

Next Economy Index

March 31, 2024

Green Alpha[®]

Largest Positions	2
Macroeconomic Commentary	4
Performance and Attribution Commentary	5
Portfolio Characteristics	6
Sector, Geographic, and Market Cap Allocations	7
Disclosures	8

Investment Philosophy

Today's economy derives its most significant growth from innovative, high-performing businesses actively developing and expediting economic productivity gains, and those expanding solutions addressing critical systemic issues such as the climate crisis, resource degradation, inequality, and diseases.

These companies represent the most promising investment opportunities for both safeguarding and increasing our clients' capital.

Green Alpha adheres to a straightforward philosophy: we actively seek out companies pioneering swiftly scalable and rapidly adaptable, economically competitive solutions.



Why Invest in the Next Economy Index?

- Active research and stock selection, passively managed through an annual rebalance
- All-cap means it captures smaller companies accelerating momentum in a massive market transition, in addition to large, proven firms
- ~150 global, market-leading companies developing solutions to core economic and environmental risks

Inception Date: December 31, 2008

Vehicle: Separately Managed Accounts

Research

Across portfolios, we aim to identify companies meeting the following criteria:

- They offer products and/or services that mitigate the risk profile of the global economy by providing solutions to pressing economic and environmental challenges.
- Companies allocating a significant portion of revenue to R&D, CapEx, and possessing more IP than their peers.
- Those led by shareholder-aligned, effective, and diverse executive teams and BODs with a record of increasing revenues and expanding profit margins, which in turn drives earnings growth.
- Companies with prudent capital allocation priorities and strong balance sheets.
- Those with shares trading at attractive valuations relative to proven and anticipated growth prospects.

Portfolio Construction

The Next Economy Index utilizes active research and stock selection, and passive portfolio construction to reflect the Next Economy: the innovation-driven, highly efficient, solutions-oriented sustainable economy that is rapidly displacing the legacy economy.

All companies passing our top-down and bottom-up research processes with sufficiently high proprietary scores are included in the portfolio. All other Green Alpha portfolios are subsets of companies held in the Next Economy Index.

Largest Positions

How the Next Economy Index is driving progress toward the Next Economy

CrowdStrike Holdings (Sector: Technology, Industry: Software)

- CrowdStrike is a leading cybersecurity company known for its cloud-native endpoint security platform. They provide comprehensive protection against cyber threats, including malware, ransomware, and nation-state attacks. They consistently invest in R&D, and their AI-driven technology is at the forefront of threat detection and prevention.
- CrowdStrike's Falcon platform utilizes advanced techniques like AI and behavioral analytics to detect and prevent breaches. It's particularly renowned for processing vast amounts of data in real time, enabling rapid detection and response. They serve a wide range of clients and client sizes from many sectors.
- Dominant Market Position in Cybersecurity: CrowdStrike is a leader in cloud-based endpoint and workload protection. This success is reflected in their strong market share and industry recognition.
- Rapid Growth Trajectory: CrowdStrike continues to experience rapid customer and revenue growth. This suggests a strong demand for their cybersecurity offerings and points to the company's potential for continued expansion in the future.

NVIDIA Corporation (Sector: Technology, Industry: Semiconductors)

- NVIDIA is at the heart of the AI revolution. Their GPUs (graphics processing units) are the preferred choice for training and running complex AI models. NVIDIA's dominance extends to high-performance computing, making their technology vital for scientific research, simulations, and supercomputing.
- Expanding Market Opportunities: NVIDIA's applications are rapidly expanding beyond its traditional strength in gaming. Their technology is powering breakthroughs in:
 - Data Centers: Driving efficiency and speed for cloud computing
 - Automotive: Enabling self-driving cars and advanced vehicle systems
 - Robotics: Supporting automation and machine intelligence
 - Metaverse: Providing the computing infrastructure for immersive virtual worlds
- Strong Leadership and Culture of Innovation: CEO Jensen Huang is a visionary leader, credited with transforming NVIDIA into a technology powerhouse. The company fosters a strong culture of innovation, continually investing in research and development to stay ahead in a fast-changing technology landscape.
- Fully half of NVIDIA's executive officers and 25% of the board of directors are women, including the Compensation Committee Chair.

Tokyo Electron (Sector: Technology, Industry: Semiconductors)

- Tokyo Electron is a global leader in the production of semiconductor manufacturing equipment. The continued growth of the semiconductor industry bodes well for Tokyo Electron's long-term prospects. Their equipment is fundamental to the creation of the advanced semiconductors that power everything around us.

Tokyo Electron, Micron Technology, and Qualcomm's Next Economy attributes are continued on the following page.

Company Name	Ticker	Weight
CrowdStrike Hldgs	CRWD	1.67%
NVIDIA Corp	NVDA	1.64%
Tokyo Electron	TOELY	1.48%
Micron Technology	MU	1.47%
Qualcomm	QCOM	1.41%
Broadcom	AVGO	1.38%
Taiwan Semiconductor Manuf	TSM	1.34%
Applied Materials	AMAT	1.29%
Arista Networks	ANET	1.28%
Lam Research Corp	LRCX	1.26%
% of Portfolio		14.22%

Largest Positions *continued*

Tokyo Electron *continued*

- Diversification and Expansion: While Tokyo Electron's core strength lies in semiconductor production, they are actively diversifying into adjacent markets, including:
 - Flat Panel Display (FPD) production equipment
 - Electronics assembly equipment
 - Potential growth areas like advanced packaging for semiconductors
- They are at the invisible heart of the technological revolution, enabling innovation in smartphones, AI, supercomputing, self-driving cars, and countless other technologies.
- Pushing the Limits of Precision: The semiconductor manufacturing process Tokyo Electron's equipment facilitates is incredibly complex and precise. They deal with features measured in nanometers (billionths of a meter), pushing the boundaries of what is possible in manufacturing.

Micron Technology (*Sector: Technology, Industry: Semiconductors*)

- Micron Technology is one of the world's leading manufacturers of memory and storage solutions. Micron has played a pivotal role in the evolution of memory and storage technology. Their innovations have helped make our devices smaller, faster, and more capable. They hold numerous patents and are pioneers in developing technologies like DRAM and NAND flash memory that are essential to a vast range of devices.
- Driving the Bleeding Edge of Technology: Micron is constantly pushing the boundaries of memory capacity and performance. They're one of the first to market with the latest memory advancements, powering the next generation of computing, artificial intelligence, gaming, and much more.
- Integral to our Technological Landscape: Micron's technology is a crucial component of our digital world. Their chips are found in everything from our smartphones and computers to data centers and the expanding world of connected devices, quietly driving the advances we see around us, for example:
 - Training AI models: AI models, including those that power sophisticated chatbots, require huge amounts of memory (DRAM). Micron's high-performance memory solutions enable this energy-intensive process.
 - Running AI Workloads: Once trained, AI models need fast access to substantial data and memory to execute responses and actions. This again relies on Micron's memory chips.

Qualcomm (*Sector: Technology, Industry: Semiconductors*)

- Qualcomm is a titan in wireless technology development and licensing. Founded in 1985 in San Diego, Qualcomm played a pivotal role in shaping mobile communication standards like CDMA and OFDMA.
- The company's core business revolves around designing and selling cutting-edge chips and software for mobile devices and wireless networks. Flagship products include Snapdragon mobile processors and 5G modem chips.
- Qualcomm's extensive patent portfolio underpins its licensing business, generating significant revenue from device makers using their technologies.
- A major highlight of Q4 2023 was Qualcomm's booming automotive business. With chip revenue soaring 60% year-over-year and a \$30 billion design pipeline, this fast-growing segment demonstrates successful diversification beyond mobile.
- As a driving force behind 5G and IoT, Qualcomm continues to push the boundaries of wireless connectivity. Heavy investment in AI, machine learning, and extended reality signals a future-focused strategy.

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

Macroeconomic Commentary



The first quarter of 2024 revealed a more-persistent-than-hoped picture of inflation. While showing significant deceleration compared to 2023 peaks, inflation rates remained stubbornly above central bank targets. This defied earlier expectations of a rapid return to price stability, forcing a retrenchment in interest rate expectations. The Federal Reserve, and its global counterparts, signaled that rates will likely stay higher for longer than previously anticipated. Stock markets, with their fixation on immediate, and even incorrect but narrative-promoted results, entered a realm of extreme short-termism. Share prices became increasingly volatile, exhibiting rapid reactions to the smallest shifts in inflation data or monetary policy announcements. The focus on short-term fluctuations often overshadowed longer-term trends during the period; therefore, overlooked potential growth opportunities.

Disruptive sectors like electric vehicles (EVs) and renewable energy faced misleading criticisms in Q1. Despite visible [growth](#) and [advancements](#), narratives emerged suggesting a slowdown in EV demand and the [failure of the renewable energy transition](#). These narratives circulated primarily among market commentators, who focused on short-term share price dips. This underscores a dangerous disconnect between on-the-ground business results and their corresponding stock performance.

Some Key Observations and Themes from the Quarter

- **Resilient, but Weakening Consumer:** Consumer spending, a prime driver of the economy, showed signs of strain due to high prices and borrowing costs. Yet, household balance sheets remained strong, providing a buffer for consumption.
- **The Labor Market Paradox:** Job reports continued to defy expectations with low unemployment and [robust job growth](#). This, however, increased wages and contributed to the sticky inflation. It raised concerns about a potential wage-price spiral.
- **Geopolitical Volatility:** Renewed geopolitical tensions impacted energy prices and global supply chains, creating further hurdles for policymakers trying to tame inflation.

EVs and the Green Transition: A Reality Check

The skepticism directed towards EVs and renewable energy in Q1 stems from a misunderstanding of long-term transformational trends. While short-term fluctuations in demand or input costs exist, the broader trajectory remains undeniably clear:

- **EV Adoption is Accelerating:** Sales of EVs continued their upward trend. Major automakers ramped up production to meet demand. Charging infrastructure steadily expanded, further driving adoption. China's leading EV makers are producing [compelling cars at extremely competitive](#) prices relative to internal combustion engine automobiles.
- **Renewable Energy Installations are Soaring:** Deployment of wind and solar grew significantly, driven by falling costs and favorable policy support. Storage technologies continued to improve, addressing intermittent supply concerns.

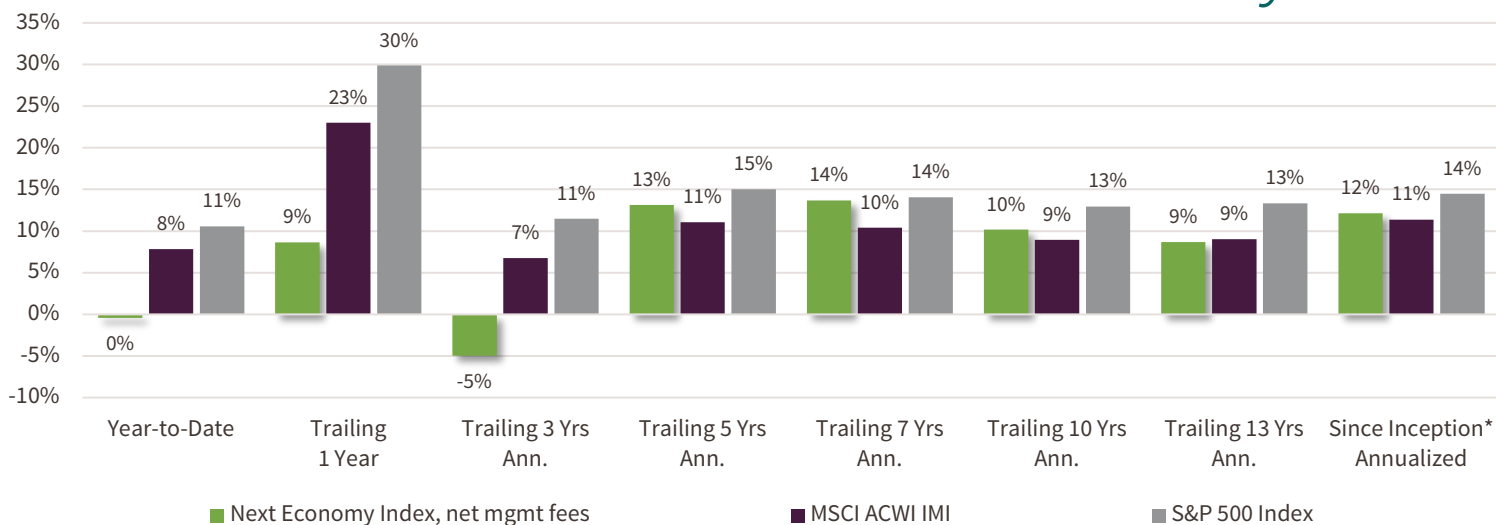
The Stock Market Disconnect

The negative narratives around promising sectors contrasted starkly with their business fundamentals. Many EV manufacturers reported record production and sales in Q1, with strong growth projections. Renewable energy companies [announced](#) major capacity expansions. This performance was decoupled from stock valuations, suggesting that the market remains fixated on immediate returns, missing the potential of future growth.

Conclusion

Q1 2024 demonstrated that taming inflation would be a more arduous task than many had hoped. It also highlighted a market environment where short-term noise reigns, threatening to overshadow promising long-term economic shifts. Discerning investors can navigate this landscape by grounding their decisions on verifiable data—as opposed to on narrative—and a recognition of the transformational forces at play in the global economy.

Portfolio Performance & Commentary



For the first quarter 2024, Green Alpha's Next Economy Index returned -0.40% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned 7.82%.

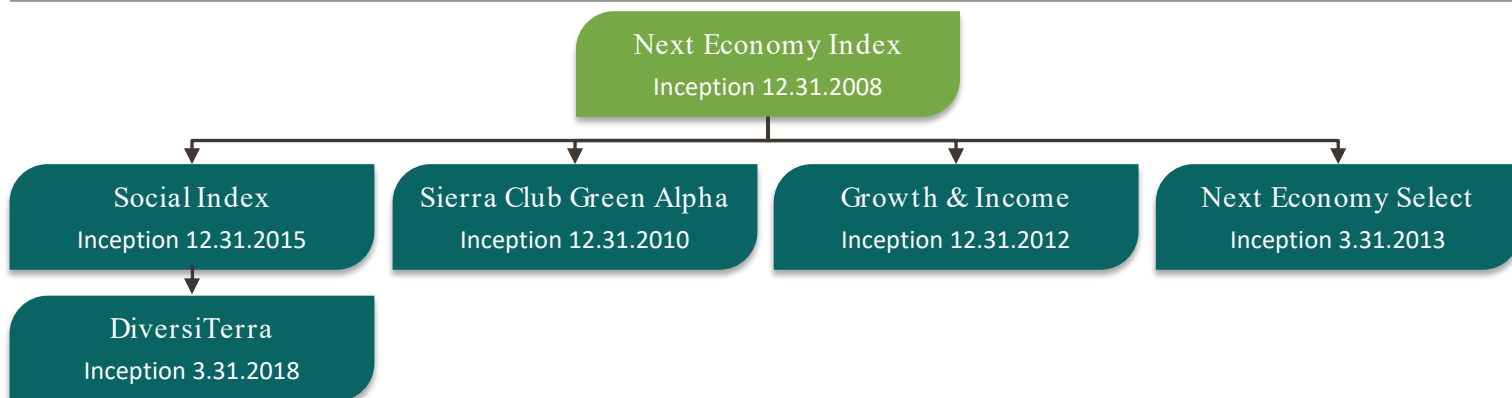
The sectors detracting the most from the strategy's returns were Energy and Consumer Discretionary.

- Within the Energy sector, underperformance versus the benchmark was the result of the portfolio's relative overweight exposure to solar—specifically U.S. residential installers, PV manufacturing, energy storage, and many balance-of-systems providers such as inverter makers, and cabling and distributed system providers. Within the renewable energy landscape, the only bright spot in Q1 was exposure to a pure-play Chinese polysilicon supplier. Interestingly, the business results for many renewable energy companies were quite strong in the quarter, revealing a continuing disconnect between markets and reality, which we believe is the result of a prevailing negative news narrative.
- In Consumer Discretionary, which detracted from performance nearly as much as Energy, the underperforming stocks were virtually all associated with electric and/or autonomous vehicles. Here again, these industries overall showed continuing growth and demand profiles, but the prevailing narrative has inappropriately spooked investors. EV market share gains are continuing to advance. From an all-time high of 20% market share globally in 2023, Q1 saw EV sales around the world accelerate further, with most EV makers posting double-digit year-on-year sales gains from Q1 2023 to Q1 2024. In a Consumer Discretionary bright spot, losses from EVs were partially offset by gains in sustainable home and office construction products.

The strategy's best performing sectors were Technology and Consumer Staples.

- Technology was by far the best performing sector, contributing nearly five times as much as the second contributor, Consumer Staples. The Technology sector's returns were primarily driven by semiconductors, which encompass the full value chain from design to hardware sales. This was followed by tech hardware and storage, which benefited from increased demand for AI servers. Consumer electronics, data and networking, and communications equipment all performed well. Software was the sole declining industry in the sector, but even here, it was a mixed bag as security and application software declined but infrastructure software was up.
- In Consumer Staples, gains were led by consumer products and retailers, including natural and organic food and beverage makers, and the retail locations that distribute them. Natural and organic cleaning, personal and baby care products was a top performer. Total portfolio weight to Consumer Staples was less than 4% in Q1, meaning the share price gains from these companies were impressive to result in the sector being the second largest contributor to the portfolio's returns.

**Portfolio Inception: December 31, 2008. 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.*



- **Largest Next Economy basket** –the most diversified Green Alpha portfolio by number of stocks; all stocks that pass Green Alpha’s top-down and bottom-up investment processes enter the Index
- **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

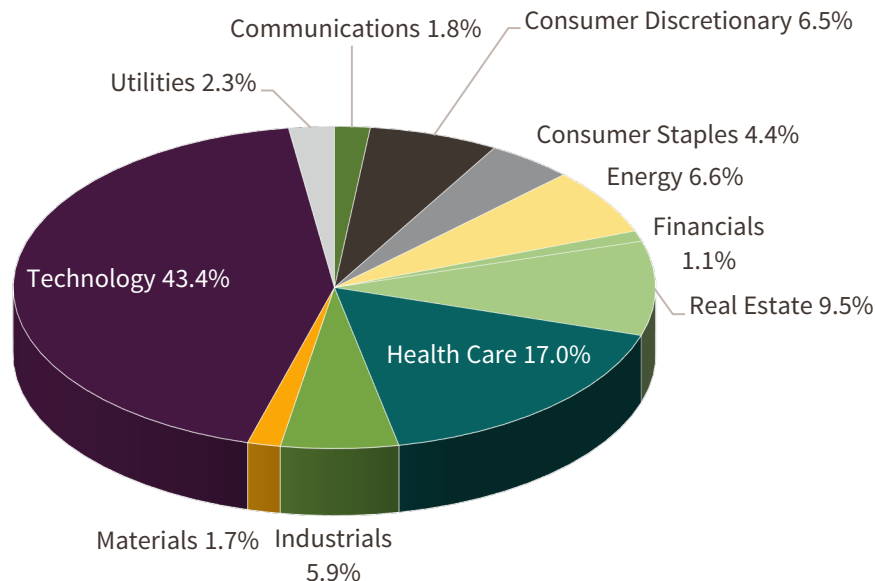
Characteristics	Next Economy Index	Benchmark: MSCI ACWI IMI (SPGM)	Social Index	Next Economy Select	Growth & Income	Sierra Club Green Alpha	DiversiTerra
# of Securities	150	2,644	114	61	36	46	58
Active Share vs MSCI ACWI IMI	92%	-	93%	97%	97%	96%	95%
Active Share vs Next Economy Index	-	-	29%	66%	69%	68%	61%
Sales Growth, Trailing 3-Yr	34%	15%	49%	32%	23%	25%	44%
P/E, Current	27.7	20.2	30.1	23.3	19.8	19.4	29.8
P/E, 1-Year Forward	25.1	17.8	26.6	20.7	16.0	17.7	21.8
Price/Sales	2.3	1.9	2.3	1.7	1.2	0.9	2.1
Price/Book	2.9	2.8	2.8	2.3	1.8	1.9	2.5
LT Debt/Equity	54%	165%	54%	45%	86%	56%	55%
Current Ratio	3.7	2.4	3.8	5.1	3.3	3.7	4.1
Dividend Yield	1.16%	1.95%	1.03%	1.85%	3.90%	2.00%	1.56%
Market Cap, Wtd Avg (\$B)	\$126.15	\$484.77	\$120.81	\$124.18	\$108.03	\$131.65	\$114.34
Market Cap, Median (\$B)	\$7.21	\$2.66	\$9.29	\$5.46	\$28.20	\$8.01	\$5.99
Turnover, Trailing 2-Yr Avg	25%	Not Available	39%	16%	10%	10%	28%
Beta, Trailing 3-Yrs	1.35	1.00	1.43	1.40	1.27	1.36	1.35
U.S.-Domiciled Companies	79%	60%	88%	66%	67%	72%	82%
% Revenue Derived in U.S.	52%	45%	60%	51%	51%	52%	59%

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

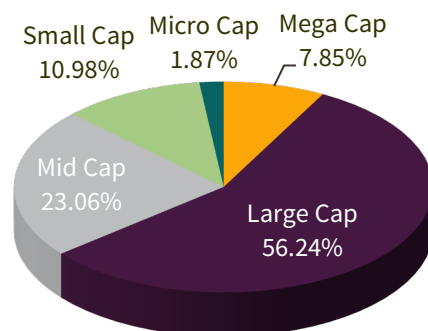
Portfolio Allocations

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

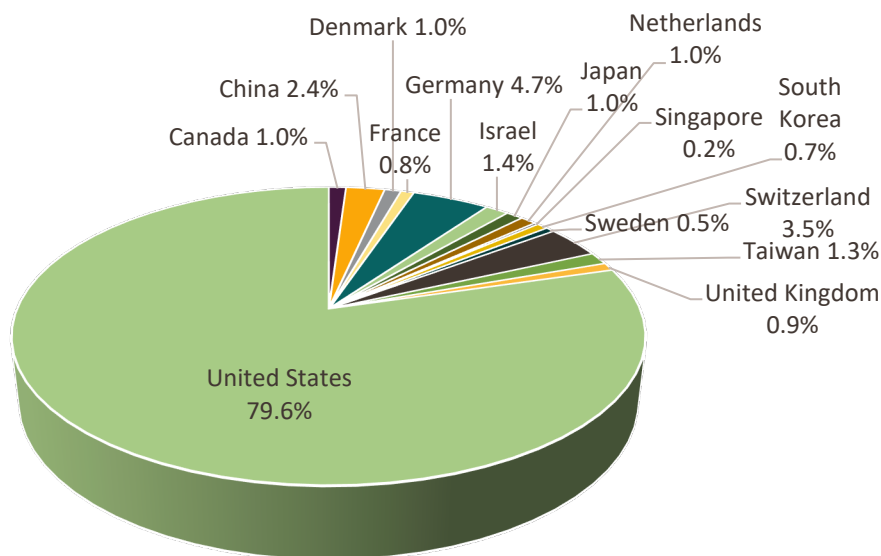
Sectors



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 and is based on a model portfolio. 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.”
- Performance quoted throughout this document represents 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 Next Economy Index 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 \$75,000. The Next Economy Index 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 Next Economy Index 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 Next Economy Index 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, Next Economy Index performance results reflected the actual performance of a representative account, net of actual management fees and transaction costs. Assets managed in the Next Economy Index strategy representative account received a reduced fee from the standard fee schedule. Next Economy Index 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) 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.
- 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.