



Taking Action on Climate Change

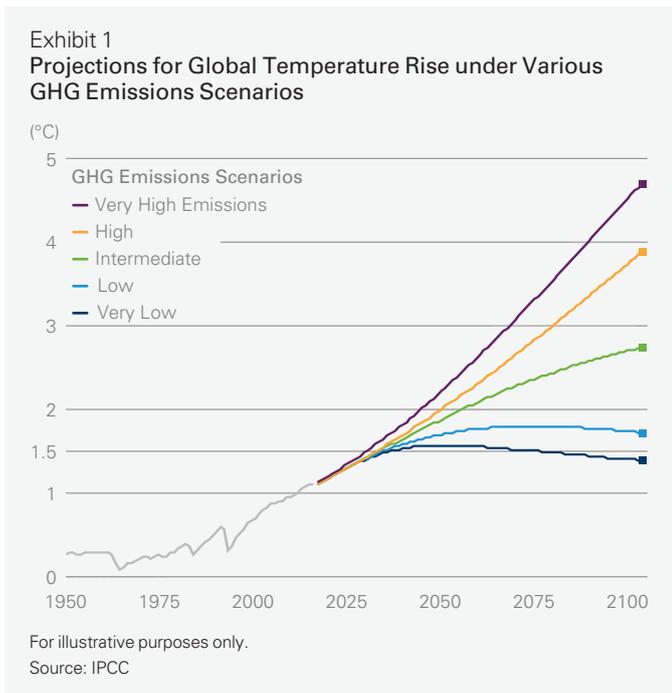
Does investing in climate-aware strategies come at the expense of maximizing returns? What is really driving the increased demand for climate-aware investing, and how can investors navigate the space in pursuit of potential alpha?

In our view, active investors who not only invest in climate solutions providers, but also use bottom-up, fundamental research to identify the most attractive businesses among them, will be best positioned to outperform. In this paper, we discuss the imminent risks of climate change, stakeholders' requisite responses to those risks, the growing universe of strategies designed to invest in a climate-aware manner, and why we believe climate solutions providers are the most attractive opportunity.

Why We Are Focused on Climate Change

Climate change is perhaps the most significant economic disruption of our lifetimes. The UN Intergovernmental Panel on Climate Change (IPCC), which consists of 195 government members and assesses scientific and technical research on climate science, recently released its latest comprehensive assessment. For the report, 270 authors across 67 countries analyzed more than 14,000 studies, with the goal of providing the most up-to-date understanding of the climate system and climate change. Based on this analysis, the IPCC report concludes that the planet is on course to exceed a rise in average temperature of 1.5°C within the next decade—sooner than had been expected just a few years ago (Exhibit 1).¹

The 1.5°C threshold, which represents the rise in temperature relative to pre-industrial levels, is important: Beyond this level, “tipping points”—feedback loops in which global warming causes a permanent shift in earth systems, locking in further warming—become more likely.



The panel uses scientific evidence to explain the potentially devastating effects of global warming on the planet, the unequivocal and unprecedented human influence on global warming, and the irreversible and costly effects it has already had. To illustrate the magnitude of these effects, SwissRe, the world’s largest reinsurer, estimated in a recent study that if no mitigating actions are taken to decarbonize, global GDP could decrease 18% by 2050; that compares to a decline of only 4% if the Paris Agreement targets, which aim to limit global warming to well below 2°C, are met.² The effects of climate change are far reaching, including physical risk from rising sea levels and natural disasters, drought, food supply disruptions, increased migration, and health issues such as respiratory conditions and other heat-induced illnesses.

How Are Stakeholders Responding to Climate Change?

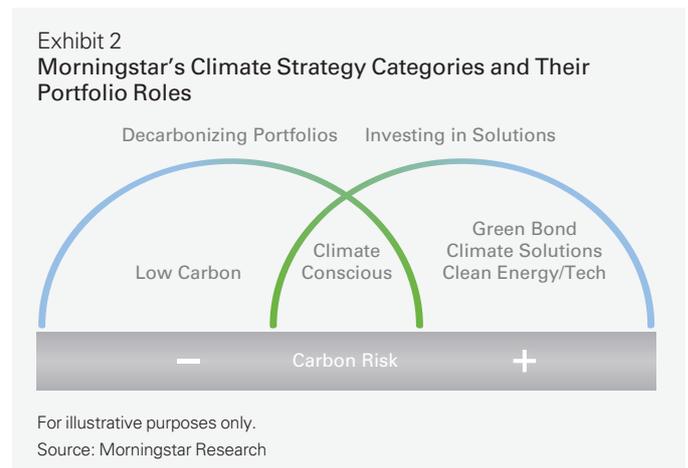
Increasingly, asset owners, governments, and consumers are recognizing the gravity of global warming and the need for immediate action to slow its current trajectory. This recognition is causing a structural shift in behavior by stakeholders who realize they have vital roles to play.

More than 70 global asset owners representing over US\$10 trillion of assets under management (AUM) have joined the Net-Zero Asset Owner Alliance (NZAOA), committing to transition their investment portfolios to net zero emissions by 2050. Other parts of the investment chain are moving in the same direction with similar efforts, including the Net Zero Asset Managers initiative (NZAM) and Net Zero Investment Consultants Initiative (NZICI). In the government sphere, the European Union’s US\$1 trillion “Green Deal,” the US administration’s US\$1.2 trillion Infrastructure Investment and Jobs Act, and US\$430 billion Inflation Reduction Act, which earmark hundreds of billions of dollars toward clean energy initiatives, and China’s commitment to become carbon neutral by 2060 all exemplify this shift. Consumer preferences are also changing, and the increasing demand for products made in a climate-friendly manner is creating bottom-up pressure on companies to take action.³ A growing number of companies are making decarbonization commitments; to date, more than 20% of the world’s largest companies have committed to net zero targets.

These trends are putting companies in the spotlight to demonstrate real progress on climate action, and they will need effective tools to do so.

Investing in Climate Strategies

In response to growing demand from investors to allocate their capital in a climate-conscious way, asset managers have expanded their offering of products that aim to address climate change. In its April 2022 report on the climate-aware investment landscape, Morningstar divides the diverse product offerings into five distinct categories (Exhibit 2):



- Low Carbon strategies, which seek to own companies with lower-carbon intensity/footprints than the benchmark
- Climate Conscious strategies, which invest in companies whose business models explicitly consider climate change
- Green Bond strategies, which invest in debt that finances projects enabling the transition to a green economy
- Climate Solutions strategies, which only invest in those companies whose products and services contribute to the transition to a low-carbon economy
- Clean Energy/Tech strategies, which invest in companies that enable or contribute to the clean energy transition⁴

Assets in climate-aware strategies increased dramatically between 2017 and 2021, and particularly over the past year, during which climate-aware funds’ AUM has roughly doubled from approximately US\$200 billion in 2020 to US\$400 billion as of December 2021. Compare this to 2017, when assets totaled less than US\$50 billion globally. Demand for climate-aware investment strategies has broadened geographically as well, with the climate conscious and climate solutions categories receiving the most significant investment flows. Demand in Europe has been particularly strong: It is the largest and most diverse climate funds market, representing close to 80% of global assets as of December 2021.⁵

We believe there is significant room for growth as more stakeholders enter the sector, in the United States in particular, where climate-aware investment efforts have lagged Europe’s markedly despite the US’s larger pool of total investable assets. Action on climate change remains a key priority for the Biden administration, while US government agencies are progressing on climate regulations. For example, the Securities and Exchange Commission (SEC) has drafted new climate-related disclosure rules, which, if implemented, would compel many companies to

augment their carbon-related disclosures. These dynamics should cause investors to further acknowledge the significance and the urgency of decarbonization, ultimately resulting in greater allocation of capital toward the companies leading it.

The Appeal of Climate Solutions

The direction of travel is clear, and the global commitment to fighting climate change continues to gain momentum. However, meeting the ambitious targets many companies have set is unlikely with current technologies alone. It will also require novel products and services, creating a major opportunity for investors.

The climate solutions investable universe is typically divided into two groups of companies: those involved in the *mitigation* of greenhouse gas (GHG) emissions, and those that enable *adaptation* to the effects of climate change. While all solutions providers are companies that deliver products or services that contribute to the fight against climate change, there are important distinctions between these two groups. Those involved in mitigation provide a technology, product, or service that helps reduce or remove GHG emissions, while those in adaptation provide solutions that help society adapt to the negative consequences of global warming. For example, a company focused on smart building technology is helping with mitigation, while a provider of waste management services is involved in adaptation. Exhibit 3 gives a detailed view of how we see the solutions provider universe and Exhibit 4 highlights two company-specific examples.

The investment universe of climate solutions providers is thematically well diversified and nuanced across different solutions. It includes many businesses and technologies that may not be immediately obvious—like those involved in developing hydrogen, plant-based alternatives to meat, enzymes, micro-organisms, and those that make renewable natural gas from landfills. A recent Harvard Business School (HBS) study

Exhibit 3
The Universe of Climate Solutions Providers

Mitigation			Adaptation	
Reduce GHG emissions in making, storing, and using energy			Adjust to current and/or expected effects of climate change	
				
MAKE Renewables	STORE Storage	USE Efficiency	Water Management	Waste Management
<ul style="list-style-type: none"> • Biofuels & Biomass • Geothermal • Hydropower • Solar • Waste-to-Energy • Wind 	<ul style="list-style-type: none"> • High-Density Batteries • Hydrogen • Lithium Batteries 	<ul style="list-style-type: none"> • Advanced Materials • Automation & IT Solutions • Enzyme Technology • Power-Efficient Equipment • Smart Buildings • Smart Cities • Sustainable Transportation 	<ul style="list-style-type: none"> • Wastewater Management • Water Infrastructure • Water Management 	<ul style="list-style-type: none"> • Recycling • Sustainable Packaging • Shared Economy • Waste Management

For illustrative purposes only. Chart sizes are not indicative of opportunity set.
Source: Lazard

Exhibit 4

Company Examples of Mitigation vs. Adaptation

Mitigation Example: Efficiency

Schneider Electric provides energy and automation digital solutions for sustainability and efficiency. Schneider combines world-leading process and energy technologies, real-time automation, software, and services, enabling integrated solutions for homes, buildings, data centers, and infrastructure.

Schneider has three areas in which it can help clients with their decarbonization strategies:

- Defining climate strategy: measure, create roadmap, structure program and governance, communicate commitments
- Digitization: monitor energy use and emissions, identify savings opportunities, report and benchmark progress
- Execution: electrify operations, reduce energy use/efficiency, replace energy sources, and engage value chain

Adaptation Example: Waste Management

Smurfit Kappa manufactures and distributes containerboard, corrugated containers, and other paper-based packaging products.

- The company uses 100% renewable, recyclable, recycled, and/or biodegradable materials to create sustainable packaging. Recycled fibers make up 76% of its raw materials, with the rest from sustainable virgin wood fibers
- Smurfit handled 7.4 million tonnes of recovered paper in 2021, and its fibers can be recycled up to 25 times
- When full life cycle emissions are considered, packaging from recycled paper has lower emissions compared to those of virgin plastic

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Source: Lazard Estimates, Schneider Electric (Annual Report 2021)

identified more than 600 pure-play, publicly traded solutions providers globally.⁶ They are split almost evenly between developed and emerging markets, with China home to the largest group. The opportunity set grows materially if we expand the investment universe to companies with a large portion—but not all—of their revenues coming from climate solutions.

As investors, we are excited by the prospect of investing within a secular theme that we believe could outperform the broad markets over the long term. According to the HBS study, a portfolio of global climate solutions companies significantly outperformed the MSCI All Country World Index (ACWI) on both an absolute and risk-adjusted return basis. When calculating performance using multi-factor regressions for simulated value-weighted and equally-weighted climate solutions portfolios from 2011 to 2021, the value-weighted portfolio generated a total return of 14.8% and an alpha of 10.0%, with a

Sharpe ratio of 0.80. The 2018 to 2021 period was even stronger for the value-weighted portfolio: a 40.1% return per annum, excess return of 22.9%, and a Sharpe ratio of 1.70. The equally-weighted portfolio saw even more statistically significant alpha of about 11.9% for the full period, and 13.8% for the 2018–2021 period. To put these numbers into perspective, the MSCI ACWI had a return of 10.1%, a risk level of 14.3%, and a Sharpe ratio of 0.71 annually from 2011 to 2021.

While climate solutions providers have shown impressive returns, we believe that as more stakeholder groups take action to combat climate emissions, more investment opportunities will be created, and with that, further alpha potential. In our view, active investors who not only invest in this theme, but also use bottom-up fundamental research to identify the most attractive and most promising opportunities within it will have a clear competitive advantage.

Climate Solutions and the Power of Investment

Production costs for the more-established sustainable technologies currently offered by climate solutions providers—including solar, wind, and batteries—have declined significantly over the past decade as they have attracted more capital and competition (Exhibit 5). That, in turn, has increased their adoption by end-users. While one could logically expect additional investment to result in lower costs, the pace and magnitude of price efficiencies for these technologies over the last decade have significantly exceeded most experts' forecasts. To illustrate, a study by the Institute for New Economic Thinking at the University of Oxford found that of nearly 3,000 projections by models designed to forecast declines in solar costs between 2010 and 2020, the mean expected annual cost reduction at the time was 2.6% and the maximum was 6%, while actual costs declined 15% during the period. Given that the need to decarbonize has grown more urgent over that time, we are optimistic that in the future, the capital flowing into other climate solutions that similarly have great potential but also have cost or technological limitations will have an even more profound impact on their future viability in the years ahead. We also expect the EU Emissions Trading System, which sets an upper limit on GHG emissions among European member entities—forcing those emitting in excess of that limit to purchase credits—to increase the demand for climate solutions, as it will cause the costs associated with *not* decarbonizing to increase over time.

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Notes

- 1 “Climate Change 2022, Mitigation of Climate Change, Summary for Policymakers,” Intergovernmental Panel on Climate Change (IPCC), accessed 21 July 2022, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf. According to the report, global warming of 1.5°C relative to 1850–1900 would be exceeded during the 21st century under the intermediate, high, and very high greenhouse gas emissions scenarios. Under the five illustrative GHG emission scenarios, in the near term (2021–2040), the 1.5°C global warming level is very likely to be exceeded under the “very high” scenario, likely to be exceeded under the “intermediate” and “high” scenarios, more likely than not to be exceeded under the “low” scenario, and more likely than not to be reached under the “very low” scenario. Furthermore, for the “very low” scenario, it is more likely than not that global surface temperature would decline back to below 1.5°C toward the end of the 21st century, with a temporary overshoot of no more than 0.1°C above 1.5°C global warming.
- 2 “Economics of Climate Change Risks,” SwissRe, accessed 21 July 2022, <https://www.swissre.com/institute/research/topics-and-risk-dialogues/climate-and-natural-catastrophe-risk/expertise-publication-economics-of-climate-change.html>
- 3 “Consumers Expect Brands to Address Climate Change,” Deloitte and The Wall Street Journal, accessed 21 July 2022, <https://deloitte.wsj.com/articles/consumers-expect-brands-to-address-climate-change-01618945334>
- 4 Clean energy strategies generally focus exclusively on the renewable/power generation spaces.
- 5 “Climate Funds Dig Deeper Roots,” Morningstar, accessed 24 August 2022, <https://www.morningstar.com/articles/1088297/climate-funds-dig-deeper-roots>
- 6 “Climate Solutions Investments,” Harvard Business School, accessed 18 July 2022, https://www.hbs.edu/ris/Publication%20Files/22-054_6cf2092f-aab9-4b37-90c0-9f33dd24b04a.pdf

Important Information

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