

# Green Alpha€

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### **Investment Philosophy**

We consider the greatest growth drivers of the twenty-first century to be high-functioning, inventive companies generating and accelerating solutions to system-level risks like the climate crisis, resource degradation, worsening inequality, and human disease burdens. Consequently, those companies are our chief opportunity for investments that preserve and grow clients' purchasing power.

Green Alpha's investment philosophy is straightforward: seek enterprises creating smart, scalable and rapidly evolving, economically-competitive solutions. Don't invest in companies causing global systemic risks.



## Why Invest in the Next Economy Index?

- Active research and stock selection
- Passively managed through an annual rebalance
- Demonstrates the diversity, growth, breadth, and depth of the rapidly-developing Next Economy™
- ~145 global, market-leading companies developing solutions to core economic and environmental risks
- Fossil fuel free since inception

Inception Date: December 31, 2008

Style: All-Cap Global Equities

Vehicle: Separately Managed Accounts

#### Portfolio Construction

The Next Economy Index utilizes both active stock selection and passive portfolio construction to reflect the Next Economy – the innovation-driven, highly efficient, solutions-oriented sustainable economy that is unfolding. All companies that pass both our top-down and bottom-up research processes with sufficiently high proprietary scores are included in the portfolio. 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 potentially long-term compounding growth
- that trade at compelling valuations relative to proven and anticipated growth, within acceptable levels of risk

Like all Green Alpha portfolios, Next Economy Index investments seek to de-risk the global economy, thus reducing our clients' long-term portfolio risks.



# Largest Positions

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

#### **XPeng** (Sector: Consumer Discretionary)

- XPeng is a Chinese EV maker traded on the NYSE, operating in the Chinese (the world's largest vehicle and EV market), European, and soon the U.S. markets. The company is positioned as a middle/high-end EV brand. They are committed to delivering cost-effective intelligent EV's featuring autonomous driving technology and smart cockpits. The company is a leader in EVs in China and is working to gain market share worldwide.
- As a market leader in autonomous driving, their XPILOT system allows XPeng cars to change lanes, speed up or slow down, and enter/exit highways. The company delivered 34,422 vehicles in Q2 2022, a 98% increase year-over-year.

Company Name	Ticker	Weight
XPeng	XPEV	1.22%
IBM	IBM	1.20%
NIO	NIO	1.17%
American Tower	AMT	1.09%
Qualcomm	QCOM	1.09%
Moderna	MRNA	1.01%
Daqo New Energy	DQ	1.01%
Seagen	SGEN	1.00%
GSK	GSK	0.99%
Apple	AAPL	0.97%
% of Portfolio		10.75%

#### IBM (Sector: Technology)

- IBM has led the U.S. in the number of patents received annually for 29 years in a row and is a top patent holder across many domains: cloud and cognitive software; quantum computing; enabling distributed ledger; pioneering AI; developing security methods atop lattice cryptography; advancing nanotechnology; developing and applying Watson AI across industries, including medicine, water, and food safety; and the most accurate weather forecasting tech. This intense focus on R&D is key for growth.
- Having divested from its legacy managed-infrastructure business, IBM has re-emerged as a Next Economy™ innovation
  powerhouse. Their primary initiatives include blockchain code and technology, cloud computing, AI and machine learning, and
  quantum computing. IBM has recognized that these innovations, in their words, "can exponentially alter the speed and scale at
  which we can uncover solutions to complex problems. We've come to call this accelerated discovery."

#### **NIO** (Sector: Consumer Discretionary)

- NIO is a Chinese developer and manufacturer of EVs and is listed on the NYSE. They are known for innovative models, like the EP9 electric hypercar, the ES6 SUV, and the EC6 coupe SUV. Their vehicles include a power service system with chargeable, swappable, and upgradable batteries, giving them a strong competitive advantage. This is enabled by 1,400+ patented technologies allowing a fully-charged battery to be swapped in 3 minutes. The company set a record-high for vehicle deliveries in Q1 2022, representing a 28.5% increase over the same period in 2021; revenues also increased by 24.2% for the same period.
- NIO's technology suite includes NOMI AI, a digital assistant for the car dashboard, NIO Pilot, a semi-autonomous system, and Aquila, a complete Level 4 self-driving system licensed from Mobileye. NIO is diversifying by building an extensive network for battery charging and swapping, and in-home charging options.

#### **American Tower** (Sector: Industrials)

- American Tower is an owner and operator of wireless and broadcast communications infrastructure worldwide, operating 43,000 towers in the US and Canada, and 176,000 globally. It operates 28 data centers in the U.S. and is on track for the 4th consecutive year of record new site construction volumes. American Tower is strategically positioning itself to capture increasing demand for 5G and is focused on partnering with multinational wireless carriers globally. During Q2, it closed an equity offering to raise \$2 billion to deploy in investment opportunities, with an international focus.
- American Tower's fundamentals differ from a traditional REIT in that they lease the same property to multiple tenants, which in turn drives increased revenues and margins, mainly to dividend growth. AMT shares currently feature ~2.4% dividend.
- American Tower's board of directors is composed of 38% women, including the Chair of the Board and Audit Committee Chair.

#### **Qualcomm** (Sector: Technology)

- Qualcomm is the world's largest mobile device chipmaker; its leading products are chipset modems and other IoT devices, and it
  is the market leader for 5G chipsets. As of 5/31/2022, Qualcomm has a 44% share of the global smartphone AP (Application
  Processor)/SoC (System-on-Chip) chipset and baseband market. As more of the market transitions to 5G devices and mature
  markets continue cyclical upgrades, Qualcomm will continue to benefit and grow from the lead it has built in 5G.
- Their ability to maintain and grow market share is underpinned by a leading IP estate of 140,000+ granted and pending patents in more than 100 countries, covering 5G, imaging, computer vision, voice and audio technologies, WiFi, and AI.

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

# Macroeconomic Commentary

Though not inevitable, the probability of a U.S. recession increased in Q2 with the Fed significantly increasing interest rates to tame rising inflation. Although inflation hurts the economy, so does fighting it, and a slowdown in some sectors is already visible. At the end of Q2, the Commerce Department confirmed that the U.S. economy shrank 1.6% in the first quarter, downgrading their previous prediction. Commerce's report also showed that consumer spending rose at a much reduced 0.2% rate from April to May, and May to June it shrank outright, seemingly in response to inflation, but also possibly in response to the nonstop news narrative of an impending recession. Reductions in spending have led to retailers reporting they are experiencing inventory buildups, and some have planned price reductions as a result. In this we see the first inklings of inflation moderation.

On the growth side, rebounding sectors like hospitality and travel have had a hard time hiring employees fast enough as people return to restaurants, airports, and hotels. Evidently, the spending increases in May were for experiences rather than material goods, and amid the May-to-June spending slowdown, travel and leisure continued to grow. Unemployment is still at record lows and wage growth has doubled from 2019, which one would expect with two job openings currently available for every unemployed person. In addition, the end of Q2 saw data indicating that manufacturing supply chains are getting back on track in key industries like semiconductor manufacturing—another potential deflationary influence. The economic picture is far more complex than a 'looming recession,' and the next 12 months could turn out to be very surprising in any number of ways, no doubt both boosting and detracting from stock market valuations.

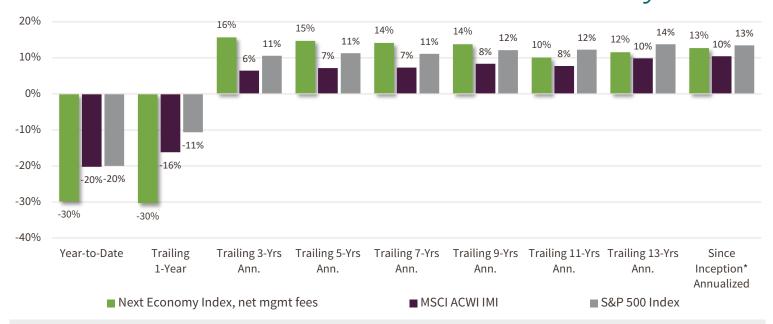
In energy, the recent spike in oil and other fossil fuel prices has pushed a more rapid increase in renewable and clean energy development. Data shows that investment in global energy—mostly in clean energy—is projected to increase by 8%, reaching \$2.4 trillion in 2022 alone. Although these trends are encouraging, they are nevertheless insufficient to fix either the current energy crisis in Europe (and elsewhere) or the climate crisis. The IPCC report released on April 4th made special effort to warn the world that the transition to renewables has been underfunded—to the extent that the COP26 agreements will be difficult to meet. The gap between written pledges and financial investments to meet those pledges is significant and ultimately must be addressed. As awareness of this disconnect advances, we expect the emergence of further catalysts in the energy sector.

During the first half of 2022, most major global indexes, including the MSCI ACWI IMI and the S&P 500 Index, benefitted from exposure to fossil fuels suppliers and producers, which rallied for most of the period. Green Alpha believes that fossil fuels are in the throes of a long-term pattern of demand (therefore price) destruction, and that their current rebound is a temporary condition that will be repeated less often, as the economic transition to sustainable energies and transportation is further established.

What all this signifies is that we can and should continue to expect the unexpected. For Green Alpha, that means remaining fully invested in our long-term thesis of transition from existing economics to Next Economics<sup>TM</sup>. In the face of all the complexity occurring amid and contributing to the current bear market in equities, Green Alpha strategies as a group held up relatively well during Q2. Although our portfolios underperformed our own stated benchmark, the IMI, we did realize outperformance versus leading growth indexes, which generally share our lack of exposure to fossil fuels.

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# Portfolio Performance & Commentary



Likely due in part to the interest rate pressure here in the States, U.S. companies generally underperformed foreign-domiciled companies year-to-date. All Green Alpha portfolios have greater exposure to U.S. companies compared to the MSCI ACWI IMI. Furthermore, our exposure tends to consist of companies exhibiting high growth characteristics; meaning that year-to-date, most of our portfolios experienced the dual negative impact of exposure to more U.S. companies, as well as ones that are growthy and thus out of favor in the market. In the Next Economy Index portfolio, the U.S. exposure detracted a whopping 8.5% from returns relative to the MSCI ACWI IMI.

For the first half of 2022, Green Alpha's Next Economy Index returned -29.8% net of management fees vs. its benchmark, the MSCI All Country World Investible Market Index (MSCI ACWI IMI), which returned -20.2%.

Showing the breadth of the current global bear market cycle, no sectors in the portfolio provided positive returns during the period. The sectors detracting the most from the strategy's returns were Technology and Health Care.

- Technology was down across subsectors, as the secular rotation away from growth and toward perceived value and "safety" continued its pattern from Q1. Losses were led by the portfolio's exposure to companies in the semiconductor value chain, including the world's most productive and advanced foundries, chip designers, and vertically down to packaging and device fabrication. Software and hardware leaders added to declines.
- In Health Care, losses were primarily from exposure to the Biotech and Pharma industry, followed by the Medical Equipment and Devices industry. Here again, broad rotation away from growth played a meaningful role in the pullbacks.

The sectors diminishing returns the least within the Next Economy Index portfolio were Financials and Energy.

- In Financials, a unique venture debt provider offering loans to Next Economy companies in cleantech, health care information, life sciences, and sustainability detracted modestly. The portfolio's relatively low exposure to financials was one reason for its outperformance vs. the benchmark, which has far more exposure to the sector.
- Within Energy, overall losses were partially offset by gains in a leading global provider of mono- and polysilicon wafers and ingots upstream of the solar PV manufacturing industry, and in a top global maker and distributor of finished solar PV panels and modules.

<sup>\*</sup>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 important disclosures about portfolio, benchmark, and characteristic information.



## Next Economy Index

How the portfolio compares to the MSCI All Country World Investible Market Index (MSCI ACWI IMI) and other Green Alpha portfolios

#### Characteristics

- Largest Next Economy basket by definition, the Index is 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, 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	Green Alpha Next Economy Index	Benchmark: MSCI ACWI IMI (SPGM)	Green Alpha Next Economy Social Index	Green Alpha Next Economy Select	Green Alpha Growth & Income	Sierra Club Green Alpha
# of Securities	145	2,413	100	59	35	47
Active Share	93%	-	95%	96%	97%	96%
Sales Growth, Trailing 1-Yr	3,037%	43%	5,302%	3,186%	1,402%	1,940%
P/E, Current	16.11	14.50	16.46	15.89	14.01	18.35
P/E, 1-Year Forward <sup>†</sup>	16.28	13.25	16.92	17.24	15.59	19.91
Price/Sales	2.10	1.55	1.91	1.44	1.47	1.30
Price/Book	2.57	2.27	2.23	2.40	2.01	2.75
LT Debt/Equity	0.70	0.84	0.67	0.87	1.25	0.86
Current Ratio	3.46	1.79	3.37	3.13	1.80	2.54
Dividend Yield	2.64%	2.82%	2.57%	2.93%	4.31%	2.43%
Market Capitalization, Weighted Avg (US\$B)	\$65.40	\$289.82	\$62.13	\$95.13	\$58.41	\$87.90
Market Capitalization, Median (US\$B)	\$7.85	Not Available	\$6.94	\$6.11	\$26.61	\$15.16
Turnover, Trailing 2-Yr Avg Annual	31%	-	39%	5%	23%	18%
Beta, Trailing 2-Yrs	1.14	1.00	1.15	1.16	0.93	1.16

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

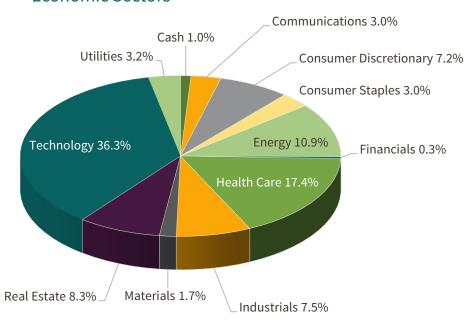
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## Portfolio Allocations

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.

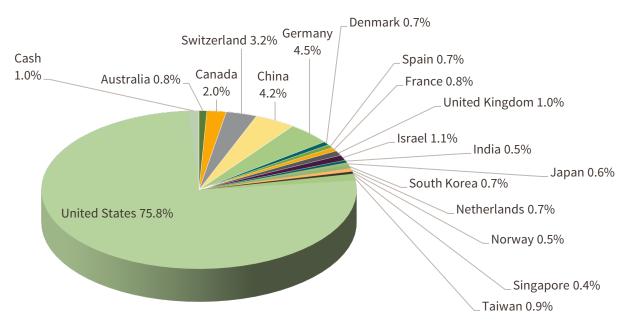
#### Economic Sectors ††



### **Market Capitalizations**



## Companies' Main Headquarters



††Bloomberg Industry Classification Standard. Please see the final page of this document for important disclosures about portfolio, benchmark, and characteristic information.

# 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. The Next Economy Index 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 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: <a href="http://greenalphaadvisors.com/about-us/legal-disclaimers/">http://greenalphaadvisors.com/about-us/legal-disclaimers/</a>.
- 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.
- Regardless of time frame, all characteristics data are sourced from Bloomberg Finance L.P. based on the representative Next Economy Index account, which may or may not be exactly what is delivered on each custodial or wrap account platform.
- Green Alpha portfolios may invest in companies with small and medium market capitalizations, which may have more limited product lines, markets, and financial resources than larger companies. In addition, their securities may trade less frequently and in more limited volume than those of larger companies. Small or mid-cap stocks may be more volatile than those of larger companies and, where trading volume is thin, the ability to dispose of such securities may be more limited. Green Alpha portfolios may also invest in foreign domiciled companies. Investing in foreign securities may involve additional risks, including exchange-rate fluctuations, limited liquidity, high levels of volatility, social and political instability, and reduced regulation. Emerging markets are often more volatile than developed markets and investing in emerging markets involves greater risks. International investing may not be suitable for everyone. An investment in Green Alpha portfolios should be considered a long-term investment.
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- The MSCI All Country World Investable Market Index (ACWI IMI) captures large, mid, and small cap representation across 23 developed markets and 27 emerging markets countries. With more than 8,750 constituents, the index is comprehensive, covering approximately 99% of the global equity investment opportunity set. Investors cannot invest directly in this index.
- The SPDR MSCI Global Stock Market ETF (ticker: SPGM) seeks to provide investment results that, before expenses, correspond generally to the price and yield performance of the MSCI ACWI IMI. Investors can invest directly in SPGM.
- The S&P 500 Index is an unmanaged index of 500 common stocks chosen for market size, liquidity, and industry group
  representation. It is market-value weighted. The S&P 500 Index figures do not reflect any fees, expenses, or taxes. Investors cannot
  invest directly in this index.
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