

## John Laing Environmental Assets Group

### Anaerobic diversification

Unlike other listed renewable energy funds, John Laing Environmental Assets Group (JLEN) has exposure to waste and wastewater projects. A recent move into anaerobic digestion (see page 3) further differentiates it from its peer group and increases the diversification of its portfolio. The adviser likes this area as it is less exposed to the vagaries of power prices than other areas of the renewables market (a plus, given JLEN's recent reduction in its estimates of future power prices). JLEN has announced plans to expand the company to take advantage of this and other opportunities.

### Progressive dividend from investment in environmental infrastructure assets

JLEN aims to provide its 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. It invests in environmental infrastructure assets with predictable, wholly or partially index-linked cash flows, supported by long-term contracts or stable regulatory frameworks.

Environmental infrastructure comprises projects that use natural or waste resources or support more environmentally-friendly approaches to economic activity. This could involve the generation of renewable energy (including solar, wind, hydropower and biomass technologies), the supply and treatment of water, the treatment and processing of waste, and projects that promote energy efficiency.

Year ended	Share price total return (%)	NAV total return (%)	Earnings per share (pence)	Dividend per share (pence)
31/03/15*	12.6	6.4	5.85	6.00
31/03/16	(2.5)	3.1	3.01	6.054
31/03/17	16.8	8.9	9.31	6.14
30/09/17 (H1)	2.9	2.1	1.80	3.155

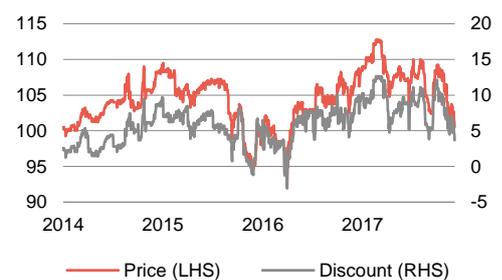
Source: Morningstar, Marten & Co. \*period from launch 31 March 2014

<b>Sector</b>	Renewable infrastructure
<b>Ticker</b>	JLEN LN
<b>Base currency</b>	GBP
<b>Price</b>	100.5
<b>NAV</b>	96.9*
<b>Premium/(discount)</b>	3.7
<b>Yield</b>	6.3

\*Morningstar estimate, last published 98.5p cum 1.5775p dividend

### Share price and discount

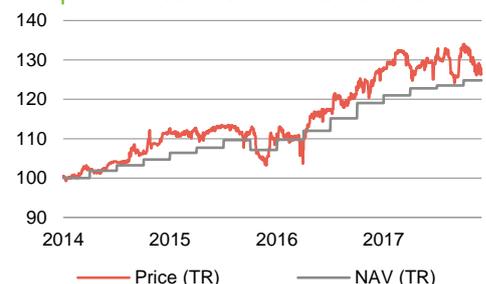
Time period 31/03/2014 to 02/03/2018



Source: Morningstar, Marten & Co

### Performance over five years

Time period 31/03/2014 to 28/02/2018



Source: Morningstar, Marten & Co

<b>Domicile</b>	Guernsey
<b>Inception date</b>	31 March 2014
<b>Adviser</b>	John Laing Capital Management
<b>Market cap (GBPm)</b>	380.4
<b>Shares outstanding</b>	378.5m
<b>Daily vol. (1-yr. avg.)</b>	526,476 shares
<b>Net gearing</b>	16.9%

[Click here for QuotedData's initiation note](#)

## Recent developments

Over the months since QuotedData's last note on John Laing Environmental Assets Group (JLEN) was published, the company has added to its wind portfolio, expanded its management team, announced more quarterly dividends in-line with forecasts, released statements on both the six-month period to 30 September 2017 and the final quarter of 2017, and has acquired another anaerobic digestion plant. This update report covers these developments. The note also looks in more detail at anaerobic digestion as JLEN further diversifies its portfolio.

New share issuance programme to support portfolio diversification

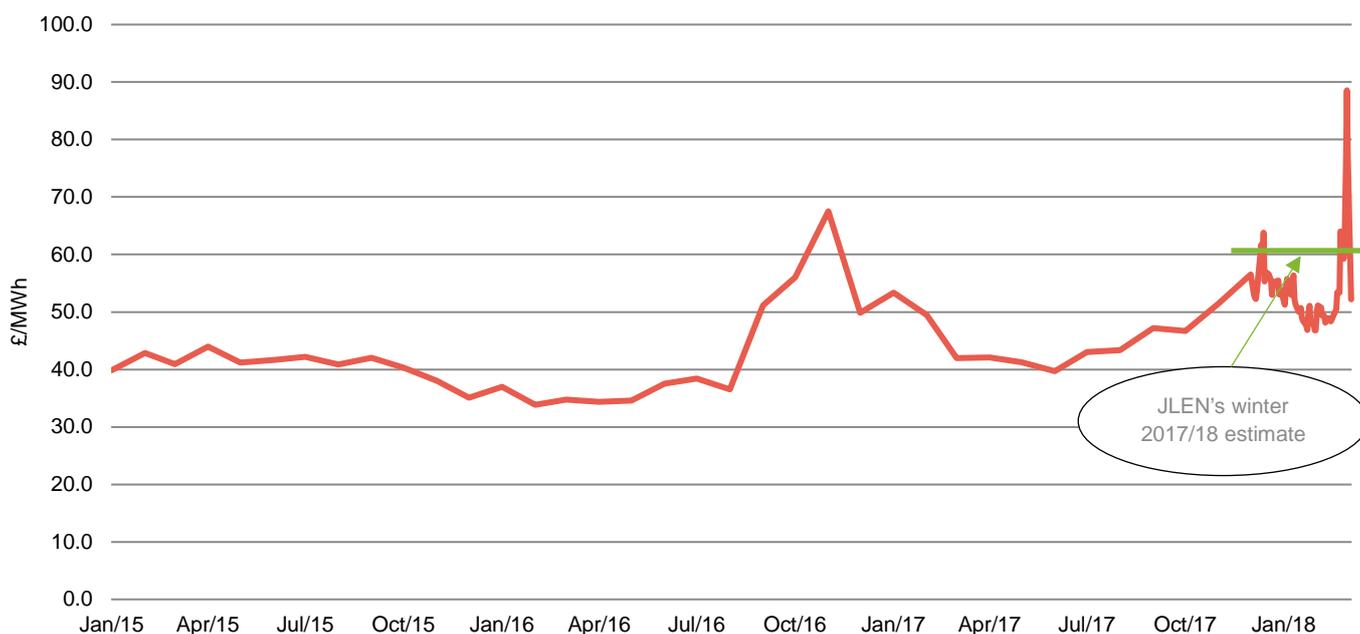
On 23 February 2018, JLEN published a prospectus in conjunction with a share issuance programme, for up to 200m new ordinary shares to be issued between 23 February 2018 and 22 February 2019. As a first step along this road JLEN announced a £30m initial placing. It said that its intention is to use cash raised to repay some or all of its borrowings from its revolving credit facility and to finance a pipeline of potential acquisitions that it has identified across the Biomass and Anaerobic Digestion sectors, further diversifying the company's portfolio.

The proposed share issuance follows on from fundraising in each of the years since the company's launch in 2014. Expansion of funds can lead to a lower ongoing charges ratio, as fixed costs are spread over a wider base. In JLEN's case, the management fee on the proportion of portfolio value that exceeds £500m drops to 0.8% from 1.0%, which should also feed into a lower [ongoing charges ratio](#).

The company has said that the share issuance programme should allow it to raise additional capital quickly, in order to take advantage of opportunities as they arise. Other benefits that it has identified include increased liquidity as the market cap increases.

## Power prices – long-term forecasts trimmed

Figure 1: UK day-ahead baseload power prices (see page 3)



Source: OFGEM (to 1 December 2017), Marex Spectron (from 4 December 2017)

Figure 1 shows how power prices (as measured by the UK's energy regulator, Ofgem, up to 1 December 2017 and, from 4 December 2017, Marex Spectron, a leading commodity broker) have varied since January 2015. The graph shows data for the UK day-ahead baseload price. This is the market price for electricity that is available to be supplied the next day at a constant or 'baseload' rate.

JLEN's last NAV calculation, as at 31 December 2017, assumed that the average price for winter 2017/18 would be £49/MWh and for summer 2018 £42/MWh. To date, the estimated winter 2017/18 price appears to be close to the actual price, except for the sharp spike as snow blanketed much of the UK.

Long-term power price forecasts trimmed by 7.7%

At the end of September 2017, external market consultants advised JLEN that time-weighted average power prices will be 7.7% lower than previous forecasts over the next 25 years. This had a modest impact on JLEN's NAV as discussed on page 7.

Strong inflation-linkage to revenue from subsidies

JLEN says that 81% of the power that its portfolio is expected to generate will be sold at fixed prices for the current winter season and 66% for summer 2018.

Power prices are only part of JLEN's revenues, however. It is important to point out, especially given the 4.1% inflation rate (based on the retail prices index or RPI) in the UK at the end of 2017, that the subsidies that JLEN receives in relation to its wind, solar and anaerobic digestion plants are directly linked to RPI in the UK and inflation indices in France.

## Solar

Branden issues resolved

Within JLEN's solar portfolio, the technical problems that it had with its Branden project (discussed in our previous note) have now been resolved and the project is producing electricity normally. This should have a positive effect on results from the solar portfolio relative to last year, all other things being equal. For the six months ended 30 September 2017, adverse weather meant that sunshine levels were lower than budget, on average.

## Wind

JLEN's wind farms have been performing ahead of budget. Wind speeds have been high in recent months, even to the extent that JLEN had to suspend production on occasion, but overall production has been good. There have been no major outages/damage as a result of recent storms.

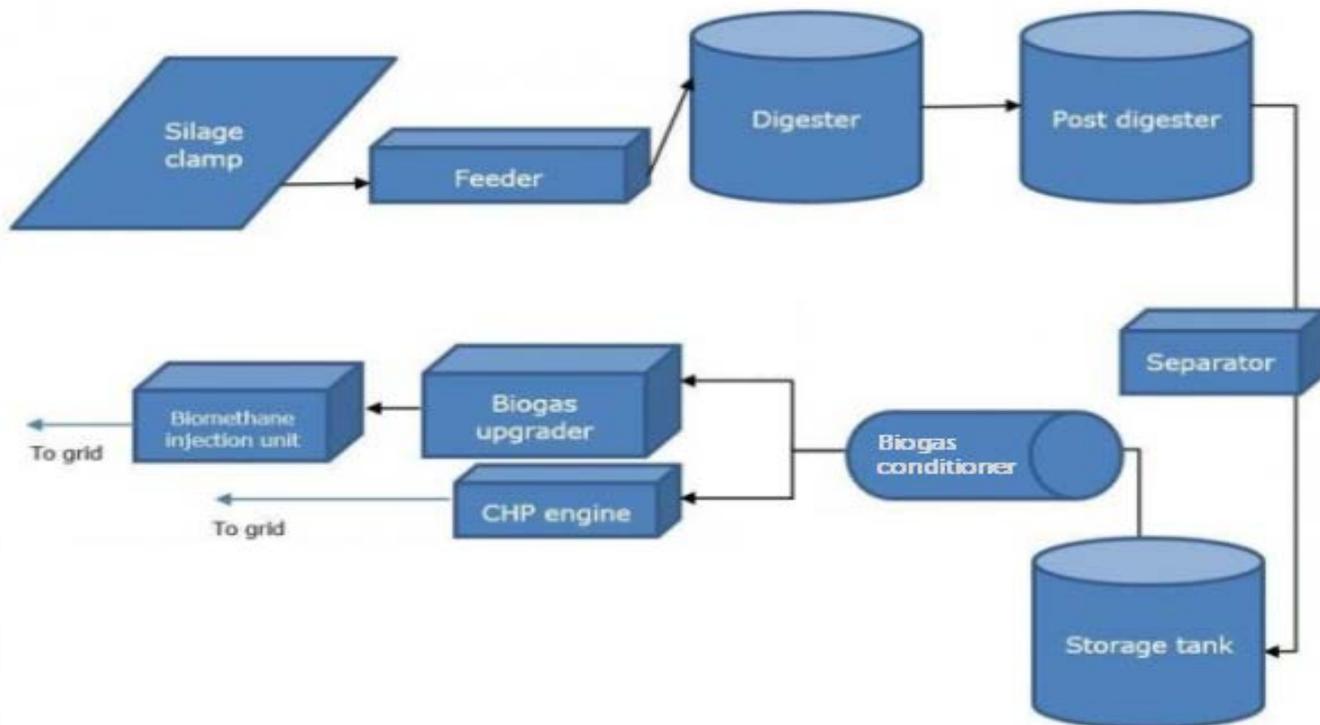
## Anaerobic digestion

Just before QuotedData's last note was published, JLEN acquired an anaerobic digestion plant, the Vulcan Renewables plant at Hatfield Woodhouse near Doncaster. The plant is managed by Future Biogas Limited. On 2 February 2018, JLEN added another plant, Icknield Farm in Ipsden, South Oxfordshire.

Part of the attraction of anaerobic digestion is that the revenue from these operational biogas-to-grid plants is mainly subsidy. The plants produce biomethane, the price of which varies in relation to natural gas prices, and electricity (but exposure to power prices is relatively lower than for wind and solar plants).

There was some detail on the Hatfield plant in the last note but it is discussed in more detail here, to give you an idea of how these things work. Figure 2 shows the workings of the Hatfield plant.

Figure 2: Vulcan Renewables – Hatfield plant operation



Source: JLEN

**Stricter rules on feedstock will apply to new plants**

The plant at Hatfield Woodhouse was one of the first commercial biogas-to-grid projects in the UK, having been commissioned in October 2013. It uses crops as feedstock for the process but anaerobic digestion plants can also use animal waste and food waste. The Hatfield plant can process 40,000 tonnes of agricultural feedstock each year. Most of this is maize but rye, grass and beet all feature when they are in their harvesting seasons. It looks as though the subsidy regime will change for new plants so that at least 50% of the feedstock must be from waste or residues if the plant is to qualify for subsidy. This change is not being imposed retroactively and so will not apply to Hatfield, Icknield Farm or, says JLCM, to any of the operational plants that they may buy in the foreseeable future.

Anaerobic digestion takes place inside the digester. It is a natural process whereby micro-organisms, bacteria and archaea break down organic matter into carbon dioxide, methane and water, plus a solid organic residue. They do this in the absence of oxygen – hence it is anaerobic digestion. The organic residue or digestate can be sold as biofertiliser.

The biogas that both of JLEN's anaerobic digestion plants produce needs to be conditioned and then upgraded into biomethane. These processes remove water vapour, carbon dioxide and traces of compounds such as ammonia and hydrogen sulphide. If the gas is going to the grid it may have a compound called mercaptan added to it to give it the smell that we associate with natural gas.

Methane gas that cannot be separated is burnt in a CHP (Combined Heat and Power) engine, providing additional heat and power that can be used to keep the plant running, with the excess sold to the grid.

Anaerobic digestion plants that are already accredited to export gas to the grid are eligible for a subsidy under the Non-Domestic Renewable Heat Incentive (RHI). Eligible installations receive quarterly payments over 20 years based on the amount of heat

generated. The level of subsidy has varied over the years. For JLEN's Hatfield scheme, the rate is £79 per MWhth (Megawatt hour thermal) adjusted in line with RPI. The plant also has a 0.5MWe (megawatt equivalent) CHP engine, which attracts a government subsidy for the renewable energy it produces under the feed-in-tariff (FiT) regime.

The Icknield Farm plant was commissioned in December 2014. The plant has a capacity of c.5MW and predominantly produces biomethane exported to the national gas grid. In addition, the plant also has a 0.4MWe CHP engine and is accredited under the RHI and FiT regimes. The feedstock for this plant includes a number of products such as maize and rye silage, oat husks and pig slurry.

JLEN's prospectus, published on 23 February 2018, contains more information on the anaerobic digestion market (see pages 95 and 96), sourced from the Anaerobic Digestion and Bioresources Association (ADBA). Among other things, it shows that the number of anaerobic digestion plants is expected to continue to expand in the UK, following considerable expansion over the past four years, although pace of expansion has slowed as tariff rates have fallen.

According to JLEN, UK anaerobic digestion plants in one form or another produced 11.4 TWh (terawatt hours) of biogas in 2016. This is just 2.5% all the gas produced in the UK that year. ADBA believes that anaerobic digestion could, if optimised, produce more than four times as much.

## Biomass

Biomass projects are not a feature of JLEN's portfolio currently, although the recent prospectus highlights this as another potential area for further portfolio diversification. Dedicated biomass to power plants were eligible for subsidies under the renewables obligation certificate or ROC regime from 2012 (see page 6 of the initiation note for more information). A number have been built and the adviser believes that an increasing number will come to market for sale by developers or funds seeking an exit. As for anaerobic digestion, a large part of the attraction is that subsidies (in the form of ROCs and RHI) make up a significant portion of the revenue from these projects.

## Other waste

Tay and ELWA performing in-line with expectations

JLEN has said that performance at its Tay and ELWA environmental processing assets has been in line with expectations. However, it has not been the case at its Dumfries & Galloway PFI investment.

There was some background information on this in the last note. In brief, the PFI concession is to process municipal waste. The contract was awarded in 2004 and runs until 2029. Dumfries and Galloway Council used to deliver unsorted waste which the plant would sort. A portion would be recycled, a portion would be sold on as fuel (solid recoverable fuel or SRF) and a portion would go to landfill.

New landfill regulations affect Dumfries and Galloway

Regulations in Scotland (Zero Waste Scotland), introduced in 2012, say that no biodegradable waste should go to landfill from January 2021 onwards. In addition, waste is now sorted before it arrives at the plant.

The changes affect every local authority in Scotland but the arrangement that the PFI concession has with Dumfries and Galloway Council is not typical. Discussions between the Operator and the Council have continued to try and resolve how to absorb the impact of this legislation between the parties.

JLEN adopting prudent approach to Dumfries and Galloway valuations

At the moment the dispute is unresolved with no sign of a negotiated settlement. In the meantime, JLEN has taken the prudent step of making a provision against the value of the investment. The impact on the NAV is discussed on page 7 but it is not significant.

Chris Holmes joins team from Green Investment Group

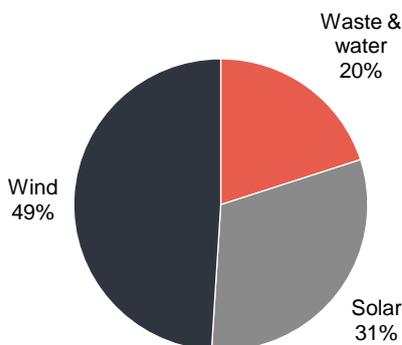
## Team

The adviser has been strengthening its team. Chris Holmes joined John Laing Capital Management (JLCM) in January 2018 to take on the role of joint lead adviser to the company. Chris will work alongside Chris Tanner, who has acted as joint lead adviser to JLEN since its launch in 2014.

Chris Holmes is formerly of Green Investment Group (part of Macquarie Group), where he was managing director of its waste and bioenergy division. His background is in project finance banking and he spent 12 years at Dutch bank NIBC heading the UK lending and advisory activities into infrastructure and renewable transactions. He also managed the bank's initiative to bring institutional investors into infrastructure projects via structured capital market solutions. Prior to NIBC, Chris spent a number of years in project finance at firms including Grant Thornton. Chris has served on the board of directors of the International Project Finance Association and is currently chair of its UK Council.

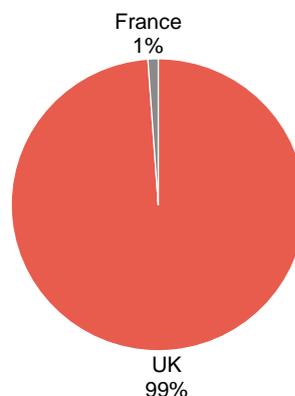
## Asset allocation

Figure 3: JLEN portfolio by type as at 30 September 2017



Source: JLEN, Marten & Co

Figure 4: JLEN portfolio by location as at 30 September 2017



Source: JLEN, Marten & Co

Icknield Farm add to JLEN's anaerobic digestion exposure, while the Llynfi Afan deal expands its wind portfolio

JLEN has acquired two new assets since the last note on the company, Icknield Farm, discussed on page 3, and Llynfi Afan Wind Farm. The wind farm was acquired from John Laing Group (under the First Offer Agreement – see QuotedData's initiation note for more detail) for £43.0m. The farm is located in the Afan Valley, Abergwynfi, West Glamorgan, Wales and comprises 12 Gamesa 2MW G80 turbines with a total generating capacity of 24MW. It has been operational since March 2017 and is accredited for 0.9 ROCs.

Both deals were funded, in part, with the £130m revolving credit facility that was discussed on page 20 of the initiation note.

JLEN has also disclosed that 82% of its portfolio, as at 30 September 2017, had a remaining asset life ranging between 21 and 30 years, with the balance having at least an 11-year life.

## Performance

QuotedData has up-to-date information on JLEN and its peers

Q4 2017 impacted by Dumfries and Galloway

For the six months ended 30 September 2017, JLEN reported a fall in its NAV from 100.1p to 99p which it attributed primarily to the decrease in forecast electricity prices discussed on page 2. Elsewhere in the portfolio, waste volumes were in line with budget but low rainfall impacted on wastewater volumes.

JLEN announced its estimated NAV for 31 December 2017 on 23 January 2018. This was 98.5p, a small drop from the 99p level as at 30 September 2017. Electricity price assumptions were unchanged from those used as at 30 September 2017. Wind and solar generation for the three months ended 30 September was marginally below budget but this just offset above-average generation in the wind portfolio earlier in the year. The principal negative impact on the 31 December 2017 NAV was the reduction in the value of JLEN's investment in the Dumfries and Galloway PFI concession, in relation to the problems outlined on page 5.

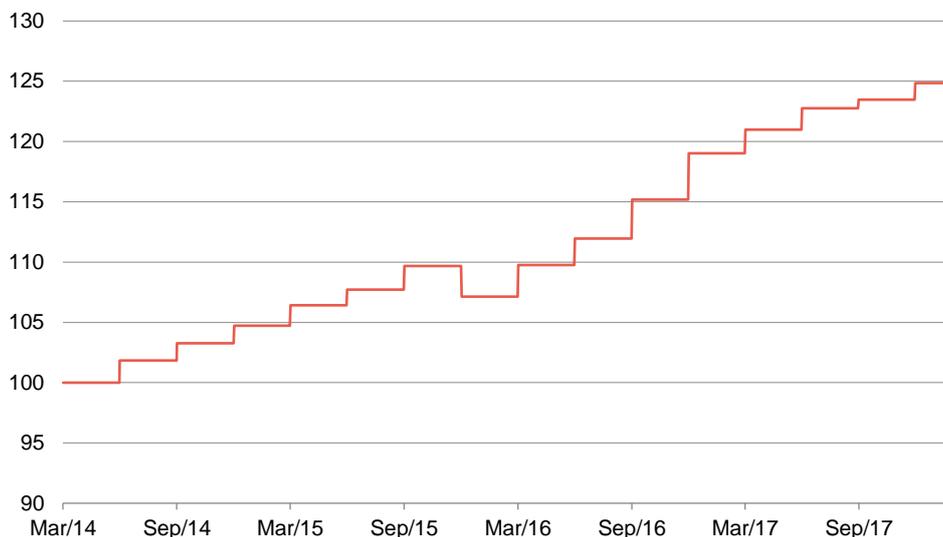
## NAV assumptions

In addition to the change in power price assumptions, at 30 September 2017, UK inflation was assumed to be 3.8% for 2017, 3.1% in 2018 and 2.75% thereafter. The French inflation rate was assumed to be 1%.

The overall weighted average discount rate used in the NAV calculation was kept at 8.2%. Within that number, JLEN reduced the discount rate for its wind assets but raised the discount rate for the D&G PFI concession.

Figure 5 shows how JLEN's NAV has developed since launch in total return terms.

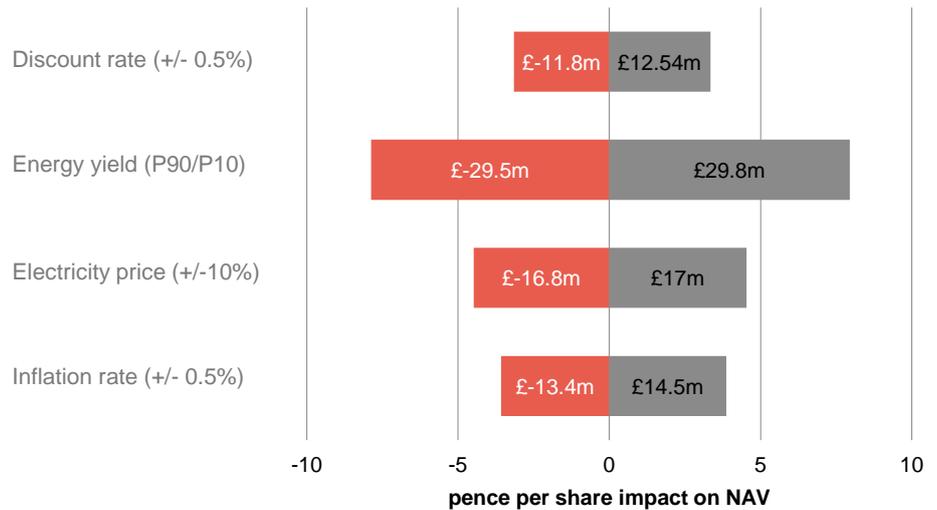
**Figure 5: JLEN NAV total return performance since launch rebased to 100**



Source: Morningstar, Marten & Co

Figure 6 shows how JLEN's NAV might vary in different scenarios. The discount rate is used to discount future cash flows when calculating the NAV. Energy yield P90 and P10 refer to the 90<sup>th</sup> best and 10<sup>th</sup> best scenarios (of 100) for the amount of energy generated by the portfolio.

Figure 6: NAV sensitivity to various factors

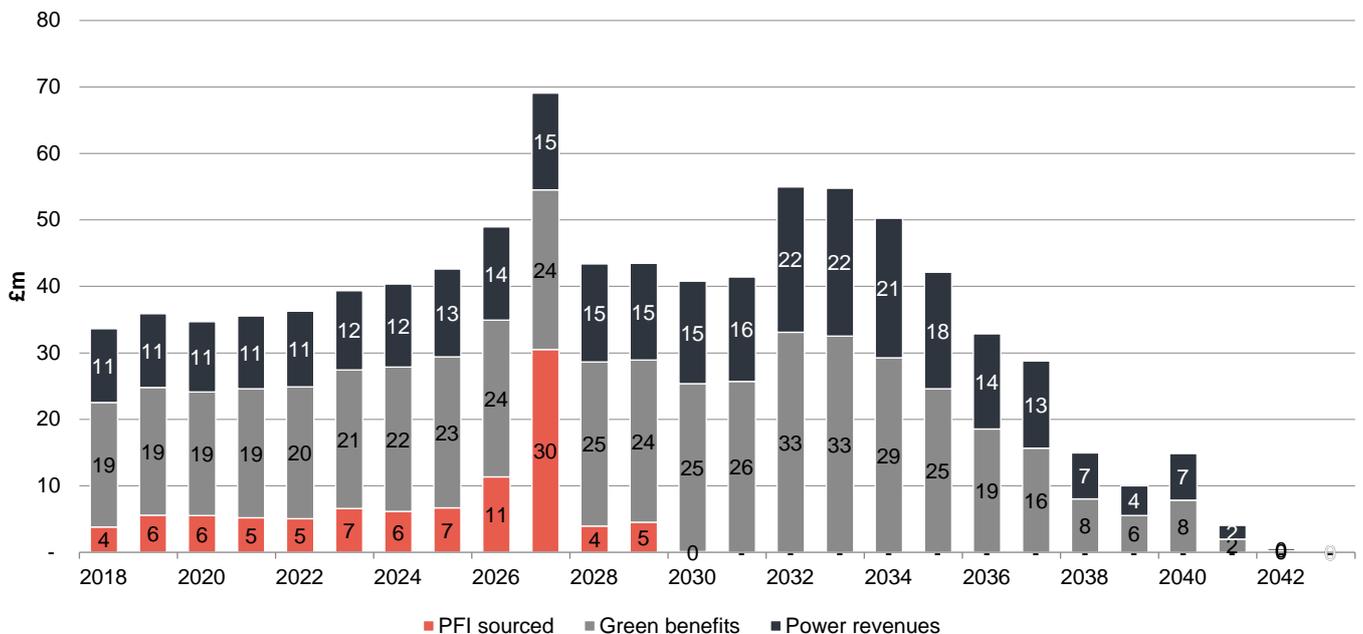


Source: JLEN, as at end September 2017

### Forecasts

Figure 7 shows the annual cash flow contribution per revenue type that JLEN has projected based on the current portfolio. The contribution from PFI contracts peaks in 2027 but rolls off quite swiftly thereafter. The contribution from green benefits (subsidies) is fairly predictable, the main variable being inflation, whereas the contribution from power purchase agreements is more likely to fluctuate.

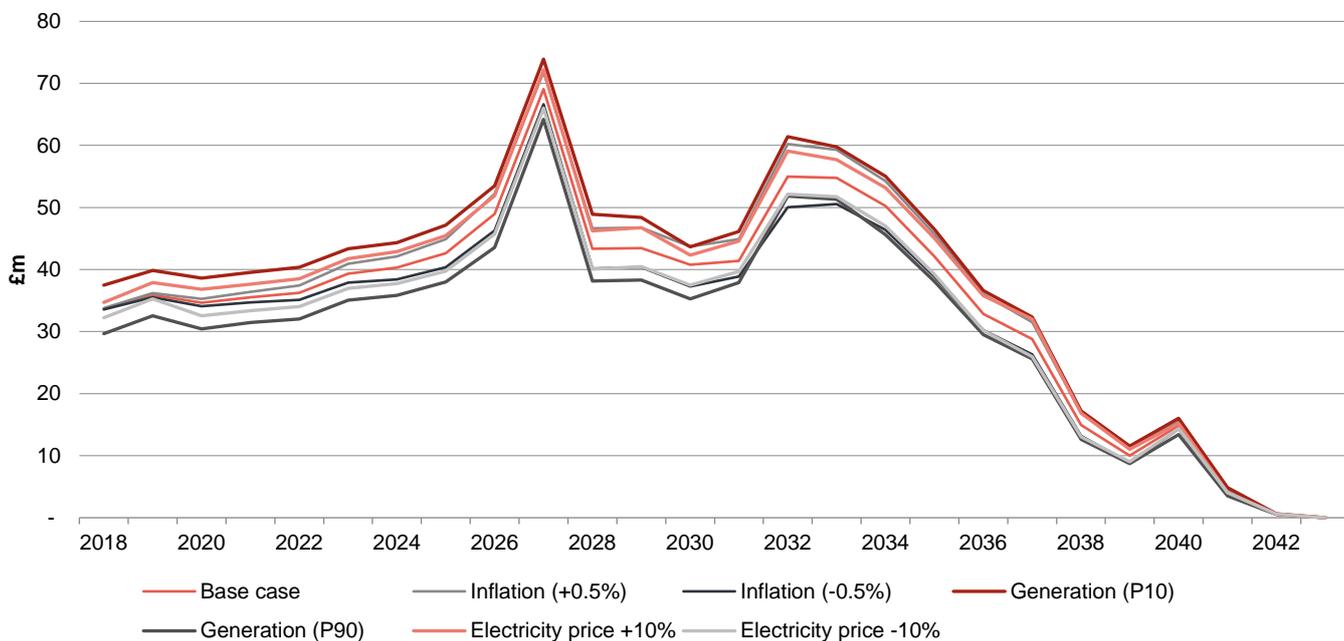
Figure 7: Cash flow contribution by revenue type over 25 years



Source: JLEN

Figure 8 shows how the total cash flow projections in Figure 7 might vary from JLEN's base case under the circumstances highlighted in Figure 6.

Figure 8: Sensitivities to cash flow projections by year



Source: JLEN

## Dividend

Figure 9: JLEN dividends declared or forecast to be declared since launch

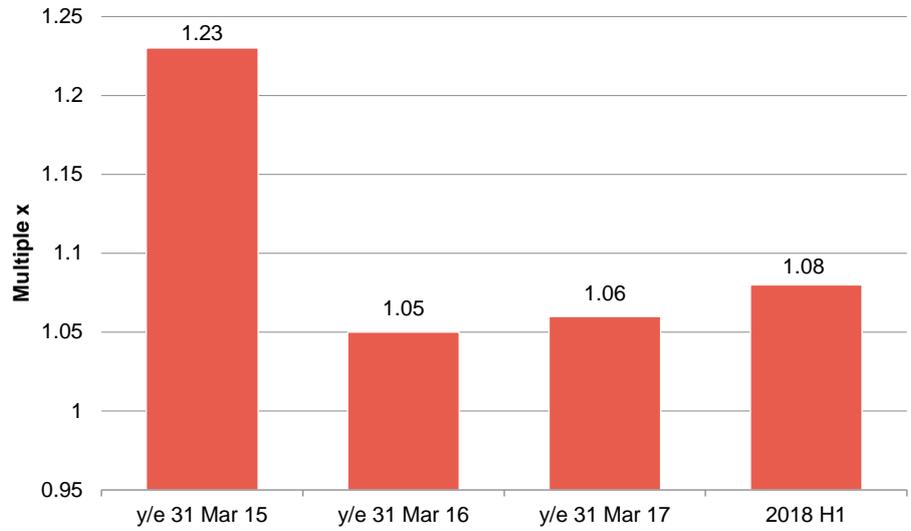


Source: JLEN

To date, JLEN has met its dividend forecasts for the year ended 31 March 2018.

Figure 10 shows that JLEN's dividends have been covered by the cash generated from the portfolio after running costs.

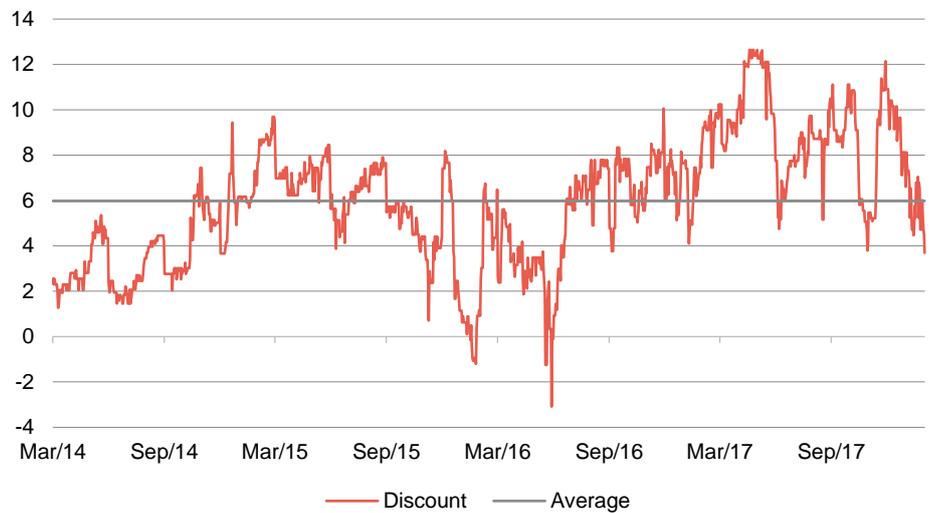
Figure 10: cash flow dividend cover



Source: JLEN, Marten & Co

## Premium

Figure 11: JLEN premium/(discount) since launch



Source: Morningstar, Marten & Co

JLEN has continued to trade at a premium to NAV and, as at the date of publication was trading at a premium of 3.7%, just below its average since launch of 6.0%. This may reflect investors' demand for high yielding investments that do not move with equity markets.

## Fund profile

Renewable energy (including solar, wind, hydropower and biomass technologies), the supply and treatment of water, the treatment and processing of waste, and projects that promote energy efficiency. JLEN does not invest in new or experimental technology.

You can access the company's website at [www.jlen.com](http://www.jlen.com)

John Laing Environmental Assets Group (JLEN) invests, through a subsidiary, John Laing Environmental Assets Group (UK) Limited (UK Holdco), in infrastructure projects that use natural or waste resources or support more environmentally-friendly approaches to economic activity. This could involve the generation of renewable energy (including solar, wind, hydropower and biomass technologies), the supply and treatment of water, the treatment and processing of waste, and projects that promote energy efficiency. It is aiming to build a portfolio that is diversified both geographically and by type of environmental asset. This emphasis on diversification helps differentiate JLEN from its peers which tend to specialise in solar or wind.

Reflecting its objective of delivering sustainable, inflation-linked dividends and preserving its capital, JLEN does not invest in new or experimental technology. A substantial proportion of its revenues are derived from long-term government subsidies.

## Previous research

QuotedData's initiation note, [Diverse renewables exposure](#), was published on 6 September 2017. The contents page of this note is reproduced below.

<b>3</b>	<b>Introducing JLEN</b>
3	Advisory team
<b>4</b>	<b>The renewables market</b>
6	Revenue
6	Subsidies
7	Electricity sales
9	Anaerobic digestion revenues
9	Water and waste revenues
10	Maintenance costs
10	Valuation
<b>12</b>	<b>Investment process</b>
12	Investment restrictions
13	First offer agreement
13	Ongoing management
13	Disposals
13	Hedging
<b>13</b>	<b>Asset allocation</b>
14	Solar
14	Wind farms
15	Anaerobic digestion
15	Waste
16	Water
16	Potential acquisitions

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**17 Performance**

**18 Peer group**

**19 Dividend**

**19 Premium**

**20 Fees and costs**

**20 Capital structure and life**

21 Gearing

21 Major shareholders

**21 Board**

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# QuotedData

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