Quoted UK Infrastructure and Renewable Energy – Prospects for 2023

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Please note:

Closing stock market prices as at 31 December 2022 have been used, unless otherwise specified.

Exchange rates used are:

£ to € – €1.13

£ to US$ – US$1.21

£ to Brazil Real – Real6.25

In terms of the plant capacity figures cited in this publication, the data is based – with some adjustments – on information published by the relevant REIF. Plant under construction is generally excluded unless its commissioning is expected to have been undertaken prior to 31 December 2022.

Executive summary

- Hardman & Co Research's focus is on the nine quoted infrastructure investment companies (IICs) and on the 22 renewable energy infrastructure funds (REIFs), most of which have seen their share prices fall during 2022, while the FTSE-100 rose by just 0.9%. We update our publication of July 2022 and, in addition to assessing share price performances during 2022, we address the three key issues of recent months – higher inflation, extremely volatile power prices and rising interest rates.
- The stocks analysed are all members of the Association of Investment Companies (AIC). As a 31-strong group, their combined market capitalisation is currently £30.7bn. Aside from the planned IPO of AT85 Global Mid-Market Infrastructure, which is now not due to be completed until March 2023, no IIC/REIF IPOs have been undertaken since 2021.
- Within the 31-member grouping, the most valuable IICs are HICL Infrastructure and 3i Infrastructure – capitalised at £3.3bn and £3.0bn, respectively. The equivalent in the REIF sector are Greencoat UK Wind and TRIG, which are capitalised at £3.5bn and £3.2bn, respectively.
- Although many established funds have high inflation linkage, the inflation issue remains a real concern for many investors. In fact, IICs and REIFs, to varying extents, derive material benefits from higher inflation, providing – in an admittedly unlikely scenario – that it is not accompanied, in time, by higher interest rates.
- As expected, the sharp rise in interest rates of late has had distinctly negative NAV implications through higher fund discount rates; not surprisingly, share price ratings have fallen as a result. Plus, while many REIFs involved in renewable generation have the benefit of rising energy prices as an offset, this feature does not generally apply to IICs (GCP Infrastructure excepted).
- Soaring gas prices have had a pronounced upward impact on long-term REIF valuations since long-term power price assumptions are a key factor – along with discount rates – in determining the NAVs of most REIFs. The NAV volatility of Foresight Solar provides a telling illustration. It reported a 27.4% increase in its NAV between March 2021 and March 2022, while its September 2022 NAV was hit by an 8.6p per share decline due to the proposed Electricity Generator Levy (EGL), although the latter was broadly offset by other factors.
- Around 50% of the REIF sector's £16.1bn valuation is accounted for by wind power generation. Due to generous subsidies, the UK wind power sector has expanded; it now exceeds 25GW of capacity, while UK solar capacity is currently ca.15GW. The removal of subsidies for new solar plants from 2017 remains challenging, although unit costs have plummeted.
- Offshore wind power is booming. Given the sea change in costs, the government is seeking a quintupling of offshore wind capacity by 2030. The pivotal 2019 auction for the development of some North Sea sites saw several Contracts for Difference (CfDs) being awarded. The lowest, on the Dogger Bank, was struck at just £39.65p (2012 prices) per MWh, while an auction in July 2022 saw a record low price of just £37.35p per MWh.
- With rising interest rates, it is no surprise that the underlying premia over NAVs have, with a few exceptions, disappeared. Even BBGI, whose premium was ca.25% for much of 2021, is now trading at a premium of just 5.1%. And 3i Infrastructure's premium has now been substantially eroded. Shares in the two IIC digital stocks, Cordiant Digital and Digital 9, are now trading at discounts of 24.7% and 19.3%, respectively.

- For the REIFs, the standout performer in 2022 was Gresham House Energy Storage; its shares are currently trading – driven by winning T1 and T4 contracts in the recent capacity auction and by its very conservative 10.8% discount rate – at a 7.5% premium to its latest published NAV: its shares rose by a formidable 23.3% during 2022. By contrast, shares in HydrogenOne Capital and the struggling Aquila Energy Efficiency fell by 33.8% and 25.9% during 2022 – they are now trading at discounts to their NAVs of 18.1% and 27.2%, respectively.
- While all established IICs and REIFs have avoided nominal dividend cuts, any increases, with a few exceptions, have been modest. 3i Infrastructure, the dividend of which rose by 6.7% in 2021/22, is planning a similar rise in 2022/23, while Greencoat UK Wind, which links its dividend payments to movements in the RPI, has raised its payment by an impressive 7.5% for 2022. By contrast, HICL now seems set to pay the same dividend in nominal terms, namely 8.25p per share, for five successive years.
- Underlying prospective dividend yields for most established IICs and REIFs now lie within ranges of 4.5%-7.0% and 5.0%-6.5%, respectively. Lower dividend cover, however, has become a notable trend. GCP Infrastructure, HICL Infrastructure, NextEnergy Solar, and Sequoia Economic Infrastructure have been among those preferring to build up their cover by holding their dividend on a nominal basis. In the latter two cases, this policy has recently changed.
- Although no sector IPOs were completed in 2022, fundraising for the IICs and REIFs has continued in earnest – with Digital 9 Infrastructure, despite the tech sell-off in the US in 1H'22, being very much to the fore. There have been recent fundraising setbacks, most notably the pulling of Pantheon Infrastructure's planned £250m C-share issue and major shortfalls for equity issues by both Harmony Energy Income and ThomasLloyd Energy Impact. Overall, though, IICs and REIFs have raised ca.£10.2bn of new funds – at modest discounts to their prevailing share prices – since January 2020.
- Recent IPOs in the REIF sector have expanded well beyond the standard UK-based onshore wind and solar models of the past: Battery Energy Storage Systems (BESS) businesses, led by Gresham House Energy Storage and Gore Street Energy Storage, now feature more prominently. Furthermore, TRIG and the three quoted solar stocks are among the longer-established REIFs that have recently invested in BESS projects.
- While an Energy Profits Levy (EPL) was announced in 2022 – it is targeted at leading oil and gas producers – the EGL is also being introduced shortly. Long-established REIFs are adversely affected, although full details of the many proposed exemptions are still awaited. However, Bluefield Solar's 3Q'22 announcement concluded that the EGL would cut its NAV by 14.0p (gross) per share, but it was largely offset by reversing an 11.0p per share power price contingency figure set up previously.
- Three Environmental Trusts – Impax Environmental Markets, Jupiter Green and Menhaden Resource Efficiency – are also discussed briefly in this document. Along with the 31 IICs and REIFs, they lie within the AIC universe.

Current market ratings of UK IICs

IIC	Share price (p)	Shares in issue (m)	Market cap. (£m)	Year-end	NAV per share (p)	Prem./disc. to NAV (%)	Prosp. dividend (p)	Prosp. yield (%)
3i Infrastructure	333	891	2,968	Mar	325.8	2.2	11.15	3.3
BBGI	158	713	1,123	Dec	149.8	5.1	7.48	4.7
Cordiant Digital Infrastructure	85	774	654	Mar	107.5	-24.7	4.00	4.7
Digital 9 Infrastructure	87	865	750	Dec.	105.1	-19.3	6.00	6.9
GCP Infrastructure	102	885	903	Sep	112.8	-9.6	7.00	6.9
HICL Infrastructure	164	2,035	3,337	Mar	164.3	-0.2	8.25	5.0
INPP	152	1,910	2,899	Dec	157.3	-3.5	7.74	5.1
Pantheon Infrastructure	94	480	449	Dec	99.3	-5.8	2.00	2.1
Sequoia Economic Infrastructure	88	1,750	1,533	Mar	93.6	-6.4	6.57	7.5
Total			**14,617**					

Source: Hardman & Co Research

Current market ratings of UK REIFs

REIF	Quoted price	Exchange rate	Share price (p)	Shares in issue (m)	Market cap. (£m)	Year-end	NAV per share (p)	Prem./disc. to NAV (%)	Prosp. dividend (p)	Prosp. yield (%)
Aquila Energy Efficiency	71	1.00	71	100	71	Dec	97.9	-27.5	3.50	4.9
Aquila European Renewables	81	1.00	81	408	331	Dec	97.5	-16.9	4.64	5.7
Atrato Onsite Energy	95	1.00	95	150	143	Sep	92.8	2.5	5.00	5.3
Bluefield Solar	136	1.00	136	612	832	Jun	141.4	-3.8	8.40	6.2
Downing Renewables and Infrastructure	113	1.00	113	185	209	Dec	117.7	-4.0	5.00	4.4
Ecofin US Renewables	69	1.00	69	138	95	Dec	78.8	-13.1	4.63	6.8
Foresight Solar	118	1.00	118	610	720	Dec	125.6	-6.1	7.12	6.0
Gore Street Energy Storage	112	1.00	112	481	537	Mar	111.1	0.4	8.00	7.2
Greencoat Renewables	115	0.89	101	1,141	1,156	Dec	97.4	4.0	5.47	5.4
Greencoat UK Wind	153	1.00	153	2,320	3,538	Dec	155.0	-1.6	7.72	5.1
Gresham House Energy Storage	163	1.00	163	541	879	Dec	151.2	7.5	7.00	4.3
Harmony Energy Income	124	1.00	124	232	287	Oct	122.8	0.6	8.00	6.5
HydrogenOne Capital Growth	79	1.00	79	129	102	Dec	96.5	-18.1	0.00	0.0
JLEN	120	1.00	120	662	791	Mar	124.4	-3.9	7.14	6.0
NextEnergy Solar	111	1.00	111	590	655	Mar	122.9	-9.7	7.52	6.8
Octopus Renewables	101	1.00	101	565	568	Dec	110.3	-8.9	5.24	5.2
SEEIT	97	1.00	97	1,110	1,071	Mar	106.1	-9.0	6.00	6.2
ThomasLloyd Energy Impact	96	1.00	96	176	169	Dec	83.3	15.2	1.45	1.5
TRIG	131	1.00	131	2,480	3,236	Dec	134.3	-2.8	6.84	5.2
Triple Point Energy Transition	80	1.00	80	100	80	Mar	100.3	-20.7	5.50	6.9
US Solar	70	1.00	70	332	231	Dec	80.1	-13.2	4.61	6.6
Victory Hill GSEO	102	1.00	102	423	431	Dec	112.5	-9.3	5.00	4.9
Total					**16,130**					

Source: Hardman & Co Research

Overview of 2022

A mixed year overall

Undoubtedly, 2022 was a mixed year at best for the 31 quoted IICs and REIFs that are being reviewed. During 2022, the FTSE-100 Index rose by 0.9%, while – over the same period – the FTSE-250 fell by almost 20%.

Lean year for fundraising

Since January 2020, the 31 funds have raised almost £10.2bn of proceeds. However, with no sector IPOs in 2022 – the AT85 Global Mid-Market Infrastructure IPO has been delayed until March 2023 – it came as no surprise that the amount of money raised was well down on the 2021 figure. In fact, a comparatively modest £2.3bn (excluding the planned AT85 Global Mid-Market Infrastructure IPO) of new equity was raised by the 31 funds.

Double-figure inflation, high interest rates…

Inevitably, the sector has been affected by both inflation – some IICs have very high inflation linkage – and rising interest rates, which put upward pressure on fund discount rates and ultimately depressed their NAVs.

…and soaring gas prices

Despite many long-term PPAs being in operation, the war in Ukraine, which has seen gas prices soar – although they have fallen back sharply of late – has had a major impact on some of the older established REIFs.

Dividends – no nominal dividend cuts

Furthermore, many funds, including HICL – expected to pay an 8.25p per share dividend for the fourth year in succession as well as in 2023/24 – held their dividend in nominal terms: none actually cut it during 2022, At the other end of the scale, Greencoat UK Wind increased its dividend by 7.5%, while 3i Infrastructure's dividend rose by 6.7%.

And the winner is… Gresham House Energy Storage – but only just

Within the 31 funds, the most impressive share price performance was reported by Gresham House Energy Storage, rising by 23.3% during 2022. Harmony Energy Income, boosted by the construction progress of its "shovel-ready" projects, and ThomasLloyd Energy Impact, with its substantial – and recently completed – SolarArise generation portfolio in India, reported similar share price increases over 2022.

While the losers are… HydrogenOne – with over a third of its value lost during 2022, followed by Aquila Energy Efficiency, Cordiant Digital Infrastructure and Digital 9 Infrastructure

By contrast, several of the more recently quoted REIFs failed to meet some of their shareholders' expectations. HydrogenOne Capital Growth, down by no less than 33.8% over the year, was – by some way – the worst performer. However, Aquila Energy Efficiency and the two leading digital players, Cordiant Digital Infrastructure and Digital 9 Infrastructure, all lost around a quarter of their value over 2022.

The table below highlights the share price performance of the 31 funds during the 2022 calendar year.

IIC/REIF share price performance over 2022

IIC/REIF	Share price performance over 2022
Gresham House Energy Storage	+23.3%
Harmony Energy Income	+23.2%
ThomasLloyd Energy Impact	+21.7%
Foresight Solar	+17.2%
JLEN	+13.9%
Bluefield Solar	+9.9%
Downing Renewables and Infrastructure	+9.7%
NextEnergy Solar	+9.0%
Greencoat UK Wind	+7.5%
Greencoat Renewables	+1.8%
TRIG	-3.3%
Gore Street Energy Storage	-4.7%
Aquila European Renewables	-4.8%
Victory Hill GSEO	-5.6%
3i Infrastructure	-5.9%
GCP Infrastructure	-5.9%
HICL	-6.9%
Octopus Renewables Infrastructure	-9.4%
BBGI	-10.5%
INPP	-10.5%
Pantheon Infrastructure	-10.9%
US Solar	-11.5%
Atrato Onsite Energy	-13.1%
Ecofin US Renewables Infrastructure	-13.1%
SEEIT	-17.9%
Sequoia Economic Infrastructure	-18.1%
Triple Point Energy Transition	-21.4%
Digital 9 Infrastructure	-24.2%
Cordiant Digital Infrastructure	-25.6%
Aquila Energy Efficiency	-25.9%
HydrogenOne Capital Growth	-33.8%

Source: Bloomberg

The UK macro environment

Key macroeconomic issues, as they relate to the UK economy, affect the IICs/REIFs 31 players to varying degrees; this document assesses their implications.

The energy price valuation driver

Across the REIF subsector, soaring energy prices – due predominantly to the Ukraine crisis – have benefited some REIFs of late, although energy prices have fallen sharply from their high points of just six months ago.

10%+ UK inflation

Undoubtedly, the energy crisis has been a major factor in recent inflation trends: the UK figure currently exceeds 10%. While such a figure is negative for many other sectors, banks being an obvious exception, many IICs and REIFs derive real benefit from such trends given that many of their revenues are effectively inflation-linked, especially those in the electricity and water sector.

INPP's 70%+ inflation protection

This high level of protection from inflation is illustrated by HICL and INPP: their inflation hedges are 80% and 70%, respectively. HICL has more than 100 assets while INPP is a major investor in the Thames Tideway sewerage scheme; it is also heavily involved in electricity transmission links to offshore wind farms.

Interest rate worm has turned

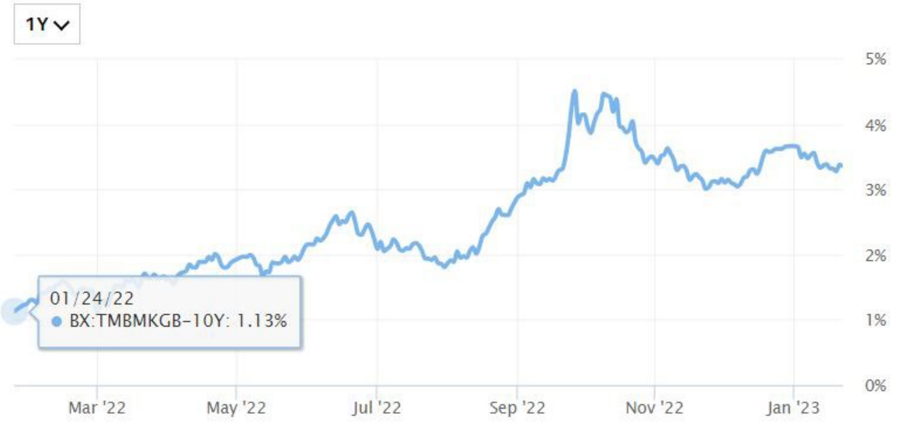
Hardly surprisingly, after a long and sustained period of low interest rates, the recent rise in interest rates has adversely affected some IICs and REIFs, including the two leading digital stocks – Cordiant Digital Infrastructure and Digital 9 Infrastructure – and other relatively highly geared funds. Against that background, fundraising becomes more challenging, especially for digital infrastructure businesses as the US technology boom faltered badly in 1H'22.

The sharpness of the interest rate upturn is illustrated by the yield on 10-year gilts over the past six months. Inevitably, it makes corporate bonds less attractive against gilts, unless the latter respond with materially higher returns.

September's shenanigans in gilts market

The graph below shows the recent trend for 10-year gilt yields and highlights the volatility during the autumn period of 2022.

Movement in 10-year gilt yields over one year



Source: https://www.barrons.com

Rising discount rates – HICL's 70bp UK increase

Of course, higher interest rates have driven up the discount rates of many IICs/REIFs. As such, their NAV valuations have fallen as future revenues are marked down in real terms value. Several IICs/REIFs have already responded, with HICL, for example, raising its discount rate from 6.6% to 7.1% over the past six months – the UK adjustment was no less than 70 basis points.

The UK mini-Budget, in November 2022, included many far-reaching tax changes, both on the personal and on the corporate fronts. The increase in the standard rate of Corporation Tax to 25% was well trailed.

Windfall taxes

The mini-Budget also addressed the widespread political demands for the imposition of a windfall tax, which had been imposed on the banks in the early 1980s when interest rates were very high, and in 1998 when the Labour Government justified the tax on the basis of a substantial undervaluation of utility assets at their privatisation.

The rate of the Energy Profits Levy (EPL), which was introduced in 2022 and applies to oil and gas extraction, was set at 25%: it will be imposed in addition to the standard 30% Corporation Tax and the existing 10% Supplementary Charge, thereby creating an investment-deterrent rate of 65%. Furthermore, it will now apply until March 2028. Its most obvious targets are the oil majors, Shell and BP, which – understandably – are now reviewing their long-term investment plans.

The EGL seeks to capture "extraordinary returns"

More specifically, further details have emerged regarding the proposed Electricity Generation Levy (EGL) – a form of windfall tax – that seeks to tax "extraordinary returns" from electricity generators. The impetus behind its implementation is the soaring cost of gas and the consequent surge in power prices that have particularly benefited electricity generators, including wind and solar generators in the REIF subsector.

While many details remain outstanding, it should be noted that the EGL will:

- tax wholesale market revenues exceeding £75 per MWh;
- exclude revenues covered by Feed-in-Tariffs (FiTs), Renewable Obligation Certificates (ROCs) and CfDs;
- grant an exemption threshold of £10m per year; and
- apply on a temporary basis.

Only the older REIFs may be affected

In effect, few REIFs will be adversely affected by these fiscal changes, especially given all the exemptions. It should only be the long-established wind- and solar-generating REIFs, such as Greencoat UK Wind, TRIG, Bluefield Solar, NextEnergy Solar and Foresight Solar.

Bluefield Solar's 14p (gross) NAV hit from EGL

In the case of Bluefield Solar, it has confirmed that the EGL would cause a 14p per share (gross) decline in its NAV – a sharp decline. However, by offsetting a power price contingency made previously, the net impact is a more modest 3.2p per share off its NAV. Indeed, it has published two NAV figures, as at the end of September 2022, namely 144.6p per share without the EGL and 141.4p with the EGL, as offset by the power price contingency. In coming weeks, the charging mechanism should become clearer, so that Bluefield Solar's initial figures may change.

Solid nominal dividends

For investors in IICs/REIFs, the recent environment has been relatively favourable, with solid dividends, albeit increasing in nominal – although not in real – terms. Many such stocks have missed out on the pronounced recovery seen in some sectors post the COVID-19 period.

Digital infrastructure becoming popular

It is significant that the 31 stocks under review have begun to diverge quite markedly. The larger IICs, such as HICL, BBGI and INPP, have a wider range of investments. More recently, digital infrastructure has proved popular despite the revenues being far less secure than those earned from government-backed PPI deals. The enthusiastic response to Pantheon Infrastructure's IPO – if not to its planned C-share issue, which was pulled – underlined this point. More recently, though, digital infrastructure offerings have generated less enthusiasm from investors.

Very different models

For the REIFs, the sector has moved well away from simply focusing on wind and solar power generation. Stocks, such as SEEIT, ThomasLloyd Energy Impact and Victory Hill GSEO have very different models from the conventional UK wind generation focus of Greencoat UK Wind.

23.3% increase in share price of Gresham House Energy Storage in 2022

Furthermore, investment in BESS offerings has become very popular of late, propelled – in part – by the spectacular share price of Gresham Energy Storage, the share price of which rose by a formidable 23.3% during 2022.

Infrastructure investment companies (IICs)

Nine IICs currently

Currently, there are nine quoted UK IICs; they are capitalised at a total of £14.6bn, with HICL Infrastructure, at £3.3bn, and 3i Infrastructure, at £3.0bn, being the most valuable in the sector. The expected newcomer to the IIC sector, AT85 Global Mid-Market Infrastructure, the IPO for which is not due to be completed until March 2023, is expected to be capitalised at just below £300m.

Core IIC grouping

The core IIC grouping consists of HICL, INPP and BBGI. HICL owns more than 100 assets across a wide range of sectors. INPP focuses more on the regulated energy and water sectors, while BBGI has a portfolio of low-risk assets in both the UK and in North America across many sectors, including roads and bridges.

Both the long-established GCP Infrastructure and the US-based Sequoia Economic Infrastructure are effectively major lenders. In the former's case, energy and PPP/PFI investments are key. In the latter's case, its lending is wide-ranging but, of late, it has struggled with three major bad debts, now in the process of being resolved, being to the fore.

3i Infrastructure – *sui generis*

The highly successful 3i Infrastructure is very much a one-off within the IIC subsector, with a higher risk profile and materially higher dividend growth.

The digital players

The four other stocks – all of which are recent sector arrivals – are very focused on the digital infrastructure market. In two cases, those of Cordiant Digital Infrastructure and Digital 9 Infrastructure, their core business is identifiable from their corporate names.

The Pantheon/AT85 pairing

For Pantheon Infrastructure, floated in 2021, and the expected newcomer, AT85 Global Mid-Market Infrastructure, their investment remits are wide-ranging, with digital and energy infrastructure investments being flagged as priorities. Both stocks have market capitalisations – in AT85 Global Mid-Market's case, this is a forecast – below our £650m threshold. Going forward, given their similar investment profiles in digital and energy markets, they seem likely to attract comparative valuations.

Shown below are the eight IICs with market capitalisations of more than £650m.

3i Infrastructure (market cap. £2,968m)

Investment sectors: 3i Infrastructure was demerged from the 3i Group in 2007. While 3i Infrastructure's investments are now wide-ranging, its focus lies on mid-market economic infrastructure investments – within a typical equity range of £100m to £300m. 3i Infrastructure periodically recycles its portfolio assets. In 2020, it sold its very profitable 93% stake in WIG and its UK Projects investments for a combined total of £581m – an illustration of its successful investment rollover strategy. More recently, the focus has shifted towards developing trends, namely energy transition and digitalisation.

Portfolio: 3i Infrastructure owns a portfolio comprising ca.20 investments. In terms of sectors, based on asset value, 42% of funds are invested in energy transition: the figures for digitalisation and globalisation are 25% and 18%, respectively. With the recently acquired full ownership (16.9% of which was subsequently syndicated) of ESVAGT, the latter became the largest single holding, at 14%, while the UK-based waste business, Infinis, accounts for a 10% share, along with the recently acquired GCX, global data communications business, and TCR (28% of whose shares are now syndicated), which focuses on airline service support. Regarding legal jurisdictions, 3i Infrastructure's assets are split quite widely throughout the EU and the UK, with the Netherlands, France and the UK – along with Belgium and Luxembourg – being the key markets for 3i Infrastructure.

Financial/share price data: 3i Infrastructure recently published its half-year results for 2022/23. The figures were generally good, with the NAV figure rising to 325.8p per share – up by 7.4% over the March 2022 figure. The once formidable cash balance has been eroded, on the back of substantial new investment, especially in the digitalisation sector. Furthermore, 3i Infrastructure re-confirmed its 11.15p dividend per share target for 2022/23, which represents an impressive 6.7% increase on the 2021/22 dividend per share. The latest income statement is shown in the table below.

3i Infrastructure – Half-year income statement, 2022/23

£m	to 30/09/2022	to 30/09/2021
Net gains on investment	296	244
Investment income	70	47
Fees payable on investment activities	0	(2)
Interest receivable	2	3
Investment return	368	292
Movement in FV of derivative instruments	(81)	(8)
Management, advisory and performance fees	(31)	(31)
Operating expenses	(2)	(2)
Finance costs	(5)	(1)
Exchange movements	(2)	0
Profit before tax	247	250
Income taxes	0	0
Profit after tax and profit for the year	247	250
Total comprehensive income for the year	247	250
EPS (basic and diluted, p)	27.7	28.0

Source: 3i Infrastructure, Hardman & Co Research

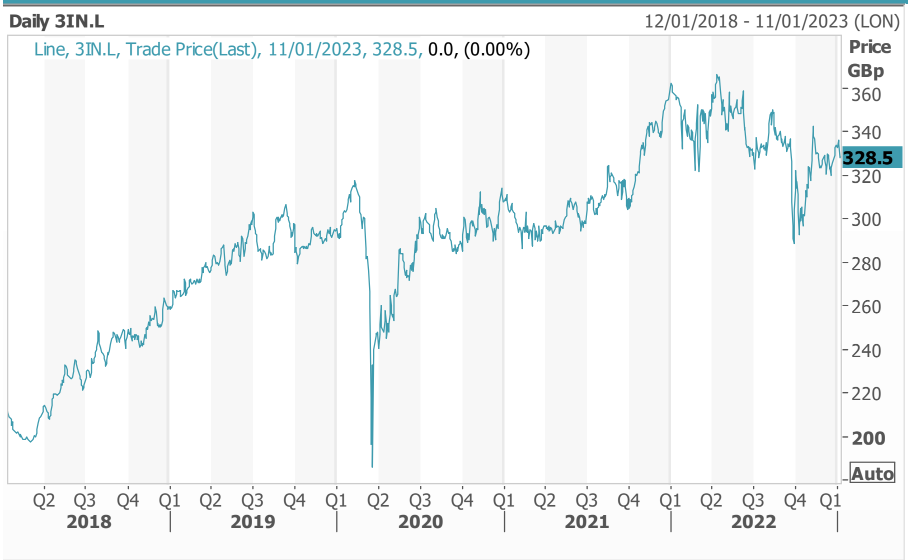
At the end of its 2021/22 half-year, 3i Infrastructure announced several substantial proposed investments, which – at that time – were outstanding. In the subsequent period, the following four major investments were completed.

- The acquisition, for $377m (£311m), of GCX, a leading global data communications service provider, with subsea fibre-optic networks.
- The increase of its 48% stake in TCR to 96%, at a cost of £334m; subsequently, 28% of TCR shares have been syndicated.
- The move to full ownership of ESVAGT, a service provider for offshore wind vessels, at an additional cost of £268m. Although this transaction has been completed, a 16.9% stake has subsequently been syndicated.
- A ca.£192m investment to secure a 92% stake in SRL Traffic Systems, a traffic management rental company; £83m of further debt financing is also being provided.

Given the considerable funds involved – more than 10% of 3i Infrastructure's current market capitalisation – the proposed GCX transaction, in particular, will be closely scrutinised by investors.

Nevertheless, long-term investors should have benefited from investing in 3i Infrastructure as the five-year graph highlights – its outperformance against the IIC sector has been noticeable.

3i Infrastructure – Five-year share price performance



Source: Refinitiv

BBGI (market cap. £1,123m)

Investment sectors: BBGI is a diversified social infrastructure company. It seeks to invest in long-term, low-risk essential infrastructure investments that deliver stable, predictable cashflows. Most of its investments are via PPPs or derivatives thereof – all are availability-based – and are supported by government-backed revenues. There are no investments in higher-risk, demand-based or regulatory-based sectors. As recent events, notably the COVID-19 pandemic, have demonstrated, BBGI has the lowest risk profile of all the IICs. Moreover, it consistently maintains the lowest ongoing charges among the IICs to its shareholders – the figure is well below those of other IICs.

Portfolio: Within its global 55-strong asset portfolio, investment in bridges and roads features prominently. Crucially, the portfolio concentrates on low-risk, public sector-financed, availability-based infrastructure investments. Its two leading markets are the UK and Canada, but the US is also important for BBGI. Importantly, BBGI provides access to a diversified portfolio of infrastructure assets that serve an inherent social purpose in supporting local communities.

More specifically, BBGI is single-minded in its policy of investing in availability-based infrastructure assets; consequently, it avoided – unlike some other IICs, which had invested in demand-based transport projects – any materially negative impact from COVID-19. Indeed, during the pandemic, its assets were more than 99% available to its public sector clients. None of its existing 55 investments has reported either defaults or distribution lock-ups – unlike other members of its peer group.

Financial/share price data: In August 2022, BBGI announced its results for its half-year ending June 2022: the key figures are reproduced below. BBGI's NAV performance remains solid, with its June 2022 NAV figure – at 149.8p per share – representing a 6.5% increase on the December 2022 figures. With its impressive TSR – averaging 9.1% per year over the decade – BBGI's shares continue to trade at a 5.1% premium to its NAV, albeit at a much-reduced level than for most of 2021. A full-year dividend of 7.48p per share is expected for 2022. For 2023 and 2024, BBGI has re-confirmed its target dividends, namely 7.63p per share and 7.78p per share, respectively.

BBGI – Half-year income statement, 2022

£000	to 30/06/2022	to 30/06/2021
Operating income	128,307	33,088
Operating expenses	(20,290)	(6,479)
Operating profit	108,017	26,609
Profit before tax	93,535	26,048
Profit from continued operations	92,478	24,845
EPS (basic, p)	12.97	3.73
EPS (diluted, p)	12.97	3.71

Source: BBGI, Hardman & Co Research

BBGI's availability-based business model is centred upon assuming very low risks and generating good returns – a policy that has proved successful in recent years.

Currently, BBGI has 55 investments. Importantly, though, BBGI confirmed that it would not proceed with its planned acquisition of a 25% stake in the Centre Hospitalier de l'Université de Montréal (CHUM) PPP.

The image below shows the McGill University Hill Centre (MUHC) facility in Montreal, Canada, which is the one of the most valuable holdings in BBGI's 55-strong portfolio; it is a typical investment for BBGI.

BBGI's MUHC facility

- **Type:** Availability-based
- **Status:** Operational
- **Equity Holding (%) BBGI:** 40%
- **Total Investment Volume (Debt & Equity):** C$2 billion
- **Financial Close/Operational:** July 2010/October 2014
- **Concession Period:** 34 years ending in 2044

Source: BBGI Annual Report 2020

For more detailed information about BBGI, please see our research report published in April 2022, *NAV and dividend up – 10.4% TSR p.a. since 2011*.

Cordiant Digital Infrastructure (market cap. £654m)

Investment sectors: Cordiant Digital Infrastructure's business model is – not surprisingly – based on investment in digital infrastructure and enhanced connectivity; these markets lie at the heart of its offering. As recent acquisitions demonstrate, Eastern Europe is a favoured market.

Portfolio: Cordiant Digital Infrastructure has now completed its £306m acquisition of Ceske Radiocomunikace (CRA) in the Czech Republic, which has given it a business comprising 660 digital broadcast towers, an optical backbone network and a portfolio of strategically located data centres. In addition, Cordiant Digital Infrastructure has completed its deal to buy Emitel, a multi-asset digital information business with more than 500 communication towers, which is sited in Warsaw, Poland, at a cost of over £350m. These two deals in Eastern Europe will be pivotal in driving the finances of Cordiant Digital Infrastructure, which has also recently completed its acquisition of the New York City-based Hudson Interchange (formerly DataGryd) for $74m (£61m).

Financial/share price data: Cordiant Digital Infrastructure has recently published its half-year income statement for the period between April 2022 and September 2022. In seeking to build up its portfolio, it has raised a total of ca.£800m of funding from equity markets in under two years; this figure includes the £370m of gross proceeds that Cordiant Digital Infrastructure generated at its IPO in February 2021. Its latest published NAV, as at September 2022, was 107.5p per share. On the dividend front, Cordiant Digital Infrastructure plans to pay a 4.0p dividend per share for its 2022/23 financial year.

Cordiant Digital Infrastructure – Half-year income statement 2022/23

£000	to 30/09/2022	to 30/09/2021*
Income		
Net gain on investments at FV through P/L	19,414	18,936
Total income	19,414	18,936
Operating expenses		
Investment acquisition costs	(717)	(2,072)
Other expenses	(6,846)	(2,711)
Operating profit	11,851	14,153
Foreign exchange movement of working capital revaluation	2,887	35
Finance income	6,275	150
Finance expenses	0	(124)
Profit before tax for the period	21,013	14,214
Tax charge	0	0
Profit and total comprehensive income for the period	21,013	14,214
Basic EPS from continuing operations (p per share)	2.72	3.73
Diluted EPS from continuing operations (p per share)	2.72	3.41

**From 04/01/2021. Source: Cordiant Digital Infrastructure, Hardman & Co Research*

Digital 9 Infrastructure (market cap. £750m)

D/9 DIGITAL INFRASTRUCTURE

Investment sectors: Digital 9 Infrastructure undertook its IPO in March 2021. It emerged from the same stable as Triple Point Energy Transition, although the pace of its acquisitions policy has unquestionably exceeded the sluggish rate of the latter. At the operating level, it seeks to improve – and to expand – digital infrastructure and to reduce the digital divide. Data centres, subsea cables, terrestrial fibre and wireless networks are its priorities. While wireless networks returns are, by far, the highest EBITDA contributor and data centres make up the largest segment of Digital 9 Infrastructure's overall valuation, each of these four divisions should – in time – account for between 20% and 30% of Digital 9 Infrastructure's asset base.

Portfolio: In terms of building its portfolio, Digital 9 Infrastructure has already made striking progress, with a series of investments, which began with the acquisition of Aqua Comms., an Irish-based business that operates capacity services across fibre-optic telecoms networks: it manages a transatlantic subsea fibre system of ca.20,000km in length. Subsequently, Verne Holdings, which manages data centres in Iceland and is 100% renewable-powered, was acquired for £231m. In Finland, the €135m (£115m) Ficolo acquisition has now been completed. Digital 9 has also bought a 48% stake in Arqiva, a UK data, networks and communications service provider, at a cost of a formidable ca.£460m.

Financial/share price data: Digital 9 Infrastructure has announced its half-year results for the six months ending June 2022. Its NAV, at June 2022, was 105.1p per share, compared with 104.6p per share at December 2021. However, many of the figures in the latest set of accounts have been distorted by the many acquisitions that Digital 9 Infrastructure has been undertaking. Having raised £300m at its IPO March 2021, Digital 9 Infrastructure has secured new equity amounting to ca.£900m in less than two years. A minimum 6.0p dividend per share has been flagged for the 2022 financial year.

Digital 9 Infrastructure – Half-year income statement, 2022

£000	to 30/06/22	to 30/06/2021
Income		
Income from investments held at FV	1,404	0
Gains on investments held at FV	30,007	23,070
Interest income	0	11
Total income	31,411	23,081
Expenses		
Acquisition expenses	0	(5,487)
Investment management fees	(3,352)	(480)
Other operating expenses	(682)	(423)
Total expenses	(4,034)	(6,390)
Operating profit	27,377	16,691
Finance expenses	(1)	(1)
Profit on ordinary activities before taxation	27,376	16,690
Profit and total comprehensive income attributable to shareholders	27,376	16,690
EPS (basic and diluted, p per share)	3.43	9.34

Source: Digital 9 Infrastructure, Hardman & Co Research

Key details of Digital 9 Infrastructure's recent acquisitions are set out below – they highlight its undoubted drive to invest aggressively.

Digital 9 Infrastructure acquisitions since its March 2021 IPO

Date	Acquisition	Cost (£m)	Core business
Apr'21	Aqua Comms.	170 (post cash)	Owner/operator of 20,000km of subsea fibre systems
Jul'21	EMIC-1	50*	Partner with Meta to build a 10,000m fibre system between Europe and India
Sep'21	Verne Global	231	Leading Icelandic data platform operator
Dec'21	SeaEdge UK1	15	Manages a data centre and landing station for the North Sea Connect subsea cable
Apr'22	Host Ireland	51	A leading enterprise broadband provider
Apr'22	Volta	45	Owns a premier data centre based in Central London
Jul'22	Ficolo	114	A leading Finnish data centre and cloud infrastructure platform business
Oct'22	Arqiva	459	Secured a 51.7% economic stake in the UK's sole national terrestrial TV and radio broadcasting network

**Investment cost: an additional £69m follow-up capital expenditure is planned*
Source: Digital 9 Infrastructure, Hardman & Co Research

GCP Infrastructure (market cap. £903m)

Investment sectors: GCP Infrastructure, along with GCP Asset Backed, is one of two quoted Gravis Capital closed-ended investment funds. Their market capitalisations are £903m and £365m, respectively. GCP Infrastructure aims "to create a diversified portfolio of debt and similar assets secured against UK infrastructure projects". It focuses on debt investments in the renewable generation sector and on PPP/PFI schemes.

Portfolio: GCP Infrastructure holds 48 Investments, with an average life of 11 years – all are UK-based. Most notably, it has heavy exposure to the renewable energy sector, with the wind generation component accounting for 20% of its investment value and biomass accounting for a further 12%. Outside the energy sector, GCP Infrastructure has 23% of its value tied up within PPP/PFIs, a financing model that the UK government is effectively phasing out. Social housing, a sector in which further investment by GCP Infrastructure now seems unlikely, represents a further 14.%.

Financial/share price data: In its half-year results for the period ending in September 2022, GCP Infrastructure reported an NAV figure of 112.8p per share. Previously, GCP infrastructure's NAV had been adversely affected by lower long-term power price assumptions – a scenario that the recent surge in gas prices has significantly reversed. Having paid an annual dividend of 7.6p per share for seven consecutive years, GCP Infrastructure's dividend was cut to 7p per share in 2019/20, a figure that has been held subsequently. With thin dividend cover, the 7p per share annual dividend payment seems set to continue beyond 2021/22.

GCP Infrastructure – Half-year income statement, 2022/23		
£000	to 30/09/2022	To 30/09/2021
Income		
Net income/gains on FV financial assets	157,039	97,324
Net gains on FV derivative financial instruments at FV	386	(20,851)
Other income	60	449
Total income	157,485	76,922
Expenses		
Investment advisory fees	(8,558)	(7,951)
Operating expenses	(3,892)	(2,733)
Total expenses	(12,450)	(10,684)
Total operating profit before finance costs	145,035	66,238
Finance costs	(4,716)	(3,882)
Total profit and income for the period	140,319	62,356
EPS (basic and diluted, p)	15.88	7.08

Source: GCP Infrastructure, Hardman & Co Research

HICL Infrastructure (market cap. £3,337m)

HICL Infrastructure

Investment sectors: HICL Infrastructure has over 100 investments across many sectors. Its portfolio is heavily slanted to the UK, which accounts for 62% of its investments, with 18% arising from mainland EU. Its North American exposure is growing and is now 15%. Transport and health investments, which account for ca.53% of its value, are key sectors, along with electricity and water at 15%, in HICL Infrastructure's portfolio.

Portfolio: HICL Infrastructure has the largest and widest range of the nine IICs under review. Its extensive portfolio has been built up over a sustained period since its IPO in 2006. Importantly, in terms of risk, contracted projects, such as those under PPP/PFI schemes, now account for 64% of these assets, while the demand-based component, which includes some revenue risk, is now 19%. HICL's portfolio currently offers inflation linkage of ca.80% – an impressive figure at a time of double-digit inflation and the highest of all quoted IICs.

HICL Infrastructure's favoured sectors are transport and health, which account for 31% and 22%, respectively, of its total portfolio value. Importantly, within its transport holdings, HICL Infrastructure has significant demand-based investments, including HS1, which saw demand plummet from early 2020 but is now recovering, along with the Northwest Parkway in Colorado, US, and the A63 motorway in SW France. In the health sector, some acute care hospitals within HICL Infrastructure's portfolio – predominantly those in the north of England – have faced various issues, which its clients are contesting. Significantly, in 2021/22, HICL Infrastructure completed the sale of the Queen Alexandra Hospital in Portsmouth for £108m.

Financial/share price data: HICL Infrastructure recently published its half-year results for 2022/23; they showed an improvement overall, especially as the three largest demand-based investments, which had been severely affected by COVID-19 travel restrictions, have reported improved returns. The portfolio has changed of late, with the Queen Alexandra Hospital sale and the acquisitions of a 45% stake in the US-based Texas Nevada Transmission (TNT) – it is still to be completed – and of a 40% stake New Zealand's Actearoa Towers (due to be re-branded shortly as Fortysouth). Due in part to an increased discount rate – now 7.1% against 6.6% previously – HICL's NAV rose only marginally to 164.3p per share, compared with 163.1p per share at March 2022. Underlying dividend cash cover remains very tight, at 1.03x (it was 0.90x in 2020/21), but it should rise over the next two years as the dividend continues to be held at 8.25p per share for both 2022/23 and probably for 2023/24 – meaning up to five years of a flat nominal dividend. In mid-July 2022, HICL successfully raised £160m through a share placing.

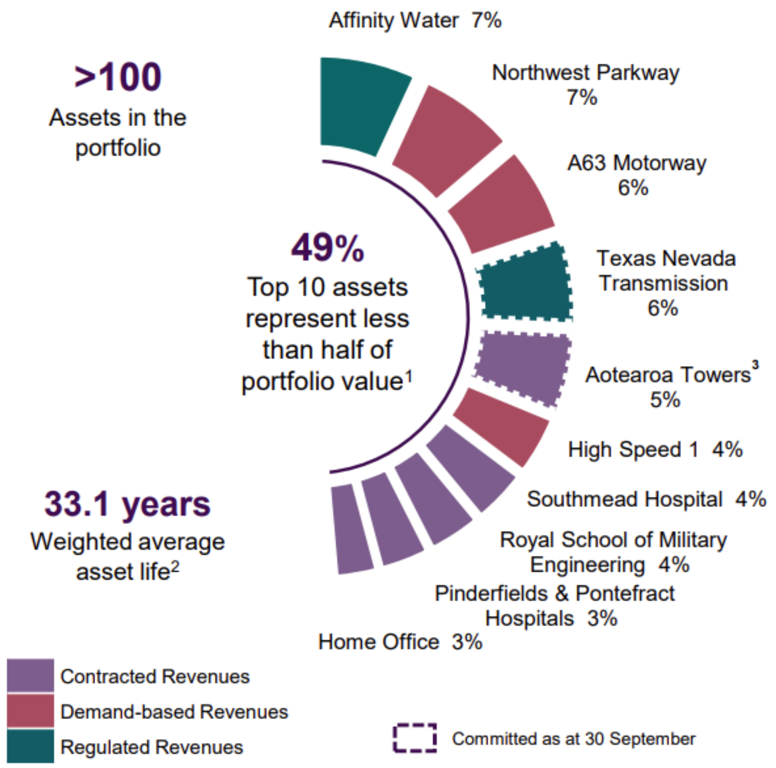
HICL Infrastructure – Half-year income statement, 2022/23

£m	to 30/09/2022	to 30/09/2021
Dividends received	141.5	44.2
Interest income	59.7	56.6
FV movement	(116.4)	47.8
FV movement on investments	65.3	8.6
Loss on forex derivatives	(27.0)	(4.0)
Other income	2.7	4.0
Total income (IFRS basis)	125.8	157.2
Expenses/finance costs	(23.2)	(18.0)
Profit before tax	102.6	139.2
Tax	0	0.3
Total return	102.6	139.5
Earnings per share (basic and diluted, p)	5.2	7.2

Source: HICL Infrastructure, Hardman and Co Research

As part of its 2022/23 half-year results, HICL Infrastructure published a chart setting out its portfolio metrics and highlighting its key shareholdings: Affinity Water remains its leading shareholding. The Queen Alexandra Hospital shareholding has now been sold. The chart is reproduced below.

HICL's Infrastructure's 10 largest investments*



By value, using directors' valuation of £3,866m, as at 30 September 2022
Source: HICL Infrastructure's half-year results presentation

INPP (market cap. £2,899m)

Investment sectors: INPP's origins lie with Babcock & Brown, an Australian Investment Bank. INPP is very long-term-orientated, with an investment lifespan of well over 30 years. Its focus has been very much on the energy sector, and especially on gas transportation and electricity transmission. Recently, investment in offshore wind transmission links has been very much to the fore.

Portfolio: INPP's key investments are in the utilities sector, notably in its offshore electricity transmission operations, and in its Cadent distribution business, which delivers gas to ca.50% of UK gas customers. These two components account for almost 40% of INPP's portfolio. After its Cadent stake, INPP's second-largest investment is the 25km Thames Tideway Tunnel (TTT) super sewer: INPP recently raised its stake in TTT to 18%. Much of the remainder of the portfolio is made up of transport and education investments, including over 250 schools: these two sectors account for 20% and 17% of the portfolio, respectively. Importantly, INPP offers impressive inflation linkage of ca.70%: only HICL, among the quoted IICs, has greater protection against inflation.

In terms of location, the UK remains INPP's key market, with 76% of its portfolio being sited here. Of the remainder, Australia and Belgium (the latter with its Diabolo rail link contract to service Brussels airport) account for 8% and 7%, respectively.

Financial/share price data: Despite some concerns during the COVID-19 pandemic, INPP continues to perform well, as its half-year results for 2022 demonstrated. Although the construction element of the TTT super sewer project, at June 2022, was more than 80% complete, INPP has suffered various delays and cost increases from COVID-19, and asset impairments have resulted. Encouragingly, financial regulation of the Cadent gas business is now clearer following the final determination of the Competition and Markets Authority (CMA); in INPP's words – "the appeal process is complete".

Overseas, INPP has suffered from the heavy COVID-19-related fall-off in demand on its Diabolo rail link to Brussels airport: the latter's revenue figure is very dependent on rail passenger numbers. INPP has agreed to invest €24m (£21.2m) in the business, around half of which relates to a contingency commitment. In April 2022, INPP raised £325m (gross), at just under 160p per share, from a very well-supported issue. With its NAV rising by 6.1% to 157.3p per share, as at June 2022, compared with 148.2p per share as at December 2021, INPP is planning to increase its full-year 2022 dividend to 7.74p per share; its 2021 dividend payment was 7.55p per share.

INPP – Half-year income statement, 2022

£000	to 30/06/2022	to 30/06/2021
Interest income	45,336	39,377
Dividend income	27,911	18,032
Net change in investment at FV via P&L	166,934	(16,684)
Total investment income	240,181	40,725
Other operating income/expenses	(2,963)	2,785
Total income	237,218	43,510
Management costs	(13,999)	(12,861)
Administration costs	(934)	(1,132)
Transaction costs	(759)	(335)
Directors' fees	(242)	(200)
Total expenses	(15,934)	(14,528)
Profit before finance costs and tax	221,284	28,982
Finance costs	(2,048)	(1,765)
Profit before tax	219,236	27,217
Tax credit	9	48
Profit for the period	219,245	27,265
EPS (basic and diluted, p)	12.38	1.68

Source: INPP, Hardman & Co Research

Sequoia Economic Infrastructure (market cap. £1,533m)

SEQUOIA ECONOMIC INFRASTRUCTURE INCOME FUND LIMITED

Investment sectors: Sequoia Economic Infrastructure is a specialist investor in economic infrastructure debt. It runs a portfolio of debt – 95% of which is private – and bond investments, with generally shorter timeframes than those of other quoted IICs.

Portfolio: Currently, Sequoia Economic Infrastructure has over 70 investments across eight sectors, with an average life of ca.4.5 years. In terms of asset allocation, technology, media and telecoms (TMT) now accounts for 26% while power's share, including renewables, has fallen to 18%; transport investments represent a similar figure to the latter.

Sequoia Economic Infrastructure has diversified across many mature jurisdictions. Slightly over half of its assets are in North America, with a further 26% being in Europe and 20% in the UK. However, through Simply Energy, it has significant exposure to the collapsed Bulb Energy – a victim of the UK's shambolic energy supply market – via ca.£55m of senior debt, which is secured against Simple Energy's assets, Bulb Energy's parent company; to date, £14m of this debt has been recovered. Bad debts have also arisen with both the delayed – and above-budget – Salt Lake Potash project in Australia and an investment in Whittle School in Washington DC, now renamed 4000 Connecticut Avenue. Progress is being made in restructuring the latter's finances, which were seriously impaired by enrolment levels – and therefore revenues – being well short of expectations.

Financial/share price data: On the back of its seriously weak share price – down by over 18% during 2022 – Sequoia Economic Infrastructure's half-year results for 2022/23 reported some progress in addressing its problems. Nevertheless, NAV fell back sharply, as the applied discount rate rose. At September 2022, NAV was 93.6p per share, compared with 100.5p per share just six months earlier. And professional fees, as in 2021/22, continue to rise appreciably. With various challenges on the broad economic front, such as rising inflation, along with specific issues in the energy sector – the impact of surging gas prices being especially concerning as the Bulb Energy collapse has demonstrated – Sequoia Economic Infrastructure's outlook remains somewhat uncertain. Its dividend for 2021/22, which was barely covered, was 6.25p per share. However, with markedly higher dividend cover now projected – on the back of higher inflation raising floating rate returns – Sequoia Economic

Infrastructure has recently confirmed a rise in its planned 2022/23 dividend to 6.57p per share.

Sequoia Economic Infrastructure – Half-year income statement, 2022/23

£	to 30/09/2022	to 30/09/2021
Revenue		
Net gains on non-derivative financial assets at FV	117,439,357	17,490,664
Net gains (losses) on derivative financial assets at FV	(187,934,965)	(25,433,938)
Investment income	27,837,490	68,708,224
Net foreign exchange loss	(12,011,438)	(298,335)
Total revenue	(54,669,556)	60,466,615
Expenses		
Investment adviser fees	6,176,304	5,945,053
Investment manager fees	183,668	174,573
Directors' fees and expenses	189,726	130,800
Other professional fees	2,182,873	1,238,036
Other expenses	191,039	286,657
Total operating expenses	8,923,610	7,775,119
Loan finance costs	3,806,112	2,001,715
Total expenses	12,729,722	9,776,834
Loss/profit and comprehensive loss/income for the year	(67,399,278)	50,689,781
EPS (basic and diluted, p)	(3.82)	2.87

Source: Sequoia Economic Infrastructure, Hardman & Co Research

European energy background

The attractions of Europe for REIFs

Many REIFs have invested in mainland Europe. Hence, it is appropriate to address the common energy issues that apply, especially in the larger markets – Germany, France and Italy – and in those, including Iberia and the Nordic countries, which are particularly favoured by REIFs.

Significantly, in the expectation of a rapidly expanding EU renewable generation market, many REIFs – most notably TRIG, Octopus Renewables Infrastructure, Aquila European Renewables, the RoI-based Greencoat Renewables and Downing Renewables and Infrastructure – have all invested in mainland EU countries, and will continue to do so.

Gas supplies and gas prices in Europe

Inevitably, the issue of gas prices is all-consuming at the present time, especially in Germany and in leading countries in Eastern Europe. For many years, these countries have been highly dependent upon large volumes of imported gas from Russia. Following the invasion of Ukraine and the sanctions applied by the EU, price levels have soared and import volumes have plummeted. In any event, serious – and apparently deliberate – damage to the Nord Stream 1 and 2 pipelines has put both out of operation for the foreseeable future.

Germany's *Energiewende*

More specifically, the *Energiewende* in Germany, which envisages a very pronounced upsurge in renewable generation investment, will be a key driver. Major investment will be required in the Baltic Sea region to finance new renewable plant, much of which will consist of offshore wind turbines. Furthermore, with the near final closure of the country's nuclear power plants, heavy investment will be required to wheel power from the north of Germany to the south of the country; Bavaria, in particular, will face a real challenge over the next decade in securing sufficient power supplies.

Gas supply issues are also to the fore in Italy, which, historically, has imported large volumes of gas. It is addressing, with some urgency, the potential for gas imports to replace those lost from Russia, as a result of sanctions. The energy market in Italy is dominated by ENEL, which is the leading electricity generator and supply company. In fact, relatively few REIFs operate there, although NextEnergy Solar has maintained a small wind generation portfolio in the Puglia region in recent years.

The French nuclear conundrum – riddled by outages

Since the 1970s, France's energy generation has been dependent on a massive nuclear power portfolio. Hence, renewable generation has been slower to take off in France than elsewhere. However, the age of most French nuclear power stations is such that many technical problems, mainly reactor cracks, have emerged across the portfolio. Indeed, in recent months, close to half of EdF's nuclear power portfolio has been off stream – a most unfortunate situation given the Russian gas supply issue. For the REIFs, France offers some renewable energy investment opportunities: its wind power capacity is below one third of the ca.63GW in Germany. TRIG and Octopus Renewables Infrastructure do have significant renewable generation capacity in France, although JLEN sold its small French wind portfolio in 2021.

Sweden for wind, Iberia for solar – the Aquila European Renewables' mantra

Outside, the three-largest European energy markets, Sweden, Spain and Portugal have emerged as the favoured markets for REIF investment. In fact, a discernible pattern is emerging from investment in the EU by REIFs, as exemplified by the strategy of Aquila European Renewables – Sweden for wind plant and Iberia for solar plant.

It is not only Sweden but other Nordic countries, such as Norway and Finland, that are favoured for onshore wind investment – TRIG is a heavy investor in the region. Furthermore, Downing Renewables and 3i Infrastructure have been building up a hydro portfolio in Sweden, while Greencoat Renewables is also active in pursuing investment opportunities there.

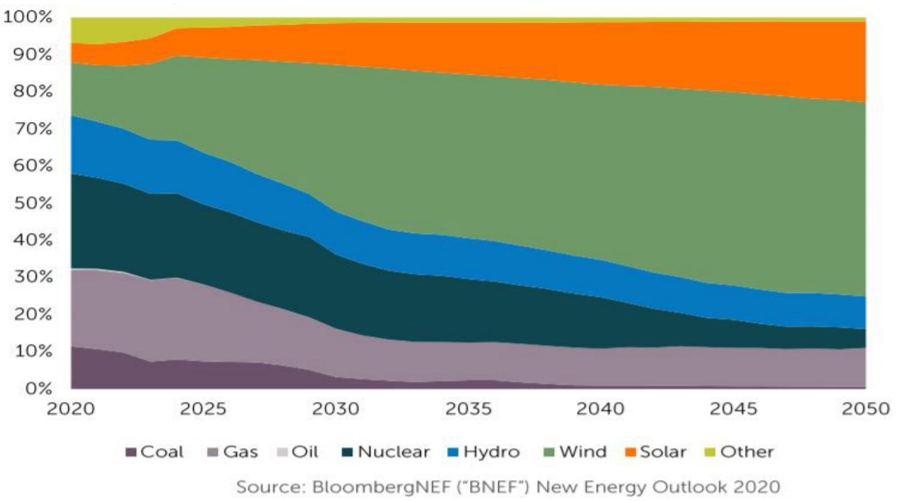
Gas supply issues less important in Iberia

The two Iberian countries – Spain and Portugal – are markedly less affected by the testing gas supply issues in Northern Europe. Importantly, too, they have been attracting significant solar investment of late: Spain's Andalucía province, with high levels of irradiation, is especially favoured by potential investors. TRIG, notably in Cadiz, Octopus Renewables Infrastructure, Foresight Solar, and Aquila European Renewables are all active in the Iberian solar generation market.

Bloomberg renewable power projections

Looking forward over the next three decades, the chart below sets out the European generation projections of Bloomberg New Energy until 2050; these show a major expansion of both wind and solar generation in coming years.

European power generation mix to 2050



Source: Bloomberg New Energy/JLEN September 2020 interim results presentation

UK energy market

Ukraine and gas

In recent months, the Ukraine crisis, and more specifically, soaring gas prices, have dominated debates in the UK energy sector. Various decisions of late, and especially the efforts to reduce the role of gas in energy generation, have been driven by the abiding concerns about future gas supplies and the price per therm at which they might be available. There is real uncertainty about how longer-term gas prices will settle in a market that is, at present, highly volatile, especially during the winter months.

Gas prices now way off their spring 2022 peak

It should be added that, because spot prices for a therm of gas may have soared, it does not mean that this supply scenario will endure for the next five or 10 years. Indeed, over the past few months, gas prices have fallen off sharply from their peaks during the spring of 2022. Whether this scenario will endure during the current winter is debatable; it will be very dependent upon whether any prolonged periods of very cold weather are experienced.

The Rough guide

Already, various initiatives to boost UK gas supplies are under way, such as the planned re-opening – at very considerable cost – of the Rough gas storage facility in the North Sea, which was controversially closed in 2017. The facility has recently been partly re-opened. How it is financed going forward is still unclear as its owner, Centrica, is involved in detailed discussions with the government.

Ramping up North Sea gas projects

Looking further forward, there has been a notable increase in approval levels for new North Sea gas projects, but it will be some years before this trend bears fruit, in the form of enhanced gas output.

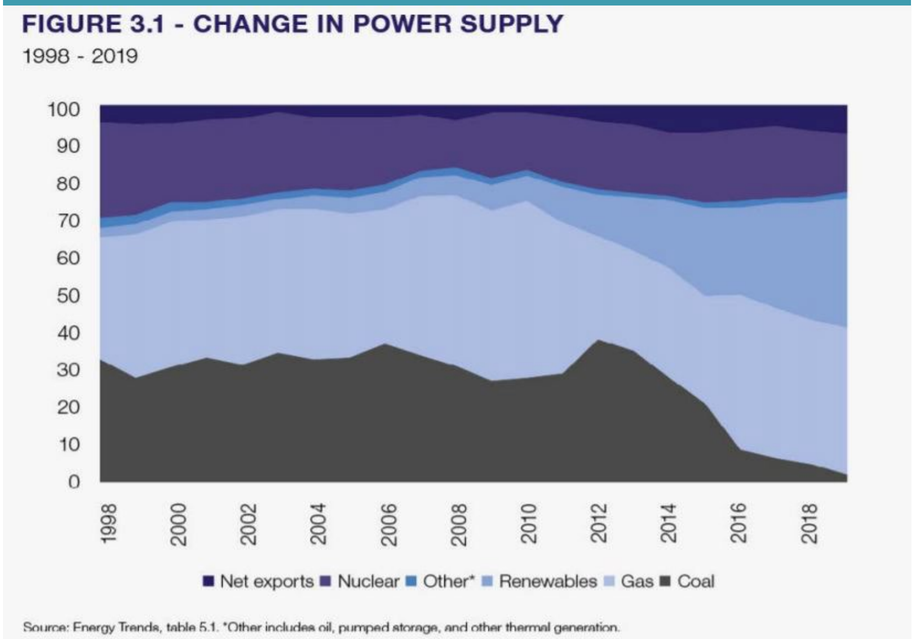
£2,500 per year consumer price cap

At the consumer level, the energy crisis is having a massive impact for UK consumers, both in terms of gas heating and cooking costs but also in terms of electricity prices, which are driven higher by surging gas input costs. As such, the controversial energy price cap has now been set at a unit rate that is calculated to cost the average household £2,500 per year.

The coal/renewables changeover

In terms of electricity generation, there has been a sea-change in recent years as output from renewable generation replaces coal-fired output, which produces substantial CO2 emissions. The pronounced shift is clearly illustrated in the graph below, which was published in the Energy White Paper 2020; the data predates the Ukraine war and the energy crisis that it engendered.

Change in power supply



Source: Energy White Paper 2020

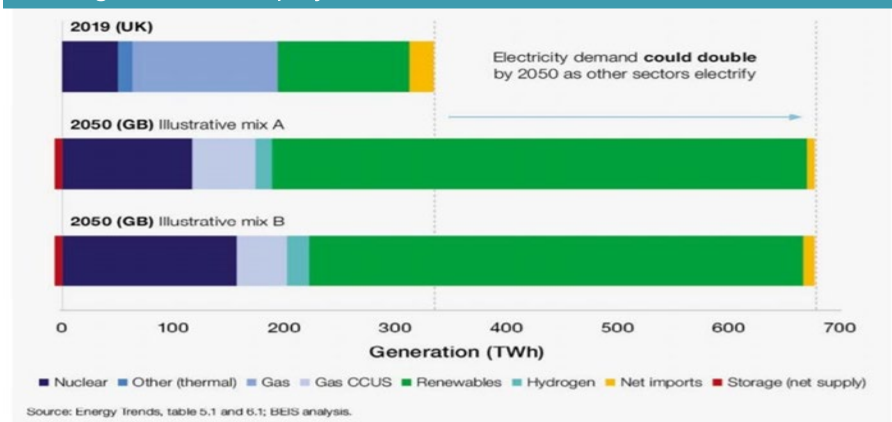
Renewables share up from 7% in 2010 to a third now

To underline this transition in generation source, the Energy White Paper 2020 also confirmed that the contribution from UK renewable generation was now ca.33%, compared with just 7% in 2010 – a very sharp rise in just over a decade.

In addition, as demonstrated below, the White Paper 2020 confirmed that there is significant scope until 2050 – and beyond – for new investment in wind power and solar power for deployment in the UK market: the tranches earmarked for renewable generation are substantial.

Energy White Paper 2020 projections

Future generation mix projections



Source: Energy White Paper 2020

Wholesale power prices in the UK

1973/74 oil precedent for recent gas price surge

More specifically, soaring energy prices have had a pronounced impact on UK energy prices – and on UK politics – in recent months, as well as on the underlying valuations of REIFs.

During the lead up, in the latter part of 2021, to the invasion of Ukraine by Russia, spot gas prices soared. Apart from the OPEC-driven surge in oil prices in the mid-1970s – up fourfold between October 1973 and January 1974 – there has been no similar precedent in global energy markets of such substantial increases over so short a timeframe.

Spot gas prices have soared

The graph below, published by Ofgem, shows both how alarmingly spot prices for gas have risen since the spring of 2021 but also how steeply they have fallen from their peak in the spring of 2022.

Gas prices per therm – Day-ahead contracts (GB monthly average)

Source: https://www.ofgem.gov.uk

Markets should respond on the gas supply front

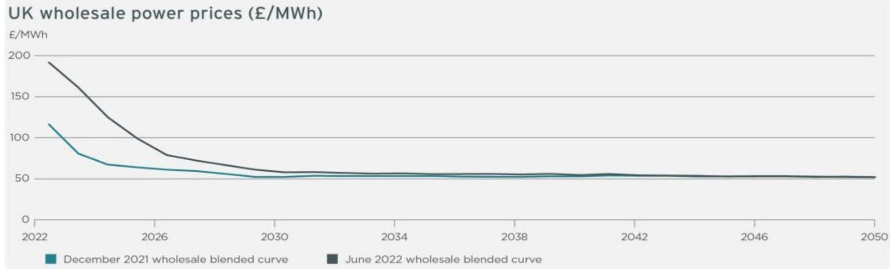
In the longer term, the response of market forces should enable more supply to come on stream and for the demand for gas to be reduced, but it seems unlikely that wholesale gas prices will return close to the levels prior to mid-2021.

For electricity generators, much higher gas input costs mean that Combined Cycle Gas Turbines (CCGTs) become far less competitive than hitherto. Importantly, virtually every generator sells part of its projected output on a forward basis, at locked-in prices. However, some output is sold on a merchant price basis, which provides exposure to the benefits of higher prices but is also susceptible to the risks of lower prices.

Foresight Solar's long-term projections

Looking forward, Foresight Solar has published a graph on future UK wholesale electricity projections, which is reproduced below. It shows electricity prices returning, in real terms, to their pre-2021 levels by the 2030s.

UK wholesale power prices (£/MWh)

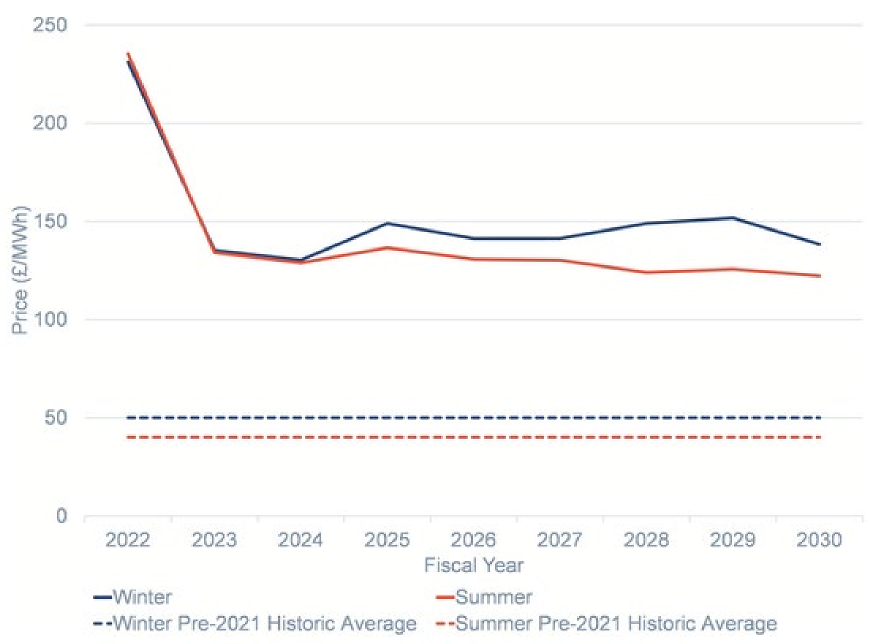


Source: Foresight Solar

Curve goes down and plateaus in ca.2025 – but way above the pre-2021 figure

By contrast, the longer-term projections from Cornwall Insights, a well-known energy consultancy, are somewhat different. Their mid-2022 figures show, as expected, a surge in gas prices, which begin to level off by 2025. Thereafter, there is a predicted return to near "normality". However, the figures from 2025 onwards show that the new long-term energy equilibrium prices are well above those prior to mid-2021 – a very sharp ongoing premium is projected by Cornwall Insights, although some other gas experts (and Foresight Solar) consider this projected ongoing premium to be excessive.

Power price forecasts – Average per fiscal year



Source: Cornwall Insight Benchmark Power Curve

In general, higher energy prices are good news for the 22 REIFs, in that they boost their revenue line, not necessarily immediately, but over time. The recent sharp increases in NAVs underpin this characteristic.

Interest rates climbing

However, in the real world, higher inflation, which is fuelled – to a large extent – by higher energy prices, almost inevitably brings about rises in interest rates; the latter is a distinct negative for REIF valuations. Indeed, in recent months, interest rates have risen significantly, in both the US and the UK – with their generally negative impact (except for the banking sector) on stock markets.

Power costs in the UK

Gas price impact

In recent years, energy generation costs have been volatile. The recent gas price surge has made many CCGTs highly uncompetitive, while the operating costs of plants in the UK's dated nuclear power portfolio have been far more predictable, even if the media headlines have been captured by further cost over-runs and persistent delays at Hinkley Point C. However, there is still political momentum to progress Sizewell C towards financial close, even though Chinese involvement will no longer be permitted there.

In addition, on the UK renewable generation front, onshore wind and solar investment persists – although way below the levels prior to 2017, when the subsidy payments for new wind and solar plant were abolished.

Greencoat UK's planned heavy investment in subsidy-free South Kyle

Nevertheless, Greencoat UK Wind is planning to invest heavily in the unsubsidised 235 MW South Kyle wind farm in Scotland, which it has contracted to buy in early 2023 – once its commissioning is complete – from its developer, Sweden's state-owned Vattenfall. NextEnergy Solar is investing in subsidy-free solar plants at Staughton, with a capacity of 50MW, and elsewhere.

Sea-change in the North Sea

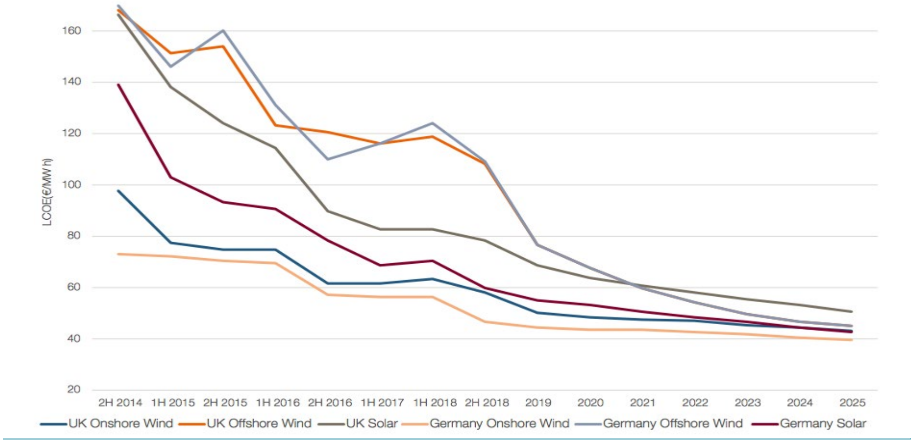
Offshore wind development is set to be a major growth area, with a sea-change in costs, far larger turbines and minimal environmental concerns – the Energy White Paper 2020 was unequivocal in its support for offshore wind.

Costs plummet

On the cost front, offshore wind generation has performed extremely well – and in direct contrast to CCGT plants, where the gas input cost is a very high proportion of unit generation costs.

The graph below – compiled by IRENA – shows the very sharp declines in generation costs since 2014 for onshore and offshore wind, as well as for solar, in both the UK and Germany.

Renewable power costs since 2014



Source: IRENA

Unquestionably, the substantial fall in costs of offshore wind power has provided the kick-start for more aggressive offshore wind developments.

Offshore at <£40 per MWh vs. >£90 per MWh for nuclear from Hinkley Point C

Clearly, the 2019 Dogger Bank winning bid of £39.65p per MWh (2012 prices) compares very favourably with the 35-year £92.50 per MWh (2012 prices) CfD for the desperately expensive – and much delayed – new Hinkley Point C nuclear plant. More recently, in the 2022 offshore wind auction, the lowest successful CfD bid was for just £37.35p per MWh.

Given the pronounced cost factor differentials, a key driver behind the Energy White Paper 2020 target of 40GW of offshore wind power by 2030, it seems inevitable that the government, whether Conservative or Labour, will focus on rolling out offshore wind projects; the politics of doing so are very straightforward when set against controversial – and financially very challenging – new nuclear-build.

BP and Shell gear up for offshore wind investment

Despite the further imposition of energy-related taxes, which depress the projected rate of return, major oil sector players, including BP and Shell, are still expected to participate in offshore wind development – although perhaps less aggressively than originally intended – by taking substantial stakes in North Sea offshore wind projects.

National Grid – pushing its capex boat way out into the North Sea

Furthermore, National Grid, whose activities are pivotal to exploiting North Sea energy resources, has just announced a massive £54bn investment budget for expanding its network, which is targeted at building more wind generation infrastructure, especially offshore. Despite its current net debt exceeding £40bn, much of this £54bn budget is expected to be deployed before 2030.

Renewable energy infrastructure funds (REIFs)

Leading REIFs

In our analysis of the REIFs, we focus initially on the four most valuable – those with market capitalisations exceeding £1bn. Included in this grouping are Greencoat UK Wind, TRIG, the Irish-based Greencoat Renewables and SEEIT.

JLEN renewables template

Also assessed in this section, despite its market value being below our £1bn threshold, is the renewable generation portfolio operated by JLEN, which arguably provides a portfolio template for a typical REIF. JLEN is UK-based, but it has some minor interests – for the moment at least – in mainland Europe and a focus on onshore wind and solar generation, along with some smaller investments in other renewables technology, most notably in Anaerobic Digestion (AD) plants.

The three solar players

Furthermore, we analyse the three solar generation funds – Bluefield Solar, Foresight Solar and NextEnergy Solar. Each has a current market capitalisation of more than £650m. Finally, we also review Gresham House Energy Storage – the best performing REIF in 2022.

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 accounts for between 40% and 45% of the 22 REIFs' total market capitalisation.

Greencoat UK Wind (market cap. £3,538m)

GREENCOAT UK WIND

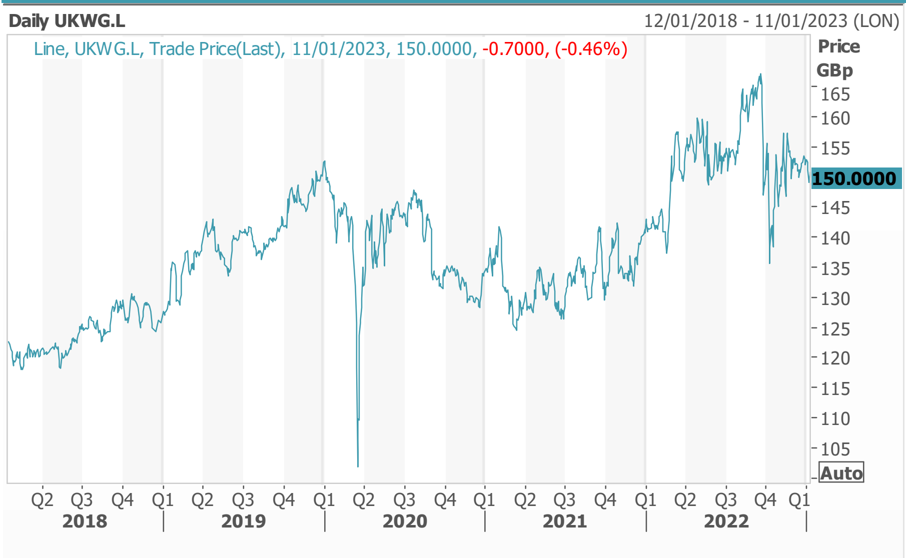
Investment sectors: Greencoat UK Wind, as its name implies, focuses exclusively on the UK wind sector, in which it is heavily invested. Its capacity, including the Hornsea 1 offshore stake is now 1,610MW. Around 35% of its capacity is sited in Scotland, with much of the remainder in England. Importantly, Greencoat UK Wind's fund aims include a commitment to "invest exclusively in operating UK wind farms, predominantly onshore, although offshore returns are now becoming more relevant."

Portfolio: Following the recent completion of its acquisition of a 12.5% shareholding in the 1,218MW Hornsea 1 offshore wind project at a formidable cost of ca.£400m, Greencoat UK Wind's total plant capacity has risen to 1,610MW: this figure includes the purchase of the 38MW Twentyshilling wind farm in the Scottish borders. In coming months, Greencoat UK Wind is expected to acquire the 235MW South Kyle wind farm in southwest Scotland, once its construction is complete, which is due shortly. It has committed to buy this wind farm from its developer, the Swedish-based Vattenfall, at a cost of ca.£320m. Given the considerable cost of both this project and of the Hornsea 1 investment – notwithstanding the subsidy-free element of the South Kyle investment – investors will be carefully analysing their financial returns: their impact on future Greencoat UK Wind NAV figures will be very material.

Financial/share price data: Greencoat UK Wind's NAV per share at September 2022 was 155.0p per share, compared with 122.2p per share at March 2021 – a strong rise in just 18 months and a trend that seems set to continue. Furthermore, shareholder returns have been boosted by an annual RPI-adjusted dividend increase, as prescribed under Greencoat UK Wind's fund principles. While the 2021 payment was 7.18p per share – the RPI figure was comparatively low between January 2021 and December 2021 – Greencoat UK Wind's full-year 2022 dividend is set to increase to 7.72p per share. This increase implemented Greencoat UK Wind's declared policy to link its dividend payments to movements in the RPI – no other REIF dividend increase is as aggressive: the 2023 dividend is expected to rise sharply as well. Impressively, too, in November 2021, Greencoat UK Wind raised £450m of new equity at a relatively modest discount of ca.6% to its then share price. This fundraise illustrated the strong, latent demand for new REIF equity at the time.

Greencoat UK Wind is the sector bellwether for the nascent UK wind sector. In terms of its share price – excepting the March 2020 COVID-19-related share price plunge, from which its recovery was quick – Greencoat UK Wind's five-year performance chart shows a consistent rise in its share price, illustrated by the graph below. Recently, it has advanced further, on the back of higher power price assumptions and its planned RPI-linked dividend increase for 2022.

Greencoat UK Wind – Five-year share price performance



Source: Refinitiv

In terms of Greencoat UK Wind's overall financial performance since 2013, the figures are impressive – despite a pause in 2019 and 2020 – as demonstrated by the table below.

Greencoat UK Wind's financial performance – 2013/21

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%
2019	2,385	127.7	6.94	1.4	2.2%	-1.4%
2020	2,952	145.2	7.10	1.3	1.2%	0.6%
2021	2,933	256.8	7.72	1.9	8.7%	9.4%

Source: Greencoat UK Wind

TRIG (market cap. (£3,236m)

Investment sectors: While Greencoat UK Wind and TRIG have alternated in the role of being the most valuable REIF in recent years, TRIG has a greater international reach, especially since its permissible overseas investment ratio was raised to 65%. In terms of generation sources, both REIFs are very dependent upon wind, although TRIG's offshore wind investments are materially higher. TRIG also maintains a 285MW portfolio of solar generation assets (see below) – something that Greencoat UK Wind lacks.

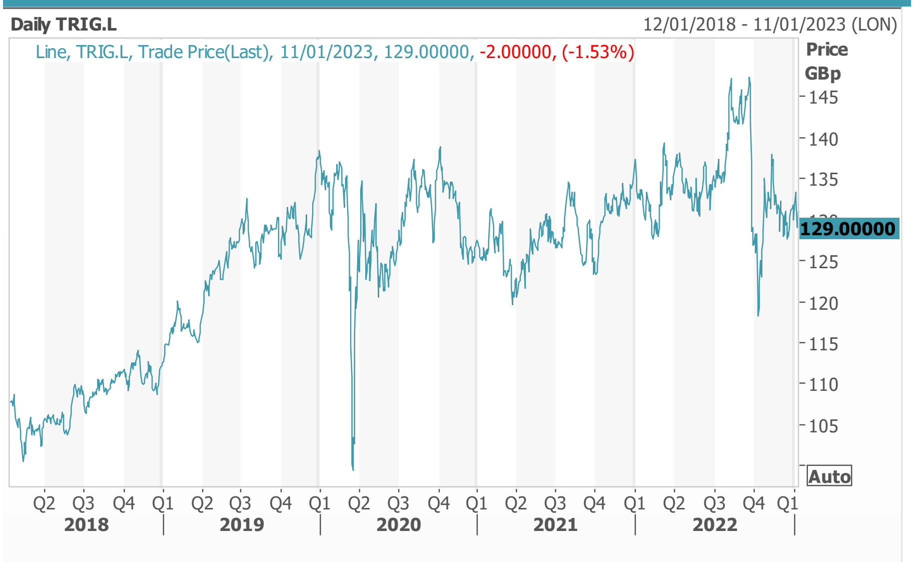
Portfolio: TRIG's latest operational capacity figure is 1,962MW (as adjusted), and further plants are under construction. Importantly, within the UK, TRIG has raised its stake in the Hornsea 1 offshore wind project to 10.2% - just short of Greencoat UK Wind's 12.5% shareholding. Importantly, ca.85% of TRIG's overall capacity covers wind generation assets: the 213MW Jadraas plant in Sweden is TRIG's key onshore wind asset. TRIG has also acquired a 25% stake in the 330MW Gode 1 offshore wind project, which is located off the German coast in the North Sea. TRIG is widely expected – in good time – to make additional investments in offshore wind, in both the Baltic Sea and the North Sea: major build-outs there are expected over the next decade. TRIG's recent acquisitions, notably in northern Europe, have certainly raised its international profile. Recent figures published by TRIG show that England and Scotland represent 54% of TRIG's total plant capacity: France and Sweden now account for 15% and 11%, respectively. Spain is also attractive for TRIG's solar generation aspirations; in particular, it is undertaking heavy investment in solar power in the region of Cadiz, Andalucía.

Modest dividend increase

Financial/share price data: TRIG's 2022 half-year results were broadly in line with expectations – strong output in the Nordic region, offset by shortfalls in France, where wind speeds were weak, and grid-related issues in both the UK and Germany. By June 2022, TRIG's NAV per share had risen sharply to 134.3p per share. Dividend cover, though, has come under sustained pressure – being just 1.12x in 2021. Hence, TRIG's dividend is set to increase in 2022 by a distinctly modest 1.2%, to 6.84p.

The chart below underlines the success of TRIG's investment policy, with a solid rise in its share price – despite the COVID-19-induced chasm in March 2020 – over the past five years.

TRIG – Five-year share price performance



Source: Refinitiv

Greencoat Renewables (market cap. £1,156m)

Investment sectors: Greencoat Renewables' focus is on the expanding wind generation sector. Its core business is in the Republic of Ireland (RoI), which accounts for most of its revenues; importantly, it does not operate in Northern Ireland (NI). More recently, it has made several substantial investments in mainland Europe.

Portfolio: At September 2022, Greencoat Renewables' operational plant capacity amounted to 1,095MW, virtually all of which is accounted for by wind generation. Aside from its robust RoI core market, from which its business developed, Greencoat Renewables has also sought to invest overseas: the Nordic Region is a favoured market, along with Germany and France. In the case of the latter, it now owns 120MW of wind capacity there. In Sweden, it has invested heavily in the Ertrask projects – initially in the more advanced southern section but, more recently, in the northern section, which remains under construction. In Finland, the 43MW wind plant at Kokkoneva is now operational. However, Greencoat Renewables' most ambitious long-term target is the rapidly developing offshore wind generation market. In April 2022, it invested ca.€350m (£310m) for a 50% stake in the 312MW Borkum Riffgrund project; the publicly quoted and Danish-based, Oersted, holds the other 50%.

In coming years, it seems probable that further mainland Europe wind generation investments, both onshore and offshore, will be undertaken by Greencoat Renewables – and, most likely, in northern European countries, such as Sweden, where wind conditions are more favourable.

Financial/share price data. On the financial front, Greencoat Renewables raised gross proceeds of €282m (£250m) in April 2022 – this sizeable sum will help finance future deals. As at September 2022, Greencoat Renewables' NAV was confirmed as 97.4p (c110.1) per share, up by 1.4% on the March 2022 figure. In terms of its 2022 full-year dividend, Greencoat Renewables is expected to pay a dividend of 5.47p (c6.18) per share, a distinctly modest increase over the 2021 payment. Significantly, its shares are €-denominated and, since its IPO in 2017, they have performed creditably, on the back of secure wind-generated earnings.

SEEIT (market cap. £1,071m)

Portfolio: Having developed its seed capital portfolio, which consisted mainly of CHP investments, SEEIT has announced many subsequent acquisitions. Importantly, in the US, SEEIT has acquired the district energy system, Red Rochester, based around the very large Eastman Industrial Park in Rochester, New York; it is SEEIT's most valuable single investment. Also in the US, it has full ownership of Primary Energy, which comprises five co-generation projects within the US steel industry. Elsewhere in the US, it operates – via ONYX – a solar generation and energy storage business, with off-takers spread across many sites.

In Europe, SEEIT has invested £107m in Vartan Gas, whose main subsidiaries are Gasnatet, a Swedish gas distribution business, and Stockholm Gas; these businesses account for ca.10% of SEEIT's overall portfolio value. Previously, SEEIT had bought a 125MW co-generation portfolio in Spain, comprising five CHP plants, two olive-processing plants and two biomass plants. Recently, SEEIT completed the acquisition of a 69MW portfolio of renewable assets from United Utilities for ca.£100m.

Financial/share price data: Having raised £100m (gross) at its IPO in December 2018, SEEIT has undertaken several equity raises subsequently. Since January 2020, it has secured £860m of new equity. Compared with other REIFs, such as Aquila Energy Efficiency and Triple Point Energy Transition, SEEIT's investment policy has been positively frenetic, although the latest gearing figure of 34% is very close to the 35% target. In its recently published half-year results for 2022/23, SEEIT reported a NAV of 106.1p per share, compared with 108.4p at March 2022.

Importantly, too, SEEIT reaffirmed its full-year 2022/23 dividend target of 6.00p per share.

Given a very extensive pipeline of potential new investments, SEEIT's expansion stance seems set to persist, provided that it continues to receive strong support, as it has done to date, from its shareholders.

JLEN (market cap. £791m)

Investment sectors: Apart from TRIG and Greencoat UK Wind, JLEN (formerly John Laing Environment Fund), which was floated in March 2014 out of the eponymous housebuilder, now has 41 assets. It also owns the largest UK wind capacity of the remaining REIFs. Indeed, its portfolio, details of which are set out below, provides the template for a renewable energy start-up business, at least in securing diversification across the renewables sector.

Portfolio: JLEN's current operational capacity is 359MW, 161MW of which is onshore wind, with almost all its plants – part of its small French wind portfolio was recently sold – being in the UK. JLEN also owns six solar plants, with a capacity of 80MW, all of which are also sited in the UK. Exceptionally, among the other REIFs, JLEN is well-invested in Anaerobic Digestion (AD) facilities, with a UK capacity of 50MW. To date, these AD plants have earned good returns, since plant revenues are underpinned by substantial payments from the Heat Incentive Scheme. Looking forward, JLEN, in common with other REIFs, has struggled to find renewable energy projects that can achieve its desired financial returns commensurate with assuming the appropriate risks – the Cramlington CHP acquisition apparently met those criteria. There were also four tuck-in acquisitions during 1H'22/23. Central to the search for further portfolio-enhancing deals is Foresight Group, which is now the Investment Adviser to JLEN.

The table below shows JLEN's current generation portfolio.

JLEN – Generation portfolio

Resource	Capacity (MW)
Wind	161
Solar	80
Waste/bioenergy	64
Anaerobic digestion	50
Hydro	4

Source: JLEN

Financial/share price data: In terms of its NAV of 124.4p per share (post the EGL adjustment), as at September 2022, JLEN has achieved a very marked increase – of 35% – over the depressed level of 92.2p per share at its March 2021 year-end. JLEN's latest NAV was boosted mainly by higher power price assumptions, along with the impact of the Cramlington CHP waste acquisition; it was offset by a material increase in its discount rate – up from 7.3% in 2021/22 to 8.4% currently. Although JLEN's cash dividend cover in 2021/22 was very thin, at just 1.1x, it has risen sharply this year to over 1.6x. The 2022/23 dividend forecast remains at 7.14p per share. In January 2022, JLEN raised ca.£61m (gross) of new equity at a small discount to its then share price; previously, in May 2021, a similar sum, £57m (gross), had been raised. The two issues noticeably improved JLEN's cash position.

Bluefield Solar (market cap. £832m)

Investment sectors: Bluefield Solar, having undertaken its IPO in July 2013, is the oldest of the three solar generation companies that dominate the UK market – the others are Foresight Solar and NextEnergy Solar, both of which are discussed below. Bluefield Solar's focus is entirely on the UK, and it derives considerable benefit from – and its reliance on – the various generous subsidies applicable to solar plants built prior to 2017.

Portfolio: Following the purchase of a portfolio of small wind plants – its first move outside the solar sector – Bluefield Solar's latest capacity figure is now 813MW. Nevertheless, almost 93% of its capacity revolves around solar generation assets. There have been several tuck-in acquisitions of late. Importantly, and in common with Greencoat UK Wind, Bluefield Solar's entire portfolio is based in – and is dependent upon – the UK and its regulatory regime.

Financial/share price data: In June 2022, Bluefield Solar raised £150m of new equity capital, which is being used to finance its acquisitions. Bluefield Solar's adjusted (see below) NAV, as at September 2022, was 141.4p per share (its NAV, as at March 2022, was 127.0p per share). While higher power price assumptions have boosted Bluefield Solar's NAV, it recently raised its discount rate from 6.75% to 7.25%. The latest NAV figure allows for the expected negative impact of the EGL, equivalent to a substantial 14p per share, which is largely offset by the reversal of the contingency applied to recent power price forecasts; this amounts to 11p per share. Bluefield Solar's dividend outlook – 8.40p per share for 2022/23 – is solid, helping to underpin its share price rating.

Bluefield Solar's shares have rallied strongly since the COVID-19-instigated market plunge in March 2020, as its five-year share price graph highlights.

Bluefield Solar – Five-year share price performance

Source: Refinitiv

Foresight Solar (market cap. £720m)

Investment sectors: The second-most valuable quoted solar generation REIF – after Bluefield Solar – Foresight Solar, is somewhat different, in that ca.170MW of its declared 1,018MW capacity is sited in Australia, where there have been prolonged and divisive debates about the merits of financing renewable generation projects. Nevertheless, the UK remains Foresight Solar's key market.

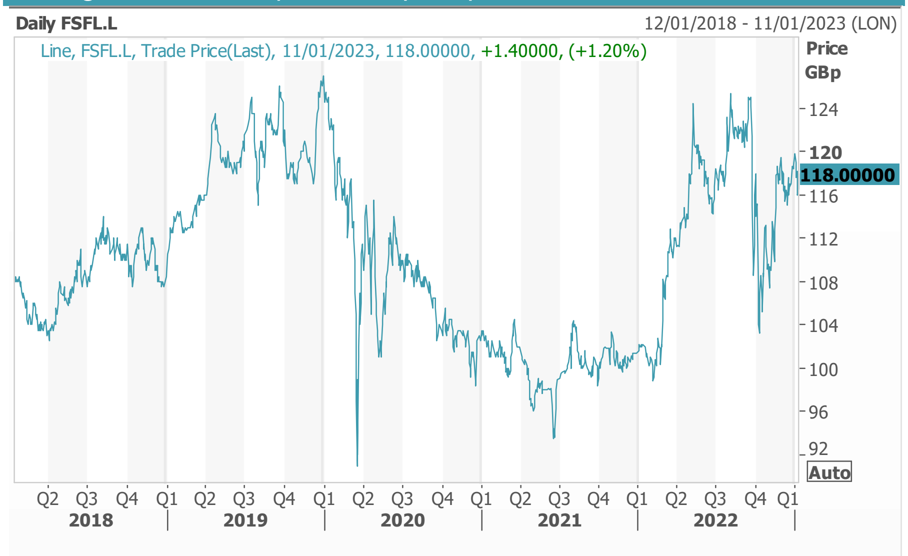
Portfolio: Just over 70% of Foresight Solar's assets, equivalent to 1,018MW of its total capacity, are in the UK. Also, in addition to its existing 125MW solar plant portfolio in southern Spain, Foresight Solar is investing in project Lorca, also in southern Spain, near Granada, for which 99MW of solar capacity is being constructed. Further Iberian acquisitions seem likely. In Australia, Foresight Solar persists in trying to build up its solar generation-based business – but with difficulty. Foresight Solar has also entered the BESS market, both with JLEN and on its own account.

Financial/share price data: At September 2022, Foresight Solar's NAV had risen to 125.6p per share, compared with just 91.9p per share at March 2021, representing a 36.6% increase in NAV over the 18-month period: this latest NAV figure includes provision for the projected EGL liability. Furthermore, in its September NAV calculation, Foresight Solar increased the assumed discount rate on its UK levered portfolio by 1%. This recovery in its NAV has spurred Foresight Solar to reassess its dividend policy. Previously, there were abiding concerns about Foresight Solar's thin dividend cover, which is now targeted to rise to 1.5x in 2022. Indeed, for the current year, a dividend of 7.12p per share – a 2.0% increase over the 2021 payment – is anticipated.

Like other REIFs, Foresight Solar weathered the COVID-19 pandemic without undue alarm, but its shares had performed sluggishly until quite recently, due partly to lower power price projections, which have now been reversed due to the surge in gas prices. However, the problems associated with its Australian portfolio have been a drag on Foresight Solar's share price rating.

The graph below shows how Foresight Solar's shares have performed over the past five years.

Foresight Solar – Five-year share price performance



Source: Refinitiv

Looking ahead, changes may be afoot, as Foresight Solar's former parent company, Foresight Group, whose interests extend well beyond the former's core renewable energy sector, undertook an IPO in February 2020; it is now valued at £506m.

NextEnergy Solar (market cap. £655m)

Investment sectors: NextEnergy Solar, which focuses on operating solar plants in the UK, undertook its IPO in April 2014. At that time, longer-term energy price projections were considerably higher than proved to be the case until late 2021, when gas prices began their upward surge. Over the past eight years, NextEnergy Solar has assembled a portfolio – as at September 2022 – of 865MW of installed capacity. Around 96% of its capacity is sited in the UK, with the remainder located in Italy.

Portfolio: Excepting the 35MW of its solar capacity in Italy, all of NextEnergy Solar's 865MW of capacity is UK-based. And, despite the end of the Renewable Obligation (RO) for new solar plants in 2017 and the subsidies to which it gave rise, NextEnergy Solar is continuing to invest in additional solar capacity. It is seeking to build up to 150MW of new solar capacity in the UK, 50MW of which relates to the Staughton plant. Part of the remainder will be achieved by the 50MW Hatherden plant, which is currently under construction. Further opportunities are sure to materialise via its JV with NPIII. In addition, NextEnergy Solar has made its first tentative steps into the BESS market.

Financial/share price data: NextEnergy Solar's latest reported NAV at September 2022 was 122.9p per share. Its low dividend cover – just 1.2x in 2021/22 – had been holding back NextEnergy Solar's plans to deliver decent dividend growth. However, on the back of higher dividend cover expectations, NextEnergy Solar's dividend is targeted to rise by ca.5%, to 7.52p per share. NextEnergy Solar has made progress, although – with the end of subsidies for new solar capacity as from 2017 – the past four years have been more challenging. As such, expectations for growth in both its share price and its dividend have been curbed, although higher dividend cover is now giving some scope for substantial nominal dividend increases.

The chart below shows how NextEnergy Solar's share price has performed over the past five years. Unlike some other REIFs, its share price has failed to recover to the levels achieved prior to the COVID-19 plunge in early 2020.

NextEnergy Solar – Five-year share price performance

Source: Refinitiv

Undoubtedly, the three largest UK-quoted wind generators – including the Irish-based Greencoat Renewables – and the three solar generators form the backbone of the quoted REIF sector, which now comprises a membership of 22 funds. In market capitalisation terms, these six REIFs account for ca.60% of the sector's overall value.

In comparing their portfolios, the three quoted (almost) pure solar companies – Bluefield Solar, Foresight Solar and NextEnergy Solar – are included in the wind and solar data table below, along with Greencoat UK Wind, TRIG and JLEN. The latest plant capacity data of these six REIFs are also highlighted in the table.

UK wind and solar data

REIF	Installed capacity (MW)	UK	Solar	Wind
Bluefield Solar	813	100%	93%	7%
Foresight Solar	1,018	71%	100%	0%
Greencoat UK Wind	1,610	100%	0%	100%
JLEN	359	100%	22%	45%
NextEnergy Solar	865	96%	100%	0%
TRIG	1,962	54%	15%	84%

Source: Hardman & Co Research

Over three years, BESS, as an energy source, has come to the fore as the quest to design a viable storage system for power generated by renewable energy sources persists. The unquestioned UK leader is Gresham House Energy Storage. The RoI-based Gore Street Energy Storage is also a significant player in this growing energy subsector. Some prominent wind and solar generators, including TRIG, Bluefield Solar, Foresight Solar and NextEnergy are also investing – at a comparatively modest level to date – in this developing field.

Gresham House Energy Storage (market cap. £879m)

Investment sectors: Gresham House Energy Storage is the larger of the two quoted REIFs that are heavily exposed to the BESS subsector. Investing in BESS plants is its core business, which enables it to provide frequency balancing services to grid operators. Its shares have performed very impressively during 2022 – up by 23.3%.

Portfolio: Gresham House Energy Storage now operates utility-scale BESS assets at many different sites in England and Scotland, following a pronounced build-up over the past three years. Its plant capacity has now risen to 425MW, with a similar capacity currently under construction. However, this figure is set to be dwarfed by the planned delivery of the existing pipeline of 707MW, which – if constructed – would expand capacity up to almost 1,600MW by 2024: it includes a proposed 180MW plant in County Louth, RoI. On the trading front, Gresham House Energy Storage is benefiting from the many arbitrage opportunities that have recently arisen as UK renewable generation output rises in a volatile energy trading market. The 2022 gas-driven spikes in power prices – both on the upside and on the downside – provide an obvious example. More specifically, Gresham House Energy Storage was awarded valuable contracts in the recent T1 and T4 capacity auctions.

Financial/Share price data: Gresham House Energy Storage's latest reported NAV was 151.2p per share, as at September 2022. Furthermore, its very conservative 10.8% blended discount rate – way above the ca.7.5% average adopted by other REIFs – suggests some material hidden value. Gresham House Energy Storage plans to pay a 7p per share dividend for 2022. Since January 2020, Gresham House Energy Storage has raised ca.£400m of new equity finance. With BESS technology being a popular sector for discerning investors, demand for Gresham House Energy Storage's shares has been heavy.

Fundraising

Strong primary and secondary markets for infrastructure funds – £10bn+ raised since January 2020

The sharp downturn in the UK economic outlook, highlighted by the abandoned mini-Budget, which was replaced by a further mini-Budget with markedly different economic policies, has created a new – and arguably more challenging – investment environment.

AT85's struggle to complete its IPO

While there have been several fundraisings in the sector, especially during 1H'22, no IPOs were completed during the year. However, AT85 Global Mid-Market Infrastructure, after several delays in completing its IPO, is planning to raise £300m (gross) by March 2023. Furthermore, despite various tuck-in acquisitions, there were few major deals during the year. However, two relative newcomers to the sector, Digital 9 Infrastructure and Pantheon Infrastructure, each undertook several acquisitions as they sought to build up their portfolios. In all, given the low level of corporate activity, there were fewer reasons to raise further equity funds.

Nevertheless, judging by the table below, which shows that the IICs and REIFs have raised almost £10.2bn of new money since January 2020, investor appetite remains reasonably strong, despite some shortcomings of late. Of this figure, around two-thirds was raised for the REIFs and the remainder for the IICs.

Investor resilience to the sector despite rising interest rates

Clearly, many investors seem readily to accept the risk profile. While no sector IPO was completed in 2022, nine sector IPOs took place in 2021 – three IICs and six REIFs – although there was the occasional failure, such as the planned IPO of the Blackfinch Renewables European Income Trust. Importantly, too, many secondary fundraisings – in some cases for quite serious amounts of equity – have been achieved at a very modest discount to the prevailing share price.

Fundraisings earlier in 2022 saw INPP and TRIG raise £325m (gross) and £277m (gross) respectively, at a low discount to their then prevailing share prices. The recent rise in interest rates is expected to make future offerings of this type less attractive to investors.

US tech sell-off in 1H'22 had some negative implications for digital infrastructure fundraises

Over the past year, the sell-off of US tech stocks during 1H'22 made it harder for digital infrastructure funds to raise new equity. Pantheon Infrastructure's proposed £250m C-share issue was pulled in September 2022: "extreme volatility" as a result of the abandoned mini-Budget was cited as the reason. In the case of Harmony Energy Income, a REIF, its latest equity offering raised just £15m, way below what was sought. A similarly disappointing response greeted the November 2022 fundraise of ThomasLloyd Energy Impact, which yielded just over £30m (gross) of proceeds.

Major IIC and REIF fundraises since January 2020				
IICs and REIFs	Date	New shares (m)	Price (p)	Gross proceeds (£m)
3i Infrastructure	nil			
Aquila Energy Efficiency	May-21	100.0	100	100
Aquila European Renewables	Sep-21	87,4	89	76
	Oct-20	122.9	89	107
	Mar-20	38.1	90	34
Atrato Onsite Energy	Nov-21	150.0	100	150
BBGI	Jul-21	45.2	166	75
	Nov-20	32.5	169	55
Bluefield Solar	Jun-22	115.4	130	150
	Jul-21	89.1	118	105
	Nov-20	36.5	124	45
Cordiant Digital Infrastructure	Jan-22	188.7	106	200
	Jun-21	185.0	100	185
	Feb-21	370.0	100	370
Digital 9 Infrastructure	Jul-22	54.5	110	60
	Jan-22	88.1	108	95
	Sep-21	255.8	107	275
	Jun-21	166.6	105	175
	Mar-21	300.0	100	300
Downing Renewables and Infrastructure	Jun-22	47.6	111	53
	Oct-21	14.5	103	15
	Dec-20	122.5	100	123
Ecofin US Renewables	May-22	10.7	101	11
	Dec-20	125.0	100	125
Foresight Solar	nil			0
GCP Infrastructure	nil			0
Gore Street Energy Storage	Apr-22	136.4	110	150
	Sep-21	68.8	107	74
	Apr-21	132.3	102	135
	Dec-20	60.0	100	60
	Jul-20	24.6	96	24
	Feb-20	3.6	96	3
Greencoat Renewables	Apr-22	251.4	95	240
	Oct-21	148.6	95	139
	Dec-20	110.6	97	105
Greencoat UK Wind	Nov-21	341.0	132	450
	Feb-21	150.9	131	198
	Sep-20	305.3	131	400
Gresham House Energy Storage	May-22	103.4	145	150
	Jul-21	89.3	112	100
	Nov-20	114.3	105	120
	Feb-20	30.0	104	31
Harmony Energy Income	Oct-22	14.8	100	15
	Nov-21	210.0	100	187
HICL	Jul-22	94.7	169	160
	Jul-20	73.2	164	120
HydrogenOne Capital Growth	Apr-21	21.5	100	21
	Jul-21	107.4	100	107
INPP	Apr-22	203.8	160	325
	Jul-20	81.8	165	135
JLEN	Jan-22	60.1	101	61
	May-21	54.7	104	57
	Feb-20	49.7	115	57
NextEnergy Solar	nil			0
Octopus Renewables	Nov-21	70.0	105	74
	Jun-21	144.9	104	150
Pantheon Infrastructure	Nov-21	400.0	100	400
SEEIT	Sep-22	118.4	114	135
	Mar-22	87.0	115	100
	Sep-21	226.2	110	250
	Feb-21	150.9	106	160

Source: Hardman & Co Research

Major IIC and REIF fundraises since January 2020 (continued)

IICs and REIFs	Date	New shares (m)	Price (p)	Gross proceeds (£m)
	Oct-20	100.0	105	105
	Jun-20	105.8	104	110
Sequoia Economic Infrastructure	Mar-21	105.0	105	110
	Feb-20	267.9	112	300
ThomasLloyd Energy Impact	Nov-22	34.3	89	31
	Dec-21	115.4	100	85
TRIG	Mar-22	210.1	132	277
	Sep-21	161.3	124	200
	Mar-21	195.0	123	240
	Nov-20	160.0	125	200
	May-20	100.0	120	120
Triple Point Energy Transition	Oct-20	100.0	100	100
US Solar	May-21	132.0	72	98
Victory Hill GESO	Jun-22	111.0	110	122
	Dec-21	69.0	101	70
	Feb-21	242.6	100	243
Total				**10,187**

Source: Hardman & Co Research

Current market ratings

Set out below are the latest market ratings for the 31 IICs and REIFs under review. Most NAV figures are those published at the end of either June 2022 or September 2022.

Dividends, yields and NAVs

The tables below covering dividend yields and NAVs show:

- a total market capitalisation for the 31 IICs and REIFs of £30.7bn, split as follows: REIFs at £16.1bn and IICs at £14.6bn.
- a prospective underlying dividend yield for the 31 IICs/REIFs of between 4.5% and 7.0%, with a few notable outliers, such as 3i Infrastructure, whose prospective dividend yield is noticeably lower; and
- following the pronounced rise in interest rates, most IIC/REIF funds are currently trading at discounts to their NAVs – Aquila Energy Efficiency and Cordiant Digital Infrastructure being the most notable, with discounts of 27.5% and 24.7%, respectively.

NAV premia range widely

The table below shows the NAV data reported by each of the 31 IICs and REIFs – in most cases, at the end June 2022 or September 2022. In respect of the two most valuable REIFs, Greencoat UK Wind and TRIG, NAVs for September 2022. have been used. Importantly, consistency on such issues as discount rates, long-term power prices, asset valuations and asset lives remains elusive, which precludes precise read-across comparisons between NAV premia and other valuation tools. Current market yields for the IICs and REIFs, based on our prospective dividends for the coming period, are also set out. Some sector newcomers are expected, initially at least, to pay comparatively low dividends, as they build up their portfolios.

UK-quoted IICs and REIFs

IIC and REIF	Share price (p)	Market cap. (£m)	NAV per share (p)	Prem./Disc. to NAV	Prospective yield
3i Infrastructure	333	2,968	325.8	2.2%	3.3%
Aquila Energy Efficiency	71	71	97.9	-27.5%	4.9%
Aquila European Renewables	81	331	97.5	-16.9%	5.7%
Atrato Onsite Energy	95	143	92.8	2.5%	5.3%
BBGI	158	1,123	149.8	5.1%	4.7%
Bluefield Solar	136	832	141.4	-3.8%	6.2%
Cordiant Digital Infrastructure	85	654	107.5	-24.7%	4.7%
Digital 9 Infrastructure	87	750	105.1	-19.3%	6.9%
Downing Renewables and Infrastructure	113	209	117.7	-4.0%	4.4%
Ecofin US Renewables Infrastructure (ex € to £)	69	95	78.8	-13.1%	6.8%
Foresight Solar	118	720	125.6	-6.1%	6.0%
GCP Infrastructure	102	903	112.8	-9.6%	6.9%
Gore Street Energy Storage	112	537	111.1	0.4%	7.2%
Greencoat Renewables (ex € to £)	101	1,156	97.4	4.0%	5.4%
Greencoat UK Wind	153	3,538	155.0	-1.6%	5.1%
Gresham House Energy Storage	163	879	151.2	7.5%	4.3%
Harmony Energy Income	124	287	122.8	0.6%	6.5%
HICL Infrastructure	164	3,337	164.3	-0.2%	5.0%
HydrogenOne Capital Growth	79	102	96.5	-18.1%	0.00
INPP	152	2,899	157.3	-3.5%	5.1%
JLEN	120	791	124.4	-3.9%	6.0%
NextEnergy Solar	111	655	122.9	-9.7%	6.8%
Octopus Renewables	101	568	110.3	-8.9%	5.2%
Pantheon Infrastructure	94	449	99.3.	-5.8%	2.1%
SEEIT	97	1,071	106.1	-9.0%	6.2%
Sequoia Economic Infrastructure	88	1,533	93.6	-6.4%	7.5%
ThomasLloyd Energy Impact (ex $ to £)	96	169	83.3	15.2%	1.5%
TRIG	131	3,236	134.3	-2.8%	5.2%
Triple Point Energy Transition	80	80	100.3	-20.7%	6.9%
US Solar (ex $ to £)	70	231	80.1	-13.2%	6.6%
Victory Hill GSEO	102	431	112.5	-9.3%	4.9%
Total	n/a	30,747	n/a	n/a	n/a

Note: Based on prices as at 31/12/2022; Source: Bloomberg, Hardman & Co Research

Valuation issues

NAV movements pivotal for valuing IICs and REIFs

In valuing IICs and REIFs, movements in their NAVs are pivotal. For much of 1H'22, there were significant premia over NAV for most quoted IICs and REIFs – no longer. These premia have, with a few exceptions, been eroded in recent months as 10-year gilt yields and interest rates moved upwards. However, the funds' defensive characteristics, especially at a time of economic uncertainty and rising inflation, appeal to many discerning, income-seeking investors.

In terms of NAVs, many rose sharply during 2022, especially those relating to REIFs involved in wind and solar generation. Raised long-term power price assumptions and higher inflation have been key factors, although upward movements in discount rates – to reflect recent interest rate rises – have recently offset these increases.

JLEN and Foresight Solar's NAV surge in 2021/22

Examples from JLEN and Foresight Solar illustrate this trend. In 2021/22, Foresight Solar's 27.4% NAV increase and JLEN's 25.1% NAV increase, due mainly to higher long-term energy price assumptions, are clearly very material. Looking forward, the impact of higher interest rates on valuation figures is set to reverse this trend.

Back-tracking NAVs

The table below tracks the latest published NAVs for the leading IICs and REIFs; it also compares them with those reported back in late 2018 or early 2019 – both dates preceded the outbreak of the COVID-19 pandemic. The 2022 NAV figures quoted below are mostly based upon the latest published data, from either June 2022 or from September 2022. Until recently, with the notable exception of 3i Infrastructure, which has thrived, sector NAVs have generally edged upwards. Recently, though, the surge in gas prices has driven up NAVs to the benefit of both Greencoat UK Wind and TRIG. The notable outlier on the downside has been the troubled Sequoia Economic Infrastructure, which has recorded a sharp fall in its NAV in recent years: GCP Infrastructure's performance has also been disappointing.

Historical NAV data of leading IICs and REIFs

IIC and REIF	NAV at either 06/2022 or 09/2022 (p)	NAV at either 12/2019 or 03/2020 (p)	NAV at either 12/2018 or 03/2019 (p)	Current prem./disc. to 12/2018 or 03/2019 NAV
3i Infrastructure	325.8	254.5	234.7	+38.9%
BBGI	149.8	136.2	133.5	+12.2%
Bluefield Solar	141.4	120.8	114.4	+23.6%
Foresight Solar	125.6	103.8	111.2	+12.9%
GCP Infrastructure	112.8	109.8	112.5	+0.3%
Greencoat Renewables	c110.1	c103.2	c103.4	+6.5%
Greencoat UK Wind	155.0	121.4	123.1	+25.9%
HICL Infrastructure	164.3	152.3	157.5	+4.3%
INPP	157.3	150.6	148.1	+6.2%
JLEN	124.4	97.5	104.7	+18.8%
NextEnergy Solar	122.9	99.0	110.9	+10.8%
Sequoia Economic Infrastructure	93.6	96.7	103.4	-9.5%
TRIG	134.3	115.0	108.9	+23.3%

Source: Hardman & Co Research

Lack of consistency in determining NAVs

More specifically, in analysing the IICs and REIFs, it is very apparent that there is a pronounced lack of consistency in setting individual fund valuation methodologies. Many of the key valuation tools, such as discount rates, future power price assumptions, inflation projections, asset lives and energy yields, *inter alia*, are – in many cases – inherently subjective.

Dividends

Search for decent nominal – or preferably real – dividend growth

Given mounting concerns about UK inflation – now close to 10%, and way above the Bank of England's declared 2% target figure – it will become increasingly difficult for the stocks under review to pay real, as opposed to nominal, dividend increases. 3i Infrastructure, with its aggressive dividend projections, may be an exception in this respect, along with Greencoat UK Wind and its RPI-linked dividend policy.

For many years, the established IICs and REIFs have managed to generate nominal dividend increases. With inflation at 2%, real dividend increases were very common. However, with ongoing inflation far above this figure, real dividend increases will be quite rare, although the rate of inflation is now beginning to ease back – and should fall quite noticeably during 2023.

Eroding dividend cover for many REIFs

In 2021, dividend cover fell to low levels for many of the established stocks within the IIC and REIF grouping – although not for 3i Infrastructure, a major outlier in this respect. Several are paying dividends that are barely covered, which clearly has implications for future dividend growth. In some cases, notably Foresight Solar, HICL Infrastructure, JLEN and NextEnergy Solar, their latest published cash dividend cover showed a major improvement over their previous level. Indeed, in framing their future dividend targets, IICs and REIFs will be very mindful of their level of projected dividend cover and how it might change going forward.

Most yields now lie within 4.5% to 7.0% range – 3i Infrastructure's growth profile makes it an outlier

The table below shows projected dividend payments and the relevant prospective yields for the quoted IICs and REIFs. Most underlying prospective yields lie within the 4.5%-7.0% range. Despite several IICs and REIFs having quite low dividend cover, most are targeting modest annual dividend increases – but in nominal, not in real, terms. Such a scenario is in clear contrast with the UK's leading gas supply company, Centrica, which cut its dividend per share in 2019 by a formidable 58%.

Prospective dividends

IICs and REIFs	Financial year-end	Prospective dividend (p)	Prospective yield
3i Infrastructure	Mar	11.15	3.3%
Aquila Energy Efficiency	Dec	3.50	4.9%
Aquila European Renewables	Dec	4.64	5.7%
Atrato Onsite Energy	Sep	5.00	5.3%
BBGI	Dec	7.48	4.7%
Bluefield Solar	Jun	8.40	6.2%
Cordiant Digital Infrastructure	Mar	4.00	4.7%
Digital 9 Infrastructure	Dec	6.00	6.9%
Downing Renewables and Infrastructure	Dec	5.00	4.4%
Ecofin US Renewables Infrastructure	Dec	4.63	6.8%
Foresight Solar	Dec	7.12	6.0%
GCP Infrastructure	Sep	7.00	6.9%
Gore Street Energy Storage	Mar	8.00	7.2%
Greencoat Renewables	Dec	5.47	5.4%
Greencoat UK Wind	Dec	7.72	5.1%
Gresham House Energy Storage	Dec	7.00	4.3%
Harmony Energy Income	Oct	8.00	6.5%
HydrogenOne Capital Growth	Dec	n/a	n/a
HICL Infrastructure	Mar	8.25	5.0%
INPP	Dec	7.74	5.1%
JLEN	Mar	7.14	6.0%
NextEnergy Solar	Mar	7.52	6.8%
Octopus Renewables	Dec	5.24	5.2%
Pantheon Infrastructure	Dec	2.00	2.1%
SEEIT	Mar	6.00	6.2%
Sequoia Economic Infrastructure	Mar	6.57	7.5%
ThomasLloyd Energy Impact	Dec	1.45	1.5%
TRIG	Dec	6.84	5.2%
Triple Point Energy Transition	Mar	5.50	6.9%
US Solar	Dec	4.61	6.6%
Victory Hill GSEO	Dec	5.00	4.9%

Source: Company accounts, Hardman & Co Research

Greencoat UK Wind's pronounced – and RPI-linked – 2022 dividend hike

Overall, though, the dividend pay-out record in recent years from the IICs and REIFs has been reassuring, especially when set alongside the intense financial pressures that other UK energy stocks, such as Centrica, have faced. With the relative lack in the market of good-quality stocks on decent yields, and the many dividend cuts and/or suspensions by well-known quoted companies over the past three years, it is hardly surprising that IICs and REIFs have attracted the interest of many discerning yield-driven investors.

Consistent NAV premia – the Severn Trent RAV comparison

Furthermore, except for the period in March 2020 when the COVID-19 pandemic panic was at its height, many IICs and REIFs had continued – until recently – to trade at a decent premium to their NAV, in common with utilities such as regulated water stocks. Severn Trent, for example, is currently trading at a ca.20%-25% premium to its regulatory asset value (RAV, a similar concept to NAV adopted by price-regulated utilities) despite the decidedly tougher five-year pricing regime imposed following the PR19 periodic review.

Key macro numbers

Whether this scenario continues depends on various factors, most notably major changes to the pathway of volatile power prices and any further upward movements in both inflation and, more likely, in interest rates.

Lower-capitalised IICs and REIFs

The smaller infrastructure players

Out of the 31 IICs and REIFs, nine have a current market capitalisation of over £1bn. Prospects for the two largest digital infrastructure players, Cordiant Digital Infrastructure and Digital 9 Infrastructure, along with GCP infrastructure, were addressed earlier. In addition, the business activities and financial prospects of the three solar funds – Bluefield Solar, Foresight Solar and NextEnergy Solar – as well as of JLEN and Gresham House Energy Storage, have also been discussed earlier in this report.

The remaining IICs and REIFs all have current market capitalisations below the £650m mark. At the lower end of the market capitalisation table are some REIFs, which are currently valued at below £100m; they include Aquila Energy Efficiency, Ecofin US Renewables, and Triple Point Energy Transition.

Investor interest in BESS

Given the increasing interest in BESS technology, it is worth highlighting the business models of both Gore Street Energy Storage and of Gresham House Energy Storage; the latter has been the standout performer in the sector over the past year. In fact, both 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.

Many announcements outstanding – and eagerly awaited

For the most recent sector entrants, Aquila Energy Efficiency, Atrato Onsite Energy, Harmony Energy Income, HydrogenOne Capital Growth, ThomasLloyd Energy Impact, Victory Hill GSEO and Pantheon Infrastructure, it is still early days. Nonetheless, some of these REIFs, notably Aquila Energy Efficiency and HydrogenOne Capital Growth, have seen their share price ratings fall quite steeply in recent months. Announcements are awaited from several in this grouping regarding their investment strategies – and to what extent this replicates the intentions set out in their pre-IPO Prospectuses, especially with respect to the realisation of their individual pipelines.

Brief profiles of the smaller REIFs and of Pantheon Infrastructure are set out below. We have also included new sector entrant, AT85 Global Mid-Market Infrastructure, shares of which are due to be publicly traded, for the first time, in March 2023; its delayed IPO process has been challenging.

Aquila Energy Efficiency (market cap. £71m)

AQUILA CAPITAL

Investment sectors: Aquila Energy Efficiency is out of the same stable as Aquila European Renewables. Its focus is somewhat different in that its *mantra* is delivering energy efficiency from a wide range of investments with both public and private bodies; targeted markets include the UK and the EU, notably Germany, Spain and Italy.

Portfolio: Delivering completed deals has proven painstakingly slow with just a few modest initiatives – until recently – being undertaken. In consequence, a strategic review, which effectively endorsed the attractions of the European energy market for energy efficiency offerings, was undertaken. Importantly, shareholders will be given an opportunity to vote on the continuation of the fund, via an Initial Continuation Resolution, in February 2023, which could be pivotal – depending on the outcome (a 50%+ majority vote will suffice) – both to the future of Aquila Energy Efficiency as a quoted stock and whether its portfolio will reach critical mass. However, in recent months, the pace of deployment has been stepped up quite markedly. Currently, £87m of commitments are in place, comprising some 30 diverse investments, including two substantial investments in Germany and several solar-related projects in Spain.

Financial/share price data: Aquila Energy Efficiency's latest NAV figure is 97.9p per share as at June 2022. A 3.5p dividend for the 2022 financial year is planned. Beyond that date, it is far from clear how the dividend profile, which is also the subject of a review, will evolve. Aquila Energy Efficiency undertook an IPO in May 2021 – its share price has fallen by 29% in the subsequent 19 months, mainly due to the lack of progress in building a viable energy efficiency portfolio – an issue that has already culminated in the resignations of two Non-Executive Directors. At its IPO, Aquila Energy Efficiency had raised gross proceeds of £100m – below the £150m target that was set out in its Prospectus.

Aquila European Renewables (market cap. £331m)

Investment sectors: Aquila European Renewables, which was floated in 2019, is based in Hamburg, Germany, a country that will undergo major energy changes over the next decade – with offshore wind generation plant replacing the many of the decommissioned nuclear power plants. Significantly, wind power, solar power and hydro power assets are Aquila European Renewables' preferred technologies.

Portfolio: In recent years, Aquila European Renewables has expanded aggressively: we estimate that it now has an operational generation capacity of 417MW (the Rocks and Albeniz plants are included in this figure). The Nordic Region, especially Norway, has emerged as its prime wind generation market. Clearly, its 25.9% stake in the 150MW Tesla plant in Sweden and its 13.7% stake in the controversial 400MW Rocks onshore wind project in Norway are cornerstone investments. Aquila European Renewables also owns valuable assets at Olhava in Finland and at Svindbaek in Denmark. In southern Europe, it has acquired a portfolio of hydro assets in Portugal, along with Albeniz, a 50MW solar business in southern Spain. Aquila European Renewables seems likely to undertake further renewable generation investment in the attractive Iberian market. And, unlike any other REIF, it has invested directly in Greece where it owns the 40MW solar generation plant at Desfina.

Financial/share price data: Aquila European Renewables' NAV at September 2022 was 97.5p (c110.2) per share – a 6.5% rise on the March 2022 NAV out-turn. With an improved dividend cover, the 2022 dividend is expected to rise by ca.5% to 4.64p (c5.25) per share. At its IPO in May 2019, Aquila European Renewables raised €154m, which has been progressively invested in a diversified portfolio of renewable generation assets across mainland Europe, although the UK is excluded from its core energy markets. More recently, in November 2020, it raised a further €127m and, in September 2021, another €90m of equity capital was secured; these fundraises financed much of its recent EU investment.

AT85 Global Mid-Market Infrastructure (est. market cap. £294m)

Investment sectors: AT85 Global Mid-Market Infrastructure sought to complete its IPO in December 2022 – at a difficult time with rising interest rates. In the event, this timeframe was missed; instead, its IPO is now due to be completed by March 2023. It is expected that £300m (gross) of new proceeds will be raised, equivalent to ca.£294m (net). The sectors on which AT85 Global Mid-Market Infrastructure plans to focus are threefold – energy, digital and transport/logistics. As its name suggests, investments are likely to average ca.£50m as it seeks to tap into the mid-market element of the global infrastructure market. North America and the UK seem set to be its prime target markets.

Portfolio: In coming months, it is likely that AT85 Global Mid-Market Infrastructure will be building up its portfolio. Currently, it has a pipeline of ca.£540m, of which £99m is accounted for by three designated investments within its "initial assets" classification. The largest planned investment is in BTR, a utility-related investment in the US: it is costed at £51m. The other two are ACL Airshop, with a global market offering, and the US-based Everfast, which operates in the logistics sector; the estimated costs are £26m and £21m, respectively. Beyond these three initial targets, utility-related and digital investment seem likely to prevail.

Financial/share price data: No financial information relating to AT85 Global Mid-Markets' trading is currently available – its financial year coincides with the calendar year. However, it is targeting a dividend of 4.5p per share for the 2023 financial year. Its IPO is due to be completed by March 2023 and a total of £300m (gross) is scheduled to be raised as part of this process. These funds seem likely to finance investments in AT85 Global Mid-Market Infrastructure's three chosen sectors and, more immediately, its "initial assets". For investors, there will be close comparisons with Pantheon Infrastructure, which floated in 2021, and whose focus is on similar market sectors.

Atrato Onsite Energy (market cap. £143m)

Investment sectors: The core business of Atrato Onsite Energy is the onshore renewable assets market. More specifically, though, it focuses on the installation of energy equipment on the rooftops of commercial properties, such as supermarkets, which it argues is a somewhat neglected area in terms of energy efficiency potential.

Portfolio: As it seeks to build up its portfolio, it is likely that further agreements with participating organisations will be announced shortly – discussions with several companies are under way. Currently, Atrato Onsite Energy is operating on 37 sites, 18 of which are occupied by Tesco. Anglian Water, now owned by private equity, and Amazon provide seven sites each, although the largest generation unit, at a modest 20MW, is on the premises of leading car manufacturer, Nissan, in Sunderland. In September 2022, Atrato Onsite Energy acquired Sonne Solar, which offers a capacity of 33MW of PV systems. Importantly, as at September 2022, over 90% of Atrato Onsite Energy's revenues were either the subject of PPAs or are actual subsidies.

Financial/share price data: Atrato Onsite Energy's NAV at September 2022 was 92.8 per share compared with 97.4p per share in March 2022 – a decline of almost 5% over six months. A dividend payment of 5p per share is being targeted for 2022/23. Nevertheless, Atrato Onsite Energy's current share price is 5% below the IPO price in November 2021. Subsequently, Atrato Onsite Energy has raised a further £150m of new equity from an issue that was significantly over-subscribed.

Downing Renewables and Infrastructure (market cap. £209m)

Investment sectors: Downing Renewables and Infrastructure has been busy assembling a portfolio of generation investments in key European markets, most notably in Sweden where it has been focusing on small hydroelectric plants, as well as on solar opportunities in the UK.

Portfolio: In building up its generation capacity to the current figure of 193MW, Downing Renewables and Infrastructure bought eight hydro – mainly run-of-river – plants in Sweden, with a capacity of 26MW, from Fortum AB, for £60m. Subsequently, it has acquired both further hydro plants and some wind generation plants there to boost its Swedish capacity to 86MW. On the solar front, Downing Renewables and Infrastructure has invested £42m to acquire capacity of 96MW, 78MW of which is in Great Britain, with the remaining 18MW being located in NI. In terms of power sources, solar now accounts for around half of Downing Renewables and Infrastructure's total capacity, with the remainder being broadly shared between hydro and wind.

Financial/share price data: Downing Renewables and Infrastructure's latest NAV is 117.7p per share, up from 110.1 per share as at March 2022. In the interim, the assumed discount rate has been increased to a weighted average of 7.7% – ranging from 6.3% for unlevered Swedish wind assets to 8.0% for levered UK solar and

Swedish hydro plants. For 2022, Downing Renewables and Infrastructure has reaffirmed a 5p per share dividend. As part of its IPO in December 2020, Downing Renewables and Infrastructure had raised over £122m of proceeds (gross), part of which was used to finance the purchase of its expanding hydro plant portfolio in Sweden and its solar portfolio in the UK: a further £53m was raised in June 2022.

Ecofin US Renewables Infrastructure (market cap. £95m)

Investment sectors: Excepting the Whirlwind wind generation acquisition, solar generation, in certain selected states in the US, lies at the heart of the model for Ecofin US Renewables. To finance its expansion, Ecofin US Renewables undertook a successful IPO on the LSE in 2020. However, given the recent announcement by US Solar about its future as a quoted REIF, there will be some concerns that similar industry structure issues may adversely affect Ecofin US Renewables.

Portfolio: Initially, Ecofin US Renewables Infrastructure's priority had been to complete the acquisition of its four-seed portfolio, which was comfortably achieved. The 49.5% stake in two Californian solar plants, Beacon Solar 2 and Beacon Solar 5, with a total capacity of 108MW, is integral to its underlying valuation. Seeds 2, 3 and 4, with a total capacity of 23MW, were completed earlier, so that Ecofin US Renewables Infrastructure is now the owner of several energy assets in Massachusetts and has operating solar generation plant in four other states. In addition to completing its 60MW Whirlwind Energy acquisition in Texas – as the name suggests, a wind asset rather than a solar asset – Ecofin US Renewables Infrastructure has raised its total capacity to 177MW.

Financial/share price data: Ecofin's NAV at September 2022 was 78.8p (c95.4) per share, a 2% decrease on the June 2022 figure. A 4.63p (c5.60) dividend per share payment is expected for this calendar year. At its IPO in December 2020, Ecofin US Renewables Infrastructure raised $125m (£105m) (gross) – its shares are currently down by 17% compared with its IPO price two years ago. Concerns about structural changes affecting the US solar generation sector and the surprise resignation of three of its well-established fund managers in July 2022 have both been destabilising factors for Ecofin US Renewables.

Gore Street Energy Storage (market cap. £537m)

Investment sectors: Gore Street Energy Storage, based in the RoI, continues to invest in a diversified portfolio of utility-scale BESS projects – it operates in the same space as the larger Gresham House Energy Storage. More specifically, Gore Street Energy Storage uses battery cell technology to provide frequency balancing services to grid operators – undoubtedly an expanding market. It also retains its optimism about the revenue growth potential arising from its "dynamic containment" technical initiatives.

Portfolio: Country-wise, Gore Street Energy Storage has been focused on the UK and the RoI. In both countries, it has been assembling a portfolio of BESS investments. Gore Street Energy Storage now owns a total of 292MW of operating assets – a figure that is set to rise markedly over the next two years. In NI, Gore Street owns two productive 50MW plants at Drumkee and Mullavilly. Furthermore, Gore Street holds 51% stakes in both the recently commissioned 30MW Kilmannock BESS plant and in the 30MW Porterstown equivalent, which is near completion; both plants are in the RoI. Furthermore, both sites are set to increase their capacity following consent for major grid upgrades locally. Gore Street Energy Storage continues to look internationally and has recently completed BESS deals with ERCOT in Texas – three of its BESS plants are operational there – and it has also secured a 90% stake in a project at Cremzow in Germany. Looking forward, Gore Street Energy Storage is planning to build a 200MW plant on a construction-ready site in Heysham, Lancashire. It is a key project, but its commissioning is unlikely before 2026.

Financial/share price data: Despite a 1.0% increase in its discount rate to 9.3%, Gore Street Energy Storage's latest NAV, as at September 2022, was 111.1 per share; this was still an increase when compared with the March 2022 figure of 107.1p per share. For 2022/23, Gore Street Energy Storage is seeking to pay a dividend of 8p per share, this latter payment being conditional on the level of its NAV growth. To finance its expansion, Gore Street Energy Storage has been busy raising funds of late. Indeed, since January 2020, Gore Street Energy Storage has raised proceeds of almost £450m (gross), £150m of which was secured in April 2022.

Harmony Energy Income (market cap. £287m)

Investment sectors: The focus of the Yorkshire-based Harmony Energy Income is clear-cut – developing and operating commercial-scale BESS projects in Britain; it is closely involved with the US-based Tesla in seeking to do so. Harmony Energy Income's current operating BESS capacity is 98MW, a figure that is set to rise sharply over the next 18 months.

Portfolio: Harmony Energy Income's total capacity should exceed 300MW by the end of 4Q'23. The lead project is at Pillswood, near East Cottingham in East Yorkshire, with a total capacity of 98MW. The 99MW Bumpers Farm project in Buckinghamshire is the second of three plants with a near-100MW total capacity in the portfolio; it is due to become operational in 3Q'23. And, in December 2022, Harmony Energy Income announced a £22m investment in three further "shovel-ready" BESS projects, the largest of which – a 99MW plant at Rye Common, Hampshire – is due to be energised in late 2024.

Financial/share price data: Harmony Energy Income's NAV at October 2022 was 122.8p per share; it was boosted by the building progress at Pillswood. In terms of its dividend policy, Harmony Energy Income plans to pay an 8.0p dividend in its 2023/24 financial year. At its IPO in November 2021, Harmony Energy Income raised proceeds of £210m (gross), much of which is being deployed into completing the building of its seed assets, most notably the Pillswood project. It benefits from a substantial investment by Ineos, a well-known, privately owned participant in the international oil and gas sector. However, having set a £130m maximum, its recent fundraising was very poorly supported, with just £15m being raised.

HydrogenOne Capital Growth (market cap. £102m)

Investment sectors: Given the undoubted investor interest in the developing hydrogen market, HydrogenOne Capital Growth should be well-positioned to deliver significant benefits for its shareholders, once it has assembled a decent portfolio of hydrogen-based assets. So far, HydrogenOne Capital Growth has not identified a single specific element of the emerging hydrogen market on which to focus, although the hydrogen/gas relationship is likely to be pivotal. Government policy on many hydrogen-related issues, including the scope to redeploy – at least in part – the existing UK gas pipe network, remains unclear. The recent surge in gas prices – and the near political panic it has generated – may well delay this process.

Portfolio: Recently, HydrogenOne Capital Growth confirmed that a majority of the net proceeds from its July 2021 IPO had been invested, mostly in three private companies. Several relatively modest investments have been made, including the £10m investment in Bramble Energy, which operates in the fuel cells market. Overseas, a £20m stake in Elcogen, an Estonian-based undertaking, has been acquired and, in September 2022, almost £10m was invested in Strohm Holdings, a Dutch-based company.

Financial/share price data: HydrogenOne Capital Growth's latest NAV, at September 2022, was 96.5p per share, slightly above the March 2022 figure of 94.9p per share. It should be noted that HydrogenOne Capital Growth, as its name implies, has no interest in paying large dividends, but it does seek to make sufficient payments to enable it to retain its investment trust status. At its IPO, HydrogenOne Capital Growth raised proceeds of £107m (gross) on the back of considerable investor interest – very much from the growth potential angle. A further £21m (gross) was raised in April 2022. Due in part to some of its poorly performing investments, its shares have been weak of late and have fallen by over 30% since the start of the 2022.

Octopus Renewables Infrastructure (market cap. £568m)

octopus renewables

Investment sectors: Octopus Renewables Infrastructure undertook its IPO in December 2019. In assembling its distinctly pan-European portfolio, it continues to focus on the wind and solar generation market – and, through its investment in the RoI-based Simply Blue Group, is moving increasingly into participation in offshore wind projects. While the UK is expected to account for much of the investment, there are other countries of interest, including mainland Europe, with wind projects in the north and solar projects in the south. Significantly, Octopus Renewables Infrastructure has prescribed a maximum 60% exposure – by gross asset valuation – for both wind and solar investments.

Portfolio: Octopus Renewables Infrastructure now owns total generation capacity of 310MW. In the UK – following the recent completion of the Breach Solar acquisition in Cambridgeshire – it now holds 123MW of solar plant. It has also recently acquired a 51% stake in the 48MW Crossdykes wind project in southern Scotland. Elsewhere, Octopus Renewables Infrastructure is now active in most major EU markets. Its 120MW wind/solar portfolio in France remains its most significant international deal to date. Octopus Renewables Infrastructure has also acquired 48MW of wind capacity in Sweden. Importantly, too, it has plants under construction in western Finland and at Kuslin, Poland: the capacities are 71MW and 40MW, respectively. Octopus Renewables Infrastructure is also seeking to complete the acquisition of the 35MW Leeskow onshore wind business in Brandenburg, Germany. Looking forward, Octopus Renewables Infrastructure plans a major investment in a 175MW solar farm in Andalucía, Spain.

Financial/share price data: Octopus Renewables Infrastructure's NAV at September 2022 was initially confirmed as 108.3p per share; the June 2022 NAV was higher at 111.1p. However, with more clarity regarding various tax (especially the EGL), pricing and regulatory issue, Octopus Renewables Infrastructure recently raised – for illustrative purposes – its adjusted September 2022 NAV by 2.0p per share to a putative 110.3p per share. A 5.24p per share dividend is being targeted for 2022, a figure that is expected to rise sharply in 2023. Having raised proceeds of £350m (gross) at its IPO in 2019 and undertaken two further equity issues – totalling £224m (gross) – there appears to be no immediate need for additional funding. However, Octopus Renewables Infrastructure has a formidable investment pipeline, especially in the offshore wind sector, which may, in time, necessitate further fundraising.

Pantheon Infrastructure (market cap. £449m)

PANTHEON
INFRASTRUCTURE
PLC

Investment sectors: Undoubtedly, Pantheon Infrastructure's investment plans are both ambitious and wide-ranging. In its Prospectus, it identified the following as possible targets: digital infrastructure; renewables and energy efficiency; power and utilities; transport and logistics; and social investment. Under the transport and logistics head, ports, rail, road and airports were cited. In terms of timing, Pantheon Infrastructure had been seeking to acquire between eight and 12 assets by the autumn of 2022 – a target that has now been achieved. However, the pulling of its proposed £250m C-shares issue last September – at the height of the mini-Budget controversy – was an undoubted setback and will inevitably be a constraint as Pantheon Infrastructure seeks to expand its portfolio.

Portfolio: To date, as the table below shows, over £300m has been invested by Pantheon Infrastructure in nine different projects – thereby averaging almost £34m per project. They have been spread across several sectors – digital infrastructure being the most prominent. In terms of countries, North American, where ca.50% of its assets are located, seems particularly appealing to Pantheon Infrastructure: the Europe exposure figure is ca.40%.

The table below lists the acquisitions recently completed by Pantheon Infrastructure – a ca.£41m commitment to acquire a stake in National Grid's gas transportation business is expected to be completed shortly.

Pantheon Infrastructure acquisitions since IPO

Company	Date	Subsector	Region	Committed Funds (£m)
CyrusOne	3/22	Digital data centre	North America	25
Cartier Energy Holdings	4/22	District heating	North America	33
Vertical Bridge	5/22	Digital towers	North America	24
Delta Fiber	5/22	Digital fibre	Netherlands	23
Calpine	7/22	Electricity generation	North America	47
Fudura	7/22	Renewables/energy efficiency	Netherlands	40
Primafrio	7/22	Transport/logistics	Spain	36
Vantage Data Centers	8/22	Digital data centre	North America	29
Asterion Industrial Partners	11/22	Digital fibre	RoI	46

Source: Pantheon Infrastructure; Hardman & Co Research

Perhaps Pantheon Infrastructure's most significant project is its most expensive to date – the $58m (£47m) investment in Calpine, which is the largest generator of electricity from natural gas and geothermal resources in the US. In time, Pantheon Infrastructure's portfolio may begin to resemble that of 3i Infrastructure – but with less risk, lower returns and higher US exposure. Pantheon Infrastructure may also be competing against expected sector newcomer, AT85 Global Mid-Market Infrastructure, and, in the digital infrastructure space, with both Cordiant Digital Infrastructure and Digital 9 Infrastructure.

Financial/share price data: Pantheon Infrastructure's NAV, as at September 2022, was 99.3p per share, compared with 97.9p per share at June 2022. Pantheon Infrastructure has also confirmed a 2.0p per share dividend target for 2022 and is seeking to double its dividend to 4p per share in 2023. In November 2021, Pantheon Infrastructure's IPO had been very strongly supported in that its £300m fundraising target was easily reached; eventually, a figure of £400m was prescribed – a very different scenario from the pulled proposed C-shares issue last September.

ThomasLloyd Energy Impact (market cap. £169m)

ThomasLloyd
ENERGY IMPACT TRUST PLC

Investment sectors: ThomasLloyd Energy Impact undoubtedly breaks new ground for the REIFs. Its planned investments are in Asia – a geographical spread that is unique to the existing sector. India, the Philippines, Indonesia, Vietnam, Bangladesh and Sri Lanka – prior to its recourse for emergency loans to the International Monetary Fund (IMF) – have all been confirmed as target markets. These economies all have exciting long-term growth potential, and additional power capacity will be much needed. ThomasLloyd Energy Impact describes itself as "the first and only impact-focused company on the LSE dedicated to sustainable energy infrastructure projects aimed at helping reduce Asia's significant greenhouse emissions". Clearly, in so vast a potential market – some 4.6bn people currently live in Asia – project selection will be key, with projected revenues presumably being underpinned by long-term PPAs.

Portfolio: Currently, ThomasLloyd Energy Impact has three solar power projects operating in the Philippines. However, by far its biggest investment to date is the now confirmed 100% ownership – acquired in two tranches – of SolarArise, a Delhi-located solar generation company with a formidable 434MW of capacity, 234MW of which is currently operational. This pivotal acquisition – the final tranche of which was signed off earlier this month – seems set to drive returns over the next few years.

Financial/share price data: ThomasLloyd Energy Impact's latest NAV, at September 2022, was 83.3p (c100.8) per share. The projected 2022 dividend target of 1.45p (c1.76) is modest but the longer-term dividend policy – stated in the Prospectus as yielding 7%+ by year three – is rather more aggressive. At its IPO in December 2021, ThomasLloyd Energy Impact had confirmed the issue of 100m new shares, raising gross proceeds of £100m – falling well below its Prospectus target. Importantly, in acquiring full ownership of SolarArise, Thomas Lloyd Energy Impact will have effectively invested most of its IPO proceeds. A placing in November 2022 raised just over £30m (gross) of proceeds, which was well below expectations – an unquestionably disappointing investor response for ThomasLloyd Energy Impact.

Triple Point Energy Transition (market cap. £80m)

Triple Point Energy Transition PLC

Investment sectors: Triple Point Energy Transition (formerly Triple Point Energy Efficiency), the IPO of which took place in October 2020, is focused on three specific sectors: low carbon heat (local and distributed); social housing retrofit and industrial energy efficiency; and distributed generation (hydro and solar). Given that all three of these subsectors are complex and that any deal will necessarily involve several parties, it is perhaps not surprising that investment initiatives, to date, have been both painstakingly slow and distinctly cautious.

Portfolio: Nevertheless, in seeking acquisitions within its preferred £5m to £30m band, Triple Point Energy Transition has invested, via the Teesside-based Spark Stream, in CHP-related assets. Nine operational small hydro plants in Scotland have also been acquired at a cost of £46m – all are covered by Feed-in-Tariffs (FiTs). Recently, Triple Point Energy Transition began investing in the BESS market, with the provision of a £46m fixed rate debt facility in favour of Virmati Energy to pursue BESS construction opportunities. In terms of its overall pipeline, the figure now exceeds £500m; realistically, few of these projects will come to fruition.

Financial/share price data: Triple Point Energy Transition's NAV at September 2022 was 100.3p per share, compared with 96.1p per share at March 2022. Although there is apparently no published target, a dividend of ca.5.50p per share is expected for the 2022/23 financial year. At its IPO, Triple Point Energy Transition raised £100m (gross) of proceeds; part of these proceeds seems likely to fund UK acquisitions in its chosen fields in coming months.

US Solar (market cap. £231m)

US Solar Fund

Investment sectors: At its IPO in April 2019, US Solar's declared aim had been 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 more than 60 projects, located across 13 US states. However, this proposed plant rollout has certainly been overshadowed – and possibly even halted – by a key RNS announcement on 17 October 2022, namely: "The Board is undertaking a strategic review of the options available to the Company to maximise value for shareholders. The Board will consider all options available to the Company, including, but not limited to, a sale of the entire issued, and to be issued, share capital of the Company". An eagerly awaited update is due in 1Q'23.

Portfolio: Over the past three and a half years, US Solar's focus has been on investing in states on the US east and west coasts, as well as in its core Milford plant in Utah. To date, US Solar has built up a portfolio of 543MW of solar generation capacity across four states. Within US Solar's portfolio, its largest investments – 28 in all – are now in North Carolina, with a capacity of 168MW. Aside from the 128MW Milford facility in Utah, the 140MW of capacity in Oregon is also pivotal to US Solar's underlying valuation.

Financial/share price data: US Solar's share price has been weak in recent months and is currently trading at a 13.2% discount to its NAV figure of 80.1p (c97.0) per share, as at September 2022. This was one factor cited by the board for its decision to undertake a full strategic review. Despite these uncertainties, a 4.61p (c5.58) dividend per share is planned for the 2022 financial year. In April 2019, US Solar had raised proceeds of $200m (£168m) (gross) at its IPO. Subsequently, in May 2021, a further $132m (£111m) (gross) was raised. Clearly, US Solar's overtly expansionist strategy has been curtailed by material structural changes adversely affecting the US solar sector – and its commercial and financial implications.

Victory Hill GSEO (market cap. £431m)

VICTORY HILL
VH Global Sustainable Energy Opportunities plc

Investment sectors: Victory Hill GSEO plans to "invest in a diversified portfolio of global sustainable energy infrastructure assets". It has identified a seed portfolio – "the enhanced pipeline" – of potential investments, with a total cost of ca.£305m. Its targeted investments are widespread and, to some eyes, somewhat unfocused. Victory Hill GSEO now has significant investments in Brazil, the US, the UK and, to a relatively modest extent, in Australia.

Portfolio: To date, Victory Hill GSEO has signed commitments for investments in several projects. Its lead UK investment – at a total cost of £106m – is to fund two flexible CHP plants, with a combined capacity of 45MW, one of which is a 10MW plant in Nottingham and the other, at 35MW, in County Durham; in the former case, the plant has now been commissioned. Victory Hill GSEO's three other well-advanced projects are in Brazil, the US and Australia. In Brazil, it is investing in a portfolio of 18 remote solar distribution plants in 10 Brazilian states. Crucially, though, Victory Hill GSEO has acquired the 198MW run-of-river hydro-plant at Mascarenhas, in Espirito Santo state, at a final cost of ca.£113m – two-thirds of which is payable upfront while the remainder is deferred until 1H'27; this plant has been operational since 1974. In the US, ca.£79m ($96m) has been spent on acquiring two terminal storage sites on the Texan coast. Investing further in solar power in Australia is also an aspiration for Victory Hill GSEO. However, in common with Foresight Solar, progress to date there has been slow, with modest capacity acquisitions. Recently, £21.2m was spent in acquiring three solar PV sites in New South Wales, which are due to become operational in 3Q'23. Victory Hill GSEO's capacity in Australia is currently a modest 17MW.

Financial/share price data: Victory Hill GSEO's latest NAV, as at September 2022, was 112.5 per share and it is planning to pay a 5p per share dividend in respect of its 2022 financial year. At its IPO in January 2021, Victory Hill GSEO had raised over £242m of gross proceeds, much of which seemed destined to finance the seed portfolio. In November 2021, £70m (gross) of new equity was raised, and a further £150m (gross) of new equity capital was secured in June 2022. In total, this amounts to £462m (gross) in just 18 months, part of which is being invested in the key Mascarenhas hydro-plant in Brazil; with 60% of its revenues subject to long-term PPAs, this plant will be very influential in driving the cash flow of Victory Hill GSEO.

Environmental Investment Trusts (EITs)

Although their business models are somewhat different from those of the 31 IICs and REIFs analysed in this document, we also assess briefly the three Environmental Investment Trusts (EITs), which are classified as "Environmental" by the AIC. The three stocks concerned are Impax Environmental Markets, which is capitalised at £1,281m and the much smaller Jupiter Green and Menhaden Energy Resources.

Impax Environmental Markets (£1,281m)

IMPAX Environmental Markets plc

Set out below are the key elements of the investment policy of Impax Environmental Markets – and its marked success in growing its NAV from 250p per share at the end of December 2018 to 423p per share at 30 December 2022; the latter figure, though, has fallen back from 496p per share as at 1 January 2022.

Investment sectors: As an EIT that invests in the expanding environmental sector, Impax Environmental Markets focuses on four key areas: clean energy and energy efficiency; water treatment and pollution control; water technology and natural resource management; and sustainable food. Importantly, no investment is permitted to represent more than 3% of the fund's value.

Portfolio: Impax Environmental Markets runs a diverse, environmentally orientated portfolio and has focused on the four key areas highlighted above. Its top 10 investments account for ca.25% of the portfolio's value. Just over half of the portfolio is invested in the US, with a further 37% in Europe and much of the remainder in Asia Pacific. The leading stock, accounting for a 2.9% share of the portfolio, is now the US-based Clean Harbors, which operates in the hazardous waste sector. The next three stocks, each accounting for 2.8% of the portfolio, are: Eurofins Scientific, based in France; PTC, a US software solutions business; and Butcher Industries, a Swiss tech./logistics operation.

Financial/share price data: Having published its 2022 half-year results, Impax Environmental Markets has subsequently updated its NAV. At the end of December 2022, it was 423p per share. As for dividends, Impax Environmental Markets has declared modest dividends previously – just 2.8p per share in 2021. A major increase in Impax Environmental Markets' dividend per share in 2022 – currently yielding well below 1% – is most unlikely: a ca.3p full-year dividend for 2022 is expected.

Impax Environmental Markets – Half-year income statement 2022

£000	Year to 30/06/2022	Year to 30/06/2021
Gains/losses on investments	(255,299)	147,848
Net forex gains/losses	(2,355)	166
Income	11,625	8,945
Investment management fees	(5,515)	(4,486)
Other expenses	(664)	(709)
Activities before finance costs and tax	(252,208)	151,764
Finance costs	(755)	(726)
Return on ordinary activities before tax	(252,963)	151,038
Tax	(1,351)	(1,383)
Return on ordinary activities after tax	(254,314)	149,655
Return per ordinary share (p)	(83.83)	54.09

Source: Impax Environmental Markets, Hardman & Co Research

Jupiter Green (market cap. £42m)

Investment sectors: Jupiter Green is an investment trust, which "invests globally in companies that have a significant focus on environment solutions". More specifically, it looks to invest across three key sectors: infrastructure; resources efficiency; and demographics.

Portfolio: In terms of markets, just over 40% of Jupiter Green's assets are invested in US stocks, while the remaining near 60% is well diversified: 9% being in France and 8% in Japan. Importantly, no stock within its portfolio accounts for more than 4%. At December 2022, the three largest holdings were the 3.2% shareholding in the Danish-based Vestas Wind Systems and the 3.1% stakes in both the French-based Veolia Environnement and in Prysmian, an Italian electrical cabling company.

Financial/share price data: Jupiter Green is currently trading at a 19% discount to its latest NAV of 242p. Owing to Jupiter Green's revised policy to switch its investment strategy more towards small, innovative companies, future dividend payments are expected to be either very modest or to be passed entirely.

Menhaden Resource Efficiency (market cap. £70m)

Investment sectors: Menhaden Resource Efficiency operates a "multi-asset investment strategy, which seeks to provide the best balance between risk and reward across equity, credit and private universes". Generally, it runs position in between 15 and 25 assets, mainly in the US or in Europe. Resource efficiency is a key investment criterion.

Portfolio: The latest data shows that Menhaden Resource Efficiency's portfolio has a 60% exposure to North America and a 26% exposure to Europe. Its core holding is Alphabet – the owner of Google – representing almost 23% of the portfolio: importantly, Alphabet suffered from the sharp downgrading of the US tech sector in 1H'22. Following Menhaden Resource Efficiency's exit from Charter Communications, a US-based connectivity business, the Microsoft holding, which accounts for almost 12% of net assets, is now the second-largest holding. The two Canadian rail companies – Canadian Pacific Railway and Canadian National Railway – account for a combined 17.5% share. The energy-orientated X-ELIO, an expanding Spanish solar generation company, is the next largest component of Menhaden Resource Efficiency's portfolio, accounting for a 9.5% share of net assets.

Financial/share price data: To preserve its investment trust status, Menhaden Resource Efficiency is expected to pay a modest dividend. More importantly, Menhaden Resource Efficiency continues to trade at a very pronounced discount – currently 32% – to its latest NAV of 129p per share. The weakness in the share price performance of both Alphabet and Microsoft – down by 28% and 39%, respectively, during 2022 – has been the key factor in depressing Menhaden Resource Efficiency market rating. Management continues to review the various options in its very challenging quest to narrow the large – and persistent – trading discount to NAV.

Databoxes

3i Infrastructure

Issue	Comments
Status	IIC
Ticker/website	3IN/www.3i-infrastructure.com
Fund aim	"To maintain a balanced portfolio of infrastructure investments delivering an attractive mix of income yield and capital appreciation for shareholders"
Key sectors	Utilities, transportation and digitalisation
Key markets	EU, UK, Norway and US
Year-end	Mar
Core portfolio	ca.20 infrastructure assets
NAV per share	325.8p (09/22)
Discount rate	11.3%
Market cap./share price	£2,968m/333p
Premium/discount to NAV	+2.2%
Prospective DPS/yield	11.15p/3.3%
Return record	Since its IPO in 2007, TSR has averaged 13.1% per year

Source: 3i Infrastructure, Bloomberg

Aquila Energy Efficiency

Issue	
Status	REIF
Ticker/website	AEET/www.aquila-energy-efficiency-trust.com
Fund aim	The fund "focuses on investments in small to medium-sized energy efficiency projects in the private and public sectors"
Key sectors	Energy efficiency
Key markets	UK, EU
Core portfolio capacity	n/a
Year-end	Dec
NAV per share	97.9p (6/22)
Discount rate	n/a
Market cap./share price	£71m/71p
Premium/discount to NAV	-27.5%
Prospective DPS/yield	3.50p/4.9%
Return record	n/a

Source: Aquila Energy Efficiency, Bloomberg

Aquila European Renewables

Issue	Comments
Status	REIF
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"
Key sectors	Wind, solar and hydro generation
Key markets	Nordics, Iberia
Core portfolio capacity	417MW
Year-end	Dec
NAV per share	(c110.2)/97.5p (09/22)
Discount rate	6.6%
Market cap./share price	£331m/81p
Premium/discount to NAV	-16.9%
Prospective DPS/yield	(c5.25)/4.64p/5.7%
Return record	Since its IPO in June 2019, TSR has been 13.3%

Source: Aquila European Renewables, Bloomberg

AT85 Global Mid-Market Infrastructure

Issue	Comments
Status	IIC (first dealings due in March 2023)
Website	www.at85-plc.com
Fund aim	It "seeks to deliver regular and progressive dividends, as well as capital appreciation, through investments in core-plus, mid-market infrastructure"
Key sectors	Digital, utility and transport/logistics infrastructure
Key markets	US and UK
Core portfolio	n/a
Year-end	Dec
NAV per share	98p (est.) (12/22)
Discount rate	n/a
Market cap./share price	£294m (est.)/98p
Premium/discount to NAV	n/a
Prospective DPS/yield	4.5p (est.)/4.6% (est.)
Return record	n/a

Source: AT85 Global Mid-Market Infrastructure, Bloomberg

Atrato Onsite Energy

Issues	Comments
Status	REIF
Ticker/website	ROOF/www.atrato.roof.com
Fund aim	"The company's investment objective is to support the net zero agenda whilst delivering capital growth and progressive dividend income to its shareholders"
Key sectors	Solar – roof installations
Key markets	UK (commercial, especially supermarkets)
Core portfolio capacity	63MW on 37 sites
Year-end	Sep
NAV per share	92.8p (09/21)
Discount rate	6.6%
Market cap./share price	£143m/95p
Premium/discount to NAV	+2.5%
Prospective DPS/yield	5.0p/5.3%
Return record	n/a

Source: Atrato Onsite Energy, Bloomberg

BBGI

Issue	Comments
Status	IIC
Ticker/website	BBGI/www.bb-gi.com
Fund aim	We are "an Infrastructure Investment Company that invests in and actively manages, for the long term, a globally diversified, low-risk portfolio of essential social infrastructure investments. We are committed to delivering stable and predictable cash flows with progressive long-term dividend growth and attractive, sustainable. returns to shareholders."
Key sectors	Roads, bridges, schools, hospitals, blue light (fire and police stations)
Key markets	Canada, UK, US
Core portfolio	55 investments
Year-end	Dec
NAV per share	149.8p (06/21)
Discount rate	6.55% (12/21)
Market cap./share price	£1,123m/158p
Premium/discount to NAV	+5.1%
Prospective DPS/yield	7.48p/4.7%
Return record	Since its IPO in 2011, TSR has averaged 9.1% per year

Source: BBGI, Bloomberg

Bluefield Solar	
Issue	**Comments**
Status	REIF
Ticker/website	BSIF/www.bluefieldsif.com
Fund aim	"Acquisitioned management of a diversified portfolio of large-scale solar energy in the UK, with the objective of delivering long-term stable yield'
Key sectors	Solar generation
Key markets	UK
Core portfolio capacity	813MW
Year-end	Jun
NAV per share	141.4p (post EGL) (09/22)
Discount rate	7.25%
Market cap./share price	£832m/136p
Premium/discount to NAV	-3.8%
Prospective DPS/yield	8.40p/6.2%
Return record	Since its IPO in 2013, TSR has been 92.5%

Source: Bluefield Solar, Bloomberg

Cordiant Digital Infrastructure	
Issue	**Comments**
Status	IIC
Ticker/website	CORD/www.cordiantdigitaltrust.com
Fund aim	"The Company invests principally in operating digital infrastructure assets (that) exhibit a number of attractive investment features which drive value growth, including recurring long-term contracts ….with predictable cashflows"
Key sectors	Digital infrastructure
Key markets	Czech Republic, Poland and US
Core portfolio	Digital networks in Eastern Europe
Year-end	Mar
NAV per share	107.5p (09/22)
Discount rate	7.9%-9.1%
Market cap./share price	£654m/85p
Premium/discount to NAV	-24.7%
Prospective DPS/yield	4.0p/4.7%
Return record	n/a

Source: Cordiant Digital Infrastructure, Bloomberg

Digital 9 Infrastructure	
Issue	**Comments**
Status	IIC
Ticker/website	DGI9/www.d9infrastructure.com
Fund aim	As an investment trust, it "actively invests in critical digital infrastructure assets with a target annual return of 10% per annum"
Key sectors	Digital infrastructure
Key markets	RoI, UK, EU and Middle East
Core portfolio	Digital networks
Year-end	Dec
NAV per share	105.1p (06/22)
Discount rate	n/a
Market cap./share price	£750m/87p
Premium/discount to NAV	-19.3%
Prospective DPS/yield	6.00p/6.9%
Return record	Since its IPO in March 2021, TSR has averaged 13.4%

Source: Digital 9 Infrastructure, Bloomberg

Downning Renewables and Infrastructure	
Issue	**Comments**
Status	REIF
Ticker/website	DORE/www.doretrust.com
Fund aim	It "aims to achieve stable and sustainable returns by investing in a diversified portfolio of renewable energy and other infrastructure assets"
Key sectors	Hydro, wind and solar generation
Key markets	Sweden, GB
Core portfolio capacity	193MW
Year-end	Dec
NAV per share	117.7p (09/21)
Discount rate	7.7%
Market cap./share price	£209m/113p
Premium/discount to NAV	-4.0%
Prospective DPS/yield	5.0p/4.4%
Return record	Since its IPO in January 2021, TSR has been 16.6%

Source: Downing Renewables and Infrastructure, Bloomberg

Ecofin US Renewables Infrastructure	
Issue	**Comments**
Status	REIF
Ticker/website	RNEP/www.uk.ecofinvest.com
Fund aim	"To provide shareholders with an attractive level of current distributions by investing in a diversified portfolio of mixed renewable energy and sustainable assets, predominantly located in the US"
Key sectors	Solar and wind generation
Key markets	US (California, Texas, Massachusetts)
Core portfolio capacity	177MW
Year-end	Dec
NAV per share	(c95.4) 78.8p (09/22)
Discount rate	7.5%
Market cap./share price	£95m/69p
Premium/discount to NAV	-13.1%
Prospective DPS/yield	(c5.60)/4.63p/6.8%
Return record	n/a

Source: Ecofin US Renewables, Bloomberg

Foresight Solar	
Issues	**Comments**
Status	*REIF*
Ticker/website	*FSFL/www.fsfl.foresight.group.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 cashflow"
Key sectors	Solar generation
Key markets	UK, Australia, Spain
Core portfolio capacity	1,018MW solar (inc.723MW in UK, 170MW in Australia and 125MW in Spain)
Year-end	Dec
NAV per share	125.6p (post EGL) (09/22)
Discount rate	6.23%
Market cap./share price	£720m/118p
Premium/discount to NAV	-6.1%
Prospective DPS/yield	7.12p/6.0%
Return record	Since its IPO in 2013, TSR has averaged 8.9% per year

Source: Foresight Solar, Bloomberg

GCP Infrastructure

Issues	Comments
Status	IIC
Ticker/website	GCP/www.graviscapital.com
Fund aims	"Our investment objective is to provide shareholders with regular, sustained, long-term dividends and to preserve the capital of (our) investment assets"
Key sectors	Renewable energy, PPP/PFI, social housing
Key markets	UK
Core portfolio	48 investments, mainly energy and PPP/PFI stakes
Year-end	Sep
NAV per share	112.8p (06/22)
Discount rate	6.1%-10.4%
Market cap./share price	£903/102p
Premium/discount to NAV	-9.6%
Prospective DPS/yield	7.0p/6.9%
Return record	Since its IPO in 2010, TSR has been 110%

Source: GCP Infrastructure, Bloomberg

Gore Street Energy Storage

Issues	Comments
Status	REIF
Ticker/website	GSF/www.gsenergystoragefund.com
Fund aims	"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"
Key sectors	Battery storage systems
Key markets	UK, RoI, Germany, US
Core portfolio capacity	292MW (operational as at 12/22) of energy storage systems
Year-end	Mar
NAV per share	111.1p (09/22)
Discount rate	9.3%
Market cap./share price	£537m/112p
Premium/discount to NAV	+0.4%
Prospective DPS/yield	8.00p/7.2%
Return record	Since its IPO in 2018, TSR has been 37%

Source: Gore Street Energy Storage, Bloomberg

Greencoat Renewables

Issues	Comments
Status	REIF
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"
Key sectors	Wind generation
Key markets	RoI, Germany, France, Nordics, Spain
Core portfolio capacity	1,095MW (9/22), mainly of wind in RoI and in other leading EU countries
Year-end	Dec
NAV per share	(c110.1) 97.4p (09/22)
Discount rate	6%-7%
Market cap./share price	£1,156m/101p
Premium/discount to NAV	+4.0%
Prospective DPS/yield	(c6.18)/5.47p/5.4%
Return record	Since its IPO in 2017, TSR is estimated to have been ca.44%

Source: Greencoat Renewables, Bloomberg

Greencoat UK Wind

Issues	Comments
Status	REIF
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"
Key sectors	Wind
Key markets	UK
Core portfolio capacity	1,610MW
Year-end	Dec
NAV per share	155.0p (09/22)
Discount rate	7.7%
Market cap./share price	£3,538m/153p
Premium/discount to NAV	-1.6%
Prospective DPS/yield	7.72p/5.1%
Return record	Since its IPO in March 2013, TSR is estimated to have been ca.140%

Source: Greencoat UK Wind, Bloomberg

Gresham House Energy Storage

Issues	Comments
Status	REIF
Ticker/website	GRID/www.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"
Key sectors	Battery storage systems
Key markets	UK
Core portfolio capacity	ca.650MW of battery storage systems
Year-end	Dec
NAV per share	151.2p (09/22)
Discount rate	10.8%
Market cap./share price	£879m/163p
Premium/discount to NAV	+7.5%
Prospective DPS/yield	7.00p/4.3%
Return record	Since its IPO in November 2018, TSR has been 101%

Source: Gresham House Energy Storage, Bloomberg

Harmony Energy Income

Issues	Comments
Status	REIF
Ticker/website	HEIT/www.harmonyenergy.co.uk
Fund aim	"Its investment objective is to provide investors with an attractive and sustainable level of income returns, with the potential for capital growth by investing in commercial scale energy storage and renewable energy generation projects…"
Key sectors	Battery storage systems
Key markets	UK
Core portfolio capacity	98MW
Year-end	Oct
NAV per share	122.8p (09/22)
Discount rate	n/a
Market cap./share price	£287m/124p
Premium/discount to NAV	+0.6%
Prospective DPS/yield	8.0p/6.5%.
Return record	n/a

Source: Harmony Energy Income, Bloomberg

HICL

Issues	Comments
Status	IIC
Ticker/website	HICL/www.hicl.com
Fund aim	"HICL's investment proposition is to deliver sustainable income from a diversified portfolio of investment core infrastructure"
Key sectors	Health, transport
Key markets	UK
Core portfolio	Over 100 investments
Year-end	Mar
NAV per share	164.3p (09/22)
Discount rate	7.1%
Market cap./share price	£3,337m/164p
Premium/discount to NAV	-0.2%
Prospective DPS/yield	8.25p/5.0%
Return record	Since its IPO in 2006, TSR has averaged almost 9.0% per year

Source: HICL Infrastructure, Bloomberg

HydrogenOne Capital Growth

Issues	Comments
Status	REIF
Ticker/website	HGEN/www.hydrogenonecapitalgrowthplc.com
Fund aim	"HydrogenOne Capital Growth was established to provide investors with opportunities in clean hydrogen and energy storage for energy transition"
Key sectors	Hydrogen
Key markets	UK, Germany, Estonia and Netherlands
Core portfolio capacity	n/a
Year-end	Dec
NAV per share	96.5p (09/22)
Discount rate	n/a (third-party pricing for most assets)
Market cap./share price	£102m/79p
Premium/discount to NAV	-18.1%
Prospective DPS/yield	nil/n/a
Return record	n/a

Source: HydrogenOne Capital Growth, Bloomberg

Impax Environmental Markets

Issues	Comments
Status	EIT
Ticker/website	IEM/www.impaxenvironmentalmarkets.co.uk
Fund aim	"It seeks to achieve sustainable, above-market returns over the longer term by investing globally in companies active in the growing Resource Efficiency and Environmental Markets"
Key sectors	Energy, waste, water
Key markets	US, Europe
Core portfolio	All investments are below 3% of its portfolio
Year-end	Dec
NAV per share	423p (12/22)
Discount rate	n/a (virtually all investments are quoted)
Market cap./share price	£1,281m/419p
Premium/discount to NAV	-0.9%
Prospective DPS/yield	3.0p/n/m
Return record	Since 02/2002, its share price has risen by ca.4.2x – modest dividends have been paid in some years

Source: Impax Environmental Markets, Bloomberg

INPP	
Issues	**Comments**
Status	IIC
Ticker/website	INPP/www.internationalpublicpartnerships.com
Fund aim	"We aim to provide investors with long-term, inflation-linked returns, by growing our dividend and creating the potential for capital appreciation"
Key sectors	Over 140 investments in energy, transport
Key markets	Predominantly UK, but also the EU, the US and Australia
Year-end	Dec
Core portfolio	Electricity, gas and water price-regulated assets
NAV per share	157.3p (09/22)
Discount rate	7.11%
Market cap./share price	£2,899m/152p
Premium/discount to NAV	-3.5%
Prospective DPS/yield	7.74p/5.1%
Return record	Since its IPO in 2006, TSR has been 7.7% per year

Source: INPP, Bloomberg

JLEN	
Issues	**Comments**
Status	REIF
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"
Key sectors	Renewable generation
Key markets	UK
Core portfolio capacity	41 assets with 359MW capacity, 161MW of which is wind and 80MW solar – almost entirely UK
Year-end	Mar
NAV per share	124.4p (post EGL) (09/22)
Discount rate	8.4%
Market cap./share price	£791m /120p
Premium/discount to NAV	-3.9%
Prospective DPS/yield	7.14p/6.0%
Return record	Since its IPO in March 2014, TSR has been 92.4%

Source: JLEN, Bloomberg

Jupiter Green	
Issues	**Comments**
Status	EIT
Ticker/website	JGC/www.jupiteram.com
Fund aim	Generating long-term capital growth by investing "globally in companies which have a significant focus on environment solutions"
Key sectors	Energy, waste, technology
Key markets	UK
Core portfolio	EU, UK, US
Year-end	Mar
NAV per share	242p (12/22)
Discount rate	n/a
Market cap./share price	£42m/195p
Premium/discount to NAV	-19.4%
Prospective DPS/yield	0.64p/n/m
Return record	Since its launch in 2006, its shares have almost doubled

Source: Jupiter Green, Bloomberg

Menhaden Resource Efficiency

Issues	Comments
Status	EIT
Ticker/website	MHN/www.menhaden.com
Fund aim	"Seeks to generate long-term shareholder returns…by investing in business opportunities that are demonstrably delivering or benefiting from the efficient use of energy and resources"
Key sectors	Resource and energy efficiency
Key markets	US, Europe
Core portfolio	Alphabet and Microsoft stakes
Year-end	Dec
NAV per share	129.2p (07/22)
Discount rate	n/a (ca.88% of assets are quoted)
Market cap./share price	£70m/88p
Premium/discount to NAV	-31.8%
Prospective DPS/yield	nil/n/a
Return record	Since July 2015, its shares have fallen by ca.10%

Source: Menhaden Resources, Bloomberg

NextEnergy Solar

Issues	Comments
Status	REIF
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"
Key sectors	Solar generation
Key markets	UK, Italy
Core portfolio capacity	865MW solar of which 830MW in UK, 35MW in Italy
Year-end	Mar
NAV per share	122.9p (09/22)
Discount rate	6.25%-7.75%
Market cap./share price	£655m/111p
Premium/discount to NAV	-9.7%
Prospective DPS/yield	7.52p/6.8%
Return record	Since its IPO in 2014, TSR has been 81.1%

Source: NextEnergy Solar, Bloomberg

Octopus Renewables Infrastructure

Issues	Comments
Status	REIF
Ticker/website	CORIT/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"
Key sectors	Solar and wind generation
Key markets	UK, France, Sweden, Poland and Spain
Core portfolio capacity	310MW of pan-European assets
Year-end	Dec
NAV per share	110.3p (09/22, as adjusted, for illustrative purposes, to reflect the EGL)
Discount rate	6.5%
Market cap./share price	£568m/101p
Premium/discount to NAV	-8.9%
Prospective DPS/yield	5.24p/5.2%
Return record	Since its IPO in 2019, TSR has been 17.5%

Source: Octopus Renewables Infrastructure, Bloomberg

Pantheon Infrastructure

Issues	Comments
Status	IIC
Ticker/website	PINT/www.pantheoninfrastructure.com
Fund aim	We "will enable investors to gain exposure to a high-quality mix of yielding and growth infrastructure assets with strong downside and inflation protection in developed markets"
Key sectors	Digital infrastructure, renewable energy generation, transport infrastructure
Key markets	US, EU and UK
Core portfolio	Digital infrastructure and gas transmission
Year-end	Dec
NAV per share	99.3p (09/22)
Discount rate	n/a
Market cap./share price	£449m/94p
Premium/discount to NAV	-5.8%
Prospective DPS/yield	2.00p/2.1%
Return record	n/a

Source: Pantheon Infrastructure, Bloomberg

SEEIT

Issues	Comments
Status	REIF
Ticker/website	SEIT/www.seeitplc.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"
Key sectors	CHP, gas generation/networks and biomass
Key markets	US, Spain, Sweden, UK
Core portfolio	Various energy asset holdings, notably CHP plants
Year-end	Mar
NAV per share	106.1p (09/22)
Discount rate	7.3% (unlevered) and 8.2% (levered)
Market cap./share price	£1,071m/97p
Premium/discount to NAV	-9.0%
Prospective DPS/yield	6.00p/6.2%
Return record	Since its IPO in 2018, TSR is estimated to have been ca.30%

Source: SEEIT, Bloomberg

Sequoia Economic Infrastructure

Issues	Comments
Status	IIC
Ticker/website	SEQI/www.seqifund.com
Fund aim	Sequoia Economic Infrastructure "invests in income-generating economic infrastructure debt, creating attractive risk-adjusted returns for shareholders from its diverse portfolio of private debt and bond investments, across 12 mature jurisdictions and a range of sectors and subsectors"
Key sectors	ca.70 investments in economic infrastructure debt
Key markets	US, EU, UK
Core portfolio	TMT, transport, power
Year-end	Mar
NAV per share	93.6p (09/22)
Discount rate	Varied
Market cap./share price	£1,533m/88p
Premium/discount to NAV	-6.4%
Prospective DPS/yield	6.57p/7.5%
Return record	Since its IPO in 2015, TSR is estimated to have been ca.32%

Source: Sequoia Economic Infrastructure, Bloomberg

ThomasLloyd Energy Impact

Issues	Comments
Status	REIF
Ticker/website	TLEP/www.tlenergyimpact.com
Fund aim	"The infrastructure investment platform offers unique access to the growth market for infrastructure in Asia – based on a broad range of dependable investment solutions that reflect two key investor demands – real assets with stable valuations and attractive potential returns, and responsible and sustainable investments"
Key sectors	Renewable generation
Key markets	India, Philippines and East Asia
Core portfolio capacity	514MW
Year-end	Dec
NAV per share	(c100.8) 83.3p (09/22)
Discount rate	9.75%
Market cap./share price	£169m/96p
Premium/discount to NAV	+15.2%
Prospective DPS/yield	1.45p/1.5%
Return record	n/a

Source: ThomasLloyd Energy Impact, Bloomberg

TRIG

Issues	Comments
Status	REIF
Ticker/website	TRIG/www.trig-ltd.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"
Key sectors	Wind and solar generation
Key markets	UK, France, Sweden, Germany, Spain and RoI
Core portfolio capacity	1,962MW – ca.54% of which are in the UK
Year-end	Dec
NAV per share	134.3p (9/22)
Discount rate	7.1%
Market cap./share price	£3,236m/131p
Premium/discount to NAV	-2.8%
Prospective DPS/yield	6.84p/5.2%
Return record	Since its IPO in 2013, TSR has been 9.4% per year

Source: TRIG, Bloomberg

Triple Point Energy Transition

Issues	Comments
Status	REIF
Ticker/website	TENT/www.tpenergytransition.com
Fund aim	"We target UK-based, institutional-grade energy efficiency infrastructure assets whilst helping to ensure our shareholders receive an attractive long-term income source with a positive impact"
Key sectors	CHP systems, distributed generation, energy efficiency
Key markets	UK
Core portfolio	CHP and small hydro-power investments
Year-end	Mar
NAV per share	100.3p (09/22)
Discount rate	Various
Market cap./share price	£80m/80p
Premium/discount to NAV	-20.7%
Prospective DPS/yield	5.50p/6.9%
Return record	n/a

Source: Triple Point Energy Transition, Bloomberg

US Solar	
Issues	**Comments**
Status	REIF
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"
Key sectors	Solar generation
Key markets	US (North Carolina, Oregon and Utah)
Core portfolio capacity	543MW of solar plant in five US states
Year-end	Dec
NAV per share	(c97.0) 80.1p (09/22)
Discount rate	6.7%a
Market cap./share price	£231m/70p
Premium/discount to NAV	-13.2%
Prospective DPS/yield	(c5.58)/4.61p/6.6%
Return record	n/a

Source: US Solar, Bloomberg

Victory Hill GSEO	
Issues	**Comments**
Status	REIF
Ticker/website	VICT/www.vh-gseo.com
Fund aim	"Seeks income yield and NAV growth by investing in stable, yielding, sustainable energy infrastructure investments that are in operation, in construction or "ready-to-build"..."
Key sectors	Hydro-power, CHP and solar generation
Key markets	Brazil, UK, US and Australia
Core portfolio capacity	295MW, including the 198MW Mascarenhas hydro plant in Brazil
Year-end	Dec
NAV per share	112.5p (09/22)
Discount rate	n/a
Market cap./share price	£431m/102p
Premium/discount to NAV	-9.3%
Prospective DPS/yield	5.00p/4.9%
Return record	n/a

Source: Fund website, Bloomberg

Conclusion

Is the going getting tougher?

Despite the fall in many IIC and REIF share prices in 2022 – on the back of markedly higher interest rates – both sectors, as defensive investments, still look to be well placed. After all, their earnings are high-quality – often backed by public sector contracts or PPAs – while their dividend payment profiles are sound and, in most cases, secure; albeit any increases may well be modest.

The inflation boost

While inflation is a major issue, especially in the UK where a figure of ca.10% currently applies, both IICs and REIFs generally gain from higher inflation due to locked-in price increases, but this feature is offset by higher interest rates. Most mature IICs and leading REIFs have inflation protection of between 40% and 75%.

REIFs benefit from higher power prices

Those REIFs involved in electricity generation particularly welcome higher power prices since they boost their revenue lines and their NAVs. Few sectors derive such obvious benefits from higher generation prices, which are being driven upwards by increased gas prices.

Higher interest rates and lower power prices are key risks

IICs are exposed to risks, with higher interest rates being one obvious concern, along with the revenue risk of holding demand-based assets. Both the leading REIF subsectors, wind and solar generation, are exposed to potentially lower power prices – not an issue currently – and higher interest rates, which would adversely affect all funds, although some to a greater extent than others.

Inflation protection

Nonetheless, quoted IICs and REIFs continue to offer appeal on several fronts, with dividends expected to rise at least in nominal terms, on the back of a combined sector yield of between 4.5% and 7.0%. In addition, there is significant protection against higher inflation, although rising interest rates would clearly be a negative factor.

As such, despite their low profile and indifferent share price performance in 2H'22, IICs and REIFs are expected to be of increasing interest to the discerning investor.

Appendix 1

Glossary

Glossary	
AD	Anaerobic Digestion
AIC	Association of Investment Companies
BESS	Battery Energy Storage System
CfD	Contract for Difference
CHP	Combined Heat and Power
CMA	Competition and Markets Authority
CPI	Consumer Price Index
Discount to NAV	Amount at which a fund's shares trade below NAV
EGL	Electricity Generator Levy
EPL	Energy Profits Levy
EV	Enterprise Value
EIT	Environmental Investment Trust
FM	Facilities Management
FV	Fair Value
GWh	Gigawatt hour – electricity generation per hour
IFRS	International Financial Reporting Standards
IIC	Infrastructure Investment Company
IMF	International Monetary Fund
IPO	Initial Public Offering
MWh	Megawatt hour – electricity generation per hour
NAV	Net Asset Value
NI	Northern Ireland
NTMA	National Treasury Management Agency
PFI	Private Finance Initiative
PPA	Power Purchase Agreement
PPP	Public/Private Partnership
Premium to NAV	Amount at which a fund's shares trade above NAV
RAV	Regulatory Asset Value
REC	Regional Electricity Company
REIF	Renewable Energy Infrastructure Fund
RoI	Republic of Ireland
ROC	Renewable Obligation Certificate
RPI	Retail Price Index
SPV	Special Purpose Vehicle
TMT	Technology, Media and Telecom
TSR	Total Shareholder Return
TWh	Terawatt hour – electricity generation per hour

Source: Hardman & Co Research

Appendix 2

Possible questions

We list below various question – some of which may not relate to all 31 stocks under review – that might reasonably be asked of the Directors of IICs or of REIFs.

- What is the impact on your business model of higher inflation and higher interest rates?
- How is your NAV calculated?
- What projections are you using for long-term power prices?
- What is the blended discount rate that you use for your NAV calculations?
- What percentage of your revenues is subsidy-driven?
- How difficult is it for you to find new investments at an attractive price that meet your financial return requirements?
- What is your policy regarding investment in demand-based assets?
- Which overseas markets do you see as the most attractive for IIC/REIF investment – and why?
- What has been your TSR since your IPO?
- What percentage of your revenues is covered by PPAs?
- In percentage terms, what is your inflation linkage?
- What is your latest dividend cover?
- What is your long-term dividend policy?
- How damaging is the 2017 closure of the RO for new solar investment?
- When, if at all, do you expect gas prices to return to 2020 levels?
- Do you have any exposure to the EGL and, if so, how much?

About the author

Nigel Hawkins

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

Nigel 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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