
It has been a gritty period for alternative energy equities. We see the major driver behind the pullback in world equities as concerns about the slowdown of growth in China. The falling oil price and falling natural gas and electricity prices have weighed further on the alternative energy sector.

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Quarterly commentary

It has been a gritty period for alternative energy equities. We see the major driver behind the pullback in world equities as concerns about the slowdown of growth in China. The falling oil price and falling natural gas and electricity prices have weighed further on the alternative energy sector. The fund has 40.14% invested in Chinese domiciled companies that have performed weakly.

Within the subsectors, the solar equities have performed poorly with poor performance across all solar holdings. However, earnings forecasts remain robust and global demand remains intact – undimmed by wider energy price falls. As exporters they are beneficiaries of the slightly lower Yuan and Chinese domestic demand is expected to continue to grow – it is not dependent on any level of GDP growth.

Within the wind sector, Good Energy Group and Enel Green Power were the strongest performers, not depreciating in price over the quarter. Performance across the remaining companies was universally weak. The Chinese power producers should be well placed as attractive engines for growth of the Chinese economy that the government is likely to continue to support and they would be major beneficiaries of lower interest rates. Chinese government support for renewables is increasing.

Nibe, (sustainable heating solutions), was the portfolio's best performing stock, as demand for groundsource heatpumps grows, reflecting the improved global economic situation. Centrotec, (German heating), also held up well over the quarter, but Wasion (Chinese metering) was weak reflecting concerns over Chinese demand.

For the hydro investments, Cemig in Brazil was particularly weak coming into bids for relicensing of Brazilian assets and reflecting poor rainfall. Iniziative Bresciane and Verbund both held up relatively well.

Ormat, our geothermal holding gave up some of its strong second quarter returns, but showed no fundamental weakness. Cosan, our biofuels holding was hard hit by the fall in the oil price. However, only a fraction of Cosan's business is directly related to

the oil price and its distribution business will directly benefit from increased demand at lower prices. We feel the price response has been unmerited by the company's actual situation.

Outlook

Solar

The photovoltaic (PV) installed is set to break the 2014 record for annual installed capacity in 2015 again, with market expectations of c.55 gigawatt(GW) installed in 2015, up from 40GW in 2014. The demand centres are China, the United States and Japan. By the end of the first half of 2015, China's cumulative installed solar capacity surpassed 35GW and China will have the highest cumulative installed capacity of any country by year-end. Rumours have it that China's thirteenth five-year plan could include a 200GW cumulative capacity by 2020 goal, up from the current 100GW goal. This would require an average annual installation rate of 32GW per year, instead of the 15GW current run rate that would support installations of 100GW by 2020. Whether or not China would be able to deliver all these projects with grid connections is uncertain given that in H1 2015 many GW were left idle due to lack of space on the grid, but grid expansion investments are expected to be planned to accommodate much higher levels of solar installations and solar is being increasingly installed at locations with grid capacity. An increase in the annual run rate in China from 15GW to 32GW would be very positive for solar demand given the current global installation run rate of 55GW.

The United States PV industry is awaiting the government's decision on whether to extend the Investment Tax Credit (ITC) beyond 2016. Forecasts indicate that without the ITC, US demand for PV would be 22GW smaller between 2016 and 2022 (SEIA, Bloomberg New Energy Finance). Nevertheless, the potential looming ITC expiration will likely cause an installation rush in the US solar sector. Companies are braced for a fall in the ITC and if US installation costs fall to international levels, returns without the ITC should still support strong US demand growth.

Japan's solar sector continues to enjoy one of the highest subsidies globally, even with the feed-in tariff cut of 16% over the summer. With 17.2GW already installed, the main barrier to Japan's solar sector is the lack of grid capacity rather than lack of project offerings.

Western Europe's share of global PV installations continues to decrease, although some of the cheapest systems are being constructed there. For example, in German tenders for ground-mount systems, the offered average price was \$88.87/MWh (megawatt per hour), with capex hovering above the \$0.88/watt (W) mark and cheap financing widely available. Overall, we expect Europe to move away from feed-in tariffs for large-scale systems and use tenders instead. In the residential sector, the retail power price for the German consumer is just under \$0.33/kWh (kilowatt/hour), while

the feed-in tariff for PV output is roughly one third of this. Other Central and Western European countries also have retail electricity costs that are more expensive than electricity from rooftop PV systems. Self-consumption will become the driver for unsubsidised PV demand in the future, that will eventually be facilitated by battery storage.

The German government introduced a battery storage subsidy for PV-battery systems in May 2013. A PV system alone is still financially more attractive than a PV and storage system. By mid-2015, only 25,000 PV and storage systems had been installed in Germany to date. Interestingly, only around half of these used the storage subsidy – the remaining half pertain to renewable energy ‘enthusiasts’. For commercial consumers, the story is different. Commercial consumers can use far more of their PV system output due to the high daytime use of power. However, the German government imposed self-consumption taxes on PV systems greater than 10kW. The Austrian government followed suit, although only applying this to larger systems (greater than 25kW). Overall, we will see slow but steady growth in the European PV sector driven by self-consumption and hindered by anti-solar charges and installation caps.

Subsidy-free markets have emerged in Chile, Australia and sub-Saharan Africa for the mining sector and other remote industrial operations. Grid electricity in these sun-rich countries is often expensive (Chile) or unattainable (remote mines). Many sites are unable to procure grid connections. As a result, Chile (for example) has recorded over 500MW of cumulative PV installations to date, and may surpass 1GW this year.

In the Middle East, we note the recognition from Al-Naimi, the Saudi oil minister, that solar is likely to take over from oil eventually. Saudi Arabia’s ACWA Power bid for a 1.2GW PV installation in Dubai at a price of US\$0.0589/kWh. Debates are raging about whether this price is truly unsubsidized, given the low interest rates and rumours of ‘free land’. Nonetheless, the cost of solar installations is still falling, so that achieving an unsubsidised US\$0.0589/kWh figure for large-scale, ground-mounted installations before the end of the decade is highly likely.

Pricing for solar modules held relatively firm over the quarter whilst polysilicon prices fell from over \$20.5 per kg to around \$15.86 per kg (Bloomberg New Energy Finance) at the end of September, which supported margins at module manufacturers. There was no visible progress towards removing the European minimum price and US duties on Chinese solar modules, but Australia decided not to impose duties on Chinese solar modules. We are optimistic in the long run about global trade talks to remove tariffs on sustainable technologies, although this does not appear imminent.

Wind

Demand from European countries for onshore wind is expected to remain relatively flat. The UK renewable energy market has been shaken by the new government’s

proposals to remove subsidies for onshore wind entirely after 2016. The potential for growth in the wind sector in Europe would come from the Offshore sector. At the end of October 2015, Dong Energy announced its plans for a 660MW Offshore wind facility in the Irish sea, to be completed by 2018. However, the challenge offshore wind faces remains its cost, which has not fallen as per onshore wind costs.

In the United States, wind power will likely retain some form of subsidy after the expiry of Production Tax Credits in 2016 owing to the Clean Power Plan, which will devolve support to the state level. The CEO of US-utility Xcel Energy Inc, serving eight states, expects wind power to become cheaper than natural gas by 2020. Corporations as a group are now the largest PPA-offtakers in the United States, many using wind power purchase agreements (PPA) to hedge against long term rises in electricity prices. The number of US corporations looking at renewables – and mainly wind – for power price hedging is only growing, potentially fuelling demand.

Emerging markets offer the best hopes for growth in wind installations. Chile recently saw a power auction predominantly won by Mainstream Renewable Power, an Irish renewable energy developer, with several hundred MWs of wind. Brazil continues to provide demand for wind power, although its weakening currency has stopped some foreign companies from bidding in its auctions. China, traditionally a closed market for foreign manufacturers, is increasing its annual wind targets. The market appears to be opening up slowly to non-Chinese manufacturers - from 1.7% market share in 2014 to almost 5% in 2015, according to Bloomberg – indicating that the large Chinese wind market will not remain an all-Asian affair.

Other technologies

Other alternative energy investment opportunities outside of wind and solar tend to be unique situations rather than benefit from the overall trend away from fossil fuels, rather than sector specific growth stories. For example, we believe that heat pumps and improved efficiency heating technologies are likely to become more prevalent as continental European best practise is exported globally

Long term outlook

The long term outlook for alternative energy remains good. The key drivers remain in place: dwindling fossil fuel supplies; energy security concerns; environmental issues; and climate change. The reduced cost of alternative energy technologies is likely to accelerate the growth of the alternative energy sector. We continue to position the fund to seek to benefit from the long term growth of the sector.

Portfolio changes

We made no major changes to the portfolio in the third quarter.

Guinness Atkinson
Alternative Energy Fund Update
 October 2015



Fund Performance (Q3 2015)

The Guinness Atkinson Alternative Energy Fund was down 20.45% for the third quarter of 2015. This compared to a fall in the Wilderhill New Energy Global Innovation Index in the third quarter of 16.25%, a fall in the Wilderhill Clean Energy Index of 24.59% and a fall in the MSCI World Index of 8.32%.

Total Returns as of 9/30/15

Total returns	Q3 2015	YTD 2015	1 year	5 year	From launch (03/31/06)
Guinness Atkinson Alternative Energy Fund	-20.45%	-18.13%	-30.00%	-12.53%	-13.36%
Wilderhill New Energy Index	-16.25%	-7.16%	-16.13%	-3.25%	-3.94%
Wilderhill Clean Energy Index	-24.59%	-22.76%	-35.30%	-15.14%	-15.64%
MSCI World Index	-8.31%	-5.58%	-4.49%	9.27%	8.96%

Calendar year returns	2010	2011	2012	2013	2014	2015
Guinness Atkinson Alternative Energy Fund	-21.90%	-42.53%	-15.20%	61.54%	-14.29%	-18.13%
Wilderhill New Energy Index	-13.65%	-38.91%	-4.14%	55.70%	-2.16%	-7.16%
Wilderhill Clean Energy Index	-4.76%	-50.50%	-17.37%	58.54%	-16.93%	-22.76%
MSCI World Index	12.44%	-4.96%	16.60%	27.47%	5.61%	-5.59%

CY = Calendar Year

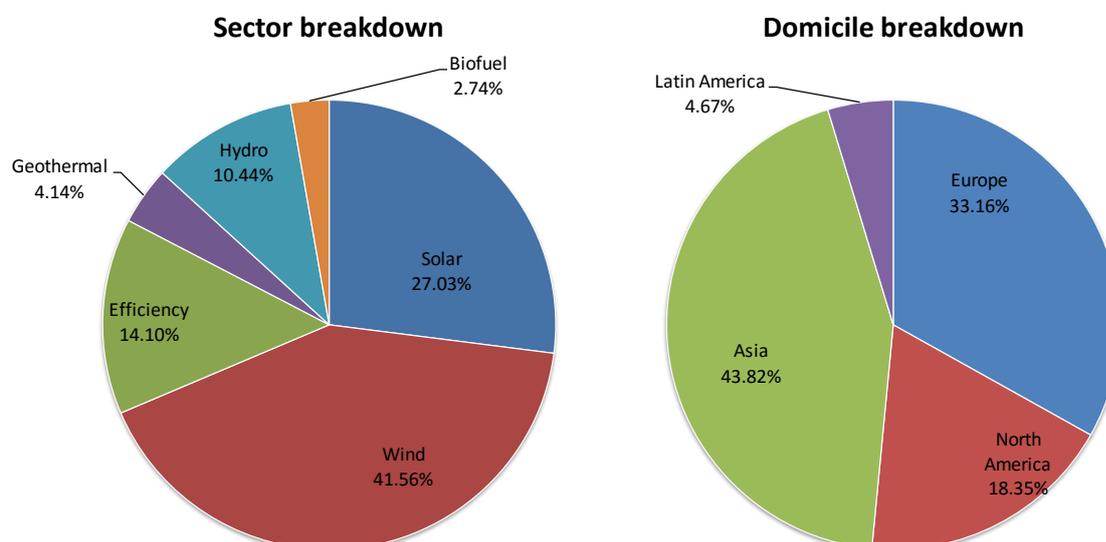
Expense Ratio: 2.02% (net); 2.06% (gross)

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.

The advisor has contractually agreed to reduce fees and expenses through June 30, 2016.

Fund Holdings



Top 10 holdings as of 09/30/15	% of assets
GOOD ENERGY GROUP PLC	5.51%
INIZIATIVE BRESCIANE-INBRE S	4.75%
ENEL GREEN POWER SPA	4.57%
CENTROTEC SUSTAINABLE AG	4.29%
NIBE INDUSTRIER AB-B SHS	4.20%
ORMAT TECHNOLOGIES INC	4.13%
JA SOLAR HOLDINGS CO LTD-ADR	4.04%
CHINA LONGYUAN POWER GROUP-H	4.00%
BORALEX INC -A	3.85%
VERBUND AG	3.75%

The top five performers over the third quarter were Nibe Industrier (+12.39%), Good Energy (+6.22%), Enel Green Power (+0.51%), Centrotec Sustainable (-1.34%), and China Longyuan Power Group (-2.79%).

The bottom five performers over the third quarter were Yingli (-66.8%), Northern Power Systems (-59.33%), CEMIG SA (-53.28%), Enphase Energy (-51.38%) and China Singyes Solar Technology (-46.89%).

Edward Guinness and Samira Rudig

October 2015

Guinness Atkinson
Alternative Energy Fund Update
October 2015



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. Current and future portfolio holdings are subject to risk. 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.

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.

Capex, or capital expenditure, is money invested by a company to acquire or upgrade fixed, physical, non-consumable assets, such as buildings and equipment or a new business.

One cannot invest directly in an index.

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