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# HydrogenOne Capital Growth plc 2021 results

London listed fund dedicated to clean hydrogen for the energy transition to net zero

#### **Presentation team**





Dr JJ Traynor Managing Partner

- 33 years energy, capital markets, project management, M&A
- Senior roles at Royal Dutch Shell, Deutsche Bank, BP
- Geology BSc from Imperial College, PhD from Cambridge University. INSEAD Advanced Management Programme.
   Fellow of the Geological Society of London



Richard Hulf *Managing Partner* 

- 30 years energy, fund management, corporate finance and engineering
- Senior roles at Artemis, Ernst & Young, previously Henderson Crosthwaite, Exxon and Babcock Power
- MSc in Petroleum Engineering from Imperial College, Chartered Engineer (CEng)

Combined 60+ years energy sector and capital markets track record

#### **UK listed hydrogen investment trust**



#### Investing in clean hydrogen projects, private equity and strategic listed companies



LSE listed hydrogen fund



**10-15%** Target 10-15%/year NAV growth<sup>1</sup>





- >90% target allocation to private equity
- Dedicated Investment Adviser with 100% hydrogen focus
- 60 years track record in energy



- Strategic investor in HydrogenOne
- Co-investor in projects



- Technical adviser to HydrogenOne
- DD and project management

#### What is driving the hydrogen economy?





Energy Transition Hydrogen policies in 39 countries for Net Zero



Air Quality Hydrogen fuel in heavy transport and power



Energy Security Distributed renewables and storage

#### ...projects

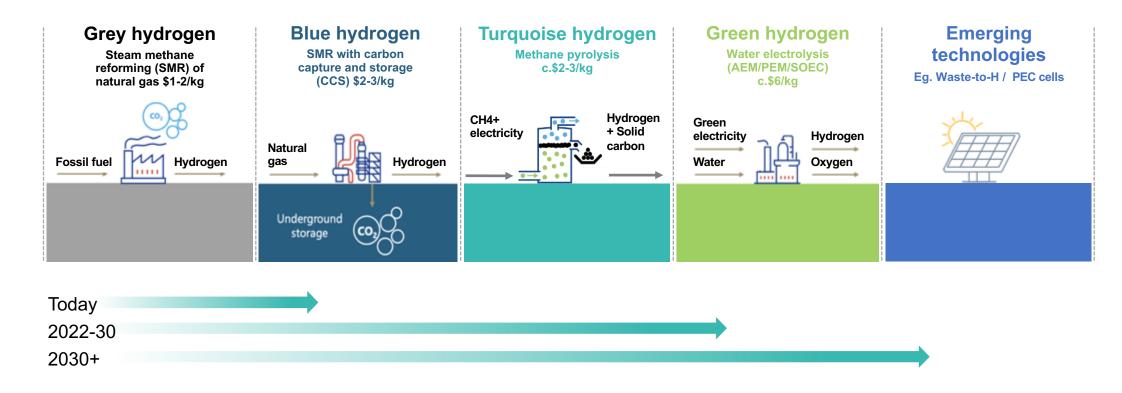


#### ...supply chains



#### **Hydrogen supply sources**





- Multiple potential sources of hydrogen
- Innovation to extend traditional portfolio asset lives: oil & gas facilities, pipeline networks
- Potential for blending and premium markets for clean hydrogen

#### Range of business we invest in



## Hydrogen value chain **Hydrogen supply Energy storage Distribution Supply chain Carbon capture Hydrogen** applications

# Clean hydrogen supply

 "Green" hydrogen using renewable power and electrolysis

10MW solar. 2020 start-up

Japan FH2R (Toshiba/Tohoku/ Iwatani)

- "Turquoise" hydrogen reforming natural gas and extracting solid carbon byproduct
- Bankable projects in decades-long cash flow streams

#### Supply chain equipment



- Specialist equipment manufacturers
- Fuel cells, electrolysers, portable power and hydrogen refuelling sites
- Pre-IPO and listed opportunities
- Strong growth and consolidation potential

#### **Hydrogen applications**

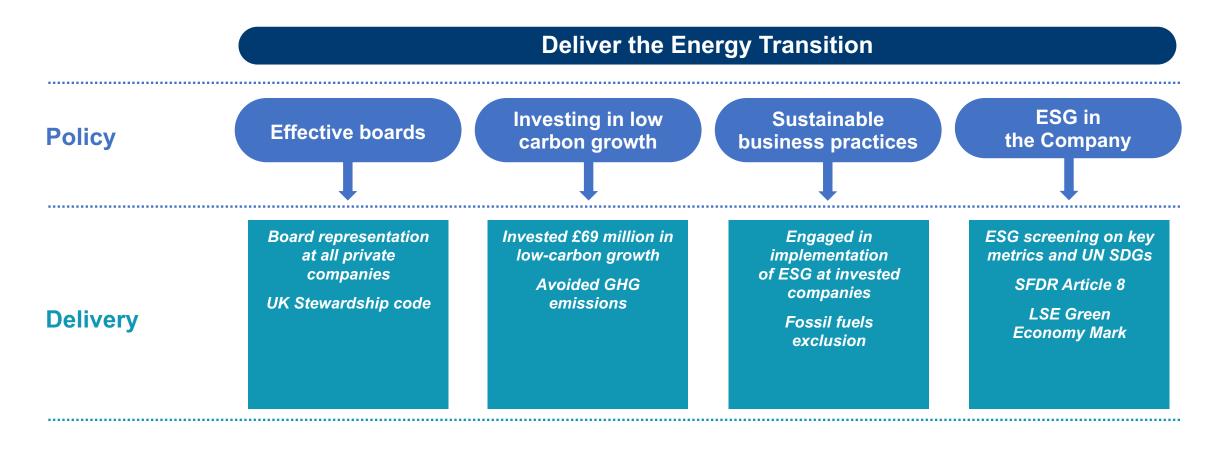


Hydrogen flight using fuel cells

- High tech innovation companies and projects targeting 'hard to decarbonise' sectors
- Trains, flight, shipping and steel
- Ability to retain and deploy intellectual property at scale

#### **ESG** policy and 2021 delivery





Profitable growth with strong ESG focus

















SDG target

3.9

7.1,2,3

9.4,5

11.6

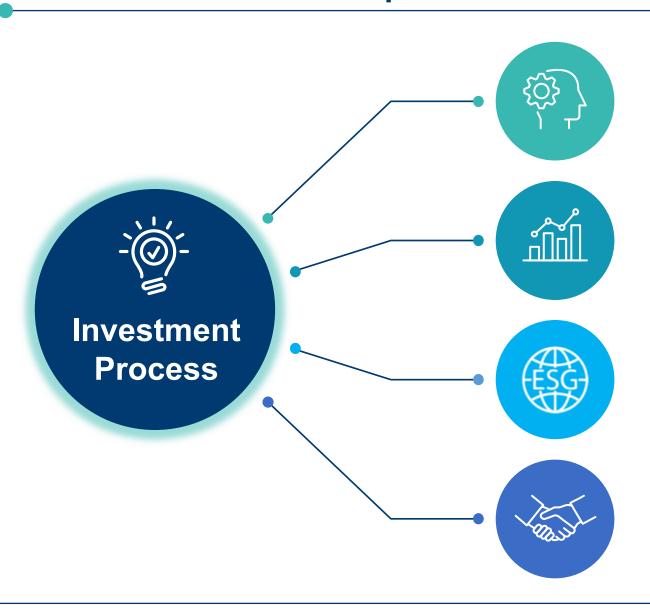
12.6

14.3

15.3

#### Structured investment process and access to deal flow





#### 1. Specialist insights into deal flow

- Investment Adviser networks and track record
- Building out opportunities via our investments
- First mover... "see everything"
- Investing alongside industrials, ESG funds and VC

#### 2. Investment Policy

- Hydrogen and related growth assets
- OFCD mandate
- Fossil fuels production excluded

#### 3. ESG Policy

- Investing in low carbon growth
- Effective boards
- ESG in the Company
- Sustainable business practices
- UN SDGs

#### 4. Transaction

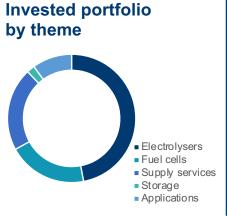
- Autonomy in investment selection and allocation
- Detailed DD including Advisory Board, Arup and other 3rd parties
- Board / AIFM review ahead of completion

#### **Fund overview**



NAV
£102m
NAV/share
94.94p
Funds invested
c. <b>£69m</b>







Top 5 holdings % AUM	
1. Sunfire GmbH	19.62%
2. HiiROC Limited	9.81%
3. Bramble Energy Limited	9.81%
4. NanoSUN Limited	8.88%
5. Cranfield Aerospace Solutions Limited	6.87%

#### **Deployment of funds since IPO**







£3m Gen2 Energy

£9m deployed to equities £10m HiiRoc



£10m Bramble

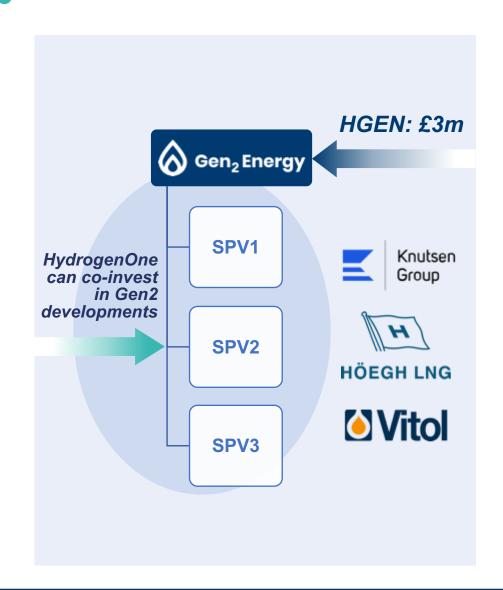


£7m Cranfield

Cranfield Aerospace Solutions £200m+ near term private equity pipeline

#### **Gen2 Energy**







£3m

#### Nordic green hydrogen developer company

- Gen2 Energy has 700MW of green hydrogen projects in Norway & Denmark
- Specialist in accessing low cost 24/7 hydroelectric power
- HGEN has follow-on investment opportunities in project SPVs



#### **Sunfire investment**









## Material, established electrolyser name with strong technology and growth potential

- Founded in 2010, Sunfire is based in Dresden, plus Norway, Switzerland;
   270 staff
- Pressure alkaline and solid oxide electrolysers + e-fuels; GW growth plan
- Backed by Neste and SMS Group
- 2021-22 raise E195m (HydrogenOne, Planet First, Lightrock, Carbon Direct, CIP, Blue Earth)
- CIP framework agreement March '22, for c.640 MW of electrolysis

#### **HiiROC** investment







£10m

#### **Turquoise hydrogen OEM**

- Founded in 2019, based in Hull, UK; 40 staff
- Thermal plasma conversion of methane to hydrogen and carbon black (solid)
- Price competitive with grey hydrogen with zero GHG emissions
- £26m fund raise, backed by HydrogenOne, Melrose, Hyundai, Centrica, Kia
- Proceeds targeted to step up manufacturing capacity

#### NanoSUN investment

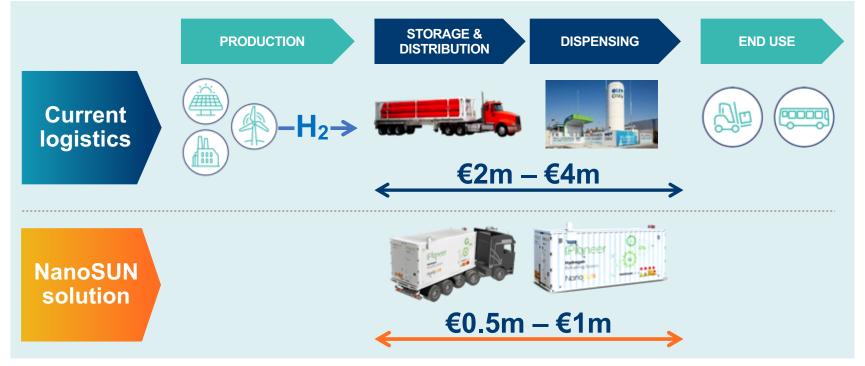


#### **Hydrogen refuelling station OEM**

- Founded in 2017, based in Lancaster, UK; 30 staff
- Mobile hydrogen storage and distribution
- 2021 raise £12m, backed by HydrogenOne and Westfalen
- Proceeds targeted to step up manufacturing capacity and develop larger scale units



£10m





#### **Bramble Energy investment**









#### Fuel cell innovator and applications

- Based in Crawley, UK
- Bramble Energy has developed the unique printed circuit board (PCB) fuel cell – the PCBFC™. A patent protected fuel cell that can be manufactured in almost all printed circuit board (PCB) factories worldwide
- Deploying PCBFC in portable power units in partnership with BOC (a Linde Group company), and fuel cell stacks for light commercial vehicles
- B-Series raise £35m, backed by HydrogenOne, IP Group, BGF, Parkwalk, UCL Technology Fund
- Proceeds targeted to step up manufacturing capacity and further innovation

#### **Cranfield Aerospace Solutions investment; March 2022**









#### Fuel cell flight innovator (UK)

- CAeS has a 10+ year track record in flight innovation and CAA certification
- Phase 1: conversion of Britten Norman 19-seater. 440 in service / £600m TAM
- Follow on: Cessna 208 and Twin Otter. 1300+ in service / £1bn+ TAM
- £10.5m fund raise, backed by HydrogenOne, Safran
- Proceeds targeted to fly and certify Britten Norman Islander

#### **Summary and outlook**



- Successful launch of fund and investment of capital
- Full deployment of IPO proceeds expected by Q2-22
- Considering further fundraise 2022

**Supply chain** 

• £69m deployed

companies

2021

### + Supply projects **Developer +** >£300m pipeline Supply chain companies >£200m pipeline 2022 2023+

#### 10-15% target return<sup>1</sup>

- Private equity
- £500m pipeline

#### **Energy transition**

- Allocating capital to clean energy
- Exclusion of fossil fuels producers

#### **Deep experience in sector**

- Access to distinctive assets
  - Specialist approach

¹ The total NAV return target is a target only and not a profit forecast. There can be no assurance that this target will be met, or that the Investment Trust's actual returns will depend upon a number of factors, including but not limited to the size of the Investment Trust's net income and level of of ongoing charges. Accordingly, potential investors assumant on substance on this target in deciding whether or not to invest in the Investment Trust and should decide for themselves whether or not the target total NAV return is reasonable or achievable. The illustrative returns has been calculated on the basis of various assumptions and inputs. There can be no assumantion when deciding whether or not the target total NAV return is reasonable or achievable. The illustrative returns has been calculated on the basis of various assumptions and inputs. There can be no assumantion when the substance on this information provided should not be seen as an indication of the Investment Trust's expected or actual results or returns. Accordingly, investors should not place any reliance on this information provided should not be seen as an indication of the Investment Trust's expected or actual results or returns. Accordingly, investors should not place any reliance on this information provided should not be seen as an indication of the Investment Trust's expected or actual results or returns.

#### For more information:



#### The Bluffer's Guide to Hydrogen

Further information on clean hydrogen is available at:

#### The Bluffers Guide to Hydrogen



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