

Fourth quarter 2015

Quarterly commentary

The fourth quarter of 2015 saw a number of positive improvements to government support for the sector and companies began to see improved visibility on future earnings.

The United States gave welcome support to the US renewable energy sector shortly before Christmas. Congress unexpectedly extended the investment tax credit (ITC) for solar power and the production tax credit (PTC) for wind on 18th December 2015, the final day of business on Capitol Hill of the year. This provides a clear trajectory for the wind industry until 2020 and the solar industry until 2024 with gradual reductions in the credits that should be able to be absorbed by the sector's cost reductions and should see the sector transition away from subsidies in the US. Equipment manufacturers and installers should benefit from the ITC and PTC extensions.

Global demand for solar power is forecast to have increased globally from 45 gigawatts (GW) in 2014 to 55GW in 2015. The Chinese demand for photovoltaic (PV) in the next five years is supported by China's ambitious renewable energy goals in its 13th Five-Year Plan (FYP). The drivers of this are health and environmental, in particular air quality in the major cities and should be resilient to weakness in the wider Chinese economy.

Renesola and Canadian Solar were the best performing stocks of the quarter after receiving 20-30% overnight boosts from the ITC decision in congress, achieving a recovery of just under 75% each over the quarter. SunPower and SolarEdge in third and fourth place also rallied after the ITC decision was published, gaining 50% and 46%, respectively.

In November 2015, the United Nations Framework Convention on Climate Change (UNFCCC) was able to reach a global agreement to limit the average global temperature increase to two degrees Celsius at the 21st Conference of the Parties (COP21) in Paris. Although a huge diplomatic feat, its impact on renewable energy equities was muted. Even with such an agreement, countries have decades to implement appropriate policies and incentive schemes for renewable energy and there is no binding action required by any of the signatories. It does however provide a broadly supportive backdrop for alternative energy equities.

Within the wind sector, Futuren and Boralex performed well over the quarter but the fund's Chinese wind utilities suffered from the uncertainty over payment timings of Chinese subsidies.

The fund holds a diversified set of efficiency holdings that are all energy related. Nibe (sustainable heating solutions) continued to perform well as demand for groundsource

heatpumps grows. Centrotec (German heating), had a weak quarter, while Wasion (Chinese metering) remained stable.

The hydro investments disappointed in the fourth quarter. Cemig in Brazil was weak due to the fall in the Brazilian Real and the uncertainty of Brazil's climate. Iniziative Bresciane and Verbund both suffered losses in light of continually falling European spot power prices.

The fund's geothermal holding, Ormat, performed relatively well, recovering from a weak third quarter. Cosan, the fund's biofuels holding, held up well in the face of falling oil prices – most of its business is not directly linked to gasoline prices.

Outlook

Solar

The global PV market is expected to have grown from 37GW in 2013 and 44GW in 2014 to 55GW in 2015, with expectations of 64-68GW in 2016 and 70-73 GW in 2017, giving a 19% compound annual growth rate between 2013 and 2017 using the most optimistic forecast. Importantly, the global PV market continues its geographic fragmentation. Although China, Japan, and the United States are driving demand growth, almost all countries are now seeing solar growth. There is less reliance on specific subsidies in individual markets to support global demand as we saw in Germany, Spain and Italy at various points over the last decade. This lowers the political risk in the stock prices.

The US Investment Tax Credit (ITC), which gives a 30% tax credit to solar power owners, will extend to 2020 instead of expiring at the end of 2016. It is then proposed to reduce in 2021 and reach 10% from 2022 onwards. Forecasting houses have given a range of estimates for US PV market growth that are beneficial for module manufacturers and installers. Bloomberg New Energy Finance believes that the ITC means an additional 18GW of PV in the United States between 2016 and 2021 than without the extension. Greentech Media is more bullish and predicts an annual US PV market upwards of 20GW in 2020, compared to 10GW without the ITC. IHS Inc. believes that the ITC extension will avoid a decrease in annual global PV installations in 2017. The United States is set to contribute just over 7GW (13%) of global demand in 2015.

China's 13th FYP includes a 150GW PV target by 2020, implying an annual PV market of at least 20GW. China was the largest PV market in 2015, aiming to commission just under 18GW by year-end.

Japan continued its generous feed-in tariffs for PV and is likely to have installed upwards of 12GW (around 20% of the global PV market) in 2015. However, these generous feed-in tariffs have a short lifetime. The subsidies are expected to be cut in

the near future as the country's Ministry of Economy, Trade and Industry (METI) is looking at auctions and more cost-effective measures. These measures may bring installation figures down in 2016 and 2017.

European PV demand continues to decline. Germany is expected to have installed c.1.5GW in 2015, down from a peak of 7.6GW in 2012. The UK market has been strong, but is expected to decline in 2016 on lower feed-in tariffs. We expect the Western European market to remain weak until PV system and battery costs are sufficiently low to support unsubsidised uptake for residential and commercial consumers. There are several private energy storage companies that could flourish in the sector in the next couple of years on the back of PV self-consumption and management of intermittent electricity production. Europe, due to lack of net metering and high retail electricity prices, and Australia will be the hotbeds of the PV and storage systems.

The European Union minimum import price (MIP) for Chinese panels has been officially called into review, and will remain at its current rate for the duration of the review until March 2017. Due to Europe installing less PV as a proportion of the world market, the impact of the minimum import price is diminishing. Nevertheless, the MIP does dim demand for PV in Europe.

Latin America remains an area of growth, and Chile in particular, with high electricity prices, economic growth and high levels of sunshine making solar particularly attractive.

PV module prices remained essentially flat in Q4 2015 having fallen slightly further than expected over the year. Underpinning this is the fall in solar-grade polysilicon price, which allows solar wafer, cell and module manufacturers to defend their margins. We do not expect the oversupply in the PV-grade polysilicon market to subside in the next three years absent exceptionally strong growth in PV demand.

Wind

As with solar, the big wind stories come from the United States and China. The extension of the Production Tax Credit ("PTC") in the US is likely to mean an additional 20GW of installed capacity over the next five years according to Bloomberg New Energy Finance. However, this pales in comparison to China's wind target in its 13th FYP of 200GW by 2020. By the end of 2014, China had already installed 115GW of wind power, leaving 85GW to be installed between 2015 and 2020. This would require an average installation rate of 15GW per annum, which is in line with installations over the last three years, although volumes may be skewed towards earlier years to attain higher subsidies. We expect that the Chinese wind installation targets will be exceeded and revised upwards, provided that the grid capacity expansion plans are executed to enable them.

Many of the main European countries are slowing down the pace of wind installations, meaning that across the whole of Europe demand is expected to remain flat notwithstanding high growth at the periphery. Growth may come from offshore wind projects, although the direct investment opportunities into offshore wind projects are limited and the cost has not seen the same falls we have witnessed in onshore wind (and solar).

Other technologies

Companies with technologies outside of the wind and solar space are typically interesting individual company stories instead of a sector-wide boom. With most European countries looking to increase energy efficiency, we anticipate growth in efficient lighting, heating technologies, grid technologies, metering and insulation.

Long term outlook

Over 2015, alternative energy has received several supports for its long term future. The Obama climate plan, the COP21 climate change talks and successful inter-governmental, global agreement mean that there will be a continued impetus to develop alternative energy sources. The costs of alternative energy continue to fall to compete with conventional power sources, while energy storage companies are starting to enter the market to complement the intermittency endemic to alternative energy. All of these factors support a long-term transition away from fossil fuels.

Portfolio changes

We bought SolarEdge (NASDAQ: SEDG) and FirstSolar (NASDAQ: FSLR) to gain more exposure to innovative inverter technology companies (complementing our holding in Enphase) and the US PV market overall.

We sold Yingli Green Energy (NYSE: YGE) as we saw little prospect for price recovery. We also sold Enel Green Power (BIT: EGPW) due to the stock's strong performance over the last year and its upcoming acquisition by its parent company, Enel.

Guinness Atkinson
Alternative Energy Fund Update
 January 2016



Fund Performance (Q4 2015)

The Guinness Atkinson Alternative Energy Fund was up 8.21% for the fourth quarter of 2015. This compared to a rise in the Wilderhill New Energy Global Innovation Index in the fourth quarter of 9.34%, a rise in the Wilderhill Clean Energy Index of 16.05% and a rise in the MSCI World Index of 5.64%.

Total Returns as of 12/31/15

Total returns	Q4 2015	YTD 2015	CY 2014	1 year	5 year	From launch (12/31/15)
Guinness Atkinson Alternative Energy Fund	8.21%	-11.40%	-14.29%	-11.40%	-9.77%	-12.33%
Wilderhill New Energy Index	9.34%	1.51%	-2.16%	1.51%	-1.96%	-2.95%
Wilderhill Clean Energy Index	16.05%	-10.36%	-16.93%	-10.36%	-13.55%	-13.96%
MSCI World Index	5.64%	-0.25%	5.61%	-0.25%	10.32%	8.27%

Calendar year returns	2010	2011	2012	2013	2014	2015
Guinness Atkinson Alternative Energy Fund	-21.90%	-42.53%	-15.20%	61.54%	-14.29%	-11.40%
Wilderhill New Energy Index	-13.65%	-38.91%	-4.14%	55.70%	-2.16%	1.51%
Wilderhill Clean Energy Index	-4.76%	-50.50%	-17.37%	58.54%	-16.93%	-10.36%
MSCI World Index	12.44%	-4.96%	16.60%	27.47%	5.61%	-0.25%

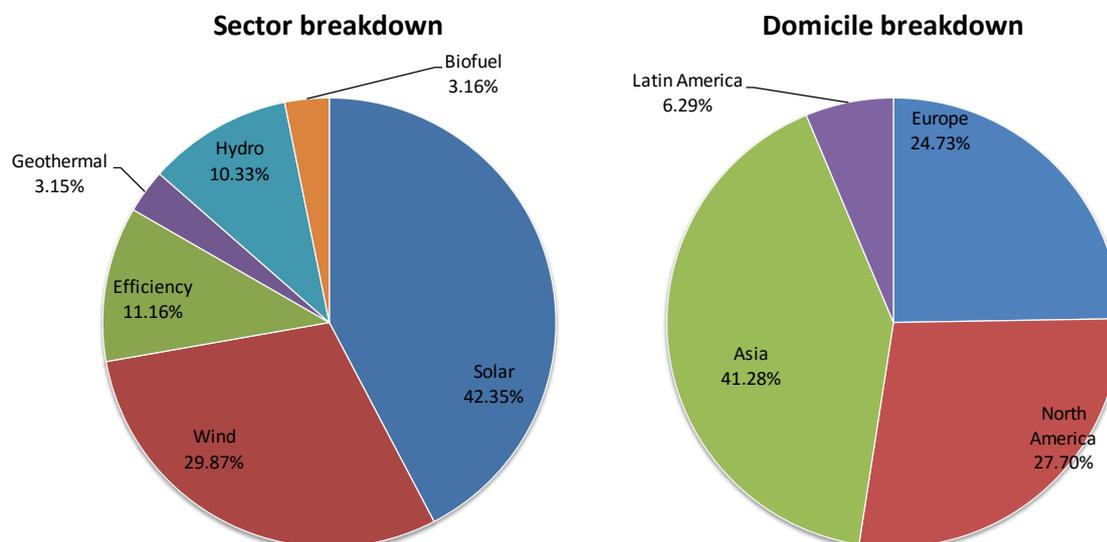
CY = Calendar Year

Expense Ratio: 2.02% (net); 2.06% (gross)

All return figures represent average annualized returns except for periods of one year or less, which are actual returns.

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by visiting www.gafunds.com or calling 800-915-6566.

Fund Holdings



Top 10 holdings as of 12/31/15	% of assets
ENPHASE ENERGY INC	5.06%
SOLAREEDGE TECHNOLOGIES INC	4.59%
GOOD ENERGY GROUP PLC	4.44%
SUNPOWER CORP	4.28%
INIZIATIVE BRESCIANE-INBRE S	4.12%
CANADIAN SOLAR INC	3.91%
RENESOLA LTD-ADR	3.88%
JINKOSOLAR HOLDING CO-ADR	3.84%
BORALEX INC -A	3.83%
TRINA SOLAR LTD-SPON ADR	3.62%

The top five performers over the third quarter were Renesola (+74.90%), Canadian Solar (+74.25%), SunPower Corp (+49.75%), SolarEdge (+46.04%), and JinkoSolar Holdings (+26.12%).

The bottom five performers over the third quarter were Northern Power Systems (-35.73%), China Longyuan Power Group (-30.61%), Mytrah Energy (-30.40%), Huaneng Renewables Corp (-19.96%), CEMIG SA (-15.73%).

Edward Guinness and Samira Rudig

January 2016

Guinness Atkinson
Alternative Energy Fund Update
January 2016



Commentary for our views on global energy and Asia markets is available on our website. Please [click here](#) to view.

Total returns reflect a fee waiver in effect and in the absence of this waiver, the total returns would be lower.

Opinions expressed are subject to change, are not guaranteed and should not be considered investment advice.

This information is authorized for use when preceded or accompanied by a prospectus for the Guinness Atkinson Alternative Energy Fund. The [prospectus](#) contains more complete information, including investment objectives, risks, charges and expenses related to an ongoing investment in The Fund. Please read the prospectus carefully before investing.

The Fund invests in foreign securities which will involve greater volatility and political, economic and currency risks and difference in accounting methods. The risks are greater for investments in emerging markets. The Fund is non-diversified meaning its assets may be concentrated in fewer individual holdings than diversified funds. Therefore, the Fund is more exposed to individual stock volatility than diversified funds. The Fund also invests in smaller companies, which will involve additional risks such as limited liquidity and greater volatility. The Fund's focus on the energy sector to the exclusion of other sectors exposes the Fund to greater market risk and potential monetary losses than if the Fund's assets were diversified among various sectors.

Fund holdings and/or sector allocations are subject to change at any time and are not recommendations to buy or sell any security. Current and future portfolio holdings are subject to risk.

The WilderHill New Energy Global Innovation Index (NEX) is a modified dollar weighted index of publicly traded companies which are active in renewable and low-carbon energy, and which stand to benefit from responses to climate change and energy security concerns.

The WilderHill Clean Energy Index (ECO) is a modified equal dollar weighted index comprised of publicly traded companies whose businesses stand to benefit substantially from societal transition toward the use of cleaner energy and conservation.

The MSCI World Index (MXWO) is a capitalization weighted index that monitors the performance of stocks from around the world. One cannot invest directly in an index.

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