

# Growth & Income

Fourth Quarter Review • December 31, 2017



## Green Alpha<sup>®</sup>

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### Why Invest in Growth & Income?

- Active, long-only equity strategy combining current income with potential for capital growth
- Comprised of income producing, global Next Economy™ companies
- Invests in 25-35 companies developing innovative solutions to core economic and environmental risks
- Fossil fuel free since inception

**Inception Date:** October 8, 2012

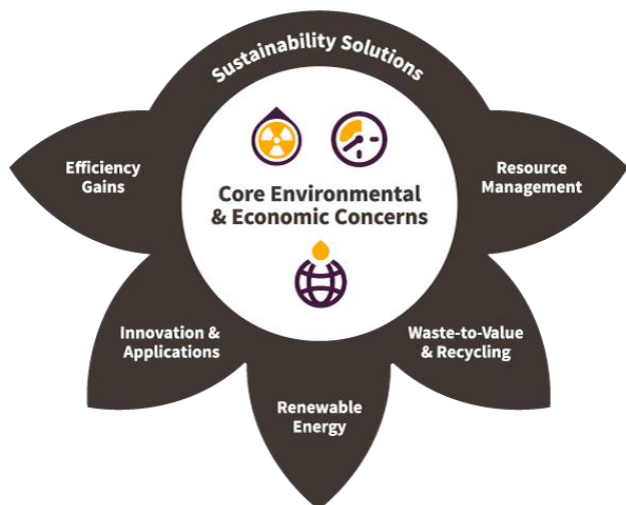
**Style:** All-Cap Global Growth Equity

**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 scarcity and widening inequality are the greatest growth drivers of the twenty-first century. That's the Next Economy.



### Portfolio Construction: Growth & Income

The Growth & Income portfolio is designed for investors who desire the powerful combination of growth and income within one portfolio. The strategy seeks to provide long-term capital appreciation without excess volatility, while delivering dividend income at higher rates than the broad equity market. As with all active Green Alpha portfolios, Growth & Income constituents are taken from Green Alpha's Next Economy universe of stocks, meaning they meet both top-down (evaluating contribution to a sustainable economy) and bottom-up (fundamentals-based analysis) criteria. Growth & Income stocks are then selected for current or potential dividend yield coupled with strong current and expected growth at a reasonable price. Under normal market conditions, the portfolio is generally composed of at least 80% global equities and at most 20% cash and cash equivalents. Like all Green Alpha portfolios, the Growth & Income portfolio 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.

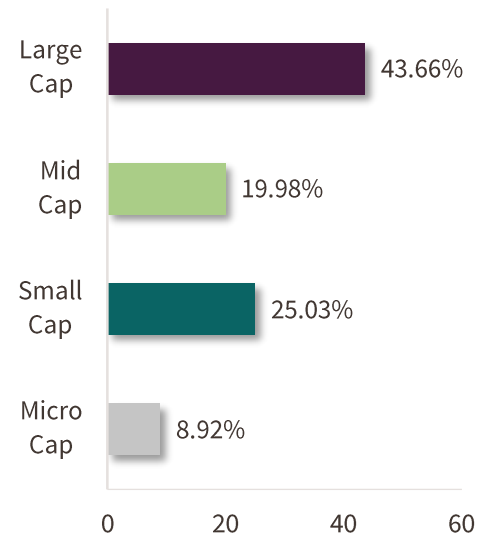
# Portfolio Overview: Growth & Income

Portfolio characteristics, how they compare to other portfolios, and allocation by market cap

## Growth & Income Characteristics

- **High Income** – a compelling combination of strong growth and higher dividend income than the broad equity market
- **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

## Equity Allocation by Market Cap



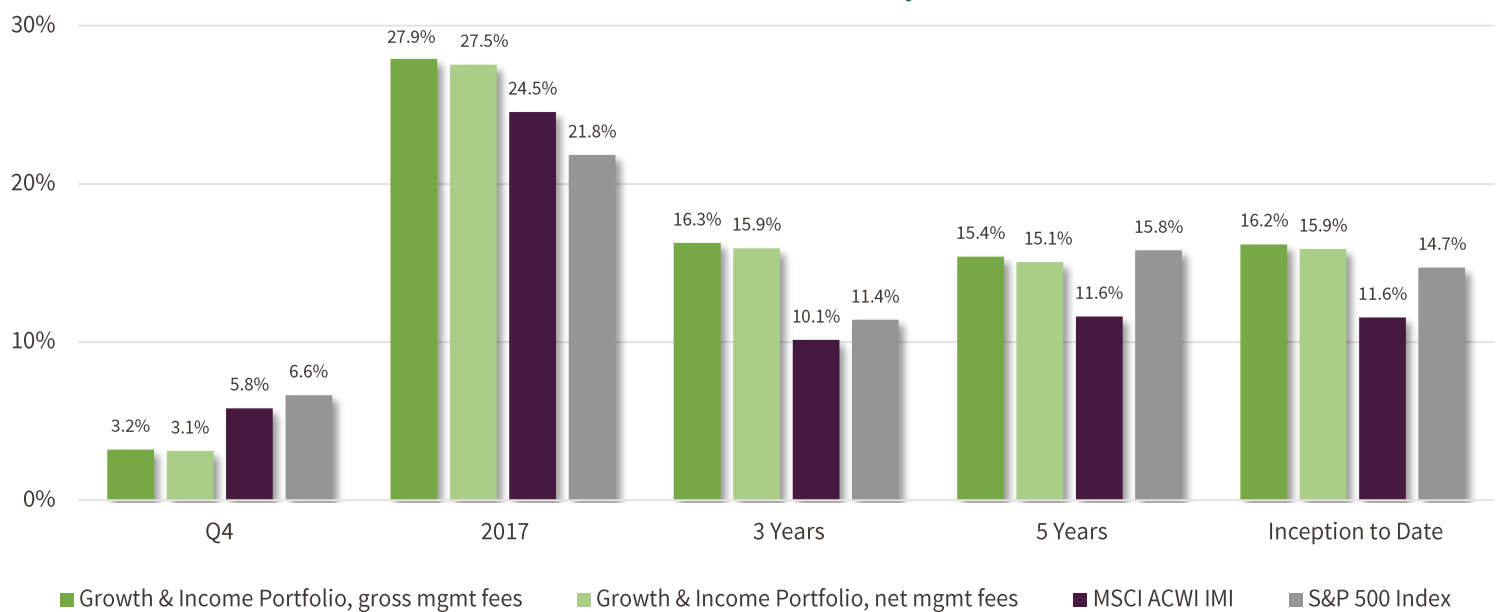
Characteristics	Green Alpha Growth & Income	Benchmark: S&P 500	Green Alpha Next Economy Index	Sierra Club Green Alpha	Green Alpha Next Economy Select
# of Securities	30	500	95	33	52
Sales Growth, 1-Year Trailing	9.53%	9.77%	16.17%	13.69%	14.02%
P/E, Current	44.26	32.95	38.82	42.02	36.32
P/E, 1-Year Forward†	30.67	22.13	31.67	30.20	24.48
Price/Sales	2.06	2.23	1.71	1.22	1.01
Price/Book	2.18	3.30	2.92	2.05	2.03
LT Debt/Equity	0.94	0.87	0.58	0.53	0.59
Current Ratio	2.58	2.10	2.92	3.55	2.96
Dividend Yield	4.70%	1.89%	1.63%	1.25%	1.86%
US Domicile	74.35%	100%	75.96%	65.66%	63.87%
Non-US Domicile	23.24%	-	22.97%	30.82%	27.70%
Cash	2.41%	-	1.07%	3.52%	8.43%
Market Capitalization Weighted Avg (US\$B)	20.17	197.05	59.42	49.04	35.48
Turnover, 1-Year Trailing	32%	-	19%	19%	24%
Beta, 1-Year Trailing	1.08	1.00	1.22	1.40	1.21

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# Manager Commentary & Performance History

## 2017 in Review

### Performance History



Welcome to our review of the Next Economy in 2017. In 2017, markets held up in spite of uncertainties, and Green Alpha strategies performed particularly well, outpacing major benchmarks, and our assets under management grew substantially to \$112 million. So, what was relevant about our Next Economy investment thesis in 2017?

For those of us who don't live and breathe Next Economics, a refresher may be useful. Next Economics rests on the idea that the global economy is becoming ever more efficient and productive as it 1) increasingly incorporates tech-leveraged innovation and 2) moves to minimize the global risks that threaten the economy's ecological and social underpinnings and, as a result, economic growth. In its ultimate realization, the economy will be efficient enough that it can provide good standards of living for everyone without overtopping any of these tolerances, thereby preventing probable systemic collapse. By generating long-term wealth via risk-mitigating products and services – rather than short-term wealth via risk-exacerbating industries like fossil fuels – it is possible to achieve an economically, environmentally, and socially “sustainable” economy.

In terms of portfolio construction methodology, we take a private equity-like view of public equity investing in that we seek the best growth opportunities representing the most innovative, dynamic, risk-solving, and fast-growing companies, often tech-leveraged, that we can identify. Therefore, our strategies are all cap, cross sector, cross industry, and global. As such, our portfolios don't lend themselves to comparison with any individual benchmark. Indeed, as a matter of thesis, we believe that most traditional benchmarks reflect the inefficient legacy economy as much as, and probably more than, they do the highly productive Next Economy. Not only do our strategies not correlate especially closely with most traditional benchmarks (apart from definitional equity correlation), we don't especially want them to; correlating with the legacy economy is not within our mission. *Cont. on Page 4.*

*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. Growth & Income performance results reflect performance of a model portfolio. The Growth & Income model performance does not reflect any transaction costs. Growth & Income performance results do reflect the reinvestment of dividends and interest. The Growth & Income model contains equity stocks that are managed with a view towards capital appreciation and current income. 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 important disclosures on page 8 of this document.*



# Manager Commentary (cont.)

## 2017 in Review

Since our thesis holds that Next Economy innovations will increasingly gain market share from their legacy economy predecessors and counterparts in any given industry, we believe that our strategies should, within the additional context of stock selection, realize this lack of correlation as an ability to earn alpha over the long term versus traditional index benchmarks. Over time, we anticipate broad market index turnover to reflect the growing scale and number of representatives of Next Economics in the global economy, and therefore the differences between the output of our thesis and major market indices will become less. This will be a decades-long process.

### Common threads of 2017 among Green Alpha portfolios

What, then, are the primary portfolio drivers of ever-increasing, sustainable productivity? In 2017, tech-leveraged innovation and cheap renewable energies led the charge. The global economy is increasingly characterized by automation, machine learning and AI, robotics, connectivity for all smart objects, and waste-to-value based resource management – all powered by true renewables like wind and solar. Unsurprisingly, the leading companies behind these inventions have been growing. More detail about specific sectors and industries can be found below within each strategy's review, but let's begin by looking more closely at renewable energy, the cornerstone of an indefinitely sustainable economic system.

We're keen to own leaders in renewable energies since overall, renewable generation remained one of the fastest growing global industries in 2017. Solar is [poised to install 108 GW](#) of new capacity in 2018 – up from [9 GW in 2007](#). Don't expect these trends to slow down. [According to Bloomberg](#), “Electricity demand worldwide grows 58% to 2040 and this is met by a doubling of installed capacity to 13,919GW in 2040 from 6,719GW today, with wind up 349% and solar expanding a whopping 14-fold.” In this light, we have to agree with the energy journal [TerraJoule](#), which recently observed (December 18, 2017 edition) that “while surprising, it's not complicated: two technologies for capturing energy (wind + solar) were comically uneconomic for 30 years and, now, are dangerously competitive. Moving the world economy steadily towards the power grid is, by definition, a process whereby the next unit of GDP is far likelier to be created on the platform of electricity, rather than oil.”

In the case of renewables in particular, one additional factor supported share prices in 2017: increasing demand for the stocks themselves. This could have been the result of expanding acceptance of renewables as the soon-to-be primary energy source for the global economy, pro-sustainability galvanization in the face of destructive U.S. policy, or, most likely, some combination of the two. Although the world emitted [historic levels of CO2 in 2017](#), renewable power and electric transportation had meaningful impacts, and are now transforming the global system, with both industries consistently and significantly outstripping expectations and forecasts. Wind and solar are now making power so inexpensively and growing deployments so fast, *Wired* magazine has gone so far as [to say](#), “clean energy... is, in effect, the new Silicon Valley—filled with giddy, breathtaking ingenuity and flat-out good news.” On the tech progress front, a [recent headline](#) from *Vox* proclaims “Solar panels have gotten thinner than a human hair. Soon they'll be everywhere.” We agree, and we believe that, as a result, there is no clear long-term path for demand growth in fossil fuels. For a detailed round up of the remarkable business advances in renewable energies and electric vehicles, see Michael Liebreich's “[Long-Term Clean Energy Optimism, Short-Term Caution](#).”

So, after a long time in the doghouse, many of our energy positions finally saw sentiment turn positive in 2017.

Renewable energies weren't the only sector where Green Alpha portfolios returns were propelled by greater-than-average market demand for Next Economy stocks; we also saw this phenomenon in technology, industrials and some consumer non-cyclicals.

*Cont. on page 5.*

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

# Manager Commentary (cont.)

## 2017 in Review

This was the result of one key factor: better than expected business results, leading to frequent upside revenue and earnings surprises from companies across our strategies. As the best positioned and most productive denizens of the Next Economy continue to gain market share from their legacy economy predecessors, we expect this trend to generally continue over the long term. As with renewables, we may have also seen a shorter-term increase in portfolio constituents' share demand resulting from backlash against political efforts to undermine progress towards general and economic sustainability, but this is harder to quantify.

Within each sector, we of course select only representatives of the future economy. In utilities, that means renewables-generated electricity providers and responsible water custodians. For financials, that means firms that provide financing for renewable energy and efficiency projects. In industrials, makers of stainless steel and connected water infrastructure, providers of efficient displays for phones and other devices, and makers of highest quality decking material made from recycled plastics, all of which made meaningful 2017 return contributions. Yes, we do invest in traditional sectors. No, we don't always or even frequently select the traditional candidates.

Clearly, some things don't change from year to year; innovative companies and their problem-solving ideas remain integral to our Next Economy thesis. However, the Next Economy's results can emerge differently across portfolios due to distinct portfolio construction goals, so let's take a brief look at performance by sectors for the portfolio.

When reading the portfolio-specific comments below, we recommend examining since inception performance chart details on page three and the sector attribution chart on page six. These provide visuals to aid the description below.

What you won't find below is an explanation of why a particular sector had a negative contribution to the portfolio's return for 2017, because none of the 10 sectors, as defined by the Bloomberg Investment Classification Scheme, had a detracting effect on any of our portfolios.

**Growth & Income** – *Please refer to page 6 for Sector Allocation and Attribution charts*

The Growth & Income Portfolio is designed to provide a combination of long-term capital growth and high dividend income payouts via firms from the Next Economy universe that meet the same criteria as our other portfolios. Not all stocks in the Growth & Income portfolio pay a dividend, but most do, and additional weight may be given to equities with the most meaningful dividend yields, all else being equal.

As equities broadly rose this past year, the Growth & Income holdings with the most growth-leaning characteristics performed the best, and the technology sector (primarily semiconductor equipment) led the portfolio in both absolute return and portfolio contribution terms. Financials (including sustainable infrastructure, energy efficiency, and renewable financing; climate-centered reinsurance; green real estate) were a close second, just under half a percentage point of contribution behind tech. Financials also yielded the second most in terms of dividend yield (with the Energy sector providing the highest dividend yields in the portfolio). The Utilities sector – meaning those selling only renewably-generated electricity and some water utilities – provided the third largest contribution to portfolio returns for 2017. Industrials and energy round out Growth & Income's top five sectors contributing performance in 2017.

It might be interesting to note, for clients not already invested in the Growth & Income portfolio, that while it's also a more concentrated portfolio holding 25 to 35 companies, it's our most stable in terms of performance over time. Its portfolio construction methodology of favoring high dividend-paying stocks means that it holds a larger number of older, more established companies that are less volatile by their very size and nature.

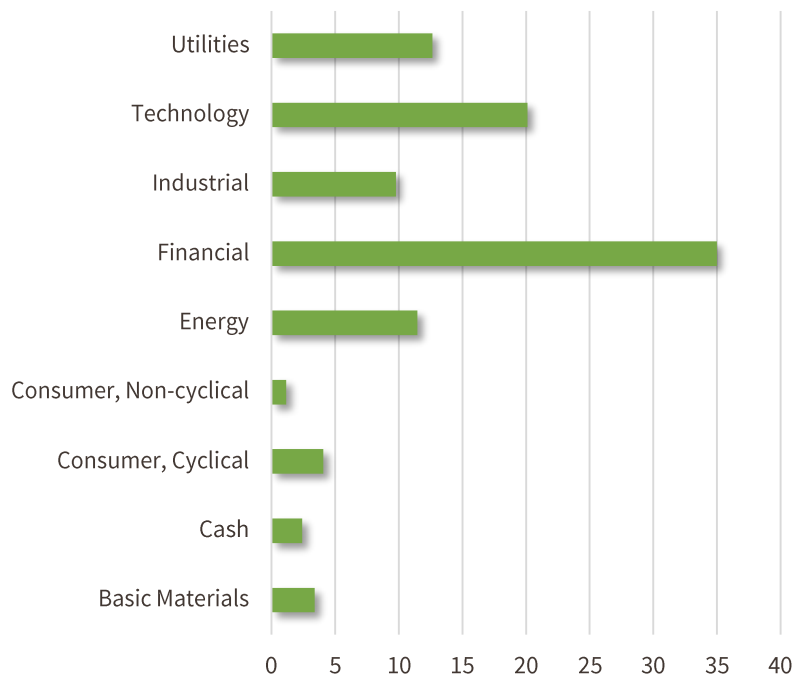
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# Sector Attribution & Top Ten Holdings

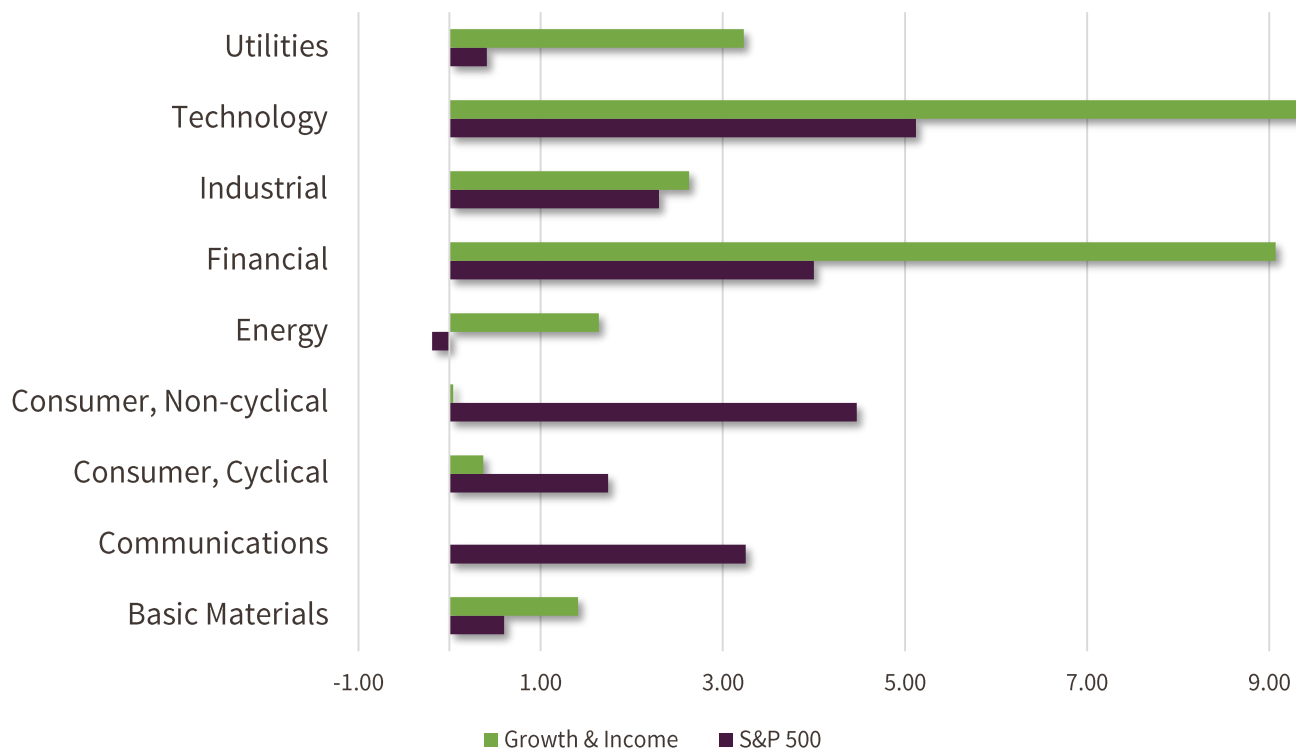
## 5 Largest Growth & Income Holdings

Company Name	Weight
Hannon Armstrong	7.40%
8Point3 Energy Partners, LP	7.32%
Pattern Energy Group, Inc.	7.24%
Liberty Property Trust	6.64%
Garmin	5.37%
<b>Top 5 Total (% of portfolio)</b>	<b>33.97%</b>

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



## YTD 2017 Attribution by BICS<sup>††</sup>



<sup>†</sup> Bloomberg consensus estimates

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

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# Attribution

## 5 Largest Contributing Stocks – 4<sup>th</sup> Quarter

Company Name	Average Weight	Stock Price Return	Contribution to Portfolio Return	Comment
Qualcomm, Inc. <i>QCOM</i>	3.86%	24.52%	0.82%	QCOM focused on innovation – fastest mobile processor on the market, leading the way to 5G wireless tech; Broadcom initiated takeover talks with Qualcomm, combined entity would be world's largest chip-maker
STMicroelectronics <i>STM</i>	4.10%	12.77%	0.73%	Powerful combo of industry growth tailwinds & taking market share from competition; beat both earnings & revenue expectations, gave higher guidance for next quarter, increased gross margin another 7%; announced collaboration with Alibaba to supply processors to Alibaba Cloud
Schnitzer Steel <i>SCHN</i>	3.44%	19.83%	0.68%	Spot steel price going up because of industrial building growth & in reaction to China exporting far less steel (because they're using it); Management operating strong with revenue, margins and earnings all increasing
Garmin <i>GRMN</i>	5.27%	11.32%	0.55%	Announced partnership with United Healthcare of Vivo Smart 3 motion wellness program; continued leadership in marine & aviation, coupled with fitness /outdoor market share gains drove revenues higher than expected
Liberty Property Trust <i>LPT</i>	6.73%	5.72%	0.36%	Operating income increased as demand for LEED certified buildings grows, led to higher earnings than expected; above-industry occupancy intact at ~96%

## 5 Largest Detracting Stocks – 4<sup>th</sup> Quarter

Company Name	Average Weight	Stock Price Return	Contribution to Portfolio Return	Comment
Pattern Energy Group, Inc. <i>PEGI</i>	1.18%	-9.09%	-23.47%	Threat of removal of Production Tax Credit hurt PEGI's share price during the quarter; action didn't materialize & threat is now gone
Vestas Energy Group, Inc. <i>VWDRY</i>	0.90%	-23.47%	-24.59%	Despite record turbine & service orders, anti-renewables market sentiment and political headwinds punished share price
Brooks Automation, Inc. <i>BRKS</i>	3.00%	-21.13%	-8.72%	After dramatic run-up in share price, short-term traders took profits and sold the price down after Q4 revenue and earnings higher than expected, Q1 reported to be better than previously expected
TerraForm Power, Inc. <i>TERP</i>	0.83%	-10.95%	-21.13%	Threat of political headwinds (potential impacts from PTC, ITC & Section 201) kept TERP's share prices down despite completing anticipated acquisition by Brookfield Asset Management
Gilead Sciences, Inc. <i>GILD</i>	0.47%	-10.96%	-30.61%	Market concerns over patent expirations, despite strong research & development investments in new products

Past performance is not a guarantee of future results. To obtain information about the calculation methodology used to select the model portfolio's largest contributors and detractors from performance or to obtain a list showing every holding's contribution to the account'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 Growth & Income strategy 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.

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