Guinness Alternative Energy Fund

A high conviction pureplay equity fund managed by Edward Guinness investing in quoted companies in the alternative energy sector.

INVESTMENT COMMENTARY – August 2016

Manager

Edward Guinness
(from launch in December 2007)

Fund size

$5.6m

AUM under strategy **$17.8m**

Aim

Guinness Alternative Energy Fund gives investors pureplay exposure to global alternative energy markets.

The Fund is managed for capital growth and invests in companies in the solar, wind, hydro, geothermal, biofuels, biomass and energy efficiency sectors.

Investment case

We believe that over the next twenty years the alternative energy sector will benefit from the combined effects of:

- Higher energy prices driven by population growth, developing world industrialisation and diminishing fossil fuel supplies
- Falling costs of alternative energy assets as the technology improves
- Energy security concerns
- Climate change and environmental issues

The Guinness Alternative Energy team has been managing alternative energy portfolios since 2007.

The Fund is a long-only equity portfolio of around 30 equally-weighted positions.

Normally the Fund is invested in companies with a market capitalisation over $100 million.

Alternative energy review

The second quarter of 2016 showed signs of improving fundamentals that have not yet been matched by a recovery in stock prices. Fears about China's economy have not subsided. Brexit concerns were shrugged off by the equity markets, although the impact does not materially affect the fundamentals of the alternative energy sector, since the UK forms only a small percentage of global renewable energy demand. We now believe that interest rates will be held lower for longer – with the US media speculating over a rate cut from the Federal Reserve – which would make project finance cheaper by lowering the levelised cost of electricity of alternative energy sources. The increase in the oil price from $41.46/bbl at the end of March to $48.33/bbl at the end of the quarter boosted confidence in the energy sector as a whole, although we would argue that its direct impact on alternative energy stock economic fundamentals is limited.

Performance contribution

Brazilian ethanol investment Cosan continued its rally through the second quarter, returning 17.39%. Cosan continues to outperform Brazil's Ibovespa index.

Canadian wind power developer, owner and operator Boralex performed strongly, rising 20.44% in the second quarter due to strong performance from existing plant, new plant beginning to contribute and greater visibility over its pipeline of planned projects.

Solar sector weakness was reflected in the performance of Sunpower, First Solar, Trina Solar and SolarEdge which were down 30.66%, 29.20%, 22.13% and 22.04% over the quarter respectively.

Boer Power was down 44.78% over the quarter. The company missed its sales estimates in the first quarter by 18% and added debt to its balance sheet. Since then, analysts have continually expressed doubts on Boer Power reaching previous growth estimates. We continue to see Boer Power as poised to capture value from increased demand for energy management and energy efficiency systems in China and believe the current price reflects analysts' concerns.

Outlook

Solar

We continue to believe that equities in the PV sector are undervalued while the PV sector itself looks stronger than ever before.

The solar sector was a Chinese success story in the first half of 2016. China is estimated to have installed 22GW in the first six months of the year – more than triple the amount installed in the same period in 2015. The Chinese government cut its feed-in tariff by approximately 10% for solar installations on 30th June 2016, creating a surge of installations prior to that date. Analysts' expectations were significantly lower than the 22GW reported. Further installations of 6-8GW are expected in the second half of 2016 (Bloomberg). The global solar market is typically stronger in the second half of the year, which we expect to be reflected by stronger sales outside China for the solar module manufacturers

The United States remains a long-term growth driver in the solar sector with the extension of the Investment Tax Credit (ITC). Utility-scale system costs are coming down more in line with those in Europe. There is significant potential for falls in rooftop solar installation prices as US installations have much higher non-module costs than European installations. The US is expected to become the second largest market after China in 2016.

US election

If Hillary Clinton wins the presidential elections in the United States and follows through with her campaign promise to have 140GW of PV installed in the United States at the end of her potential term, global demand will meaningfully increase over the next 5 years. Achieving 140GW of PV installed in the United States would require around 50GW more than is currently forecast to be installed globally, leading to a 13% increase in total global PV demand. This would further strengthen the fundamentals of the solar PV sector while potentially turning sentiment positive.

We expect Japan to be the third-largest solar market in 2016. To date only 25% of the projects approved have been constructed, which provides a strong backlog for future installations despite reductions in the feed-in tariffs and grid constraints.

India set a 100GW solar target by 2022. Although the country is unlikely to achieve the target in full, 2015 already saw a doubling in annual installed capacity from the previous three years. It is likely that India will continue to increase its installed base of solar PV capacity at the current rate until 2022.

On the manufacturing front, solar PV equipment manufacturing capacity is slowly increasing, with Chinese government pressure on companies not to expand too rapidly. New manufacturing lines are replacing obsolete lines. Solar companies continue to lower the cost of production and expect to be able to maintain margins despite falling prices.

Wind

We perceive good opportunities in wind farm operators and developers who can benefit from the steady growth of the sector, while having concerns about the valuation levels of a number of the wind turbine manufacturers, notwithstanding their strong current positioning.

In 2015, 63GW of wind was installed globally. Of this, 30.5 GW was installed in China, which is ahead of the 24GW that China needs to install annually to meet its target of 250GW of cumulative installed capacity by 2020. China provided unexpected support for renewable energy projects in China by mandating minimum percentages of power produced that must be accepted by the grid. Project operators now sell a higher percentage of the electricity generated, which is a positive for Chinese wind farm owners. While the outlook for growth in annual installations in China is relatively flat, the returns available for installers with falling turbine prices, improving turbine performance and lower financing costs make China an attractive country for wind assets.

The United States wind sector has the potential to witness an unprecedented period of steady growth following the extension of the Production Tax Credit which has historically lapsed roughly every other year, leading to major variation in annual wind installation. The next four years have the potential to allow wind developers to make proper long-term plans and to optimise the installations that they make.

Europe continues to see steady growth in annual installations, which have increased from 9GW in 2008 to 14GW in 2015. Growth is expected to slow over the next five years, as a number of countries, notably the UK, have made it harder to build new onshore wind installations.

Energy Efficiency

The first half of 2016 saw significant mergers and acquisitions activity in the energy efficiency sector, continuing the trend of larger companies wanting to benefit from the opportunities presented by energy efficiency and energy management systems. The technology giant Oracle acquired Opower while Nibe Industrier (held) acquired the HVAC solutions manufacturing division LSB Industries. We expect the investment opportunity in energy efficiency and energy management companies to gain further recognition in the future.

Biofuels

The recovery in the oil price has been a positive for ethanol and biodiesel manufacturers. The outlook for regulatory support for increased ethanol in the US remains unlikely. Use of biofuels in Latin America remains strongest, and the economics of refining from sugar beet remain attractive.

Geothermal

The long-term prospects for geothermal are that it is likely to remain a relatively niche source of energy generation, limited to areas with good geothermal resource potential. The returns from projects that are completed are attractive as there is good visibility on output expectations and the plant can be operated as baseload or to provide flexibility. The “game changer” for geothermal would be the maturing of hot rock technology, that would facilitate geothermal facilities in a much broader range of locations, but this technology still has to be developed before it is economically competitive.

Hydro

The opportunities for large-scale hydro development are limited, but hydroelectric generating companies with operating large-scale assets are well placed to offer both baseload and flexible power generation. This creates specific company investment opportunities. There is a growth opportunity in small-scale hydro installations, where the long life of the assets and predictable output drive investor returns.

Storage

Storage has always been a potentially attractive investment area, and it is now beginning to become investible. The cost of batteries is falling dramatically, 30% in 2015 alone, as investment is made in larger-scale facilities and innovative battery materials. Batteries have multiple potential roles, with grid-scale storage to provide ancillary services and electric vehicles (EVs) the two applications that are both imminent and provide a significant growth story. The investment opportunities are in battery manufacturers and within the other portfolio companies, a number of whom are developing battery applications as an enhancement to their alternative energy technology.

The investment potential is being recognised by many energy incumbents. Total announced its acquisition of Saft – a pureplay battery manufacturer – in May 2016. Only days later Engie acquired a majority stake in Green Charge Networks, an energy storage company that optimises energy consumption for its customers using battery storage.

Norway released figures showing that EVs made up over 20% of new car sales in H1 2016 and 18% in all of 2015, demonstrating how quickly uptake can increase with the right support. Most car manufacturers are developing electric vehicles to satisfy emissions requirements. The high number of battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) expected to be launched over the next five years, combined with increased government support through grants and infrastructure investments, gives a high probability that a number will find favour with consumers and lead to increased uptake.

Energy Storage in the Portfolio

In the second quarter we increased our exposure to the electricity storage market. We added a position in Saft, a French battery manufacturer, which has subsequently been taken over by Total SA at a 40% premium. We have also taken a position in Tianneng Power, a Chinese battery manufacturer whose products predominantly power electric bicycles and small, low-speed electric vehicles. Tianneng's small lithium battery division has grown rapidly in recent years and is likely to supply batteries for electric vehicle manufacturers in the future, supported by a strong existing battery business.

Energy storage is becoming increasingly important for companies across the portfolio. Enphase and SolarEdge have partnered with battery companies to install batteries alongside solar power systems. Enphase is using a lithium ion battery with lithium iron phosphate chemistry for its home storage system to be rolled out in late 2016. SolarEdge has made its storage software system compatible with Tesla's Powerwall and other commercially available batteries. Johnson Controls manufactures li-ion batteries for electric vehicles. Sunpower has won projects which include solar with storage solutions, while FirstSolar invested in Younicos – a Berlin-based battery energy management system provider - as part of a $50m funding round. We estimate that one-third of our holdings are exposed to storage as part of their business.

Portfolio

We bought a position in Tianneng Power International (HK: 819) to gain exposure to the increased energy storage market in China. We also purchased Saft Groupe (FP: SAFT) to gain exposure to the energy storage market globally and will replace the position once Total finalises the acquisition of Saft Groupe. We also acquired positions in Schneider Electric (FP: SU) and Johnson Controls (NYSE: JCI) to expand our energy efficiency holdings and increase liquidity. Schneider Electric is a France-based energy management systems and power automations specialist. Johnson Controls is a US-based energy efficiency solutions provider and lithium-ion battery manufacturer.

We sold the fund's position in Renesola (NYSE: SOL) due to high debt levels and the prospect of oversupply in the solar market squeezing margins. We also sold positions in Greentech (DC: GES) and Futuren (FP: FTRN) due to underperformance and liquidity concerns.

Fund Performance

The Guinness Alternative Energy Fund was down 5.25% (in USD) for the second quarter of 2016. This compared to a fall in the Wilderhill New Energy Global Innovation Index of 2.39%, a fall in in the Wilderhill Clean Energy Index of 4.93% and a rise in the MSCI World Index of 1.20%.

Edward Guinness & Samira Rudig
Guinness Alternative Energy Fund

August 2016

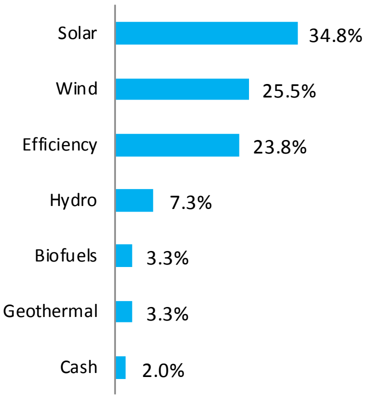
PORTFOLIO

31/07/2016

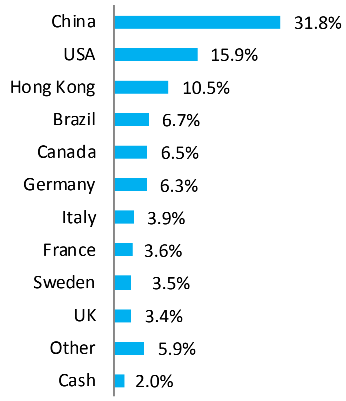
Fund top 10 holdings

Inbre	3.9%
Schneider Electric	3.6%
Johnson Controls	3.6%
China Singyes Solar Tech	3.5%
Wasion	3.5%
Nibe Industrier	3.5%
Concord New Energy	3.4%
Good Energy	3.4%
CEMIG	3.4%
JA Solar	3.4%
% of Fund in top 10	35.3%
Total number of stocks in Fund	31

Sector analysis



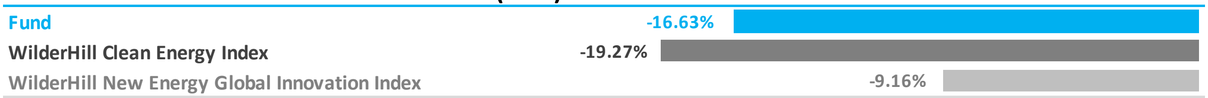
Geographic allocation



PERFORMANCE

31/07/2016

Annualised % total return from launch* (USD)



Discrete years % total return (USD)	Jul '12	Jul '13	Jul '14	Jul '15	Jul '16
Fund	-51.8	76.4	15.6	-19.4	-14.8
WilderHill Clean Energy Index	-49.7	47.9	8.1	-21.4	-20.4
WilderHill New Energy Global Innovation Index	-43.7	53.5	25.4	-6.2	-6.0

Cumulative % total return (USD)	3 months	Year-to-date	1 year	3 years	5 years	From launch*
Fund	-2.6	-9.3	-14.8	-20.6	-32.5	-77.2
WilderHill Clean Energy Index	-4.0	-17.0	-20.4	-32.3	-49.6	-84.2
WilderHill New Energy Global Innovation Index	0.3	-3.2	-6.0	10.6	-4.4	-56.3

RISK ANALYSIS

31/07/2016

Annualised, three years, in USD	Wilderhill Clean Energy Index	Fund
Alpha	0	-0.08
Beta	1	0.70
Correlation	1	0.84
R squared	1	0.71
Volatility	27.33	26.05

*Fund launch date: 19/12/2007.

Performance data based on the Fund's 'E' share class (AMC: 0.75%, max OCF: 1.24%), except periods starting prior to 02/09/2008, which are based on a composite of the Fund's 'A' share class (AMC: 1.00%, max OCF: 1.49%) from Fund launch launch (19/12/2007) until the launch of the Fund's E class (02/09/2008).

Source: Bloomberg and Financial Express, bid to bid, (inclusive of all annual management fees but excluding any initial charge or redemption fee), gross income reinvested. Performance would be lower if initial charge and/or redemption fee were included.

Past performance should not be taken as an indicator of future performance. The value of this investment and any income arising from it can fall as well as rise as a result of market and currency fluctuations.

All returns stated here are in US dollars; which is the Fund's base currency. Returns in different currencies may be higher or lower as a result of currency fluctuations.

Important information and risk factors

Issued by Guinness Asset Management Limited, authorised and regulated by the Financial Conduct Authority.

This report is primarily designed to inform you about recent developments in the alternative energy markets invested in by the Guinness Alternative Energy Fund. It may also provide information about the Fund's portfolio, including recent activity and performance. It contains facts relating to the alternative energy market and our own interpretation. Any investment decision should take account of the subjectivity of the comments contained in the report.

This document is provided for information only and all the information contained in it is believed to be reliable but may be inaccurate or incomplete; any opinions stated are honestly held at the time of writing, but are not guaranteed. The contents of the document should not therefore be relied upon. It should not be taken as a recommendation to make an investment in the Fund or to buy or sell individual securities, nor does it constitute an offer for sale.

Risk

The Guinness Alternative Energy Fund is an equity fund. Investors should be willing and able to assume the risks of equity investing. The value of an investment and the income from it can fall as well as rise as a result of market and currency movement, and you may not get back the amount originally invested. The Fund invests only in companies involved in the alternative energy sector; it is therefore susceptible to the performance of that one sector, and can be volatile. Details on the risk factors are included in the Fund's documentation, available on our website.

Documentation

The documentation needed to make an investment, including the Prospectus, the Key Investor Information Document (KIID) and the Application Form, is available from the website www.guinnessfunds.com , or free of charge from:-

- the Manager: Capita Financial Managers (Ireland) Limited, 2 Grand Canal Square, Dublin 2, Ireland; or,
- the Promoter and Investment Manager: Guinness Asset Management Ltd, 14 Queen Anne's Gate, London SW1H 9AA.

Residency

In countries where the Fund is not registered for sale or in any other circumstances where its distribution is not authorised or is unlawful, the Fund should not be distributed to resident Retail Clients. **NOTE: THIS INVESTMENT IS NOT FOR SALE TO U.S. PERSONS.**

Structure & regulation

The Fund is a sub-fund of Guinness Asset Management Funds PLC (the "Company"), an open-ended umbrella-type investment company, incorporated in Ireland and authorised and supervised by the Central Bank of Ireland, which operates under EU legislation. If you are in any doubt about the suitability of investing in this Fund, please consult your investment or other professional adviser.

Switzerland

The prospectus and KIID for Switzerland, the articles of association, and the annual and semi-annual reports can be obtained free of charge from the representative in Switzerland, Carnegie Fund Services S.A., 11, rue du Général-Dufour, 1204 Geneva, Switzerland, Tel. +41 22 705 11 77, www.carnegie-fund-services.ch. The paying agent is Banque Cantonale de Genève, 17 Quai de l'Ile, 1204 Geneva, Switzerland.

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