

# ENABLING THE TRANSITION SUPPORTING THE PROFESSION

ANNUAL REVIEW  
2019



“As deliverers of new technologies, we must lead and engage effectively and confidently with stakeholders and the public to bring all along with us on the decarbonisation journey.”



### Antony Green

IGEM President 2019-2020

My presidential year coincided with a massive boost for the climate change agenda when net zero emissions became a statutory imperative. However, when I talk to consumers about net zero, or where their energy comes from, or how gas contributes to their daily wellbeing for heating and comfort, they struggle to articulate how gas fits in. But fit it does, and IGEM has a crucial role to play.

As gas engineers and managers, we will be the ones to provide a range of technical solutions required to decarbonise. IGEM's obligation to serve the public as a professional engineering institution means we must engage fully with the quest to find affordable and sustainable solutions to these issues, with minimal disruption across our sector.

To do so, we will have

to do things that don't necessarily come naturally to us. As deliverers of new technologies, we must lead and engage effectively and confidently with stakeholders and the public to bring all along with us on the decarbonisation journey. It is my privilege to be President at this critically important time. I've attended many member events during my term of office and have been excited and impressed by the discussion around innovation, hydrogen and decarbonisation pathways within our UK membership. Likewise, impressive work has continued abroad, including within our Far East Section.

I am delighted to see IGEM is now taking a profile lead with key stakeholders. In return, project awards from government demonstrate the confidence others have in us to deliver critical evidence in support of the energy transition.

We can now be confident that our message – that gas has a major role to play in a decarbonised system – has been heard. However, IGEM and my successors must not be complacent and we must continue to evolve.

It has been a great year. IGEM has been making significant changes both internally and externally, and it has been my pleasure to work with such talented trustees, fellow members and staff as these modernisations and developments come to fruition.

With the foundations now in place to secure a relevant future, I can only thank those who have contributed and invite others to join in with our endeavours as we stand tall and 'enable the transition, support the profession'.

*Antony Green*

## 03 GETTING THE FUNDAMENTALS RIGHT

**“We’ve taken a hard look at where the institution wants to be in 2030, working to become the ‘go to’ destination of choice for engineers, technologists and managers working within the sector.”**



### Neil Atkinson

Chief Executive Officer

This year’s review highlights the activities of our membership. I can only be impressed by the vitality of IGEM’s members and their desire to contribute to the profession.

Working with our members, my focus in 2019 has been to ensure that IGEM is properly equipped to meet the decarbonised gas challenge.

We’ve embedded the recommendations of our governance review and I can report that the outcome is positive.

Our new Executive Board is providing for more agile, responsive decision making, our Council has been reformed and now has deeper and more engaging discussions on membership issues and the external environment.

We’ve taken a hard look at where the institution wants to be in 2030, working to become the ‘go to’ destination of choice for engineers, technologists and managers working within the sector.

We want to be leaders in technical knowledge and CPD, vanguards for qualifications and competency, dedicated standard-bearers for the new energy system and a respected and independent voice for policymakers and stakeholders.

This introspection has enabled us to write and adopt an exciting new business plan for the next four years. We’ve called it ‘enabling the transition, supporting the profession’ and that is exactly what we must all do to support the UK’s net zero obligations.

Finally, we’ve invested heavily in raising our profile with government and others who are seeing IGEM as a vital, essential contributor of robust evidence at the tables of policy and technology.

During the year, we launched our new website, with a modern feel and refreshed content, accessible to all mobile platforms. We also launched IGEMtv, a video platform allowing members

to access key presentations from a number of our events and at a time that suits them. There can be no doubt that enhancing our digital offering will have significant impact on member attraction and engagement as well as helping us to deliver services to members more effectively.

Financially we are in a good place too, finishing the year with revenues up 15 per cent, with significant reserves and an operational surplus. A strategic review of fund investments was concluded in October and that restructuring will allow us to better consider business-building investments in future years.

I am always struck by the pride members have for this great institution. IGEM is member-led and the contributions of our membership have been more than evident in 2019. Thank you.

A handwritten signature in black ink that reads "Neil J Atkinson". The signature is written in a cursive style with a large, sweeping underline that extends across the width of the text.

# Achieving the highest standards of professional competence



Image by National Grid

We've helped 178 individuals become professionally registered

As you might expect, all the activities we undertook in 2019 were underpinned by our remit to ensure those working with gas

achieve and maintain the highest standards of professional competence.

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**Keeping it professional**

We're proud to have helped 178 individuals to become professionally registered engineers in 2019. This would not have been possible without the 93 members who generously agreed to act as mentors or shared their time and knowledge with us in order to review applications and conduct interviews.

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**122** New Engineering Technicians

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We look forward to seeing how these individuals benefit from the recognition that comes with achieving a professional title and to helping maintain the high level of competence they have achieved.

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**37** New Chartered Engineers

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**19** New Incorporated Engineers

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**Building a safer future**

Following the Grenfell Tower tragedy in June 2017, the government commissioned an Independent Review of Building Regulations and Fire Safety, led by Dame Judith Hackitt. The resulting report *Building a Safer*

*Future* was published in May 2018 and made several recommendations on competence.

IGEM, along with fellow professional engineering institutions, has participated in a leadership working group, facilitated by the Engineering Council, concerned with defining required levels of engineering competence.

The resulting competence frameworks tackle shortcomings identified in *Building a Safer Future* by setting out the appropriate knowledge, qualifications and skill sets required for individuals working on high risk residential buildings (HRRBs), how they should be assessed and by whom.

Assuming the government proposals for implementing *Building a Safer Future* are accepted and become part of the proposed Building Control regime for high risk residential buildings, it is expected that individuals undertaking the role of either Principal Designer or Principal Contractor will be registered on an approved scheme. IGEM has offered to trial any new process proposed by the Engineering Council.

Recognising that members practicing on HRRBs may

need to demonstrate competence to an employer, IGEM is developing guidance on HRRB specific safety and technical frameworks.

**Recognising the best**

During 2019, we authorised 11 organisations to act as fellow Recognisers of Training and recognised the training provided by one independent training provider.

IGEM is authorised by the gas industry's Strategic Management Board (SMB) to recognise training programmes that meet the requirements set out in IGEM/IG/1 *Standards of training in gas work*.

This authorisation was made in response to growing concerns that some ACS training programmes were not providing a sufficient depth of knowledge and experience for trainees to be reasonably declared competent.

IGEM has been granted permission to authorise training providers who successfully complete an audit to act as fellow Recognisers of Training. Currently there are 425 training providers that have been acknowledged as delivering industry-recognised training.

# Growing our community

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**3,575**

IGEM members

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Gas Industry Awards

IGEM's members, its volunteers and wider network of gas and energy sector contacts continue to be its greatest asset. By bringing together groups of talented individuals, we are able to do more to advance the science of gas engineering than we could ever have hoped to achieve alone.

Those in our community tell us that they value the numerous opportunities we provide for them to come together to share knowledge and ideas, to ask questions and seek advice and support from their peers and professional institution.

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## Bringing more professionals together

With an increasing number of individuals retiring or leaving the gas industry, growing our community remains a priority. We have worked hard throughout the last year to encourage new people to join us and were pleased to welcome 288 individuals into membership, taking our year-end total to 3,575.

We continued to see strong interest from organisations working in and alongside the sector and for the tenth year running saw an increase in the number of companies affiliated with us, which rose to 331.



We were also pleased to extend our network of contacts online. The number of individuals connected to us by social media now stands at 13,083 and,

more importantly, we saw increased engagement in conversations started by us.

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# 288

New members

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## Celebrating with friends

Our programme of events for 2019 included many designed specifically to enable attendees to extend their network of professional contacts and catch up with existing ones at events like our annual Summer Ball.



This year's ball was held in the spectacular surroundings of Warwick Castle, hosted by our President, Antony Green. On this pleasant summer evening, guests gathered at one of England's most popular attractions in their finery for a medieval knight of delicious food, hearty dancing and rousing

entertainment. The 2019 event rounded off IGEM's tour of UK castles, having previously celebrated at historic sites in Edinburgh and Cardiff.

We look forward to welcoming our members and contacts to more exciting social gatherings in the year ahead.

## Collaborating with business

We continued to support the Large Business Forum (LBF), a group of businesses operating in the utilisation sector, providing our services to six well-attended meetings at IGEM House to discuss engineering, safety and legislative issues that affect professionals working with gas in domestic and commercial premises. Working with the Health & Safety Executive and the IGEM/G/11 *Gas Industry Unsafe Situations Procedure* panel, outcomes were delivered on the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) and on incidents of low pressure on the gas distribution network, supporting IGEM's Low Pressure Working Group.

## Supporting important causes

As part of September's Gas Safety Week, IGEM, in collaboration with Gas Safe Register, Clare Adamson MSP and SGN, hosted a special campaign event at the

Scottish Parliament – a first for the institution.

The event, attended by several members, helped raise awareness of the dangers of poorly maintained gas appliances, which can cause gas leaks, fires, explosions and carbon

monoxide (CO) poisoning. It also provided a platform for IGEM, businesses, safety groups and other stakeholders across Scotland to show their support for this annual campaign.

IGEM also supported the LBF's contribution to Gas



IGEM, in collaboration with Gas Safe Register, Clare Adamson MSP and SGN, hosted a special campaign event at the Scottish Parliament – a first for the institution



Safety Week which this year focused on encouraging gas engineers to spread the word amongst tradespeople of the dangers of interfering with existing gas installations when working in buildings.

The LBF released new guidance to help tradespeople ensure they do not contravene Regulation 8 of the Gas Safety Installation & Use Regulations (GSIUR) L56. This guidance is available on the LBF page of our website and the Gas Safe Register website.

## Reaching out to the social housing sector

We spent some time forging stronger links with the social housing sector. In November, we ran a workshop inviting representatives from the sector to discuss how IGEM could provide greater support to gas engineers working in



Attendees at the Social Housing Workshop in November

domestic properties owned by local authorities and housing associations. Following the event, a social housing working group was set up to define in

more detail how IGEM can collaborate with the sector to ensure the competence of the engineers working in this area.



# Encouraging the next generation of engineers



The UK isn't producing enough engineers to meet demand. To address this and start plugging the skills gap, we've supported a range of educational and skills initiatives to

inspire and motivate young people from all backgrounds to study science, technology, engineering and maths (STEM) subjects and start a career in engineering.

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## Supporting the engineers of tomorrow

IGEM launched its scholarships and grants scheme in 2018 and we're very pleased to report that the programme is going from strength to strength. In 2019, the number of applications increased by 69 per cent, resulting in a new batch of young IGEM scholars. We awarded three undergraduate scholarships, two first year undergraduate scholarships and one postgraduate scholarship to the following recipients in support of their engineering careers:

- **Matias Silva** (undergraduate scholarship)
- **Eve Chillcott** (undergraduate scholarship)
- **Carl Lewis** (undergraduate scholarship)
- **William Draper-Barr** (first year undergraduate scholarship)
- **Srivatsa Garg** (first year undergraduate scholarship)
- **Liam Dey** (postgraduate scholarship)

## Finding solutions for the future

Since 2013, we've been a proud partner of Solutions

for the Planet (S4TP) – an award-winning social enterprise that connects businesses, schools and communities to promote education for sustainable development, enterprise and STEM careers for young people.

Various representatives of IGEM including a Past President, our CEO and volunteer members have taken part in S4TP's Big Ideas competition, in which students from local schools are challenged to think up solutions to the world's sustainability issues.

Our representatives have attended Big Ideas days in schools, acted as mentors helping the students to develop their ideas and taken part in judging for both the regional and national finals.

In 2019, a group of children from Mayfield School in Portsmouth won the competition with their RenewAbus – a bus powered solely by renewable energy. To help raise the profile of their invention amongst the engineering community, a video of their winning presentation was shared at our Annual Conference.

We continue to spread the word amongst the gas community of this valuable enterprise and are pleased

to report that both SGN and Northern Gas Networks have also signed up as partners.

## Shaping perceptions

If you type the word 'engineer' into an online search engine, the image results it produces lack diversity in the faces of the people and the disciplines of engineering represented. This is why the Royal Academy of Engineering declared Wednesday 6 November 2019 'This is Engineering Day'.

In support of this initiative, IGEM was one of 130 organisations that pledged to increase the public visibility of more representative images of engineers and engineering by contributing to the Academy's new public image library and Instagram channel @ThisisEngineering.

## Getting the word out

We also lent our support to Tomorrow's Engineers Week, a campaign organised by EngineeringUK and the Royal Academy of Engineering to provide an opportunity for engineers, employers, universities and schools to showcase how engineers working in all sectors are on a mission to make the world a better place.

# Continuing Professional development



We launched IGEMtv, a new online video content platform to allow members to access the latest conference and event content on demand

Nearly all the activities we organise are designed to support our members with their continuing professional development by keeping them up-to-date with what's

happening in the sector and extending their knowledge. This has never been more important given the huge ongoing changes taking place within the energy sector.

## Preparing for a H<sub>2</sub> future **Facilitating the price control debate**

Over the course of 2019, hydrogen gained significant government attention due to its potentially vital role in delivering the UK's net zero energy strategy. To help members and the wider gas industry understand the properties of this low carbon gas and the challenges and complexities associated with its deployment, we added a new course to our training portfolio. Our Hydrogen and the Natural Gas Network course was, unsurprisingly, our most popular course of the year and we will be running courses again soon.

Continuing the theme of hydrogen, IGEM's Industrial Affiliate Section held a highly successful event in July. Over 100 delegates representing the organisations affiliated with us gathered at IGEM House for Hydrogen – Taking Control of Your Future, an event to discuss how the introduction of hydrogen to the UK gas distribution network might impact their businesses and the steps they should be taking to make the most of the opportunities associated with decarbonisation of the gas grid.

The other big topic of interest was Ofgem's RIIO-2 price control. In April, we facilitated an opportunity for Industrial Affiliate members who received Network Innovation Allowance (NIA) funding as part of RIIO-1 to meet with Ofgem's James Veaney, Head of RIIO-2 Policy.

Delegates told us that they found it highly beneficial to hear first-hand how NIA funding might evolve as we move into the next price control period and to be able to ask questions and voice their concerns regarding changes in RIIO-2. We will be looking to run further RIIO-2 events during the coming year.

### Taking the blinkers off

Having chaired the Independent Review of Building Regulations and Fire Safety in 2018, Dame Judith Hackitt attracted scores of delegates to her Sir Denis Rooke Memorial Lecture, in which she spoke about the need to learn lessons and share knowledge following the tragic events at Grenfell Tower. It was a powerful

presentation during which members learned how the industry must change if it is to prevent similar incidents in the future.



### Mapping the road ahead

In 2019, we stepped up our efforts to support the downstream gas industry, starting with our fifth Gas Utilisation conference, Blueprint for the Future.

The key themes of the conference were compliance, competence and capability. Our guest speakers represented the Health & Safety Executive, Energy & Utility Skills and Gas Safe Register. They covered health in the workplace, the role of the Standards Setting Body (SSB), the Group Competency Scheme and the future role of the Gas Safe Register.

Delegates were presented with a summary of the work undertaken by IGEM's working groups looking at RIDDOR and low pressure supply and our Head of Technical Services & Policy, Ian McCluskey, introduced the IGEM Recognition of Training scheme.

### Supporting the digital revolution

Central to our programme of CPD activities is our series of Road to 2050 conferences, designed to guide industry professionals along the path to reducing UK emissions. Having previously looked at the decarbonisation of heat and the decentralisation of energy, our 2019 conference focused on the third element of the energy storage trilemma: digitalisation.

From smart grids to big data, we reviewed how the networks can more accurately predict and manage demand, reduce their carbon footprint and prepare the UK's energy system for a more automated world.

We discussed the need to change the way we do things and the technology we use to capture and manage data. Using case studies from the cutting edge of the digital



Rob Graham, speaking about Blockchain in engineering at the Digitalising the Energy Networks conference in July

revolution, we demonstrated the paradigm-shifting work that is already taking place and the lessons the networks can learn from each other.

### Bringing vision to life

Building on the theme of our Gas Utilisation conference, IGEM's Annual Conference was entitled Blueprint for the Future: From Vision to reality. It mapped out the UK's net zero carbon future, the engineering challenges we face along the way and how we can better engage consumers as plans come into effect.

The conference connected government decision-makers with top engineers, global executives with grassroots investigators and visionary thinkers with hands-on doers. Our speakers included representatives from the Department for Business, Energy & Industrial Strategy,

the UK Energy Research Centre, Ofgem and Shell. Delegates got a sneak peek at IGEM's newest piece of policy work, a preview of Carbon Connect's third instalment in The Future Gas Series and heard the latest from the networks' customer engagement groups ahead of RIIO-2.

### Local networks in action

We and our members continue to benefit from the institution's eight regional Sections covering the UK and a vibrant Section in the Far East. To complement our programme of national events the volunteers that sat on the Section committees last year delivered a host of local events including site tours, exhibitions showcasing the latest technology and equipment, and presentation evenings allowing delegates to meet with and hear from leading industry figures.

## Highlights of 2019

The London Southern & Eastern Section's annual Showcase and Lions' Lair, which attracted over 100 delegates and saw Andy Hutchison, Technical Support Engineer at Steve Vick International, awarded the Tommy McNicholas shield for his presentation on the Enhanced SEAL project.

The North East & Yorkshire Section Chair's event, where delegates had the opportunity to hear from Alan Charlton, of Extinction Rebellion, Alistair Ford, lecturer from Newcastle School of Engineering, and IGEM President Antony Green on climate change, the need for adaptation and the potential role of

hydrogen.

The North West Section's visit to DNV GL's Testing and Research Centre at Spadeadam, in Cumbria, which provided the opportunity for delegates to witness a number of different experiments demonstrating the behaviour of hydrogen.

## Meanwhile, in the Far East...

A group of around 30 individuals went on a study tour to Yunfu, in China, where they visited a number of sites and factories offering them the opportunity to appreciate the application of hydrogen fuel cells on city buses and light rail transit, observe the manufacturing of artificial compound stones and learn about the production of cement using waste heat technology.

In November, another delegation, including IGEM President Elect Duncan Wong and Chairman Eddie Pak, visited Sichuan, China. They went to Chengdu Qianjia Technology Co to see the company's intelligent GIS and SCADA platforms for

managing the operation and maintenance of the gas transmission and distribution system and a range of smart meters. Next, they paid a visit to Sichuan Energy Investment Xindo Distributed Energy Co Ltd to acquire an insight into the design and operation of a typical CCHP or tri-generation plant.



Ir Eddie Pak (right), Chairman of FEDS, presenting souvenir to representative from Sichuan Energy Investment Xindo Distributed Energy Co, Ltd.

The Section also teamed up with HKIE Gas & Energy Division and IET HK's power section to organise a visit to Macau, taking in the Hotel MGM Cotai and Nam Kwong Natural Gas Company.

Looking to the future, September's public forum on the long-term decarbonisation strategy for the gas industry received an overwhelming response. Facilitated by two experts from the University of Hong Kong, the forum provided the opportunity for participants to acquire a deeper understanding of Hong Kong's long-term decarbonisation strategy.

Like all of our Sections, the Far East District Section was pleased to host a Christmas get together. This year's social event was co-organised with a number of other professional bodies in Hong Kong, enabling young members of different professional societies to share ideas and build their professional network.



Being able to watch and learn at a time and place that suits you means it's easier than ever before to keep up with your CPD

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### Keeping up with the industry

For those wishing to extend their knowledge of our technical standards, we ran a number of training courses across the year to expand understanding of the engineering knowledge and best practice they contain. The majority of these courses were based on our most popular standards, such as IGEM/TD/1 and TD/2 concerning gas pipelines for transmission, and IGEM/SR/25 *Hazardous area classification of natural gas installations*.

Additionally, we responded to an increasing number

of requests for in-house training. This has proved a practical and cost-effective way for a number of organisations to ensure their engineers are able to access the training they need while minimising the impact to their businesses.

### Bringing CPD direct to your screens with IGEMtv

We understand that it can be difficult for our members to attend all the events they'd like, which is why we launched IGEMtv in 2019. This new online video content platform was designed to allow members to access the latest conference and event content on demand. Being

We add new content all the time, but highlights from 2019 included:

- Our Industrial Affiliate event, Hydrogen – Taking Control of your Future
- The 2019 Sir Denis Rooke Memorial Lecture, delivered by Dame Judith Hackitt
- The finalists' presentations from the Young Persons' Paper Competition
- A selection of presentations from IGEM's Annual Conference

### Connecting with you

Our journal *Gas International (Gi)* continues to go from



strength to strength, offering more ways for our members to extend their knowledge and add to their CPD record. During the year, we covered themes such as hydrogen, consumer challenges and future energy systems.

Our dedicated journal team also gave *Gi* a fresh new look in 2019, restructuring

the publication to ensure its editorial content stays as relevant as possible to the needs of our members. We're always looking for new ways of bringing our members the information they need, and are pleased that IGEMtv is now complementing the journal, providing access to information in an easy-to-

digest format.

Having reached issue number 52, our weekly email newsletter Flame continues to keep our members up-to-date with the latest developments in the sector, plus details of IGEM's latest activities.

## Maintaining standards

Throughout 2019, our technical services team worked hard to review and update our standards to ensure they remain relevant and up-to-date in today's fast-moving energy landscape.

As always, they were supported by their extensive network of volunteer gas professionals with a broad range of knowledge and expertise combined with many years of industry experience.

Working in collaboration with the team at IGEM House, these individuals helped to review our existing standards and supported the publication of updated editions of nine standards.

These were:

**IGEM/TD/16** *Biomethane injection*

**IGEM/TD/19** *Reinforced PE for high pressure pipelines*

**IGEM/SR/15** *Integrity of gas related systems*

**IGEM/SR/18** *Safe working practices to ensure the integrity of gas assets and associated installations*

**IGEM/SR/29** *Dealing with gas escapes*

**IGEM/GM/4** *Flowmetering practices - inlet pressure exceeding 38bar and not exceeding 100bar*

**IGEM/PRS/40** *Meter pressure meter installation kits for flow rates not exceeding 6m<sup>3</sup>h<sup>-1</sup>*

**IGEM/PRS/41** *Low pressure domestic meter installation kits*

**IGEM/PRS/50** *Specification for gas meter serial numbering*

Our technical services team worked hard to review and update our standards to ensure they remain relevant and up-to-date in today's fast-moving energy landscape

# Acting as the **voice of industry** and a trusted advisor to government

If we are to be successful in our attempts to influence future energy policy, engaging directly with government is paramount



As the mission to decarbonise the UK progresses, IGEM has been putting the gas industry front and centre of the energy debate. We want to represent our industry in the strongest possible way, working with

government bodies and stakeholders to offer balanced solutions to the net zero conundrum. This is work we will continue to build on as we execute our business plan.

## Putting policy in the frame

Last year, we welcomed Sayda Lees-Manning, IGEM's dedicated Policy Officer, to the team. Sayda's appointment was a key milestone for IGEM as she took up the newly-created position in order to reinforce the institution's position on the political stage.



Chief Executive Officer Neil Atkinson explains: "The appointment of the institution's first ever Policy Officer demonstrates our commitment to work alongside our fellow stakeholders to communicate more widely about how the gas industry will help to decarbonise the energy sector. We will also seek to become a greater source of advice to government in a bid to shape future energy policy."

## Representing your interests

If we are to be successful in our attempts to influence future energy policy, engaging directly with government is paramount. This is why we're proud to continue to be involved in the discussions of the All-Party Parliamentary Groups for carbon monoxide and hydrogen, also a key player within BEIS' Hydrogen Programme Development Group.

Our role within these groups sees us working directly with gas network companies, safety experts, academics and policy advisors to assess the evidence base and develop informed recommendations on the future of the gas grid.

These recommendations will directly shape government policy over the coming months and contribute to a low carbon energy transition strategy that will capitalise on what the gas industry has to offer.

## Finding new pathways

IGEM is committed to supporting research projects focusing on how the existing gas network can be

decarbonised in support of the UK's transition to a net zero economy.

In 2019, we sponsored the third instalment of Carbon Connect's Future Gas Series. The third inquiry in the series considered consumer attitudes towards heat, the acceptability of different decarbonisation methods, plus how open consumers might be to accepting changes to their homes and places of work. The think-tank also looked at ethical and safety considerations of transitioning to low carbon sources, particularly public perceptions around the use of hydrogen and how vulnerable customers can be protected during a transition.

Additionally, the inquiry considered the economic and technical implications of converting or replacing appliances to use low carbon gas, how a large-scale transition might be delivered and how this might be funded.

The final report, *Uncomfortable Home Truths: why Britain urgently needs a low carbon heat strategy* was launched in Westminster by Lord Duncan of Springbank, Climate Change Minister, on 15 October.

The recommendations and findings of this report will form the basis of an upcoming piece of work aimed at influencing BEIS' 2020 Heat Roadmap.

The UK faces a number of defining challenges to its prosperity, security and wellbeing and navigating these will require making trade-offs and dealing with uncertainties in the face of escalating pressures with limited resources. For this reason, we partnered with the Royal Academy of Engineering to produce the first joint publication from

the National Engineering Policy Centre, examining the *Engineering priorities for our future economy and society*.

Here, we set out our priorities for upcoming policy and spending decisions in the UK in areas such as skills, innovation and clean energy technologies. The actions proposed in this report will enable the UK to make investment decisions that will create more jobs and prosperity, and meet the future needs of our society in a way that is faster, more efficient and sustainable. Continuing our focus on

hydrogen, IGEM joined forces with three other professional engineering institutions and the HSE's Science Division to co-author a report for government on the engineering considerations of a transition to hydrogen. Launched in June, at London's Science Media Centre, the report titled *Transitioning to hydrogen: Assessing the engineering risks and uncertainties*, examines the issues involved in repurposing the gas grid to hydrogen for large-scale deployment to industry, homes and businesses. The report concluded that



Peter Bingham, Chief Engineer of Ofgem delivering his presentation entitled "Enabling decarbonisation and innovation under RIIO" at the Annual Conference in September

there is no reason why repurposing the gas network to hydrogen cannot be achieved and recommended five key areas the UK must take action for hydrogen to successfully replace natural gas to heat homes. Lead author Dr Robert Sansom, of the IET's energy policy panel, said: "We are now in a position to seriously consider the viability of using hydrogen in the UK's gas grid for use by homes and businesses which could significantly contribute to the decarbonisation of the UK's energy sector."

## Taking our message around the world

In September, IGEM Head of Technical Services & Policy Ian McCluskey travelled to Australia to attend the 2019 International Conference on Hydrogen Safety (ICHHS). Alongside Keith Owen, Head of Systems Development and Energy Strategy at Northern Gas Networks and Chair of IGEM's new Hydrogen Committee, Ian addressed delegates from 22 countries on how to manage the deployment of hydrogen and the need to



Ian McCluskey speaking at the 2019 International Conference on Hydrogen Safety (ICHHS)

develop standards to ensure the roll-out and future use of hydrogen are implemented safely.

decarbonisation of the UK's gas sector," said Ian.

We set out our priorities for upcoming policy and spending decisions in the UK in areas such as skills, innovation and clean energy technologies

"Delivering a keynote speech at this international conference meant that I was able to raise awareness of IGEM amongst organisations from across the globe. plus share how we are taking a leadership role in supporting

"It was also a chance to hear about the plethora of research on hydrogen that is going on around the world and to reflect on what this means in the context of the UK's current transition to net zero."

# Shaping the future

As well as our policy work, IGEM has been taking part in a number of important projects designed to shape the future of heat in the UK



Image by ITM Power

### Introducing our Hydrogen Committee

To provide a central point of reference for the increasing number of hydrogen activities we're involved in, an IGEM Hydrogen Committee was created in 2019. The committee's remit is to:

- discuss health and safety issues relating to hydrogen
- share safety alerts with industry
- develop best practice guidelines for hydrogen operations
- provide advice and guidance to member companies regarding safety cases, COMAH, HAZOP surveys and planning enquiries
- to contribute to the gas quality debate
- provide oversight of IGEM-developed hydrogen standards

### Supporting the Hy4Heat project

As part of our work under the government-funded Hy4Heat programme, we completed the first iteration of a reference standard for low pressure hydrogen utilisation.

Focusing specifically on use of hydrogen in domestic properties and small commercial applications, the reference standard identifies where changes would need to be made to current processes (those used for natural gas) and the evidence required to demonstrate that hydrogen can be used safely.

In October, the document was reviewed by our Hydrogen Committee and, in December, went to BEIS for approval.

A second iteration of the reference standard is well underway and extends the remit of the document to include large commercial applications.

The working group is also developing an enabling standard that will be made available to industry for use during live trials of hydrogen.

### Producing new hydrogen specifications

In support of SGN's H100 project, in September we began work on the production of a specification for hydrogen excess flow valves. This will involve reviewing material compatibility requirements for all of the

valve components on the assumption that they will be used with 100 per cent hydrogen.

### Creating a new gas quality standard

A new Gas Quality Standard is fundamental to changing the regulatory framework which can allow more decarbonised gases onto the network, reduce natural gas processing emissions, and be efficiently updated to allow hydrogen to be blended in the near future. A new standard is therefore seen as essential to meeting the UK's net zero emissions. IGEM is currently working on the production of a gas quality standard that will help to facilitate the change to be made.

The new standard, IGEM/GL/10 *Gas quality specification for conveyance of Group H gases of the second gas family*, has been prepared and will soon be released for industry review and comment.

# Recognising and rewarding a job well done



Chris Train (left), Outstanding Achievement Award winner and Mike Foster (right), EUA, Special Recognition Award winner at the 2019 Gas Industry Awards

With much of the rhetoric concerning gas/energy focused on the future and the need to change the way we do things, it's easy to forget the excellent work already taking place in the gas sector. Each year, IGEM

runs a number of competitions designed to recognise and reward the efforts of the hard-working individuals and businesses that make the gas sector great.

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## Showcasing young talent

In June, IGEM House hosted the final of the 2019 Young Persons Paper Competition, complete with red carpet, purpose-built set and a bank of cameras poised to capture the action. Delegates could be forgiven for thinking they had arrived at the Oscars!

Philippa Wrenn, Asset Integrity Manager at GTC, kindly facilitated the proceedings, which saw the winners of nine regional Section heats present their papers for the chance to win attendance at an international gas/energy conference.

After a tense wait while the judging panel deliberated, Andrew Wynne, of ROSEN (UK), was announced the winner for his presentation

covering stress corrosion cracking. Andrew will be attending the International Pipeline Conference in Calgary.



In second place was Mario Cheung, one of two competitors representing IGEM's Far East District Section. Mario works as an Assistant Engineer for the Hong Kong and China Gas Company and shared his work on the SENT landfill gas utilisation project, the largest of its kind in Asia.



In third place was Scott Rendall, Lead Design Engineer for ALH Systems. He delivered a lively and enthusiastic presentation, complete with a demonstration of his newly-developed PEmDrill.



## EngTech Steve stands out

IGEM's Engineering Technician of the Year Award recognises the outstanding contribution that our EngTech members make to the gas industry and the wider community.

Our 2019 winner Steve Critchlow (EngTech MIGEM), is to be announced at our Gas Utilisation conference in 2020, where his contribution will be recognised by his fellow professionals.

Along with his certificate, Steve received an educational grant of £1,500 to support his future career development.

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## Another glittering Gas Industry Awards

Organised in conjunction with our colleagues at the Energy & Utilities Alliance (EUA), the Gas Industry Awards have been uncovering extraordinary talent and highly innovative work for more than 20 years. In 2019, we received 119 nominations - the highest number ever submitted.

Our champions were presented with their certificates and trophies at a prestigious awards lunch hosted in May by television presenter and engineer Kate Bellingham, at London's Park Lane Hilton. There were 10 categories of award followed by two special awards.

The winning individuals and organisations were:

### Manager of the Year

Carly Gilchrist, Fulcrum Pipelines

### Engineer of the Year

Jonathan Strain, Firmus Energy

### Young Person's Achievement Award

Ben Kuchta, Quantic Corporation



### Leadership Award

Jane Haswell, Pipeline Integrity Engineers

### Safety Award

National Grid Grain LNG for Breaking Safety Records

### Customer Service Award

Wales & West Utilities and Morrison Utility Services

### Innovation Award

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

### Product of the Year

VSRT Vertical Steam Boiler by Fulton

### Project of the Year

H21 by Northern Gas Networks in collaboration with Cadent, SGN, Wales & West Utilities, DNV GL and the Health & Safety Laboratory

### Company of the Year

SGN

### Special Recognition Award

Mike Foster, EUA

### Outstanding Achievement Award

Chris Train

"Once again, the Gas Industry Awards delivered a worthy set of winners. The calibre of the shortlisted entrants was extremely high. I was especially heartened to see the winners display a diverse mix of talents across the spectrum of gas operations, which I think demonstrates the level of commitment to safety, future technology and professional excellence evident in the industry today," said IGEM President Antony Green.

## 27 FINANCIAL SUMMARY

Operationally, IGEM overachieved on budgeted expectations for the year, delivering a surplus of £23,508. Total income of £2,141,741 has been generated, which is 14.7% greater than last year. Unrestricted and Designated Income has increased by 14.8%. Expenditure has increased by 14% reflecting increased resources applied to the service of our members and to industry safety. Valuation of our investment portfolios has increased and so there are investment gains of £423,492. The net movement in funds is £310,795. Therefore the total balance carried forward at the end of the year is £5,164,895 of which £1,290,911 is the Restricted Fund balance.

### Consolidated Statement of Financial Activities for the year ended 31st December 2019

	2019				Prior year			
	Unrestricted Funds	Designated Funds	Restricted Funds	TOTAL	Unrestricted Funds	Designated Funds	Restricted Funds	TOTAL
<b>Incoming Resources</b>								
Donations & Legacies:	0	0	135	<b>135</b>	0	0	120	120
Sponsorship Income	0	0	2,000	<b>2,000</b>	0	2,000	0	2,000
Charitable Activities	1,887,914	70,405	2,284	<b>1,960,603</b>	1,633,229	71,556	2,752	1,707,537
Trading Activities	84,563	0	0	<b>84,563</b>	69,769	0	0	69,769
Investment Income	60,320	835	33,285	<b>94,440</b>	55,149	800	31,168	87,117
<b>Total Incoming Resources</b>	<b>2,032,797</b>	<b>71,240</b>	<b>37,704</b>	<b>2,141,741</b>	<b>1,758,147</b>	<b>74,356</b>	<b>34,040</b>	<b>1,866,543</b>
<b>Expenditure On:</b>								
Raising Funds								
Investment Mgr Fees	11,168	0	6,253	<b>17,421</b>	10,977	0	6,296	17,273
Trading Expenditure	23,899	0	0	<b>23,899</b>	21,507	0	0	21,507
Charitable Activities	2,021,930	68,612	122,576	<b>2,213,118</b>	1,753,505	95,585	90,548	1,939,638
<b>Total Resources Expended</b>	<b>2,056,997</b>	<b>68,612</b>	<b>128,829</b>	<b>2,254,438</b>	<b>1,785,989</b>	<b>95,585</b>	<b>96,844</b>	<b>1,978,418</b>
Net gains/(losses) on	269,723	1,985	151,784	<b>423,492</b>	(155,399)	(3,426)	(89,093)	(247,918)
<b>Net Income/Expenditure</b>	<b>245,523</b>	<b>4,613</b>	<b>60,659</b>	<b>310,795</b>	<b>(183,241)</b>	<b>(24,655)</b>	<b>(151,897)</b>	<b>(359,793)</b>
	(268,146)	268,146	0	<b>0</b>	156,747	(156,747)	0	0
	(22,623)	272,759	60,659	<b>310,795</b>	(26,494)	(181,402)	(151,897)	(359,793)
<b>TOTAL FUNDS CARRIED FORWARD</b>	<b>2,186,039</b>	<b>1,437,809</b>	<b>1,230,252</b>	<b>4,854,100</b>	<b>2,212,533</b>	<b>1,619,211</b>	<b>1,382,149</b>	<b>5,213,892</b>
	2,163,416	1,710,568	1,290,911	<b>5,164,895</b>	2,186,039	1,437,809	1,230,252	4,854,100

### Consolidated Balance Sheet as at 31st December 2018

	2019	Prior year
<b>Fixed Assets</b>		
Tangible	<b>1,263,416</b>	1,286,039
Investments	<b>3,601,896</b>	3,300,288
	<b>4,865,312</b>	4,586,327
<b>Current Assets</b>		
Debtors	<b>417,095</b>	362,175
Short Term Investments	<b>485,272</b>	371,720
Cash at bank and in Hand	<b>152,946</b>	137,061
	<b>1,055,313</b>	870,956
<b>Creditors</b>	<b>(755,730)</b>	(603,183)
<b>Net Current Assets</b>	<b>299,583</b>	267,773
<b>Total Assets less Current Liabilities</b>	<b>5,164,895</b>	4,854,100
<b>FUNDS</b>		
Unrestricted	<b>2,163,416</b>	2,186,039
Restricted	<b>1,290,911</b>	1,230,252
Designated	<b>1,710,568</b>	1,437,809
	<b>5,164,895</b>	

### Council Statement on the summarised financial statements:

These summarised financial statements are based on information extracted from the statutory Council's report and consolidated financial statements approved by Council on 25th March 2020. They may not contain sufficient information to allow for a full understanding of the Institution's financial affairs. The full Consolidated Financial Statements, the Trustees Report and the Auditor's Report should also be consulted. Copies can be obtained from the our website [www.igem.org.uk](http://www.igem.org.uk) or from the finance department by email to [finance@igem.org.uk](mailto:finance@igem.org.uk).



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