

Sierra Club Green Alpha

March 31, 2025



Green Alpha®

Largest Positions	2
Macroeconomic Commentary	4
Performance and Sector Attribution	6
Portfolio Characteristics	7
Sector, Geographic, and Market Cap Allocations	8
Disclosures	9

Why Invest in Sierra Club Green Alpha?

- Active research, stock selection, and portfolio mgmt
- Leverage Green Alpha's Next Economy™ insights alongside Sierra Club's renowned sustainability criteria
- Gain exposure to 30-50 market leaders solving critical economic and environmental challenges

Inception Date: December 31, 2010

Vehicle: Separately Managed Accounts

Investment Philosophy

The driving forces behind economic growth are:

- companies accelerating productivity, and
- businesses tackling urgent global challenges.

High-performing enterprises can revolutionize efficiency while also developing solutions for critical issues like climate change, resource depletion, social inequality, and public health crises. By doing so, they can create economic expansion and actualize a more sustainable and equitable future. These innovative companies offer the most promising investment opportunities, providing security and growth potential for our clients' capital.

Our strategy is clear: we focus on identifying and investing in businesses that are developing brilliant, scalable, adaptable, and economically viable solutions to global challenges.



Research

We select companies for our portfolios based on:

- *Impact:* Businesses offering innovative solutions to critical economic, environmental, and other global challenges.
- *Innovation Leadership:* Companies investing heavily in R&D, intellectual property, and capital expenditures.
- *Strong Management:* Diverse, effective teams aligned with shareholders, demonstrating revenue growth, expanding profit margins, and potential dividend increases.
- *Financial Health:* Businesses with robust balance sheets and smart capital allocation strategies.
- *Value:* Companies whose stock prices offer attractive value relative to proven performance and growth prospects.

These and other factors help us construct portfolios that aim for strong returns and build a more sustainable economy. We concentrate on long-term success in an evolving landscape.

Portfolio Construction

Green Alpha has exclusive rights to combine Sierra Club's stringent environmental and social criteria with our Next Economy™ approach. This unique collaboration ensures:

1. Forward-looking alignment with Sierra Club's vision
2. Historical compliance with their rigorous guidelines
3. Selection of high-impact companies driving sustainability

Every holding represents a cutting-edge solution actively shaping the transition to a sustainable economy. Our portfolio not only anticipates future trends, but also upholds a proven track record of environmental and social responsibility, as validated by Sierra Club's exacting standards.

Largest Positions

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

Taiwan Semiconductor Manufacturing *(Sector: Technology, Industry: Semiconductors)*

- TSMC stands as the world's only manufacturer capable of producing the most advanced semiconductor chips at scale, commanding 90%+ market share in leading-edge nodes (3nm and below)—creating a near-monopoly on the critical technology underpinning everything from AI to next-generation smartphones.
- The company's insurmountable technological lead is protected by a virtuous cycle where each new process node (currently advancing to 2nm) requires \$20+ billion investments that competitors cannot match without TSMC's massive economies of scale and decades of accumulated engineering expertise—creating one of the widest economic moats in any global industry.
- TSMC's importance has transcended commerce to become geopolitical, with governments worldwide now treating access to its manufacturing capacity as a national security imperative—the U.S. alone has committed \$52 billion through the CHIPS Act largely to reduce dependency on this company, underscoring its irreplaceable position in the economy.
- While traditionally operating as a "silent partner" to tech giants, TSMC has become the indispensable enabler of the AI revolution, with its advanced packaging technologies and process nodes being the limiting factor for NVIDIA, AMD, and other chipmakers racing to build next-generation AI accelerators—positioning TSMC to capture significant value from the estimated \$1 trillion in AI infrastructure spending this decade.

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

- Brookfield owns and operates a portfolio of solar, wind, hydroelectric power generation, and energy storage facilities across North America, South America, Europe, and Asia. As one of the largest publicly traded renewable power platforms, they boast more than 8,000 power generating facilities, with installed capacity surpassing 37 GW and its development pipeline stands at over 200,000 GW.
- The company combines the financial engineering expertise of Brookfield Asset Management with hard-to-replicate renewable assets (many contracted for 10-20 years), creating a powerful combination of inflation-protected cash flows and substantial growth—management has consistently delivered 10%+ annual dividend increases while targeting 12-15% total returns.
- Brookfield Renewable has mastered the art of capital recycling, strategically selling mature assets at premium valuations while reinvesting in higher-growth opportunities—a discipline that has consistently created shareholder value regardless of broader market cycles in the renewable sector.
- Beyond traditional renewable generation, the company is strategically expanding into emerging high-growth areas like distributed generation, EV charging infrastructure, and carbon capture—positioning it to benefit from multiple dimensions of the energy transition while maintaining its core focus on risk-adjusted returns.
- A full 37% of the executive team are women and 33% of the board, including the fact that half of the board-level committees are chaired by women.

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

- JinkoSolar stands at the absolute vanguard of humanity's most consequential energy transition, as one of the world's largest and most technologically advanced solar manufacturers—yet trades at a fraction of the valuation of Western clean energy companies despite shipping a staggering 78.5 GW of solar panels in 2023 (equivalent to powering 23 million homes) and projecting 110 GW in 2024.

JinkoSolar, SL Green Realty, and Qualcomm's Next Economy attributes are continued on the following page.

Company Name	Ticker	Weight
Taiwan Semiconductor Manufacturing	TSM	6.59%
Brookfield Renewable	BEPC	4.32%
JinkoSolar Holding	JKS	4.11%
SL Green Realty	SLG	3.89%
Qualcomm	QCOM	3.81%
% of Portfolio		22.72%

Largest Positions *continued*

JinkoSolar *continued*

- The company has mastered the art of scaling cutting-edge solar technology, achieving industry-leading 33.84% efficiency with its perovskite-silicon tandem cells (compared to ~22% for conventional panels) while simultaneously driving unprecedented manufacturing scale—creating a virtuous cycle where technological leadership and cost advantages reinforce each other.
- JinkoSolar's strategic foresight in building out 130 GW of annual production capacity by end-2024 positions it to capture disproportionate market share in a solar market projected to grow from 411 GW in 2023 to over 1,000 GW annually by 2030—representing potential revenue growth that remains dramatically underappreciated by markets still viewing it as a commoditized manufacturer.
- While renewable stocks broadly trade at steep discounts to their 2021 peaks, JinkoSolar's remarkable price-to-revenue ratio of just 0.1x (meaning the entire company is valued at merely 10% of its annual sales) reflects perhaps the most extreme valuation disconnect in global markets today—especially considering the company's technological leadership in the \$5+ trillion energy transition that McKinsey projects will unfold this decade, creating a potentially unprecedented investment opportunity for those recognizing this fundamental mispricing.

SL Green Realty (Sector: Real Estate, Industry: REIT)

- SL Green is a fully integrated real estate investment trust (REIT) specializing in the acquisition, management, and development of commercial properties, in New York City's Manhattan borough. SL Green owns and operates an impressive portfolio of iconic and high-quality office buildings in prime locations.
- Adaptive Strategies: SL Green has shown adaptability in responding to market changes, including the shift in office use patterns following the COVID-19 pandemic.
- SL Green is committed to sustainability and has implemented numerous green initiatives across its portfolio:
 - Science-Based Targets: SLG has committed to emissions reduction targets aligned with the Science Based Targets initiative (SBTi), demonstrating their ambition in combating climate change.
 - Renewable Energy: SLG actively pursues renewable energy sources, both through on-site installations and by purchasing renewable energy credits.
 - Energy Efficiency Upgrades: SLG extensively invests in energy-efficient retrofits of their buildings. This includes lighting upgrades, HVAC optimization, and building envelope improvements.
 - Conservation: They implement water-saving measures in their properties, reducing their environmental footprint.

Qualcomm (Sector: Technology, Industry: Semiconductors)

- Qualcomm is a global leader that develops and commercializes foundational technologies for the wireless industry. They are known for their expertise in wireless communication, semiconductor design, and software development.
- Wireless Leadership: Qualcomm is at the forefront of wireless technology development, driving innovation in 5G, Wi-Fi, and next-generation cellular connectivity. This expertise positions them as a key enabler of the future of communication.
- Semiconductor Excellence: Qualcomm's Snapdragon processors are industry-leading, powering a wide array of mobile and IoT devices with high performance and energy efficiency. This dominance in the semiconductor market is a significant asset.
- Global Connectivity: Qualcomm's technologies connect billions of people and devices worldwide, facilitating communication, commerce, and information access on a global scale.
- Diversified Portfolio: Their portfolio extends beyond mobile to encompass automotive, healthcare, and industrial sectors. This diversification fuels innovation in autonomous driving, connected healthcare, and smart city infrastructure.
- Commitment to R&D: Qualcomm maintains a strong focus on R&D, fostering a culture of innovation. This commitment ensures they remain at the cutting edge of technological advancement and contribute to future industry growth.

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

Macroeconomic Commentary



Welcome to 2025, where change isn't just constant—it's accelerating. For investors, success means surfing these transformative waves, not merely weathering them.

Climate: From Concern to Crisis

2024 broke all temperature records (again), making it the hottest year in 125,000 years. Yet humanity responded by... burning more fossil fuels. It's like drinking more coffee to cure insomnia. And yet, the picture is not monolithic, 2025 and beyond will remain dynamic to say the least.

What's coming:

- Significant acceleration of climate adaptation spending
- Policy divergence between regions. While Europe and parts of Asia step on the green accelerator, others are pumping the brakes. Invest accordingly.
- Insurance industry is fundamentally reassessing risk. After record disaster payouts, they're rethinking how they assess risk. This will ripple through real estate, municipal bonds, corporate planning, and more.



China's Green Domination: The Dragon Goes Electric

Energy isn't just a commodity anymore—it's technology. And technology gets cheaper and better over time. China has spotted this trend and is running with it like an Olympic sprinter.

The scorecard:

- China's renewable energy dominance: 80% of global solar panels, 70% of battery production, and a rapidly growing EV industry. It's less of a race and more of a "everyone else is hoping for silver."
- Solar expansion unstoppable: Global capacity could double by 2027, with China at the center despite trade tensions.
- Battery breakthroughs incoming: Costs dropping below \$70/kWh by 2027, with innovations beyond lithium-ion hitting the market.
- Grid modernization is desperately needed: A multi-trillion-dollar opportunity as our electrical systems struggle to keep up with renewables.

Global Trade: Tensions Boiling

Trump's return has intensified trade conflicts. China's stimulus response makes the New Deal investments and reforms to exit the Great Depression look modest.

Watch for:

- Economic restructuring beyond short-term tariff reactions
- Market volatility amid continued technological progress
- Selective decoupling in critical sectors
- Capital flows shifting toward Asian innovation centers

Macroeconomic Commentary *continued*

Fiscal Reality: Creative Debt Management

U.S. Federal government debt has reached the level where interest payments are now the largest single budget line item yet plans to address this are unclear.

The new normal:

- Germany's €1.2T spending shift signals European policy transformation
- Innovation in debt management, rather than reduction
- Healthcare demands are intensifying with aging populations
- Potential productivity boost from AI, renewables, and automation

Tech Revolution: AI Enters Physical World

AI is moving beyond chatbots to transform systems and supercharge human capabilities.

Coming attractions:

- Innovation is flowing across borders despite politics
- AI integration into robotics and infrastructure
- Economic transformation through convergence of renewables, automation, and AI
- Job market evolution is creating new categories of work

Biotech: Biology Becomes Technology

Biotechnology's "iPhone moment" is creating cross-sector disruption.

The biological revolution:

- Personalized medicine is becoming standard
- Bio-based manufacturing processes are disrupting traditional industries
- Novel biological materials are creating new markets

Investment Playbook

Smart investors will focus on signals, not noise.

Action plan:

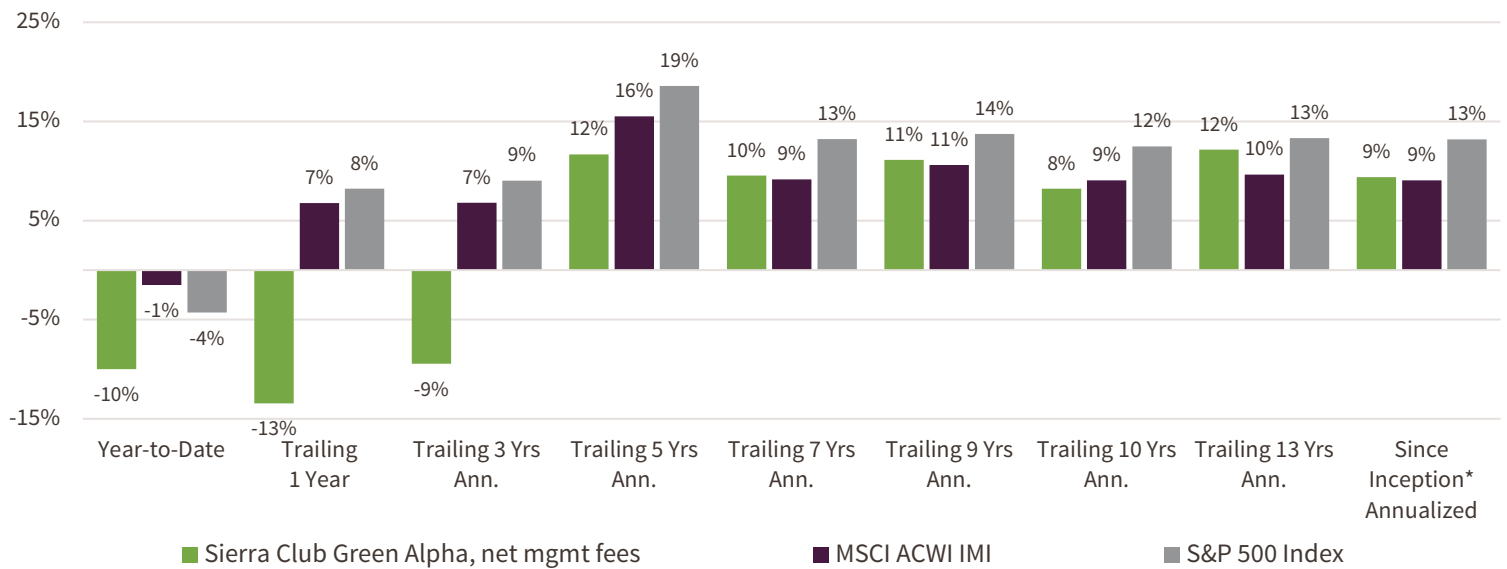
- Look beyond borders to diverse innovation centers
- Focus on fundamental technological transformations
- Bet on climate adaptation infrastructure
- Follow bioeconomy leaders
- Embrace supply chain innovation

Conclusion

We're at an economic inflection point. Headlines trumpet geopolitical drama, but the real story is deeper transformation. China's technology leadership and Europe's fiscal awakening suggest a multipolar future. Climate challenges are driving unprecedented innovation, while technological convergence creates immense opportunities.

Success depends on identifying emerging leaders regardless of nationality and focusing on long-term value creation. The waves of change are big, but rideable—with the right investment framework.

Portfolio Performance & Attribution



For the first three months of 2025, the Sierra Club Green Alpha portfolio returned -9.98% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned -1.50%.

The sectors detracting the most from the strategy's returns were Energy and Health Care.

- In the Energy sector, losses were primarily driven by Renewable Energy Equipment Manufacturing (Solar PV and components), Energy Storage Manufacturing, and Wind Turbine Components industries. Losses were partially offset by gains from the world's leading wind turbine manufacturer and service company. Mixed performance results reflect the challenges of competing in a market dominated by Chinese manufacturing (which produces 80% of global solar panels and 70% of batteries), despite the projected doubling of global solar capacity by 2027 noted in our macroeconomic outlook. Globally, investing in solar's continuing boom seems like an obvious choice.
- Within Health Care, losses were driven by Biotech, Medical Equipment & Devices, and Health Care Services industries. Despite our macroeconomic outlook highlighting biotechnology's "iPhone moment," near-term market sentiment has been cautious amid fiscal concerns around healthcare spending, inflation, and slowing economic growth.

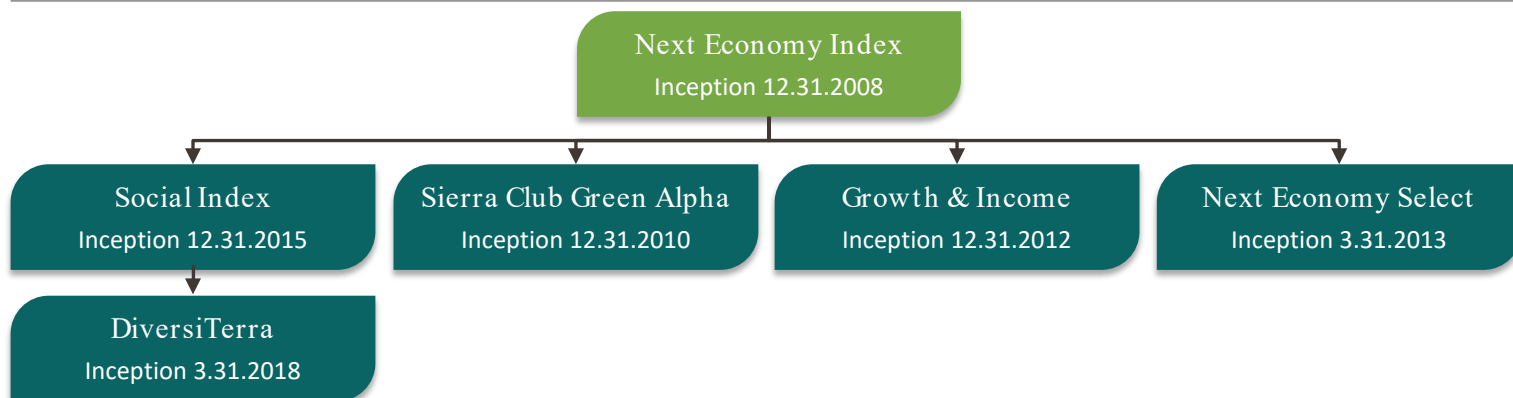
The strategy's best performing sectors were Financials and Utilities.

- The portfolio's limited exposure to the Financials sector turned in the top contributor spot via an innovative asset management company that provides unique debt financing to a variety of private Next Economy™ companies, in alignment with our perspective on innovative approaches to debt management.
- Within Utilities, exposure to the Electric Utilities industry was positive. The portfolio's exposure to a leading pure-play renewable electric power generator company was strong given the market environment. This performance supports our thesis on grid modernization and the acceleration of renewable energy integration.

While Q1 2025 presented challenges, short-term performance must be viewed through the lens of the "Great Transformation" outlined in our macroeconomic commentary. We are experiencing an economic inflection point characterized by climate adaptation demands, technological convergence, and geopolitical realignments.

The short-term market volatility reflects uncertainty around these transformative trends, particularly as trade tensions intensify and policy responses diverge globally. However, our positioning across renewable energy infrastructure, biotechnology innovation, and next-generation technologies remains aligned with long-term trends firmly in place.

**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® 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, Current Ratio
- **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, so their largest opportunity for impact
- **Fossil fuel free since inception:** we never invest in companies that prospect, extract, refine, or transport fossil fuels, nor in fossil-fired utilities or internal combustion engine manufacturers

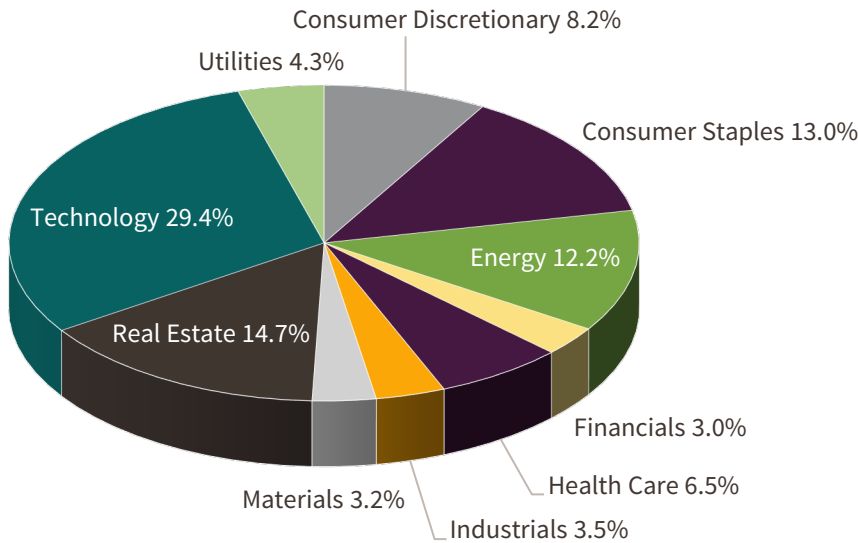
Characteristics	Sierra Club Green Alpha	Benchmark: MSCI ACWI IMI (SPGM)	Next Economy Index	Social Index	Next Economy Select	Growth & Income	DiversiTerra
# of Securities	49	2,807	150	113	58	36	53
Active Share vs SPGM	98%	-	93%	94%	98%	97%	96%
Active Share vs Next Economy Index	69%	-	-	35%	68%	72%	64%
Sales Growth, Trailing 3-Yr	15%	14%	17%	17%	13%	7%	10%
P/E, Current	28.7	20.0	26.9	25.9	27.8	26.9	27.5
P/E, 1-Year Forward	15.0	17.2	21.0	21.0	19.5	14.6	18.4
Price/Sales	0.8	1.9	1.9	2.1	1.5	1.1	1.9
Price/Book	1.5	2.8	2.2	2.1	2.2	1.4	1.8
LT Debt/Equity	116%	77%	110%	132%	164%	172%	107%
Current Ratio	3.8	2.3	3.2	3.2	4.3	3.4	3.9
Dividend Yield	2.50%	1.96%	1.17%	1.21%	2.12%	4.41%	1.75%
Market Cap, Wtd Avg (\$B)	\$91.90	\$546.23	\$121.59	\$95.02	\$121.53	\$114.18	\$91.50
Market Cap, Median (\$B)	\$6.10	\$2.74	\$7.23	\$10.63	\$5.63	\$14.89	\$10.44
Turnover, Trailing 2-Yr Avg	15%	Not Available	24%	35%	11%	12%	23%
Beta, Trailing 3-Yrs	1.45	1.00	1.41	1.52	1.51	1.33	1.45
U.S.-Domiciled Companies	69%	61%	77%	88%	68%	69%	83%
% Revenue Derived in U.S.	53%	45%	51%	63%	52%	53%	62%

Characteristics are sourced from FactSet, based on a representative account and include cash. Please see additional disclosures on last page.

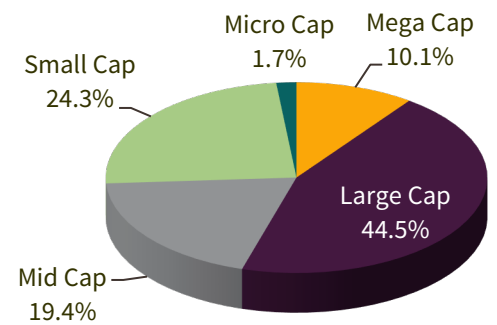
Portfolio Allocations

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.

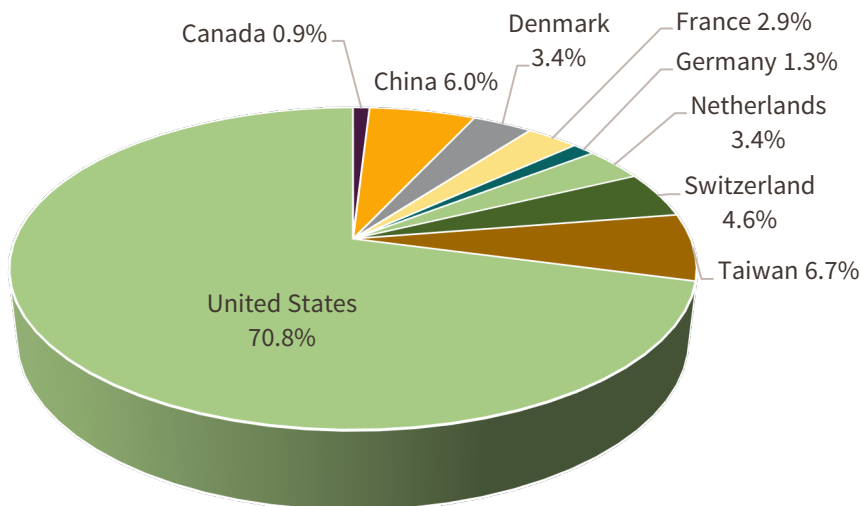
Sectors



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

- Green Alpha Advisors, LLC is a registered investment advisor. Registration as an investment advisor does not imply any certain level of skill or training.
- Green Alpha Investments is a trade name of Green Alpha Advisors, LLC. 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.”
- SIERRA CLUB, the Sierra Club logos, and “Explore, enjoy and protect the planet.” are registered trademarks of the Sierra Club.
- 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.
- The holdings identified throughout this document do not represent all the securities purchased, sold, or recommended for advisory clients. You may request a list of all recommendations made by Green Alpha in the past year by emailing a request to info@greenalphaadvisors.com. It should not be assumed that the recommendations made in the past or future were or will be profitable or will equal the performance of the securities cited as examples in this document.
- The MSCI All Country World Investable Market Index (ACWI IMI) is a free float-adjusted market capitalization-weighted index that is designed to measure the combined equity market performance of developed and emerging markets. The Index covers approximately 99% of the global equity investment opportunity set. The MSCI ACWI IMI figures do not reflect any fees, expenses, or taxes. 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.
- This presentation is for informational purposes only, and should not be construed as legal, tax, investment, or other advice. This presentation does not constitute an offer to sell, or the solicitation of any offer to buy, any security. Any mention of an individual security is for illustrative purposes only and should not be considered a recommendation to buy or sell any security. The presentation does not purport to contain all the information that may be required to evaluate Green Alpha Investments and its investment strategies.