Sierra Club Green Alpha

September 30, 2022

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) while striving to grow faster than underlying GDP.

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

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 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

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.

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.

Largest Positions

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

Company Name	Ticker	Weight
JinkoSolar Holding	JKS	6.95%
Switch	SWCH	5.47%
First Solar	FSLR	5.01%
Brookfield Renewable	BEPC	4.28%
Enphase Energy	ENPH	4.10%
% of Portfolio		25.81%

JinkoSolar Holding *(Sector: 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 globally 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.
- JKS's solar module production capacity is projected to reach 65 GW in 2022. Of the top five manufacturers, JKS alone has grown its global module market share in the last year, ranking number one in global shipments for the past four years. In Q2, quarterly shipments were 10.5 GW, up 25.5% QOQ, and up 102.4% YOY, extending the company's market share lead.
- The company continues to emphasize R&D, achieving mass production efficiency exceeding 24.8% for their 16 GW N-type cells, and Lab efficiency of up to 25.7%.
- 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.

Switch *(Sector: Communications)*

- Switch, a long-time Green Alpha conviction name in the data center space as a builder and manager providing co-location, telecommunications, cloud, and other services, has agreed to be taken private at a reasonable premium above market price. The deal is expected to close in the second half of 2022.
- Switch is the most sustainable technology infrastructure provider covered by Green Alpha, with all data centers powered 100% by renewable energy, and in some cases owning large solar generating capacity co-located with facilities.

First Solar *(Sector: Energy)*

- First Solar manufactures solar panels and provides utility-scale PV power plants and supporting services, including finance, construction, maintenance, and end-of-life panel recycling. FSLR uses 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 FSLR has fewer supply chain dependencies than traditional c-Si solar PV makers, and avoids dependencies on China, which dominates the c-Si industry.
- The company plans to grow revenues by investing $1 billion in a new, 3.5 GW module factory in the Southeast, while an additional $185 million will add 1 GW of new manufacturing to the company's facility in Ohio.
- Under the recently passed Inflation Reduction Act, First Solar could earn as much as 17 cents per watt in subsidies—the highest in the industry, and more than half of their reported production cost per watt.
- 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.

***Brookfield Renewable** and **Enphase Energy**'s Next Economy attributes are described on the following page.*

Largest positions *continued*

Brookfield Renewable *(Sector: Utilities)*

- Brookfield is a leading zero-carbon, 100% renewables-based energy utility. They own ~23 GW of electricity production capacity with a pipeline of ~75 GW, making them one of the world’s largest pure-play public renewable companies.
- 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. Brookfield is inflation resilient and may benefit from an inflationary environment. Their generating costs are fixed, but their PPAs are indexed to inflation.
- Brookfield recently announced the investment of $2 billion in Scout Clean Energy and Standard Solar to expand their portfolio, following a string of recent clean energy investments. So far, Brookfield has invested or allocated $3.5 billion for clean energy investments and follow-on capital in North America in 2022.
- Women comprise 33% of board directors, 25% of overall workforce, and 50% of executive management. In addition, the Audit Committee Chair is female. The exec team has a robustly above-average age spread of 48 years, as does the board at 38 years.

Enphase Energy *(Sector: Energy)*

- Enphase Energy is the world's leading supplier of solar microinverters, completing all-in-one solar panel systems for residential and commercial use.
- Recently, Enphase has extended business into the fast growth markets of battery energy storage and EV charging stations, both of which benefit from its smart inverter expertise. All Enphase systems with microinverters and batteries use the IQ System Controller device, which automatically detects and switches from grid power to backup battery in the case of a power outage.
- The company has installed more than 48 million microinverters on over 2.5 million homes in over 140 countries, shipped over 15 GW of DC microinverters and provided over 559.5 MWh of storage.
- Females comprise 25% of Enphase’s leadership team, including the CFO, CMO, and General Counsel.

Macroeconomic Commentary

The third quarter of 2022 was characterized generally by market declines in major indices, both domestically and globally. In the U.S., the primary reasons for negative market sentiment were the specter of rising (*or at least unabating*) inflation, and the Federal Reserve's aggressive response of large interest rate hikes in an attempt to control it. Interest rates have been the markets' focus for most of the year, but with the Fed signaling in Q3 that it was willing and able to intentionally create a recession if required to tame inflation, markets began to perceive the possibility of a shrinking economy. The Fed moved twice in the quarter, raising the Fed Funds rate a total of 1.5%, the highest since 2008. This significantly increases the cost of capital for all companies; more expensive capital means narrower margins, and the threat of recession raises the potential for less business activity.

The result for markets was a scenario leaving little place to hide. Economywide, all but two sectors (via the Global Industry Classification Standard) finished down, and the two positives, energy (up 0.01%) and consumer discretionary (up 0.36%), each increased anemic amounts. The MSCI All Country World Investable Market Index (MSCI ACWI IMI) had no positive sector returns for the quarter, bonds were down (Bloomberg U.S. Agg Total Return was down 4.75% for the quarter), most commodities declined, and cash was still losing value to inflation.

Geopolitical events continued to unnerve economies as well, and there is no question that we have entered a period of uncertainty with respect to the equity markets. Consequently, careful stock selection and active management are becoming more and more important.

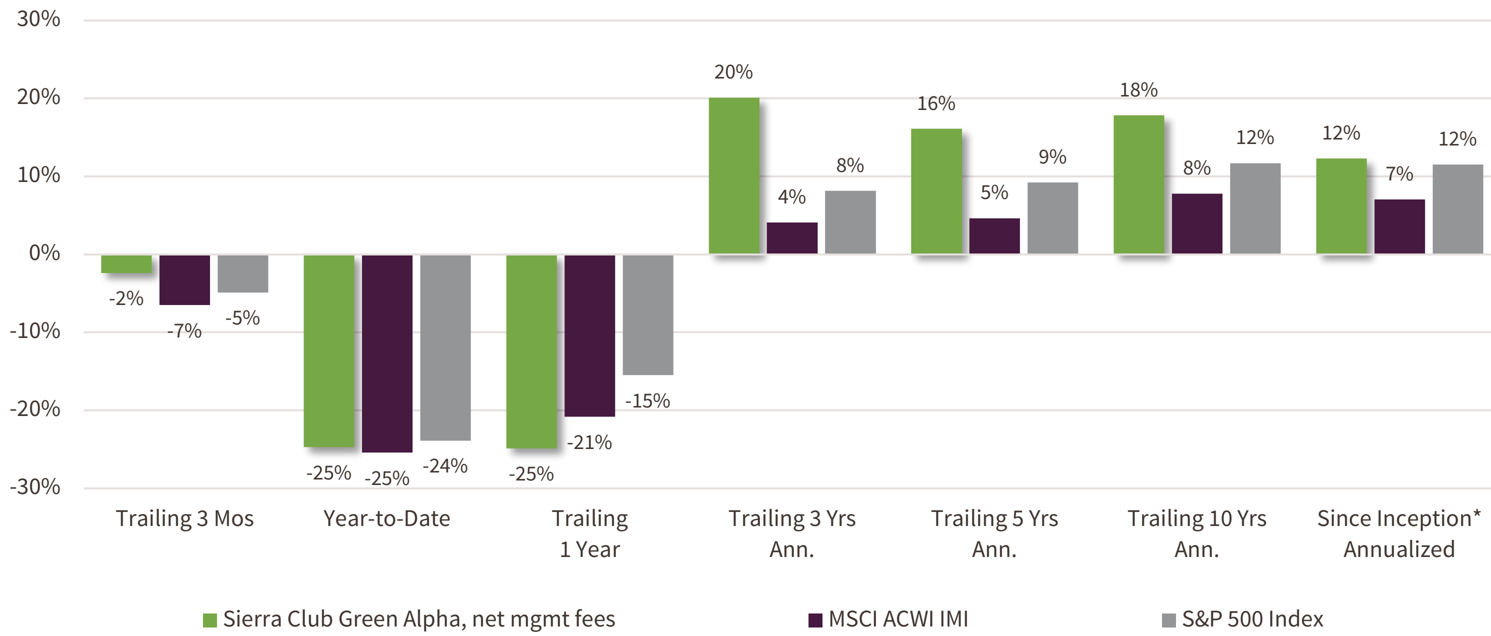
All the above economic factors illustrate the need for careful consideration of every holding in a portfolio: companies with strong balance sheets, earnings, and cash flows will become increasingly important as volatility continues into the immediately foreseeable future. Equally important is the need to understand risk vs. forward opportunity and real growth potential, while grasping the dynamics of market leadership, defensibility of market position—including intellectual property moats, capital allocation priorities, ability to access capital, balance sheet strength, and careful analysis of current valuations vs. expected growth.

These are all key attributes of Green Alpha's research process. For the firm, building portfolios that reflect the sustainable economy is not a matter of using ESG scores to filter an index list. Rather, it is a labor-intensive process of purposely selecting and evaluating each holding in terms of the above factors, as well as the business's net contribution to stabilizing the economy. Green Alpha's approach is to behave like private equity portfolio managers, evaluating each company meticulously as there is no index or benchmark to fall back on.

Amid a tough quarter, July was a bright spot for the Next Economy™ strategies. Each of the portfolios demonstrated meaningful relative and absolute performance, much of which can be attributed to the passage of the Investment Reduction Act (IRA). The IRA will, beginning in 2023, provide significant tax benefits, subsidies, and alternative incentives to renewable energies, zero emissions transportation, and other Next Economy areas of interest. Green Alpha does not consider potential policy tailwinds when making investments, preferring to rely solely on holdings' competitiveness and fundamentals, as well as on market context provided by the macro environment. That said, if policy does provide catalysts for share price appreciation, Green Alpha is happy for its clients to benefit.

Portfolio-specific commentary is on the following page.

Portfolio Performance & Commentary



For the three quarters ending September 30th, the Sierra Club Green Alpha portfolio returned -24.73% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned -25.44%.

The sectors that detracted the most from returns were Technology and Health Care, which together were responsible for the lion's share of losses year to date.

- Within Technology, declines were largely precipitated by a rotation to safety as interest rates climbed and recession fears grew. Amongst industries contributing to diminishing returns were financial transaction & business software, electronics manufacturing, consumer electronics, computer hardware & storage, telecommunications equipment, semiconductor manufacturing, foundry services, front-end capital equipment, and semiconductor devices.
- Health Care losses came mostly from the biotech & pharma industry as genomic therapeutics and diagnostics companies suffered as growth went out of favor. The medical equipment & devices manufacturing industry also declined, although more modestly.

The strategy's best performing sectors were Energy and Communications.

- Within Energy—which for Green Alpha is exclusively the various parts of the renewable energy value chain—stocks enjoyed a large rally in July with the passage of the Inflation Reduction Act (IRA); however, those gains were later moderated with the broad market declines in August and September. The strategy's top performers in the Energy sector year-to-date include the world's leading thin film solar manufacturing company, two top makers of traditional solar PV modules, and a principal maker of smart solar inverters. These gains were partially offset by losses in wind energy equipment manufacturing.
- In Communications, the telecommunications industry provided positive returns due to the private equity purchase of the world's most sustainably-powered data center company.

**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

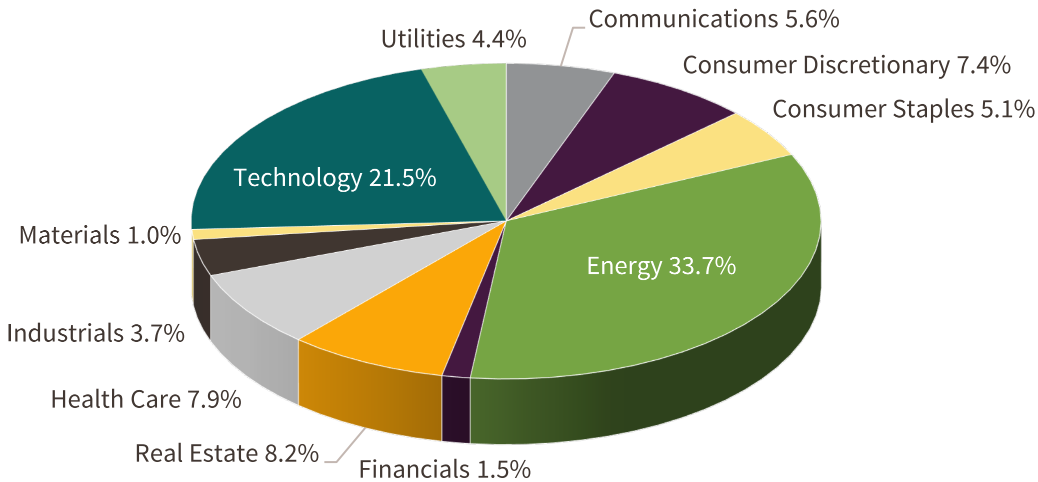
Characteristics	Sierra Club Green Alpha	Benchmark: MSCI ACWI IMI (SPGM)	Next Economy Index	Social Index	Next Economy Select	Growth & Income	DiversiTerra
# of Securities	47	2,502	144	101	57	36	57
Active Share	96%	-	93%	95%	96%	97%	96%
Sales Growth, Trailing 3-Yr	39%	10%	35%	28%	39%	23%	33%
P/E, Current	17.0	13.5	14.6	15.5	13.4	12.0	16.5
P/E, 1-Year Forward	18.0	13.0	15.6	15.8	13.5	11.5	16.0
Price/Sales	1.4	1.6	2.1	2.0	1.8	1.4	2.0
Price/Book	2.8	2.2	2.7	2.5	2.3	1.7	2.8
LT Debt/Equity	70%	461%	121%	108%	55%	91%	133%
Current Ratio	3.1	2.2	4.1	3.8	5.7	4.4	4.1
Dividend Yield	1.24%	2.48%	1.28%	1.23%	1.89%	5.14%	1.42%
Market Cap., Wtd Avg ($B)	$92.58	$289.99	$63.96	$56.89	$85.48	$55.62	$78.62
Market Cap., Median ($B)	$14.10	$1.87	$7.97	$8.18	$5.08	$26.08	$7.17
Turnover, Trailing 2-Yr Avg	11%	-	24%	34%	1%	9%	30%
Beta, Trailing 2-Yrs	1.17	1.00	1.20	1.22	1.19	0.96	1.16
U.S.-Domiciled Companies	70%	59%	78%	86%	70%	71%	83%
% Revenue Derived in U.S.	48%	44%	50%	56%	50%	50%	60%

All characteristics are sourced from FactSet and are based on a representative account, including cash. Beta is the exception, being sourced from Bloomberg while we are converting platforms. Please see the final page of this document for additional important disclosures.

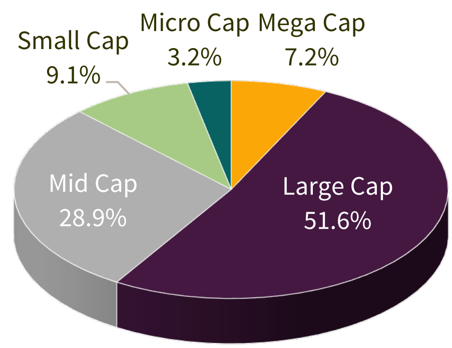
Portfolio Allocations

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.

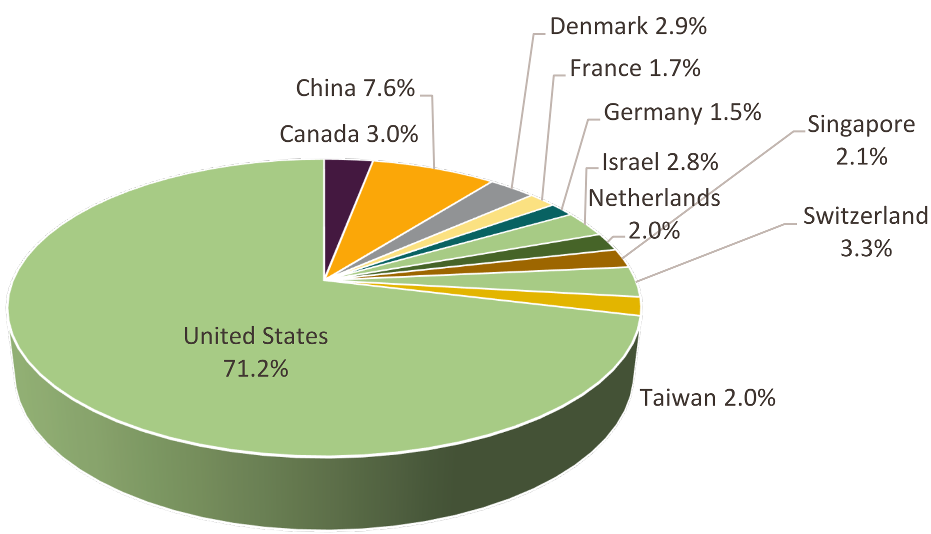
Economic Sectors



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. 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 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.
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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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