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INTERNATIONAL

HydrogenOne Capital Growth

Investment companies | Update | 17 October 2023

Sky is the limit for HGEN

It appears that a disconnect has arisen between HydrogenOne Capital Growth (HGEN)'s NAV, current and (according to its managers) prospective track record, and its share price. The discount is now 44%, despite a flat NAV.

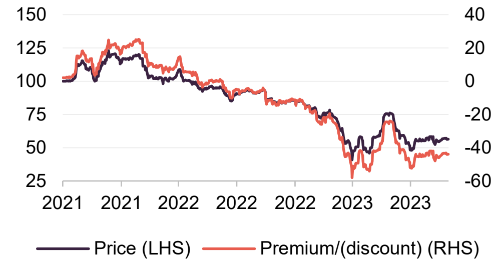
The recent spike in bond yields seems to have impacted on renewable energy funds. It may be that higher rates have increased concerns around the availability and cost of financing. In addition, there is added competition for investors' capital from money market funds, which are now providing steady returns without the same credit and duration risks as renewables.

HGEN saw revenue growth of 170% year-on-year across its portfolio of green hydrogen investments, which the managers feel helps to vindicate the investment case. If their predictions for the potential of the green hydrogen industry hold true, HGEN should benefit. For the long-term investor, the current discount may provide an attractive entry point.

Sector	Renewable energy infrastructure
Ticker	HGEN LN
Base currency	GBP
Price	56.4p
NAV	100.7p
Premium/(discount)	(44.0%)
Yield	Nil

Share price and premium/(discount)

Time period 30/07/2021 to 16/10/2023



Source: Morningstar, Marten & Co

Diversified green hydrogen exposure

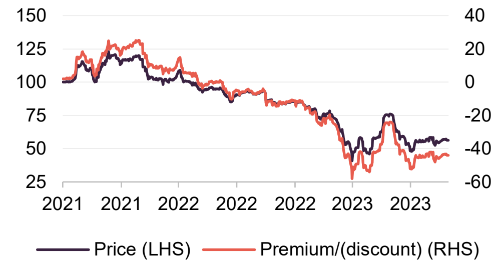
HGEN aims to deliver an attractive level of capital growth by investing, directly or indirectly, in a diversified portfolio of hydrogen and complementary hydrogen-focused assets while integrating core ESG principles into its decision-making and ownership process.

Year ended	Share price total return (%)	NAV total return (%)	Benchmark[2] total return (%)	MSCI ACWI total return (%)
30/09/2021[1]	7.0	(1.0)	(3.8)	1.1
30/09/2022	(19.2)	0.7	(41.7)	(4.2)
30/09/2023	(36.1)	3.1	(5.1)	10.5

Source: Morningstar, Marten & Co. Note 1) period from launch on 30 July 2021. 2) Benchmark is Solactive Hydrogen Economy Index. 3) HGEN's NAV is as at 31 December 2022.

Performance since launch

Time period 30/07/2021 to 30/09/2023



Source: Morningstar, Marten & Co

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Domicile	England & Wales
Inception date	30 July 2021
Manager	JJ Traynor Richard Hulf
Market cap	72.7m
Shares outstanding (exc. treasury shares)	128,819,999
Daily vol. (1-yr. avg.)	190,171 shares
Net gearing	Nil

Click for our initiation note

Click for an updated HGEN factsheet

Click for HGEN's peer group analysis

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Green Hydrogen Backdrop

Our initiation note – funding a green revolution – describes HGEN's investment approach and the fundamentals of the green hydrogen sector

Whilst it may be understandable that the broader renewables sector has derated as capital has flown towards money markets and debt (now that both offer higher returns), many commentators are finding the scale of the move hard to fathom.

The discount for HGEN is now 44%, despite steady NAV growth and ongoing portfolio execution. Unfortunately, there is a multitude of investment trusts trading on wide discounts. However, what may set HGEN apart from its peers, is the potential capital upside of the fund. HGEN's managers highlight a number of tailwinds driving green hydrogen, particularly the scale of fiscal spending flowing into the sector.

$16bn of new investment in green hydrogen has been announced YTD

As evidence of the growth in the sector, HGEN's managers report that $16bn of new investment in green hydrogen has been announced so far in 2023, including $8.4bn to fund a 4GW plant as part of the wider Saudi NEOM project. They say that this increased interest is reflected in the growing backlogs and rapidly expanding production capacity of HGEN's portfolio companies, and believe this to be an underappreciated element of the investment thesis.

It remains early days for the green hydrogen sector, however. As was covered in QuotedData's initiation note, the opportunity for industrial-scale green hydrogen production appears to be vast, particularly in hard to decarbonise sectors of the market such as power generation and transport. Whilst estimates vary, some 20bn tonnes per annum of GHG emissions could be addressed with clean hydrogen over time, which is over one third of all GHG emissions today.

Hydrogen technology is proven

For the managers, part of the attraction of green hydrogen, and the HGEN portfolio, is that the technology is proven, growing in profitability and can scale rapidly. They say that this is why we are beginning to see significant investment interest from both the public and private sector.

170% YoY revenue growth for H1 2023

HGEN's interim results (covering the six months ended 30 June 2023) showed aggregate revenue across the portfolio increasing by 170% year-on-year. The bulk of this is attributable to just three of HGEN's 10 portfolio companies – Bramble, NanoSUN, and Sunfire (which are discussed from page 5 onwards).

Asset allocation

At 30 June 2023, HGEN had £117m invested or committed to 10 private hydrogen assets, had £3.0m in listed assets and a further £9.0m of cash.

Over the first six months of 2023, HGEN made £8m of investments, including the Thierbach hydrogen plant that we discussed in our initiation note and follow-on investments into three other portfolio companies: £1.5m for NanoSUN, £1.8m for Sunfire, and £2.9m for Cranfield Aerospace.

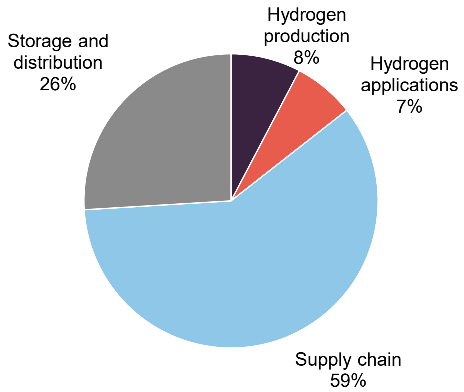
Figure 1: HGEN portfolio as at 30 June 2023

	Country	Sector	Value as at 30/06/23 (£000's)[1]	Change from 31/12/22 (£000's)	% of NAV as at 30/06/23	% of NAV as at 31/12/22
Sunfire	Germany	Electrolyser producer	25,559	3,796	20	17
Elcogen	United Kingdom	Solid oxide fuel cells	21,475	1,045	17	16
Strohm	Netherlands	Thermoplastic composite pipe	18,440	6,834	14	9
NanoSUN	United Kingdom	Mobile hydrogen storage and refuelling	12,555	1,036	10	9
Cranfield Aerospace Solutions	United Kingdom	Hydrogen powered aircraft	10,422	4,126	8	5
HiiROC	United Kingdom	Clean hydrogen technology	10,325	(2,589)	8	10
Bramble Energy	United Kingdom	PCB fuel cells	8,439	(1,593)	7	8
HH2E AG	Germany	Green hydrogen producer	4,453	(681)	3	4
Gen2 Energy	Norway	Green hydrogen producer	3,999	578	3	3
HH2E Thierbach phase 1	Germany	Green hydrogen project	1,852	1,852	1	-
Total of unlisted portfolio within the LP			117,519	14,404		
Value of HGEN's investment in the LP[2]			117,721	14,715	91	82
Listed stocks	Various		3,013	(654)	2	3
Cash and other assets			8,986	(9,694)	7	15
Total			129,720	4,367	100	100

Source: HGEN, Marten & Co. Note 1) Unlisted positions are held through the limited partnership, listed positions are held by the company directly. 2) There was a small net current assets position of £202,000 within the limited partnership at the year end.

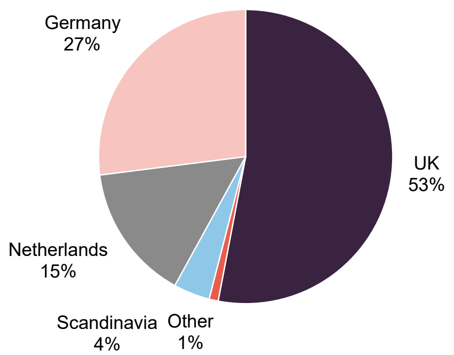
The distribution of the portfolio is not much changed from that of our initiation note. Changes reflect the £8m of investments that HGEN made in H1 2023 and valuation movements.

Figure 2: HGEN portfolio by theme as at 30 June 2023



Source: HGEN

Figure 3: HGEN portfolio split by geography as at 30 June 2023



Source: HGEN

Portfolio developments

Sunfire

Sunfire says that the Bad Lauchstädt Energy Park green hydrogen project in Saxony, Germany has been given the go-ahead. Over the course of two years, Sunfire is building a 30MW electrolyser as part of the project. The electrolyser will be powered by a nearby wind farm.

In August, Sunfire announced an order for a 100MW pressurised alkaline electrolyser (10, 10MW modules and associated power supply units) for an unnamed European refinery.

Later that month, it got €169m of IPCEI grant funding, which we believe formed part of the €5.2bn of public funding announced in September 2022 that EU states and regions are putting towards research and innovation – first industrial deployment, and construction of relevant infrastructure in the hydrogen value chain, including large-scale electrolysers. Sunfire is putting the bulk of the money towards its plant in Saxony. This is intended to have capacity of 500MW in 2023, expanding to 1GW in due course.

Finally, in September 2023, Sunfire announced that one of its solid oxide electrolysers is in use at a 250kW test facility at Lingen in Lower Saxony.

Elcogen

Elcogen was also a beneficiary of IPCEI grant funding, this time for €24.5m, which will be used to accelerate the deployment of solid oxide (SOEC) technology.

In addition, Korea Shipbuilding & Offshore Engineering (part of the HD Hyundai Group) is making a €45m investment in Elcogen, having collaborated with it on R&D. This will help fund Elcogen's new 360MW facility in Tallinn, Estonia.

Elcogen's SOEC technology is being used in a test facility (ARENHA – Advanced Materials and Reactors for Energy Storage Through Ammonia) that will produce ammonia as a means of energy storage and as a fuel. This is the technology that is often touted as a solution to decarbonisation of the shipping industry. This is also part of the attraction for HD Hyundai.

Strohm

Strohm was the main driver of HGEN's NAV improvement over H1 2023. It is involved in a test floating hydrogen and/or ammonia production and storage facility (the OFFSET project) and a test 10MW hydrogen production project (HOPE) powered by an offshore wind farm in the North Sea off the coast of Belgium. In its fossil fuel business, it has also won new business for natural gas pipelines being installed in deep water of the coast of Brazil and Congo.

HGEN says that Strohm has a €60m order book, which the managers feel will be easier to tackle having tripled its production capacity to 140km of pipe per annum, and they say that it is forecast to be EBITDA- and cashflow-positive in 2024.

NanoSUN

NanoSUN has worked with Westfalen to provide a mobile hydrogen refuelling station to a small fleet of six fuel-cell-powered buses in Brühl, North Rhine Westphalia, Germany. In addition, in Italy NanoSUN and IIT Hydrogen Bolzano have agreed a pathfinder initiative to promote Pioneer mobile hydrogen refuelling in that country.

Italy is making a €3.64bn national investment towards the green hydrogen transition, €230m of this will be dedicated to establishing a national network of hydrogen refuelling stations, 36 of which will be operative in 2026.

Cranfield Aerospace

The merger with aircraft manufacturer Britten Norman that was discussed in the last note is yet to be concluded. However, Cranfield has announced a deal with MONTE Aircraft Leasing and Torres Strait Air to convert up to 10 Britten-Norman Islander aircraft to hydrogen-electric power.

Cranfield Aerospace has also signed a Memorandum of Understanding with Dronamics, the world's first cargo drone airline, with the intention of using hydrogen fuel cell propulsion in Dronamics' Black Swan cargo drone aircraft. This includes a letter of intent for the supply of a substantial number of propulsion systems from 2026.

The two companies have been working together since November 2022 on a joint feasibility study for the Black Swan cargo drone aircraft, which is capable of carrying 350kg of freight for up to 2,500km. These studies have concluded that the Cranfield Aerospace hydrogen fuel cell system is well suited to meet the required payload, cargo volume and range for the Black Swan aircraft. With the letter of intent that was included in the deal, Cranfield Aerospace now has a total order pipeline of over 1,300 drivetrains.

In addition, upgrade work at the company's UK hangar and R&D facility was completed in the summer.

HH2E

HH2E announced that it had secured development funding for its second 100MW green hydrogen plant at Lubmin, Mecklenburg-Western Pomerania, Germany from Foresight Group. HGEN opted not to participate in this project. As with Thierbach, the intention is that the plant will scale to 1GW in time. Orders for the electrolysers for this and other HH2E projects have been placed, with an order for 120MW from Norwegian manufacturer Nel.

HH2E, DHL Group, and Sasol have signed an agreement for the setup of a joint initiative aimed at building potential production capacities for sustainable aviation fuels based on green hydrogen (eSAF) at a suitable location in East Germany. The intention is that the initial plant has the capacity to produce 200,000 tonnes per annum (avoiding the emission of 632,000 tonnes of CO_2) and the potential to scale that to 500,000 tonnes. HH2E is participating in its role as a producer of green hydrogen. Sasol is using its technology to turn that into eSAF and DHL will be a major consumer of that eSAF (it has an air cargo hub at Leipzig/Halle airport). Airbus intends to join the consortium with the expected aim of being another potential offtaker.

Gen2 Energy

Gen2Energy has signed a transaction term sheet with SEFE Securing Energy for Europe GmbH, an integrated midstream energy company, to supply green hydrogen from its plant in Mosjøen Norway to customers in Germany. The agreement is conditional on (and a big boost towards) the final investment decision to construct the Mosjøen plant, which is expected in 2024. Assuming that construction work commences in 2024, the construction time is expected to be 30 to 36 months.

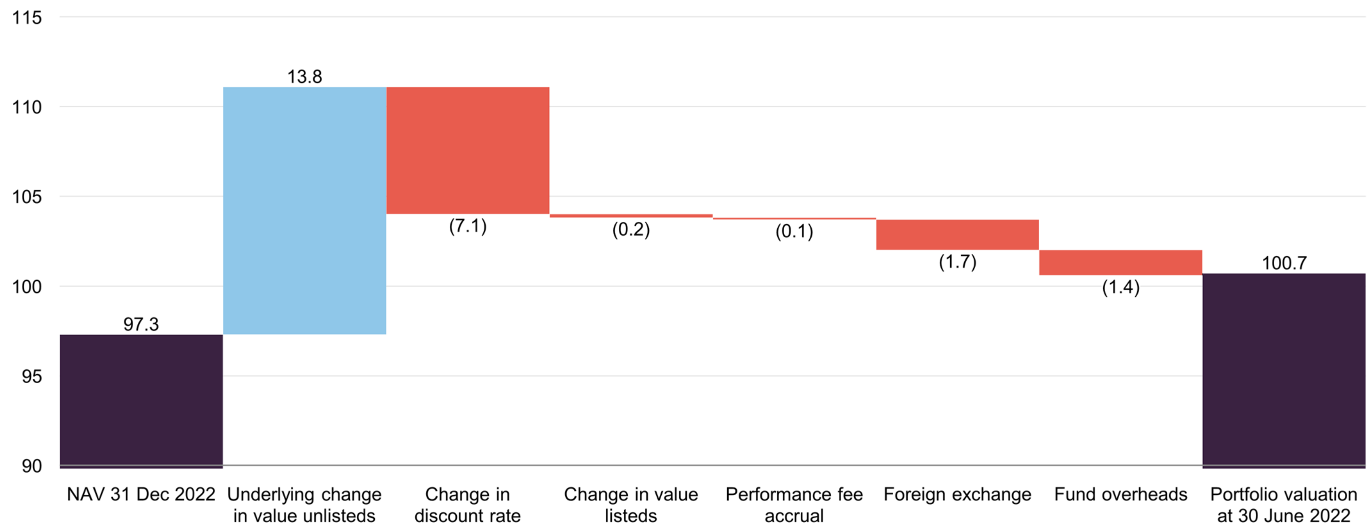
ESG

HGEN is an Article 9 fund with 87.6% of its portfolio aligned with EU taxonomy under SFDR. HGEN has just adopted a six-monthly reporting cycle on ESG metrics. As part of this, it disclosed that 83,497 tonnes of CO_2e of greenhouse gas emissions were avoided in the six months ended 30 June 2023 as a result of its activities, and 134,076 tCO_2e since IPO.

Performance

Over the six months ended 30 June 2023, HGEN's NAV rose by 3.5% despite an adverse movement in the discount rates used to value the portfolio. The weighted average discount rate rose to 13.7% from 13.0% over H1 2023. DCF valuations were used for 81% of the portfolio (by value). The balance of the unlisted portfolio was valued based on a blend of DCF and the price of recent investment. Listed stocks are valued on listed share prices.

Figure 4: HGEN contributions to change in NAV over six months to end 30 June 2023



Source: HGEN, Marten & Co.

The managers highlight that to add further reassurance as to the quality of HGEN's valuations, all of the positions in the private portfolio have downside protections such as anti-dilution and liquidation preferences.

Figure 5: Total return cumulative performance over various time periods to 30 September 2023

	3 months (%)	6 months (%)	1 year (%)	Since launch (%)
HGEN share price	(13.2)	17.1	(36.1)	(44.7)
HGEN NAV[1]	0.0	0.7	3.1	2.8
Solactive Hydrogen Economy Index	(13.9)	(14.5)	(5.1)	(46.7)
MSCI ACWI	0.6	3.9	10.5	7.0

Source: Morningstar, Marten & Co. Note 1) HGEN's NAV is as at 30 June 2023.

Valuation of HGEN's portfolio is around 30% lower than the average listed hydrogen company.

HGEN's portfolio was valued on about 4x 2024's forecast revenues at the end of June 2023. That is said to be about 30% lower than the average listed hydrogen company.

Premium/(discount)

Over the 12 months ended 30 September 2023, HGEN's shares have moved within a range of a 10.7% to a 58.1% discount to NAV and averaged a discount of 33.5%. At 16 October 2023, HGEN was trading on a 44% discount.

Figure 6: HGEN premium/(discount) since launch

Source: Morningstar, Marten & Co

HGEN's shares moved from trading at a premium to trading at a discount in May 2022 and the discount hit its widest level in March 2023. Following the publication of our initiation note, the discount narrowed, but has widened again subsequently. The swings in discount might suggest that the shares are fairly illiquid, which could reflect the long-term nature of HGEN's investment proposition and the fund's short history.

A significant driver of HGEN's discount may have been the apparent 'risk off' attitude that investors have adopted since interest rates began to rise. This could have contributed towards falls in the share prices of listed stocks.

Fund profile

More information is available on the trust's website: hydrogenonecapitalgrowthplc.com

HGEN is the first London-listed fund investing in clean hydrogen for a positive environmental impact. It aims to deliver an attractive level of capital growth by investing, directly or indirectly, in a diversified portfolio of hydrogen and complementary hydrogen-focused assets whilst integrating core ESG principles into its decision-making and ownership process.

HGEN compares its NAV performance to the Solactive Hydrogen Economy Index.

HGEN's AIFM is FundRock Management Company (Guernsey) Limited (formerly Sanne Fund Management (Guernsey) Limited). It is advised by HydrogenOne Capital LLP, whose lead managers are JJ Traynor and Richard Hulf.

HGEN can hold both listed and unlisted (private) investments: however the majority of the portfolio is invested in unlisted hydrogen assets. In both cases, HGEN aims to be a long-term investor. The early portfolio was established with a liquidity reserve of cash and listed hydrogen assets, with the intention of giving investors exposure to the sector from day one.

HGEN holds its unlisted investments through a 100% stake in a limited partnership, HydrogenOne Capital Growth Investments (1) LP.

Previous publications

We published our initiation note – Funding a green revolution – on 3 May 2023. Click the link to read it.

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