



HARDMAN & CO.



UK Renewable Energy Infrastructure Funds

A 20/20 vision

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N.B. Closing stock market prices on 31/01/2020 have been used, unless otherwise specified

UK Renewable Energy Infrastructure Funds Revisited (REIFs)

Executive summary

- ▶ Our sector research focuses on 13 quoted REIFs, including the recently floated Octopus Renewables, which equates to those selected by members of the Association of Investment Companies (AIC). Since May 2014, REIF returns have been solid, with total returns approaching 10% p.a. As a group, their combined market capitalisation is now £8.7bn; the most valuable quoted funds are Greencoat UK Wind (£2.2bn) and TRIG (£2.2bn).
- ▶ The sector premia over net asset valuations (NAVs) for most REIFs now lie in the 10%-17% range. The two most valuable REIFs, Greencoat UK Wind and TRIG, trade at premia of ca.15%. Targeted dividend increases underpin the attractions, especially of wind and solar generation investments; major earnings shortfalls are low-risk, thereby protecting quarterly dividend payments. Prospective dividend yields for most REIFs currently lie in the range of 4.5%-6.5%.
- ▶ Despite the dependence on long-term Power Purchase Agreements (PPAs), lower power prices and output shortfalls would have a material downward impact on both NAVs and share price ratings; both are also sensitive to any discount rate adjustments. Any major regulatory or subsidy changes are also obvious risk factors.
- ▶ Up to ca.60% of the REIF sector valuation is accounted for by wind power generation. On the back of subsidies, UK onshore wind power has prospered, and now exceeds 14GW, but the termination of subsidies for new onshore wind plants from 2017 onwards has cut investment, especially in England and Wales.
- ▶ Offshore wind power is the new “go-to” investment sector, given the sea-change in costs. The pivotal 2019 auction for the development of some North Sea sites saw several Contracts for Difference (CfDs) being awarded, with the lowest on the Dogger Bank, at just £39.65p (2012 prices) per MWh. This figure should be compared with the 2018 £100 per MWh Government target, as well as the £57.50p per MWh figure, which was the lowest winning bid in the similar 2017 auction.
- ▶ Ca.30% of the REIF sector valuation is accounted for by solar power generation, which now exceeds 12GW in the UK. Most solar farms are based in the Midlands or in the South, where irradiation levels are higher. The removal of subsidies for new solar plants from 2017 has undoubtedly been challenging for the sector, but unit costs have fallen appreciably in recent years. The levelised cost of solar power should fall, in time, well below £50 per MWh.
- ▶ Looking forward, delivering the desired returns from unsubsidised wind and solar plants will be challenging. Over time, unsubsidised renewable generation plants will form a rising proportion of the underlying portfolio valuation – and with the risk that earnings targets may be missed.
- ▶ The largest renewable generation capacity in the UK is operated by FTSE 100 stock, SSE, which was privatised in 1991. Its portfolio now increasingly focuses on energy networks – with a Regulatory Asset Value (RAV) of ca.£9bn – and a renewables generation capacity of ca.4GW – over three times that of TRIG, the largest REIF.
- ▶ In recent months, the now 13-strong REIF sector has been very active – the key developments are listed overleaf. Octopus Renewables is the latest entrant to the sector and may be followed by Lightspeed Solar, which has plans to invest in US solar plants. Others seem set to follow in coming months.
- ▶ Exchangerates used: £ to € – 0.84, £ to US\$ – 0.76.

REIF key data		
REIF	Hardman & Co Tier	Market cap. (£m)
Aquila European Renewables	3	138
Bluefield Solar	2	486
Foresight Solar	2	708
Gore Street Energy Storage	4	47
Greencoat Renewables	2	641
Greencoat UK Wind	1	2,156
Gresham House Energy Storage	4	225
JLEN	2	586
NextEnergy Solar	2	695
Octopus Renewables	4	378
SEEIT	4	355
TRIG	1	2,165
US Solar	3	152

Source: Bloomberg, Hardman & Co Research

News since July 2019

Much is afoot

Since our [*last publication on REIF funds in July 2019*](#), much has happened, with many of the 13 funds under review being involved in acquisitions and, in some cases, in further fundraising. JLEN (formerly John Laing Environment Fund) is also included in the grouping.

Set out below are the major announcements, since July 2019, relating to the 13 REIF funds now under review. In the main, they cover acquisitions, fundraising, dividends and NAVs.

Aquila European Renewables

- ▶ 20/12/2019 – Acquisition for €36.7m of a 100% stake in Korkeakangas Wind, which is developing 43.2MW of onshore wind capacity in central Finland.
- ▶ 12/12/2019 – Acquisition for €25.3m of 100% of Svindbaek HoldCo, which owns ca.22MW capacity of wind plant in west Denmark.
- ▶ 30/09/2019 – NAV of €150m, equivalent to €0.97 per share, was announced, as at 30/9/2019, along with a €0.015 dividend for the 2019 calendar year.
- ▶ 05/08/2019 – Signing of an exclusive agreement to buy the Aalto Wind site in Finland; the installed capacity is ca.35MW.
- ▶ 10/07/2019 – Acquisition of a ca.26% stake in Midfjellet Vindkraft, a Norwegian wind power business: the total capacity of the first three phases amounts to 150MW.
- ▶ 08/07/2019 – Acquisition of a ca.18% stake in Aguia Enlica, a Portuguese hydro business with 21 plants and total capacity of 103MW.
- ▶ 08/07/2019 – Purchase of full ownership of the Danish-based wind generation business, Holmen Wind Park 11, which owns Holmen 11, an 18MW onshore plant.

Bluefield Solar

- ▶ 28/01/2020 – Confirmation of a 1.95p per share 1Q dividend, with a 2019/20 full-year target of 7.90p per share.
- ▶ 24/01/2020 – Acquisition of three solar plants for £13.9m, with a total capacity of 13.5MW.
- ▶ 05/11/2019 – NAV of £431m was confirmed, equivalent to 116.62p per share, as at 30/09/2019.
- ▶ 19/09/2019 – Full-year results for 2018/19 were published. NAV was £436m (£419m in 2017/18), equivalent to 117.98p per share. Underlying earnings, post debt amortisation, were 8.91p (7.72p) per share. The annual dividend was 8.31p per share, 0.63p per share above the targeted payment.

Foresight Solar

- ▶ 22/01/2020 – Confirmation of a 3Q dividend of 1.69p per share.
- ▶ 27/11/2019 – The potential negative impact of the Targeting Charging Review (TCR) proposals was assessed at -1.4%, based on the September 2019 NAV of 109.1p; this would apply from April 2021.
- ▶ 11/11/2019 – NAV of £599m, equivalent to 109.1p per share, was confirmed.
- ▶ 10/10/2019 – Results of the placing were announced. Around £65m of gross proceeds were raised through the issue of 54,894,155 new shares; the placing price was 119p per share. The placing was oversubscribed, and the proceeds will be used to optimise Foresight's capital structure.

- ▶ 22/08/2019 – Interim results for 2018/19 were published. NAV was £602m, equivalent to 109.6p per share. The interim dividend was 3.38p per share, on target for a full-year dividend of 6.76p.

Gore Street Energy Storage

- ▶ 12/12/2019 – NAV of £35.9m was confirmed, equivalent to 95.5p per share.
- ▶ 12/12/2019 – Interim results were announced, with a 4p per share dividend for the six months to September 2019. A dividend target of 7p for the year-ending 31/03/2020 was confirmed.
- ▶ 17/10/2019 – Results of the placing were announced, with gross proceeds of £10.7m raised, £9.5m of which were subscribed by the Irish-based National Treasury Management Agency (NTMA); in total, 1,264,071 new shares were issued at 93.8p.
- ▶ 11/09/2019 – Confirmation of an uplift in NAV to 93.6p per share, as at 30 June 2019.
- ▶ 05/08/2019 – Results of the placing were announced. Gross proceeds of £30.9m were raised, through the issue of 6,497,267 shares at 91p per share, and a further £25m commitment from the NTMA; the latter also took 1,624,300 of the newly issued shares.

Greencoat Renewables

- ▶ 30/01/2020 – NAV of €650m, equivalent to €1.031 per share, was confirmed, along with a 4Q dividend of €0.015075 per share.
- ▶ 10/12/2019 – Gross proceeds of €125m were raised from the initial tranche of a placing, which was materially oversubscribed. 110,619,469 new shares were issued at €1.13 per share.
- ▶ 27/11/2019 – Acquisition of a 14MW wind plant at Beam Hill, County Donegal.
- ▶ 18/11/2019 – Acquisition of a 20.4MW wind plant at Killala, County Mayo.
- ▶ 30/09/2019 – NAV of €538m was confirmed, equivalent to €1.035 per share.
- ▶ 12/09/2019 – Interim results for 2019 were published. The interim dividend was €0.0315 per share.
- ▶ 11/09/2019 – Proposed acquisition of the Gortahile wind farm in County Laois, which has a capacity of 20MW.

Greencoat UK Wind

- ▶ 31/01/2020 – NAV of £1,843m, equivalent to 121.4p per share, was confirmed, along with a 4Q dividend of 1.735p per share – with a 2020 full-year target of 7.1p.
- ▶ 20/12/2019 – Planned acquisition of two wind plants in Scotland – Windy Rig and Twentysilling – from Statkraft UK. The price on completion is estimated at £104m, and the two subsidy-free plants have capacities of 43MW and 38MW, respectively.
- ▶ 29/10/2019 – NAV of £1,865m, equivalent to 122.9p per share, was confirmed, along with a quarterly dividend of 1.735p.
- ▶ 10/10/2019 – Acquisition of the Glen Kyllachy wind farm in northern Scotland from Innogy for £57.5m. Construction of the subsidy-free 48.5MW plant in Scotland will begin shortly.
- ▶ 26/07/2019 – Interim results for 2019 were published. NAV was £1,868m, equivalent to 123.2p per share. The interim dividend was 3.47p, in line with the full-year target of 6.94p.

Gresham House Energy Storage

- ▶ 02/01/2020 – Completion of the investment in the 49MW Red Scar battery-only project near Preston. By the end of 1H 2020, capacity should reach 279MW, assuming that two planned 50MW projects and the 5MW Littlebrook extension are completed on schedule.
- ▶ 16/12/2019 – Acquisition from VCL Energy of two operational battery storage facilities at Glassenbury in Kent and Cleaton Moor in Cumbria – the capacities are 40MW and 10MW, respectively. The total cost was £29.2m.
- ▶ 26/11/2019 – Dividend declaration of 1p per share covering the period July to September 2019.
- ▶ 07/11/2019 – NAV of £162m was announced, equivalent to 99.19p per share, along with a 7p per share dividend target for 2020.
- ▶ 07/11/2019 – Confirmation that financial benefits would likely accrue from the reinstatement of the UK capacity market auctions that had been suspended due to legal issues.
- ▶ 21/10/2019 – Planned acquisition of the 49 MW Red Star battery-only project near Preston.
- ▶ 11/10/2019 – Confirmation of the issuing of 40,432,650m new shares at 103p, which raised gross proceeds of £41.6m.
- ▶ 28/08/2019 – Interim results for the period ending 30/06/2019 were published. The NAV was £150m, equivalent to 100.7p per share. A second interim dividend was confirmed at 1.1p per share, with a total payment for the 2019 calendar year of 4.5p per share being targeted.
- ▶ 10/07/2019 – Confirmation of the issuing of 14,610,000 new shares at 105p, which raised gross proceeds of £15.3m.

JLEN

- ▶ 29/01/2020 – NAV of £506m, equivalent to 101.8p per share, was confirmed; this was a 2.7% decline on the September 2019 figure, due mainly to a 7.5% cut in future power price assumptions.
- ▶ 29/01/2020 – A 1.665p per share quarterly dividend was confirmed.
- ▶ 28/01/2020 – A €25m commitment to Foresight Energy Infrastructure Partners, a Luxemburg investment vehicle, was announced.
- ▶ 21/11/2019 – Interim results for 2019 were published. NAV of £520m, equivalent to 104.7p per share, was confirmed, with an interim dividend of 3.33p for the half-year.
- ▶ 29/08/2019 – Acquisition of the Warren Power anaerobic digestion plant in Norfolk for an initial consideration of £14.8m. Its main product is biomethane.
- ▶ 15/08/2019 – A trading update was issued, with the wind portfolio performing below expectations, due to poor wind resource. NAV of £512m, equivalent to 103.0p per share, was announced, as at 30 June 2019. A quarterly dividend of 1.665p per share was confirmed, in line with the 6.66p per share full-year dividend target.

Next Energy Solar

- ▶ 16/12/2019 – The UK's largest subsidy-free solar plant at Staughton, in eastern England, has been energised. Its capacity is 50MW.
- ▶ 25/11/2019 – Confirmation of an estimated negative impact on NAV from the TUR proposals of ca.1.4p per share.

- ▶ 14/11/2019 – Publication of interim results. NAV of £649m, equivalent to 111.2p per share, was confirmed, along with a dividend of 3.44p for the half-year.
- ▶ 12/08/2019 – The second tranche of the 100m preference share was issued, raising gross proceeds of £100m.
- ▶ 08/08/2019 – NAV of £643m, equivalent to 110.4p per share, was announced, as at 30 June 2019. An interim dividend of 1.7175p was confirmed. A scrip alternative was also offered.
- ▶ 07/08/2019 – Operating update published. Positive progress was reported on the construction and grid connection of the subsidy-free 50MW Staughton solar plant in eastern England.

Octopus Renewables

- ▶ 11/12/2019 – First day of dealings and confirmation that £350m of gross proceeds had been raised from the first share sale tranche. This is equivalent to net proceeds of £343m.
- ▶ 19/11/2019 – Publication of a Prospectus confirming that Octopus Renewables' priority is to invest in a diversified portfolio of renewable energy assets, including onshore wind farms and solar parks, in Europe and Australia.

SEITT

- ▶ 30/12/2019 – Acquisition for ca.\$110m of a 50% stake in the Indiana-based Primary Energy, which owns 298MW capacity covering five recycled energy and co-generation projects.
- ▶ 19/12/2019 – Gross proceeds of £54.1m were raised from a well-supported placing; 52m new shares were issued at 104p per share.
- ▶ 04/12/2019 – Interim results were announced, with NAV of £170m, equivalent to 99p per share. A 5p dividend for 2019/20 and a 5.5p payment for 2020/21 are being targeted.
- ▶ 18/10/2019 – Gross proceeds of £100m were raised from a placing, with 97,087,378 new shares being issued at 103p each.
- ▶ 11/10/2019 – Along with the announcement of a proposed non-pre-emptive placing at 103p per share, NAV of £170m was confirmed, equivalent to 99.0p per share. An interim dividend of 2.5p per share, covering the six months ending in September 2019, was targeted.
- ▶ 20/09/2019 – Acquisition of a 125MW co-generation portfolio in Spain for €64m (a figure that was subsequently increased) in cash. The portfolio comprises five combined heat and power (CHP) plants, two olive processing plants and two biomass plants.
- ▶ 09/09/2019 – Confirmation of an investment in a portfolio of US energy loans for \$22m.

TRIG

- ▶ 21/01/2020 – Planned acquisition of an unsubsidised 35MW wind farm site in Kintyre, Scotland.
- ▶ 10/12/2019 – Acquisition of a ca.36% equity stake in Merkur Offshore, which operates a 396MW offshore wind portfolio in the German North Sea.
- ▶ 22/10/2019 – Acquisition of the 25MW Little Raith wind plant in Fife, Scotland.
- ▶ 17/10/2019 – Amendments to TRIG's investment policy were approved at an EGM. Consequently, not more than 65% of the portfolio value may now be invested outside the UK.

- ▶ 03/10/2019 – Confirmation of the issue of 185m new shares at 123p, which raised gross proceeds of almost £228m – the issue was heavily oversubscribed.
- ▶ 07/08/2019 – Interim results for 2019 were published. NAV of £1,621m, equivalent to 115.0 per share, was confirmed. An interim dividend of 3.32p was announced, in line with the full-year target of 6.64p. Portfolio generation capacity has risen appreciably to 1,509MW.

US Solar

- ▶ 29/01/2020 – Announcement of binding agreements to acquire a 177MW portfolio of 22 operating solar power projects from Heelstone Renewable Energy. A potential equity capital raise has also been flagged.
- ▶ 13/01/2020 – Completion of the acquisition from Greenbacker Renewables Energy of three solar projects in North Carolina, with a total capacity of 11MW.
- ▶ 27/12/2019 – Completion of the acquisition from Greenbacker Renewable Energy of five solar projects in North Carolina, with a total capacity of 28MW.
- ▶ 18/12/2019 – A quarterly dividend of \$0.50 was confirmed.
- ▶ 10/12/2019 – Proposed acquisition of ca.39MW of operating solar capacity in North Carolina – all these projects have long-term PPAs in place.
- ▶ 05/11/2019 – NAV of \$195m, equivalent to \$0.97 per share, was confirmed, along with an interim dividend of \$0.41 per share.
- ▶ 20/09/2019 – Interim results to 30 June 2019 were published, with a confirmed dividend of \$0.41 per share in 1H 2019.
- ▶ 02/09/2019 – Completion and securing of the necessary finance for the 128MW Milford solar project.
- ▶ 25/07/2019 – NAV of \$196m, equivalent to \$0.979 per share, was confirmed as at 30 June 2019.
- ▶ 23/07/2019 – Announcement of an initial binding acquisition of the 128MW solar project at Milford in Utah. It has a 25-year PPA agreement.

The 2019 offshore wind auction

Aside from news impacting the 13 REIFs set out above, we also reproduce key details from the results of the 2019 offshore wind auction, which show how competitive this sector is becoming.

£39.65p per MWh is the winning bid

- ▶ 20/09/2019 – The Department for Business, Energy and Industrial Strategy (DBEIS) announced six winning bids, three of which form part of the Dogger Bank project, which is being brought forward by a consortium including SSE, RWE and the Norwegian pair, Equinor (formerly Statoil) and Statkraft. These three winning Dogger Bank bids for 15-year CfDs ranged between £39.65p per MWh and £41.61p per MWh. Innogy won the fourth Dogger Bank project, the 1.4GW Sofia development, while SSE was successful in the 454MW Seagreen Phase 1 scheme.

Elsewhere in this publication, we have substantially expanded our analysis of the valuation data used by each of the leading REIFs. Consistency – on such issues as discount rates, asset valuations, asset lives and power prices – remains elusive, and precludes precise read-across comparisons between NAV premia and other valuation tools.

Background

A major transformation took place in the late 1980s and early 1990s, when most of the UK electricity supply industry was privatised. British Gas had been floated in 1986.

Emergence of the “Big Six”

Following a bout of corporate activity in the latter part of the 1990s, six major energy companies emerged – France’s EDF, the two German companies, RWE and E. ON, Spain’s Iberdrola, and the UK-owned Centrica and SSE. Importantly, over the past two decades, they have dominated the UK generation market.

Dreadful returns since 2008/09

Nonetheless, shareholder returns have been poor and, in some cases, dire. EDF, in which the French Government has a ca.84% stake, and RWE have seen their share price ratings plunge, especially since the financial crisis and subsequent recession in 2008/09. The RWE chart below shows its dreadful share price performance since 2010. In recent months, though, RWE’s share price has rallied on the back of its much-enhanced involvement in renewable generation.



Source: Refinitiv

Shares in Centrica over the last decade have performed poorly – and especially over the last five years, as the graph below demonstrates.



Source: Refinitiv

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

Networks' valuations are robust

Aside from consolidation in the generation sector, virtually all the networks' businesses, mostly from the 12 Regional Electricity Companies (RECs), were acquired. Indeed, in recent years, as generation returns have plummeted, networks' businesses – with their solid regulated income – have become increasingly attractive to investors.

Back in 1990, renewable generation, except for the two hydro-power portfolios owned by ScottishPower and the then Scottish Hydro Electric (now SSE), barely existed in the UK.

The Airtricity story

In subsequent years, the onshore wind sector has grown markedly, although not as quickly as the rise of Airtricity, an Irish wind generator, the value of which soared between its modest beginnings in 1997 and its subsequent sale to E.ON and SSE for ca.£1.5bn a decade or so later.

Major shift in generation mix

Nonetheless, there has been a pronounced shift in the UK generation mix in recent years, with coal-fired stations due to be phased out by 2025 and gas-fired plants being increasingly relegated to mid-merit status – while the average age of the nuclear fleet inevitably raises concerns on several fronts.

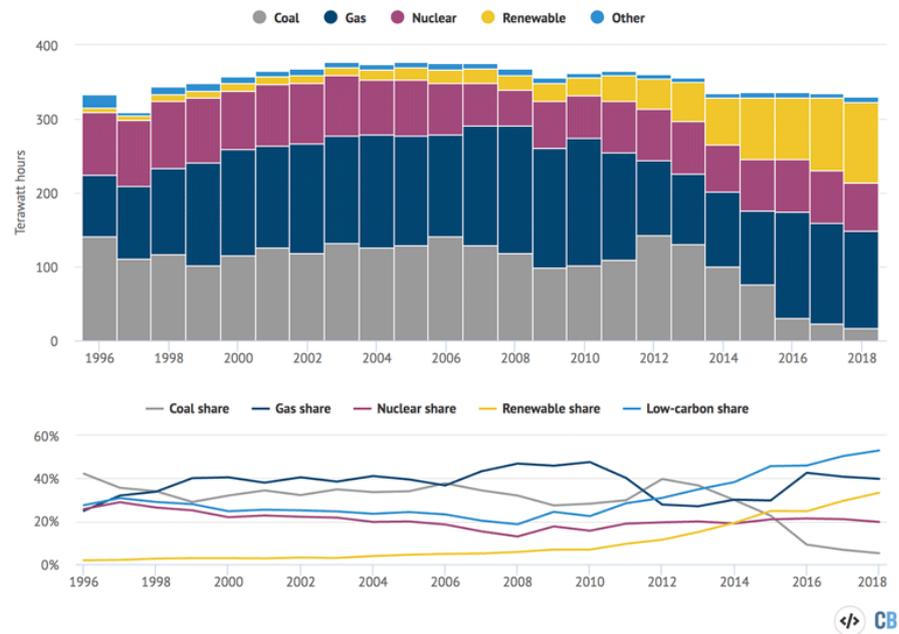
The CCGT at Keadby 2 is an exception

In terms of investment in new base-load capacity, SSE's 840MW Keadby 2 Combined Cycle Gas Turbine (CCGT) project in Lincolnshire is the only major gas-fired plant currently under construction in the UK.

The chart below illustrates the material change in the UK's generation mix since 1996, with much-reduced coal-fired output and a pronounced rise in renewables output.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

UK electricity generation by source



Source: Carbon Brief from DUKES table 5.5

A renewables record-breaker

More recently, between July and September 2019, UK renewable power sources generated higher output – 29.5TWh – compared with the 29.1TWh produced by coal, gas and oil plants combined. Much of the remaining 15.3TWh was nuclear-generated. Importantly, this was the first time in the UK that fossil fuels had been outpaced over a three-month period since the inaugural coal-fired plant was commissioned in London in 1882 – it provides a telling commentary on modern trends.

Clean energy at 48% vs. fossil fuel at 43%

For the 2019 full-year, nuclear, wind and solar plants, along with imports via interconnectors, accounted for over 48% of Great Britain's electricity output, compared with the 43% contribution from fossil fuels. The pronounced shift over almost 30 years is highlighted by the table below.

% of output from differing fuel sources

Year	Coal and others	Gas	Nuclear	Wind, solar and hydro	Biomass	Imports
1990	75.0	0.1	18.8	2.3	0.0	3.8
2019	2.1	38.4	16.8	26.5	8.2	8.0

Source: National Grid

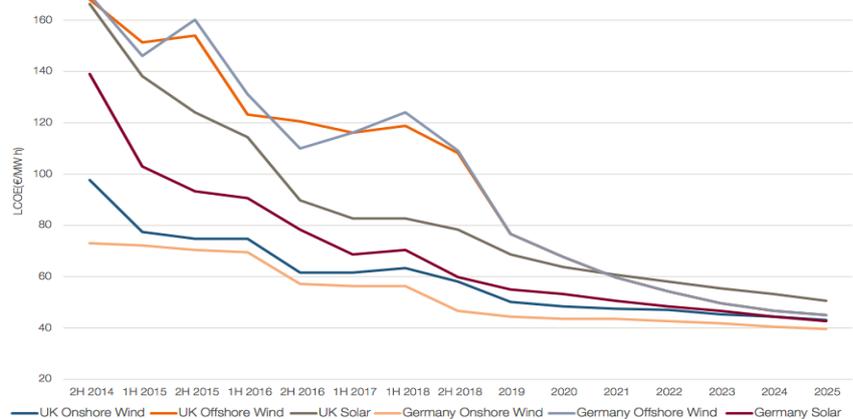
Renewable generation developments

Political drivers behind renewables

Despite widespread concerns about its costs, the large subsidies and its intermittency, renewable power has been heavily promoted by both the Government and the environmental lobby.

However, on the cost front, such concerns have been seriously misplaced, as the graph below shows. It focuses on the very sharp falls in generation costs since 2014 for onshore and offshore wind, as well as for solar, in both the UK and Germany.

Levelised costs of renewable energy since 2014



Source: IRENA

Harbinger for the future

Seven renewable technologies

Aside from nuclear power, which has some renewable energy characteristics, there are seven generally accepted forms of renewable generation; they are listed below:

- ▶ wind (onshore and offshore);
- ▶ solar;
- ▶ hydro;
- ▶ marine (tidal and wave);
- ▶ biomass;
- ▶ geothermal; and
- ▶ fuel cells.

Onshore wind a key renewable source

Undoubtedly, onshore wind has been the key renewable source in the UK; total wind capacity now exceeds 14GW. Given the closure of the Renewables Obligation (RO) subsidy regime to new capacity in 2017, this figure is unlikely to grow as fast as previously, and certainly not in England.

Sea-change in the North Sea

Offshore wind development is set to be a major growth area, with a sea-change in costs, far larger turbines and minimal environmental concerns. The latest sub-£40 per MWh winning CfD bid price for North Sea offshore wind development demonstrates the attractions of this sector.

Solar making real progress in the South

Despite the UK's temperate climate, solar power – at least in southern England – is now making a meaningful contribution.

While hydro power has been long-established in Scotland, few suitable sites remain to be exploited – and there are heavy initial capital costs.

Marine still struggling

Marine-based renewable power – whether generated by tides or by waves – continues to struggle on both the technical and financial fronts.

Many biomass projects have been proposed, but few have actually been built. Drax, which accounts for a large proportion of biomass subsidies, is a notable exception in this respect. Potential investors face many risks, including securing a reliable – and cheap – supply of wood or of other combustible materials.

Unlike in Iceland, where it is key, the opportunities for geothermal power in the UK are very few, despite some modest potential in Cornwall.

Moreover, fuel cells, despite some encouraging progress of late, still need to achieve critical mass. However, the UK-quoted Ceres Power has been investing in fuel cell technology for some years. After a pronounced share price upturn of late, it is now valued at ca.£650m.

Wind generation

Age-old source of power

The principle of generating power from wind goes way back to classical times. In the Middle Ages, windmills were a common sight in parts of Europe, notably in the Low Countries. Eventually, base-load energy needs were met primarily by coal-fired generation, supplemented by subsequent nuclear, oil and gas plants.

Onshore wind contribution

In recent years, wind power has begun to make a material contribution, driven by politics and financed by substantial subsidies. For a wind plant to perform well, consistent wind speeds are needed. Prior to installation, anemometers are put in place to ensure that the most advantageous sites are used. Furthermore, prospective purchasers analyse the data in considerable detail to maximise wind yields.

Germany and Denmark in the van

Within the EU, it has been Germany that has been at the forefront of renewable power, along with Denmark, where wind power turbines have been operational for decades.

Investment curbed by 2017 RO termination

In the UK, onshore wind power has expanded in recent years, although the end of subsidies for new plants from 2017 has – not surprisingly – curtailed investment. Nonetheless, Greencoat UK Wind has confirmed that there are now over 22GW of operating wind farms in the UK, of which ca.14GW is onshore and ca.8GW is offshore.

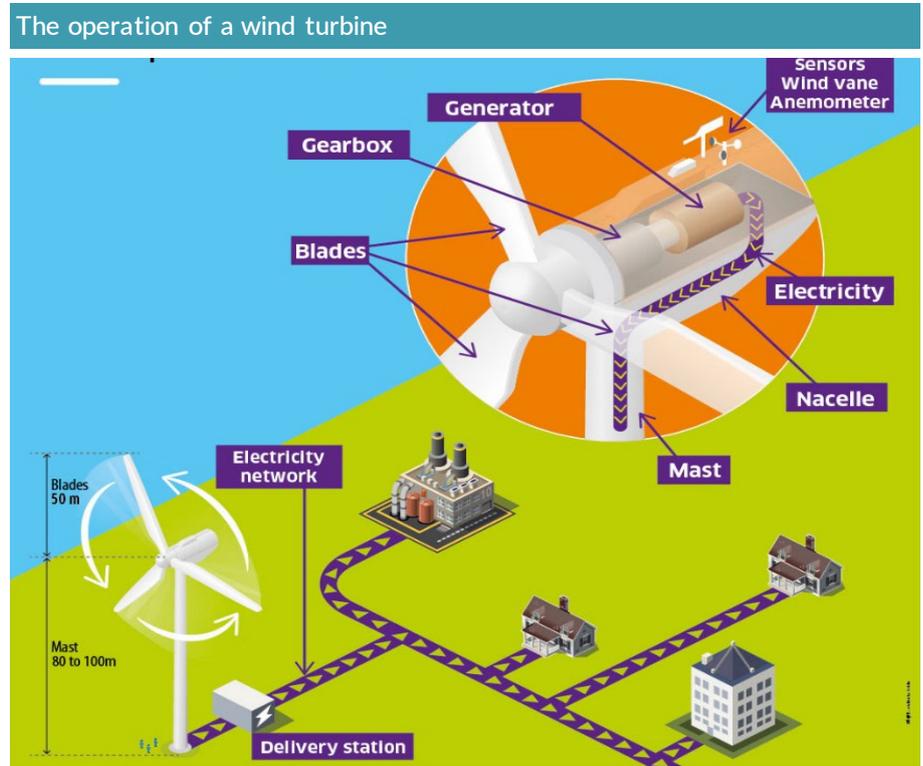
Onshore wind benefits

Onshore wind generation offers several benefits compared with other renewable generation sources, among which i) its 30%-45% load factor is far higher than that of solar, ii) over half its output is generated during the autumn and winter months, when demand and prices are higher – solar output is disproportionately geared towards the spring and summer months, and iii) a reasonably lengthy plant asset life – with a minimum 25-year period.

Scotland is pivotal to wind investment

Scotland is arguably the centre of the UK onshore wind sector; indeed, Scottish wind plants generally have a higher capacity use than those in England. Greencoat UK Wind's portfolio underlines this factor: as at March 2019, 58% of its portfolio was located there, compared with just 17% in England – on a population basis, the ratio should be 10-1 in favour of England. Following recent wind plant acquisitions, ca.65% of its portfolio is now in Scotland.

On the technical front, the chart below illustrates how onshore wind power is generated.



Source: ENGIE

Offshore wind to fill widening generation gap

Looking forward, the offshore wind sector offers real opportunities, especially as other power sources face very challenging issues. All UK coal-fired plants are due to close by 2025, the finances of gas-fired plants generally do not stack up unless they are used base-load, and nuclear plants remain both desperately expensive to build and subject to a vast number of risks.

The new landmark £39.65 per MWh offshore bids...

Importantly, the 2017 auction for developing the Hornsea Project Two and Moray East offshore sites led to bids of just £57.50 per MWh (at 2012 prices) – way below the Government’s indicative 2018 cost target of £100 per MWh.

The 2017 figure has now been trumped by the recent Dogger Bank projects’ auction in the North Sea, where the lowest successful bid was struck at just £39.65 (at 2012 prices) per MWh. The winning consortium included such well-known names as RWE, SSE and Statkraft.

...vs. £92.50 per MWh for 35 years for Hinkley Point

These figures compare very favourably indeed with the 35-year £92.50 (2012 prices) CfD for the controversial – and desperately expensive – Hinkley Point C new nuclear plant.

Given these – and other – factors, the Government seems likely to focus aggressively on developing offshore wind; the politics of doing so are straightforward when set against new nuclear-build.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

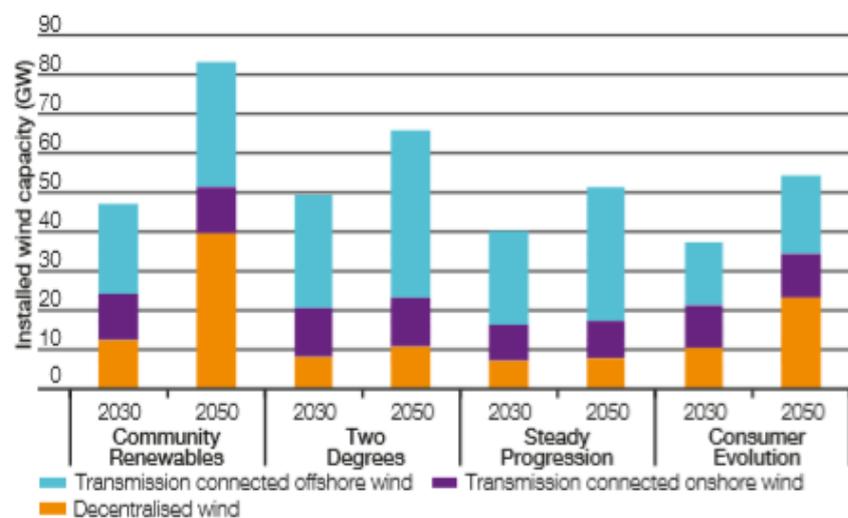
The Sizewell B precedent

Indeed, it may well be that Hinkley Point C, assuming it is completed, remains the sole “third generation” site, despite the current Government’s plan to build further new nuclear plants. Its status would replicate that of Sizewell B, the UK’s only Pressurised Water Reactor (PWR), which was commissioned in the mid-1990s.

National Grid projections

In anticipating this policy, National Grid, in its Future Energy Strategy 2018, set out its projections for wind power, based on various scenarios – the more aggressive assumptions, depicted in the chart below, show how wind power capacity is expected to take off.

National Grid wind power scenarios: centralised and decentralised wind capacity



Source: National Grid Future Energy Strategy 2018

Solar generation

Another age-old source of power

The principle of using solar power for heating purposes precedes the years of antiquity.

Importantly, in recent years, solar generation has begun to make a real contribution, especially in the southern states of the US, as well as in the warmer countries of the EU, notably Italy and Spain. Further north, solar investment has attractions that are less obvious, given much lower irradiation levels and longer night hours.

However, it has been Germany that has been at the forefront of solar power development – more than 41GW are now installed there, well ahead of the 19GW located in Italy.

Sharp rise in UK solar investment

In the UK, solar investment has risen sharply over the past decade. Not surprisingly, it is the south of England, where irradiation levels are higher, that has attracted most investment. Bluefield Solar has 465MW of UK solar capacity under management, which accounts for ca.4% of the UK’s utility-scale solar photovoltaic (PV) capacity.

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Solar reaches critical mass

Indeed, total UK solar capacity now exceeds 12GW, with heavy investment having been undertaken prior to 2017, when the renewable energy subsidy regimes were particularly enticing for discerning investors. The closure of the RO subsidy regime for new plants in 2017 has – not surprisingly – adversely affected the financial attractions of subsequent solar investment projects.

21/04/17 – King Coal ousted

There have been periods in recent summer months when solar power has been able to meet 20% of the UK's total electricity demand. On 21 April 2017, the day's entire electricity demand was met without firing up any coal-fired plants – the first time the UK has managed without such power for 130 years.

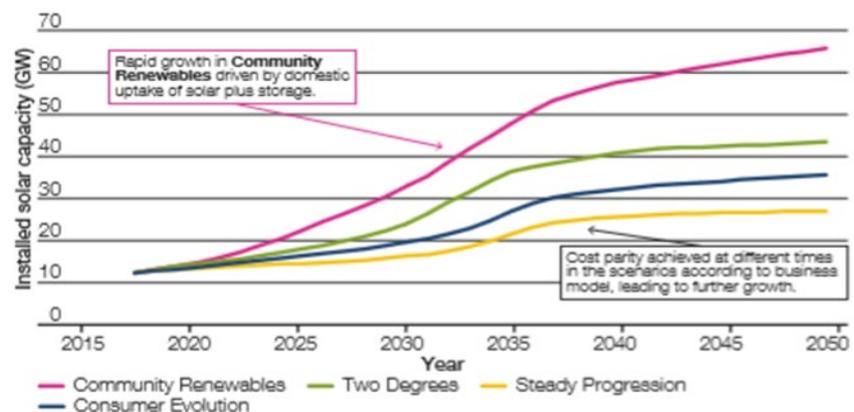
The Shell view of solar power

It is clear, too, that solar power in the UK will not be a short-term fad – solar is here to stay. Shell's CEO, Ben van Beurden, is on public record in stating, "I have no hesitation to predict that, in years to come, solar will be the dominant backbone of our energy system, certainly of the electricity system". This view is beginning to be vindicated.

National Grid solar scenarios

More specifically, in its Future Energy Strategy 2018, National Grid set out its capacity projections for solar power, based on various scenarios. The more aggressive assumptions, set out in the chart below, show how solar power capacity should take off.

National Grid solar power scenarios: solar capacity



Source: National Grid Future Energy Strategy 2018

Within an operational solar park, there are four core components – PV panels, inverters, a mounting structure and the connection network for export to the grid. Most of these components generally last for at least 25 years, although inverters will need to be replaced probably around every 12 years.

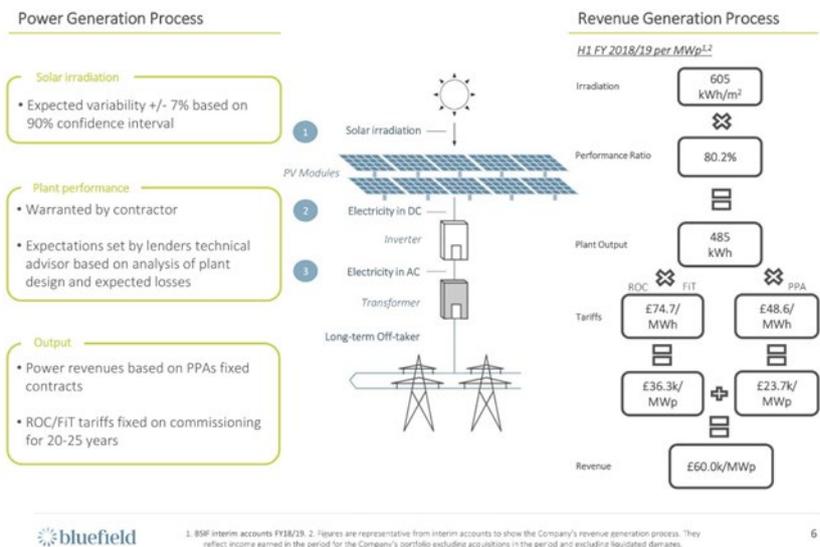
The conversion process

With the use of PV panels, irradiated energy is converted into direct current electricity. In turn, via the use of an inverter, the electricity becomes alternating current, and is therefore suitable for use on the National Grid once it has been transformed into the appropriate voltage.

The chart below, published by Bluefield Solar, sets out the underlying principles behind converting solar irradiation into generated power.

Solar PV

SOLAR PV: REVENUE GENERATION
 Converting power generation to revenues



Source: Bluefield Solar

The chart also shows how solar energy is converted into revenue, which is based partly on subsidies and partly on the prices negotiated within PPAs.

25-year minimum lifespan underpins revenues

A key attraction of solar power investment is its high predictability during its estimated 25-year minimum life. In fact, this time frame may look unnecessarily pessimistic: Bluefield Solar has recently extended the lives of some of its solar assets to 40 years. Other solar generators are also reviewing the likely lifespans of their solar assets.

Furthermore, throughout the summer, solar power should be operational during both the morning and early evening peak demand periods, when electricity prices are higher than normal.

Intermittency problem

Like wind power, solar power is intermittent, as it depends on weather and, especially, light conditions. In time, the ability to store more renewable power – and to be able to release it promptly into the grid when demand and prices are high – will undoubtedly boost returns from renewable energy investments.

Offshore wind generation

The UK is the EU's largest offshore player

Despite its relative recent development, the UK is Europe's largest offshore wind developer. Apart from the obvious benefits of geography, there is no doubt, too, that the highly impressive experience of the North Sea oil industry in surmounting often very stormy conditions has been a major advantage.

In recent years, the government has championed the offshore wind industry, not only as an integral part of its renewables policy, but also as a solution for replacing base-load fossil fuel plants: all coal-fired plants in the UK are due to close by 2025.

Furthermore, for politicians, offshore wind development offers cheap power and minimal controversy – a very different scenario from that of onshore wind power in England, but to a lesser extent in Scotland. In many cases, offshore wind turbines will be invisible from the coast

A few years ago, a target of £100 per MWh was set as a maximum price to be applicable for offshore wind plant operators by 2018 – at the time, meeting such a tough price target was seen as an immense challenge.

The pivotal 2017 offshore auction

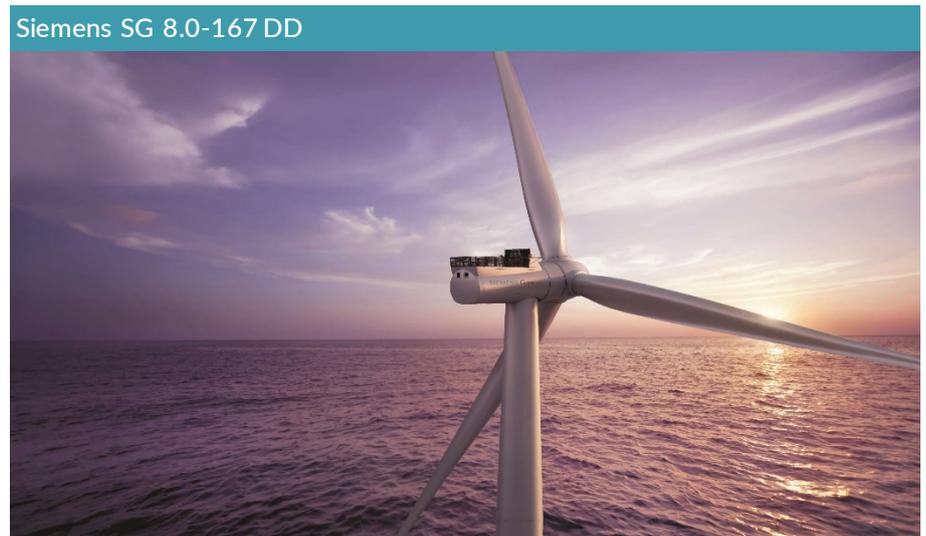
In reality, as the 2017 offshore wind auction amply demonstrated, far lower prices were readily attainable. The lowest winning bid for CfDs in that round was submitted for the Hornsea 2 project by Orsted and Engie, while the same winning price for the Moray East project was struck by the EdP-led consortium.

Even lower prices on Dogger Bank in 2019

Furthermore, the case for further offshore wind investment will continue to be driven by the very aggressive bidding seen in the recent Dogger Bank project auctions in the North Sea. The winning CfD bid for one element of the development was just £39.65p per MWh; the winning consortium included RWE and SSE, as well as the Norwegian pair, Equinor and Statkraft. Other CfDs were awarded for winning bids at slightly over the £40 per MWh mark.

Size matters

In the North Sea offshore wind sector, far larger turbines are installed than is the case for onshore generation. By way of example, the Siemens SG 8.0-167 DD, which is depicted below, has a rotor diameter of 167 metres.



Source: Gamesa Siemens

While Greencoat UK Wind owns 100% of the 60MW offshore North Hoyle project in Liverpool Bay, TRIG looks the most likely of the 13 REIFs to invest heavily in offshore wind generation projects in mainland Europe. Currently, TRIG holds a 25%

stake in the Gode offshore development in the German North Sea, which has a total capacity of 330MW.

Assuming this minority stake yields the anticipated benefits, it is likely that TRIG will invest further in offshore wind projects, in both the German North Sea and the Baltic Sea, which are expected to be in the forefront of Germany's much-needed offshore wind investment. This will help offset the nuclear power output that will be lost once all Germany's nuclear plants close in the next few years.

Energy prices/regulation

RO regime closed to new plants from April 2017, but not retrospectively

Central to the build-up of solar power over the past decade has been the proliferation of Government subsidies; these are now falling quite markedly. In particular, the RO was closed to new plants – although not retrospectively – in April 2017. Even so, some new renewable projects, especially those using immature technology, may still qualify for subsidies.

Renewable Obligation Certificate (ROCs) have been pivotal

The RO scheme was based on awarding a financial premium per MWh generated from eligible renewable power assets.

The premium paid is based on complex calculations derived from total renewable output over a full year; furthermore, its value varies depending upon the type of renewable generation deployed. In addition, feed-in tariffs (FITs) have been payable for smaller plants, although their impact is relatively minor compared with the now-closed RO regime.

ROC buyout prices

Between 2010/11 and 2018/19, the Renewable Obligation Certificate (ROC) buyout price – paid by suppliers that otherwise are not meeting their RO requirements – had risen progressively, from £36.99 per MWh to £47.22 per MWh. For 2019/20, it was £48.78 per MWh.

In June 2018, the Government confirmed that the UK's total solar capacity was then 12.8GW. Around 7.2GW of this capacity was eligible for RO payments, but – following the closure of the RO for new capacity – this figure will erode over time; the comparable figure for FITs is 4.8GW. The eligibility for ROC payments is focused on under 3% of installations, thereby indicating a high degree of concentration on generation from industrial-scale sites.

In terms of individual funds, NextEnergy Solar's contract arrangements – via PPAs – are typical of the renewable power sector. In its 2018/19 Annual Report, NextEnergy Solar confirmed that:

NextEnergy Solar's PPA model mitigates against power price risk – and dividend cuts

“As at March 31st, 2018, the Company had a mix of PPAs with fixed prices for periods ranging from 3 months to 5 years. As a result of these PPAs, as well as the UK regulatory framework, the Company had a total of c76% of its revenues linked to power prices, FITs and ROCs until March 2021, thereby mitigating the risk of dividend reductions from volatility in the power price market”.

In short, power prices would have to fall quite sharply to cause a major adverse impact on NextEnergy Solar's cashflow and adversely affect its dividend payment profile.

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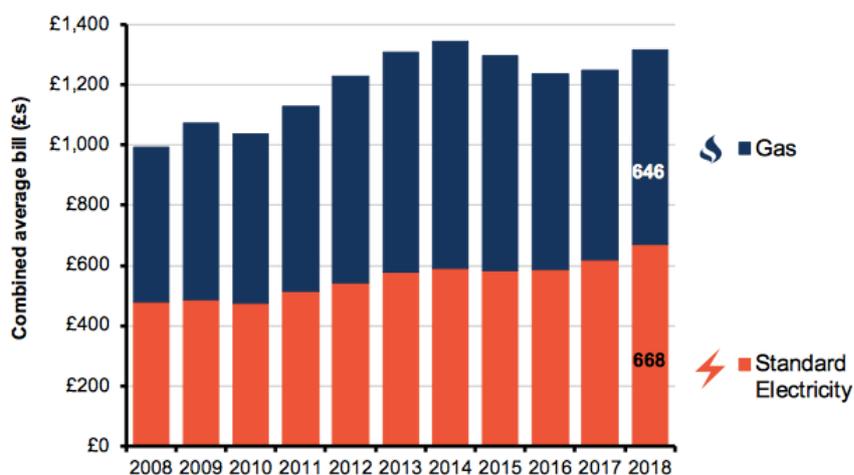
Bluefield's nihilist approach

Bluefield Solar has taken a nihilist approach and confirmed that, if power prices were to fall to nil, over 64% of its existing revenues – in theory at least – would recur, since they are underpinned over the next 15 years from a combination of floor prices and the guaranteed renewable electricity support schemes.

Gas input driver

More generally, as the chart below illustrates, domestic electricity prices in the UK have fluctuated in recent years, with the gas input cost being a critical price-setting mechanism. In 2018, electricity and gas prices rose appreciably.

Average standard electricity and gas bills



Source: BEIS

Power price projections to 2040

Over the next decade, UK power prices are expected to rise in real terms, before falling back thereafter. The chart below, published by NextEnergy Solar, is based on data stretching out until 2040; it was compiled by two leading independent energy market consultants.

Forecast UK power price (real 2019 – £/MWh)



Notes:
 (1) Source: Two Independent Energy Market Consultants
 (2) Captured price is lower than Power Curve due to long term PPA arrangements and Export Tariffs

Source: NextEnergy Solar

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The Clay Hill prototype – subsidy-free

Other REIFs, such as Greencoat UK Wind, are forecasting fairly similar long-term figures.

More specifically, in the light of eroding subsidies, cost reductions will play an increasingly prominent role in new solar-build. Indeed, a new solar plant was recently commissioned at Clay Hill in Milton Keynes, which is the UK's first non-subsidised solar plant; it is still expected to provide a competitive return for investors.

The unsubsidised challenge

Nonetheless, as unsubsidised wind and solar parts comprise an increasing part of a REIF's portfolio, it will become increasingly challenging for REIFs to deliver the required returns.

Levelised costs

Among the major sources of generation, there have been significant changes in costs over the past decade. Many renewable sources have been able to deliver major – and somewhat unexpected – cost reductions, including both solar and offshore wind.

£67 per MWh is 2020 target for solar

In the case of solar power, a Government report on comparative generation costs showed that, by 2020, it expected its Levelised Cost of Energy (LCOE) to be £67 per MWh, compared with the £92 per MWh that it had anticipated seven years previously.

Massive cuts in costs

The scale of efficiency savings in the solar generation sector is illustrated by Bluefield Solar, which recently confirmed that its cost price had fallen to £60 per MWh in 2017, compared with ca.£200 per MWh in 2010.

Such sharp reductions have also been seen in the offshore wind sector. By 2018, the government had hoped that the £100 per MWh figure would be reached. In fact, this forecast proved unduly pessimistic, as the 2017 winning bids of £57.50 per MWh (at 2012 prices) for the development of the Hornsea Project Two and Moray East wind farms highlighted. This trend was reinforced by the recent Dogger Bank project auctions, which yielded a record-low winning bid of just £39.65 per MWh.

Hinkley Point's infamous £92.50 per MWh 35-year nuclear CfD

By contrast, nuclear power costs seem to be heading in the opposite direction. The infamous inflation-linked 35-year £92.50 per MWh (at 2012 prices) CfD for Hinkley Point C demonstrates – quite unequivocally – that it is way out of kilter with rapidly falling renewable energy prices.

Gas projects are parked

On the gas front, CCGT plants became the workhorse of the 1990s, a decade during which many were built. However, this expansion has been sharply reversed, since the financial returns from building new CCGT plants are unlikely to be substantial. In particular, the probability that such new gas plants will be called upon to generate on a mid-merit basis – rather than as a base-load operator – has greatly reduced expected returns.

Peaking plant

National Grid responsibility

For decades, National Grid, which has the responsibility for managing the power system in Great Britain, has had to operate within ever-lower plant capacity margins. In recent years, the absence of new-build, base-load plants has further depressed capacity margins and heightened the risk of power cuts.

09/08/2019 partial black-out

On 9 August 2019, this issue became very high-profile, as a partial black-out took place affecting many public areas, including some airports and railway stations: numerous electric trains lost power, leaving their passengers stranded.

National Grid confirmed that virtually simultaneous outages took place at two plants – the gas-fired Little Barford station and the offshore wind farm at Hornsea. Lightning strikes were identified as a key factor, although National Grid's very low level of reserve power – of ca.1,000MW – was insufficient to replace the lost power of the two plants with a total nameplate capacity of over 1,300MW.

In the past, there were various peak-load plants, some of which were oil-fired, that were kept open simply to supply power during periods of very high demand or to cover major system outages.

Pumped storage plants

For very short-term demand “spikes”, power was often generated – in less than a minute – from the two pumped storage plants in Wales, namely Dinorwig (1,728MW) and Ffestiniog (360MW); the latter was built in the early 1960s.

More recently, the strong growth of renewable power output, along with increased off-grid generation, has made it far more challenging to manage the electricity system effectively – and to avoid power cuts, as the 9 August 2019 partial black-out demonstrated.

National Grid employs various measures to address this problem – and to avoid the need to build new – and underused – peaking plant.

Capacity auctions

The key change in recent years has been the holding of capacity auctions, whereby electricity generators bid to supply power to cover periods of expected high demand.

Such auctions have enabled several peaking plants to remain operational, while they have also – somewhat controversially – attracted very competitive bids from owners of small environmentally unfriendly diesel-fired generation units.

Capacity auctions to resume

However, in November 2018, the European Court of Justice concluded that such auctions constituted a form of state aid and were therefore illegal under EU law. Despite the ongoing Brexit scenario, the European Commission has effectively reversed this judgment, so that capacity auctions in the UK are set to resume shortly.

Demand management schemes

Importantly, there is also a demand management scheme for large energy users, who – in return for a favourable pricing regime – agree to be taken off supply during periods of very high demand.

Furthermore, several companies supply grid-related services, including those to maintain grid frequency and to undertake short-term energy storage. Two REIFs analysed in this document – Gore Street Energy Storage and Gresham House Energy Storage – operate in this space.

In the light of the 9 August 2019 events and following strong pressure from both the government and Ofgem, it seems inevitable that National Grid will need to retain significantly higher reserve capacity to handle such incidents.

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Ofgem levies fines

Furthermore, Ofgem has recently confirmed that the owners of the Little Barford and Hornsea plants have both been fined £4.5m, as a result of their unavailability on that date, while UK Power Networks, the electricity distribution company, must pay £1.5m.

Scalable and economic storage systems are the big prize

In the longer term, the quest for durable – and scalable – energy storage systems is likely to result in much greater capacity being built to hold back large amounts of electricity – a much cheaper option than building new and rarely called-up peaking plant.

Dire share price performance among the “Big Six” since 2009

Defensive earnings

Over the past decade, investors in the UK’s leading energy companies, Centrica and SSE, are unlikely to have prospered. To be sure, had they invested in the four other members of the “Big Six”, and especially in EDF, E.ON and RWE, they would probably have underperformed to an even greater degree – shares in the renewable generation-orientated Iberdrola have performed far better.

Reproduced below is a graph compiled by Greencoat UK Wind, which shows the total shareholder returns since 2013 from the leading wind and solar generators, six of whom make up the group of 13 REIFs that are under review in this document. The data show strong outperformance, especially during 2018.

Shareholder returns of leading REIFs since 2013

Total Shareholder Return vs Market Peers (Bloomberg)



Source: Greencoat UK Wind

NextEnergy Solar’s record

More specifically, the impressive track record of NextEnergy Solar illustrates how it has been able to prosper since 2014/15, during a period when the UK energy market has faced many challenges. The table below shows its shareholder returns since 2014/15 and how they compare with the FTSE All-Share.

NextEnergy Solar shareholder returns

Criterion	2018/19	2017/18	2016/17	2015/16	2014/15
Cumulative shareholder return since IPO	46.7%	33.6%	26.7%	6.1%	5.9%
Annualised shareholder return since IPO	9.5%	8.5%	9.1%	3.2%	6.3%
Shareholder total return	11.8%	6.2%	21.1%	0.2%	5.9%
FTSE All-Share total return	8.8%	1.4%	20.9%	-3.6%	5.5%

Source: NextEnergy Solar

A similar consistently performance has been achieved by REIF wind generators, who have also benefited from various attractive features for investors, including steadily rising NAVs, higher dividends and a modest rise in the share price.

Moreover, in terms of wind resource, the operating figures are reassuringly consistent on a YoY basis.

Wind speed/output correlation

The table below shows Greencoat UK Wind's average wind speed and output on a YoY basis, when compared with its management's projections – the correlation between the two variables is high.

Greencoat UK Wind's generation data						
Year	2013	2014	2015	2016	2017	2018
Wind speed	+3%	-2%	+5%	-6%	-1%	-4%
Output	+8%	-3%	+8%	-6%	0%	-6%

Source: Greencoat UK Wind

Favourable defensive characteristics for investors

Undoubtedly, wind power does offer investors several favourable characteristics, most of which fit in with the concept of defensive earnings.

Greencoat UK Wind has an impressively consistent track record

The table below shows Greencoat UK Wind's track record since 2013; during turbulent political times and amid many challenges for UK energy companies, it has demonstrated a reassuringly solid performance; furthermore, its dividend cover is robust, certainly compared with most other REIFs. As the figures indicate, it made several acquisitions over a period of almost six years.

Greencoat UK Wind's financial performance since 2013							
Period	Output (GWh)	Cash generation (£m)	Dividend (p)	Dividend cover (x)	RPI increase	NAV growth	
2013 (9m)	292	21.6	4.50	1.8	1.9%	2.5%	
2014	565	32.4	6.16	1.6	1.6%	2.5%	
2015	799	48.3	6.26	1.7	1.2%	0.5%	
2016	978	49.0	6.34	1.4	2.5%	4.0%	
2017	1,457	80.1	6.49	1.5	4.1%	2.4%	
2018	2,003	117.3	6.76	1.6	2.7%	10.8%	

Source: Greencoat UK Wind

Solar's resilience

The solar sector has also shown impressive resilience. Indeed, NextEnergy Solar has achieved an annualised total shareholder return of ca.9.0% since its shares were first traded in April 2014 – albeit below the Greencoat UK Wind figure.

Energy storage funds' revenue risk

It should be noted that greater revenue uncertainty applies to the two energy storage stocks under review, Gore Street Energy Storage and Gresham House Energy Storage. Also, it is still very early days for Aquila European Renewables, Octopus Renewables, SEEIT and US Solar, all of which are in the process of building up their initial energy portfolios.

Looking forward, the impact of decreasing subsidies across a wind or solar generation portfolio will have a negative impact on NAVs, as unsubsidised new plants are progressively introduced, although there may be some offset from plant extensions, as recently announced by Bluefield Solar.

Benefits for investors

Many tangible benefits

In recent years, infrastructure investment levels have been robust, especially in the renewable energy space. According to the former John Laing Environment Fund, now JLEN, citing research from Preqin, renewable energy currently accounts for almost 60% of infrastructure deals, as the table below shows:

Key infrastructure investment sectors				
Primary industry	2015	2016	2017	2018
Renewable energy	48%	45%	50%	57%
Transport	15%	14%	9%	7%
Social	11%	14%	18%	6%
Energy	13%	13%	10%	12%
Utilities	10%	12%	9%	12%
Telecoms	1%	2%	2%	3%
Other	1%	1%	1%	2%

Source: Preqin

For investors, exposure to REIFs offers several benefits, although the sector inevitably remains subject to some risks.

Among the benefits, we would highlight the following features:

- ▶ Good shareholder returns, with some REIFs reporting total returns of more than 9% over a five-year period. Undoubtedly, these are attractive figures in what is, for the moment at least, a low inflation environment.
- ▶ REIFs offer both decent dividends and probable share price growth, with their share price ratings being boosted by the relative security of their earnings.
- ▶ Holding a portfolio of diverse REIFs reduces the risk element.
- ▶ Relatively low exposure to the commercial environment and therefore a reduced risk of a serious revenue shortfall. After all, the RO scheme still applies for many existing wind and solar generation assets.
- ▶ PPA contracts of up to 25-year duration are in operation.

SSE template

“Big Six” player

SSE is one of the UK’s “Big Six” energy companies. It was floated, along with the Iberdrola-owned ScottishPower, in 1991. As part of its privatisation, the then Scottish Hydro-Electric (now SSE) inherited a portfolio of hydro-power assets, which it still retains – these plants have been solid generators of revenues in the intervening near-30 years.

Furthermore, SSE has undertaken heavy investment in the wind power sector, which has proven to be particularly successful in Scotland, where wind levels are generally higher – and more constant – than is the case in the south of England.

The template for many REIFs?

On the basis that REIFs are able to retain their independence, many – and especially those currently operating wind and solar generation plants – will seek to emulate the success of SSE, a substantial part of whose underlying value is now accounted for by renewable generation.

EV components

With a current Enterprise Value (EV) of over £24bn, SSE’s key business is its extensive energy network, whose returns are price-regulated. With RAV of ca.£9bn for these assets, which – in line with existing utility premia of ca.20%-35% – places a value on the business of ca.£11.3bn, this represents almost 50% of SSE’s overall EV.

The table below provides a breakdown of SSE’s current renewable assets, in terms of both capacity and the size of the pipeline. No pipeline is applicable for the hydro assets, where the investment cycle is far more spread-out.

SSE renewable plant data			
	Capacity (MW)	2018/19 Adj. EBIT (£m)	Pipeline (GW)
Hydro	1,459	179	n/a
Onshore wind	1,955	188	1
Offshore wind	579	89	7

Source: SSE

Reliance on ROCs

In terms of remuneration schemes, SSE has published details of how most of its renewable plants are funded. Bearing in mind the age of its onshore wind portfolio, it is no surprise that the ROCs regime is, by some way, the largest component.

Remuneration regime for SSE’s renewable plants	
Existing capacity (MW)	Remuneration scheme
2,235	ROC – £ per MWh
235	CfD – £ per MWh
375	Refit – € per MWh
850	Capacity mechanism – £ per MW

Source: SSE

The read-across flaws

Given the many differences between SSE’s renewables business and those of the leading REIFs, read-across valuation data have many flaws, ranging from differing remuneration regimes to the impact of mid-year acquisitions.

Nonetheless, the table below provides some relevant comparisons between SSE Renewables and Greencoat UK Wind; neither company invests outside the British Isles.

SSE Renewables vs. Greencoat UK Wind

SSE Renewables	Greencoat UK Wind
Capacity – 3,993MW	Capacity – 979MW
Output (2018/19) – 9.8TWh	Output (2018/19) – 2.0TWh
Market cap. (Group) – £14.9bn	Market Cap. – £2.3bn
Net debt (Group) – £9.4bn	Net debt – £0.8bn
Estimated EV (Renewables only) range – £7bn to £9bn	EV – £3.1bn

Source: SSE, Greencoat UK Wind and Nigel Hawkins Associates

SSE Renewables value vs. Greencoat UK Wind

While SSE Renewables is undoubtedly the larger business, it should probably be valued – within the SSE group – at ca.3x the quoted EV of Greencoat UK Wind.

M&A activity

To date, M&A activity in the REIFs sector has been minimal. Of course, the sector is very new, and there have been no obvious cases of serious underperformance. Also, unlike, the troubled outsourcing sector, there have been very few accounting issues.

Importantly, in recent years, despite the absence – since 2017 – of subsidies for most types of new renewable energy plants, valuations have held up well, as potential investors chase the relatively few assets that become available.

NAV premia modest

The current NAV premia for both the wind and solar generators average ca.15%, which underpin the validity of their business strategy. It could be argued, though, that – given the undoubted enthusiasm for renewable generation investment in recent years – these premia are actually quite modest.

Indeed, they compare poorly with the premia over RAV, a similar concept to NAV, which applies to other companies in the utilities sector. Severn Trent is currently trading at ca.30% over its RAV.

Gas take-out prices peaked

Furthermore, in recent years, the premia over RAV commanded by several gas distribution companies, which were sold by National Grid, have been well above those figures.

The REC frenzy saw all 12 go

It should not be forgotten, either, that the 12 RECs, which were privatised in 1990, were all bought out between 1995 and 2000. Perhaps inevitably, the first bid for Northern Electric by Trafalgar House in 1995 saw shares in all 12 RECs soar as takeover speculation became a frenzy.

Usual suspects

Against that background, bids for any of the 13 REIFs could emerge, with the most likely targets being the more mature wind and solar generators. While no-one expects that the REC scenario will be replicated, it would be no surprise if a bidder were to emerge – and especially one seeking to acquire a portfolio of valuable renewable energy assets.

Alternatively, private equity could enter the sector, possibly offering a model where higher gearing became the norm. Nevertheless, private equity owners would be hard-pressed to deliver major improvements to the financial models that are currently underpinning the cashflows of the more mature REIFs.

Even so, under either of these scenarios, REIF share prices would surely rise.

Risks

No British Energy-type risks

As the list below indicates, REIFs are exposed to many risks, virtually all of which should be eminently manageable – there is no British Energy-type scenario, where shares in the privatised nuclear generator became regarded as a *quasi* dotcom stock when wholesale energy prices fell sharply, British Energy duly went bust.

Single technology risk

Nonetheless, REIFs with a focus on a single technology, or on a single market, are more vulnerable to an adverse regulatory decision; a sudden halving of UK solar subsidies, although very unlikely, would be a case in point.

However, as with all investments, there are various risks attached to the UK wind and solar sectors, and to other REIF investments, although these are materially below those of other – and especially price-regulated – utility-related businesses. The main risks are set out below.

- ▶ **Low power prices:** In most cases, wind and solar generators are largely protected via PPAs, although reduced long-term power price projections will depress NAVs; JLEN's 2.7% cut in its quarterly NAV in January 2020 being a case in point.
- ▶ **Inadequate wind resource:** Over a long period, wind speeds have been quite predictable, although they can vary on a year-to-year basis.
- ▶ **Poor irradiation figures:** Historically, irradiation figures have also been quite predictable; furthermore, large plant portfolios mitigate this risk.
- ▶ **Outages:** Major outages have far more impact if large plants are involved, as, on occasions, distribution network operators (DNOs) have temporarily disconnected power lines.
- ▶ **Material regulatory changes:** The closure of the RO to new capacity in 2017, although expected, has had a negative impact on future wind and solar power investment – crucially, it was not retrospective.
- ▶ **Difficulty of delivering sustainable returns from unsubsidised new-build plants:** this challenge will become an increasingly important feature of onshore wind and solar portfolios.
- ▶ **Ofgem's Targeting Charging Review:** This review is examining the peaking-related charges paid by the large generators, whose dominance has been eroded by the phasing-out of coal-fired plant and the lower output of gas-fired plants. The review has proposed the removal of these Balancing Services Use of System (BSUoS) payments to suppliers from April 2021, along with other technical amendments.
- ▶ **Auction prices for new offshore wind power developments:** This will be a key financial factor going forward, given the record-breaking CfD bid prices of just £39.65 per MWh in the recent Dogger Bank offshore wind auction.
- ▶ **Counterparty risk:** The wind and solar sectors are far less exposed to counterparty risks than most fossil-fuel, and especially biomass, generators.
- ▶ **Acquisitions:** Leading wind and solar funds have undertaken many “tuck-in” acquisitions, but there is no guarantee that the price paid will be justified subsequently by the earnings from the assets acquired.

- ▶ **Revenue shortfalls:** The two energy storage funds under review – Gore Street Energy Storage and Gresham House Energy Storage, as well as Aquila European Renewables, Octopus Renewables, SEEIT and US Solar – are particularly exposed to revenue figures falling short of expectations.
- ▶ **Missing NAV targets:** Underperforming NAV targets, for whatever reason, may well adversely impact a REIF's share price, especially if investors believe such a shortfall is not a one-off event.
- ▶ **Interest rate movements:** Any appreciable rise in interest rates would be negative for both the wind and solar generation sectors, as it would place upward pressure on the cost of capital and, therefore, on financial returns.
- ▶ **Tax changes:** As with every profitable business, tax changes can have an adverse impact – the UK Finance Act 2017 restricting tax relief on borrowing to 30% of EBITDA is one such example.
- ▶ **Exchange rates:** Some of the REIFs, notably Aquila European Renewables, SEEIT, TRIG and US Solar, are significantly exposed to exchange rate movements.
- ▶ **Business Relief (BR):** Currently, BR provides exemption from Inheritance Tax for most AIM shares held for at least two years; if this provision were to change, some REIF shareholders could become sellers as a result.
- ▶ **Changed financial assumptions:** Assessing individual REIF NAVs is not a precise art, with key decisions being needed on the discount rate to be used – REIFs use different figures – and whether recent market transactions should impact any NAV calculation.
- ▶ **Political machinations:** Historically, the UK utilities sector has been very sensitive to political changes. Following the decisive 80-seat majority achieved by the Conservative Party in the December 2019 General Election, this risk element has fallen very sharply.

UK-quoted renewables

In defining REIFs, we have adopted the criteria determined by members of the Association of Investment Companies (AIC). Within this group, there are 13 funds, four of which – Aquila European Renewables, Octopus Renewables, SEITT and US Solar – were floated very recently.

The key market data of these 13 quoted funds are set out below.

Leading UK-quoted REIFs			
Fund	Share price (p)	Market cap. (£m)	Prosp. yield
Aquila European Renewables (ex € to £)	89	138	1.4%
Bluefield Solar	131	486	6.1%
Foresight Solar	117	708	5.8%
Gore Street Energy Storage	96	47	7.3%
Greencoat Renewables (ex € to £)	102	641	5.0%
Greencoat UK Wind	142	2,156	4.9%
Gresham House Energy Storage	110	225	4.1%
JLEN	118	586	5.6%
NextEnergy Solar	119	695	5.8%
Octopus Renewables	108	378	n/a
SEITT	111	355	4.5%
TRIG	132	2,165	5.0%
US Solar (ex \$ to £)	76	148	1.4%
Total		8,743	

Source: Bloomberg, Hardman & Co Research

Iberdrola, RWE and SSE are big wind power investors

There are various UK companies with heavy exposure to the wind sector; these include the large international integrated energy businesses, such as Iberdrola and RWE via Innogy, as well as the privatised SSE, which is Scottish-based. However, while the valuations of its wind plants have a marked impact on SSE's overall valuation, its wide-ranging portfolio means that any significant sector developments are substantially diluted in overall terms.

REIF's two biggest hitters

There are two quoted REIFs, namely Greencoat UK Wind and TRIG, where UK wind output is pivotal in determining their cash generation and share rating. In total, this duo account for ca.50% of the 13 REIF's total market capitalisation.

TRIG is mainly wind

While Greencoat UK Wind has consistently been the most valuable REIF in recent years, TRIG, with a similar market capitalisation, has greater international exposure. Its latest capacity figure is 1,509MW, ca.86% of which are wind generation assets. It has also acquired further onshore wind plants in France.



Its recent international expansion has seen it acquire full ownership of the 213MW Jdraas onshore wind plant and a 75% stake in the Erstrask onshore wind plant. Both sites are in Sweden and represent major investments by TRIG. In the case of Jdraas, its supply contracts expire in 2023, and TRIG will surely be according a high priority to signing a long-term PPA to cover much of its output beyond that date.

Importantly, too, TRIG has acquired a 25% stake in the 330MW Gode offshore wind project, which is located off the German coast in the North Sea. TRIG is widely expected to make further investments in offshore wind in both the Baltic Sea and the North Sea.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

TRIG's twin aims

Overall, TRIG's two key aims are:

- ▶ To provide investors with long-term stable dividends, while preserving the capital value of its investment portfolio.
- ▶ To invest in a diversified portfolio of renewable energy infrastructure assets in the UK and Northern Europe, with a focus on operating assets. Realising TRIG's European aspirations has been facilitated by the approval to raise the threshold to 65% for investment outside the UK.

The chart below underlines the success of TRIG's investment policy, with a solid rise in its share price in the past five years.



Source: Refinitiv

Nonetheless, its recent acquisitions, notably in Sweden, have certainly raised its international profile. Arguably, too, its overall risk profile has risen through its exposure to the Swedish market, where wholesale prices are generally below-average.

Greencoat UK Wind has a very narrow investment window – UK and wind



Greencoat UK Wind, as its name implies, focuses exclusively on the UK wind sector, in which it is heavily invested. Its capacity, after recent acquisitions, is now 979MW.

Its policy is narrowly defined as follows:

- ▶ to invest exclusively in operating UK wind farms, predominantly onshore, although offshore returns are now becoming more relevant;
- ▶ to “increase its dividend in line with the RPI”; and
- ▶ to “preserve capital on a real basis by re-investing excess cashflow in additional operating UK wind farms, and through prudent use of portfolio leverage”.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

Clyde and Corriegarth are big cash generators

Key to paying Greencoat UK Wind's dividends are the Clyde/Corriegarth onshore wind plants, which accounted for around a third of the dividend cost in the first six months of 2019. Greencoat UK Wind owns ca.28% of the Clyde plant.

Greencoat UK Wind is the sector's bellwether

Nonetheless, Greencoat UK Wind is expanding its activities, and it raised £506m of gross proceeds in 1H 2019 to finance further acquisitions in the wind sector.

As with TRIG, Greencoat UK Wind's five-year share price performance chart shows a solid rise in its share price. Furthermore, shareholder returns have been boosted by an annual RPI-adjusted dividend increase – achievements that very few REIFs can match.

Greencoat UK Wind – share price performance (5-year)



Source: Refinitiv



JLEN – offshoot of the eponymous housebuilder

Apart from the two leading UK wind generators, Greencoat UK Wind and TRIG, the John Laing Environment Fund, recently renamed JLEN, runs the largest UK wind generation portfolio among the 13 REIFs under review.

JLEN was floated in March 2014, and its origins lie with the eponymous building company. In recent years, it has expanded its renewable energy portfolio, which now amounts to 298MW.

The wind element is the most important, accounting for 57% of total capacity, while the solar portfolio amounts to 27%. The remainder is accounted for by either anaerobic digestion plants or by waste/hydro assets.

Anaerobic digestion returns

Importantly, JLEN's anaerobic digestion plants earn good returns, based on a 2018/19 achieved price of £101 per MWh. Plant revenues are underpinned by payments from the Heat Incentive Scheme.

New Investment Adviser

However, last month's 2.7% cut – when compared with September 2019 – in JLEN's NAV, due mainly to lowered assumptions for long-term power prices, has adversely impacted its share price rating.

Looking forward, JLEN, in common with other REIFs, is struggling to find renewable energy projects that can achieve its desired returns commensurate with assuming the appropriate risks. Central to this search is Foresight Group, which has recently been appointed as Investment Adviser to JLEN.

UK-quoted solar stocks

There are various quoted UK REIFs with major exposure to the solar sector. NextEnergy Solar and Bluefield Solar, in particular, offer a very undiluted investment in UK solar power.

Valuation benchmarks for the unquoted solar sector



Consequently, both are ideal as sector benchmarks for unquoted solar generation portfolios, especially in terms of assessing underlying value.

In the case of NextEnergy Solar, it had renewable generation capacity, as at September 2019, of 705MW. More than 95% of its capacity is in the UK, with the remainder sited in Italy.

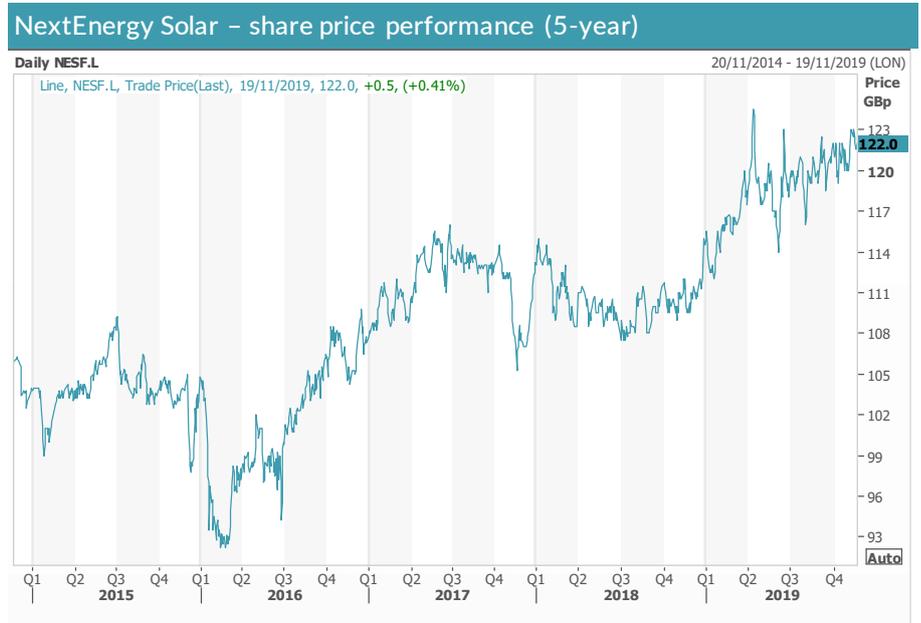
As at March 2019, Bluefield Solar’s 465MW portfolio consisted of 45 large solar assets, 39 micro solar assets and two roof-top assets. The entire portfolio is based – and dependent upon – the UK.

Solidity is the watchword

Apart from NextEnergy Solar’s dip in 2015/16, the share prices of both these funds have been reliable performers – and during a period when shares of other energy stocks, particularly due to political and regulatory concerns, have been volatile.

Interestingly, NextEnergy Solar, at its IPO in 2014, assumed power prices being around a third higher in 2019/20 than is currently the case. Nonetheless, its share price has risen notably over the last three years.

The charts below show how these two REIFs have performed over the past five years. To be sure, overall share price growth may have been modest – but it has been consistent.



Source: Refinitiv

Bluefield Solar – share price performance (5-year)



Source: Refinitiv

With the end of the RO for new plant in 2017, NextEnergy Solar and Bluefield Solar have built unsubsidised plants. In the former’s case, it plans to build up to 150MW of new solar capacity, 50MW of which relates to the Staughton plant, which was recently energised. In the latter’s case, it has built the 10MW Clay Hill solar farm near Milton Keynes.

The economic viability of unsubsidised solar plants

There is some doubt about the economics of unsubsidised solar plants, with site selection being pivotal. Moreover, in order to reduce the merchant plant risk, there is a need to negotiate a favourable PPA – or a similar type of contract.

Foresight group

The third quoted solar generation REIF, Foresight Solar, is somewhat different, in that 146MW of its 869MW capacity is located in Australia, where there are prolonged and divisive debates about the merits of financing renewable generation projects. The remaining 723MW of its solar capacity is all sited in the UK.

Foresight/JLEN deal

Furthermore, Foresight Solar’s parent company, Foresight Group, has recently announced the acquisition of the mandate for the JLEN fund, which has a gross asset value of £764m; the latter has been publicly listed since 2014. The process of changing the investment adviser to Foresight from JLEN – and boosting the former’s total assets under management by 26% – has now taken place.

In assessing comparative capacity levels, the three quoted pure solar companies – Bluefield Solar, NextEnergy Solar and Foresight Solar – are included, along with Greencoat UK Wind and TRIG, in the table below. In the latter’s case, for comparative purposes, its published figures to June 2019 are reproduced; however, TRIG’s net capacity, as of late January 2020, has risen to 1,664MW.

Undoubtedly, the three largest UK-quoted wind generators and the three solar generators form the backbone of the quoted REIF sector, which now comprises 13 renewable energy funds. In market capitalisation terms, these six REIFs account for ca.75% of the sector’s overall value.

UK solar and wind capacity				
Company	Installed capacity (MW)	UK	Solar	Wind
Bluefield Solar	465	100%	100%	0%
Foresight Solar	869	83%	100%	0%
Greencoat UK Wind	979	100%	0%	100%
JLEN	298	97%	27%	57%
NextEnergy Solar	705	95%	100%	0%
TRIG	1,509	55%	13%	86%

Source: Company websites

Valuation issues

NAV premia and discounts are share price drivers

In valuing REIFs, movements in their NAVs are pivotal. Currently, for most funds, there are significant premia over NAV, although this has not always been the case. With the recent surge in renewable energy activity, investors have been attracted to the sector, especially as more traditional energy investments have often performed poorly.

All five quoted at healthy premium

The table below shows the latest published NAVs – based on varying discount rates – for the six largest UK-quoted REIFs under review; four are currently trading at a double-digit premium to their NAV. The NAV figures quoted are based upon the latest published fund data, namely from September and December 2019, with the exception of TRIG, where June 2019 figures have been used. However, current market share prices have been used to calculate the premia, as well as the prospective dividend yields.

UK renewable energy stocks					
Company	NAV (£m)	NAV per share (p)	Prem./disc. to NAV	Prosp. yield	
Bluefield Solar	431	116.6	12.3%	6.1%	
Foresight Solar	599	109.1	7.2%	5.8%	
Greencoat UK Wind	1,843	121.4	17.0%	4.9%	
JLEN	506	101.8	15.9%	5.6%	
NextEnergy Solar	649	111.2	7.0%	5.8%	
TRIG	1,621	115.0	14.8%	5.0%	

Source: Hardman & Co Research

Lack of valuation consistency

In assessing the REIFs, and especially the more mature wind and solar generators, it is clear that there is a pronounced lack of consistency in setting individual fund valuation methodologies. Many of the key valuation tools, such as underlying fixed asset valuations, discount rates, asset lives, power price assumptions and output projections, *inter alia*, are, in many cases, inherently subjective.

In terms of power prices, for example, judgments need to be made about future trends, which rely on a mix of inter-related factors. Moreover, there are few credible energy forecasting organisations that undertake this task – and meet the required technical standards.

In order to analyse company-specific methodologies more closely, we set out below the differing valuation criteria adopted by the six leading UK wind and solar generation REIFs.

Bluefield Solar

“...Solar plants under construction and not yet operational are valued at cost and exclude acquisition costs which are expensed in the period in which they are incurred, whilst investments that are operational are valued on a DCF basis over the life of the asset (typically 25 years, though the Company is completing asset extensions on a subset of its portfolio) and under the ‘willing buyer-willing seller’ methodology, prudently ‘benchmarked’ on a £/MWp basis against comparable transactions for larger scale portfolios...” (Source: p103, Annual Report 2018/19)

Foresight Solar

“...A broad range of assumptions is used in the valuation models. These assumptions are based on long-term forecasts and are not affected by short-term fluctuations, be it economic or technical. It is the policy of the Investment Manager to value with reference to Discounted Cash Flows (DCF) at the later of commissioning or transaction completion...” (Source p25, Annual Report 2018)

Greencoat UK Wind

“...Valuations are derived using a discounted cash flow methodology in line with IPEV Valuation Guidelines and take into account, *inter alia*, the following – due diligence findings where relevant, the terms of any material contracts including PPAs, asset performance, power price forecast from a leading market consultant, and the economic, taxation or regulatory environment...” (Source: Greencoat UK Wind 2018/19 full-year results announcement)

JLEN

“...This valuation is based on a discounted cash flow analysis of the future expected equity and loan cash flows accruing to the Group from each portfolio investment. This valuation uses key assumptions which are recommended by the Investment Advisor using his experience and judgement, having taken into account available comparable market valuations and financial market data in order to arrive at a fair market value...” (Source: Chairman’s Statement, Annual Report 2018/19)

NextEnergy Solar

“...The valuation principles used are based on a discounted cash flow methodology and take into account IPEV guidelines. Assets not yet operational or where the completion of the acquisition is not imminent at the time of valuation use the acquisition cost as a proxy for fair value...” (Source: p34 Annual Report 2018/19)

TRIG

“...For non-market traded investments (being all the investments in the current portfolio), the valuation is based on a discounted cash flow methodology and adjusted in accordance with the European Venture Capital Associations’ valuation guidelines, where appropriate, to comply with IFRS 3 and IFRS 9, given the special nature of infrastructure investments...” (Source: p37, Annual Report 2018)

The NAV drivers

To derive a credible NAV for a REIF, various factors have to be analysed at the outset. As a starting point, the gross asset value, say of a wind or solar generation plant, has to be determined – funds vary somewhat as to how the opening value is set.

Several other valuation parameters are then determined, which have a key influence on the NAV.

The most important are:

- ▶ discount rates;
- ▶ energy yields;
- ▶ power prices;
- ▶ long-term inflation; and
- ▶ asset lives.

Each of these key REIF valuation parameters is analysed below.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

Discount rates

Of course, the chosen discount rate is key to the overall NAV – and indirectly to the share price rating. As such, investment managers accord a high priority to ensuring that the discount rate applied is appropriate – and properly reflects the key variables that determine it.

Unlevered v levered

Accounting for the debt element is also important. Some REIFs hold debt at the group level, while others allocate it to individual plants. In allowing for the impact of the debt component, some Tier 1 and Tier 2 REIFs use different figures for levered and unlevered assets; the difference is ca.1% to ca.2.0%.

It should be noted, though, that so-called unlevered assets may be just *that* at the devolved level, but there is generally some debt at the group level, which does need to be accounted for.

Country variations

Some REIFs accord different discount rates to their overseas assets. NextEnergy Solar, for example, uses a blended 7.0% for its UK assets and 8% for its small Solis portfolio in Italy.

6.50% to 8.50% discount rate range

Depending on various factors, including location and leverage, the discount rate ranges from 6.50% for NextEnergy Solar's unleveraged operating solar assets in the UK to the 8.50% figure that is used by Foresight for its Longreach solar plant in Australia.

The table below compares the blended discount rates used by the six leading wind and solar generation REIFs – along with some pertinent observations about the discount rate policy that individual REIFs have adopted. For various reasons, direct read-across analysis between the various discount rates and the valuation methodologies used by the six REIFs, while not precluding some valid comparisons, is potentially misleading.

Comparable discount rates

Discount rates of the top six UK REIFs		
Fund	Blended disc. rate	Observations
Bluefield Solar	7.18%	Lowered by extended asset lives for 106.5MW of solar capacity.
Foresight Solar	7.30%	Weighted – 6.75% for unlevered UK assets and between 7.50% and 7.75% for debt-financed plants: the Australian Longreach solar plant is discounted at 8.50%.
Greencoat UK Wind	8.10%	Blended – ROC and merchant revenues are separated (see below for further observations).
JLEN	7.50%	Weighted – unleveraged wind and solar, and leveraged wind.
NextEnergy Solar	7.00%	Weighted – with 6.50% for unlevered operating UK solar assets: the Italian Solis portfolio is discounted at 8.0%.
TRIG	7.50%	Weighted and levered – but increasingly exposed to EU mainland investments, which has implications for the applied discount rate.

Source: Fund reports, Nigel Hawkins Associates

Read-across distortions

It should be noted that Greenfield UK Wind's discount rate is calculated on an unleveraged basis, a factor that materially distorts any direct read-across comparisons. Indeed, if Greencoat UK Wind were to use a leveraged discount rate, its figure would be nearer 10%.

It is also salutary to compare the discount rate changes between Greenfield UK Wind and Bluefield Solar. Greencoat UK Wind's unlevered discount rate has barely fallen since its listing in March 2013; by contrast, Bluefield Solar's discount rate has been cut by ca.2.5% since its own initial listing some months later.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

In reality, Greenfield UK Wind's conservative approach to the discount rate issue is undoubtedly one factor why its NAV premium has been consistently well ahead of the REIF sector average.

Projected output figures over an extended period are a key valuation issue. Since wind and solar generation output should be reasonably predictable in the medium and long term, this variable should not cause unduly pronounced fluctuations in the NAV. However, there is some inconsistency among the Tier 1 and Tier 2 REIFs, although the P90 – the 90% probability output scenario – is widely used, rather than the less challenging P50 yardstick.

Power prices and “group think”

Long-term power prices, as a basic commodity, are key drivers of the revenues of the leading REIFs, along with the renewable subsidies that enhance them. Nonetheless, forecasting long-term power prices is complex, with many variable factors entering into the equation. Since very few organisations are equipped to undertake this detailed financial modelling work, it means that an element of “group think” is inevitable.

The fact that, at its IPO in 2014, NextEnergy Solar was forecasting that power prices would be considerably higher than they are currently underlines the unpredictability of this market; conveniently, both the wind and solar generation sectors have been able to counter this downside by enhanced output and lower unit costs.

Nonetheless, power prices remain a key factor in NAV appraisal. In Bluefield Solar's case, it assumes a ca.£32m each way impact on revenues arising from 10% changes in power prices.

Inflation

Despite very low inflation figures, they are still highly relevant for REIF valuation purposes. For many years, UK inflation has been low and fairly constant. Clearly, if the inflation levels of the mid-1970s – which peaked at ca.25% – were to recur in the UK, NAVs would be heavily impacted.

Furthermore, there is no consistency on long-term inflation assumptions – a scenario not helped by the existence, for the moment at least, of both RPI and CPI inflation yardsticks.

The table below shows the long-term inflation assumptions of the Hardman & Co Tier 1 and Tier 2 REIFs. The Republic of Ireland-based Greencoat Renewables uses a 2% long-term CPI figure.

Long-term inflation rate assumptions	
REIF	Long-term inflation assumption
Bluefield Solar	3% to 06/2024, 2.75% thereafter
Foresight Solar	2.75%
Greencoat Renewables	2.0% (CPI)
Greencoat UK Wind	3.0%
JLEN	2.8%-3.2% to 2023, 2.75% thereafter
NextEnergy Solar	3.0%
TRIG	2.75% for UK, 2.0% for France/Ireland

Source: Annual Reports

Asset lives

Currently, most wind and solar generation assets have an accounting life of between 20 and 30 years. However, this figure is edging up, as Bluefield Solar's recent extension to 40 years, covering 106.5MW of its solar portfolio, demonstrates. The leading REIFs have variable policies on this issue, with some extending asset lives following successful lease negotiations; others accept that solar plants will become less productive as they near the end of their lives, and they adjust their NAVs accordingly.

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

WALL formula

Moreover, to address the asset life issue, some REIFs, such as NextEnergy Solar, have published a Weighted Average Life (WALL) figure covering their asset portfolios.

TRIG's valuation template

Looking forward, the exchange risk seems set to become more important. TRIG, in particular, has been expanding overseas recently. It now ascribes the impact of exchange rate movements to its NAV, although they are comparatively modest compared with output and power price fluctuations. Furthermore, TRIG recently published a summary of all its major risks and their projected impact on its NAV; the details are set out below.

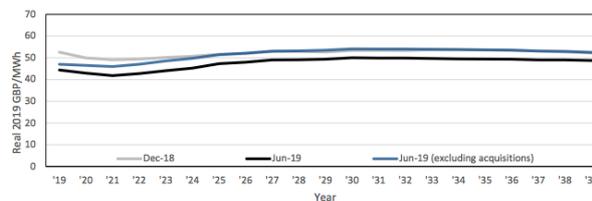
TRIG valuation

Valuation – Key Assumptions

Discount rates remain firm, longer asset lives, slight power price reduction



		As at 30 June 2019	As at 31 December 2018
Discount Rate	Weighted average	7.5%	7.6%
Power Prices	Weighted by market	Based on third party forecasts	Based on third party forecasts
	UK	2.75%	2.75%
Long-term Inflation¹	France & Rep. of Ireland	2.00%	2.00%
Foreign Exchange	EUR / GBP	1.1167	1.1124
Asset Life	Wind portfolio, average	29 years	26 years
	Solar portfolio, average	30 years	30 years



Blended power curve (real)²

- ▲ Reduction in forecast prices since December 2018 with short-term oversupply of gas compared to forecast levels due to mild weather
- ▲ Medium-term prices are expected to increase as demand exceeds supply
- ▲ A key determinant of long-term cash flows and dividends

1. A change in the long-term inflation assumption would be equivalent to a similar (but inverse) change in the valuation discount rate. Short-term inflation in the UK is assumed at 3.2% for 2019 and 3.0% for 2020 (ROC's only). In France and Rep. of Ireland it is assumed at 1.75% for 2019 and 2020.
 2. Power price forecasts used in the Directors' valuation for each of GB, Northern Ireland, France and Sweden are based on analysis by the Investment Manager using data from leading power market advisers. In the illustrative blended price curve, the power price forecasts are weighted by P90 estimates of production for each of the projects in the Company's 30 June 2019 portfolio. 23
trig-ltd.com

Source: TRIG

In assessing these risks, sensitivity analysis is very relevant, with several REIFs setting out their financial exposure to the most obvious risks.

Greencoat's sensitivity analysis

In its latest interim report, Greencoat UK Wind published a sensitivity analysis on NAV, assessing the impact of the above factors. The most notable conclusions were:

- ▶ a 0.5% variation in the discount rate causes a 5p-6p change in the NAV;
- ▶ energy yields – a 10-year P90 vs. a 10-year P10 calculation gives rise to reductions and increases of almost 10p in the NAV;
- ▶ power prices – a 10% change either way has a similar effect on the NAV to the energy yield fluctuations described above;
- ▶ long-term inflation – a ca.6p NAV change is projected if long-term inflation moves 0.5% either side of the 3% base rate assumed by Greencoat UK Wind;
- ▶ asset life – a five-year reduction gives rise to a cut in NAV of over 7%, while a similar extension yields a ca.6% rise in the NAV.

In the case of TRIG, whose market capitalisation, at £2.2bn, is almost identical to that of Greencoat UK Wind, the key risks – set out earlier – are similar, along with their sensitivities. However, TRIG is increasingly exposed to mainland EU

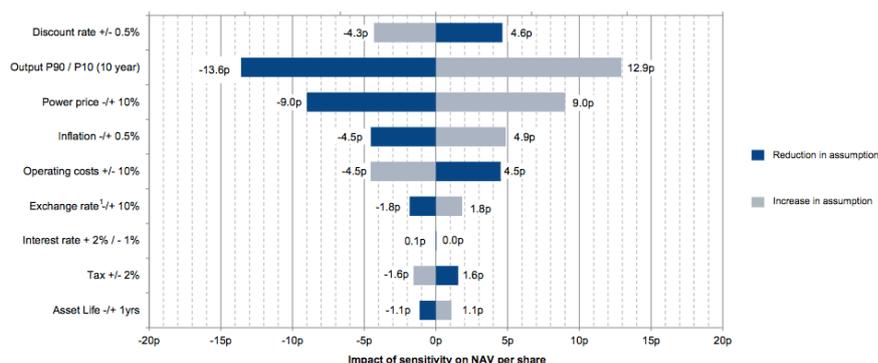
markets, notably Sweden; as such, a significant exchange risk also arises. Details of TRIG’s sensitivity to the impact of various events are set out below.

TRIG’s sensitivities

TRIG NAV sensitivities

NAV sensitivities

Based on portfolio at 30 June 2019



Sensitivity effect on NAV per share as at 30 June 2019
(£ labels represent sensitivity effect on fully invested portfolio value of £1,894m, including net outstanding commitments)

NB: Exchange rate sensitivity relates to the direct sensitivity of exchange rates changing, not the indirect movement relating to exposure gained through power prices
Source: TRIG

Bluefield Solar’s sensitivity data

Bluefield Solar has also published a sensitivity analysis comparable with that of Greencoat UK Wind. The figures are very similar, with the exception of the energy yield element.

In Bluefield Solar’s case, again, on the 10-year P90 vs. 10-year P10 basis, the projected NAV change is more pronounced – at ca.13p. Moreover, it has specified a ca.£50m swing either way from this energy yield calculation.

Premia and discounts to NAVs

The table below sets out the premia/discount figures based on the latest NAV figures announced by each of the 13 REIFs under review. Except for Greencoat Renewables, Greencoat UK Wind and JLEN – where December 2019 data are reproduced – and for TRIG – where the June 2019 NAV figure is shown – September 2019 NAV returns have otherwise been used.

NAV vs. current market capitalisations

Fund	Hardman & Co Tier	NAV (£m)	NAV per share (p)	Market cap. (£m)	Prem./disc. to NAV
Aquila European Renewables (€ to £)	3	126	81.5	138	+9.3%
Bluefield Solar	2	431	116.6	486	+12.3%
Foresight Solar	2	599	109.1	708	+7.2%
Gore Street Energy Storage	4	36	95.5	47	+0.5%
Greencoat Renewables (€ to £)	2	546	86.6	641	+17.4%
Greencoat UK Wind	1	1,843	121.4	2,156	+17.0%
Gresham House Energy Storage	4	162	99.2	225	+10.9%
JLEN	2	506	101.8	586	+15.9%
NextEnergy Solar	2	649	111.2	695	+7.0%
Octopus Renewables	4	343	98.0	378	+10.2%
SEIT	4	320*	99.4*	355	+11.7%
TRIG	1	1,621	115.0	2,165	+14.8%
US Solar (\$ to £)	3	148	73.7	152	+3.1%

*Adjusted to reflect raising of £154m of gross proceeds in 4Q 2019
Source: Fund websites, Bloomberg

UK Renewable Energy Infrastructure Funds – A 20/20 Vision

With regard to dividends, the table below shows the projected dividend payments and the relevant prospective yields. For the REIF sector, the current prospective yield averages ca.5%-6%. Despite many REIFs having low dividend cover, most are targeting modest dividend increases – a clear contrast with one of the UK's leading utilities, Centrica, which recently cut its dividend by a formidable 58%. The low prospective yields for both Aquila European Renewables and US Solar reflect the fact that their trading has been on a part-year basis.

Dividend profiles				
Fund	Financial year-end	Prospective dividend (p)	Prospective yield	
Aquila European Renewables	December	1.26	1.4%	
Bluefield Solar	June	7.92	6.0%	
Foresight Solar	December	6.76	5.8%	
Gore Street Energy Storage	December	7.00	7.3%	
Greencoat Renewables	December	5.07	5.0%	
Greencoat UK Wind	December	6.94	4.9%	
Gresham House Energy Storage	December	4.50	4.1%	
JLEN	March	6.66	5.6%	
NextEnergy Solar	March	6.87	5.8%	
Octopus Renewables	December	n/a	n/a	
SEITT	March	5.00	4.5%	
TRIG	December	6.64	5.0%	
US Solar	December	1.07	1.4%	

Source: Fund websites, Bloomberg

REIF dividends look good v Centrica's 58% cut

Undoubtedly, the dividend pay-out scenario in recent years from these REIFs has been reassuring, and all the more so given the intense pressure that UK energy stocks, such as Centrica and SSE, are currently facing (as noted, the former has recently announced a 58% dividend cut). With the relative lack in the market of good-quality stocks on decent yields, it is hardly surprising that REIFs have attracted the interest of many discerning investors.

Eroding premia

During 2018, most REIFs were trading at a significant premium to their NAV, in common with utilities such as regulated water stocks: Severn Trent is currently trading at a ca.30% premium to its RAV (a similar concept to NAV), despite the tougher regime imposed in the PR19 periodic review.

Whether this scenario continues depends on various factors, most notably major changes in power prices and any upward movement in interest rates.

The other REIFs

The remaining seven REIFs under review – with the exception of the Republic of Ireland-based Greencoat Renewables – all are in the Hardman & Co Tier 3 and 4 categories, having lower market capitalisations. They range from Greencoat Renewables, with a £641m market capitalisation, to the much smaller Gore Street Energy Storage, currently valued by the market at £47m.

Energy storage duo are different

In the case of the latter and of Gresham House Energy Storage, they do offer some characteristics of a typical REIF; indeed, they are listed as such under the AIC criteria. However, their business models and, more specifically, their cashflows are very different from those of a relatively mature wind and solar generation business.

Brief profiles of this septet, focusing on their business activities, generation capacity and financial status, are provided below:



Aquila European Renewables

Aquila European Renewables, which was recently floated, is based in Hamburg, Germany, a country that will see a very sharp increase in wind power investment – especially offshore – in the coming years, as its nuclear power plants close down.

Wind power, solar power and hydro power assets are the most likely acquisitions. Following its purchase of the 18MW Holmen wind plant in Denmark, Aquila European Renewables has bought a ca.26% stake in the Midtjället Vindkraft wind farm business in Norway; the first three phases of this project will give rise to capacity of 150MW. Furthermore, a portfolio of hydro assets, amounting to 103MW, has been bought in Portugal: Aquila European Renewables is also seeking to buy a 35MW wind plant at Aalto in Finland.

As part of its flotation in May 2019, Aquila European Renewables raised €154m, which is being invested in a diversified portfolio of renewable generation assets across mainland Europe, although not in the UK.

Gore Street Energy Storage



This fund seeks to invest in a diversified portfolio of utility-scale battery storage projects – it operates in the same space as Gresham House Energy Storage. More specifically, Gore Street Energy Storage uses battery cell technology to provide frequency balancing services to grid operators – an expanding market, given the partial black-outs on 9 August 2019 in parts of the UK.

Apart from the 29MW of capacity owned in the UK, Gore Street now has a controlling interest in 160MW of battery storage capacity in the Republic of Ireland, of which 60MW is covered by long-term contracts.

In terms of its finances, Gore Street has been raising funds – with some difficulty – to finance its expansion in the Republic of Ireland and other deals in its pipeline. Over £40m of gross proceeds have been raised in recent months, with the NTMA, a Republic of Ireland public sector organisation, being a cornerstone investor.

Greencoat Renewables



Greencoat Renewables is an investor in euro-denominated renewable energy infrastructure assets. It is focused on the acquisition and management of operating wind farms in the Republic of Ireland and is also looking at various opportunities in targeted European countries.

Greencoat Renewables' current wind generation capacity is 460MW. Its two core plants are at Cloosh Valley, with its 108MW capacity, and Knockacummer, with its 100MW capacity. The 460MW capacity figure seems set to rise markedly over the next three years.

Having raised gross proceeds of €148m in March 2019 and €125m in December 2019, gearing levels now lie at a more prudent level. Further equity may be raised if Greencoat Renewables decides to invest in some of the various projects in the EU that it is currently analysing.

Gresham House Energy Storage



Gresham House Energy Storage is the larger of the two quoted REIFs in the energy storage sub-sector. Aside from providing frequency balancing services, Gresham House Energy Storage expects to benefit from the many arbitrage opportunities that will inevitably arise from the increase in UK renewable generation output.

Gresham House Energy Storage has been investing in energy storage plants that utilise batteries and, in some cases, engines. Following the completion of the 49MW

Red Scar battery-only scheme, its capacity should reach 279MW by the end of June 2020 – assuming that two planned 50MW projects and the 5MW Littlebrook extension are all completed on time.

Since its IPO, Gresham House Energy Storage has undertaken two placings, in July and October 2019, which raised total gross proceeds of £57m. There is a solid project pipeline, some of which it will be seeking to develop.

Octopus Renewables

octopus renewables

Octopus Renewables floated at the end of 2019, with the first day of dealings on 11 December. In building up its portfolio, its focus will be on the UK, which is expected to account for up to 50% of gross assets. Other areas of investment interest are mainland Europe – with wind projects in the north and solar projects in the south – and Australia.

The two renewables sources most favoured are wind and solar power. Octopus Renewables has prescribed a maximum 60% exposure – by gross asset valuation – for both wind and solar investments. Asset transfers from other Octopus funds are certainly possible; in such cases, independent valuations would be used.

Having raised gross proceeds of £350m at flotation, Octopus Renewables has identified a formidable potential investment pipeline worth up to £2.8bn.

SEEIT

SEEIT

SEEIT's focus is primarily on the UK/European and US energy efficiency markets, and it has been active in seeking out deals that meet its investment criteria.

SEEIT has been developing its seed capital portfolio, which originally comprised mainly CHP investments and light-emitting diode (LED)-related projects. SEEIT has also announced its acquisition of a 125MW co-generation portfolio in Spain, comprising five CHP plants, two olive processing plants and two biomass plants. More recently, it has bought a 50% stake in the Indiana-based Primary Energy, which owns a 298MW portfolio of recycled energy and co-generation projects.

Having raised £100m in December 2018, SEEIT has issued further equity. Gross proceeds of £72m were raised in April 2019, along with another £154m (gross) in 4Q 2019. With its aggressive acquisition programme, further fundraises are expected.

US Solar



Its declared aim is to invest in solar power assets, predominantly in the US, where many states offer attractive financial incentives for solar power development – the investment pipeline disclosed at listing included 14 opportunities made up of more than 60 projects located across 13 US states. In time, investments in Canada and Mexico are also possible.

US Solar has confirmed its investment in a 128MW solar power project in Milford, Utah. This key project is due to be commissioned within the next 18 months, and it has already secured 25-year PPAs with a Berkshire Hathaway Energy subsidiary. More recently, US Solar has confirmed that it has completed the acquisition of 39MW of operational solar capacity in North Carolina. Furthermore, it has just signed a binding agreement to acquire a 177MW operational solar portfolio in the US from Heelstone Renewable Energy.

In April 2019, as part of its listing on the London market, US Solar raised gross proceeds of \$200m. Last month, US Solar indicated to the market that a further equity issue was under consideration, as its expansion gathers pace.

Key REIF data

Aquila European Renewables	
Issue	Comment
Ticker/website	AERS/ www.aquila-european-renewables-income-fund.com
Fund aim	“Will seek to generate stable returns, principally in the form of income distribution, by investing in a diversified portfolio of renewable energy infrastructure investments”
Core portfolio capacity	305MW
Latest NAV	€150m (£126m)/81.5p
Market cap./share price	£138m/89p
Premium/discount to NAV	+9.3%
Dividend/yield	ca.€0.015 dividend is being paid for the 2019 financial year
Return record	The shares have risen marginally since being first quoted in June 2019 <i>Source: Fund website, Bloomberg</i>
Bluefield Solar	
Issue	Comment
Ticker/website	BSIF/ www.bluefieldsif.com
Fund aim	“Acquisition management of a diversified portfolio of large-scale solar energy in the UK, with the objective of delivering long-term stable yield”
Core portfolio capacity	465MW – all UK solar
Latest NAV	£431m/116.6p
Market cap./share price	£486m/131p
Premium/discount to NAV	+12.3%
Dividend/yield	7.92p/6.1%
Return record	Total shareholder return of over 73% since the fund was first quoted in July 2013 <i>Source: Fund website, Bloomberg</i>
Foresight Solar	
Issue	Comment
Ticker/website	FSFL/ fsfl.foresightgroup.eu
Fund aim	“To provide investors with a sustainable and inflation-linked quarterly dividend ...and it aims to preserve and, where possible, enhance capital value through the re-investment of excess cash flow”
Core portfolio capacity	869MW – all solar, of which 723MW is in UK and 146MW in Australia
Latest NAV	£599m/109.1p
Market cap./share price	£708m/117p
Premium/discount to NAV	+7.2%
Dividend/yield	6.76p/5.8%
Return record	Annual total shareholder return of 8.8% since the IPO in 2013 <i>Source: Fund website, Bloomberg</i>
Gore Street Energy Storage	
Issue	Comment
Ticker/website	GSF/ www.gsenenergystoragefund.com
Fund aim	“To focus on projects that are well-positioned for growth in strategic locations with high barriers to entry and with a sustainable low operating cost structure” and “to generate value for our companies and investors beyond capital”
Core portfolio capacity	189MW, including a controlling interest in 160MW of battery storage projects in Ireland
Latest NAV	£36m/95.5p
Market cap./share price	£47m/96p
Premium/discount to NAV	+0.5%
Dividend/yield	7.00p/7.3%
Return record	Since the fund was floated in May 2018, its shares have fallen – due partly to fundraising challenges <i>Source: Fund website, Bloomberg</i>

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Greencoat Renewables

Issue	Comment
Ticker/website	GRP/ www.greencoat-renewables.com
Fund aim	“Initially to focus on investing in operating wind assets in Ireland... over time, it will also target certain other Eurozone countries”
Core portfolio capacity	25%-100% stakes in 460MW of wind plant in the Republic of Ireland
Latest NAV	€650m (£546m)/86.6p
Market cap./share price	£641m/102p
Premium/discount to NAV	+17.46%
Dividend/yield	€6.03 (5.07p)/5.0%
Return record	After a lacklustre performance since the fund was first quoted in July 2017, its shares rallied in 2019 <i>Source: Fund website, Bloomberg</i>

Greencoat UK Wind

Issue	Comment
Ticker/website	UKW/ www.greencoat-ukwind.com
Fund aim	It “invests in UK wind farms” and “seeks to provide investors with an annual dividend that increases in line with RPI inflation whilst preserving the capital value of its investment portfolio in the long-term”
Core portfolio capacity	25%-100% stakes in 979MW of UK wind plants
Latest NAV	£1,843m/121.4p
Market cap./share price	£2,156m/142p
Premium/discount to NAV	+17.0%
Dividend/yield	6.94p/4.9%
Return record	Total shareholder return of over 97% since the fund was first quoted in March 2013 <i>Source: Fund website, Bloomberg</i>

Gresham House Energy Storage

Issue	Comment
Ticker/website	GRID/ newenergy.greshamhouse.com
Fund aim	“To provide investors with an attractive and sustainable dividend over the long-term by investing in a diversified portfolio of utility-scale operational energy storage systems”
Core portfolio capacity	174MW of battery storage systems
Latest NAV	£162m/99.2p
Market cap./share price	£225m/110p
Premium/discount to NAV	+10.9%
Dividend/yield	4.50p/4.1%
Return record	Shares have risen steadily since the fund was first quoted in November 2018 <i>Source: Fund website, Bloomberg</i>

JLEN

Issue	Comment
Ticker/website	JLEN/ www.jlen.com
Fund aim	“To provide shareholders with a sustainable dividend paid quarterly, that increases progressively in line with inflation and to preserve the capital value of its portfolio on a real basis over the long term”
Core portfolio capacity	298MW, 57% of which is wind and 27% solar – virtually all the portfolio is in the UK
Latest NAV	£506m/101.8p
Market cap./share price	£586m/118p
Premium/discount to NAV	+15.9%
Dividend/yield	6.66p/5.6%
Return record	Since its flotation in March 2014, the total shareholder return has exceeded 50% <i>Source: Fund website, Bloomberg</i>

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NextEnergy Solar

Issue	Comment
Ticker/website	NESF/ www.nextenergysolarfund.com
Fund aim	"Seeks to provide investors with a sustainable and attractive dividend that increases in line with RPI over the long-term. In addition, the Company seeks to provide investors with an element of capital growth..."
Core portfolio capacity	705MW of solar capacity, mainly in the UK but with a small Italian portfolio
Latest NAV	£649m/111.2p
Market cap./share price	£695m/119p
Premium/discount to NAV	+7.0%
Dividend/yield	6.87p/5.8%
Return record	Within the annualised target return of 7%-9% – despite far lower power prices than expected since the 2014 IPO

Source: Fund website, Bloomberg

Octopus Renewables

Issue	Comment
Ticker/website	ORIT/ www.octopusrenewablesinfrastructure.com
Fund aim	"Seeks to provide investors with an attractive and sustainable level of income returns, with an element of capital growth by investing in a geographically and technology-diversified spread of renewable energy assets"
Core portfolio capacity	n/a
Latest NAV	£343 (est.)/98.0p
Market cap./share price	£378m/108p
Premium/discount to NAV	+10.2%
Dividend/yield	n/a (a ca.3p per share dividend is targeted for 2020)
Return record	Floated very recently, having comfortably beaten fundraising expectations

Source: Fund website, Bloomberg

SEITT

Issue	Comment
Ticker/website	SEIT/ www.sdcleit.com
Fund aim	"To provide an attractive total return for shareholders of 7%-8% per annum with a stable dividend income, capital preservation and the opportunity for capital growth"
Core portfolio capacity	SEIT has acquired a diversified portfolio of assets, including CHP, energy efficiency and biomass plants
Latest NAV	£320m/99.4p (adjusted to reflect £154m fundraise in 4Q 2019)
Market cap./share price	£355m/111p
Premium/discount to NAV	+11.7%
Dividend/yield	5.00p/4.5%
Return record	A steady rise in the share price since the fund was quoted for the first time in December 2018

Source: Fund website, Bloomberg

TRIG

Issue	Comment
Ticker/website	The Renewables Infrastructure Group/ trig.com
Fund aim	"To invest principally in a diverse range of operational renewable energy infrastructure assets, with a focus on the UK and other parts of Northern Europe...and to seek to provide an attractive long-term income-based return with a positive correlation to inflation"
Core portfolio capacity	1,509MW of capacity, 86% wind and 13% solar – UK/Ireland, France and Sweden are key markets
Latest NAV	£1,621m/115p
Market cap./share price	£2,165m/132p
Premium/discount to NAV	+14.8%
Dividend/yield	6.64p/5.0%
Return record	Annualised NAV total return of 8.6% since the fund was first quoted in July 2013

Source: Fund website, Bloomberg

US Solar	
Issue	Comment
Ticker/website	USFP/ www.ussolarfund.co.uk
Fund aim	“To provide its shareholders with attractive and sustainable dividends, with an element of capital growth, through investing in a diversified portfolio of solar power assets located in North America and other OECD countries in the Americas”
Core portfolio capacity	The initial solar generation investment is the 128MW solar plant project at Milford
Latest NAV	\$195m (£148m)/73.7p
Market cap./share price	£152m/76p
Premium/discount to NAV	+3.1%
Dividend/yield	\$0.0141 (1.07p)/1.4%
Return record	Following a recent decline, the shares are now trading close to the IPO price in April 2019 <i>Source: Fund website, Bloomberg</i>

Business relief (BR)

Long-term, secure wind and solar asset cashflow is ideal for BR investment vehicles

It should be noted that investment in REIFs has been stimulated by their ability to generate decent and risk-averse returns, along with an attractive cashflow, which is eminently suitable for Business Relief (BR) purposes. Consequently, several UK investment funds, such as Octopus, have focused on renewable power as a core component of their portfolios.

BR emerged from Business Property Relief, which was introduced within Inheritance Tax legislation in 1976. In order to minimise the need for small businesses to be broken up on the death of the owner, various reliefs were specified.

Owners of shares in unquoted businesses, subject to various anti-avoidance provisions, are exempt from Inheritance Tax. The same criteria are applicable to most AIM-listed stocks.

For many investors, BR has undeniable appeal, as it allows them to place assets into an appropriate business that, after a two-year period, becomes exempt from Inheritance Tax. To benefit from these reliefs, two major product lines are available, namely AIM portfolio services or those that are outside AIM. HMRC has also specified various categories of assets where such relief will not be granted; in particular, various investment-orientated undertakings and property-related businesses are among those categories deemed ineligible.

Recently, the Office of Tax Simplification, which has been asked by the Government to propose ways to simplify Inheritance Tax, has questioned whether third-party investors – as opposed to the original owners of the business – in AIM-listed stocks should continue to benefit from this important BR exemption.

Conclusion

Is the going getting tougher?

The REIFs sector still looks to be well-placed. After all, REIFs' earnings are high-quality, and their dividend payment profiles are both attractive and, in most cases, secure.

Of course, both the leading REIF sub-sectors – wind and solar generation – are exposed to potentially lower power prices, despite the valuable PPA protection, and higher interest rates, which would adversely affect all funds, although some to a greater extent than others.

Decent growth, rising dividends and modest risks – and more unsubsidised output

Irrespective of the Brexit-related political issues, quoted REIFs continue to offer appeal on several fronts – decent growth, rising dividends and, for most funds at least, modest risks, which are related mainly to future power prices and interest rates. However, for many REIFs, it will be challenging to deliver shareholder value from an increasing proportion of revenues from unsubsidised plants.

Appendix 1

Glossary	
AIC	Association of Investment Companies
BSUoS	Balancing Services Use of System
BR	Business Relief
CCGT	Combined Cycle Gas Turbine
CfD	Contract for Difference
CHP	Combined Heat and Power
CPI	Consumer Price Index
Discount to NAV	Amount a fund's shares trade below NAV
DBEIS	Department for Business, Energy and Industrial Strategy
DCF	Discounted Cash Flow
DNO	Distribution Network Operator
EGM	Extraordinary General Meeting
EV	Enterprise Value
FIT	Feed-in Tariff
GWh	Gigawatt hour – electricity generation per hour
HS2	High-speed 2 West Coast Railway Line Project
IFRS	International Financial Reporting Standards
IPEV	International Private Equity and Venture Capital
IPO	Initial Public Offering
IRR	Internal Rate of Return
LCOE	Levelised Cost of Energy
LED	Light-Emitting Diode
MWh	Megawatt hour – electricity generation per hour
NAV	Net Asset Value
NTMA	National Treasury Management Agency
PPA	Power Purchase Agreement
Premium to NAV	Amount a fund's shares trade above NAV
PV	Photovoltaic
PWR	Pressurised Water Reactor
RAV	Regulatory Asset Value
REC	Regional Electricity Company
REFIT	Renewables Energy Feed-in Tariff
REIF	Renewable Energy Infrastructure Fund
RO Scheme	Renewable Obligation Scheme
ROC	Renewable Obligation Certificate
RPI	Retail Price Index
TWh	Terawatt hour - electricity generation per hour
TSR	Total Shareholder Return
WALL	Weighted Average Lease Life

Source: Nigel Hawkins Associates

Appendix 2

Aside from the wind and solar generation funds analysed above, along with other REIFs, this document also has relevance for more mainstream infrastructure funds, such as GCP Infrastructure, which has significant exposure to UK renewable energy. Some, like HICL for example, are substantially invested in other utility stocks, such as Affinity – a leading water company.

Brief summaries of these quoted infrastructure companies are set out below:



3i Infrastructure (market cap. £2.76bn)

3i Infrastructure is currently invested in 27 separate assets – less than one quarter of the number of HICL's investments. The sector valuation breakdown is 33% in utilities, with its Infinis stake being key, 23% in communications and 20% in transport. In terms of markets, 3i Infrastructure's portfolio is split between mainland EU, with 65%, and the UK, with 34%.

The latest NAV figure, as at December 2019, is estimated at 253p per share. For 2019/20, a dividend target of 9.20p per share has been set.



BBGI Sicav (market cap. £1.05bn)

Transport investment lies at the heart of BBGI's long-term infrastructure investment strategy – it accounts for half of its portfolio. Investment in health infrastructure is also an important component. Canada and the UK are BBGI's chosen markets – with around a third of its fund assets in each country.

The latest NAV was £858m, equivalent to 136.2p per share. BBGI is also on course to pay a 7p dividend per share for 2019, with a 7.18p per share target for the current financial year.



GCP Infrastructure (market cap. £1.12bn)

GCP Infrastructure is focused primarily on financing infrastructure debt in the UK, effectively its sole market. Its 50-asset portfolio is well-diversified, although renewable energy infrastructure financing has become the dominant element. Indeed, this latter sector complements GCP's policy of investing in those infrastructure projects with long-term, public sector-backed and availability-based revenues.

Its latest NAV is 109.58p per share. A quarterly dividend of 1.9p per share has been paid for numerous quarters, making a total annual payment of 7.6p per share.



HICL (market cap. £3.31bn)

HICL is the largest of the quoted infrastructure funds, with a focus on public-private partnerships and regulated assets. Education, transport and health investment feature prominently in HICL's extensive portfolio, which comprises 116 investments. In terms of overseas markets, HICL operates in six different countries – but the UK remains key.

The latest NAV figure is £2,970m, equivalent to NAV per share of 157.8p, subsequent to which HICL has undertaken two equity issues raising a total of £117m. A 2.06p quarterly dividend per share is being paid for the current year.



INPP (market cap. £2.70bn)

INPP invests in public sector and social infrastructure projects. However, energy transportation, especially of gas, along with transport schemes, have become INPP's dominant sectors, although investment in education facilities also features. Just over 70% of INPP's assets are UK-based.

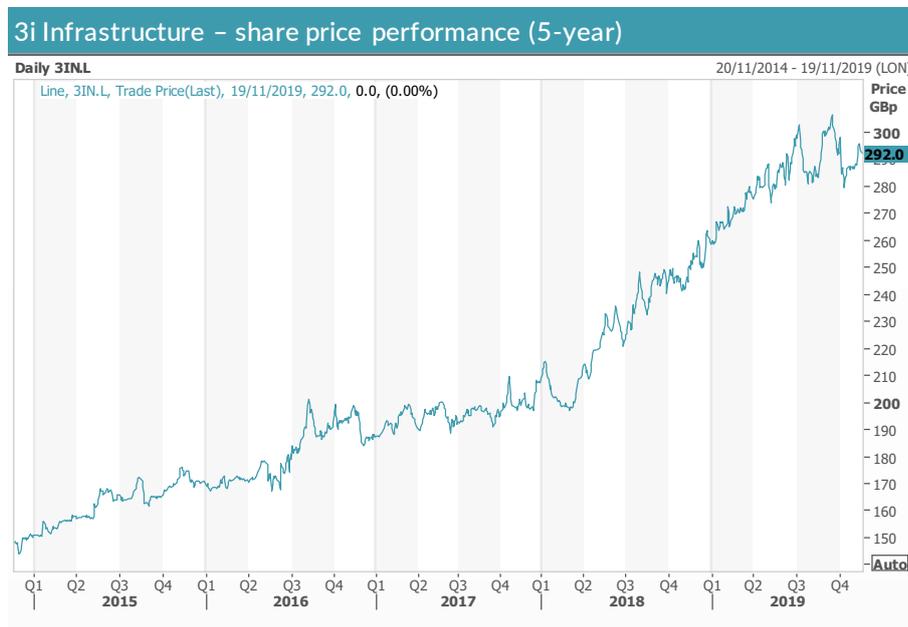
The latest NAV figure, as at June 2019, was £2,232m, equivalent to 150.3p per share. An interim dividend of 3.59p per share is being paid this year, with a 7.18p per share dividend anticipated for the full year.

The table below shows the latest published NAVs – based on differing valuation methodologies and varying dates – for each of these five funds, along with the relevant premium.

Latest NAV data						
	NAV per share (p)		Share price (p)		Premium/discount to NAV	
3i	253	√	310	=	+23%	
BBGI	136	√	166	=	+22%	
GCP	110	√	128	=	+16%	
HICL	158	√	178	=	+13%	
INPP	150	√	167	=	+11%	

Source: Hardman & Co Research

In the case of 3i Infrastructure, its five-year share price performance has been very robust, as the graph below demonstrates.



Source: Refinitiv

Wider diversification

The larger infrastructure funds have far greater diversification, which limits their exposure to any single adverse event, such as HICL's failed investment in Carillion. Nonetheless, several have invested heavily in the controversial PFI and related schemes, whose standing has been badly impaired by the collapse of support service companies such as Carillion and Interserve.

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Labour and PFI

In fact, the current government has cut back sharply on this method of financing public sector construction projects. Since the Labour Party was heavily defeated at the last General Election, its trenchant views on PFI and related financing structures are somewhat academic.

The HS2 project – under the deepest of reviews

Several infrastructure funds are exposed – directly or indirectly – to the highly controversial and desperately expensive - £80bn-£88bn – High Speed 2 (HS2) railway project.

Given its soaring costs and highly questionable cost/benefit returns, the government has announced an urgent inquiry, which will recommend the way forward for HS2.

HS2 options

Among the most widely canvassed options are:

- ▶ the scrapping of the entire HS2 project;
- ▶ the identification of a new London railway terminal, nearer Heathrow and away from Euston;
- ▶ the removal of the planned branch to Leeds;
- ▶ re-positioning the construction programme to the north – specifically to Manchester – and reversing the current build-out plans that are due to begin in London;
- ▶ a relentless focus on construction cost savings;
- ▶ the reduction of planned maximum speeds, which would yield substantial savings on the cost of the rolling stock.

Oakervee report is key

Against this background of profound uncertainty, it is no surprise that the infrastructure fund sector is eagerly awaiting the recently elected government's response to the Oakervee Report regarding the future of the HS2 project.

Appendix 3

Questions

We list below various questions that might reasonably be asked of the Directors of REIFs.

- ▶ How is your NAV calculated?
- ▶ Do you make any adjustments to your NAV for significant sector-related transactions?
- ▶ What is your leverage policy for valuation purposes?
- ▶ What is the blended discount rate that you use for your NAV calculations?
- ▶ Are you exposed to any political or regulatory risk?
- ▶ How vulnerable are you to upward movements in interest rates?
- ▶ What percentage of your revenues is subsidy-driven?
- ▶ How do you account – in valuation terms – for “tuck-in” acquisitions?
- ▶ Which overseas markets do you see as the most attractive for REIF investment – and why?
- ▶ What is your target annual fund growth rate?
- ▶ What percentage of your revenues is covered by PPAs?
- ▶ What long-term power price assumptions are used in your NAV calculations?
- ▶ What is your long-term dividend policy?
- ▶ How damaging is the 2017 closure of the RO for new investment?
- ▶ Are you planning any extension to your asset lives?
- ▶ What long-term inflation assumption do you use for valuation purposes?

About the author

Nigel Hawkins is the Renewables sector analyst at Hardman & Co.

Nigel Hawkins is responsible for analysing the UK Utilities, including those privatised in the 1980s and 1990s, as well as newer arrivals in the sector. He has been involved in the Utilities sector since the late 1980s, as a feature writer at Utility Week magazine and as an analyst at Libertas Capital, which specialised in the renewable energy sector. Prior to that, he was the Telecoms analyst at Williams de Broë. Between 1989 and 1995, he worked at Hoare Govett as the Water and Electricity sector analyst.

Between 1984 and 1987, Nigel was the Political Correspondence Secretary to Lady Thatcher at 10 Downing Street.

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Notes

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