

# Next Economy Social Index

Portfolio Review • June 30, 2018

## Green Alpha<sup>®</sup>

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### Why Invest in the Social Index?

- Applies unique gender and social inclusion criteria to Green Alpha's largest basket of innovators
- Passively managed, long-only equity strategy seeking long-term capital growth
- Invests in global, market-leading companies driving the transition to the Next Economy™
- Fossil fuel free since inception

**Inception Date:** December 31, 2015

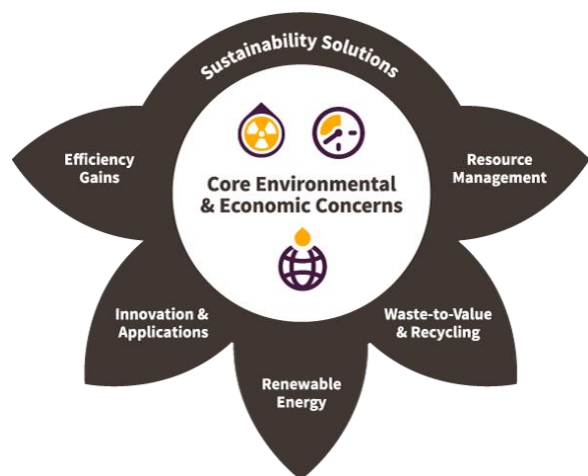
**Style:** All-Cap Global Growth Equity

**Available Vehicle:** Separately Managed Account

### Next Economy Investment Philosophy

Green Alpha's investment philosophy is straight forward: don't invest in companies that cause global systemic risks; instead, invest in the solutions.

We believe companies that create or enable innovative solutions to climate change, resource degradation and scarcity, and widening inequality are the greatest growth drivers and sources of wealth creation of the twenty-first century. That's the Next Economy.



### Portfolio Construction: the Social Index

The Next Economy™ Social Index is an actively researched, passively managed portfolio designed to harness the powerful long-term performance potential of Next Economy companies run by diverse leadership teams and boards of directors. To manage the Social Index, we start with our list of [Next Economy Index](#) constituents, then remove any that lack strong female representation in leadership or on the board. We first select weights based on market cap, with additional portfolio weight given to companies where women hold positions of significant authority, women have especially strong representation in leadership, and/or corporate policies are socially inclusive. Stocks are actively selected using Green Alpha's top-down (evaluating contribution to a sustainable economy) and bottom-up (fundamentals-based analysis) investment criteria. Like all Green Alpha portfolios, the Next Economy Social Index is a fossil fuel free, all-cap, cross-sector, global equity strategy.

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

# Portfolio Overview: Next Economy Social Index

Portfolio characteristics and how they compare to the S&P 500 and other Green Alpha portfolios

## Next Economy Social Index Characteristics

- **Next Economy innovators, diversity leaders** – harnessing the performance potential offered by diverse teams by applying gender and social inclusion criteria to the Next Economy Index
- **Fundamentals-driven** – because the quality of the companies you invest in and the price you pay for them matter
  - ✓ **High growth** – indicated by Sales Growth, drop from current P/E to Forward P/E as revenue and earnings grow
  - ✓ **Compelling valuation** – demonstrated by Price/Sales, Price/Book metrics
  - ✓ **Strong balance sheet, solid management execution** – expressed by LT Debt/Equity, Current Ratio
- **Fossil fuel free since inception** – we have never invested in companies that prospect, extract, refine, or transport fossil fuels, nor fossil-fired utilities
- **Diversified** – we look for solutions wherever we can find them - across the globe, in firms of all sizes, and in every industry
- **Public equities, long-only** – largest asset class, largest opportunity for impact

Characteristics	Green Alpha Next Economy Social Index	Benchmark: S&P 500	Green Alpha Next Economy Index	Green Alpha Next Economy Select	Green Alpha Growth & Income	Sierra Club Green Alpha
# of Securities	73	500	94	54	33	38
Sales Growth, TTM	18.34%	11.70%	17.48%	16.56%	9.20%	18.14%
P/E, Current	34.41	35.65	34.06	22.63	32.26	27.38
P/E, 1-Year Forward <sup>†</sup>	20.36	16.21	20.33	16.77	17.98	18.59
Price/Sales	1.67	2.16	1.66	0.90	2.04	1.28
Price/Book	3.16	3.28	2.84	1.74	1.99	2.10
LT Debt/Equity	0.61	0.85	0.54	0.57	1.05	0.55
Current Ratio	2.91	2.01	2.96	2.87	2.75	3.13
Dividend Yield, TTM	1.49%	1.93%	1.61%	2.21%	6.02%	1.84%
Dividend Yield, Current	-	-	-	-	4.88%	-
US Domicile	82.81%	100%	76.77%	68.28%	76.66%	69.62%
Non-US Domicile	14.53%	-	21.23%	27.33%	21.14%	23.51%
Cash	2.66%	-	2.00%	4.39%	2.21%	6.87%
Market Capitalization Weighted Avg (US\$B)	70.14	217.20	65.90	43.11	19.73	59.46
Turnover, TTM	37%	-	18%	15%	34%	18%
Beta, TTM	1.03	1.00	1.04	0.95	0.88	0.95

TTM = Trailing Twelve Months

<sup>†</sup> Bloomberg consensus estimates

<sup>††</sup> Bloomberg Investment Classification System

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# Top Ten Positions

And how the top five positions are driving progress toward the Next Economy

## **NVIDIA Corp.** (Technology, Semiconductors)

- GeForce chip architecture sets the standard for high-speed processing applications such as: graphics processing, AI & deep learning, autonomous machines (including self-driving vehicles), crypto currency mining, data centers, cloud computing, design & production visualization.
- Machines empowering algorithms & AI are essential to increasing efficiency & sustainability of global economy.
- Strong 33% women in Senior Management Team, including two critically influential positions: EVP/CFO & EVP/Operations. Board of Directors includes three women (25%); replaced one male Director with a woman since 2016.

## **Apple, Inc.** (Consumer Discretionary, eCommerce)

- Significant contributor to IT, connectivity, & AI that enable & drive efficiency—a pillar of the sustainable economy.
- Strong commitment to operational sustainability; reached goal of using 100% renewable energy at corporate level; working with suppliers to commit to renewable energy; aim to make every product from recycled or reclaimed material.
- Women in Senior Management (18%) have critical roles; Board includes two women (25%), including a Committee Chair.

## **Square, Inc.** (Financials, Financial Transactions)

- Mobile transaction service provider, primarily enabling merchants to accept payments anywhere.
- Provides efficient, easy to use, and affordable software hardware for merchants, making commerce more accessible to small businesses.
- Women make up 27% of Senior Management and 22% of the Board, including two Committee Chairs.

## **IBM** (Technology, Services)

- Has been very adroitly managing transition from legacy IT & consulting services to innovation powerhouse.
- Highlights: top patent holder across domains; enabling distributed ledger; pioneering AI; leaders in quantum computing; developing security methods atop lattice cryptography; advancing nanotechnology; developing & applying Watson (AI) across industries, including medicine, water, food safety.
- Female CEO is building a diverse team to maximize the company's ability to innovate, with six women (29%) in Senior Management & three women on the Board of Directors (23%), including several key Committee Chairs.

## **Tesla** (Consumer Discretionary, Autos)

- Designs, develops, manufactures and sells fully electric vehicles and energy storage systems; also installs, operates and maintains solar products.
- Aims to accelerate the global transition to sustainable energy.
- While Tesla sometimes misses its ambitious short-term production goals, they continue to drive unmatched, long-term progress in the EV market.

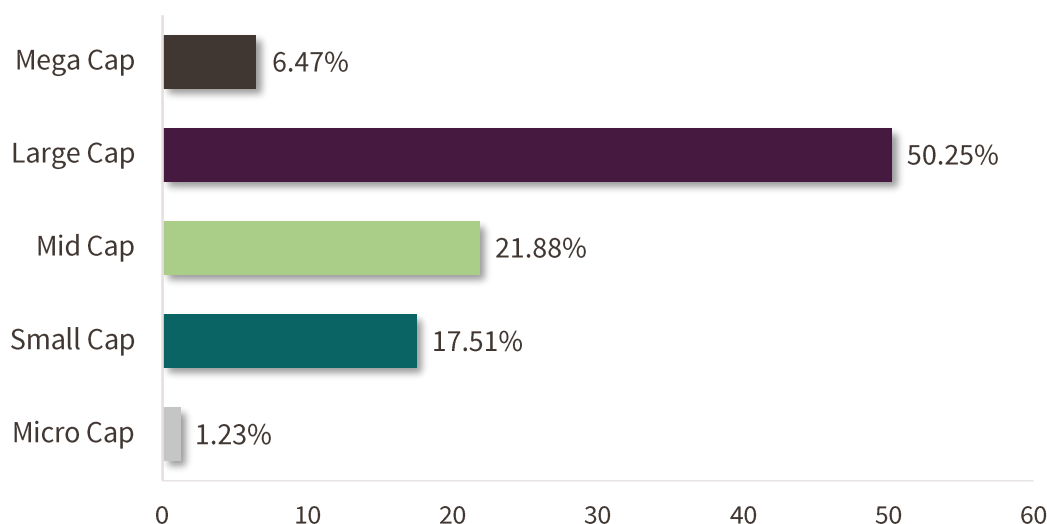
Company Name	Ticker	Weight
NVIDIA	NVDA	2.42%
Apple, Inc.	AAPL	2.32%
Square, Inc.	SQ	2.24%
Int'l Business Machines	IBM	2.15%
Tesla, Inc.	TSLA	2.14%
Alphabet, Inc.	GOOG	2.12%
Alibaba Group	BABA	2.03%
Qualcomm, Inc.	QCOM	1.99%
SunRun, Inc.	RUN	1.97%
Avnet, Inc.	AVT	1.94%
% of Portfolio		21.33%

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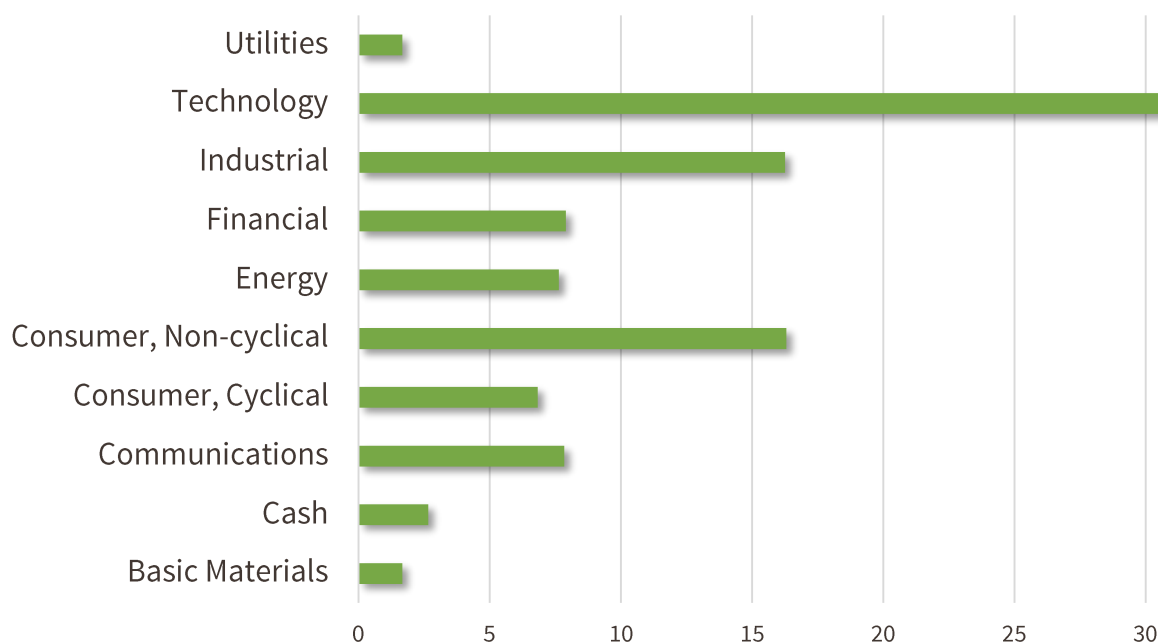
# Allocation by Market Cap & Sector

Our search for Next Economy companies is unconstrained. We seek solutions to systemic risks wherever they exist – across sectors, market caps, and geographies. The following divisions are the result of our Next Economy process, rather than the starting point.

## Equity Allocation by Market Cap



## BICST<sup>††</sup> Sector Allocation (% of Portfolio)



<sup>†</sup> Bloomberg consensus estimates

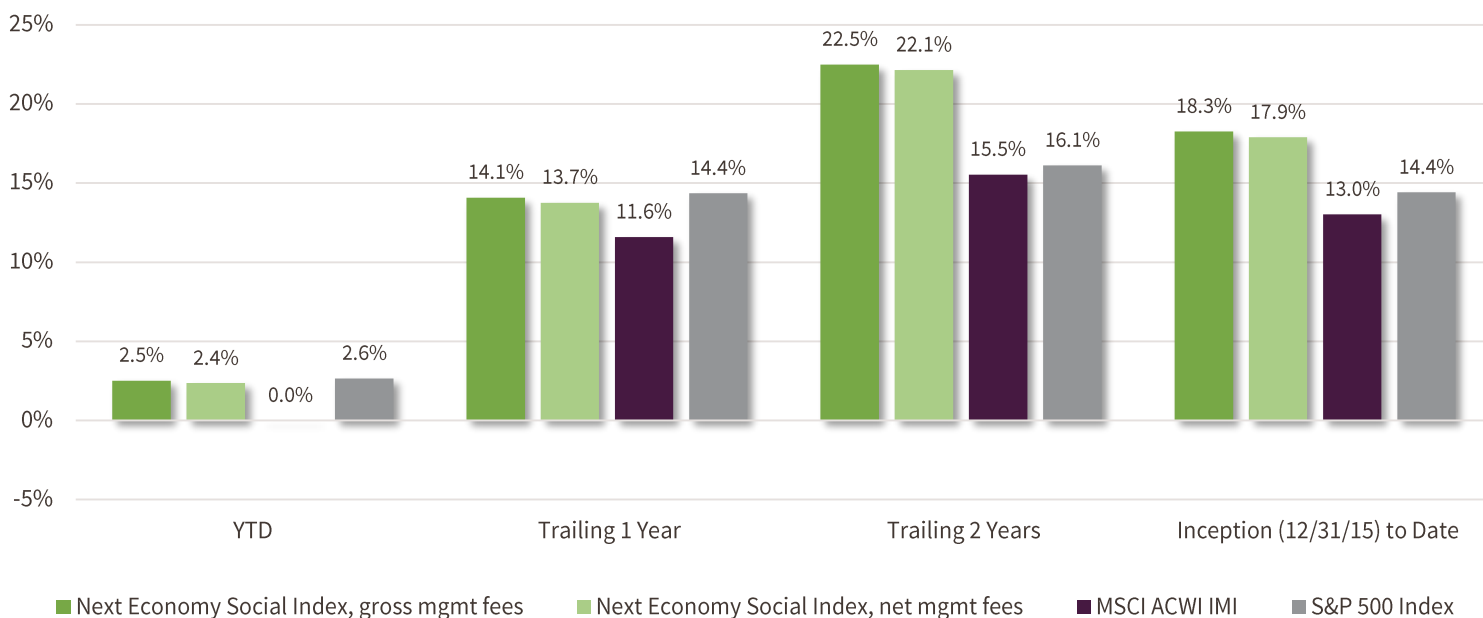
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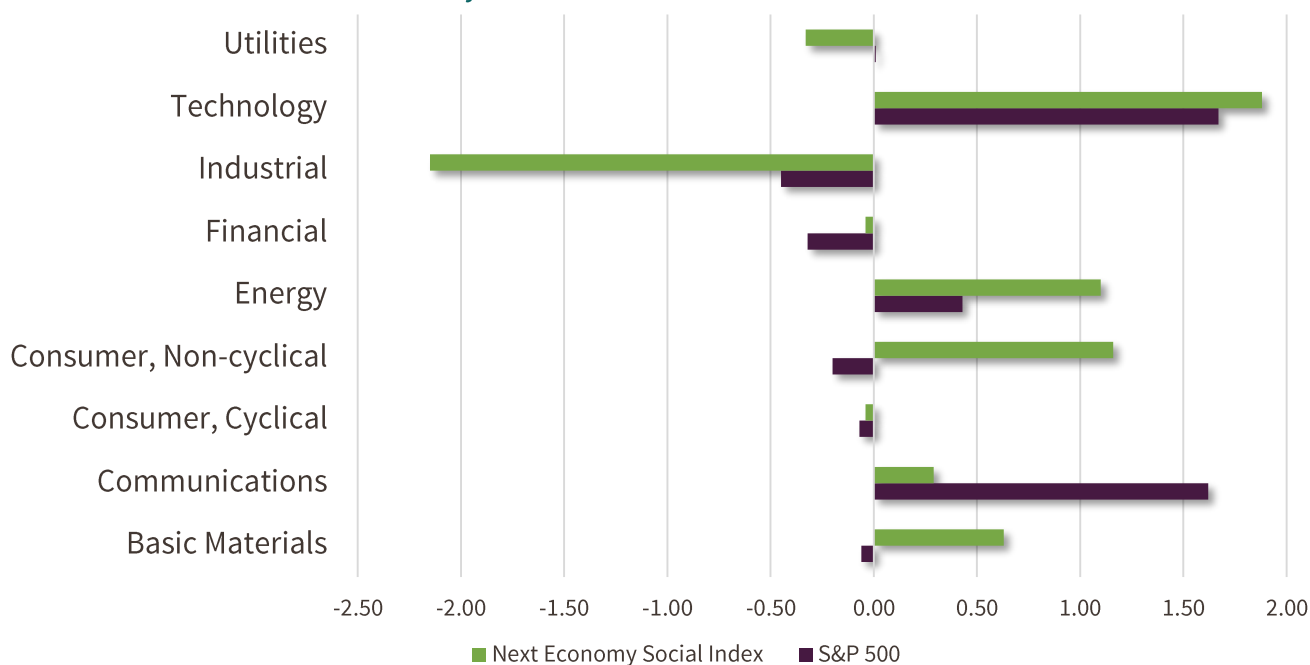
# Performance History & Sector Attribution

For commentary, see pages 7 - 9.

## Performance History



## Year to Date 2018 Sector Attribution by BICS††



† Bloomberg consensus estimates

†† Bloomberg Investment Classification System

All returns presented above that are greater than 1 year in length have been annualized. Performance data quoted represent past performance. Past performance does not guarantee future results and current performance may be lower or higher than the data quoted. Next Economy Social Index performance results reflect performance of a model portfolio. The model performance does not reflect any transaction costs. The Next Economy Social Index performance results do 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. Model performance has inherent limitations. The returns shown are model results only and do not represent the results of actual trading of client assets. The model performance shown does not reflect the impact that material economic and market factors had or might have had on decision making if the account held actual client capital. Actual client accounts in this strategy are managed by Green Alpha based on the model portfolio, but the actual composition and performance of these accounts may differ from those of the model portfolio due to differences in the timing and prices of trades, and the identity and weightings of securities holdings. Please see additional important disclosures on page 9 of this document.

# Attribution: Top Five Contributors & Detractors

Next Economy innovation doesn't unfold overnight—or even a quarter. Think of this as one way of looking at the previous quarter's performance, not necessarily the long-term picture.

## Five Largest Contributing Stocks – 2<sup>nd</sup> Quarter

Company Name	Ticker	Average Weight	Stock Price Return	Contribution to Portfolio Return
<b>Exact Sciences</b>	EXAS	1.86%	48.25%	0.75%
<b>SunRun</b>	RUN	1.57%	47.26%	0.64%
<b>Square, Inc.</b>	CDXS	1.51%	33.97%	0.59%
<b>Natural Grocers by Vitamin Cottage, Inc.</b>	NGVC	0.82%	77.93%	0.55%
<b>Seattle Genetics, Inc.</b>	SGEN	1.26%	36.10%	0.53%

## Five Largest Detracting Stocks – 2<sup>nd</sup> Quarter

Company Name	Ticker	Average Weight	Stock Price Return	Contribution to Portfolio Return
<b>Applied Materials, Inc.</b>	AMAT	2.30%	-16.61%	-0.56%
<b>Ultra Clean Holdings, Inc.</b>	UCTT	1.59%	-13.77%	-0.38%
<b>First Solar, Inc.</b>	FSLR	0.77%	-28.91%	-0.36%
<b>Lumentum Holdings, Inc.</b>	LITE	1.55%	-9.25%	-0.34%
<b>Itron, Inc.</b>	ITRI	1.61%	-16.07%	-0.32%

Past performance is not a guarantee of future results. To obtain information about the calculation methodology used to select the largest contributors and detractors from performance or to obtain a list showing every holding's contribution to the model's performance during the measurement period, contact us at [info@greenalphaadvisors.com](mailto:info@greenalphaadvisors.com). Given differences in account sizes, custodial fee arrangements and other client-specific factors, not all accounts invested in the Next Economy Social Index experienced the exact portfolio contributions shown above. The holdings identified throughout this document do not represent all of the securities purchased, sold, held or otherwise recommended for advisory clients. Nothing in this document should be considered recommendation to purchase or sell any particular security.



# Manager Commentary

Q2 2018 in Review



Q2 2018 saw more than the usual amount of market reverberations emerge from macro policy. First and last on that list: tariffs and the fear of full-blown trade wars.

It has been a year since the Trump administration withdrew the United States from the Trans-Pacific Partnership (TPP), a free trade agreement for nations around the ring of fire. This has had its effects on corporate America, such as Harley-Davidson CEO Matt Levatich [said](#) “We were very optimistic about what the TPP would enable for Harley-Davidson. It took seven years for it to come to fruition. We could see the writing [of the US withdrawal] on the wall, and we got busy with Plan B.” Plan B was to build a plant in Thailand and close its plant in Missouri. Markets largely shrugged all that off in 2017, but in Q2 2018, things got a lot worse for global trade, and markets noticed.

In Q2, the administration threatened to impose tariffs on up to \$450 billion of Chinese imports and began imposing some of them, including large tariffs on steel and aluminum that affect America’s closest allies in Europe and Canada.

Of course, these threats and actual trade taxes did not go unanswered. In June, Europe imposed higher taxes on consumer goods made in the U.S., including products from jeans to motorcycles, in response to White House tariffs on European products. Worse yet, the US’s new trade policies seemed to galvanize the world into a stance of unified retaliation. “European and Chinese officials have formed an unlikely team at the World Trade Organization,” is how *Business Insider* [put it](#), and many nations and companies are now suing the U.S. in courts and at the WTO. Reuters [reports](#) that “Trump’s trade policy, labeled ‘medieval’ by former WTO head Pascal Lamy, has inflamed international opinion this year.”

As the Tax Foundation, an independent tax policy nonprofit, recently [wrote](#), “Trade barriers such as tariffs raise prices and reduce available quantities of goods and services for U.S. businesses and consumers, which results in lower income, reduced employment, and lower economic output.” That’s exactly what markets fear.

What have the market effects been so far? Mostly, increased volatility. Days with news of increased trade tensions see markets consolidate; days with more hopeful news, or at least no trade news, have been pretty good.

Another effect has been a flight to US small and mid caps on the theory that smaller firms are not as exposed to global trade, and therefore not as vulnerable in a trade war. US small cap indexes have roughly doubled the returns of large caps during the quarter as a result. Green Alpha views this trading thesis as spurious, as markets will quickly realize that small and midcap firms depend on global commerce and global supply chains as much as large and mega cap firms.

Today, the news is full of stories about smaller firms suffering under newly-imposed tariffs, such as [layoffs at a nail-finishing company](#) in Missouri that imports steel from Mexico, but now must pay the 25% tax for their basic material. Harley-Davidson, a solid mid-cap at ~\$7.1 billion, is [moving some production overseas](#) to avoid retaliatory tariffs from the EU, costing American jobs. Smaller firms may in fact be more vulnerable as they have less capacity to weather periods of higher input costs, likely less access to capital, and higher costs of capital to bridge the gap during periods of lower revenues.

As risky as these developments are, they are small blips in the context of Green Alpha’s investment thesis. Our thesis—that innovations driving productivity gains and tackling economic risks are the best sources of wealth generation—is perennial. As [we’ve said before](#), trade sparring may influence which nation takes the lead and benefits most from technological progress, but it will not shift the trajectory of innovation itself. As a result, we hew closely to our thesis under all market conditions. (*continued on page 8*)

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# Manager Commentary (cont.)

Q2 2018 in Review

Some key developments within the Next Economy:

**Infrastructure inflection point:** Traditional infrastructure—like bridges, roads, water mains, and water treatment—desperately need upgrades. Companies that supply and utilize waste-to-value materials, like recycled steel, are meeting critical infrastructure and sustainability needs. Infrastructure construction saw an uptick in Q2 and is [forecast to be up overall in 2018](#) versus 2017.

In less-traditional infrastructure, Q2 saw the [increasing development of infrastructure as a service \(IaaS\)](#) from major tech firms. Data ownership and management are key to today's global economy. As such, the tech-driven economy also requires infrastructure to support the twenty first century's most precious commodity: data. Global fiber networks, wireless networks (including 5G), cloud services, and satellite communications (including internet) will continue to be key areas to watch.

**Is genomics investment-worthy?** Genomics technology continues to achieve significant medical and scientific breakthroughs. For investors, new opportunities and risks are unfolding in diagnostics, treatment and direct IP resulting from the development of gene-editing techniques. Although potentially transformative for medicine and human as well as biosphere well-being, the industry faces some political headwinds and both questions and backing from sustainable and impact investors. Q2 saw some [major advancements](#) that lead Green Alpha to believe in the long-term ability of a selected basket of related stocks to drive long-term performance with periods of significant volatility along the way.

**U.S. China solar flare-up:** China's recently announced changes to national solar policies have rocked the global PV market. With the resulting oversupply of panels, prices may fall 35% or further—more than nixing the impact of U.S. trade tariffs. Stock prices of panel manufacturers are following suit, offering some fantastic buying opportunities for investors.

Adding to the momentum, the US Internal Revenue Service handed down new [guidance](#) in Q2 allowing solar developers to claim a 30% investment tax credit on any project they begin by the end of 2019 and complete by 2023. Since the US administration's section 201 tariff on panels sunsets in February 2022, this means developers can both enjoy their ITC tax credit and avoid nearly all tariffs on imported panels.

Such positive developments for solar have thus far gone under-appreciated in the markets, making them perfect examples of how [information asymmetry](#) provides juicy opportunities for the vigilant investor. Long-term, solar's prospects shine bright.

**Battery tech fully charged:** With their ability to power electric vehicles and offer dependable electricity storage, batteries are exponentially growing. Storage can provide a critical service during sudden electricity demand peaks and offers stability in the presence of intermittent renewable energy. Due to improvements in technology and increases in scale of battery production at an increasing number of companies around the world, the price of lithium-ion battery storage has fallen from US\$1,000 per kilowatt hour of storage (kWh) in 2010 to US\$209 per kWh in 2017, [according to](#) Bloomberg New Energy Finance. That price is [projected](#) to fall to less than US\$100 per kWh by 2025, making both grid storage and EVs much less expensive, potentially catalyzing explosive demand.

In Q2, China made announcements about their [commitment to growth in energy storage](#) technologies, which may overtop the rest of the [world's combined production capacity](#) (this may or may not be possible as plans for large-scale battery production continue to grow worldwide). *(continued on page 9)*



# Manager Commentary (cont.)

Q2 2018 in Review

**Gender and diversity investing elevated:** Gender and diversity investing is one of the fast-growing categories of sustainable and impact investing, with public equity assets in these strategies [growing](#) from \$100 million in 2014 to more than \$900 million in 2017. Investors have been encouraged by diversity-focused research, which demonstrates that diverse management teams outperform homogeneous groups in material ways, from creative problem solving to executing on short- and long-term goals.

While increases in the percentage of women in top management positions and on corporate boards [has stalled](#), female inclusion and influence continues to materially increase across Green Alpha's Next Economy universe.

While some investment vehicles overtly focus on gender, all portfolio managers should be evaluating the quality of a company's leadership, including their diversity and social inclusion efforts. Just as analyzing a company's material sustainability efforts shouldn't be relegated to a 'niche market,' examining the quality of a company's leadership should be taken seriously. Leadership impacts every company and the likelihood of an investment's success – no matter the sector, market-cap or domicile.

## Next Economy Social Index - Portfolio Commentary

- The Social Index was our best-performing strategy for Q2, returning 3.97% for the quarter. Gains in the Consumer Non-cyclical sector can be credited with the lion's share of these returns, adding 2.47% to total return.
  - Biotechs and pharmaceuticals were responsible for 1.79% of the 2.47% Consumer Non-cyclicals contributed to portfolio return. Genetics-based diagnostics and therapies to treat cancer and other diseases were particularly strong in the quarter.
  - Commercial services added 0.59% to the sector's returns as our holdings in firms that are disintermediating traditional financial services continued to gain traction.
- Consumer, Cyclical sector added 0.92% to portfolio performance during the quarter.
  - Electric vehicle manufacturers were entirely responsible for this contribution, as the growth in EV sales globally—led by China—continued to outpace sales growth of traditional internal combustion vehicles.
- Of the nine sectors held within the Social Index, two exhibited negative performance in Q2. The first was industrials, detracting 0.79% from portfolio return.
  - Industrials' performance was led downward by firms providing IP and manufacturing for displays for flat-panel TVs, smart phones, notebook computers, and monitors, among other applications.
  - Trade concerns (justified) and speculation (misguided, in our opinion) about the plans of the world's largest smartphone OEM by market cap combined to bring down flat-panel related firms' share prices. Display-related stocks detracted 0.47%.
  - The remainder of Industrial's negative contribution was the result of underperformance in smart meter manufacturing at -0.32%, despite strong growth and the positive outlook for improving infrastructure.
- Technology, which was pushed downward by upstream capital equipment for semiconductor manufacturing (-0.94% at portfolio level), overall took just 0.02% away from the portfolio's quarterly returns, as losses were offset by gains in software, computers and digital security.

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- Dividend information for the Growth & Income Portfolio: The dividend yield for the trailing twelve months (TTM) for the Growth & Income Portfolio included a significant one-time special dividend distribution by TerraForm Power, Inc. The TTM dividend yield for the portfolio (6.02%) was materially higher than the current dividend yield (4.88%) as a result of the special dividend. The current dividend yield is shown in addition to the TTM dividend yield as a more appropriate reflection of the portfolio's current dividend yield as of June 30, 2018.
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- The SPDR S&P 500 ETF (SPY) seeks to provide investment results that, before expenses, correspond generally to the price and yield performance of the S&P 500 Index. Investors can invest directly in SPY.
- MSCI ACWI IMI: The MSCI ACWI Investable Market Index (IMI) captures large, mid and small cap representation across 23 developed markets and 23 emerging markets countries. With over 8,600 constituents, the index is comprehensive, covering approximately 99% of the global equity investment opportunity set. Investors cannot invest directly in this index.
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