

The

# POWER of RESEARCH

We look at how research is funded in the UK,  
how it works for the energy industry and  
collaborations between universities,  
industry and local initiatives

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## Also in this issue:

- News from the Divisions
- 2019 Gas Industry Awards
- Hydrogen activity update

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WELCOME



**T**he EUA/IGEM Gas Industry Awards took place in May with over 650 industry colleagues joining us to celebrate the best of our industry. Turn to page 12 for a rundown of this year's winners.

This issue we've taken a look at the success of the UK research sector. As world-leaders in research and innovation, the UK boasts a well-rounded, impactful and globally connected research base. At the heart of Government's Industrial Strategy, the UK's Innovation, Research and Technology (IRT) sector has a combined turnover of £6.9bn, employing over 57,000 scientific and technical staff with a contribution to UK GDP of £34bn.

The 'knowledge infrastructure' of UK research consists principally of two main types of organisation - first, the university system comprising the 130 or so universities of different types and, second, a range of bodies including Public Sector Research Establishments' set up by the seven UK Research Councils, major standards-setting organisations and research organisations, Independent Research and Technology Organisations (IRTOs) and the set of nine 'Catapult Centres'. We have a look at how the sector is structured.

We hope you find the review of EUA's engagement in the Hydrogen programme of interest. EUA believes that 'Green Gas', including hydrogen, has the potential to decarbonise energy significantly and this is an area of high priority to educate Government, business and consumers on. Green Gas has huge potential, utilising the UK's world class gas grid, - in the medium term, with green gas blends, and in the long term, with 99% blends of hydrogen along with Carbon Capture and Storage. Keeping a close eye on projects, policy developments and research in this area is crucial and EUA is working hard to inform and shape the debate.

All this is rounded off with the usual news and updates from each Division.  
We hope you enjoy this edition.

Caroline Haine, Editor, OUTPUT

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## Utility Networks News

# Knowledge equals 'power'...

The Network Engineering & Equipment Group's collaborative approach informs, updates and provides opportunities for the future



Ofgem has confirmed the methodology it will be using for RIIO-2. They will set the allowed baseline return on equity at 4.3%, almost 50% lower than under RIIO-1 and the lowest ever capital rate ever set. Network companies will be required to increase the support they provide for vulnerable consumers and the RIIO-2 framework will facilitate the decarbonisation of power, heat and transport and the transition to a smarter energy system, by taking into account company's environmental plans when setting funding allowances. Ofgem also announced reforms to innovation funding and we await further detail on this, although NIA funding has been retained.

EUA will be analysing the methodology in greater detail and collecting member feedback. The first and second draft of GDN business plans will be provided to RIIO-2 Consumer Challenge/Company User/Consumer Engagement Groups in July and October respectively. Formal submission of companies' business plans to Ofgem takes place in December 2019.

At the most recent group meeting, along with a significant member GD-2 feedback session, attendees heard from two key industry speakers. HSE shared information on its role in GD-2 and then tRiIO Director of Operations provided an update and look ahead on tRiIO's delivery of the 8 year contract which it delivers for Cadent, as one of its strategic partners. The project enters year seven of the contract this year.

The meeting also saw the introduction of 'The Knowledge Network' – a session that provided wide ranging sector intelligence and information sharing, by means of a series of quick briefings on an array of industry topics and themes by experts in their field. Areas covered were: 'Digging up Britain', contributing to standards, safety governance and an update on the smart meter roll-out programme. If there is anyone who you would like to hear from/engage with, or topics you would like to see covered please let us know.

Following IGEM's appeal to EUA members (at February's NEEG meeting) to help contribute to industry standards,

NEEG member companies are invited to register their interest to sit as EUA representatives on IGEM committees or contribute to technical panels and papers. If you would like to get involved or require more details please contact [peter@eua.org.uk](mailto:peter@eua.org.uk) in the first instance.

Two key events took place in June. A visit was arranged to The MTC in Coventry. MTC is part of The High Value Manufacturing Catapult (Innovate UK). Member companies received a tour and capability showcase of its unique R&D facilities.

EUA's inaugural Utility Connections Seminar took place on Thursday 27th June at Warwick University. The event provided a key insight and perspective from house builder representatives Homes England, IGT's & IDNO's, water companies, GDN's, accreditation and training organisations.



**Richard Stone, AVK Sales Director – Gas, is retiring in July after forty years.**

Richard has been a dedicated supporter of EUA over the years, having chaired the Distribution and Transmission Equipment Group (former name of the NEEG group) from 2008 until 2012 when the groups were combined.

Richard shared his thoughts on the industry he leaves behind:

## Richard Stone retires as AVK Sales Director – Gas

"Youngsters starting out on a career in the gas industry in 2019 are facing a future that is as interesting, challenging and exciting as it has ever been. The gas industry has been revitalised in recent years through a combination of innovation and economics. Multifarious alternative gas sources - shale gas, LNG, biogas, syngas (synthetic gas) and hydrogen - make future prospects really exciting.

However, I have concerns around the drive towards ever further deregulation creating an industry structure that is far too complex

(gas metering alone is bewilderingly fragmented) and the regulator's pressure on gas network companies to produce the same outputs at ever lower cost and hope this is not at the expense of quality.

I offer a big thank-you to all my colleagues across the gas industry for helping make my career so rewarding and enjoyable".

EUA extends its gratitude and appreciation for Richard's contribution to the organisation over the years and wish him every happiness in his retirement.



# The Smart Metering roll out is progressing, slowly

**T**erry Jefferson has been busy supporting members interests around the Smart Metering Programme and surrounding initiatives.



There is a considerable amount of positive news with the level of issues reducing and the level of devices installed rising across the UK with 14m devices already installed. This overall number includes a mix of SMETS1 and SMETS2 devices (also some Advanced Meters), with SMETS2 now 800k devices

When the roll out commenced in 2011 BEIS was hoping to achieve all domestic and small industrial/commercial consumers being offered a Smart Meter by the end of 2020, but these targets are now seen as virtually impossible. Due to the initial slow start, delays encountered with the introduction of

SMETS2 meters and some other ongoing issues, the programme is well behind schedule.

The programme benefits (£5.7 billion saving by 2030 for consumers, energy suppliers and network operators)

assumes that there are no significant delays to the roll out. Government has committed to review the benefits statement at some point this year.

Implementation rates of SMETS2 have been increasing over the past few months, but there remain a number of current challenges for the programme. The rate of installation within the Northern region has been significantly slower than in the Central/Southern Regions, mainly due to issues between the Communication Hubs and actual devices on the Home Area Networks (HANs). The root cause of the issues are now fully understood, and moving

forward, these will be rectified through 2019 and will allow acceleration of installations in the North.

SMETS1 Enrolment and Adoption work, which will see 13m devices which are first generation get enrolled in to the DCC systems is ongoing. The current plan will see 3 tranches of devices migrated in to the DCC systems over the next few months and completed by end 2019. This will effectively allow these first generation devices to mirror most of the functionality of the SMETS2 devices, but most importantly allow consumers to change energy suppliers without losing the functionality within the devices. The programme will also re-activate most of the devices where they have gone 'dumb' due to having already changed supplier. The industry view is that timescales for this work, alongside all the other elements which are being driven forward, are extremely aggressive.

## Metering Safety Collaborative Workshop welcomed

**I**n support of members, EUA hosted a Metering Safety Collaborative Workshop on the 8 May. It was well attended, with much lively and informative debate covering a range of topics. The principle aim of the workshop was to get members together to facilitate a debate and inform of potential issues encountered by other organisations, along with facilitating identification of root cause for these issues (which may include a recommendation of a review of a CoP and/or Standards).

The workshop encouraged and allowed lessons learnt to be explored, shared and implemented moving forward. A subsequent workshop is planned toward the end of Summer.





## Boiler Plus has delivered innovation and efficiencies for consumers

**T**he introduction of Boiler Plus legislation in April 2018 has encouraged innovation within the industry and delivered a greater range of heating system products for consumers to choose from, the Heating and Hotwater Industry Council (HHIC) has concluded.

The range of products available for controlling domestic heating systems has been rapidly developing and Boiler Plus

has complimented and accelerated this trend by making consumers more aware of the options for enhancing the efficiency of their heating system. Mandating certain controls, such as programmable timers and modern thermostats, is also helping the development of new products and improving existing ones.

From conversations with installers it is apparent that many were already fitting the technology specified in Boiler Plus as standard, so the 'challenges' have been minimal. However, consumer education is

a continual challenge faced by the industry and the impact of Boiler Plus means far more conversations are taking place between installers and their clients about the options available, increasing levels of consumer awareness.

There are differing opinions across the industry regarding Boiler Plus. Some feel it goes too far, others would suggest it doesn't go far enough and some see it simply as legislation catching up with industry standards. Of key importance is that there is a cost to the consumer at the

## Storing up problems for the future

*With more people leaving the profession than entering, it is clear the heating industry is heading for a shortfall. Neil Macdonald, Technical Director, looks at the latest steps to try and secure numbers within this important sector.*

Whereas some trades seem to be successfully attracting new talent, the heating industry is one that appears to be

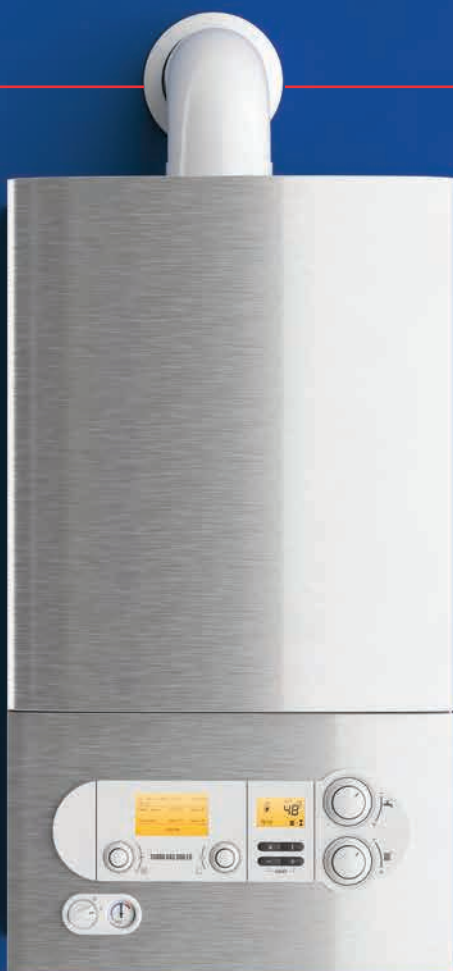
suffering, therefore it is more important than ever to address the issues.

The UK's heating industry is globally respected but for it to continue to compete internationally, increase productivity and develop new technologies, it must have a sufficient workforce. With every positive step the industry makes in terms of increasing training and recruitment levels, there remains a real threat to total numbers and maintaining the high level of competency the gas industry has worked so hard to attain.

Some very early analysis still under evaluation by HHIC suggests that if current trends continue, by 2028 the gas industry could find itself with a sizeable shortage of capable engineers compared to today's numbers. With a market that currently sees around 1.7 million boilers being installed each year, and 21 million being serviced, the impact could be significant.

Data from the Gas Safe Register, released in 2017, showed that 10 percent of gas engineers were over the age of 65, 29 percent were aged between 55 and 64 and a further 38 percent between 45 and 54. This is particularly concerning given that gas engineers typically begin to retire at the age of 55, Gas Safe's figures suggest that around 97,000 current gas engineers (more than three quarters of the total workforce) will reach this age within the next 10 years.

Only 7,500 engineers (6 percent) of the workforce are under the age of 35 and if current trends continue there may only be a further 7,500 new gas engineers in the next decade. This would mean that by 2029 the total workforce would shrink by over 30,000, even if engineers continue to retire later than the current average. This is at a time when housebuilding and sales of boilers and other heating products is increasing. Without a significant improvement in numbers of Gas Safe Registered



end of every installation so good levels of understanding, clarity and transparency are crucial.

Progress is a moving target and one which the heating industry and government will constantly review. There are a number of areas where Boiler Plus could extend;

- Mandatory Boiler Plus beyond the combi boiler market.
- Mandatory Boiler Plus for new build heating system installations.
- Annual boiler servicing.
- Installation best practice (such as hydraulic balancing)
- Heating system treatment and protection

HHIC will continue to support the wider industry, through consumer and installer guides, representation and organisation of collaborative work.

## Boiler Plus

From April 2018, all boilers must have a minimum ErP efficiency of 92 percent and all installations must have time and temperature controls fitted, if they aren't already present and working correctly. Combi boilers, which are the most popular type of boilers in the UK, require one of four additional requirements to comply. The measures available are:

- Load compensation
- Weather compensation
- Smart control
- FGHR (Flue Gas Heat Recovery)



engineers, the demand for servicing and installations on each engineer could increase by between 38 percent and 75 percent.

HHIC is developing a report which will look at how this shortfall will affect the industry within the next 10 to 15 years. The report will investigate the problems and put forward potential steps to help offset the deficit, review how to improve retention of knowledge, and consider how to increase the numbers of new engineers entering the profession.

There are some opportunities. For instance, figures show that only 0.4 percent of current gas engineers are female. The barriers to more women seeing the industry as a viable career path, and indeed to young people in general approaching heating industry apprenticeships in greater numbers, cannot be ignored and needs to be examined and addressed before effective change can happen.

The heating industry still remains largely invisible and not highlighted as a viable career choice until many other options have been ruled out. One HHIC member recently suggested that re-categorising the heating industry to fall within the Utilities/Energy/Engineering sector for the purpose of apprenticeships, may increase the appeal to a broader spectrum of recruits. It could better resonate with the younger generation, due to both the terminology, and the fact these sectors are often so topical when looking at the future success of the country as a whole.

HHIC's report will form the basis of recommendations presented to Government and wider industry. Thoughts and contributions on the subject of the forecasted gap in the gas engineering workforce are welcomed from those across the industry. If you have any input you wish to share please contact [Lucy@hhic.org.uk](mailto:Lucy@hhic.org.uk)



## HHIC Annual members' lunch

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**I**n March, HHIC hosted its annual members' lunch at The Brewery in London. With a particular focus on the future of heat in new build and social housing properties, the event sought to outline the opportunities for all stakeholders to shape and inform the heating debate. HHIC believes that bringing the industry together to 'get things done', is a key part of its role.

Delegates heard from a variety of speakers including EUA's President and Chair of HHIC's Boiler Manufacturers' Group; Dr Elaine Lancaster, as well as representatives from the SAP Industry Forum, and Katy Read, Policy Lead, Energy Performance of Buildings, Department for Business, Energy and Industrial Strategy (BEIS) who provided an insightful update on the current Government policy position for our sector.

HHIC was delighted to welcome Chadden Hunter as the after dinner speaker. Chadden is a producer and director who has worked on some of the best-known natural history series including Frozen Planet and Planet Earth. He has dodged armed bandits and survived brain-parasites and filmed everything from indigenous tribes in Africa to snow leopards in Pakistan.



## HHIC welcome Lucy Ward to the team

**L**ucy takes on the role of Membership Support Officer and will assist the team across all the working groups, manage and maintain the HHIC website, provide marketing coordination and office management expertise.

Lucy has substantial sales and account/customer management experience having been responsible for a wide customer base in previous roles, from large scale, multiple site businesses, to wholesalers, independent retailers and direct end users.

If you have any queries with regard to anything HHIC Lucy will be pleased to hear from you. Her contact details are [lucy@hhic.org.uk](mailto:lucy@hhic.org.uk) 01926 513763



## Servicing Best Practice for Hot Water Storage

Isaac Occhipinti,  
Head of External Affairs, HWA

**T**he Hot Water Association (HWA), in conjunction with the wider industry, has produced a first of its kind, consumer guide, detailing what can be expected when having a hot water storage cylinder serviced by a registered engineer.

Servicing is a topic that crops up on an almost daily basis. What constitutes a full service? What guidelines can be followed? These are regular conversations in the industry. As a result, HWA, and its members have been considering what can be done to bring greater transparency, quality, and consistency to servicing in the UK. Helping the professional, accredited and diligent registered engineer to cut through and raise awareness of the



# MARC News

## New look and refocus for Manufacturers Association of Radiators and Convectors



necessity and requirements of a proper hot water storage system service.

One consideration was a minimum "hot water storage cylinder servicing guide", incorporating customer information requirements.

As most cylinders have common component parts, a guide which outlines agreed industry standards, founded on technical competence, legislative compliance, and consumer protection seemed sensible.

HWA is delighted to have been able to bring this idea to fruition and has launched a 'Homeowners guide to Unvented Hot Water Storage Cylinder Servicing'.

The guide focuses on compliance with legal requirements (e.g. AD Part G) and ensures essential appliance checks, tests, and servicing tasks are correctly carried out, and in a safe manner.

The 'first of its kind' guide lays out an agreed industry best-practice approach to hot water cylinder servicing, whilst noting the important role played by manufacturer's instructions. The guide also aims to educate consumers on the standards they should expect and details a list of the steps engineers should take when they visit a customer's home.

This consumer-facing guide supports the professional accredited engineer. HWA believes outlining what homeowners can expect from their service will assist with the message that 'the cheapest quote isn't always the best.'

**The Manufacturers Association of Radiators and Convectors (MARC) has launched its new revitalised brand** to support plans to raise the profile of radiators and convectors within the heating industry with consumers and with Government. The new brand will be launched to the public and wider industry via a refreshed website which will 'go live' in late summer.

MARC exists to provide a dedicated voice to the radiator and convector industry, focussing on the specific needs and issues faced by manufacturers, and to give a collective voice to its members. MARC's membership comprises more than 90 percent of the current UK marketplace.

Over the past five years, MARC has taken a more vocal approach to its support for the industry. 2019 will see that activity heat up with the launch of two events looking at Construction Products Regulation and its relationship to the manufacture and sale of radiators in the UK. The purpose of the workshops is to bring together leading manufacturers and distributors to discuss and explore how the industry can work together to address the issue of non-compliance with standards. It is apparent that some companies are not complying with EN442 - the European standard for radiators - and are providing misleading

data on their websites and promotional material. This undermines MARC members who are actively following the regulations. MARC is calling for zero tolerance for those who do not comply.

MARC is also raising awareness with consumers. Anybody purchasing radiators should immediately reject those which are not BS EN442 verified to ensure that standards and reputations are maintained. Reporting non-compliant products to local trading standards can also help to put an end to this problem.

The new MARC website will include a section listing all radiator models for each MARC member along with compliance certificates for that, and a test certificate. This is to allow specifiers and customers the confidence that MARC members only sell radiators that comply with EN442.

2019 plans will also see members of MARC continue to lobby Government and championing a whole house approach to energy efficiency in order to reduce carbon emissions. It makes no sense to invest in fitting high-end condensing boilers, renewable heating technologies or advanced controls, only to pair them with inefficient and outdated radiators. For too long, heat emitters have been left out of the efficiency equation and MARC would like to see radiators included in future heat policy.



Ross Anderson of ICOM considers the key challenges to decarbonisation in the commercial and industrial heating sectors

# Being realistic about decarbonisation

**A**s an association that represents manufacturers and distributors of a wide range of commercial and industrial heating and water treatment products, ICOM is heavily involved in all aspects of the decarbonisation debate. The products that fall within our remit include gas & oil boilers and burners, biomass boilers, heat pumps, combined heat and power (CHP), warm air and radiant heaters, as well as water control and treatment.

This broad involvement provides us with a detailed overview of the situation facing the commercial and industrial sectors, a situation that is considerably more complex than that in the domestic market – a sector that ICOM does not cover.

Ideally, we would be able to fully decarbonise both the gas and electricity networks. However, the reality is that financial and operational issues mean this scenario is unworkable in many commercial and industrial applications. The commercial sector, for example, hits problems due to the scale of the energy requirements for, say, hotels, sports centre etc. Here, heat networks can certainly play a key role in reducing emissions when fired by waste or powered by renewable energy sources, but total de-carbonisation is not realistic.

In the industrial sector there are many diverse requirements for heat – such as kilns, ceramic furnaces, steam raising plant and many other processes requiring high temperatures. Currently, the only heating technologies capable of meeting these high temperature requirements are gas and oil burners. Of course, heat pumps can be used to supply a base load but require a

'top-up' to reach these higher temperatures.

Similarly, renewable energy sources are at the mercy of the weather. When the wind isn't blowing or the sun is obscured by cloud, security of supply requires that back-up energy sources are in place. The predominant sources of such back-up power are currently gas-fired powered stations.

All of this means we will be using gas for many years to come, albeit in smaller quantities as energy efficiency improves and renewables take on more of the load when the weather permits.

However, improved energy efficiency and wider use of intermittent renewable energy sources are unlikely to be able to deliver the significant reduction in greenhouse gases that we are looking for by 2050. If we are to get as close to decarbonisation of the gas grid as possible, we will certainly have to consider replacing methane with hydrogen which, of course, will bring its own issues.

The first step will be to blend hydrogen with methane and this should be relatively easy to achieve without any major impact on end users. Research is already being carried out to determine the optimum level of hydrogen that can be added to the natural gas grid to ensure currently installed appliances operate safely.

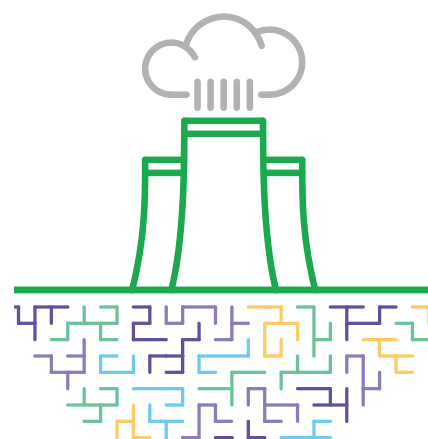
Beyond this, using 100 percent hydrogen is technically possible and if this were introduced nationwide it would provide the economies of scale that appliance manufacturers need to develop new 'hydrogen-friendly' products. The likelihood, though, is that hydrogen will be

introduced piecemeal in different cities and towns, so the economies of scale are reduced and equipment will be more expensive as a result.

There is also an issue with safety as, like methane, hydrogen is odourless and needs to have a detectable odour added. The sulphur-based chemicals currently used to odourise methane would potentially damage the catalysts in fuel cells and turbines, so an alternative needs to be found.

Moreover, there is still the consideration of increasing production of bio-methane, both for local use and injection into the grid. Synthetic natural gas and propane also have a place in achieving the 2050 goals. All of these green gases need investment to increase production volumes to play a bigger role in the strategy.

To summarise, then, the future of meeting the UK's heat requirements in all its forms is likely to involve a mixture of many sources. Getting the mix right will be a difficult process but if we are to achieve the 2050 targets all options will have to be considered and brought together.





## NGV Network News

# NGV Network looks to build on Fuel Duty differential

**T**he freight and haulage sector is the logistical backbone of the British economy and, like every sector, it will need to make large strides in reducing greenhouse gas emissions in the coming decades if we are to meet our long term commitments. Whilst significant progress has been made in the energy generation sector, emissions are on the rise in the transport sector, putting it firmly in the spotlight for policymakers under increasing pressure from the public to speed up progress on decarbonisation.

For many years, the Government has focused on subsidising both purchases of new electric cars and charging infrastructure for electric vehicles. With concern over air quality in many of Britain's towns and cities rocketing up the political agenda, a particular focus on cleaning up or replacing diesel vehicles has taken hold. Given that the vast majority of heavy goods vehicles run on diesel, the Government's policy aims will inevitably affect the freight sector in time.

The companies that make up the NGV Network are at the forefront of providing a cleaner alternative to diesel which is familiar to, and not disruptive for, fleet operators. A key consideration for fleet operators when contemplating a switch to gas HGVs is affordability; narrow profit margins mean that fleet managers must always be as efficient as possible when it comes to their vehicle expenditure. The large gap in fuels costs between gas and diesel has been an important driver in offsetting the higher upfront purchase costs for gas HGVs in a few short years. This is why when the significantly lower Fuel Duty applied to Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) was up for review by the Treasury last

year, the NGV Network aimed to emphatically make the case for this differential to be maintained.

The case was made by demonstrating the carbon and pollutant reduction potential of gas over diesel as well as the huge development prospects of the gas HGV industry should the differential in Fuel Duty be maintained. A report, produced by Frontier Economics, was commissioned to quantify these arguments and provide the evidence that the Treasury needed to consider the future of the differential. Once the Budget was announced, members were delighted to see that not only is the Fuel Duty differential to be maintained, it will be extended by thirteen years until 2032, with a review to take place in 2024. With the certainty that this decision provides, members of the NGV Network are now looking ahead to new priorities that will continue to drive rapid growth in the sector.

The availability of refuelling stations is understandably a key consideration for fleet operators. Therefore, having accurate, up-to-date and intuitive information on the locations of refuelling stations and their public availability is vital. The NGV Network will address this need by pulling together data on dozens of stations, both public and private, from all fuel providers into an interactive online map. This map will enable fuel companies to demonstrate the reach and availability of their sites whilst giving fleet operators the certainty that their drivers can access fuel when needed.



Ongoing industry trials are another priority for the Network, particularly the Low Emission Freight and Logistics Trial being run by the Office for Low Emission Vehicles. Trials are an invaluable opportunity for the industry to demonstrate both the benefits of switching to gas HGVs and the progress that has been made in making gas trucks even cleaner and more efficient. Unfortunately, the current set of trials have faced numerous delays but it is hoped that they will be completed, and the resultant data released, before the end of the year. Once we have this data, it can be used to add weight to the arguments that the NGV Network and its members are making on the advantages of transitioning from diesel to gas.

Work on increasing the profile of gas HGVs amongst policymakers and fleet managers will continue, spurred on by the vote of confidence that the Fuel Duty differential represents. The potential for renewable biomethane to deliver even greater well-to-wheel emissions reductions, whilst using waste feedstocks that might otherwise cause emissions of their own, will be a strand that runs through all of the NGV Network's upcoming work. Needless to say, 2018 was a successful year for gas vehicles and 2019 looks to be another year of rapid growth in the sales of gas vehicles, refuelling infrastructure and awareness of what gas HGVs can deliver.



# Gas Industry Awards 2019

## #GasAwards

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Over 650 people attended this year's Gas Industry Awards at the Hilton on Park Lane where the 12 winners were unveiled.

Kate Bellingham, TV Personality and Engineer, hosted the awards and Dermot Nolan, Chief Executive Officer of Ofgem, gave the after dinner speech.



### SPECIAL AWARDS

An award for Outstanding Achievement went to **Chris Train, OBE**, for his services to the gas and electricity industries.



**Mike Foster**, Chief Executive of EUA also won a Special Recognition award for his campaigning on behalf of the gas industry.



### MANAGER OF THE YEAR

**Carly Gilchrist, Fulcrum Pipelines**

"This individual's collaborative style of management has cultivated a flexible, customer-focused team. Their success has contributed to a 47% increase in ownership of gas network supply points and forecast growth in revenue to 2.5 million."

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**RADIUS**  
Systems



and mentoring of those who are taking on leadership roles within the industry today are the true qualities of a leader."

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**SGN**  
Your gas. Our network.

### SAFETY AWARD National Grid Grain LNG for Breaking Safety Records

"The winner clearly understands that safety excellence is about more than continually good results, having embedded a culture of continuous achievement within their organisation."

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### ENGINEER OF THE YEAR

**Jonathan Strain, Firmus Energy**

"In 2018 this engineer led the planning, design, contract negotiations and stakeholder engagement for a prestigious £3 million pound project whilst continuing to manage a network build of c. 150km of new gas pipelines."

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### CUSTOMER SERVICE AWARD Wales & West Utilities and Morrison Utility Services

"The winner is an industry leader in customer service having twice been awarded the prestigious ServiceMark with Distinction by the Institute of Customer Service."

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### YOUNG PERSON'S ACHIEVEMENT AWARD

**Ben Kuchta, Quantic Corporation.**

"Self-taught engineer, inventor and an award winning entrepreneur."

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### LEADERSHIP AWARD

**Jane Haswell, Pipeline Integrity Engineers**

"A leading light in the gas industry this persons continued support, encouragement, advice



### INNOVATION AWARD

**Cadent**  
in collaboration with  
Bri-Stor Systems and  
Perpetual V2G Systems  
for the Sustainable  
Vehicle Auxiliary Power  
System

"This company has successfully deployed hybrid technology to reduce the impact of their fleet





of vehicles and reduce running costs, working with a number of partner organisations."

Sponsored by



### PRODUCT OF THE YEAR Vertical Steam Boiler by Fulton

"The winning product is a world-first in terms of its design and successfully meets the evermore stringent industry and environmental standards whilst improving steam quality and heat transfer and reducing nitrogen oxide emissions."

Sponsored by



### PROJECT OF THE YEAR H21 delivered by Northern Gas Networks in collaboration with Cadent, SGN, Wales & West Utilities, DNV GL and the Health & Safety Laboratory.

"The winning project demonstrates the potential of the UK's existing gas network to support the decarbonisation of heat, power and transport."

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### COMPANY OF THE YEAR SGN

"This company has been recognised by Ofgem for taking their level of customer service to new heights and have amassed no less than 16 awards!"

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## MEHNA News



EHNA is a relatively new division of EUA established to support and promote best practice in the design and operation of heat networks. Ross Anderson explains.

In 2017, the Department for Business, Energy and Industrial Strategy (BEIS) noted: "Heat networks form an important part of our plan to reduce carbon and cut heating bills for customers (domestic and commercial). More recently BEIS has launched a £320 million Heat Networks Investment Project (HNIP) which will offer grants and loans to both the public and private sectors in England and Wales, for networks serving two or more buildings.

Clearly, then, heat networks are destined to play a key role in the UK's carbon reduction strategy. However, heat networks use a range of products, many supplied through members of divisions within the EUA, such as ICOM, the Heating and Hot Water Industry Council (HHIC), the Hot Water Association (HWA) and the Utility Networks division (UN).

Consequently, it was decided to create a new division - called the Manufacturers of Equipment of Heat Networks Association (MEHNA) - that would give a shared voice for suppliers of heat network products. This move has been welcomed by BEIS, and MEHNA is already working with the Heat Network Delivery Unit and the metering and billing departments of BEIS.

MEHNA's role is to represent the product manufacturers in discussions on regulations and standards with a view to

# One voice for heat network products

ensuring heat networks are designed to operate as efficiently as possible. As well as addressing product design and operation, MEHNA is working closely with the Chartered Institution of Building Services Engineers (CIBSE) and the Association for Decentralised Energy (ADE).

For example, CIBSE is reviewing its Code of Practice for heat network design (CP1) and MEHNA is involved in the review process by compiling members' comments and ensuring that necessary changes are made to the document.

Another early success for MEHNA has been productive dialogue with the Building Engineering Services Association (BESA), which publishes a test regime for HIUs. Following input from MEHNA the test regime has been modified to more closely reflect the market and we hope to have future involvement in BESA's steering group and technical committee.

Also challenging is the lack of standards in some areas of the heat network system and MEHNA is working with the British Standards Institution (BSI) to remedy this shortfall. As part of this, we expect to be involved in writing a new standard for HIUs that will bring a major change in the design, manufacture and operation of HIUs.

The progress made already is a clear indication of the need for a single voice that supports the products in this growing market and MEHNA has already attracted several members that were not formerly involved with EUA. There is still much to do and we will continue our work to represent member's views in this area.

## President's Column

# Gas Distribution Network Director, **Helen Bray** takes over reins as **EUA President**

**E**UA welcomed a new President at the AGM on 15 May. Helen Bray is Director of Stakeholder Relations for SGN, the network distributing natural and green gas to 5.9 million homes and businesses across Scotland and the south of England. Her role with SGN covers stakeholder engagement, customer experience, corporate communications, public affairs and business transformation.

Her professional qualifications include a CIPR Diploma in Public Relations and the Institute of Directors Certificate in Company Direction. Helen has a degree in metallurgy and economics from Oxford University and a degree in law from Hull University.

On her appointment Helen said;

"Outgoing President, Elaine Lancaster has been at the helm of EUA, for the last twelve months marking a shift in a sector that has, traditionally, lacked diversity.

I am delighted to be taking over the Presidency from her and at such an exciting time for the industry. By bringing together all the different elements of the supply chain I think EUA provides a unique forum for driving positive change towards a low carbon future for the UK.

I am keen to continue the focus Elaine brought to her presidential year on widening the talent pool in our industry through gender and diversity."

In a recent interview in OUTPUT magazine, Helen provided some thoughts on this.

"Engineering-based businesses provide interesting careers, but perhaps we need to think outside the traditional approach to STEM in order to attract a broader range of young people. If we want to encourage

more people to join our industry, perhaps there are lessons to be learned from other sectors. The technology sector has little difficulty in attracting the brightest young people to join - the opportunity to innovate, shape the future and drive change in society is a strong incentive. So, I have three questions.

My first question to us all in STEM based businesses is to ask how we develop a truly innovative culture in our sector.

My second question for our educators in schools and universities is to ask how we can build innovation and creativity into our approach to STEM. The US movement to combine the creative arts and humanities (A) with STEM talks about converting STEM to STEAM, using creativity to drive innovation. The current focus on designing around the user is an example of the way in which the creative arts are supporting the traditional engineering approach to provide new solutions. My theory - based on a non-representative sample of female friends and colleagues - is that a broader approach may also stimulate the interest of more women, particularly those who are innately curious and innovative.

My third question is for Government and policymakers. How can we combine creativity with STEM to drive innovation within industry, which will in turn drive a much-needed increase in the country's productivity. Perhaps Government-funded initiatives like Innovate UK's 'Women in Innovation' awards can help. This competition provides funding and mentoring support for women with innovative ideas. The programme recognises not just entrepreneurs but intrapreneurs - those who work inside larger businesses on innovative projects.

Individual companies can also do their bit to help broaden the range of those interested

in a creative and innovative career in engineering. And we have some great female role models spreading their knowledge and enthusiasm.

SGN has a long-term partnership with Solutions for the Planet, a programme through which 2000+ students each year engage in STEM activities looking for creative solutions to sustainability and environmental issues. The programme's blend of creativity, innovation and STEM sparked a greater interest in STEM among three quarters of participants as reported in Solutions for the Planet's most recent evaluation.

If other member companies are working on similar initiatives, Helen is keen to hear about what's happening and to discuss any ideas or thoughts on achieving greater collaboration [Helen.bray@sgn.co.uk](mailto:Helen.bray@sgn.co.uk)





# The Power of Research



**T**he UK is a world-leader in research and innovation and boasts a well-rounded, impactful and globally connected research base. Despite only 0.9 per cent of the world's population, and 4.1 per cent of researchers, the UK accounts for 10.7 per cent of citations and 15.2 percent of the worlds most highly cited articles.

Research and innovation is at the heart of Government's Industrial Strategy published in 2017 and the UK's Innovation, Research and Technology (IRT) sector has a combined turnover of £6.9bn, employing over 57,000 scientific and technical staff. The sector contributes £34bn to UK GDP.

The UK's expertise spans all fields of knowledge, from the discovery of penicillin and monoclonal antibodies, to the jet engine and the worldwide web, to tackling major global challenges, and tackling technological challenges. Seven of the most widely used ISO standards in the world originated from the UK.

## Research Knowledge Infrastructure

The 'knowledge infrastructure' of UK research consists principally of two types of organisation. There is a university system comprising about 130 universities of different types. This is probably the world's leading university sector in the sense that, weighted by population, the UK has more universities in the world's top echelon than any other country, and performs extremely well on the usual indicators of scientific output (such as high-impact publications).

The other part of UK research currently has four major components:

- a large set of 'Public Sector Research Establishments' (PSREs) which are research and development institutes sponsored directly by government departments or the seven UK Research Councils.
- a set of infrastructural 'Public Research Organisations' (PROs), including major standards-setting organisations and research organisations providing - for example - geophysical or metrological information to Government and business.
- a set of Independent Research and Technology Organisations (IRTOs). These are (mainly) private non-profit research performers or commercial research enterprises providing R&D services, both to government and business, and many belong to the Association of Independent Research and Technology Organisations (AIRTO).
- A set of nine '**Catapult Centres**' which seek to link business, advanced research and engineering around innovation processes with major business implications, and further large-scale collaborative research organisations. They are:
  - Cell and Gene Therapy Catapult
  - Compound Semiconductor Applications Catapult
  - Digital Catapult
  - Energy Systems Catapult
  - Connected places Catapult (Future cities and Transport Systems combined)
  - High Value Manufacturing Catapult (a network of another seven centres)
  - Medicines Discovery Catapult
  - Offshore Renewable Energy Catapult
  - Satellite Applications Catapult

# UK Research & Innovation

## UK Research and Innovation

The Higher Education and Research Act 2017, merged the UK's research councils and the research part of the Higher Education Funding Council for England into **UK Research and Innovation (UKRI)** which brings together the seven Research Councils, Innovate UK and a new organisation, Research England.

UKRI is an independent organisation supported and challenged by an independent chair and board and is principally funded through the Science Budget by the Department for Business, Energy and Industrial Strategy (BEIS).

UKRI works in partnership with universities, research organisations, businesses, charities, and government to create the best possible environment for research and innovation to flourish. Operating across the whole of the UK the organisation has a combined budget of more than £7 billion. They aim to support and help connect the best researchers and innovators with customers, users and the public.



### Arts and Humanities Research Council (AHRC)

Funds a wide range of subjects to provide social and cultural benefits.



### Biotechnology and Biological Sciences Research Council (BBSRC)

Invests in world-class bioscience research such as food security, green energy in farming, food, industrial biotechnology and pharmaceuticals sectors.



### Economic and Social Research Council (ESRC)

Funds research on the social and economic questions facing us today.



Engineering and Physical Sciences Research Council

### Engineering and Physical Sciences Research Council (EPSRC)

Engineering and Physical Sciences Research Council (EPSRC) Has a wide portfolio covering healthcare technologies, structural engineering, manufacturing, mathematics, advanced materials, chemistry.



### Medical Research Council (MRC)

Is at the forefront of scientific discovery to improve human health.



### Natural Environment Research Council (NERC)

Helps solve major environmental issues such as air pollution, clean energy, resilience of our infrastructure.



### Science and Technology Facilities Council (STFC)

Research seeks to understand the Universe from the largest astronomical scales to the tiniest constituents of matter.

## Innovate UK

### Innovate UK

Works with people, companies and partner organisations to find and drive the science and technology innovations that will grow the UK economy. They de-risk, enable and support innovation.



### Research England

A new council responsible for funding, engaging with and understanding English higher education institutions (HEIs). They

distribute over £2.2bn to universities in England every year in the form of quality-related research (QR) funding, and via the Higher Education Innovation Fund.

## Research Funding in Energy - Energy Programme

The Energy Programme aims to position the UK to meet its energy and environmental targets and policy goals and is investing more than £625 million in research and skills to pioneer a low carbon future. Led by the Engineering and Physical Sciences Research Council (EPSRC), the Energy Programme brings together the work of EPSRC and that of the Biotechnology and Biological Sciences Research Council (BBSRC), the Economic and Social Research Council (ESRC), the Natural Environment Research Council (NERC), and the Science and Technology Facilities Council (STFC).

Global energy markets are worth over a trillion dollars and set to grow. A key short term challenge is to rapidly accelerate the deployment of green energy technologies that decarbonise our energy supply and increase energy efficiency in buildings, industry and transport sectors. There is also an opportunity to develop existing networks and infrastructure to support the changing energy landscape, such as through carbon capture and storage and large scale deployment of renewables.

## UKERC

The UK Energy Research Centre (UKERC) is dedicated to carrying out energy research in the UK and is funded by UKRI's energy programme. It acts as a focal point for UK energy research and a gateway between the UK and the international energy research communities. Their current research focusses on the increasingly contested and uncertain nature of energy system change; with a core research programme focusing on six themes: Future energy system pathways, Resources & vectors, Energy systems at multiple scales, Energy, economy & societal preferences, decision-making and Technology & policy assessment.



## University Research

Over three-quarters of all publicly-funded research and development takes place in a university and they lead the world in science and research. The last national assessment of research quality in the UK's universities, the Research Excellence Framework, found that 76% of the submitted work was internationally excellent or world-leading.

Research is a key part of the mission of many universities in the UK and research councils fund specific projects that may typically last for three years. Grants are normally bid for on a competitive basis and the funding awarded depends on the estimated cost of undertaking the project.

Government departments, non-departmental government bodies, local authorities and the NHS also fund research in universities. This is often by way of a research contract under which the sponsoring body obtains rights to use the results of the research.

A large amount of funding for research comes from non-public organisations too. These include charities, the European Commission and industrial and commercial organisations in the UK and overseas. This is mostly in the form of grants and contracts for specific research projects.



## UK University Energy Research Resource\*

Aberdeen University	Aberdeen Institute of Energy
Bath University	Sustainable Energy Research Team
Birmingham University	Birmingham Energy Institute
Bristol University	Communications System and Networks Research Group
Brunel University London	Institute of Energy Futures
Cambridge University	Energy@Cambridge
Cardiff University	Energy Systems Research Institute
Cranfield University	Cranfield Energy & Power
Durham University	Durham Energy Institute
Edinburgh University	Institute for Energy Systems Infrastructure and Environment
Exeter University	Exeter Energy
Glasgow University	Systems, Power and Energy
Heriot-Watt University	Energy Academy
Hull University	Energy & Environment Institute
Imperial College, London	Energy Futures Lab
Keele University	SEND Hydeploy
Lancaster University	Energy Lancaster
Leeds Beckett University	Leeds Sustainability Institute
Leeds University	Energy Centre for Integrated Energy Research
Lincoln University	Power & Energy Group
Liverpool University	Stephenson Institute of Renewable Energy
London School of Economics	Grantham Research Institute
London South Bank University	Centre for Efficient and Renewable Energy in Buildings (CEREB)
Loughborough University	CREST (Centre for Renewable Energy Systems Technology)
Manchester University	Manchester Energy Tyndall centre for Climate Change Research
Newcastle University	Sir Joseph Swan centre for Energy Research
Nottingham University	Energy Technology Research Institute
Oxford University	The Oxford Institute for Energy Studies
Oxford Brookes University	Oxford Institute for Sustainable Development
	Low Carbon Building Research Group
Reading University	
Salford University	Applied Buildings & Energy Research Group
Sheffield University	Energy 2050
Southampton University	Energy and Climate Change Research Group
Strathclyde University	Technology & Innovation Centre
Sussex University	The Sussex Energy Group
Swansea University	Energy Safety Research Institute
Warwick University	Warwick Energy Group
UCL	UCL Energy Institute

\*This list is not exhaustive. EUA has identified UK Universities with departments focused on energy research. There are most likely others. Please do please let us know if you are aware of others to add to this list to help us complete the picture.

# Homing in on the House

## Energy Research Lab - University of Salford

**T**he School of the Built Environment at Salford University, is home to the unique Energy House - the only fully climate controlled research facility in the world. Built in 2011, this full sized two bedroom terraced house is built inside an environmental chamber and can replicate almost any weather conditions. It is fully furnished and packed with a vast array of sensors that can monitor a wide range of variables throughout the house and chamber.

The Energy House is home to the Applied Buildings and Energy Research Group (ABERG, within the University of Salford UPRISE Research Centre), a multidisciplinary team dedicated to



investigating the issues of energy use within buildings.

### About

The Energy House is typical of a terraced house built in Salford in 1919. Because it has been reconstructed in a fully environmentally controllable chamber it provides a unique testing facility for research. The house represents 21 percent of UK housing stock and was rebuilt using the traditional methods of the time, including lime mortar, and lathe and plaster ceilings. It has solid brick walls, suspended timber floors and single glazed

windows. The house is classed as a hard to treat property in terms of energy efficiency due to the lack of cavity walls.

The house is an end of terrace property achieved by the construction of a one-third width full size property next to it. The conditioning void enables simulation of heat transfer between neighbouring properties. On the ground floor there is a living room and kitchen diner. Two bedrooms and the bathroom are on the first floor. In its current state it is uninsulated. The heating is provided by a wet central heating system,

## Project Leo - pioneering



**P**roject LEO (Local Energy Oxfordshire) is an industry-first project to trial a new smart local energy system - or 'smart grid'. The project has been awarded £13.8m from UK Research and Innovation (UKRI) and will be supported by £26m of private funding from the project partners.

The project will explore how the growth in local renewables, electric vehicles, battery storage, and demand side response can be supported and help in reducing charges to consumers. It will develop a new model for the way in which local energy systems in Oxfordshire are managed and measured. The system will balance local demand with local supply in a real-world environment and will help to test markets, inform investment models and, assess the benefits of flexibility to the energy system. It will also demonstrate the potential for individuals and communities to become active participants. By creating opportunities for local communities to trade the energy they

generate, use and store at a local level, project LEO will show the potential for individuals, businesses and communities to collaborate in the energy system of the future.

The project is led by Scottish and Southern Electricity Networks along with EDF Energy, Nuvee, Open Utility, Origami Energy, Oxford City Council, Oxfordshire County





fired by a gas condensing combination boiler. All of this can be changed to suit the testing requirements required by clients.

Unlike test houses built outdoors, conditions in the Energy House can be replicated time and time again whatever the weather is like outdoors. There is also no need for users to wait until the weather conditions meet their requirements as rain, snow, wind and temperature can be specified to high levels of accuracy. The chamber can recreate a series of external weather conditions:

- Rain (up to 200mm each hour)
- Temperature ranges from -12°C to +30°C (with an accuracy of +/-0.5°C)
- Wind (localised and chamber wide) up to 10m/s

The test facility uses several different monitoring equipment, all logging and displayed through a custom time series



program. This provides live data feeds and real time analysis. Currently the Energy House has over 200 sensors which are able to read down to 1 second resolution. This can generate over 2.8 Gigabytes in a week-long test.

## Inside the Energy House

### Comfort data

Air velocities and black globe temperatures can be recorded for each room in the house, this can feed into most thermal comfort calculation methods, this data is invaluable when comparing different type of heating systems, and also for pre and post measurement of fabric interventions such as internal wall insulation.

### Electricity, gas and water monitoring

Electricity, gas and water monitoring Consumption of electricity gas and water is also monitored, directly from the mains incoming meters. Appliance monitoring is undertaken using industry standard Zigbee Pro wireless smart meter plug devices, which have continually measure of kWh, Watts, Amps and Volts to three decimal places with an accuracy better than +/- 0.5 percent.

Industry standard water flow meters have been fitted to the toilet feed, shower and bath feed, washing machine and kitchen sink. Separate flow metering can be applied at any stage to measure waste water flow.

### Energy output monitoring

Each heat emitter (radiator in most tests) is fitted with a Measuring Instruments Directive (MID) approved heat meter, this allows the researchers insight into how much power is being input into each of the rooms and allows comparisons to be made on different heat emitters and heating systems.

### Appliance monitoring



The Energy House is fully furnished and has the following appliances installed: TV, electric fire, fridge freezer, cooker etc. All of these devices are monitored to an appliance level; this helps with isolating energy consumption, and has been invaluable when carrying out tests where an appliance's consumption may be key, such as voltage optimisation technologies.

# smart energy for Oxfordshire



Council and The Low Carbon Hub C.I.C. It also benefits from significant academic expertise from Oxford Brookes University and the University of Oxford.

The partner's roles in the project:

Scottish and Southern Electricity Networks will establish a neutral market facilitation

platform demonstrating data exchange and the purchase of flexibility services to actively balance the network mitigating against local constraints.

Oxford City Council and Oxfordshire County Council will provide key infrastructure and local investment projects, including intelligent street lighting, EV infrastructure and responsive heat networks.

Leading social enterprise, the Low Carbon Hub, will manage and develop a portfolio of local energy generation and demand projects, informing investment models;

Leading academics from the University of Oxford and Oxford Brookes University, will collect and analyse data sources to deliver a model for future local energy 'whole system' mapping and planning; Marketplace Operators Origami, Piclo, and Nuvve will pilot new business models, via innovative market platforms, to deliver local energy trading, flexibility and aggregation;

Energy supplier, EDF, will bring customer focused innovations and energy services to more than 5 million customers;

The initiative is expected to run for 3 years.

# Hydrogen

## A review of EUA's work progr

**E**UA's aim is to provide a trusted industry voice on behalf of members to help contribute towards better policy outcomes. EUA believes that 'Green Gas', including hydrogen, has the potential to reduce emissions significantly and this is an area of high priority to educate Government, business and consumers on.

Green Gas has huge potential, utilising the UK's world class gas grid, as a solution to the carbon challenge and fuel poverty - in the medium term, with green gas blends, and in the long term, with 99% blends of hydrogen with Carbon Capture and Storage.

The UK gas grid currently delivers gas into the homes of over 85% of the UK population which is achieved through a first-class distribution network, managed by our members, developed over many years. Rather than taking out heating systems and making the grid obsolete, it makes sense to utilise the system in place and decarbonise the gas we use with green gases such as Biomethane and bio SNG in addition to hydrogen. The alternative would mean tripling electricity generation requirements and mandating the expensive retrofit of homes.

Speaking at an energy systems catapult event, the Department for Business

Energy and Industrial Strategy (BEIS), Minister Claire Perry signalled her commitment to gas as a 'long term solution if it can be decarbonised'.

Government recognition like this is imperative, but EUA cannot not rest on its laurels. Given the current political uncertainty and anticipated cabinet reshuffles, EUA is continually igniting the Green Gas conversation with members interested in the energy trilemma debate and working hard to shape the debate and so far Government is receptive. In the Spring Statement, Chancellor Phillip Hammond detailed a commitment to seek to increase the proportion of Green Gas in the grid over the coming years. This is a significant step forward for Green Gas and EUA will continue to promote the message that Green Gas is a means of futureproofing UK housing stock and a solution to the carbon challenge.

## EUA activity

### Studies

There are some pivotal 'Green Gas' and low carbon heat studies currently underway, feeding into the evidence base on the UK's energy future. EUA is working across these projects to ensure members are kept up to date and the studies are provided with the correct resources.

One such study is the 'Living Lab' which has been created by the Energy Systems Catapult and offers energy providers and device manufacturers the opportunity to test new products, services and business models in over 100 real-world consumer homes. Currently under testing is 'Heat as a Service' which centres on an app where users can buy warm hours and control their heating. EUA will be monitoring this project and sharing the findings with members.

Another key project is the Hydeploy trial at Keele University - an energy trial to establish the potential for blending hydrogen, up to 20%, into the normal gas supply to reduce emissions. It is led by



EUA members Cadent Gas and Northern Gas Networks and EUA sit on the steering group committee of this exciting project, which could save around 6 million tonnes of CO<sub>2</sub>, the equivalent of taking 2.5 million cars off the road.

Continuing the hydrogen agenda and signalling a widespread commitment to greening gas is the Hy4Heat project - a study to establish if it's technically possible and safe to replace natural gas with hydrogen in residential and commercial buildings and gas appliances. This study includes the shaping of PAS4444, a standard



# activity update

## programme on hydrogen

to be used for hydrogen appliances in the hy4heat trial, but the aim is that it can form the basis for wide scale standardisation of hydrogen appliances. The project extends across all EUA divisions and now includes hydrogen metering, the most recent work package to be added to the project.

The reach and presence across the hydrogen agenda enables EUA to identify opportunities to further the debate and support a thorough review.

### APPGs

EUA is active in Government All Party



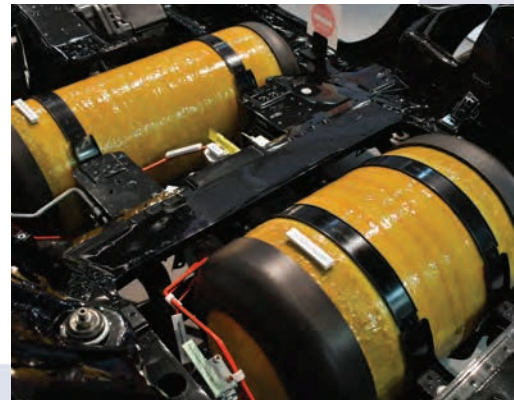
Edmund Abbs-Brown  
Parliamentary Officer

Managers (IGEM), British Standards Institute (BSI), and the European Heating Industry groups. A focus of recent years has been the impact of pure and blended hydrogen on the grid and gas appliances. This is crucial work that is required to bring hydrogen to market. Notable discussions recently have been the UK cap on hydrogen content. The BSI committee cross cuts hydrogen for transport, power generation and potentially hydrogen for heat. EUA's role is to help establish boundaries, assist, and

and consider new training, competencies and assessments to underpin a hydrogen engineering workforce.

### Events

In addition to its popular annual industry events, EUA hosted its second low carbon consultative forum in late 2018, focusing on hydrogen and featuring the 'hydrogen bike', which demonstrated to participants how easily hydrogen can be made. This event was well received by members and it is likely EUA will hold more interactive forums in the future.



Parliamentary Groups, APPGs such as PRASEG- the APPG for Renewable and Sustainable Energy and the APPG on Hydrogen. This activity provides events and opportunities to promote Green Gas, including hydrogen. Having an active presence and being a part of the debate is essential.

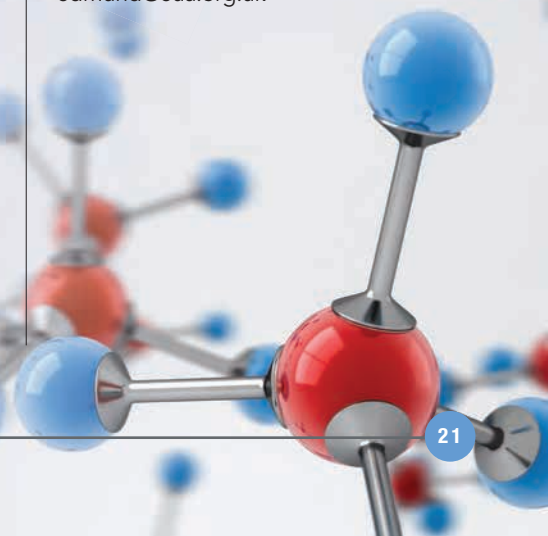
### Standards

With time and change comes the need to review industry standards. EUA is active in groups responsible for this, such as the Institute for Gas Engineers &

check that the expertise and standardisation for the heating industry remains where it is, within the established gas appliance and utilisation TC's. This is proactive and to ensure that any appliance and domestic use terms do not diverge from established gas industry norms, or inhibit innovation within the appliance industry.

EUA is also well represented on committees for skills and competencies for natural gas engineers. Hydrogen is expected to be a part of the future energy mix, so it is important that organisations such as EU Skills look ahead to the future,

If you would like any further information around Hydrogen projects or EUA involvement in the Hydrogen agenda, please do get in touch [edmund@eua.org.uk](mailto:edmund@eua.org.uk)



## We welcome into membership...



**Thermco Electricals Ltd** Thermco Electricals Ltd provides an extensive range of domestic, commercial and industrial immersion heaters to meet customer needs and specific requirements. With almost 100 years of knowledge and experience in the immersion heater industry, Thermco Electrical Ltd provides a comprehensive solution to domestic, commercial and bespoke applications. [www.thermco.uk](http://www.thermco.uk)



**Flogas Britain Ltd** is a leading domestic LPG (Liquefied Petroleum Gas) supplier with more than 30 years' experience in providing reliable, affordable energy solutions to homes and businesses across the UK. [www.flogas.co.uk](http://www.flogas.co.uk)



### SNIEF – PROFESSIONAL PLUMBERS TO THE PUBLIC

SNIEF (Scottish & Northern Ireland Plumbing Employers' Federation) is the trade association for plumbing and heating businesses based in Scotland and Northern Ireland providing professional and practical assistance. SNIEF has just over 750 member firms employing over 3500 plumbers and 700 plumbing apprentices. [www.snief.org](http://www.snief.org)

### Cool Energy Holding Ltd

With globally sourced products that have been designed by heating engineers – for heating engineers Cool Energy's mission is to: to provide efficient heating and cooling solutions; develop leading edge premium products for the domestic, commercial and industrial markets; supply products tailored for application and performance; provide help with product specification, installer training, approved installer schemes, and after sales support. [www.coolenergyshop.com](http://www.coolenergyshop.com)

**Testo Limited** Testo SE & Co. KGaA, with its headquarters in Lenzkirch in the Black Forest, is a world market leader in the field of portable and stationary measurement solutions. With 33 subsidiary companies around the world, and 2,700 employees, Testo Ltd provides highly precise measuring instruments and innovative solutions. [www.testo.com](http://www.testo.com)

**Neomitis Ltd** Néomitis® is a specialist in controls and heating products for residential and small office environments. The product range covers thermostats, programmers, timers, radiant heaters, hydraulic radiators, electric and hydronic heated towel rails and hydro-electrical heating devices for new build or renovation applications. Néomitis® designs, tests and manufactures all its products. [www.neomitis.com](http://www.neomitis.com)

**BIA Energy Consulting Ltd** offers consultancy services aimed specifically at the micro-CHP industry specialising in design, research, hydrogen and customer insight. [www.biaenergyconsulting.com](http://www.biaenergyconsulting.com)



**Frese Ltd** Frese manufacture and supply pressure independent flow and temperature control valves, heat interface units and associated equipment for commercial, institutional and large residential buildings. The company also provides prefabricated equipment incorporating Frese and complimentary technology for packaged heat exchangers and terminal units. [www.frese.co.uk](http://www.frese.co.uk)



**AMPS (The Association of Manufacturers of Power generating Systems)** AMPS is a trade association and membership is made up of leading designers, manufacturers, suppliers and installers of reciprocating diesel and gas engine electrical generating systems. They are supported by manufacturers and suppliers of a wide variety of ancillary equipment. [www.amps.org.uk](http://www.amps.org.uk)

**DMS Metering Solutions Ltd** An independent supplier of metering and control solutions, DMS Metering Solutions Ltd operates within the Building Services, District Heating and Renewables market sectors. The company supports a nationwide supply service, with a comprehensive customer capability including onsite technical support, training and commissioning. [www.dmsltd.com](http://www.dmsltd.com)

**Dragon Recycling Solutions** specialises in recycling meters for leading utilities suppliers and has a wealth of experience in materials recovery with full traceability, developing best value from redundant assets and identifying and evaluating further revenue streams from customers waste. The state of the art processing line allows the company to recycle high volumes of utility meters with the utmost efficiency. Glass, plastics and metals are removed from each utility meter and recycled. The printed circuit boards and cardboard from the meters will be

processed and recycled. Overall, there is a 98% recovery rate and the whole process is fully documented and traceable.

[www.dragonrs.com](http://www.dragonrs.com)

**Flonidan** designs, develops and sells gas metering solutions and is one of the world market leaders in smart gas meters and an important provider of data communication components to water, electricity, heat and gas meters. The product range entails both smart gas diaphragm meters as well as a new ultrasonic gas meter, SciFlo®, which excels both in range and size. [www.flonidan.com](http://www.flonidan.com)

### Logic Certification

Logic Certification is one of the Building Services Engineering (BSE) sectors foremost certification bodies, offering qualifications via a network of approximately 200 approved centres located nationwide. The company is able to issue certificates in the traditional areas of gas heating, oil heating, energy efficiency, plumbing and electrics. In addition, we have developed industry-qualifications for renewable technologies. [www.logiccertification.com](http://www.logiccertification.com)

### LSBUD (LinesearchbeforeUdig)

LinesearchbeforeUdig (LSBUD) is a free to use online search service that any individual ("User") can use to check their works against over 75 asset owners' ("Members") utility assets. These assets include hundreds of thousands of kilometres of underground and overhead pipelines and cables in the electricity, gas, high pressure fuel/oil, heating, water and fibre optic networks. The service processes over 2.5 million enquiries per annum- that's more than one every 10 seconds.

[www.linesearchbeforeudig.co.uk](http://www.linesearchbeforeudig.co.uk)

**National Grid Gas Transmission** own, manage, and operate the national transmission network in Great Britain. [www.nationalgridgas.com](http://www.nationalgridgas.com)

**Smart Test Labs** was founded on an ongoing need for scalable, cost effective industry expertise to support Energy Suppliers and Meter Operators with readiness to deliver Smart Meter delivery plans, whilst also ensuring ongoing compliance with their SEC obligations. The company offers 'Smart DCC Onboarding & Ongoing Industry Change' and E2E & 'Live' Lab' Testing as a Service. [www.smarttestlabs.com](http://www.smarttestlabs.com)

### Vector Business Services Ltd

Vector Business Services (VBS) delivers business advisory, management consultancy and support services to small and medium sized organisations seeking business growth and operational excellence and operate primarily in the energy, utilities and education sectors. The company provides cost-effective and value adding advice and support covering strategy and business planning, administrative procedure development, website design and financial monitoring advice.



ACV UK Ltd  
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Bosch Thermotechnology Ltd  
Cotherm Ltd

Danfoss Ltd  
Dimplex UK Limited  
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Heatrod Elements Limited  
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OSO Hotwater (UK) Ltd  
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Adey Professional Heating Solutions  
Alpha Heating Innovation  
Baxi Heating

BoilerMag  
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Deep Water Blue Limited  
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EOGB Energy Products Ltd

Fernox  
Ferrol Limited  
GP Burners (CIB) Ltd  
Hamworthy Heating Ltd  
Hoval Ltd  
Ideal Boilers Ltd  
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Karl Dungs Ltd  
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Nu-Way (EnerTech Ltd)  
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BOXT  
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SGN  
UKOOG  
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Advance Appliances  
Albion Water Management  
Alpha Heating Innovation  
Altecnic Ltd  
Ariston Thermo Group  
Association of Gas Safety Managers (AGSM)  
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Dimplex UK Limited  
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EOGB Energy Products Ltd  
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Hoval Ltd  
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