Guinness Atkinson
Alternative Energy Fund
Managers Update – October 2016

GUINNESS ATKINSON FUNDS

We provide comment on the third quarter of 2016 for Alternative Energy

- Quarter commentary
- Performance contribution
- Outlook
- Portfolio changes
- Performance
- Holdings

We have changed the structure of our quarterly briefs. This is the first edition in the new format and feedback is welcome.

Quarterly commentary

During the third quarter, the fund began to recover from the weak first half of 2016. The main macroeconomic events have been improvements in policy for wind in China, and proposals for sharp reductions in Chinese solar feed in tariffs in June 2017. The US election is weighing on stocks generally, but if Clinton were to win, it is likely it would be positive for the entire alternative energy sector. Record-low bids in solar, onshore wind and offshore wind this quarter showed the competitiveness of alternative energy compared to fossil fuels – this should provide a demand driven floor to price reductions for equipment manufacturers.

Performance contribution

Top 5 performers	Q3	Bottom 5 performers	Q3
China Singyes	50.41%	Sunpower	-42.41%
Senvion	37.36%	Enphase	-40.70%
China Suntien	34.07%	JinkoSolar	-22.47%
Tianneng Power	26.21%	First Solar	-18.54%
Centrotec	18.37%	JA Solar	-12.26%

Wind

The wind energy sector saw strong performance in the third quarter. Most of the companies we hold in the wind sector are independent power producers (IPPs) that develop, build and own wind farms, and over half of that is invested in such companies in China, where we perceive the best value opportunity. The good performance was driven by policy changes in China that limit curtailment (being switched off by the grid), made payments to Chinese power producers of subsidies that had been delayed and gave indications that future payments will not be delayed. Lack of sufficient grid infrastructure had caused the curtailment levels of wind power output to increase from 15% in 2015 to 25% in Q1 2016, meaning that IPPs were able to sell less power than they theoretically could have produced. The cap introduced in May 2016 has so far been well-enforced and led to earnings increases for Chinese wind IPPs in the second quarter. The sixth subsidy plan for renewables for China was published in September 2016. This led analysts to believe that delayed subsidy payments would be received by the IPPs in the near future, whereas there was no visibility to when these payments would be made previously.

Our other wind investments include Senvion, a German wind turbine manufacturer, that performed well over the quarter. We acquired the stock as it was trading at a significant discount to its peers and over the quarter it saw a rerating on the back of continued orderflow.

Solar

Solar remained the laggard. A rush of solar installations boosted earnings for solar companies in Q2, but worries of overcapacity have weighed on share price performance. All five of the weakest performers in the quarter were solar companies. The module manufacturers - JinkoSolar, SunPower, FirstSolar and JA Solar suffered from expectations of lower module prices and lower margins. SunPower announced that it would scale down its utility-scale division and close its Philippines module production plant to move the equipment to Mexico, resulting in a higher loss for FY 2017 than previously expected. We believe all of these companies are well placed – Sunpower and FirstSolar have strong management teams, differentiated products and meaningful downstream businesses. JinkoSolar and JASolar are two of the cost leaders in the module market and are well placed for increased volumes at lower prices. As system prices continue to fall, the inverter manufacturers have also been hurt. Enphase has a strong product offering, but pricing is falling faster than anticipated and their suffering has been exacerbated by a balance sheet that is weaker than their peers. We continue to monitor the Enphase position closely and are not currently rebalancing.

On a more positive note, China Singyes Solar, a solar installer, increased 50.4% over the quarter, which has benefitedfrom the boom in Chinese solar installations, and Trina Solar, the Chinese module manufacturer, was the recipient of a board approved a management buyout offer on 1st August, which saw the stock trading 49% higher than its lows for the year. We have sold the position following the announcement.

Efficiency

Battery related companies performed well. Grid scale storage saw support for large projects that provide short-term grid balancing services in the UK and California. Batteries were preferred to diesel alternatives. More and more electric vehicles are being launched by major car manufacturers - the Chevrolet Bolt is coming out in early 2017 at a competitive price and range. Tianneng Power announced good interim earnings in mid-August, with revenue increasing 21% and profit attributable to shareholders increasing 48% year on year. Notably, the company's small lithium battery products segment increased revenues by 52%. With China's grid limitations becoming more apparent and the need for energy management systems on a distribution level and company increasing, we believe Boer Power is well positioned to benefit. Our Swedish heatpump investment, Nibe Industrier posted healthy earnings and has acquired another geothermal heat pump player in Europe. Johnson Controls completed its merger with Tyco.

Hydro

Both hydro positions performed well over the third quarter, for unrelated reasons. Cemig has benefited from the 10% increase in value of the Brazilian Real to the US dollar. The company was oversold at the beginning of the year, and we are finally seeing the price recover. Iniziative Bresciane has benefited from high rainfall over second and third quarters that should have enabled strong operating performance.

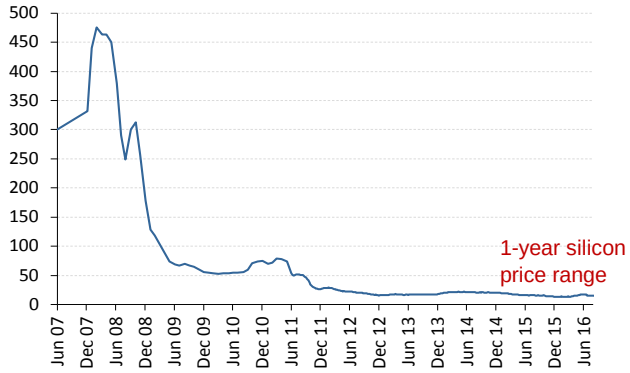
Geothermal

The fund's geothermal holding, Ormat Technologies, has continued to do well as more plants are completed and generate cash flow for the company. Ormat reported a year-on-year increase in net income attributable to shareholders of 68% in Q3 2016.

Outlook

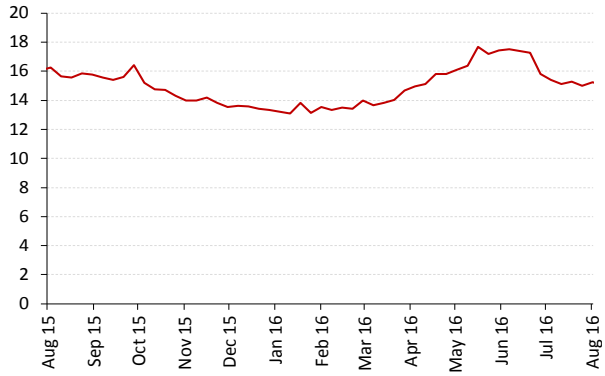
Solar

Long-term Silicon price ($/kg)



Source: Bloomberg

TTM (Trailing 12 Month) Silicon price ($/kg)

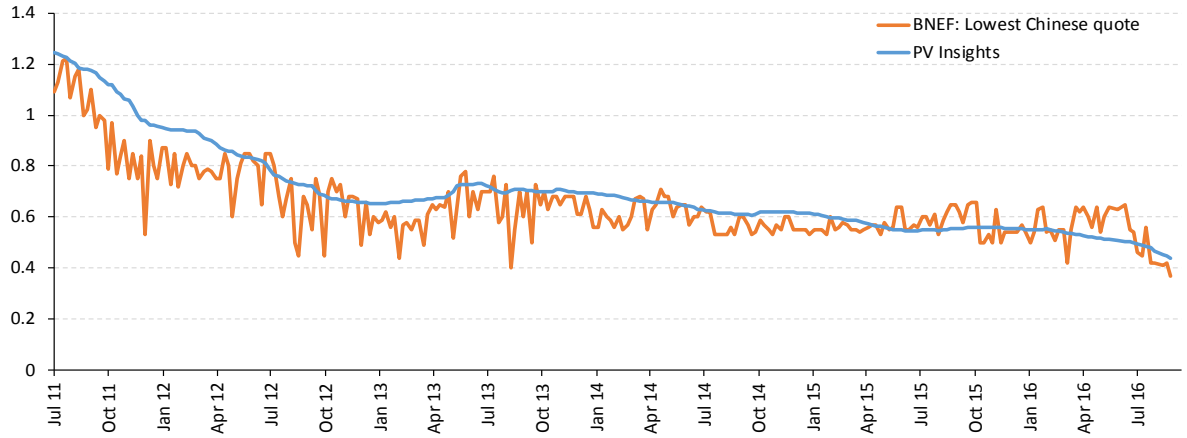


Source: Bloomberg

Over the quarter, the Bloomberg New Energy Finance polysilicon spot price fell from $17.45 to $13.88. For historical context, polysilicon prices have fallen from a high of $475/kg in February 2008 to just over $50/kg in December 2009. Since then, polysilicon has continued to fall in price albeit not as dramatically. Since August 2012, polysilicon has failed to maintain a price above $20/kg for any significant amount of time. The costs for producing silicon in existing plants is now believed to be just under $10/kg for the lowest cost producers. A number of the polysilicon production plants still have costs of over $20/kg[1]. We are aware of smaller suppliers entering the market who claim to have production costs below $10/kg using new technologies, such as privately-held Silicor Materials in Iceland. We do not believe that there will be a major bottleneck in polysilicon supply causing a price spike unless annual installation volumes more than double from current levels. We have no investments in polysilicon manufacturers.

Module Price ($/W)

[1] Bloomberg New Energy Finance



Source: Bloomberg

Module prices have declined steadily and have seen a lurch downwards following the reduction in Chinese feed-in tariffs in June 2016. China has announced potential feed-in tariff cuts that would likely induce an installation boom in the first half of (H1) 2017, boosting demand and alleviating oversupply. We expect a temporary plateauing or even recovery in module prices to result from this surge in installations.

Over the long run, prices are likely to continue to decline further due to technology improvements and economies of scale which should enable manufacturers to maintain margins over the long run. Consolidation of the solar module manufacturers is likely and will further support margins. We believe that the companies in the portfolio are well-placed to weather this period, with low cost bases and or strong balance sheets and shareholder support.

Solar Photovoltaic (PV) demand forecast

	2013	2014	2015	2016	2017	2018
World	**42.4**	**46.1**	**56.3**	**70.8**	**76.7**	**86.5**
Asia	24.2	25.8	34.5	42.1	41.9	38.6
North America & Caribbean	5.5	7.4	8.8	14.1	14.0	17.3
EU Europe	9.8	6.8	7.5	5.7	6.0	6.7
Central & South America	0.1	0.9	1.0	2.5	3.7	5.8
Non-EU Europe	0.8	0.8	1.2	1.6	3.0	4.6
Oceania	0.9	1.2	1.5	1.5	2.3	3.8
Middle East & North Africa	0.3	0.7	0.9	1.5	3.6	6.5
Africa (excl. North Africa)	0.2	1.4	0.6	1.2	1.8	2.7

Source: Bloomberg. Note: Sorted by 2016 forecast installations

Asia is by far the most important region for solar demand. China today accounts for most of that demand, but India has aggressive growth aspirations and other countries in the region are seeing meaningful growth. In the first half of 2016, China installed 20 gigawatt (GW) which was in line with many analysts' expectations for the full year. China has an annual feed in tariff that is adjusted in June. Initial indications of a large cut in June 2017 are expected to drive a surge in installations in the first half of 2017. India has announced a goal to increase solar capacity to 100 GW by 2022, which will require a ramp up in the pace of solar capacity additions. Japan has been a very important market for 2014, 2015 and 2016 as a result of high feed-in tariffs offered. As a result of removal of those attractive tariffs, Japan's annual installation levels are

expected to fall from 2017. Taiwan has increased its target by 2.2 times. As of June 2016, Taiwan aims to have 20GW of solar PV installed by 2025, compared to an original 2014 target of 6.2GW. We believe that analysts are underestimating the growth that will be achieved in Asia.

Outside of Asia, the next most important market is the US, where the extension of the Investment Tax Credit has created a fertile support regime for growth of solar installations. Installation costs in the US are beginning to catch up with international best practice, which we believe should support much higher levels of demand than are even now being forecast. The main concern in the US is the outcome of the presidential election. For solar, Hilary Clinton has much more supportive policies than Donald Trump, although we might expect an acceleration of installation if he were to win from installers looking to complete projects before any change in the legislation.

Europe is now evolving from having been the leading subsidy driven market, to being driven by unsubsidized installations. Unsurprisingly it is the southern European countries with high insolation and high energy costs where we believe there may be upside to analysts' forecasts.

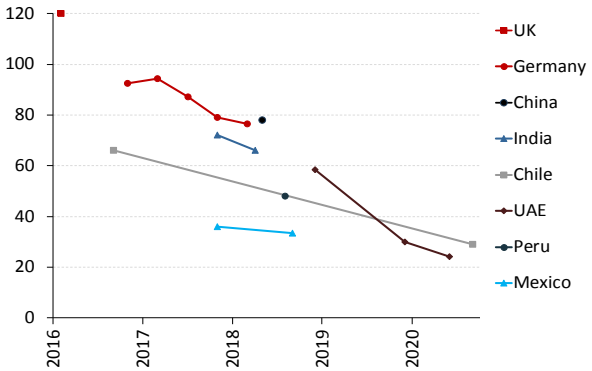
Latin America is the next most important market and we believe has huge potential because of grid constraints and utility costs. We also believe The Middle East and Africa have huge potential although it may take time for them to benefit from the installation cost efficiencies being achieved elsewhere in the world.

Lower module and project prices are improving the economics of solar PV and are beginning to compete with fossil fuel generation in a number of locations. This transition away from subsidies is likely to lead to a meaningful surge in installations growth that is less likely to be matched by product price falls. Since solar PV projects are easy to permit and quick to build compared to other power generating technologies, taking only a few months compared to years, we expect demand levels for solar PV to respond to lower prices faster than for other technologies.

This competitiveness is manifesting itself in the record-low bids for solar PV projects witnessed in the third quarter 2016. A consortium of Japan's Marubeni and China's JinkoSolar offered to sell electricity from a solar PV plant at $24.2/MWh (megawatt per hour) for a 350MW plant in Abu Dhabi. We expect this plant would be commissioned in 2020. Only one month earlier Spain's Solarpack bid $29.1/MWh for a 120MW solar plant in Chile to deliver 280GWh of energy per year starting in 2021, benefiting from a high expected capacity factor of at least 26%. Other than the structural support long term PPAs and priority dispatch of their output, these solar plants do not benefit from subsidies. Portugal has authorized 180MW of unsubsidized solar projects and a total of more than 2GW are being processed.

Solar levelized cost of electricity (LCOE) developments

PV bids by delivery date ($/MWh)



Source: Bloomberg, Cleantechnica, Guinness Asset Management

Implied price decreases, total and annualised

Country	Absolute decrease ($/MWh)	Years over which price decreases	Annualised rate of price decrease
Germany	16	1.5	12%
Chile	37	4	19%
Mexico*	2.5	1	8%
India	6	0.5	16%
UAE	35	1.5	44%

*Source: Guinness Asset Management Note: *results from second auction are preliminary and still to be confirmed by government.*

In the graph above, the drop in the bid prices is shown per country by date of delivery. There is a clear trend downwards across all three countries for which we have auction data over time. The bids in Chile and the UAE are for construction in two or more years' time meaning that bidders have to form a view on future costs and are not able to lock in returns.

Wind

Wind forecast

	2013	2014	2015	2016	2017	2018
World (including offshore)	**33.6**	**48.6**	**62.1**	**58.6**	**59.7**	**69.6**
Asia	17.1	23.8	32.3	30.4	30.4	33.6
EU Europe	11.9	10.4	13.5	11.3	12.6	11.0
North America & Caribbean	2.5	7.7	10.7	10.9	9.7	11.7
Central & South America	0.7	4.1	3.4	3.8	3.2	6.2
Non-EU Europe	0.9	0.9	1.0	0.9	1.3	1.6
Africa (excl. North Africa)	0.0	0.7	0.7	0.8	1.6	2.1
Middle East & North Africa	-	0.3	0.2	0.4	0.6	1.6
Oceania	0.5	0.8	0.3	0.1	0.3	1.8

Source: Bloomberg. Note: Sorted by 2016 forecast installations

After last year's record level of global wind installations, analysts expect a slight decrease in the global wind market in 2016. Last year's rush to complete projects before a tariff decrease meant that a record 29GW[2] of wind power was installed in China in 2015 – 19GW in the second half of (H2) 2015 alone. China's National Energy Administration (NEA) reported that close to 8GW of wind had been installed in H1 2016, of which 5.3GW were installed in Q1 2016. The Chinese government has successfully implemented and enforced limits to the amount of curtailment that wind turbines suffer, much to the relief of Chinese wind farm operators. The Chinese government targets 30GW of new wind installations in 2016, mainly in regions that have lower curtailment rates. However, whether the government will be successful is unclear –

[2] Source: Bloomberg

the country would have to repeat its phenomenal installation rate achieved in H2 2015. The vast majority of the Chinese wind market is supplied by Chinese turbine manufacturers, offering limited opportunities for non-Chinese manufacturers.

Outside of China, analysts expect wind demand to decrease slightly by 1GW as European installation levels fall. The United States is the largest individual market outside Asia. The United States Congress extended the production tax credit (PTC) which supports wind installations at the end of 2015 out to 2019. This ironically means there is less of a rush to finish projects. As a result, the United States wind market may not witness growth in 2016 and 2017 before picking up again in 2018 and 2019 as a surge before the PTC expires.

As with wind, Hilary Clinton is supportive of wind but were Donald Trump to win the US presidential election, there may be a rush of wind installations to protect against any change to supporting legislation.

We note that with expected cost and performance improvements of turbines, we expect that onshore wind power will be even more competitive compared to conventional sources in the United States, which may support higher growth than expected in 2018 and 2019 and will help the industry continue once the PTC has tapered away.

Europe as a whole is expected to continue to demand between 11 and 13GW between 2016 and 2018, driven by the feed-in-tariffs in France and general competitiveness of wind power with conventional sources. Developers are rushing to complete projects before auctions begin in Germany in 2017, after which installation levels will probably fall by around 1GW. Germany is starting construction on a transmission link with Norway, essentially using Norway's many hydro plants as energy storage. This opens up grid capacity and we believe would allow for even higher penetration of renewables in northern Europe.

Canada, Brazil and Mexico are the next sources of demand growth. Chile has made headlines due to its auctions where wind power bids have decreased in price since last year, down to $38/MWh from $79/MWh. The delivery dates for these two prices are four years apart, partially explaining the dramatic drop in price, equivalent to an annualized decrease of 17%.

Auctions across the globe continue to bring wind power prices down, with turbine suppliers seeing pressure on margins. Price pressure in the onshore wind sector is not as intense as in the solar sector – there are fewer manufacturers, the technology is broadly competitive today and policy remaining broadly supportive. However further research and development spending to improve efficiency and lower costs will as with all industries be critical in allowing all in the value chain to maintain margins.

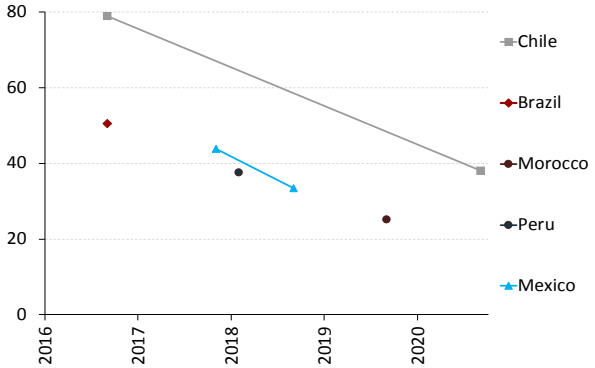
Corporates continue to provide purchase power agreements (PPAs) to renewable energy projects, predominantly wind. The US market was historically driven in part by large corporations signing PPAs, and we are beginning to see the same thing happen in Europe, reducing the importance of the utilities. We believe this trend will continue and support unsubsidized installations.

Guinness Atkinson Alternative Energy Fund

Managers Update – October 2016

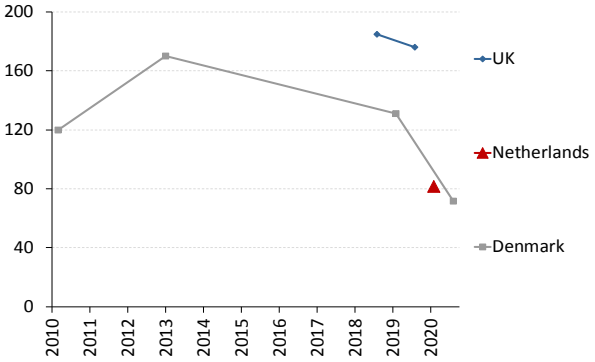
Wind LCOE developments

Onshore wind bids by delivery date ($/MWh)



Source: Bloomberg, Guinness Atkinson Asset Management

Offshore wind bids by delivery date ($/MWh)



Source: UK government, Government of the Netherlands, Windpower Monthly, Vattenfall, Guinness Atkinson Asset Management

Note: Projects have not been standardised for plant lifetime or financing cost and so values may not necessarily be directly comparable.

Offshore wind

Offshore wind has received much positive press in Q3 2016. First, Vattenfall set a new record for offshore wind in Denmark on 12 September 2016. The company had submitted the winning bid of 475 Danish Kroner per MWh ($71.7/MWh) over 12 years, surpassing Dong's previous offshore record in the Netherlands of €72.7/MWh ($81.7/MWh) in June this year. Bloomberg New Energy Finance reported the latest Vattenfall bid as having an equivalent LCOE of $51/MWh over its 23-year lifetime. However, the Danish government is looking into cancelling Vattenfall's bid, since low power prices would require higher than anticipated subsidies.

The phenomenally low prices for these offshore projects are partially achievable due to the proximity to shore, synergies with existing projects in the area and proximity to offshore wind manufacturing facilities. Bloomberg reports that there are no 'near-shore' projects left in Europe, indicating that future bids for offshore wind are likely to be higher.

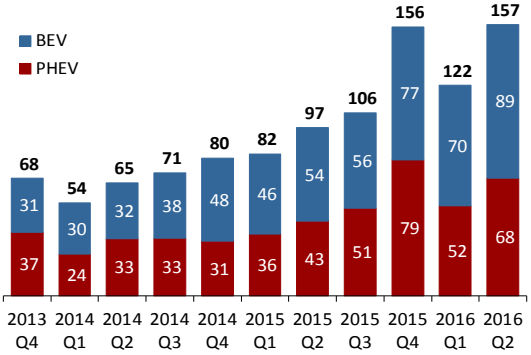
Second, the US Department of Energy and the US Department of the Interior published a document detailing the offshore wind strategy of the US until 2050. The document foresees 86GW of offshore wind by 2050. This would require average annual offshore wind installations of 2.5GW in the US. However, there are no binding targets and whether the strategy will be implemented will depend on the results of the US election in November this year. The global offshore wind market in 2020 could be as large as 10.5GW without the newly published strategy, up from 4.1GW in 2015. The new US offshore wind strategy would make the US a sizable player in the global offshore wind industry, if implemented.

Third, the Lawrence Berkeley National Laboratory showed that experts expect offshore wind to drop 30% in cost (in $/MWh terms) between 2014 and 2030. In the most optimistic scenario, the experts expect offshore wind to drop to $80/MWh by 2030. The main drivers behind cost reduction for fixed-bottom offshore wind were CapEx and financing costs. The

study, titled 'Expert elicitation survey on future wind energy costs', was conducted in late 2015 and published in the renowned scientific journal Nature Energy.

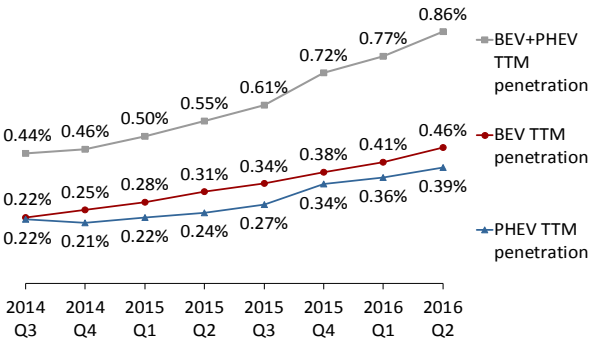
Electric Vehicles

Quarterly plug-in vehicle sales in selected countries (thousands)



Source: Bloomberg, Cleantechnica

Trailing 12-month plug-in vehicle penetration of new car sales in selected countries (%)



Source: Bloomberg. Note: TTM means trailing twelve months. Total EV sales across selected countries divided by total car sales in these countries show the penetration above.

Note: Selected countries include Austria, Belgium, Canada, China, Denmark, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, UK and USA. These countries were chosen for data availability and represent three-quarters of all car sales globally.

Electric vehicles (EVs) have shown strong growth in sales numbers since 2014. Compound quarterly growth rate is 8.7% between Q4 2013 and Q2 2016, translating to a 39.7% compound annual growth rate.

The graph on the right shows the TTM penetration of EVs in new car sales in the selected countries consistently growing for the last two and a half years. As has been the case for the duration of the graph, Norway has the highest penetration of EVs, with 28% in Q2 and 30% in Q1. The exceptionally high penetration in Norway is due to effective tax breaks and benefits to EV owners along with a relative expansive charging network. A long way behind Norway lies Sweden, at 3.7% for Q2 2016. The sensitivity of EV sales to policy changes has been experienced in the Netherlands, where EV penetration dropped from a high of 16.3% in Q4 2015 to 2.2% in the following quarter. This was due to an expiration in a subsidy for Plug-in Hybrid Electric Vehicles (PHEVs) at year end 2015.

In July, Germany introduced a subsidy scheme for EVs worth €1.2 billion. Prospective EV owners can apply for a €4,000 or a €3,000 grant when purchasing a battery electric vehicle (BEV) or a PHEV, respectively. However, the uptake of this subsidy in Germany in Q3 has been disappointing so far according to preliminary reports.

Electric car models have been making the news continuously this quarter in the run-up to the first set of affordable, long-range models coming to market. Renault surprised the market by announcing a doubling of range for its Zoe model to 250 miles (186 miles in real life driving

conditions) – beating Tesla and Chevrolet in range and timing. The long-range Zoe model will go on sale in November 2016 at around £23,000 ($30,000). In the United States, General Motors confirmed that the Chevrolet Bolt will have a 238-mile range on a full charge and will have a retail price of $37,495. After applying the $7,500 subsidy available to purchasers in the United States, the car would cost $29,995, significant since this would break the mental $30,000 barrier. The former chief designer of the Toyota Prius, Satoshi Ogiso, revealed in September 2016 that some BEV – fully electric - models up to 250km (155mile) range are already cheaper to build than non-plug-in hybrids, further adding to the momentum behind EVs.

Grid scale stationary storage

The California Public Utilities Commission (CPUC) directed utilities in Southern California to solicit grid-scale energy storage capacity after a leakage problem at the Aliso Canyon natural gas reservoir. In May 2016, the CPUC approved purchasing batteries for electricity storage to prevent blackouts. Notably the CPUC did not choose diesel generators or other forms of back-up power for the system.

On August 18, 2016 AES Energy Storage, a subsidiary of AES Corporation, announced that they will install 37.5MW of their Advancion Energy Storage arrays in early 2017. The project will be able to provide 37.5MW for four continuous hours, making this the largest battery storage project in the United States to date. San Diego Gas and Electric chose AES through a competitive solicitation.

Tesla also won a solicitation to provide an energy storage system to Southern California Edison. The system will have a power capacity of 20MW and storage capacity of 80MWh. The system will be located at a substation, similar to the projects by AES. Both projects are due to come online in a matter of months, showing the maturity of the storage sector.

The largest contract for energy storage was announced on 26 August, 2016 by National Grid, the grid operator in Great Britain. The company announced the results of its tender for enhanced frequency response (EFR), meaning that bidders had to be able to react to grid imbalances in under one second. Combined, the winners had 200MW of storage projects costing the government £65 million ($86m) over four years. National Grid stated that these projects would save the consumers £200 million over four years. Notably, the prices for these projects on a $/kWh basis may appear expensive compared with the batteries found in electric vehicles, which we assume lie between $300 and $350/kWh. However, the batteries in the EFR tender need to be able to ramp more quickly than electric vehicle batteries, having a higher power to energy ratio than electric vehicle batteries, making the batteries used for the EFR tender more expensive. Nevertheless, these prices could be low enough for some alternative energy developers to look at batteries to smooth out power generation from intermittent power generation technologies.

Portfolio changes

We sold Trina Solar, one of the leading Chinese module manufacturers following the board recommendation of a management buyout offer. We replaced the position with Sensata, a controls and sensors company selling mainly to the automotive market. We belive Sensata, aside from having a strong earnings history and trading on reasonable multiples, is likely to benefit from increased demand for its products as the automotive market focuses on fuel efficiency and electrification.

Guinness Atkinson Alternative Energy Fund

Managers Update – October 2016

Saft Group was acquired by Total and the transaction closed at the beginning of the third quarter. We replaced it with a position in Senvion, a Germany wind-turbine manufacturer formerly known as RePower. Senvion has a good market reputation and positioning and Senvion was trading at significantly lower multiples than its peers.

Fund Performance (Q3 2016)

The Guinness Atkinson Alternative Energy Fund was up 4.17% for the third quarter of 2016. This compared to a rise in the Wilderhill Clean Energy Index of 1.19%, an increase in the Wilderhill New Energy Global Innovation Index of 5.46% and an increase in the MSCI World Index of 4.99%.

Total Returns as of 30/09/16

Total returns	Q3 2016	YTD 2016	1 year	5 year	10 year	From launch (31/03/06)
Guinness Atkinson Alternative Energy Fund	4.17%	-9.24%	-1.79%	-2.10%	-11.24%	-12.32%
Wilderhill New Energy Index	5.46%	-1.90%	7.24%	6.67%	-2.60%	-2.93%
Wilderhill Clean Energy Index	1.19%	-18.24%	-5.10%	-5.63%	-13.24%	-14.68%
MSCI World Index	4.99%	6.06%	12.01%	6.48%	12.29%	12.29%

Calendar year returns	2011	2012	2013	2014	2015
Guinness Atkinson Alternative Energy Fund	-42.53%	-15.20%	61.54%	-14.29%	-11.40%
Wilderhill New Energy Index	-38.91%	-4.14%	55.70%	-2.16%	1.51%
Wilderhill Clean Energy Index	-50.50%	-17.37%	58.54%	-16.93%	-10.36%
MSCI World Index	-4.99%	16.56%	27.43%	5.58%	-0.28%

CY = Calendar Year

Expense Ratio: 1.98% (net); 2.31% (gross)

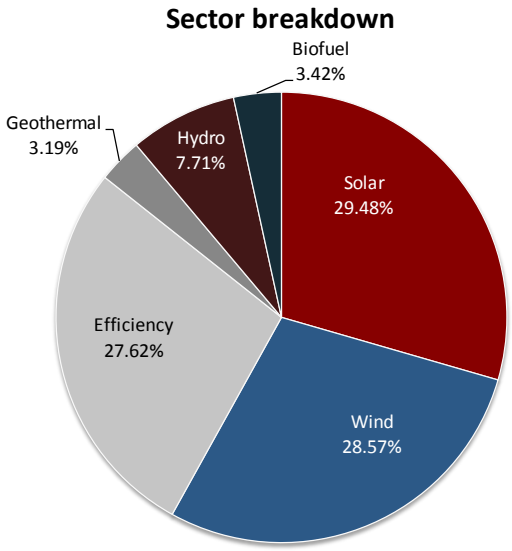
All return figures represent average annualized returns except for periods of one year or less, which are actual returns.

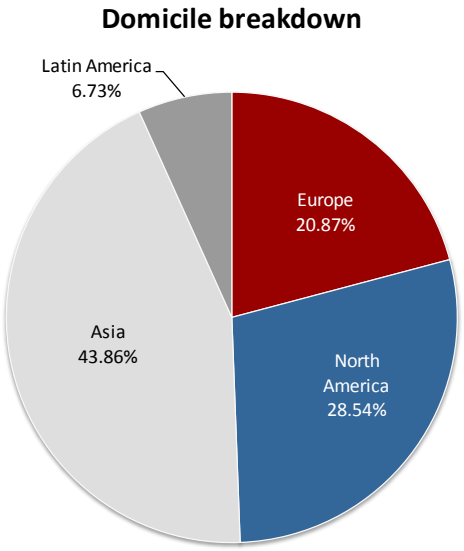
Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the 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 Funds impose a redemption fee of 2% on shares held less than 30 days. Performance data does not reflect the redemption fee. If reflected, total returns would be reduced.

Guinness Atkinson
Alternative Energy Fund
Managers Update – October 2016

Fund Holdings





Top 10 holdings as of 30/09/16	% of assets
INIZIATIVE BRESCIANE-INBRE S	4.41%
SUNPOWER CORP	3.83%
SOLAREDGE TECHNOLOGIES INC	3.82%
CANADIAN SOLAR INC	3.75%
FIRST SOLAR INC	3.51%
GOOD ENERGY GROUP PLC	3.47%
COSAN SA INDUSTRIA COMERCIO	3.42%
JA SOLAR HOLDINGS CO LTD-ADR	3.39%
SCHNEIDER ELECTRIC SE	3.34%
SENVION SA	3.32%

Edward Guinness and Samira Rudig *October 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 dvice.

Guinness Atkinson
Alternative Energy Fund
Managers Update – October 2016

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.

One cannot invest directly in an index.

Distributed by Foreside Fund Services, LLC