Sierra Club Green Alpha

June 30, 2023

SIERRA CLUB

Green Alpha

Investment Philosophy

The greatest growth drivers of today's economy are high-functioning, inventive companies creating and accelerating solutions to system-level risks—the climate crisis, resource degradation, widening inequality, and human disease burdens. Those companies are our best investment opportunity to preserve and grow clients' capital.

Green Alpha's philosophy is simple: seek enterprises creating scalable and rapidly evolving, economically-competitive solutions, rigorously evaluate their fundamentals, and acquire them at reasonable valuations.

Our investments seek to de-risk the global economy (which in turn reduces clients' long-term investment risks) primarily within sectors and industries growing faster than underlying GDP.

Why Invest in Sierra Club Green Alpha?

- Active research, stock selection, and portfolio mgmt
- Green Alpha's forward-looking Next Economy™ research processes, and the Sierra Club's® proprietary social and environmental criteria
- 30-50 global, market-leading companies developing solutions to core economic and environmental risks

Inception Date: December 31, 2010

Vehicle: Separately Managed Accounts

Research

Across our portfolios, 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 track records of increasing revenues and expanding margins, leading to earnings growth
- exhibiting sound financial fundamentals and capital custodianship
- trading at compelling valuations relative to proven and anticipated growth, within acceptable levels of risk

Portfolio Construction

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

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.

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Largest Positions

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

Company Name	Ticker	Weight
First Solar	FSLR	6.78%
JinkoSolar Holding	JKS	5.25%
Lam Research	LRCX	4.47%
Fortinet	FTNT	3.94%
Brookfield Renewable	BEPC	3.89%
% of Portfolio		24.33%

First Solar *(Sector: Energy, Industry: Renewable Energy)*

- First Solar manufactures CdTe thin-film PV solar panels and provides utility-scale PV power plants and supporting services, including finance, construction, maintenance, and end-of-life panel recycling. They employ rigid thin-film modules for its solar panels and cadmium telluride (CdTe) as a panel semiconductor.
- Unique among large solar manufacturers, First Solar is a U.S.-headquartered company and does not use crystalline silicon (c-Si) semiconductors. That means they have fewer supply chain dependencies than traditional c-Si solar PV makers and avoid dependencies on China, which dominates the c-Si industry.
- Catalysts driving performance results are an already-strong order flow and the passage of the Inflation Reduction Act (“IRA”).
  - Under the IRA, First Solar could earn subsidies as high as 17 cents per watt of capacity, which is more than half of their reported production cost.
- The company plans to grow revenues by investing $1.1 billion in a new 3.5 GW module factory in Alabama, the company’s fourth domestic facility, while an additional $185 million will add 1 GW of new manufacturing to the company's plant in Ohio.
- First Solar has a vertically integrated manufacturing process providing the lowest carbon footprint and fastest energy payback time available.
- The board of directors is 25% women, including the Lead Independent Director and Audit Committee Chair. The Chief People & Communications Officer is also female. Importantly, the executive team boasts an above-average age spread of 32 years.

JinkoSolar Holding *(Sector: Energy, Industry: Renewable Energy)*

- JinkoSolar (JKS) is one of the world’s largest solar panel manufacturers and the most vertically integrated, making ingots, cells, panels, and modules. JKS distributes to 160 countries and manufactures products in the U.S., China, Malaysia, and Vietnam, thus mitigating political and trade dispute-related growth obstacles. They have been able to largely withstand recent global supply chain disputes.
- JinkoSolar's production capacity is expanding. In 2021, the company had a total production capacity of 55 GW. By the end of 2023, JinkoSolar expects to have a total production capacity of 90.0 GW, roughly enough to power 68 million homes.
- In November 2022, the maximum solar conversion efficiency of JinkoSolar's 182 mm N-type module reached a new record of 23.86%.
- Of the world’s top five PV manufacturers, JKS alone has grown its global module market share in the last year and has ranked number one in global shipments for the past four years.
- The company continues to emphasize R&D, achieving mass production efficiency exceeding 26.1% for their 16 GW N-type cells, which is a world record for n-type solar cell efficiency.
- JKS is the top-ranked firm on the Silicon Valley Toxics Coalition’s Solar Scorecard, receiving 100 out of 100 points for operational sustainability. The company plans to run on 100% renewable energies by 2025 and is a member of RE100.

***Lam Research*, *Fortinet*, *and* *Brookfield Renewable*’s Next Economy attributes are continued on the following page.**

Largest Positions *continued*

Lam Research *(Sector: Technology, Industry: Semiconductors)*

- Lam Research is a global supplier of semiconductor and flat panel display manufacturing equipment and services. They provide a wide range of products and services that enable the production of advanced semiconductor devices used in a variety of applications, including computers, smartphones, automotive electronics, and medical devices. The company's products include wafer fabrication equipment, etch and deposition systems, and metrology and inspection systems.
- Lam is known for its innovation and technological leadership in the semiconductor industry, with a strong focus on research and development to advance semiconductor manufacturing processes. The company has a strong intellectual property portfolio, with over 17,000 patents granted or pending worldwide.
- The company has a strong customer base, including major semiconductor manufacturers in North America, Asia, and Europe such as Intel, Samsung, and Taiwan Semiconductor
- Lam Research has a strong commitment to sustainability and corporate responsibility, with initiatives focused on reducing the environmental impact of its operations, promoting ethical business practices, and supporting the communities where it operates.
- 36% of Lam's leadership is female, including the SVP of Corporate Strategy, Chief Legal Officer, Chief Human Resources Officer, and Chief Communications Officer.

Fortinet *(Sector: Technology, Industry: Software)*

- Fortinet is a cybersecurity company that develops and sells security solutions like firewalls, endpoint security, and intrusion detection systems. They have offices located all over the world.
- Fortinet was founded in 2000 by Ken Xie and Michael Xie. The company's first and main product was FortiGate, a physical firewall. The company later added wireless access points, sandbox (computer security), and messaging security, and continues to innovate.
- Fortinet's products are used by a wide range of businesses, including government, education, healthcare, retail, and manufacturing. The company's products are designed to help businesses protect themselves from a wide range of cyberattacks, including malware, ransomware, and data breaches.
- Fortinet's standout innovation is its unified security architecture. This architecture allows Fortinet to offer a wide range of security products that work together to provide a comprehensive security solution. This makes Fortinet a good choice for businesses that are looking for a single vendor to provide their security needs.
- Fortinet has two female Directors, the Chair of the Audit committee, and the Chair of the Human Resources Committee.

Brookfield Renewable *(Sector: Utilities, Industry: Electric Utilities)*

- Brookfield Renewable is a leading renewable power company that owns and operates a portfolio of solar, wind, and hydroelectric power generation and storage facilities in North America, South America, Europe, and Asia.
- Brookfield is one of the largest renewable power companies in the world, with a portfolio of 8,000 generating facilities, representing over 24,000 megawatts of generating capacity. The company's mission is to provide sustainable energy solutions that help people and businesses thrive. They are committed to developing and operating renewable energy projects that are environmentally responsible, socially beneficial, and economically viable.
- Brookfield is conservatively managed, continually looking for acquisitions at favorable prices and organic development to grow generation capacity, and has revenues largely backed by long-term power purchase agreements (PPAs). Brookfield is inflation resilient and may benefit from an inflationary environment, because their generating costs are fixed but their PPAs are indexed to inflation.
- Women comprise 30% of board directors (including the Audit Committee Chair), 25% of overall workforce, and 26% of the exec team. The exec team has a robustly above-average age spread of 48 years, as does the board at 38 years.

Macroeconomic Commentary

“2023 so far has been characterized by volatility, both up and down. Markets have managed to remain positive in aggregate. Some of the reasons for this volatility are well known, starting with the domestic economic environment. The much-anticipated recession, still said to be imminent, has not materialized despite two years of prognosticators’ predictions. Unemployment is remarkably low, and wages have been increasing across income levels. Inflation continues, albeit at a moderated 4% annual pace, which is still above the Fed’s ideal target, and this in turn adds uncertainty to markets that are having difficulty determining how many and how large additional Federal Reserve rate hikes to price into their models. Generally though, a more robust and still growing economy with greatly attenuated inflation is in principle modestly bullish for stocks.

Then there is the geopolitical environment. Ian Bremmer, founder of the Eurasia Group, believes that a rogue-state Russia is by far the greatest geopolitical risk currently facing the world. It is impossible to argue his point. In a recent podcast, Bremmer points to a recent incident where a Russian fighter jet mistakenly fired on a British aircraft, and all that prevented the deaths of 17 British service men and women was the malfunction of the Russian missile. Bremmer uses this example to point out that as long as the Russian invasion of Ukraine endures, we are a hair's breadth away from an incident that would provoke a shooting war between NATO and Russia, adding along the way that Russia has more nuclear weapons than any nation on Earth.

The second major geopolitical risk is the ongoing deterioration of the relationship between the United States and China—the world's two largest economies. This deterioration is meaningful in terms of its threat to economic growth, as it impacts not only trade, but also innovation and productivity. In the United States, the bipartisan clamoring to “get tough on China,” and in China, increasing authoritarianism and the regime's desire to be the key regional superpower in Southeast Asia, have led to an atmosphere of distrust and uncertainty, and subsequently to both punitively motivated and risk-hedging steps towards economic decoupling. We view this as dangerous through the framing of the Thucydides trap: historically, when nations have moved to separate themselves from one another economically and taken active steps to throttle the development of a rival, it has often led to open war.

Relative to the desired outcomes of economic growth and stability, Green Alpha Investments would much prefer to see stabilization in the US-China relationship, and even active collaboration in areas where the two nations are in agreement, such as the need to address the climate crisis and to find ways to spur economic growth amid declines in working age populations. In that environment, areas where there is disagreement can be addressed far more constructively. Barring such a de-escalation, escalating tensions present risks for investors.

Given all the above, it should not be surprising that investors globally are sitting on near record levels of cash. That the markets have risen at all in 2023 should, if anything, be the surprise. So, why is that?

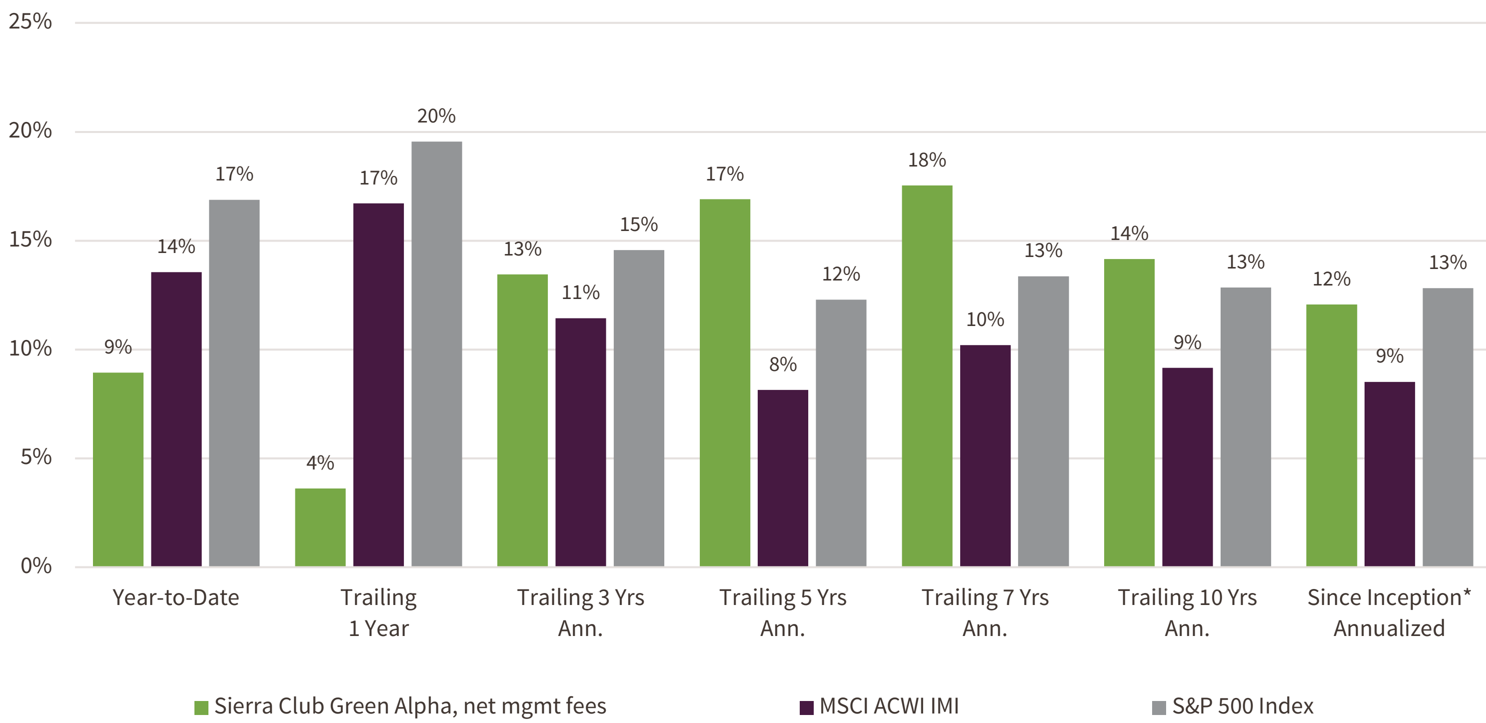
Despite these very significant risk overhangs, there are many positive developments, particularly in the United States, which is growing its economy rapidly relative to other developed nations and has also managed to do a better job taming inflation than most of its peers. Most notably, the growth in the U.S. economy revolves around significant new construction to support the build out of new, large-scale manufacturing. A significant share of this production boom is in

- semiconductor manufacturing,
- manufacturing for renewable energy,
- batteries for energy storage and electric vehicles, and
- increased domestic production of electric vehicles themselves.

All this is creating well-paying jobs and driving economic growth. We can't help but note that all these bullish trends are occurring within areas we have always defined as key Next Economy™ sectors and industries.

We continue to believe that this dynamic will continue: most economic growth will be derived from innovations that are economically competitive and that simultaneously solve problems, helping to de-risk the world. This is the underlying thesis of Green Alpha’s Next Economics™, and, as complicated and nuanced as things are, we believe the current geopolitical and economic environment is providing elegant validation of that thesis.

Portfolio Performance & Commentary



For the first half of 2023, the Sierra Club Green Alpha strategy returned 8.93% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned 13.55%.

The sectors adding the most to strategy's returns were Technology and Consumer Discretionary.

- Technology dominated contributions to returns, with the semiconductors and technology hardware industries being the standout performers. Semiconductor manufacturer contributions were the leading area in the strategy with especially significant returns during Q1 and additional contributions during Q2. Also contributing were advanced chip providers, especially those providing chips for AI and communications, with analog devices and power control chipmakers contributing as well. Gains were additionally boosted by consumer electronics and software industries, including digital security and engineering.
- In Consumer Discretionary, EV automotive manufacturing led returns, boosted by an advanced battery maker. Also contributing was a leading sustainable office furnishings provider, although those gains were almost equivalently offset by a sustainable flooring provider.

The strategy's only detracting sectors were Health Care and Real Estate.

- Within Health Care, losses came from the world's two leading mRNA vaccine and therapeutics companies, which saw significant consolidation during 1H, and from a life sciences equipment maker. These losses were partially offset by gains in one of the world's leading genomic therapeutics companies.
- The Real Estate sector detracted more modestly, with declines led by office and infrastructure REITs (see here for Green Alpha's discussion of current REIT market dynamics, and why we believe not all office REITs are created equal). Those losses were partially offset by gains in data center REITs.

**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 additional important disclosures.*

Sierra Club Green Alpha

How our portfolios compare to their benchmark, the MSCI All Country World Investible Market Index

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:** most investors' largest asset class; largest opportunity for impact

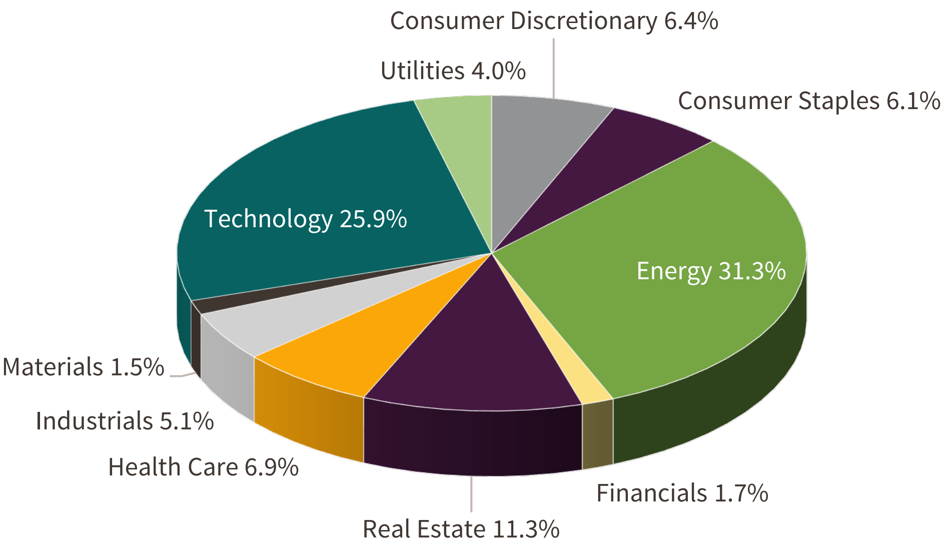
Characteristics	Sierra Club Green Alpha	Benchmark: MSCI ACWI IMI (SPGM)	Next Economy Index	Social Index	Next Economy Select	Growth & Income	DiversiTerra
# of Securities	47	2,498	141	99	63	35	57
Active Share	96%	-	92%	94%	96%	97%	95%
Sales Growth, Trailing 3-Yr	39%	15%	45%	55%	36%	23%	47%
P/E, Current	20.6	17.2	21.8	24.5	16.9	16.0	22.3
P/E, 1-Year Forward	19.7	16.3	21.8	23.5	17.6	16.8	23.5
Price/Sales	1.2	1.7	2.1	2.1	1.6	1.6	1.9
Price/Book	2.4	2.5	3.1	2.9	2.2	1.8	2.5
LT Debt/Equity	696%	423%	220%	72%	301%	71%	80%
Current Ratio	2.7	2.8	3.2	3.8	3.9	2.7	3.3
Dividend Yield	1.46%	2.22%	1.14%	1.08%	1.90%	4.28%	1.49%
Market Cap, Wtd Avg ($B)	$135.62	$407.10	$116.98	$121.06	$126.54	$95.06	$134.43
Market Cap, Median ($B)	$11.40	$2.67	$9.20	$9.71	$4.18	$33.17	$7.13
Turnover, Trailing 2-Yr Avg	9%	Not Available	12%	21%	12%	19%	15%
Beta, Trailing 2-Yrs	1.32	1.00	1.27	1.31	1.37	1.21	1.31
U.S.-Domiciled Companies	68%	56%	77%	85%	65%	65%	81%
% Revenue Derived in U.S.	44%	43%	48%	53%	43%	45%	59%

All characteristics are sourced from FactSet, are based on a representative account and include cash. Please see the final page of this document for additional important disclosures.

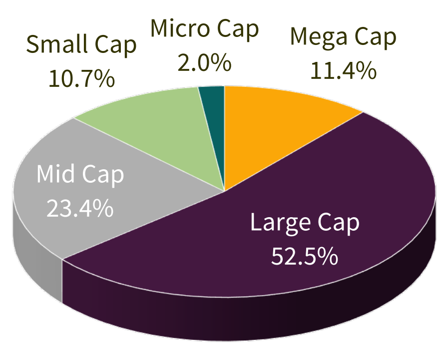
Portfolio Allocations

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.

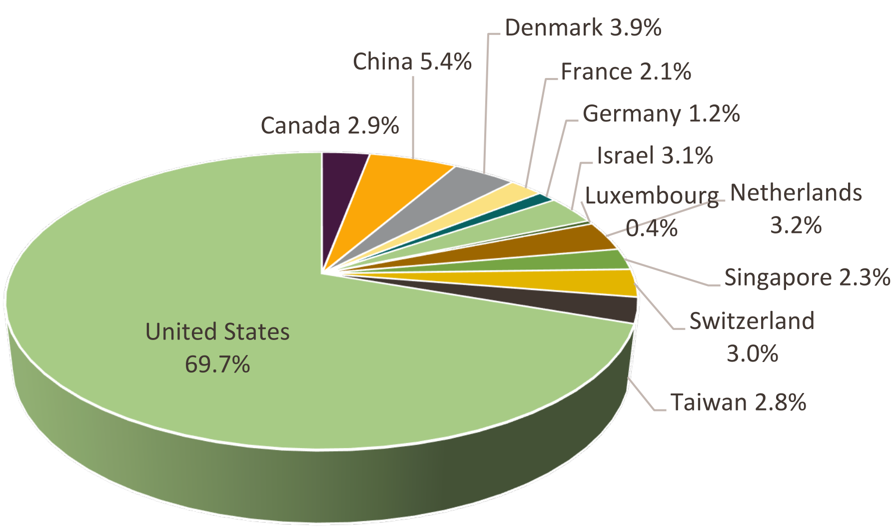
Economic Sectors



Market Capitalizations



Companies' Main Headquarters



Allocation data is sourced from FactSet and is based on a representative account. The exception is the sector chart, which utilizes the Bloomberg Industry Classification Standard from Bloomberg. All charts on this page are shown as percent of equity. Please see the final page of this document for additional important disclosures.

Important Disclosures

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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. Beginning May 31, 2023, composite membership also includes a minimum account size of $25,000. The Sierra Club Green Alpha composite performance results reflect actual performance for a composite of discretionary client accounts meeting custodian and minimum account size requirements. 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 Investments. 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.
- Green Alpha portfolios may invest in companies with small and medium market capitalizations, which may have more limited product lines, markets, and financial resources than larger companies. In addition, their securities may trade less frequently and in more limited volume than those of larger companies. Small or mid-cap stocks may be more volatile than those of larger companies and, where trading volume is thin, the ability to dispose of such securities may be more limited. Green Alpha portfolios may also invest in foreign domiciled companies. Investing in foreign securities may involve additional risks, including exchange-rate fluctuations, limited liquidity, high levels of volatility, social and political instability, and reduced regulation. Emerging markets are often more volatile than developed markets and investing in emerging markets involves greater risks. International investing may not be suitable for everyone. An investment in Green Alpha portfolios should be considered a long-term investment.
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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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