities. It establishes six environmental objectives: 1) climate change mitigation; 2) climate change adaptation; 3) sustainable use and protection of water and marine resources; 4) transition to a circular economy; 5) pollution prevention and control; and 6) protection and restoration of biodiversity and ecosystems.

5 The Sustainable Finance Disclosure Regulation, which came into effect on 10 March 2021, aims to trigger changes in behavioral patterns in the financial sector, discouraging greenwashing, and promoting responsible and sustainable investments. It requires that asset-management companies provide information about their investments' ESG risks as well as their impact on society and the planet.

The worst-hit strategies were climate solutions, which also experienced the biggest decline in inflows so far this year. Climate solutions funds attracted “just” \$3.8 billion in the first nine months of 2022, compared with \$25.2 billion over the same period last year. Still, climate solutions remain the second-most-popular strategy in Europe, after climate conscious.

Exhibit 6 Flows Into European Climate Funds by Strategy Type (\$ Billion)



Meanwhile, assets in climate-conscious strategies kept rising. Funds that tilt toward companies better positioned for the transition to a low-carbon economy attracted \$30 billion in the first nine months of the year, double the inflows over the same period last year. This new money drove assets in climate-conscious products to a new high of \$120 billion at the end of September.

Strong flows into climate-conscious funds were also accompanied by rapid product development, with 54 new offerings and 47 repurposed funds debuting so far this year. Climate-conscious funds represented more than half of new climate fund launches in Europe.

The exhibit below shows the 10 largest climate funds in Europe at the end of September.

Exhibit 7 Top 10 European Climate Funds

Name	Climate Strategy		AUM (\$Bil)	Active / Passive
	Type			
iShares MSCI USA ESG Enhanced ETF	Climate Conscious		9.78	Passive
Blackrock ACS Climate Transition World Equity Fund	Climate Conscious		9.48	Active
Nordea 1 Global Climate and Environment Fund	Climate Solutions		9.27	Active
Blackrock ACS World ESG Equity Tracker Fund	Low Carbon		7.57	Passive
Pictet Global Environmental Opportunities	Climate Solutions		7.22	Active
Blackrock ACS World Low Carbon Equity Tracker Fund	Low Carbon		6.30	Passive
BlackRock Sustainable Energy Fund	Clean Energy/Tech		5.74	Active
iShares Global Clean Energy ETF	Clean Energy/Tech		5.70	Passive
Handelsbanken Global Index Criteria	Climate Conscious		5.22	Passive
Xtrackers MSCI USA ESG ETF	Low Carbon		4.85	Passive

Source: Morningstar Direct. Morningstar Research. Data as of September 2022.

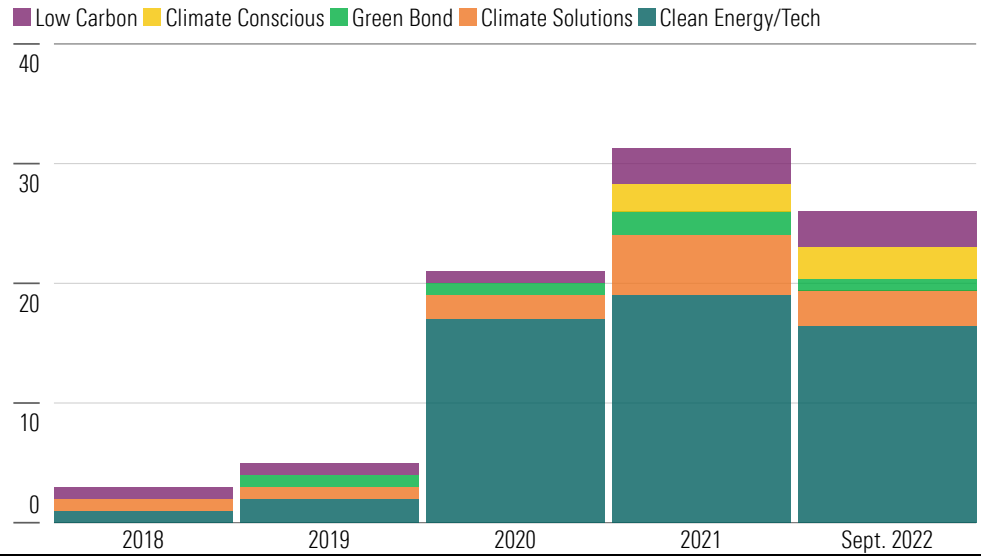
Among the top 10, **iShares MSCI USA ESG Enhanced ETF**, **BlackRock ACS Climate Transition World Equity Fund**, and **Handelsbanken Global Index Criteria** illustrate the case of passive ESG funds that have successfully switched to climate-transition benchmarks.

Climate transition and Paris-aligned benchmarks are newly created [EU climate benchmarks](#) designed to consider climate risks and opportunities, and to match the transition to a climate-resilient economy by ensuring a yearly decarbonization target of at least 7%. This rate reflects the decarbonization trajectory of the Intergovernmental Panel on Climate Change's 1.5-degree C scenario.

United States

In the U.S., assets in the most popular climate funds, namely clean energy/tech funds, were 15% lower in September relative to December 2021, at \$16.4 billion, due to falling valuations. In comparison, the S&P Global Clean Energy and Nasdaq Clean Edge Green Energy, the indexes tracked by the two largest clean energy ETFs, dropped by 9% and 16% over the period, respectively.

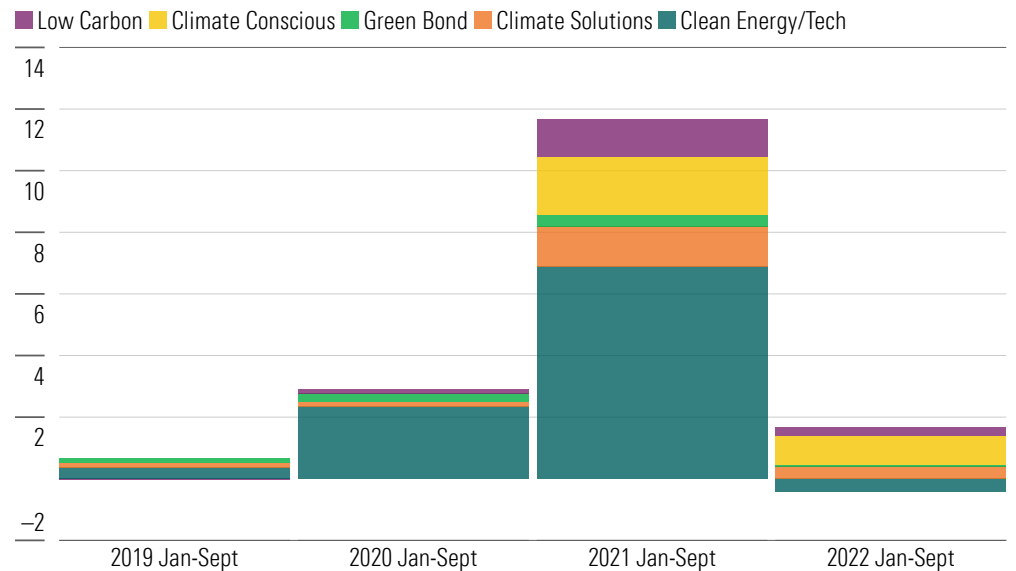
Exhibit 8 Assets in U.S. Climate Funds by Strategy Type (\$ Billion)



Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

Compounding the lower price effect, clean energy/tech funds bled \$430 million in the first nine months of the year as investors continued to see those as overvalued and favoured traditional energy companies amid record oil and gas prices. In comparison, clean energy/tech funds registered \$6.9 billion of inflows over the same period in 2021.

Exhibit 9 Flows Into U.S. Climate Funds by Strategy Type (\$ Billion)



Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

Climate-conscious strategies, which made their debut in the U.S. only last year, was the only group that grew this year to \$2.6 billion in assets at the end of September, from \$2.3 billion nine months ago.

Meanwhile, product development activity slowed down, with only 13 new climate-themed products so far this year, half of last year's number over the same period. But investors can expect more new offerings to come to market following the Inflation Reduction Act signed in August by President Joe Biden. [The landmark climate legislation](#) is designed to spur investment in clean energy and electric vehicles.

The exhibit below shows the 10 largest climate funds in the U.S. at the end of September.

Exhibit 10 Top 10 U.S. Climate Funds

Name	Climate Strategy Type	AUM (\$Bil)	Active / Passive
iShares Global Clean Energy ETF	Clean Energy/Tech	4.85	Passive
Invesco Solar ETF	Clean Energy/Tech	2.56	Passive
First Trust NASDAQ Clean Edge Green Energy Index Fund	Clean Energy/Tech	2.07	Passive
Pax Global Environmental Markets Fund	Climate Solutions	2.01	Active
BlackRock U.S. Carbon Transition Readiness ETF	Climate Conscious	1.21	Active
Invesco WilderHill Clean Energy ETF	Clean Energy/Tech	1.02	Passive
TIAA-CREF Social Choice Low Carbon Equity Fund	Low Carbon	0.98	Active
Calvert Green Bond Fund	Green Bond	0.77	Active
iShares MSCI ACWI Low Carbon Target ETF	Low Carbon	0.76	Passive
iShares Paris-Aligned Climate MSCI USA ETF	Climate Conscious	0.75	Passive

Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

The list of the top 10 U.S. climate funds is fairly diversified, with four clean energy/tech passive funds, two climate-conscious ETFs, two low-carbon strategies, one climate solutions fund, and one green-bond offering.

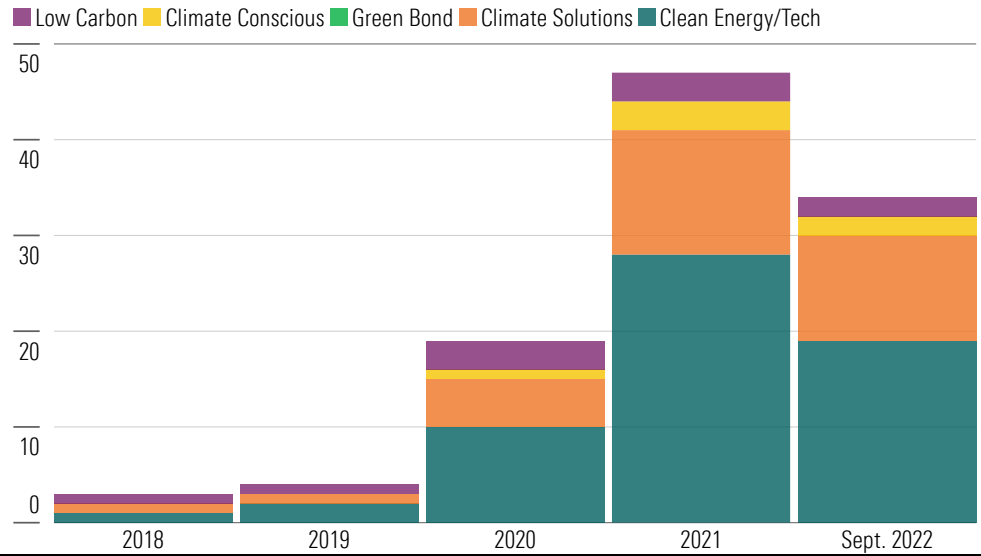
China

China experienced triple-digit growth in 2020 and 2021, resulting in the country overtaking the United States as the world's second-largest climate funds market. This rapid expansion was driven by the heightened focus on climate change and other environmental issues in the Chinese government's agenda for economic transformation.

However, this year, Chinese climate funds saw their assets drop by 27% to \$34 billion in September due to falling market valuations as well as the appreciation of the U.S. dollar.

In yuan terms, assets in Chinese climate funds, all of which invest in the domestic market, experienced a lower decline of 14.3%. In comparison, China's blue-chip CSI300 index and the Shanghai SE Composite Index were down 23% and 17%, respectively, so far this year amid worsening economic conditions both globally and domestically as Beijing's zero-COVID-19 policy continues to take its toll.

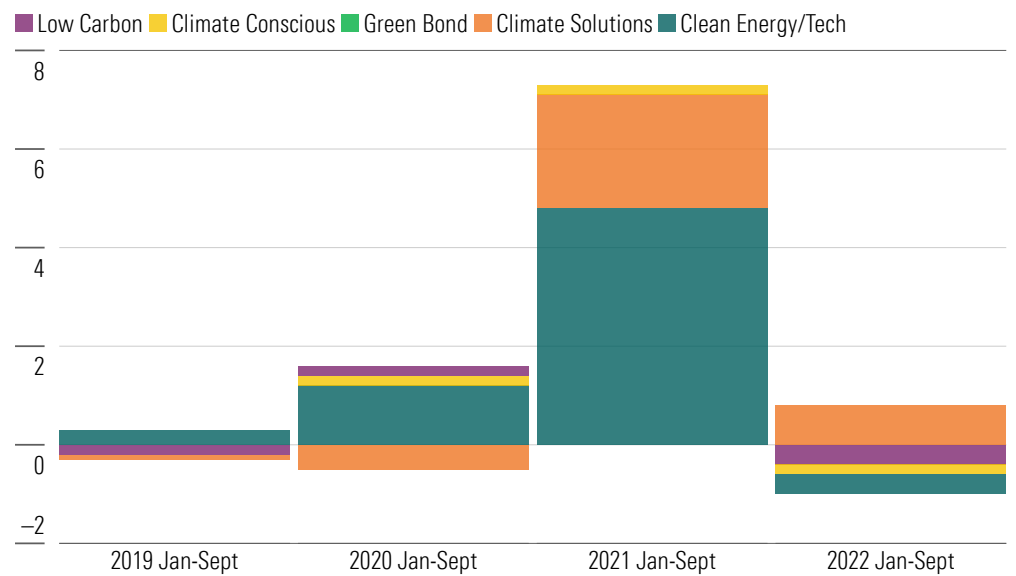
Exhibit 11 Assets in Chinese Climate Funds by Strategy Type (\$ Billion)



Source: Morningstar Direct. Morningstar Research. Data as of September 2022.

The most popular strategy, namely clean energy/tech, suffered the most from both lower valuations and outflows, in absolute terms, registering a decline in assets of 22%. Climate solutions strategies were the only group that registered inflows so far this year.

Exhibit 12 Flows Into Chinese Climate Funds by Strategy Type (\$ Billion)



Source: Morningstar Direct. Morningstar Research. Data as of September 2022.

Meanwhile, product development in China remained strong, with 43 climate-themed products launched in the first nine months of 2022, compared with 39 over the same period last year. These include eight

recently incepted ETFs that track the CSI Shanghai Environment Energy Exchange Carbon Neutral Index. Offered by different asset managers, these ETFs invest in leading companies that have made significant contributions to carbon-neutrality targets.

Exhibit 13 Top 10 Chinese Climate Funds

Name	Climate Strategy Type	AUM (\$Bil)	Active / Passive
ABC-CA New Energy Theme mix	Clean Energy/Tech	2.45	Active
ChinaAMC New Energy Fund	Clean Energy/Tech	2.41	Active
Orient Secs Green Energy Car Allocation	Climate Solutions	2.29	Active
Huatai-PB CSI Photovoltaic Industry ETF	Clean Energy/Tech	1.82	Passive
Cinda New Energy Ind Stock Fund	Clean Energy/Tech	1.64	Active
TianHong CSI Photovoltaic Industry Index	Clean Energy/Tech	1.45	Passive
Fullgoal China Secs new energy vehicles	Climate Solutions	1.32	Passive
HSBC Jintrust Carbon Awareness Equity Fund	Climate Conscious	1.15	Active
UBS SDIC New Energy Mix	Clean Energy/Tech	1.13	Active
IGW New Energy Industry Equity	Clean Energy/Tech	1.03	Active

Source: Morningstar Direct, Morningstar Research. Data as of September 2022.

Unsurprisingly, clean energy/tech and climate-solutions funds dominate the Chinese leaderboard.

Which Climate Funds Are Right for an Investor?

The choice of one type over another depends on an investor's investment goals, risk appetite, and preferences. For example:

- ▶ Investors who are concerned about the risks to their investments posed by climate change can look to low-carbon funds to decarbonize their portfolio. These vehicles are primarily oriented toward mitigating climate-related risks. Our analysis shows that these approaches provide broad and diversified exposure to the market and are therefore suitable as a core portfolio allocation.
- ▶ Investors who are concerned about climate-related risks and want to invest in opportunities that may benefit from the transition to a low-carbon economy can turn to climate-conscious funds. They typically exhibit low carbon risk and low fossil fuel exposure, with the added benefit of higher carbon-solutions involvement. Most of these climate funds provide sufficiently diversified exposure to the market to be suitable as a core allocation. Many sustainable funds that have broader ESG mandates may be similarly suitable choices.
- ▶ Investors who want to direct capital to climate-change solutions can look to climate solutions and clean energy/tech strategies. Because of their narrower market exposure and bias toward mid-caps and small caps, these funds represent more-volatile investments. They are

more suitable as part of a satellite allocation to complement rather than replace existing core holdings.

- ▶ Investors who want to orient their fixed-income exposure toward climate solutions may find green-bond funds a good fit. Investors should be aware that the projects financed by green bonds are indeed providing green solutions, but green-bond issuers may be heavy carbon emitters that are transitioning to lower-carbon activities. Many sustainable bond funds with broader ESG mandates include green bonds in their portfolios.

Climate-aware investors can also take an all-of-the-above approach. To address climate risk in core equity holdings, investors can use low-carbon or climate-conscious funds or opt for more broadly based funds with low-carbon or climate-conscious features. They can make green bonds a central part of their fixed-income exposure, either via dedicated green-bond funds or more broadly based sustainable bond funds that invest a portion of their portfolios in green bonds. And they can dedicate a portion of their investments to climate solutions or clean energy/tech funds as a way to help finance the transition to net zero. ■■■

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