

# DECISIONS FOR INFRASTRUCTURE AND RENEWABLE ENERGY INVESTORS IN VOLATILE MARKETS RESILIENT IICS AND CASH-CONSOLIDATING REIFS



### Table of contents

Executive summary	3
nfrastructure/Renewable Energy Funds	
Background	
NAVs	
Dividends	9
Politics	
Energy prices	
Other renewable energy issues	
Conclusion	
About the author	<sup> </sup> 14
Disclaimer	15
Status of Hardman & Co's research under MiFID II	15



#### **Executive summary**

- ▶ Since the start of 2024, the share prices of the nine Infrastructure Investment Companies (IICs) and of the 22 Renewable Energy Infrastructure Funds (REIFs) have been, generally, uninspiring and have failed to recover the losses of 2023. The sharp rise in interest rates from 2021 has undermined the sector, especially since the yield on "risk-free" 10-year gilts has risen appreciably.
- ▶ The change of government in the UK will also have some implications for the sector, with some relaxation expected of planning approvals for new onshore wind and solar plants in England. Moreover, with inflation now back within its prescribed 2% target, further interest rate cuts by the Bank of England are widely expected, which once implemented seem likely to boost sector valuations.
- As such, the NAVs of many stocks may rise, as lower discount rates are applied. Even so, 3i Infrastructure has managed to grow its NAV during 2023/24 it rose from 336.2p per share to 362.3p per share. Less successfully, SEEIT's NAV fell by almost 10% in 2023/24 from 101.5p per share to 90.5p per share.
- ▶ Perhaps inevitably, there have been sector casualties, mainly on the back of adverse continuation votes. Asian Energy Impact, whose shares due, principally, to the controversial RUMS generation project in India were suspended for almost 11 months, is being liquidated. Aquila Energy Efficiency, Digital 9 Infrastructure and Triple Point Energy Transition are being wound down.
- ➤ Currently, all 30 stocks Asian Energy Impact's share listing has now been removed are trading at a discount to their NAV. The average IIC is trading at a 23% discount (on an unweighted basis) to its NAV; the comparable discount (also on an unweighted basis) for the REIFs is now 32%. Not surprisingly, there are now several share buyback programmes under way.
- ▶ For the sector's two bellwether stocks, the dividend record is fine 3i Infrastructure is projecting a 6.3% rise per share in 2024/25, while Greencoat UK Wind's recent dividend record has impressed. For many others, maintaining dividends, in nominal terms, has been a challenge. In HICL's case, it has flagged a very modest nominal dividend increase for 2025/26, its first since 2018/19.
- ▶ Dividend payments have also been effectively suspended for most of this year at least by Gresham House Energy Storage and Harmony Energy Income, the two GB-exposed Battery Energy Storage Systems (BESS) stocks. The former's deep profit-warning announcement in early February shocked the BESS subsector it still has to recover.
- ▶ The average prospective dividend yield (on an unweighted basis) for the IICs is currently 5.6%; the comparable figure (also on an unweighted basis) for the REIFs is 6.6%. The latter yield reflects both the sharp decline in recent months of the share prices of many REIFs, along with the probable passing of a 2024 dividend by two BESS stocks.



## Infrastructure/Renewable Energy Funds

#### **Background**

Pre-COVID-19 optimism has dissipated

Within the 31-strong Infrastructure Investment Companies (IICs) and Renewable Energy Infrastructure Funds (REIFs) sector, most of the constituents have floated within the past decade, with many IPOs undertaken in the lead-up to COVID-19. Subsequently, however, it has been distinctly quiet on the IPO front, as sector NAVs have fallen back, due in part to higher interest rates.

Retrenchment prevails

Indeed, sector fundraising, via the equity markets, has been minimal of late. Instead, for the IICs, consolidation has been to the fore; although, HICL did confirm disposals of £509m during 2023/24. And, for most REIFs, retrenchment has been the order of the day – share buybacks have been very popular among the leading stocks.

In short, this reversal has seen much of the optimism of the early 2020s drained from the sector, as the pronounced premia over NAVs, at which most stocks then traded, were substantially reined in. Whereas, previously, the market, on the whole, was very welcoming of fundraises, this is no longer the case, with few of the 31 stocks under review seeking – actively at any rate – to raise new funds.

Share buybacks now all the rage

Instead, the focus has moved to share buybacks, which have been undertaken by many of the leading REIFs, including Foresight Solar, Greencoat Renewables and Greencoat UK Wind. In the latter's case, in recent months, it has bought back 32m shares, at an average cost of 140p per share.

Resilient stocks

The larger IICs, such as 3i Infrastructure – the sector's outlier – and BBGI, continue to prosper, albeit at rather lower valuations. Similar comments apply to HICL, despite flat dividends since 2018/19, and INPP. The two largest REIFs, Greencoat UK Wind and TRIG, are also well-placed; especially the former, despite its 1H'24 generated output being 15% below budget. Other less mature REIFs continue to struggle, though.

Heavy discounts in some cases

Clearly, the substantial discounts to NAV at which some stocks are trading, notably those applying to Digital 9 Infrastructure, Gresham House Energy Storage, and HydrogenOne Capital Growth – at more than 50% discounts in each case – sum up the poor market sentiment. Rising interest rates, and their impact in driving up discount rates, have undoubtedly cut valuations, a scenario to which markets have reacted accordingly.

There have been casualties

Importantly, there have been sector casualties, following continuation votes that failed to secure approval from disenchanted shareholders.

Asian Energy Impact falls – due to RUMS

The most egregious case has been that of the renamed Asian Energy Impact. Its shares had been suspended since 24 April 2023, pending resolution of various accounting issues relating to its operations in India. Eventually, the suspension was lifted in March 2024, but it was reimposed some seven weeks later. Subsequent company resolutions have led to its planned liquidation. Clearly, it has not been possible to resolve the complex – and controversial – issues relating to the planned – and ill-fated – RUMS' generation investment project and its financing.



Others winding down

Two other REIFs - Aquila Energy Efficiency and Triple Point Energy Transition - are in the process of being wound down. Both have suffered from the inability to find suitable investments - which were capable of generating decent returns - in their respective fields. As such, their assets are being sold off; in both cases, the slow investment level in recent years will facilitate this process.

By contrast, SEEIT, which is also seeking to sell off surplus assets - for the prime purpose of generating cash – is faced with a wide portfolio of assets, many of which are subject to detailed contractual obligations. In fact, SEEIT has managed to sell its recently acquired United Utilities Renewable Energy business at a price that broadly equated to that paid on its acquisitions in 2022.

Digital 9 sells Verne Global - the eagerly awaited completion confirmed on RNS

Among the IICs, Digital 9 Infrastructure struggled to sell its core Verne Global business, completion of which was finally confirmed in a pivotal RNS announcement in March 2024. It is now engaged in selling off its remaining assets - a sad end to the dreams that its founders cherished when undertaking its IPO in March 2021 and subsequently raising more than £900m of equity funds.

Continuation votes to the fore

Continuation votes that have been lost have led to the casualties described above. Other such votes are planned over the next few months, although they should not be a major concern to those funds that have performed comparatively well.

Even Greencoat UK was a target

Even Greencoat UK Wind, the REIF sector bellwether, faced a continuation vote at its AGM in April 2024: 11% of its shareholders voted against it. For those REIFs, with larger discounts to NAV, the number of dissentients may be somewhat higher. a scenario that may concern JLEN, which will face a continuation vote later this year.

#### Recent share price performance

In general, the well-established IICs, excepting the telecoms element, have fared rather better than many REIFs over the past year. Many IICs have seen a steady and resilient performance - Digital 9 Infrastructure excepted; few REIFs can boast of a similar performance of late.

Interest rate cuts expected

Of course, the current UK interest rate environment has been a pivotal factor, with investors eagerly awaiting cuts in interest rates, which are probable once the Bank of England has been persuaded that inflation has been tamed - and can track the prescribed 2% annual increase.

The sector's habitual outlier

More specifically, 3i Infrastructure, the sector's habitual outlier, has outperformed all other stocks, increasing by ca.12% during the past year. The graph, below, highlights its solid performance over the past 12 months.



August 2024 5



The Digital 9 plunge

Aside from Asian Energy Impact's entry into liquidation, the most pronounced sector share price decline over the past year – by 63% – has been that of Digital 9 Infrastructure. Clearly, having raised over £900m of new equity in a short period of time, it expanded far too quickly before being forced to sell off its prime asset, Verne Global – a deal that was eventually closed in March 2024.

Digital 9 Infrastructure's one-year share price graph, below, highlights its rather unedifying struggles.

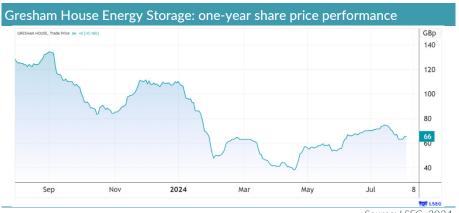


Source: LSEG, 2024

Gresham's profit warning derails the BESS cheerleaders

Within the REIF sector, and more specifically within the BESS subsector, the dramatic profit warning in February 2024 – due. primarily. to revenue shortfalls – by Gresham House Energy Storage has seen its share price plunge: the shares are down by 51% over the past year. The other GB-based BESS, Harmony Energy Income, has also seen its share price fall back sharply – just as its new capacity was coming on stream. Its shares have declined by 45% in the past year. Neither stock is expected to pay a significant dividend during 2024.

One-year share price graphs covering both funds are reproduced, below:



Source: LSEG, 2024





Source: LSEG, 2024

All stocks trading a discount to NAV – some sharply so

For all IICs/REIFs – with the exceptions of 3i Infrastructure, BBGI and Greencoat UK Wind – the likelihood, for the moment at least, of their shares trading at a premium to their NAV is slim. Undoubtedly, the advent of higher interest rates – and their impact on long-term valuations – has adversely affected NAVs. While, previously, many IICs and REIFs had traded at a premium to their NAVs – for much of 2021, for example, BBGI's premium exceeded 20% – all are now trading at substantial discounts.

#### **NAVs**

Some modest NAV increases

The recent release of NAV data in recent months has shown an overall, albeit generally modest, reduction for most stocks. There have been some resilient performances among the IICs, with 3i Infrastructure increasing its NAV at March 2024 to 362.3p per share; this compares with 336.2p per share at March 2023, equivalent to a 7.8% increase over the year. Sequoia Economic Infrastructure has also seen a modest rebound, with NAV at June 2024 of 95.3p per share: at June 2023, the figure was 93.7p per share.

However, the general trend has been down, with various factors being cited; most notably, the adverse impact on valuation of a higher discount rate.

Gore Streets's volatile discount rate

Such a scenario is illustrated by Gore Street Energy Storage. Its recent results confirmed that its discount rate had risen sharply from 8.3% in 2021/22 to 10.2% in 2023/24.

Furthermore, in the case of the REIFs, energy price movements have been a key factor as valuation adjustments have been made to reflect recent price changes.

In some cases, major downgrades have occurred, most obviously with Asian Energy Impact. SEEIT, too, has seen a sharp reversal in its NAV, which fell from 101.5p per share to just 90.5p per share between March 2023 and March 2024 – equivalent to a 9.9% fall over the year.

Latest data on NAV trading discounts

The table, below, shows the latest NAV data. All stocks under review are currently trading at a discount to their NAV; furthermore, some sector constituents are now trading at a discount of more than 40%.



Current market ratings of UK IICs									
	Share								
	price	Shares in	Market cap		NAV per	Premium vs.	Prosp.	Prosp.	
IIC	(p)	issue (m)	(£m)	Year-end	share (p)	discount	dividend (p)	yield	
3i Infrastructure	349	922	3,219	March	362.3	-3.7%	12.65	3.6%	
BBGi	139	715	994	December	147.8	-6.0%	8.40	6.0%	
Cordiant Digital	77	766	590	March	120.1	-51.8%	4.20	5.5%	
Infrastructure									
Digital 9 Infrastructure	22	865	190	December	79.3	-45.4%	0.00	0.0%	
GCP Infrastructure	83	868	720	September	107.6	-22.9%	7.00	8.4%	
HICL	123	2,020	2,485	March	158.4	-22.3%	8.25	6.7%	
INPP	131	1,910	2,502	December	152.6	-14.2%	8.37	6.4%	
Pantheon Infrastructure	84	469	394	December	109.0	-27.3%	4.20	5.0%	
Sequoia Economic	81	1,590	1,288	March	95.3	-15.0%	6.88	8.5%	
Infrastructure									
			12,382						

Source: Hardman & Co Research

Current market ratings of UK REIFs								
REIF	Share price (p)	Shares in issue (m)	Market cap (£m)	Year-end	NAV per share (p)	Premium vs. discount	Prosp. dividend (p)	Prosp. yield
	( <b>p)</b> 58	82	(£III) 48	December	94.3	-38.5%	0.00	0.0%
Aquila Energy Efficiency	58 55	378	210		74.3 78.5	-38.5% -29.4%	4.86	8.8%
Aquila European Renewables			210	December December	0.0	0.0%	0.00	0.0%
Asian Energy Impact – DELISTED	0	0	U	December	0.0	0.0%	0.00	0.0%
Atrato Onsite Energy	68	150	102	September	135.9	-50.0%	5.50	8.1%
Bluefield Solar	108	601	649	June	135.9	-20.5%	8.80	8.1%
Downing Renewables and	79	175	138	December	117.7	-32.9%	5.80	7.3%
Infrastructure								
Ecofin US Renewables	39	138	54	December	66.5	-41.4%	2.18	5.6%
Infrastructure								
Foresight Solar	89	571	508	December	118.4	-24.8%	8.00	9.0%
Gore Street Energy Storage	61	505	308	March	107.0	-43.0%	7.00	11.5%
Greencoat Renewables (ex €)	75	1,130	845	December	94.2	-20.6%	5.66	7.6%
Greencoat UK Wind	140	2,280	3,192	December	159.3	-12.1%	10.00	7.1%
Gresham House Energy	63	569	358	December	130.6	-51.8%	0.00	0.0%
Storage								
Harmony Energy Income	52	227	118	October	96.2	-45.9%	0.00	0.0%
HydrogenOne Capital	50	129	64	December	103.6	-51.7%	0.00	0.0%
Growth								
JLEN	95	662	629	March	113.6	-16.4%	7.80	8.2%
NextEnergy Solar	83	589	489	March	104.7	-20.7%	8.43	10.2%
Octopus Renewables	74	562	416	December	103.9	-28.8%	6.02	8.1%
SEEIT	64	1,092	699	March	90.5	-29.3%	6.32	9.9%
TRIG	100	2,490	2,490	December	127.7	-21.7%	7.47	7.5%
Triple Point Energy Transition	69	100	69	March	86.7	-20.4%	5.50	8.0%
US Solar	36	308	110	December	60.1	-40.3%	1.76	4.9%
Victory Hill GSEO	75	402	302	December	116.0	-35.3%	5.68	7.6%
•			11,797					

Source: Hardman & Co Research



#### **Dividends**

Dividends are stretched

Despite the relative lack of growth in NAVs, dividend payments – at least in nominal terms – remain robust, with some noticeable exceptions. The focus, however, is increasingly falling on dividend affordability, so that dividend cover announcements have become more prominent.

3i Infrastructure tops the list - again

In terms of the IICs, the most impressive dividend payer remains 3i Infrastructure, which is projecting a 12.65p dividend per share for 2024/25, a 6.3% increase over its 2023/24 payment. With the exception of Digital 9 Infrastructure, which is being wound down, most of the other members of the IIC sub-group are forecasting higher dividends in nominal terms. The exception is GCP Infrastructure, whose dividend payment seems destined to remain at 7p per share for the foreseeable future.

And, after a six-year hiatus, HICL's dividend is – at last – due to rise

Interestingly, HICL is forecasting a higher dividend of 8.35p per share in 2025/26, after six years of its dividend being seemingly marooned – like a government gilt – at 8.25p per share.

Greencoat UK Wind's RPI-related dividend uplift

Within the REIFs, Greencoat UK Wind's dividend payments have out-distanced its peers – and it even retained its RPI-related dividend policy, despite the surge in UK inflation during the post-COVID 19 period. In recent weeks, Greencoat UK Wind has confirmed its ongoing dividend policy, whereby its dividend per share rises "in line with RPI inflation". This could be an expensive pledge if inflation takes off once again.

Dividend cuts in the sector have been few

Excluding HydrogenOne Capital, which does not pay dividends, Aquila Energy Efficiency and Digital 9 Infrastructure, as well as discounting Asian Energy Impact, there are several funds which are unable – for varying reasons – to raise their dividends. Dividend cuts, though, have been relatively few.

BESS dividends are dropped

Neither of the GB-based BESS stocks – Gresham House Energy Storage and Harmony Energy Income – is expected to pay a dividend this year, although the latter may review its policy in coming months. The revenue shortfalls, highlighted by Gresham House Energy's profit warning in February 2024, abide. The third BESS stock, Gore Street Energy Storage, operates mainly on the island of Ireland and is less affected by the BESS revenue issues in GB: its finances are driven by two key plants in Northern Ireland.

Both US stocks struggle

The two US-based REIF stocks have not fared particularly well either. Ecofin US Renewables halved its quarterly payment per share for 2Q'23, following tornado-related damage to a nearby electricity substation in Texas, which its key 60MW Whirlwind windfarm uses to transmit its generated output. This reduced divided was replicated in 3Q'23 and in 4Q'23.

US Solar, too, has undertaken various initiatives as it seeks to release value for its discontented shareholders: the latest full-year dividend forecast is for just \$2.25 per share.

Prospective yields –5.6% for IICs and 6.6% for REIFs

In terms of prospective dividend yields, on an unweighted basis, the IIC subsector currently averages 5.6%. The comparable figure for the REIFs, also on an unweighted basis, is 6.6%.

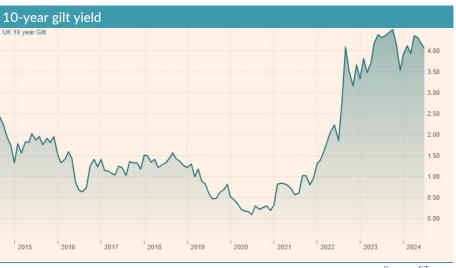
#### Gilt yields assume interest rate cuts

#### 10-year gilts

When assessing IIC/REIF sector yields, they should be compared with those currently available on 10-year "risk-free" gilts, which have risen sharply since 2021 on the back of higher interest rates.

The graph, below, published by the Financial Times, sets out how the pivotal 10-year gilt yield has increased in recent years, after a lengthy period of very low yields, when interest rates were far lower.





Source: FT.com

#### **Politics**

Labour's crushing win in July

In July 2024, the UK General Election was held, resulting in a huge Labour Party majority, which overturned the substantial Conservative Party majority achieved in 2019. The former won no less than 411 seats, compared with 209 seats in the 2019 equivalent. The disastrous Conservative Party performance saw its 365 seats in 2019 reduced to just 121 seats in 2024.

While the new Labour government is expected to introduce many changes, a few may impact the renewable energy sector and some, especially via greater use of a form of PFI covering public/private sector investment, may benefit IICs.

The key issues for the 31 stocks under review, in terms of political changes, are:

- ▶ The placing of greater reliance on renewable energy generation in the quest to achieve net zero by 2030 a key Labour Party policy. The new Hinkley Point C nuclear plant should have been commissioned by 2029, but a very sharp increase in renewable generation is required if the Labour government is to achieve its highly ambitious net zero target.
- ▶ The impact of the new publicly owned Great British Energy, which is set to become more closely associated with the Crown Estate; the latter owns vast swathes of coastal land and foreshore. The overall aim would be to stimulate offshore wind generation investment, a sector where the UK is already a world leader.
- ▶ Major planning changes are set to be introduced, especially to enable more houses to be built. Furthermore, a removal of some of the existing constraints on the building of onshore wind and solar generation plants should be expected. The West Lancashire and East Yorkshire coasts are well-placed to attract new onshore wind generation investment. Whether such investment can deliver an acceptable return on an unsubsidised basis is debatable.
- ▶ In financing major public sector investment, more use may be made of the Private Finance Initiative (PFI) and similar public/private sector financing schemes. Among the quoted IICs, BBGI, HICL and INPP would be potential beneficiaries.



#### **Energy prices**

Gas prices way off 2022 spring peak

Wholesale gas prices, both within the EU and in the UK, soared in the latter part of 2021 – and increased even further following the invasion of Ukraine by Russia.

Substantial boost to LNG deliveries

However, over the past 18 months, gas prices have fallen sharply, as the demand for gas has faltered and various alternative gas supplies, especially imported Liquid Natural Gas (LNG) deliveries, have been secured. As a result, a new relative stability has been established, despite the ongoing Ukraine/Russia conflict.

In fact, with the exception of GCP Infrastructure, which operates wind and solar plants, and Pantheon Infrastructure, long-term energy prices have a minor influence on the activities – and the valuation – of the other seven IICs.

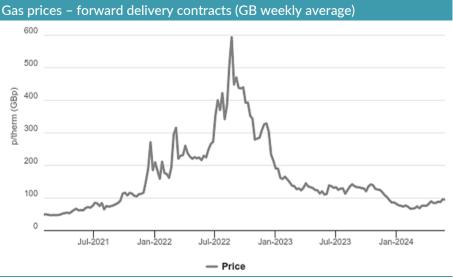
For the REIFs, very different criteria apply. Changing energy prices have an impact on revenues from merchant sales – a small part of most leading REIFs' revenues.

Changing energy prices and the valuation impact

However, long-term energy prices, in which gas input costs remain a key variable, are a central part of the underlying valuation appraisal. Over the past three years, changing energy price assumptions, along with adjustments to the prescribed discount rate, have been major drivers of NAV valuations – not forgetting their impact on dividend growth potential.

Quite remarkable volatility of the gas price

Ofgem's latest graph for the forward delivery of gas in GB is reproduced below. Despite a period of stability over the past 18 months, the volatility of gas prices since the early months of 2021 has been quite remarkable.



Source: Ofgem

Downing's figures - up to 2060

Looking forward, there is considerable disagreement about long-term energy prices. Interestingly, at its recent Capital Markets' Day Presentation, Downing Renewables and Infrastructure published a graph that indicated a forecast reduction of energy prices from £75 per MWh in 2030 to £60 (real) per MWh in 2050: the figures were based on data compiled by leading industry consultants.

The graph is shown overleaf.





Source: Downing Renewables and Infrastructure

#### Other renewable energy issues

Aside from the issues already addressed in this research paper, there are some further developments that should be noted:

- ► Government announcements on planning issues covering new potential wind and solar plants are expected. Recently, the highly controversial go-ahead for the £600m Sunnica solar farm covering some 2,500 acres on the Cambridgeshire/Suffolk border was given, overturning a previous ruling.
- ▶ Various continuation votes have recently taken place and others are due shortly. While in a minority of cases Aquila Energy Efficiency, Asian Energy Impact, Digital 9 Infrastructure and Triple Point Energy Transition shareholders have voted against continuation, the majority of such motions, including that covering the thriving Greencoat UK Wind, have failed. Even JLEN, which can boast of a decent record since its IPO in 2016, is facing a continuation motion in the coming months.
- ➤ SSE, the UK's largest renewable energy company with ca.4.5GW of renewable capacity, has recently confirmed that its 1Q'24 renewables generation output was up by 60% when compared with the equivalent 1Q'23 figure.
- ► The proposal by Octopus Renewables Infrastructure to merge its business with that of Aquila European Energy has been declined by the latter. Further such merger initiatives within the REIF sector should be expected.
- ▶ While there have been several renewable plant transactions in recent months some euphemistically described as "capital recycling" Victory Hill GSEO's recent acquisition announcement merits further comment. It is planning to buy, as a Phase 1 initiative, three solar and two wind generation assets, mainly in Spain and Portugal, with a total capacity of almost 60MW. Phase 2 envisages a considerably larger portfolio of renewable power acquisitions.

Ongoing PFI/energy issues



#### Conclusion

The interest rate driver

There is no doubt that the sudden increase in interest rates since 2021 – and not only in the UK – has presented both IICs and, more noticeably, the REIFs with real challenges. To be sure, gearing levels, with a few exceptions, remain quite modest – and certainly compared with many private equity undertakings. Nonetheless, capital allocation has certainly become more of a priority of late.

Long-term contract protection is key for IICs

For many IICs, with a portfolio of solid contracts, the impact of higher interest rates has been less – although it has dented their valuations.

For the REIFs, the challenges are greater for wind and solar generators operating in a market where prices fluctuate quite markedly, even if long-term energy price projections are less volatile. Some of the smaller REIFs are really struggling, for varying reasons, as their shareholders seek improved returns.

The gilt market has its attractions

Nonetheless, real reassurance for most investors has been provided by the reliability – with a few exceptions, especially in the BESS sector – of dividend payments, even if any increases are nominal, rather than being real. However, in the quest for maximising financial returns, many investors will be more attracted – at current yields – to "risk-free" 10-year gilts rather than to IICs and REIFs.

Challenges

Undoubtedly, challenges on several fronts – commercial, operational, financial and even political post the recent change of government – abound.



#### About the author



#### Nigel Hawkins

Nigel Hawkins is the Infrastructure and Renewables Specialist at Hardman & Co.

Nigel specialises in the energy sector, with a particular focus on the expanding renewable generation market, both in the UK and overseas, about which he has written several reports assessing the sector's finances. He has been involved in analysing the utilities sector since the 1980s. He covered the privatisation of the water and electricity companies for Hoare Govett between 1989 and 1995. Subsequently, he researched the UK and EU telecoms sector for Williams de Broe.

He has also written many feature articles for Utility Week magazine since the mid-1990s. Between 1984 and 1987, Nigel was the Political Correspondence Secretary to Lady Thatcher at 10 Downing Street. Nigel joined Hardman & Co in February 2016. He holds a BA (Hons) in Law, Economics and Politics from the University of Buckingham, and is a senior fellow of the Adam Smith Institute.



#### Disclaimer

Hardman & Co provides professional independent research services and all information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable. However, no guarantee, warranty or representation, express or implied, can be given by Hardman & Co as to the accuracy, adequacy or completeness of the information contained in this research and they are not responsible for any errors or omissions or results obtained from use of such information. Neither Hardman & Co, nor any affiliates, officers, directors or employees accept any liability or responsibility in respect of the information which is subject to change without notice and may only be correct at the stated date of their issue, except in the case of gross negligence, fraud or wilful misconduct. In no event will Hardman & Co, its affiliates or any such parties be liable to you for any direct, special, indirect, consequential, incidental damages or any other damages of any kind even if Hardman & Co has been advised of the possibility thereof.

This research has been prepared purely for information purposes, and nothing in this report should be construed as an offer, or the solicitation of an offer, to buy or sell any security, product, service or investment. The research reflects the objective views of the analyst(s) named on the front page and does not constitute investment advice. However, the companies or legal entities covered in this research may pay us a fixed fee in order for this research to be made available. A full list of companies or legal entities that have paid us for coverage within the past 12 months can be viewed at <a href="http://www.hardmanandco.com/legals/research-disclosures">http://www.hardmanandco.com/legals/research-disclosures</a>. Hardman may provide other investment banking services to the companies or legal entities mentioned in this report.

Hardman & Co has a personal dealing policy which restricts staff and consultants' dealing in shares, bonds or other related instruments of companies or legal entities which pay Hardman & Co for any services, including research. No Hardman & Co staff, consultants or officers are employed or engaged by the companies or legal entities covered by this document in any capacity other than through Hardman & Co.

Hardman & Co does not buy or sell shares, either for their own account or for other parties and neither do they undertake investment business. We may provide investment banking services to corporate clients. Hardman & Co does not make recommendations. Accordingly, they do not publish records of their past recommendations. Where a Fair Value price is given in a research note, such as a DCF or peer comparison, this is the theoretical result of a study of a range of possible outcomes, and not a forecast of a likely share price. Hardman & Co may publish further notes on these securities, companies and legal entities but has no scheduled commitment and may cease to follow these securities, companies and legal entities without notice.

The information provided in this document is not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to law or regulation or which would subject Hardman & Co or its affiliates to any registration requirement within such jurisdiction or country.

Some or all alternative investments may not be suitable for certain investors. Investments in small and mid-cap corporations and foreign entities are speculative and involve a high degree of risk. An investor could lose all or a substantial amount of his or her investment. Investments may be leveraged and performance may be volatile; they may have high fees and expenses that reduce returns. Securities or legal entities mentioned in this document may not be suitable or appropriate for all investors. Where this document refers to a particular tax treatment, the tax treatment will depend on each investor's particular circumstances and may be subject to future change. Each investor's particular needs, investment objectives and financial situation were not taken into account in the preparation of this document and the material contained herein. Each investor must make his or her own independent decisions and obtain their own independent advice regarding any information, projects, securities, tax treatment or financial instruments mentioned herein. The fact that Hardman & Co has made available through this document various information constitutes neither a recommendation to enter into a particular transaction nor a representation that any financial instrument is suitable or appropriate for you. Each investor should consider whether an investment strategy of the purchase or sale of any product or security is appropriate for them in the light of their investment needs, objectives and financial circumstances.

This document constitutes a 'financial promotion' for the purposes of section 21 Financial Services and Markets Act 2000 (United Kingdom) ('FSMA') and accordingly has been approved by Capital Markets Strategy Ltd which is authorised and regulated by the Financial Conduct Authority (FCA).

No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, mechanical, photocopying, recording or otherwise, without prior permission from Hardman & Co. By accepting this document, the recipient agrees to be bound by the limitations set out in this notice. This notice shall be governed and construed in accordance with English law. Hardman Research Ltd, trading as Hardman & Co, is an appointed representative of Capital Markets Strategy Ltd and is authorised and regulated by the FCA under registration number 600843. Hardman Research Ltd is registered at Companies House with number 8256259.

(Disclaimer Version 8 - Effective from August 2018)

#### Status of Hardman & Co's research under MiFID II

Hardman & Co's research is paid for by the companies, legal entities and issuers about which we write and, as such, falls within the scope of 'acceptable minor non-monetary benefits', as defined in the Markets in Financial Instruments Directive.

The FCA Handbook (COBS 2.3A.19) states: 'An acceptable non-monetary benefit is one which:[...] (5) consists of: [...] (b) written material from a third party that is commissioned and paid for by a corporate issuer or potential issuer to promote a new issuance by the company, or where the third party firm is contractually engaged and paid by the issuer to produce such material on an ongoing basis, provided that the relationship is clearly disclosed in the material and that the material is made available at the same time to any firms wishing to receive it, or to the general public.'

The fact that Hardman & Co is commissioned to write the research is disclosed in the disclaimer, and the research is widely available.

