# Decarbonised Gas Alliance ROADSHOW





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A stable pathway to net zero emissions

# Must-know contact INFORMATION

To speak to the DGA about the Roadshow or arrange an interview, please email press@dgalliance.org or call 01484 498 333 / 07719 312464.





in

@dgalliance

@decarbonised-gas-alliance

# The Decarbonised Gas Alliance (DGA) **UK ROADSHOW** #GettingNetZeroDone 18th-27th October 2021

The DGA UK Roadshow is leading the conversation on decarbonised gas, as part of the solution to achieve net zero – bringing together the three core elements of hydrogen use across industry, transport, and heat.

Travelling from Westminster to COP26, the DGA UK Roadshow will take in multiple, relevant locations along its route, with the goal of reaching the local community, regional industry, and political stakeholders to raise awareness of the progress being made within the decarbonised gas sector – while also providing a forum for debate, networking, and opportunity exploration.

"This Roadshow promotes the DGA as leading the conversation on decarbonised gas as part of the solution to net zero - bringing together the three core elements of hydrogen use in industry, housing and transport." – Chris Barron, chair of the DGA and director of gas networks at Costain.



# Supported by BEIS, Hydrogen Now and the UK Hydrogen Fuel Cell Association

We are proudly working – with the support of BEIS and fellow industry groups – to ensure the DGA UK Roadshow showcases the national, regional, and local benefits that hydrogen can deliver as well as provide clarity around the decarbonised gas value chain.

As a collective, we are committed to working with government and our member organisations, to create a deliverable pathway to a net zero energy system.





# London: Driving the conversation on hydrogen (press photocall) HOST: THE DECARBONISED GAS ALLIANCE (DGA) Westminster 18th October 2021



The DGA represents nearly 30 expert organisations that have come together to help decarbonise the gas system and meet the UK's target of net zero climate emissions. Its members are technical advisers on the processes, systems, and technologies that will enable the widespread adoption of hydrogen during the transition to a zero-carbon energy system.

The Alliance offers a unique perspective to decarbonised gas markets including green, blue, and other 'colours' of hydrogen – from biomass and plastics through to biogases and synthetic gas. The development of attractive market structures will be critically important in stimulating and underpinning decarbonised gas demand and supply side investment opportunity.

The DGA is ready to help shape that process.

Society essentials – manufacturing, transport, and heat – are hard to decarbonise through electrification alone. The DGA is working hard to bring change to such sectors to promote the role hydrogen can play, in a bid to provide UK infrastructure a route to decarbonise safely, cost effectively and quickly.

One of the most practical options to achieve clean energy growth is hydrogen. Taking a whole system approach, we are supporting clients, industrial clusters, and key stakeholders with their strategic intentions around hydrogen to move us rapidly towards a decarbonised economy.

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"The Decarbonised Gas Alliance (DGA) is supporting the energy transition through existing asset efficiency and life extension whilst we lead the decarbonisation of the UK's energy infrastructure.

"Alternative energy sources and advances in digital technology are creating a more competitive and dynamic energy market by providing consumers with access to greater choice. As the demand for power continues to grow, so too does the need to decarbonise and diversify into alternative sources of energy.

"This Roadshow promotes the DGA as leading the conversation on decarbonised gas as part of the solution to net zero - bringing together the three core elements of hydrogen use in industry, housing and transport." – Chris Barron, chair of the DGA and director of gas networks at Costain.



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## London: Driving the conversation on hydrogen investment HOST: THAMES ESTUARY GROWTH BOARD Sector: Transport / Infrastructure / Heat The Institution of Civil Engineers, One Great George Street, London 18th October 2021 (10:30 - 12:30)

#### **Confirmed speakers:**

- · Chris Barron, chair of the Decarbonised Gas Alliance and and director of gas networks, Costain
- Ian Lewis, executive director, Thames Estuary Growth Board
- Gavin Chapman, Growth Board Member, Thames Estuary
- Helena Anderson, founder and COO, Ikigai Capital
- Sam French, business development director, Johnson Matthey and Advisory Board member of the DGA

Forming part of the seven-day roadshow, the first official event sets the scene in terms of the role decarbonised gas can play in the national energy transition strategy and why regional focus is important – linked to the Government's roadmap and Ten Point Plan.

As Thames Estuary finalises its Hydrogen Investment Strategy, the showcase will look at the local impact of hydrogen, as well as a case study around the hydrogen investment work Thames Estuary are spearheading, and how regions might work together and collaborate.



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#### **About Thames Estuary**

The Thames Estuary 2050 Growth Commission published an ambitious vision for growth in the area of east London, north Essex and south Kent to unleash its potential. An exciting and ambitious vision, it is regarded as integral to the future of the UK economy.

The Government responded to the Commission by agreeing to establish a new governance model for the Estuary and appoint a lead (Estuary Envoy). Kate Willard OBE was appointed by the Government in December 2020 to drive this vision forward, leading a dedicated Thames Estuary Growth Board.

The Thames Estuary Growth Board is a stellar group of talented people from both the private and public sectors with expertise in transport, energy, infrastructure, government, digital, law, planning and creative industries.

The Growth Board has set out its action plan, entitled 'The Green Blue', to realise the amazing potential of the Thames Estuary. The Board's ethos is about adding value to this place, finding new opportunities, unlocking them and acting as trouble-shooter when needed.

We call our plan "The Green Blue" because we are creating good, green, sustainable growth using the important, blue waterway of the Thames that connects the UK with the rest of the world.

The Thames Estuary Growth Board will deliver and support existing projects which will lead to job creation, housing solutions, new transport and digital infrastructure, ultimately contributing billions to the economy by 2050.

The first major investment plan – which will unlock a hydrogen ecosystem in the Estuary – will be launched this winter.

For more information on the Thames Estuary and to read The Green Blue in full, please visit the Thames Estuary's website: www.thamesestuary.org.uk

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## Swindon: Driving the conversation on biohydrogen (press photocall) HOST: ADVANCED BIOFUEL SOLUTIONS LTD (ABSL) WITH SWINDON AND WILTSHIRE LOCAL ENTERPRISE PARTNERSHIP

#### Sector: Heat

## Unit A4 Marston Gate, Stirling Road, Swindon, SN3 4DE 19th October 2021 (10:00–11:30)

#### Confirmed speakers:

- · Chris Barron, chair of the Decarbonised Gas Alliance and and director of gas networks, Costain
- Andrew Cornell, CEO of ABSL

Biohydrogen is a low carbon fuel that does not generate any carbon emissions when it is used. The RadGas process, developed by ABSL, delivers hydrogen at a lower price than competing technologies with far greater greenhouse gas savings.

#### The key advantages of biohydrogen are:

- Greenhouse gas emissions associated with biohydrogen are low
- When biohydrogen is combined with carbon storage it generates significant negative emissions
- Using fossil natural gas as a reference, GHG savings from biohydrogen can be three times greater than savings from green or blue hydrogen
- Biohydrogen produced from wastes has a lower cost than blue hydrogen, which requires fossil fuel feedstocks, and green hydrogen, which has high capital costs
- Biohydrogen production is constant across the year while biohydrogen production is intermittent, driven by the availability of renewable electricity
- Biohydrogen is sustainable, renewable and forms part of the circular economy
- · Biohydrogen can be produced at relatively small scales to match demand as the market develops
- Biohydrogen can be produced close to hydrogen consumers, avoiding expensive transport costs

ABSL will demonstrate the production of biohydrogen at the Swindon plant. Construction of the plant is now complete.

Commissioning is progressing well and is due to be completed in 2021. Once it is operational the plant will act as a template for large scale commercial facilities.

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#### About Advanced Biofuel Solutions Ltd (ABSL)

Advanced Biofuel Solutions Ltd (ABSL) owns plants, licenses technology, and provides engineering services to projects specialising in the production of advanced biofuels.

ABSL is the licensor of the RadGas technology which offers very high efficiency, reliable syngas production from waste and biomass residues. In addition, the company provides design and consultancy services to engineering contractors, developers, and owners of advanced biofuel facilities.

Crucially, ABSL is currently developing the world's first plant which will convert household waste into bio-substitute natural gas (BioSNG). The facility, located in Swindon, will convert 8,000 tonnes of waste into 22GWh of gas each year.

ABSL believes that waste should be converted to fuels such as BioSNG, hydrogen, or kerosene to decarbonise heat and transport. Its solutions allow the carbon dioxide in waste to be captured and sequestrated, thus creating negative carbon emissions – which is essential for the world to meet its two-degree global warming target.

ABSL was established in March 2019 by commercial and technical experts in the advanced biofuel sector. It is a private company backed by investment funds and high net worth individuals.



#### About Swindon and Wiltshire Local Enterprise Partnership

The Swindon and Wiltshire Local Enterprise Partnership (SWLEP) plays a central role in determining local priorities, accessing government funding to channel investment into the area and undertaking activities to drive inclusive economic growth, working closely with Swindon Borough Council and Wiltshire Council, alongside the military and a wide range of local private sector organisations.

Driven by the Local Industrial Strategy, Net Zero, and the emerging Plan for Growth, production of green hydrogen and use of hydrogen as a low carbon fuel are amongst our key priorities. SWLEP has been leading the work to understand how to increase the proportion of new energy vehicles, both electric and hydrogen, along the M4 / A420 corridor.

The LEP supported ABSL with a loan of £1.25m in February 2020 from its Growing Places Infrastructure Fund programme. This was used to fund the purchase of essential capital equipment in the final phases of the construction and commissioning of their new energy plant in Swindon.

The company has so far taken on 30 new highly skilled engineers to operate the Swindon plant and develop follow on projects.

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# Welsh Water: Driving the conversation on hydrogen production **HOST: DŴR CYMRU WELSH WATER**

Sector: Heat / Transport Dŵr Cymru Welsh Water, Cardiff Wastewater Treatment Works, Cardiff, CF24 5SB

19 October 2021 (14:00 - 15:30)



This event will present an overview of Welsh Water's net zero strategy and plans for hydrogen.

In March 2021 Glas Cymru approved the carbon reduction targets for Welsh Water and the associated roadmap to achieve these goals. The approved "Journey to Net Zero" strategy, aims to achieve a reduction in the total carbon footprint (operational and embedded carbon) of 90% by 2030, compared to 2010-2011 estimated baseline of ~335kton (+/-15kton) and aiming for carbon neutrality (or better) by 2040.

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#### About Welsh Water

Dŵr Cymru Welsh Water is a not-for-profit company which supplies drinking water and wastewater services to most of Wales and parts of western England that border Wales.

Welsh Water, which serves over three million people across most of Wales and some adjoining parts of England, relies heavily on energy to deliver its essential services. It currently generates 23% of its own energy needs through wind, hydro, solar and advance anaerobic digestion (AAD) with the rest procured from 100% renewable energy resources. The company plans to be

As well as committing to becoming carbon neutral by 2040, the company aims to reduce total carbon emissions by 90% by 2030. To transform water and wastewater services, the company has set aside a record budget of over £80 million for research and innovation over the next five years. Between now and 2040 it plans to innovate how it harnesses nature through its biodiversity plan, peatland restoration, wetland treatment and catchment management.

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# Merseyside: Driving the conversation on hydrogen in industry

### HOST: PILKINGTON GLASS AND HYNET NORTH WEST

### Sector: Industry Greengate Works, Sherdley Road, St Helens, Merseyside, WA9 5DZ 20 October 2021 (10:00 – 13:00)

#### Confirmed speakers:

- John Egan, North West regional lead, HyNet
- Councillor David Baines, St Helens Borough Council
- Matt Buckley, managing director UK&I, Pilkington Glass

In a world first, and just one week after the Government's Hydrogen Strategy was released, the ground breaking 'HyNet Industrial Fuel Switching' project used hydrogen to power the furnace at Pilkington Glass.

Recently, Pilkington carried out a second demonstration project, this time using hydrogen to run the whole furnace for five days – using a volume blend of hydrogen. The aim of the trial was to show that the furnace could be run safely on the hydrogen blend, while producing a glass product that meets the quality standards required.

The process itself uses a furnace which burns the same amount of natural gas each year as approximately 30,000 average-sized homes. This roundtable event will showcase the two recent trials of hydrogen in the North West, and set out the progress being made to develop a leading regional approach to decarbonisation.



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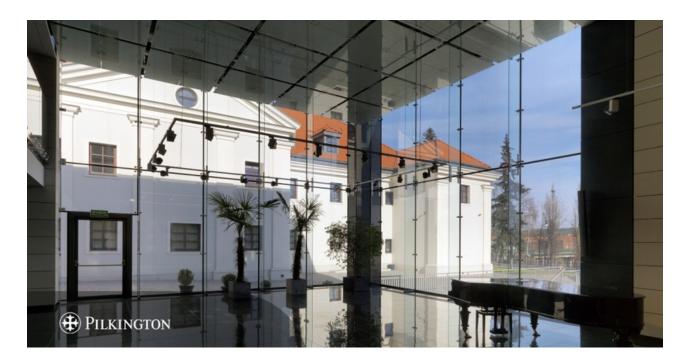


#### **About Pilkington Glass**

As part of the NSG Group, Pilkington is incredibly proud to be one of the most trusted and recognised brands in glass, across the world. For nearly 200 years, the organisation has been a world leader in the manufacture of glass and glazing solutions.

#### **Our Perspective**

- Glass is what we know. But we also know people.
- Being innovative and collaborative is at the heart of everything we do.
- We're building a sustainable future by building sustainable business relationships.
- We strive to be judged "Best in Glass" and that steers us towards excellence.
- Our reputation for becoming the best means our customers can be the best too.
- We inspire great vision and our knowledge and expertise makes that vision a reality.
- · We're here for our customers, right from the very beginning.
- We deliver impressive solutions that meet our customers' ultimate needs.



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# Humber: Driving the conversation to kickstart Humber decarbonisation **HOST: EQUINOR**

Sector: Infrastructure / Heat Aura Innovation Centre, Meadow Road, Kingston upon Hull, HU13 0GD 22 October 2021 (13:00 – 14:30 presentation / 15:00–16:00 tour)



#### Confirmed speakers:

- Chris Barron, chair of the Decarbonised Gas Alliance and director of gas networks at Costain
- Dan Sadler, vice president for Cluster Development, Equinor
- Tanguy Cosmao, H2H Saltend project director, Equinor

This event will showcase Equinor's Hydrogen-to-Humber (H2H) Saltend project, the anchor for the wider Zero Carbon Humber scheme, and a vital element in the East Coast Cluster – which aims to remove nearly half of the UK's industrial cluster emissions.

At this event, guests will learn more about these proposals, the wider decarbonisation agenda that it supports, and the economic and environmental opportunities that this presents.

#### Click here to register your attendance.

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#### About H2H Saltend

The H2H Saltend proposal will establish the world's largest hydrogen production plant with carbon capture and an ammonia plant on the Humber's north bank. H2H Saltend will convert natural gas to hydrogen and capture the carbon dioxide (CO2) in the process.

In the first phase, this could reduce emissions by circa 900,000 tonnes per year as industrial customers at px Group's Saltend Chemicals Park switch fuel to low-carbon hydrogen, while Triton Power's gas power plant blends hydrogen into the fuel supply of its converted Mitsubishi turbines.

H2H Saltend is expected to grow over time, contributing to further emissions reductions from the Chemicals Park and across the Humber.

The project links to Equinor's wider hydrogen ambitions in the Humber, including its partnership with SSE Thermal on the world's first at-scale 100% hydrogen power station at Keadby and hydrogen storage at Aldbrough. Dual hydrogen and CO2 infrastructure also removes carbon for safe storage in a North Sea aquifer.



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# Stockton-on-Tees: Driving the conversation on hydrogen technology

### **HOST: JOHNSON MATTHEY**

Sector: Transport / Infrastructure / Heat Stockton Technology Centre, Princeton Drive, Stockton-on-Tees, TS17 6PY 25 October 2021 (9:00 – 11:30)

#### **Confirmed speakers:**

- Phil Ingram, Head of sales, Johnson Matthey
- Steve Ross, Renewables director, Costain
- · Representatives from the Tees Valley Combined Authority
- Ben Houchen, Tees Valley Mayor

JM's world-leading LCH technology was developed in the North East of the UK and removes 98% of carbon – making it the world's best blue hydrogen technology. This technology will be used in HyNet, a ground-breaking hydrogen production in the North West.

JM have multiple sites in the North East, with a strong focus on local talent including a trainee scientist program for apprentices across different trades. Guests will be given opportunity to speak with current and past members of the scheme.

This event will focus on encouraging the next generation of young scientists through JM's own apprenticeship programme.



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#### About Johnson Matthey (JM)

JM is a global leader in sustainable technologies with a 200-year history of using a deep understanding of, and innovations in, metals chemistry to solve big complex problems.

Hydrogen has huge potential to tackle the climate crisis by decarbonising industries that are difficult to electrify such as heavy industry, heavy mobility, aviation, and shipping. This is a critical step in ensuring net zero targets can be met.



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# Blaydon: Driving the conversation on green skills growth

### **HOST: NORTHERN GAS NETWORKS – HYDROGEN HOUSE**

### Sector: Heat

### Low Thonley Lane, Blaydon, NE21 6LE 25 October 2021 (14:00 – 16:30)

#### Confirmed speakers:

- · Chris Barron, chair of the Decarbonised Gas Alliance and director of gas networks at Costain
- Tim Harwood, head of programme management, H21 project director
- NGN Young Innovators Council members

This panel discussion takes place at NGN's Hydrogen Homes – the UK's first homes which feature 100% hydrogen gas appliances.

Built in partnership with fellow gas distributor Cadent, and BEIS – and located on Northern Gas Networks' Low Thornley site near Gateshead – the homes opened in summer 2021 to showcase the 100% hydrogen gas appliances developed through the Government's Hy4Heat programme.

The development plays a key role in demystifying a hydrogen future and is the only place in the UK showcasing 100% hydrogen appliances – including boilers, cookers, hobs, fires, and meters – demonstrating that homes can be converted to hydrogen with minimum disruption.



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#### **About Northern Gas Networks**

"Since launching in 2005, NGN has been leading the way as one of the most cost-efficient of the UK's eight gas distribution networks – delivering great value for money to our customers, as well as a whole host of social and economic benefits to our region.

"We're recognised as a dynamic, passionate, conscious and people focused team that safely and reliably delivers gas to over 2.7 million homes and businesses across the North East, northern Cumbria and much of Yorkshire.

"Although we don't source the gas, fix boilers and appliances, or get involved with plumbing, we work with those that do to deliver it through a vast network of underground pipes that are constantly being invested in and upgraded.

"It's more complicated than it sounds so we're always exploring cutting-edge thinking, revolutionary engineering practices and world-class science, to find new ways to provide sustainable sources of energy. "And while our customers may not see us very often, they can sleep soundly knowing that we're working around the clock to keep them connected and make sure they stay safe." Jane Herbert, communications manager, Northern Gas Networks.



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# Brampton: Driving the conversation on the safe use of hydrogen

### **HOST: DNV**

## Sector: Infrastructure / Heat DNV Research & Development, MOD R5, Gilsland, Brampton, CA8 7AU 26 October 2021 (10:00 – 13:00)

Tucked away in Cumbria, DNV Research and Development is the unseen piece of the hydrogen jigsaw.

It is the vehicle for delivering assurance to society on the safe use of hydrogen. And, this event will demonstrate the ongoing commitment to ensure that the measures in place are tried and tested so that transmission and distribution of hydrogen is safe and public perception is managed.

The showcase will present the regional story and then feature a presentation from DNV looking at 'Yesterday, today and tomorrow – building a secure future for the UK'. The talk will demonstrate how the facility at Spadeadam has enabled the safe testing of hydrogen in the UK's existing natural gas network as part of the H21 programme led by Northern Gas Networks and the Hy4Heat programme looking at the use of hydrogen for heat in UK homes and businesses.



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#### Confirmed speakers:

- Hari Vamadevan, regional manager, UK and West Africa, DNV GL Oil & Gas
- · Andrew Cummings, senior principal consultant, DNV and Advisory Board member of the DGA
- Counsellor Pamela Birks, The Mayor of Carlisle

#### About DNV

DNV is an independent assurance and risk management provider, operating in more than 100 countries. Through its broad experience and deep expertise, DNV advances safety and sustainable performance, sets industry standards, and inspires and invents solutions.

The organisation provides provide assurance to the entire energy value chain through its advisory, monitoring, verification, and certification services. As the world's leading resource of independent energy experts and technical advisors, the DNV helps industries and governments to navigate the many complex, interrelated transitions taking place globally and regionally, in the energy industry.

The DNV is committed to realising the goals of the Paris Agreement, and supporting customers to transition faster to a deeply decarbonised energy system.

"DNV GL is uniquely placed to lead this work, having conducted fundamental research and thought leadership in the development of hydrogen as an energy source. DNV GL issued its first report into the use of hydrogen in gas networks in 2007 and developed a methodology for the technology qualification of equipment and processes for hydrogen usage in the same year (called HYTREC). Since then we have initiated and supported cutting-edge research projects into Hydrogen production and use, collaborating with industrial customers, and global bodies such as the IEA and European Commission."

Hari Vamadevan, regional manager, UK and West Africa, DNV GL - Oil & Gas.



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## Aberdeen: Driving the conversation on hydrogen for the future generation **HOST: SHELL**

Sector: Transport / Infrastructure / Heat Shell Learning Zone, Aberdeen Science Centre, 79 Constitution St, Aberdeen, AB24 5TU 27 October 2021 (09:15 – 14:30)

#### **Confirmed speakers**

- · Antony Jinman, polar explorer, and climate change speaker
- Rob Philips, energy sector director, Costain

In association with Shell, North East Scotland College and TechFest, a mock COP26 event will be held with 50 students and STEM ambassadors. The event will focus on explaining what COP26 is, how the energy transition is an integral part of the discussions on climate change, and the role they can all play in influencing and persuading those in leadership.

As well as taking on the role of world leaders and climate witnesses, the groups will present their perspectives to win over hearts and minds to agree a collaborative plan of action. The day will finish with an hour in the Aberdeen Science Centre.

Students in Aberdeen are very aware of the energy market and this event seeks to utilise their existing knowledge and empower and inspire them to think about their future choices and future opportunities in the energy sector.



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#### About Shell Learning Zone

Making Science, Technology, Engineering and Maths (STEM) fun, exciting, engaging and inspiring for families, schools and communities is our core mission.

Established in 1988, Aberdeen Science Centre is a recognised charity that aims to serve as a STEM Hub to connect and engage members of the public, industry, academia and government.

As a landmark visitor attraction, we encourage active involvement in learning with hands-on exhibits, investigative workshops and exciting shows and demonstrations. We promote an environment of curiosity and life-long learning.

As a STEM partner, we work with local organisations to help them showcase their innovation and fulfill their Corporate Social Responsibility objectives. Now re-opened after a remarkable £6million transformation, enjoy more than 60 amazing interactive exhibits, set across six innovative and awe-inspiring zones."



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# About the **DGA**

The DGA represents nearly 30 pioneering organisations that are striving to decarbonise the UK's gas system quickly, safely, and cost-effectively – and meet the country's target of net zero climate emissions.

#### The DGA advisory board members:



#### The hard to decarbonise sectors and decarbonised gas

While the UK has made substantial progress in decarbonising the generation of electricity, in other sectors emissions have barely budged. We have identified three sectors that are particularly difficult to tackle, and where decarbonised gas could play a very substantial part.

#### Industry - 76.5 million tonnes of CO2 equivalent a year.

There are several industrial processes where the UK doesn't have an alternative to gaseous fuels. Greenhouse gases are also a by-product of many industrial processes. And most importantly, industry should be decarbonised in the UK and not offshored to other countries, with the emissions following suit.

To protect and increase jobs, we need industry to be able to transition without unbearable costs and with plausible technology – including low carbon gaseous fuels and carbon capture on industrial processes.

#### Heavy transport - 35.3 million tonnes of CO2 equivalent a year

While cars can be electrified, long-distance lorries, ships, and aviation need alternative fuels.

#### Domestic heating - 67.5 million tonnes of CO2 equivalent a year

Although there are electric alternatives, electricity is four times the cost of gas. Some of this is due to conscious policy, but even without this, decarbonised gas remains cheaper, more storable, and better able to meet peaks in heating demand. People are extremely cost-sensitive, and a cheaper option than electricity is needed.

#### Together these represent 180 million tonnes of CO2 equivalent – 40% of the UK's emissions.

But that's not all...

At the same time, we need backup for electricity. The country is going to massively increase the size of the grid as we electrify more of the economy. That means a huge increase in the proportion of electricity provided by renewables (currently 33% of a smaller grid). The problem is, renewables are 'intermittent' – the sun doesn't always shine and the wind doesn't always blow.

Decarbonised gas – either gas-fired power with CCUS, or power from hydrogen – is a credible back-up source of electricity.

#### In all these areas, decarbonised gases can provide a solution:

• Biogases are recycled fuels that can be used for heating and transport. They are storable, and do not use fossil fuels in their production.

• Hydrogen can be used to decarbonise heating, transport and industry. Electrolysed hydrogen is zero-emitting. Hydrogen produced from methane creates some carbon dioxide, which then needs to be captured (see below).

• Carbon dioxide capture and either usage for other processes, or storage underground, are particularly important for industry and if hydrogen is to work at scale. It makes fossil fuels 'zero emissions'.

We need decarbonised gas to work at scale. This has the ability to keep costs down for households, to protect existing jobs and create new ones, and to enhance our energy security.

# Key CONTACTS

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