

Next Economy Select

March 31, 2024

Green Alpha[®]

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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 Next Economy Select?

- Active research, stock selection, and portfolio mgmt
- Very low minimum purchase of 1 ETF share provides democratized access to institutional-quality investing
- Seeks long-term capital growth to preserve and grow purchasing power
- 45-65 global, market-leading companies developing solutions to core economic and environmental risks

Inception Date: March 31, 2013

Vehicles: AXS Green Alpha ETF (ticker NXTE) and 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 Select's objective is long-term capital appreciation via investing in a diverse set of high-conviction, market-leading Next Economy companies that have competitive moats protecting and growing market share.

Green Alpha's Next Economy Select portfolio provides democratized, low-minimum investment access to institutional-quality, innovation-focused investing.

Largest Positions

How the Next Economy Select portfolio is driving progress toward the Next Economy

Applied Materials *(Sector: Technology, Industry: Semiconductors)*

- Applied Materials is a vital player in the global semiconductor supply chain, providing the manufacturing essential for creating the chips and displays that power our connected world.
- The company's technology leadership and broad portfolio uniquely position them to capitalize on the growth of AI, cloud computing, and the expanding semiconductor market. Their solutions span chip fabrication, display production, and advanced materials engineering.
- They drive innovation with substantial R&D investments, resulting in a robust intellectual property portfolio of over 17,300 patents. This reinforces their competitive advantage and technological prowess.
- The company demonstrates a commitment to sustainability with its RE100 membership and progress towards 100% renewable energy use. As members of RE100, they are targeting 100% renewable energy use globally by 2030 (currently at 70+%), and in 2022 they reached their interim goal of 100% renewable energy use in the U.S.

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

- Taiwan Semiconductor Manufacturing Co ("TSMC") is the world's largest semiconductor foundry, providing advanced chip manufacturing and fabrication services to companies on a made-to-order basis. TSMC maintains a clear dominance where their specialized factories manufacture advanced custom chips for companies like Apple, NVIDIA, and Qualcomm.
- TSMC stands alone as the one foundry already operating at the 2nm node, the most advanced chip manufacturing process available anywhere in the world currently. No other competing fab comes close in leading-edge capability and capacity. Early adoption of pioneering techniques like extreme ultraviolet lithography (EUV) underpins this leadership.
- We believe that TSMC stands as the most important company in all of technology due to their vital role as an enabler to virtually every semiconductor innovator pushing the performance envelope—those firms critically depend on TSMC to transform their chip visions into scaled reality.
- Key to Innovation: Many of the world's biggest tech companies rely on TSMC to turn their cutting-edge chip designs into reality. This makes TSMC an integral part of global technological innovation.
- With over 90% of advanced global foundry market share, an unparalleled focus on sustaining the most capable fab infrastructure, and customers heavily reliant on their new node introduction cadence, TSMC's name goes nearly synonymous with "state of the art" among computing architects. Their operational prowess dominates the leading edge of possibility, and their work arguably underpins the entire modern economy.

ASML Holding *(Sector: Technology, Industry: Semiconductors)*

- ASML is the world's only manufacturer of EUV lithography machines. These complex systems are essential for producing the most advanced semiconductor chips for cutting-edge smartphones, AI systems, and high-performance computing.
- Extreme Precision Mirrors: The heart of an EUV system is a series of meticulously crafted mirrors that reflect and focus the extreme ultraviolet light. These mirrors are so smooth that if one was the size of Germany, the highest "bump" would be less than a millimeter tall!
- Chip Manufacturing Equipment Pioneer: Beyond EUV, ASML designs and builds a broader range of high-tech systems used in the semiconductor production process, including deep ultraviolet (DUV) lithography systems.

ASML, CRISPR Therapeutics, and IBM's Next Economy attributes are described on the following page.

Company Name	Weight
Applied Materials	5.76%
Taiwan Semiconductor Manuf.	5.75%
ASML Holding	4.85%
CRISPR Therapeutics	4.38%
IBM	4.25%
Lam Research Corp	4.20%
Qualcomm	3.70%
First Solar	3.56%
Brookfield Renewable	3.21%
Moderna	3.07%
% of Portfolio	42.73%

Largest Positions *continued*

ASML Holding *continued*

- SML invests heavily in research and development, consistently pushing the limits of lithography technology, and holds a vast portfolio of patents to protect its innovations and maintain its competitive advantage.
- Market Dominance: ASML's unique position in EUV technology gives them a significant market share within the critical semiconductor equipment industry. The complexity, precision, price, size and scale of their lithography tools creates a very wide moat around ASML's monopoly.

CRISPR Therapeutics (Sector: Health Care, Industry: Biotech & Pharma)

- Their Core Innovation: CRISPR-Cas9 technology allows for precise editing of DNA sequences. With CRISPR, scientists can potentially correct the underlying cause of genetic disorders, rather than just addressing the symptoms.
- Transforming "Untreatable" into Curable: Many devastating genetic conditions currently lack effective treatments. CRISPR technology holds the promise of developing cures by directly targeting and correcting the faulty genes at the root of these diseases. CRISPR Therapeutics' core focus areas:
 - CRISPR/Cas9 Gene Editing: They utilize the revolutionary CRISPR/Cas9 technology, which allows for precise editing of DNA, opening doors for treating genetic diseases and modifying cell functions for therapeutics.
 - Ex Vivo Therapies: They primarily utilize ex vivo therapies, where cells are extracted from a patient, edited outside the body, and then reintroduced, providing a personalized and potentially curative approach.
 - Diverse Pipeline: They are developing a broad range of therapies, including hemoglobinopathies like sickle cell disease and beta-thalassemia, oncology for various cancers, regenerative medicine, and rare diseases.
- Key Achievements and Milestones:
 - Exa-cel (CTX001): Their leading therapy for sickle cell disease and transfusion-dependent beta-thalassemia has conditional marketing authorization in some countries and continues to show promising results in clinical trials.
 - Partnerships: They actively collaborate with leading pharmaceutical companies and research institutions, including Vertex Pharmaceuticals, the University of California Berkeley, and Editas Medicine.
 - Investment in R&D: They continually invest in research and development, exploring new applications of CRISPR/Cas9 technology and expanding their pipeline of potential therapies.

IBM (Sector: Technology, Industry: Software & Tech Services)

- IBM is a global technology leader driving innovation to tackle the world's most pressing challenges. After its strategic divestiture, the company focuses on areas with significant future growth potential:
 - Hybrid Cloud: IBM offers advanced hybrid cloud solutions, including hardware, software, and services, empowering businesses to manage complex IT environments across public, private, and on-premises clouds.
 - AI & Automation: A pioneer in artificial intelligence, IBM's Watson platform and other AI solutions optimize decision-making, improve customer experiences, and enhance operations across industries.
 - Cybersecurity & Blockchain: IBM prioritizes data protection with leading-edge cybersecurity offerings. It also explores the transformative potential of blockchain technology for secure and transparent transactions.
 - Quantum Computing: IBM is at the forefront of quantum innovation. Their IBM Quantum platform and Qiskit open-source SDK democratize access to quantum computing, driving exploration and discovery for researchers and businesses alike.
- Commitment to Progress: IBM believes its technologies will "exponentially alter the speed and scale" of problem-solving, aligning with its mission of accelerated discovery.

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.

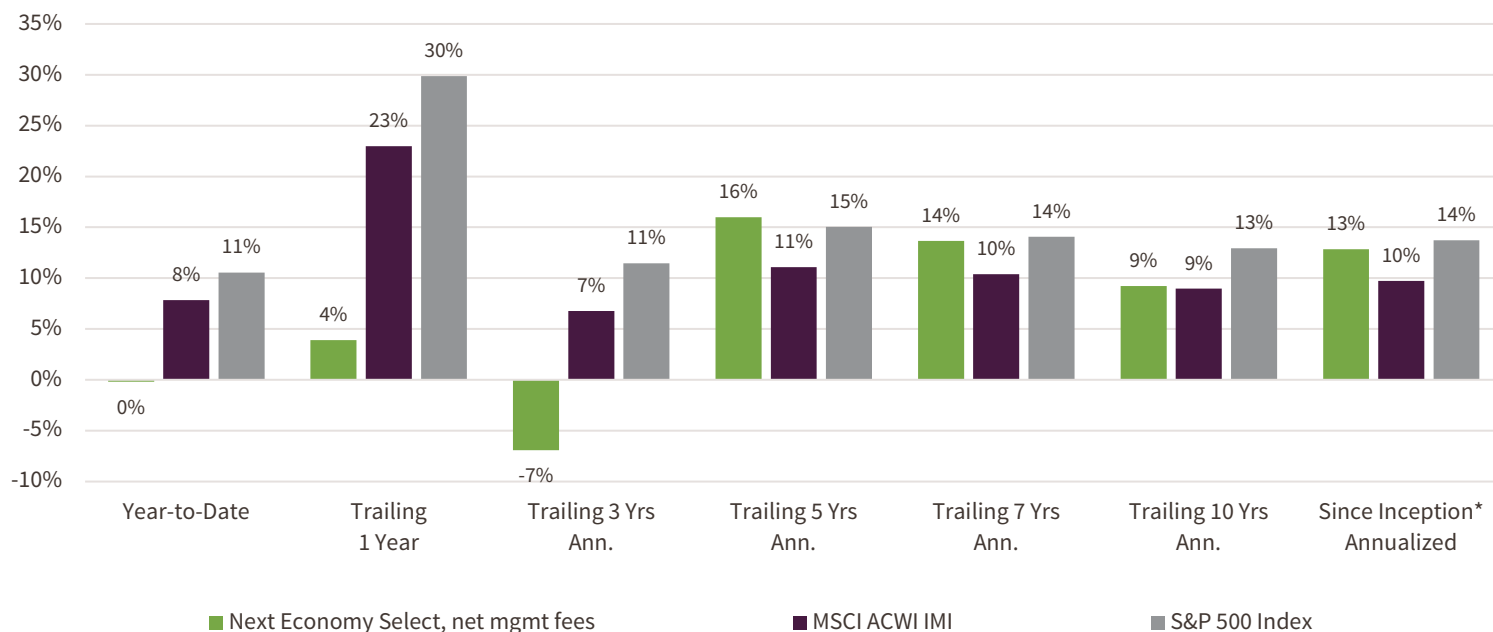
The Stock Market Disconnect

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 Select portfolio returned -0.19% net of management fees, versus its benchmark, the MSCI All Country World Investable Market Index (MSCI ACWI IMI), which returned 7.82%.

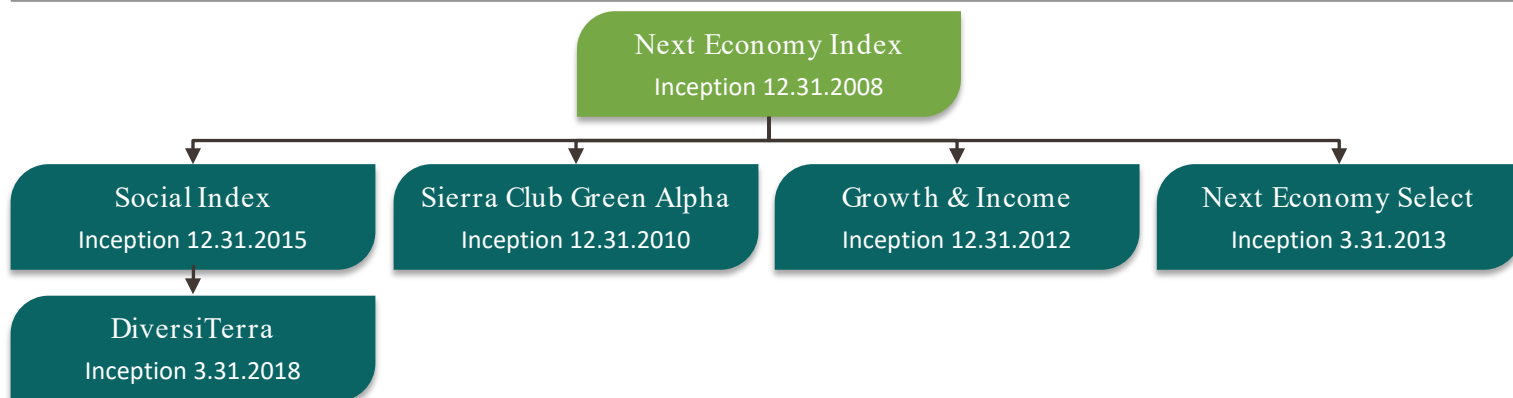
The sectors detracting the most from the strategy's returns were Energy and Consumer Discretionary.

- Within the Energy sector, underperformance versus the benchmark was the result of the portfolio's overweight exposure to renewable energy—specifically wind turbine manufacturing, solar PV manufacturing, U.S.-based residential solar installation, energy storage, and many balance-of-systems providers such as inverter makers, and cabling and distributed system providers. With 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, the underperforming stocks were virtually all associated with electric and/or autonomous vehicles and advanced batteries. 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 flooring products.

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

- Technology was by far the best performing sector, led by semiconductors, primarily upstream manufacturing equipment and foundry services, followed by technology services. Mobile communications hardware and components also contributed. These gains were partially offset by losses from a leader in silicon carbide semiconductors, consumer electronics security related software.
- In Consumer Staples, gains were led by consumer retailers and products, including natural and organic food and beverage makers, and the retail locations that distribute them. This is a relatively small exposure set for the portfolio, with approximately 4% weighting in the quarter, so its appearance as second most contributing sector can primarily be attributed to strong stock selection.

**Composite Inception: March 31, 2013. 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.*



- **Highest conviction stocks, two investment vehicles:** democratizing access to leading Next Economy companies via an ETF and separately managed accounts, providing clients of all shapes and sizes with institutional-quality options
- **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

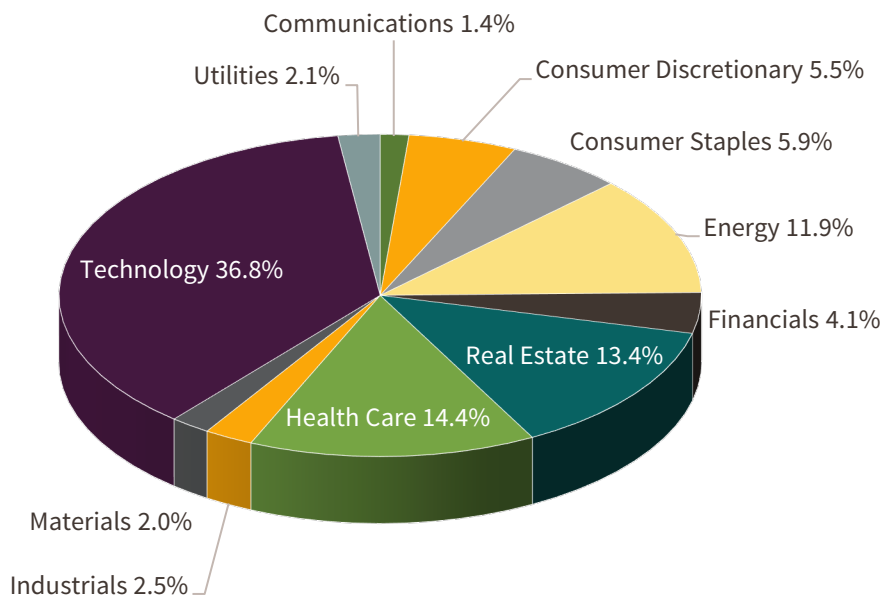
Characteristics	Next Economy Select	Benchmark: MSCI ACWI IMI (SPGM)	Next Economy Index	Social Index	Growth & Income	Sierra Club Green Alpha	DiversiTerra
# of Securities	61	2,644	150	114	36	46	58
Active Share vs MSCI ACWI IMI	97%	-	92%	93%	97%	96%	95%
Active Share vs Next Economy Index	66%	-	-	29%	69%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

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

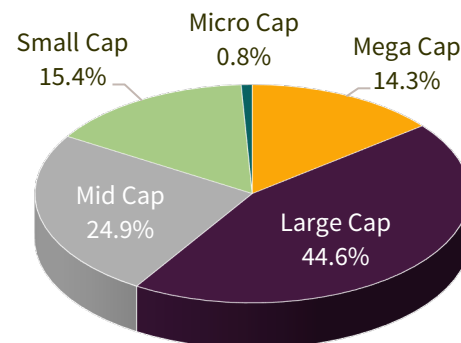
Portfolio Allocations

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

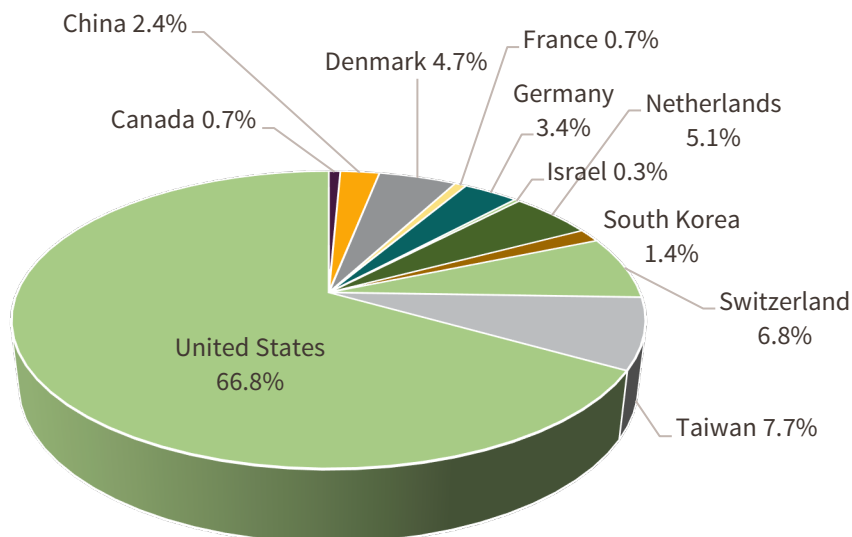
Sectors



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.

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- Beginning May 31, 2023, composite membership includes a minimum account size of \$100,000. Next Economy Select performance results reflect actual performance for a composite, net of actual management fees and transaction costs. Some assets managed in the Next Economy Select strategy within the composite receive a reduced fee from the standard 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. Next Economy Select performance results do not reflect the reinvestment of dividends and interest. Extreme periods of underperformance or outperformance are due to the concentrated nature of the strategy and the impact of specific security selection. Such results may not be repeatable.
- From the strategy’s inception through June 30, 2021, performance data are sourced from Bloomberg Finance L.P. Beginning June 30, 2021, the composite and all performance results are maintained and calculated by Green Alpha’s portfolio accounting system Advent APX.
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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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