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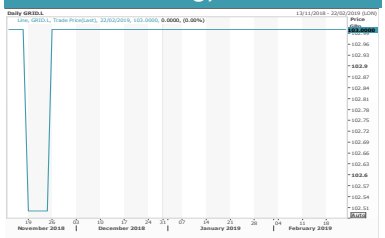
Alternative Energy



Source: Eikon Thomson Reuters

Market data

EPIC/TKR	**GRID**
Price (p)	**103**
12m High (p)	104
12m Low (p)	102
Shares (m)	100
Mkt Cap (£m)	103
Market	LSE

Description

GHESF owns a 70 MW portfolio of battery-based energy storage systems – more will be acquired shortly. Revenues are earned from the provision of technical services, especially for frequency maintenance purposes, to National Grid and other electricity companies.

Company information

CEO	Ben Guest
CFO	Duncan Neale
Chairman	John Leggate

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Key shareholders

Gresham House Nominees	16.7%
Ben Guest/Lux Energy	11.5%
Noriker Power	4.1%

Diary

Autumn 2019	Results

Analysts

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GRESHAM HOUSE ENERGY STORAGE FUND

Opportunities in Energy Storage Systems

Given the pronounced growth and the intermittency of renewable generation, energy storage systems (ESSs) and battery cell developments are attracting real attention – the recent acquisition by Shell of Sonnen, Germany's leading battery power business, being a case in point. GHESF, which now owns 70 MW of ESS projects, was floated last October 2018. Simultaneously, it raised £100m of proceeds, around 60% of which have now been invested in the recently acquired seed portfolio. GHESF aspires to expand its portfolio, although the pace of this expansion will be determined by future fundraising opportunities. It plans a 4.5p dividend for this year and a minimum 7p annual dividend payment subsequently.

- **Strategy:** GHESF aims to invest in battery-based ESSs by building up an operating portfolio; to date, 70 MW of capacity has been bought for £57.22m. A further 262 MW of capacity is under consideration – and at various stages of development. Subject to the availability of the requisite finance, GHESF seeks to acquire – and integrate – most of this pipeline.
- **UK Generation:** With very low plant margins and more intermittent renewable generation, National Grid is finding it ever more challenging to manage the system to the required 50Hz frequency requirement. Grid support services, including the ability to provide Firm Frequent Response (FFR) power, are becoming increasingly important.
- **Valuation:** Having joined LSE in November 2018, GHESF is now valued at £103m, a figure underpinned by its £100m fundraising, around 60% of which has now been invested in its 70 MW seed core portfolio. GHESF's valuation will also be closely compared with that of Gore Street Energy Storage Fund – with 29 MW of capacity due to be commissioned shortly; the latter is currently valued at £29m.
- **Risks:** For new companies with unproven business models, such as GHESF, there are clearly risks. Revenues are currently modest but are expected to grow meaningfully. FFR contracts and the ability to deliver Asset Optimisation (AO) revenues are key. Regulatory and technical risks are clearly present, and the arrival of more competitors seems likely. Assessing GHESF's financials, including its underlying NAV, and determining its acquisition costs could also be challenging.
- **Investment summary:** As a new company in a newish market, any discerning investor must accept that there are risks and that much of the attraction lies in the concept of battery-based ESSs – and of their considerable potential for widespread deployment. GHESF has, though, pledged to deliver a 4.5p dividend for 2019 and a 7p payment for 2020.

The 7 MW Rufford ESS plant

Source: GHESF

Strategy

Building an ESS portfolio

Gresham House Energy Storage Fund (GHESF) seeks to build a portfolio of Energy Storage Systems (ESSs) to take advantage of the increasing interest in battery-based storage technology.

The seed portfolio now bought

As pledged in its Prospectus last October, which accompanied its £100m fundraising, GHESF has already acquired its seed portfolio of five ESS plants. The aggregate project value was £57.22m, prior to any working capital or cash balances held by the acquired companies.

Details of the five acquired businesses are set out below; net export capacity, as stated for two - Roundponds and Staunch - of the plants, means that these plants are equipped to generate and sell any surplus power.

Seed ESS plants

Project	Location	Capacity (MW)	Site type	Commissioning date
Roundponds	Wiltshire	20	Battery/generators – net export	April 2018
Staunch	Staffordshire	20	Battery/generators – net export	March 2017
Lockleaze	Bristol	15	Battery – symmetrical	July 2017
Littlebrook	Kent	8	Battery – symmetrical	December 2017
Rufford	Nottinghamshire	7	Battery/generators – symmetrical	July 2017
Total		70		

Source: GHESF Prospectus (as adapted)

Plans for growth…

GHESF has clear plans to extend this portfolio. A total of 262 MW of new capacity is under review by GHESF. Of this, 182 MW, comprising five plants, is ready to be built and to be transferred to GHESF within the next few months – subject to additional fund-raising. The first 5 MW is already under construction and another 50 MW is expected to follow shortly. An additional 80 MW of new ESS capacity is subject to exclusive heads of terms agreements.

…but further funds will be needed

To finance much of this planned expansion, GHESF would need to secure additional funds, given that 60% of the pre-Christmas fundraising was used to acquire the 70 MW seed portfolio.

Energy Storage Systems (ESS)

Strains on the Grid

In recent years, renewable generation, led by increasing on-shore wind and solar output, has begun to make a real contribution to UK electricity output. With all the UK's coal-fired power stations due to be closed by 2025, declining nuclear output, as existing plants have reached the end of their lives, and minimal new gas-fired capacity under construction, there are increasing strains on the level of reliable base-load generation capacity.

Instability concerns

As such, the grid network is becoming less stable – a scenario that offers opportunities for organisations such as GHESF, which can provide a range of technical support and load balancing services. Central to this capability are the lithium-ion batteries, which are core to ESS projects, since they can both store – and subsequently discharge – power once required to do so.

More specifically, maintaining grid frequency – at 50Hz, which corresponds to the rotational speed of turbines within power stations that are connected to the Grid – is crucial, and something that the inherent intermittency of renewable generation makes far harder than has been the case to date. By their very nature, the availability

of both wind power and solar power is intermittent – the latter contributing minimal output at night – and it can be difficult to forecast.

FFR contracts to maintain 50Hz grid frequency

Importantly, National Grid offers contracts to enable Firm Frequency Response (FFR) services. Counterparties to these contracts, such as GHESF, earn revenues by providing near real-time frequency variations through importing and exporting power.

While FFR contracts provide key revenues at present and – depending upon future contracts – will presumably continue to do so in the future, it is the opportunities provided by Asset Optimisation (AO) that seem likely to be their main vehicle for driving revenues ahead.

Risks

Various risks

Inevitably, as GHESF is such a young company, it is subject to many risks. The most material are summarised below:

- Since GHESF is a new business, with neither an operating nor a financial track record, its prospects are far from assured; however, the team developing the ESS portfolio has decades of experience in the renewables sector;
- Many of its future revenues will be dependent upon either contracted FFR activities – whose renewal is not guaranteed – or on AO, which may well be volatile.
- New energy storage technologies and competitors – in addition to Gore Street – may emerge.
- Errors in assessing GHESF's underlying Net Asset Value (NAV) or in determining accurately future acquisition prices; this risk is mitigated by the use of an IRR figure that is above the Fund's target return;
- Technical problems with its operating equipment, although – with several sites in operation – this risk is spread;
- Changes to the complex arrangements for regulating the electricity supply industry: however, regulated revenues are comparatively modest as a %age of the total;
- The departure of key personnel;
- The inability to generate enough revenues to meet investors' dividend payment expectations.

Revenues

GHSEF aims to develop several revenue sources based on its battery-based ESS facilities. In the short term, FFR revenues, which will derive from existing contracts, are key. Their growth will depend upon the winning – and the pricing – of future contracts.

AO offers real, although unpredictable, potential

On the AO front, the opportunities are, in general terms, wide. Undoubtedly, the rapid increase – and unpredictability – of renewable power is causing disruption of the Grid, especially as established base-load generating plants reduce in number and also in output capability. There is significant evidence of this trend with rising constraint payments by National Grid to wind generators – to compensate them for not taking their output - and insufficient attention to either storing or exporting that power via interconnectors.

Increasingly, though, arbitrage-type markets for very short-term power requirements are expected to grow – unplanned outages of a base-load operator will, for example, provide obvious opportunities.

The Triad peaks – met by GHESF plants in 2017/18

More technically, GHESF aspires to secure revenues from the so-called Triad periods in National Grid's power demand curve. Such periods, where demand over the Grid network peaks, comprise just three half-hour slots between the peak demand periods of November and February each year. Triad periods do need to be separated by 10 clear days, rather than being compressed in a short, sharp snap. Significantly, the seed assets that were operational during the winter of 2017/18 successfully hit all three Triads

GHESF also expects various revenue-earning opportunities to arise from other major electricity players, including the provision of technical services to the regionally-based Distribution Network Operators (DNOs).

Capacity market auctions and the ECJ ruling

GHESF also expects to earn – relatively modest – Capacity Market contract payments, despite the recent high-profile ruling by the European Court of Justice (ECJ) that the UK's current peaking auctions constitute illegal state-aid, which had led to its current suspension. However, it is probable that Capacity Market contracts will be resurrected – especially given the UK's very low plant margins and the risks that they run.

In summary, based on its initial seed capacity of 70 MW, GHESF should be able to generate revenues of c£5min in its first year; virtually all this revenue would accrue from FFR contracts. This figure will be boosted by minor interest income on the £40m raised and not invested to date.

Still some financing capacity on the balance sheet

Having raised £100m late last year and, allowing for the recent ca.£60m of investment, GHESF's balance sheet looks robust. However, given its aim to acquire up to 262 MW of additional plant, a further fundraising is anticipated. To a certain extent, this will depend upon the operating performance – and financial returns – of its seed 70 MW portfolio, which is spread across five sites. However, given the current interest in the battery-based ESS sector, raising further funds – on the right terms – is certainly feasible, assuming current expectations are met.

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