



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	Investment Management, Technology Evaluation, Project Evaluation, Business Strategy, M&A Due Diligence 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, MIChemE, EurIng, ACGI Formerly: Global Head of Specialty Gases & Equipment, Linde Gas, Munich
Products & Themes	E-fuels, Hydrogen, CCUS, Decarbonisation , Sustainability, Biomethane, Alternative Energy, Industrial Gases, Specialty Gases, Medical Gases, Ammonia
Industry sectors	Energy, Chemicals, Industrial gases , Oil & gas, Sustainability, Gas analysis instrumentation, Gas detection, Climate protection

PROFESSIONAL CAREER

2017 – today	Managing Director & Founder – sbh4 consulting <ul style="list-style-type: none">– Renewable energy and decarbonisation consulting: hydrogen, ammonia, biomethane, electrification of industrial processes & CCUS– Deal origination and advice to PE & infrastructure investment funds– Commercialisation and scale up advisor to clean-tech startups– Buy-side M&A transaction support, due diligence, and market research– Strategy consultant and advisor to international companies– More than 200 published articles related to decarbonisation, hydrogen, energy and CCUS
2021 – today	Hydrogen & CCUS Expert – World Hydrogen Leaders, UK <ul style="list-style-type: none">– Design and delivery of hydrogen & CCUS related training– Targeted to hydrogen technology providers, investors, and operators– 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 – H₂, water, and nitrogen
2021 – 2022	Hydrogen and CCUS Expert – PetroEdge, Singapore <ul style="list-style-type: none">– Design and delivery of hydrogen, ammonia & CCUS related training– Targeted to engineers, technology providers, investors, and operators– Courses: CCS for refinery pre- and post-combustion emissions, Low-carbon hydrogen production
2021 – 2022	Alliance Partner – Green Swan Partners <ul style="list-style-type: none">– Hydrogen, CCUS, electrification of industrial processes– Deal origination and due diligence

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

2021 – 2022	International CCS & Hydrogen Expert – Asian Development Bank <ul style="list-style-type: none">– 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 <ul style="list-style-type: none">– Advise on hydrogen, CCUS and biomethane investments
2020 – today	Scientific Committee Member CEM 2023, Barcelona <ul style="list-style-type: none">– Air emissions monitoring and mitigation
2020 – today	Advisory Board – H2 View, UK <ul style="list-style-type: none">– 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 <ul style="list-style-type: none">– 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) <ul style="list-style-type: none">– 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 <ul style="list-style-type: none">– 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 <ul style="list-style-type: none">– Investment project evaluation and delivery– Commercial and operations strategy development and execution
2000 – 2003	Marketing Manager - Industrial Products, BOC Ltd, Guildford, GB <p>Product and market strategy for industrial gases and energy gases.</p>

CURRICULUM VITAE – STEPHEN B. HARRISON

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 ₂ and Oxygen.
1991 – 1994	Bulk & Tonnage Process Engineer, BOC Ltd, Guildford, GB Process optimisation in hydrogen, syngas, CO ₂ and other gas purification.
1990 – 1991	Bulk Food Applications Sales Engineer, BOC Ltd, London, GB Technical consultancy for CO ₂ 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 CO₂ 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 CO₂ 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 CO₂, *Cement Americas*, Oct 2021
- Hydrogen fired burners for green glassmaking, *Pollution Solutions Green Energy*, Oct 2021
- VSA, membrane and PSA for SMR CO₂ capture, *Carbon Capture Journal*, Sept 2021
- Reducing CO₂ 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
- CO₂ 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 CO₂, *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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6th December 2022

Gesellschafter, Geschäftsführer, sbh4 GmbH