



## **Stephen B. Harrison**

- International E-fuels, hydrogen, energy, CCUS and decarbonisation expert
- Global business leadership in industrial, medical & specialty gases
- International “Blue Chip“ experience in Great Britain and Germany
- Chemical Engineering Masters degree from world class university

## **Together we can make it happen!**

- I love sharing ideas, being a champion for change and getting the right things done
- I have earned a reputation for delivering complex projects on time, to budget and with the expected benefits
- I work at ‘high velocity’: fast & in the right direction

### **So, what do I bring to the team?**

- Clarity and expertise
- Industry insights
- Focus and strategic execution
- Authenticity with direction and purpose

### **And how do I bring that to the team? By...**

- Inspiring the will to win
- Sharing my knowledge
- Leveraging my network
- Spreading meaning and hope

### **As a leader, I know that I am a link in the chain. I know that I must also watch, listen and respect...**

- Market dynamics and customer requirements
- Current strategy, investor concerns and legal requirements
- The needs of the people I am leading and stakeholders

**I believe that sustainable high performance comes from who we are and how we learn, share, live and work, in addition to what we know.**

## OVERVIEW

Functional expertise	<b>Investment Management, Technology Evaluation, Project Evaluation, Business Strategy, M&amp;A Due Diligence</b> International experience in UK, Germany and worldwide Consulting, Project management, Sales and marketing, Team leadership, Strategy development and execution, P&L oversight, Profitable growth, Innovation management, SHE Chemical Engineering Masters Degree from Imperial College, University of London Chartered Chemical Engineer, MChemE, EurIng, ACGI Formerly: Global Head of Specialty Gases & Equipment, Linde Gas, Munich
Products & Themes	<b>E-fuels, Hydrogen, CCUS, Decarbonisation</b> , Sustainability, Biomethane, Alternative Energy, Industrial Gases, Specialty Gases, Medical Gases, Ammonia
Industry sectors	<b>Energy, Chemicals, Industrial gases</b> , Oil & gas, Sustainability, Gas analysis instrumentation, Gas detection, Climate protection

## PROFESSIONAL CAREER

2017 – today	<b>Managing Director &amp; Founder – sbh4 consulting</b> <ul style="list-style-type: none"><li>– Renewable energy and decarbonisation consulting: hydrogen, ammonia, biomethane, electrification of industrial processes &amp; CCUS</li><li>– Deal origination and advice to PE &amp; infrastructure investment funds</li><li>– Commercialisation and scale up advisor to clean-tech startups</li><li>– Buy-side M&amp;A transaction support, due diligence, and market research</li><li>– Strategy consultant and advisor to international companies</li><li>– More than 200 published articles related to decarbonisation, hydrogen, energy and CCUS</li></ul>
2021 – today	<b>Hydrogen &amp; CCUS Expert – World Hydrogen Leaders, UK</b> <ul style="list-style-type: none"><li>– Design and delivery of hydrogen &amp; CCUS related training</li><li>– Targeted to hydrogen technology providers, investors, and operators</li><li>– Courses: CCS for blue hydrogen; Waste to hydrogen; Technologies for turquoise hydrogen production; Hydrogen safety masterclass; On-purpose blue hydrogen production; Giga-scale pathways for low-carbon hydrogen production; High-capacity underground hydrogen storage; Hydrogen transmission in gas pipelines; Hydrogen Refuelling Station technologies; Biomass to green hydrogen; Blue energy islands; Technologies for green ammonia; Electrolysis technologies for green hydrogen; E-fuels, e-fertilizers, and e-chemicals; Hydrogen and derivatives for heavy duty transportation; Electrolyser utilities – lye, water, and nitrogen</li></ul>
2021 – 2022	<b>Hydrogen and CCUS Expert – PetroEdge, Singapore</b> <ul style="list-style-type: none"><li>– Design and delivery of hydrogen, ammonia &amp; CCUS related training</li><li>– Targeted to engineers, technology providers, investors, and operators</li><li>– Courses: CCS for refinery pre- and post-combustion emissions, Low-carbon hydrogen production</li></ul>
2021 – 2022	<b>Alliance Partner – Green Swan Partners</b> <ul style="list-style-type: none"><li>– Hydrogen, CCUS, electrification of industrial processes</li><li>– Deal origination and due diligence</li></ul>

## CURRICULUM VITAE – STEPHEN B. HARRISON

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- Pre-Series A fundraising involvement in Greentech startups
- Commercialisation, carve out concepts and scale up

2021 – 2022

### **International CCS & Hydrogen Expert – Asian Development Bank**

- Renewable hydrogen deployment for multiple projects in Pakistan
- Green hydrogen Pacific hub for Palau
- Oil & Gas to energy transition for PVN (Vietnamese national O&G operator)
- Pre-feasibility study investigations and report authorship
- Liaison with international technology providers
- Coordination with Government departments
- Leadership of other ADB-contracted local experts

2020 – today

### **Investment Advisor, Vantage Sustainable Infrastructure, UK**

- Advise on hydrogen, CCUS and biomethane investments

2020 – today

### **Scientific Committee Member CEM 2023, Barcelona**

- Air emissions monitoring and mitigation

2020 – today

### **Advisory Board – H2 View, UK**

- Hydrogen, clean mobility, energy transition, decarbonisation
- Editorial guidance to the Global Managing Editor
- Scout, research and write feature articles

2018 – today

### **Advisory Board – gasworld, UK**

- Hydrogen, CCS, LNG, energy gases, industrial gases, F-Gases, ammonia
- Editorial guidance to the Global Managing Editor
- Scout, research and write feature articles

2018 – 2021

### **Principal, Germany – Nexant Energy & Chemicals Advisory, UK (contract)**

- Business development leadership in the DACH region
- Market studies and technology evaluation
- M&A technical, market and ESG due diligence (buy- & sell-side)
- Development and delivery of the first Nexant Training hydrogen course
- Hydrogen, refined products, LNG, energy gases

2007 – 2017

### **Global Head of Specialty Gases & Equipment, Linde Gas, Munich**

- Global business development & investment strategy
- M&A target identification, screening and transaction execution
- Energy gases and hydrogen electrolyser focus
- Capex project assessment, planning and commercialisation

2003 – 2007

### **Global Director – BOC Scientific, The BOC Group, Windlesham, GB**

- Investment project evaluation and delivery
- Commercial and operations strategy development and execution

2000 – 2003

### **Marketing Manager - Industrial Products, BOC Ltd, Guildford, GB**

Product and market strategy for industrial gases and energy gases.

## CURRICULUM VITAE – STEPHEN B. HARRISON

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- 1999 – 2000      **Business Change Manager, BOC Ltd, Guildford, GB**  
Change management for M&A and business transformation projects.
- 1997 – 1999      **Specialty Gases Commercial Manager, BOC Ltd, Guildford, GB**  
Leadership, commercial processes and customer relationship management.
- 1994 – 1997      **Bulk Environmental Applications Development, BOC Ltd, London, GB**  
Technology innovation programme in EMEA for CO<sub>2</sub> and Oxygen.
- 1991 – 1994      **Bulk & Tonnage Process Engineer, BOC Ltd, Guildford, GB**  
Process optimisation in hydrogen, syngas, CO<sub>2</sub> and other gas purification.
- 1990 – 1991      **Bulk Food Applications Sales Engineer, BOC Ltd, London, GB**  
Technical consultancy for CO<sub>2</sub> and nitrogen applications.

### EDUCATION

- 1995              **Chartered Chemical Engineer:** CEng, MICheM
- 1986 – 1990      **Chemical Engineering,** Imperial College of Science, Technology and Medicine, University of London, GB  
Master of Chemical Engineering Honours Degree: MEng, ACGI  
Marketing and Management, in addition to core Engineering programme  
Prize: Courtaulds Chemicals Industrial Award  
Prize: SPEEDUP Prize for process systems engineering
- 1989              **Courtaulds Chemicals Ltd:** Process design
- 1988              **BP Chemicals Ltd:** R&D
- 1987              **Plastech Ltd:** Composite materials purchasing & supply chain

### LANGUAGES

English (native)  
German (fluent)

### NATIONALITIES

British  
German

### PUBLICATIONS (Examples from over 200 publications and papers in the past 5 years)

- Bio coal and wood pellets – carbon-neutral fuels from biomass, *Green Energy*, November 2022
- Methanol and synthetic fuels rely on CO<sub>2</sub> utilisation, *Carbon Capture Journal*, November 2022
- Waste to hydrogen to play a major role in the circular economy of the future, *gasworld*, October 2022
- Water for hydrogen electrolysis in Egypt and other desert locations, *Pollution Solutions Green Energy*, September 2022
- Biomass BECCS and electrolysis for climate-neutral liquid fuels, *Decarbonisation Technology*, August 2022
- Bulk liquid CO<sub>2</sub> transportation, *gasworld*, June 2022
- Gasification of waste and biomass to hydrogen, *gasworld*, March 2022
- Underground Hydrogen Storage, *gasworld*, March 2022
- Unlocking the potential for CCUS in Viet Nam, *Carbon Capture Journal*, November 2021
- Turquoise Hydrogen production by methane pyrolysis, *Petroleum Technology Quarterly*, Oct 2021
- Decarbonisation of post-combustion and geogenic CO<sub>2</sub>, *Cement Americas*, Oct 2021
- Hydrogen fired burners for green glassmaking, *Pollution Solutions Green Energy*, Oct 2021
- VSA, membrane and PSA for SMR CO<sub>2</sub> capture, *Carbon Capture Journal*, Sept 2021
- Reducing CO<sub>2</sub> emissions through process electrification, *Decarbonisation Technology*, Aug 2021
- Reliable off-grid power supply using green hydrogen, *Clean Energy*, Aug 2021
- From wet green biomass to biohydrogen biomethane and biocoal, *Green Energy*, July 2021
- The future of LNG alongside the rise of low-carbon fuels, *Petro Industry News*, June 2021
- CO<sub>2</sub> clean-up by mineralisation, *International Environmental Technology*, June 2021
- Maximising hydrogen production from PV Solar parks, *H2 View*, May 2021
- Technologies for Direct Air Capture of CO<sub>2</sub>, *Carbon Capture Journal*, May 2021
- Carbon Capture & Hydrogen to produce e-Fuels, *Pollution Solutions Green Energy*, May 2021
- CCS to create blue hydrogen from natural gas, *Carbon Capture Journal*, March 2021
- Giga-scale green hydrogen projects, *Pollution Solutions Green Energy*, March 2021
- Chemcycling of waste to Hydrogen, *Recycling Magazine*, February 2021
- Hydrogen and CCS – building blocks for a low-carbon future, *gasworld*, February 2021
- Optimising Hydrogen production, *Hydrocarbon Engineering*, Oct 2020
- Gas detection for safety around hydrogen electrolyzers and SMRs, *H2 View*, August 2020
- High efficiency hydrogen electrolysis and synthetic fuels, *gasworld*, June 2020
- Hydrogen from petcoke gasification, *Hydrocarbon Engineering*, June 2020
- CCS requires pure carbon dioxide, *Hydrocarbon Engineering*, June 2020
- Maximising Hydrogen Production on SMRs, *H2 View*, May 2020
- Hydrogen mobility in Germany, *H2 View*, March 2020

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Stephen B. Harrison

6<sup>th</sup> December 2022

Gesellschafter, Geschäftsführer, sbh4 GmbH