# Sierra Club Green Alpha

December 31, 2021

Green Alpha®

## Contents

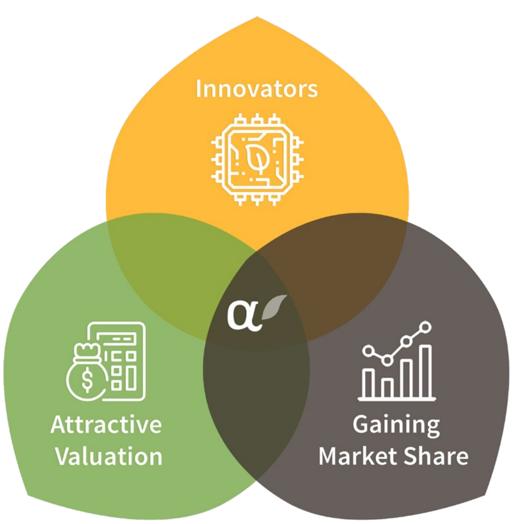


## Investment Philosophy

We understand that high-functioning, innovative companies creating and accelerating solutions to system-level risks like the climate crisis, resource degradation, worsening inequality, and the human disease burden are the greatest growth drivers of the twenty-first century.

Green Alpha's investment philosophy is straightforward: don't invest in companies that cause global systemic risks; do seek out those creating smart, scalable and rapidly evolving, economically-competitive solutions.

We expect such companies to gain market share, which makes investing in them our best chance at preserving and growing our clients' purchasing power.




## Why Invest in Sierra Club Green Alpha?

- Active research, stock selection, and portfolio mgmt
- Blend of Green Alpha's forward-looking Next Economy™ research processes, and the Sierra Club's® proprietary social and environmental criteria applied to each company's operating history
- 30-50 global, market-leading companies developing solutions to core economic and environmental risks
- Fossil fuel free since inception

**Inception Date:** December 31, 2010

**Style:** All-Cap Global Equities

**Vehicle:** Separately Managed Accounts

## Portfolio Construction

Green Alpha is proud to be the only financial services firm licensed to utilize the Sierra Club's rigorous investment guidelines. These criteria are applied to our Next Economy investing philosophy and research, resulting in what may be the most progressive, sustainability-focused stock portfolio available. We seek companies:

- with products and/or services lowering the global economy's risk profile by creating solutions to our most pressing economic and environmental risks
- committing more capital to R&D and owning more intellectual property than their peers
- run by effective, diverse executive teams and boards of directors with consistent track records of increasing revenues and expanding margins, leading to earnings growth and potential dividend increases
- that trade at compelling valuations relative to proven and anticipated growth, within acceptable levels of risk

Every portfolio holding is a high-impact, forward-looking Next Economy solutions provider contributing to the transition to a sustainable economy, with a Sierra Club-compliant operating history.

# Sierra Club Green Alpha

How the portfolio compares to the MSCI All Country World Investible Market Index (MSCI ACWI IMI) and other Green Alpha portfolios

## Characteristics

- **Sierra Club® criteria** – the only portfolio available in the market that utilizes the Sierra Club's proprietary, rigorous social and environmental screening criteria
- **Fundamentals-driven:** the underlying quality of companies and the price paid for their shares are key drivers of LT returns
  - ✓ **High growth:** indicated by Sales Growth, and a decrease from Current P/E to Forward P/E as revenue and earnings grow
  - ✓ **Compelling valuation:** demonstrated by Price/Sales and Price/Book metrics relative to growth expectations
  - ✓ **Strong balance sheet and management execution:** conveyed by capital stewardship, LT Debt/Equity, and Current Ratio
- **Fossil fuel free since inception:** we have never invested in companies that prospect, extract, refine, or transport fossil fuels, nor in fossil-fired utilities or internal combustion engine manufacturers
- **Diversified – we seek solutions wherever we can find them:** across the globe, in companies of all sizes, and every industry
- **Public equities, long-only:** largest asset class; largest opportunity for impact

| Characteristics | Sierra Club Green Alpha | Benchmark: MSCI ACWI IMI (SPGM) | Green Alpha Next Economy Index | Green Alpha Next Economy Social Index | Green Alpha Next Economy Select | Green Alpha Growth & Income |
|---|---|---|---|---|---|---|
| # of Securities | 45 | 1,810 | 140 | 89 | 59 | 35 |
| Active Share | 97% | - | 93% | 95% | 96% | 98% |
| Sales Growth, Trailing 1-Yr | 445% | 55% | 260% | 95% | 280% | 190% |
| P/E, Current | 28.27 | 19.07 | 27.08 | 30.58 | 22.97 | 20.46 |
| P/E, 1-Year Forward† | 24.21 | 17.14 | 23.50 | 27.02 | 21.37 | 20.72 |
| Price/Sales | 2.02 | 2.04 | 3.17 | 2.98 | 2.12 | 2.34 |
| Price/Book | 3.72 | 2.89 | 4.42 | 4.62 | 3.05 | 2.47 |
| LT Debt/Equity | 0.85 | 0.86 | 0.84 | 0.92 | 0.81 | 0.98 |
| Current Ratio | 2.56 | 1.96 | 3.07 | 2.71 | 3.80 | 1.88 |
| Dividend Yield | 1.85% | 2.19% | 1.63% | 1.72% | 2.15% | 2.89% |
| Market Capitalization, Weighted Avg (US$B) | $132.91 | $412.68 | $122.13 | $120.31 | $146.71 | $78.92 |
| Market Capitalization, Median (US$B) | $15.54 | Not Available | $12.61 | $13.31 | $8.80 | $30.92 |
| Turnover, Trailing 2-Yr Avg Annual | 20% | - | 22% | 25% | 7% | 28% |
| Beta, Trailing 2-Yrs | 1.13 | 1.03 | 1.03 | 1.02 | 1.12 | 1.09 |

*† Bloomberg consensus estimates. Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.*

# Largest Positions

How the Sierra Club Green Alpha portfolio is driving progress toward the Next Economy

| Company Name | Ticker | Weight |
|---|---|---|
| Fortinet | FTNT | 4.77% |
| Tesla | TSLA | 4.43% |
| JinkoSolar Holding | JKS | 4.37% |
| Moderna | MRNA | 4.26% |
| Qualcomm | QCOM | 4.09% |
| **% of Portfolio** | | 21.92% |

**Fortinet** *(Sector: Technology)*

- Pure-play digital security firm providing both hardware and software to address security across the entire digital infrastructure including networked, application, multi-cloud, or edge environments.
- Ranks #1 in the most security appliances shipped worldwide, and 500,000+ customers trust Fortinet to protect their businesses. Well positioned in a massive and growing market as cyberattacks are on the rise and more data is created and managed daily. They provide broad cybersecurity training programs via the Fortinet Network Security Institute.

**Tesla** *(Sector: Consumer Discretionary)*

- Tesla is a world leading innovator and provider of zero-emissions vehicles, and energy and power solutions. Tesla is growing production capacity for all products, in a time of overwhelming demand, and are rapidly increasing both revenues and margins as a result. Their manufacturing is world class and features innovations that permit high levels of efficiency, resulting in operating leverage and margin expansion.
- The company's tech leadership is a key driver of its success: the most efficient battery chemistry and drivetrain efficiency make their vehicles among the best value in terms of cost per mile of range, and their megapack utility-scale storage systems are in demand worldwide. Also, their software development capabilities are world-class, enabling for example, Tesla cars to use more and different semiconductor chips during the recent shortage by adjusting code to match new hardware. This meant Tesla's production was not nearly as affected as other auto makers in 2021.

**JinkoSolar Holding** *(Sector: Energy)*

- JinkoSolar is among the world's largest solar panel manufacturers and is highly vertically integrated, making ingots, cells, panels, and modules. JKS distributes and earns revenues globally (70+ countries are active markets), thus mitigating political and trade-dispute-related growth obstacles. They have been able to largely withstand recent global supply chain disruptions.
- The world's top five module makers have 65-70% of global market share, making it difficult for smaller upstarts to gain traction. Of the top five, JKS alone has grown its global module market share from 11% to 15% in the last year. The company is also a technology leader, providing panels that are globally competitive on a cost-per-watt basis. Their flagship panel in Oct. 2021 was rated at 25.4% efficiency, one of the most efficient available.
- JinkoSolar is the top-ranked firm worldwide on the Silicon Valley Toxics Coalition's Solar Scorecard, receiving 100 out of 100 available points for sustainability of their operations; and they are planning to run on 100% renewable energies by 2025.

**Moderna** *(Sector: Health Care)*

- Discovery-to-clinical-stage biotech focused on using messenger RNA to develop and deploy therapies and vaccines. Moderna's revolutionary science has potential applications for many areas, including oncology, infectious and cardiovascular diseases.
- Robust early-and-advanced stage pipeline means future growth may be impressive even excluding revenues from a COVID-19 vaccine, although the vaccine has accelerated their time to profitability, as well as their ability to fund further research and trials. Interesting vaccines in their pipeline include those for HIV and CMV. Moderna is not just pioneering new medicines, but *new categories* of medicines, potentially transforming medicine overall.

**Qualcomm** *(Sector: Technology)*

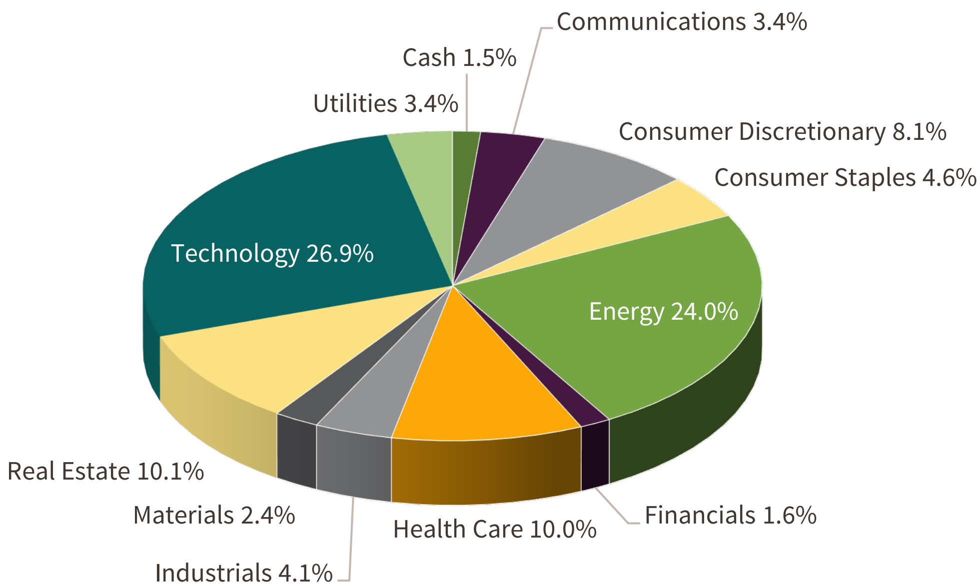
- Qualcomm is the world's largest mobile device chipmaker, its leading products are chipset modems and other IoT devices, and it is the market leader for 5G chipsets. Qualcomm has sizeable market share in each of the related markets it serves: 38% share of the global handset market, ~25% of the global automotive modem market, and ~16% share of the IoT-enabled devices market excluding phones, tablets, laptops, and cars.
- The company's TAM is growing rapidly: growth in demand for content streaming and the opportunity in autonomous and semi-autonomous vehicles, the adoption of edge computing, and as more of the global market transitions to 5G devices and mature markets continue cyclical upgrades, Qualcomm will continue to benefit and grow from the lead it has built in 5G.

*Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.*

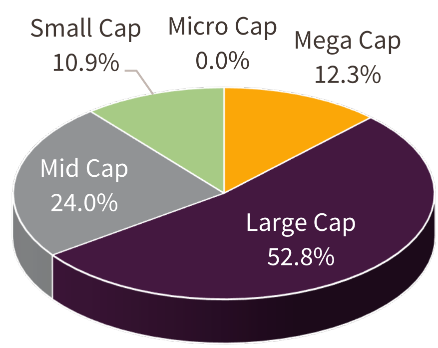
# Portfolio Allocations

Our search for Next Economy companies is unconstrained. For the Sierra Club Green Alpha portfolio, we seek solutions to systemic risks wherever they exist – across sectors, market caps, and geographies.

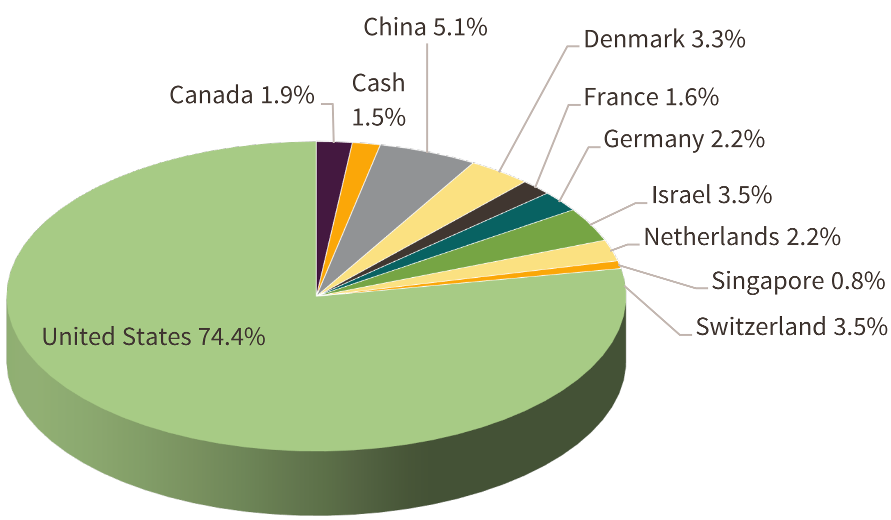
## Economic Sectors ††




## Market Capitalizations




## Companies' Main Headquarters




*†† Bloomberg Industry Classification Standard. Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.*

# Macroeconomic & Market Commentary

Where investments are made – where capital flows – defines what the economy is. What we purchase and use, how we use it, and how we power it: the whole economy emerges from where investments have gone to provide those things. The economy can become far less or far riskier as a result of our investment decisions, and asset allocators therefore have an outsized role in determining the course of the future.

Tying a bow on 2021, a fast-onset suburban fire in Boulder County, Colorado, Green Alpha's home, that in the span of hours destroyed upwards of 1,000 homes and businesses, was to most of the world one more scrap of data in another year full of climate change-related disasters. For us, it was more personal, causing an evacuation of our office and some employees' homes as smoke blew in and ash fell; we are grateful that the entire Green Alpha team and our families are safe and well. As of this writing, our office is in a location that was under a strict evacuation order. Science has long predicted events like this would become more common and more intense, and that the stability of nature should no longer be taken for granted. Science is doing its part, but investment management has largely ignored scientists' warnings, and; therefore, it remains a weak link in working toward de-risking our collective future. How the asset management industry mounts a response to climate change, via that industry's function of deploying capital, is the proverbial hand on the dial that will in part determine the frequency and severity of more extreme events.

### Our Portfolios in 2021 and Looking Forward

2021 was a year of market underperformance for Green Alpha's strategies (see Portfolio Snapshots for detailed performance numbers and commentary). As we discuss below, we believe our thesis represents a reliable path forward in terms of preserving and growing our clients' purchasing power, and that it will, over the longer term, prove effective over market cycles of inflation, deflation, stimulative policy, cooling policy, and as economic narratives real and imagined rise and fall. Whether or not you find yourself concerned about our 2021 relative underperformance, read on to learn how we're looking forward.

It starts with the flexibility to source ideas wherever they occur, to be "go anywhere" in the service of finding attractive investments, and then doing the deep work of evaluating a company on its intrinsic merits. Plumbing the complexities of a company's business and how it fits into the context of the world's economic and environmental systems is harder and more complex than is looking uncritically at P/E ratios and ESG ratings. Yet it is work we like to do, because it has become so critical to analyze the actual position of a firm relative to the evolving complexities of the global environment and everything within it, including the economy. If we try to reduce ourselves to algorithmic rules, we eliminate the ability to be flexible in the face of change. In a time of accelerating risks, we can no longer assume simple ratios are telling us all that we need to know about our investments; we need to look deeper.

Companies delivering better business performance often outperform markets in general[i, ii] but investing based on business results requires patience, because news and zeitgeist narratives can drive market valuations more than fundamentals, sometimes for substantial periods of time.

For example, consider solar PV manufacturing. Solar exists in a fast-growing market for electricity, it is in demand because it is a zero-carbon source of electricity that is also cost competitive with any other source of electricity generation, and it can be profitably deployed almost anywhere, even at high latitude nations like Germany. As a result, solar is gaining market share from legacy sources at a rapid rate and it is doing so in a fast-growing TAM. The better-run solar manufacturers are growing revenues, expanding their production capacities, earning operating leverage to expand their

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[i] Joseph D. Piotroski, Journal of Accounting Research Vol. 38, Supplement: Studies on Accounting Information and the Economics of the Firm (2000) https://www.jstor.org/stable/2672906

[ii] Clifford S. Asness, Andrea Frazzini, and Lasse H. Pedersen, Quality Minus Junk (2013) http://www.econ.yale.edu/~shiller/behfin/2013_04-10/asness-frazzini-pedersen.pdf

# Commentary *(continued)*

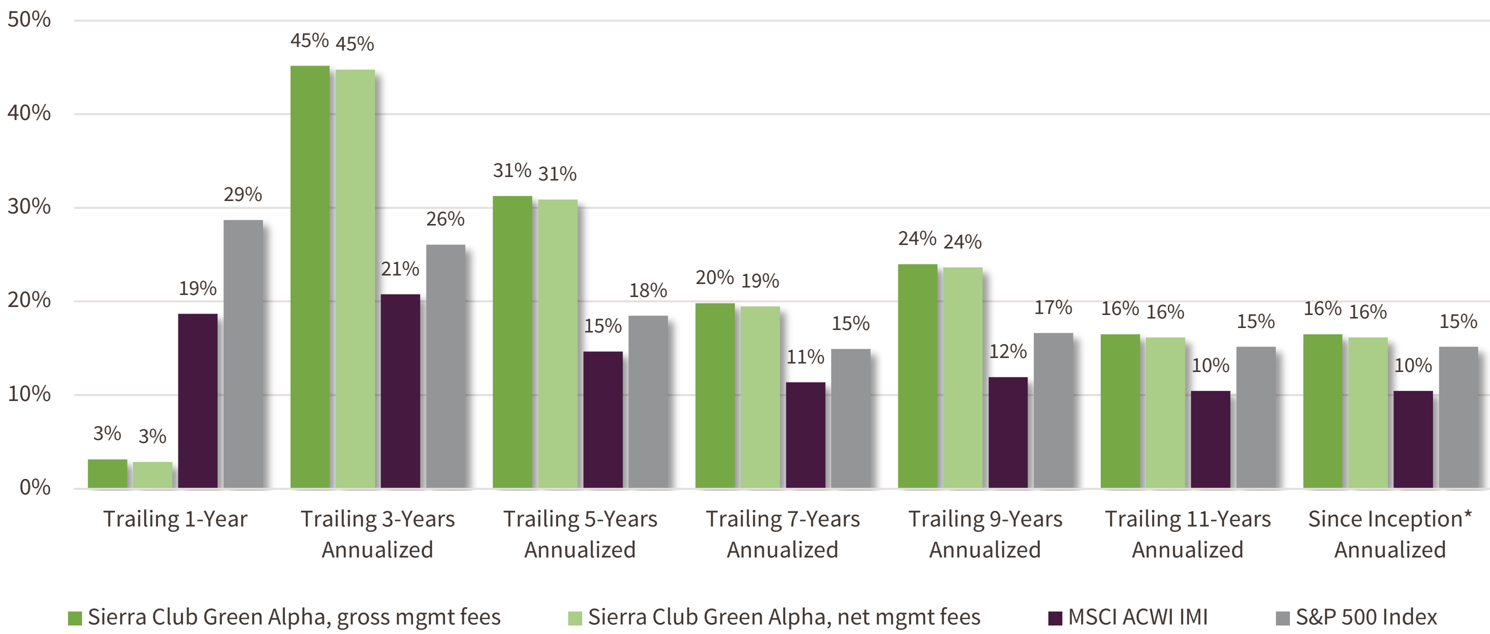
margins, and using their newfound scale and credibility to lower their costs of capital. And yet, market multiples of these companies remain stubbornly low. Why? Partially due to genuine short-term concerns about supply chains and interest rates, but largely because of the common narrative. It is often said that solar is niche, it won't work because it is intermittent, Solyndra was a disaster, solar isn't core energy, it is an alternative. These and similar arguments are still surprisingly common in markets, and even embedded in our systems. For example, solar isn't considered "energy" in MSCI's Global Industry Classification Standard ("GICS"), but rather it is defined as "technology."

But while narratives matter in the short and sometimes medium terms, it is business results and overall fundamentals that drive returns in the long run. Business results-based returns, which come from reinvestment of retained earnings into expansionary pursuits such as growing production capacity, improving production efficiencies, and aggressive spending to drive innovation, are more predictable and enduring than momentum or multiple-expansion-based returns. Companies capable of sustaining stronger-than-average business results over time are more likely to reward investors. Which is why we focus on the Next Economy™. It is our job to find what ideas are most likely to work, become much larger and more profitable, and still be effective and valuable in the face of the climate crisis, resource degradation, worsening inequality, and mounting human disease burdens. Among the companies delivering on these ideas, we research which own the most and best intellectual property ("IP") for safely running the global economy, and which best manage their capital for intrinsic growth. Summed into one question, Green Alpha wants to know: Will this business enable us to thrive on the planet without disrupting the systems on which we rely? When we identify conviction firms, we can find value, tactically, in periods when the narrative turns against Next Economy companies.

This has been, is, and will be our focus. We won't deviate from this thesis when the news narrative turns against one of our conviction sectors, industries, or companies. In 2021, the narrative was negative towards renewable energies, some advanced biotech companies, and disruptive innovation in general. Since we believe that science, research, and innovation are how we are solving – and will continue to solve our biggest challenges – we were often in disagreement with the 2021 zeitgeist. It is abundantly evident today that we live in what author Azeem Azhar has dubbed the Exponential Age, and neither economists nor asset managers can continue to assume that the economy will continue to slowly progress as an extension of the economy we already know. Rather, Green Alpha can devise new processes and implement systems to follow to make our methodologies as adaptive as possible. For this, we gain valuable insights from the disciplines of predictive modeling and scenario planning: assimilate as much macro and micro information as possible and develop an educated thesis that represents a probable set of outcomes for a given company, industry, sector, and/or the economy as a whole.

Within all of this, one thing is clear to us: future demand – and thus market returns – can expect to be correlated with the structural trend of climate change. As Nicholas Stern has reminded us, "climate change is the biggest market failure the world has ever seen." In the context of Herbert Stein's Law, "trends that can't continue, won't," we can use this to plot a path forward. By targeting the intersection of the most economically productive yet nondestructive (*and ideally regenerative*) innovations, excellent fundamentals, and careful capital custodianship, we're adding waypoints to that path. Green Alpha is striving to set the standard for what asset management can and should do to realize a regenerative, zero-risk economy, and to earn competitive returns as that economy expands.

*Sierra Club Green Alpha portfolio-specific reflections follow on the next page*




> In 2021, the Sierra Club Green Alpha strategy returned 2.85% net of management fees vs. its benchmark, the MSCI All Country World Investible Market Index (MSCI ACWI IMI), at 18.66%.

The portfolio's top-contributing sectors for the year were Technology and Health Care

- In Technology, Semiconductor manufacturing was by far the largest contributor. Front-end capital equipment companies that supply foundries and help them add additional production capacity added to returns. Contributors from that industry included the world's only maker of advanced extreme ultraviolet lithography machines for chip etching and included chip casting and testing devices, and chip packaging equipment. The largest customer for this gear, the world's largest and most advanced foundry company itself, also contributed. Chip designers, also known as fabless chip companies, contributed to returns to a lesser degree.
- Within the Health Care sector, vaccine makers' performance was strong (if volatile), driven by increased contributions from COVID-19 vaccines.

The two sectors that detracted the most from the portfolio's returns were Energy and Utilities.

- The Sierra Club Green Alpha's underperformance relative to its benchmark in 2021 was largely due to renewable energy declining as a sector, having peaked near inauguration day. The utilities in this portfolio were solely power generation utilities, which for Green Alpha means only those powered by 100% renewables, and they culminated in the sector being the portfolio's second largest detractor. The negative contributions from Energy and Utilities are consequently from the same phenomenon of renewable energies being cyclically out of favor in the market. The narratives surrounding negative 2021 performance in renewable energy were inflation concerns and rising bond yields, which have hurt innovation-themed, "futuristic," and growth stocks; the second headwind for renewables has been the U.S.' poor policy response to the climate crisis being taken by the markets as a signal that renewables' growth may slow. However, real business results for renewable energies were good overall in 2021. In the U.S., wind and solar power accounted for 85% of new electricity generation capacity additions during the year, showing that renewables are continuing to proliferate and gain market share from legacy forms of energy. Green Alpha believes renewables' current headwinds will dissipate over the longer term, even in the face of negative government policies, as business growth and the resulting positive company reports demonstrate the enduring nature of the global energy transition.

**Portfolio Inception: December 31, 2010. All returns presented above that are greater than 1 year in length have been annualized. Performance data quoted represents past performance. Past performance does not guarantee future results and current performance may be lower or higher than the data quoted. Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.*

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- Green Alpha is a registered trademark of Green Alpha Advisors, LLC. Green Alpha Advisors also owns the trademarks to “Next Economy,” “Next Economics,” “Next Economy Portfolio Theory,” “Investing in the Next Economy,” and “Investing for the Next Economy.”
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- Performance quoted throughout this document represent past performance. Past performance does not guarantee future results, and current performance may be lower or higher than the data quoted. Investment returns and principal will fluctuate with market and economic conditions, and investors may have a gain or loss when shares are sold.
- Beginning November 30, 2021, the Sierra Club Green Alpha strategy performance results are a composite of discretionary client accounts invested in the strategy on specific custodial platforms. Green Alpha’s discretionary client accounts that are not included in the composite are those custodied at Folio Institutional due to operational limitations of Folio’s data feeds to Green Alpha’s portfolio accounting system Advent APX. The Sierra Club Green Alpha composite performance results reflect actual performance for a composite of discretionary client accounts, net of actual management fees and transaction costs. Some assets managed in the Sierra Club Green Alpha strategy within the composite receive a reduced fee from the standard management fee schedule. Actual client returns experienced will vary from the composite returns based on a variety of factors, and we encourage you to ask about specific factors. Accounts are included in the composite for full-month periods under management with Green Alpha Advisors, LLC. The Sierra Club Green Alpha performance results do not reflect the reinvestment of dividends and interest.
- Actual advisory fees may vary among clients with the same investment strategy. Green Alpha’s standard fee schedules are available within Form ADV Part 2. For those details and additional legal information, please see information and files here: http://greenalphaadvisors.com/about-us/legal-disclaimers/.
- From the strategy’s inception through November 30, 2021, Sierra Club Green Alpha performance results reflected the actual performance of a representative account, net of actual management fees and transaction costs. Assets managed in the Sierra Club Green Alpha strategy representative account received a reduced fee from the standard fee schedule. Sierra Club Green Alpha representative account performance results did not reflect the reinvestment of dividends and interest. Please contact Green Alpha for information about the representative account selection process.
- Regardless of time frame, all characteristics data are sourced from Bloomberg Finance L.P. based on the representative Sierra Club Green Alpha account, which may or may not be exactly what is delivered on each custodial or wrap account platform.
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- The MSCI All Country World Investable Market Index (ACWI IMI) captures large, mid, and small cap representation across 23 developed markets and 27 emerging markets countries. With more than 8,750 constituents, the index is comprehensive, covering approximately 99% of the global equity investment opportunity set. Investors cannot invest directly in this index.
- The SPDR MSCI Global Stock Market ETF (ticker: SPGM) seeks to provide investment results that, before expenses, correspond generally to the price and yield performance of the MSCI ACWI IMI. Investors can invest directly in SPGM.
- The S&P 500 Index is an unmanaged index of 500 common stocks chosen for market size, liquidity, and industry group representation. It is market-value weighted. The S&P 500 Index figures do not reflect any fees, expenses, or taxes. Investors cannot invest directly in this index.
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