



**WALES&WEST**  
UTILITIES



# Network Innovation Allowance (NIA) Annual Summary

1 April 2015 to 31 March 2016  
for Wales & West Utilities



## Innovation key to a successful future

Wales & West Utilities always puts customers first. It's a core value of our company.

A key strand of our strategy is to deliver benefits for our customers through innovating year on year, while embedding what we have learnt and developed already within our business. All innovation is driven by our five business priorities which reflect what matters to our business – including the regulatory outputs we deliver. Our priorities help us make sure we meet the needs and expectations of our customers today and into the future.

This year, we have invested £1 million in innovation, carefully spending this money on projects that will provide real benefits and value for our customers. We are reporting here on our progress against these projects, which are supported by Network Innovation Allowance (NIA) funding – 33 in 2015/2016, 11 more than 2014/2015.

In the 'Looking Ahead' section of last year's report, we spoke about our focus on the future role of gas and sustainable gas alternatives to help deliver the UK's energy requirements. I'm very proud of our role in shaping this work in the last 12 months. Our work on the Bridgend Future Modelling project, for example, has enabled us to clearly articulate key facts about future energy solutions and in doing so, we have developed a fuller understanding of what this means for customers in the future. This learning will allow us to continue to play an active role in shaping the future energy landscape and allows gas networks to invest wisely to meet the challenges ahead. This work, alongside our work on the customer tool Futurewave – which will help customers make the best choice to meet their energy needs – and operational innovations like the rapid steel pipe cutter, is preparing us for the future while allowing us to continue to deliver outstanding levels of service today.

But we don't innovate in isolation. We are working not only with other gas networks on projects but also businesses of all sizes, universities and the Energy Innovation Centre. The NIA scheme has delivered successes – and it is beholden on us as an industry to continue the momentum that has built up since it began.

Our vision of the future is clear. Gas has a key role to play in the future energy mix and, through innovation, we can continue to make sure that we provide an energy supply that is affordable, secure and sustainable for today and tomorrow.



**Graham Edwards** Chief Executive



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## Our year at a glance



## Introduction and key achievements

We are pleased to present this third annual summary of our innovation achievements, supported by funding through the Network Innovation Allowance (NIA).

Our innovation strategy is driven by our key business priorities, which help us deliver excellent customer service, reduce our contribution to our customers' bills and operate a safe and reliable gas network while minimising our environmental impact.

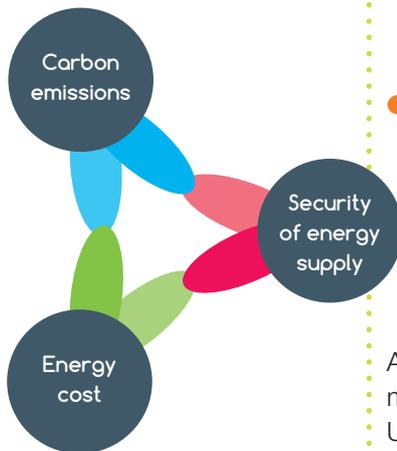
Collaboration and sharing innovation with others is central to delivering our business innovation strategy and we are now working with more partners than ever before. Almost 70% of our projects have been delivered while working with others.

We are proud of our 'small innovation team, big delivery team' approach. In this report, we feature a range of projects that show the success of our approach. Our highlights include:

- **The Acoustek innovation project** which can detect blockages or features within a pipeline using sound waves. This technology delivers a solution for faster location of problems that saves time and reduces the cost of our essential works. We are proud of our project partners at the University of Manchester, who won the Best University Technology Award for their work at the Energy Innovation Awards.
- **Bridgend Future Modelling** analyses the energy trilemma from the customer's perspective. It aimed to find out what a future energy network that could address the energy trilemma would look like. We completed a series of case studies to model future energy demand, potential ways to meet that demand and the ability of residents to pay for this. The report provided valuable information for the Climate Change Committee in its report published in 2016.

As our 2014/2015 report outlined, our innovation focus for 2015/2016 was on making sure we understand the role gas could play in the energy future of the UK. In the recent past, the expectation from the government and others has been that gas networks would be switched off within the next 20-30 years, to be replaced by electrified heat. However, it is becoming clear that the electrification of heat brings with it many challenges – both technical and economic. We think that the work we are doing with partners demonstrates that gas and gas distribution networks are key to a future energy supply that is affordable, secure, reliable and environmentally sustainable.

### The Energy Trilemma



## Key achievements

- We took part in 33 innovation projects. Of these projects, 22 were worked on collaboratively with one or more of the other Network Licensees. We were the lead gas distribution network on seven of these projects.
- As well as fostering new innovation, we worked hard to embed innovation projects from previous years into our day-to-day activities for the benefit of our customers and other stakeholders.
- An example of innovation that is now business as usual is the ductile iron window cutting tool. It ultimately reduces the time our customers are off gas during essential gas pipe replacement work, reducing the level of disruption experienced. This project was completed in 2014/2015 and we have been training our operatives to use the tools in 2015/2016.
- We continue to achieve high customer service scores as reported to Ofgem, while winning the prestigious IGEM Customer Service Award in 2016 – the sixth time in the last eight years.
- The time that customers are off gas during planned work has reduced by 7% in this period.
- We retain our Institute of Customer Service accreditation at Distinction level, one of the only five companies in the UK with this honour – the only network and the only utility.
- Winners of the RoSPA Gold Award for an unprecedented third consecutive year – recognising our excellence in managing safety and our industry-leading performance.
- The first gas company in the world to achieve certification to ISO 55001, the standard for asset management.
- We won the BITC Responsible Large Business of the Year Award in 2016 – for the values that drive everything we do, including our innovation work.



RoSPA Gold Award winners for the third consecutive year



Success at the IGEM Gas Industry Awards in 2016



BITC Responsible Large Business of the Year Award 2016

## Our innovation strategy

### Strategy

Innovation has always been central to driving our business forward. Since 2013 when the NIA incentive began, we have developed our innovation strategy and reviewed it annually. As the needs of our customers and our stakeholders have evolved, so has our strategy.

All our innovation is driven by our five business priorities which reflect what's really important to our business – including the regulatory outputs we deliver. Our priorities help us make sure we meet the needs and expectations of all our customers and stakeholders today and into the future.

**Put simply, our strategy is to deliver benefits for our customers through innovating year on year – while embedding what we've learnt and developed already within our business.**

#### Demanding SAFETY ALWAYS



We keep raising the bar on safety, continually looking for ways to improve standards for our customers and colleagues.

#### Driving OUTSTANDING SERVICE



We work hard to give our customers a reliable service and peace of mind by putting their needs at the core of our business.

#### Delivering VALUE FOR MONEY



We spend money wisely based on what will give the very best value, every time.

#### Doing all we can to PROVIDE A RELIABLE GAS SUPPLY & PROMOTE SUSTAINABILITY



We are committed to providing a reliable gas supply for our customers whilst protecting and helping the environment for today and for the future.

#### Designing

#### OUR FUTURE



We invest in our people so that we all have the skills, confidence and innovative thinking to build our business long into the future. We want to be a company people aspire to work for.

As this report outlines, a particular focus for 2015/2016 has been the work to prepare our business – and our industry – to meet the challenges of the future. These challenges can be summarised as:

- The need to deliver a reliable, affordable and sustainable energy future to meet the long-term needs of our customers and our other stakeholders.
- Managing and upgrading an ageing infrastructure to make sure our customers continue to receive a safe and reliable supply of gas.
- Continuing to innovate to make sure that the tools and techniques we use keep our colleagues and our customers safe while delivering value for money.

## Governance



All innovation ideas (we had 151 during 2015/2016) are rigorously evaluated by our innovation team. They are assessed against our business priorities (how are they going to contribute to improving outcomes for our customers and our stakeholders) and ease of implementation versus benefits for the customer.

Before being selected for development, they are reviewed by our innovation committee as well as our innovation steering group made up of five of our eight executive team members and several senior managers. They review the quality and effectiveness of our ongoing innovation portfolio monthly, which allows us to respond quickly to feedback and incorporate it into our future planning.

This thorough process and ongoing monitoring makes sure that every project we select for development has the potential to provide real benefits to our customers.

## Delivery

### Small innovation team, big delivery team

We have a small innovation team that uses its knowledge, expertise and contacts across our business and externally to manage our innovation portfolio. This approach means that we can create knowledge and enthusiasm for innovation in general – as well as for specific projects.

Our innovation committee has representatives from every part of our business and our executive team, including all our operational processes. They act as innovation ambassadors, helping us deliver and embed innovation, and passing on relevant feedback from those most directly involved in delivering the project. This makes sure that all our innovations are tested by those who will be using them the most – our colleagues.

Having a delivery team made up of our whole business brings another benefit too: inspiring innovation. We're proud that a significant source of innovation – up to 40% of the project ideas we receive – is our own colleagues, and we are always looking for new ways to gather their ideas and tap into their experience.

## Working with partners



Innovation Summit

We regularly go outside our business and our industry to solve problems and develop potential solutions. This includes membership of the Energy Innovation Centre (EIC). This is one way we launch calls for innovation to deliver solutions to operational or process challenges we face.

Collaboration is central to delivering our business innovation strategy and we are now working with more partners than ever before. We have built new relationships in addition to maintaining strong relationships with our existing project partners, suppliers and businesses of all sizes, and are working closely with other gas distribution and transmission networks, our Alliance contractor partners and other utility companies.

Working with partners has brought good results, including the 'Hornet' rock drill which we implemented this year. The 'Hornet' – a rock drill on a frame that limits the vibration experienced by the operator – was identified by a call for innovation through the EIC and has now been purchased and rolled out across our operational teams.

We have established some great ways of communicating, whether this is through calls for innovation, partners approaching us with an idea directly, breakfast briefing sessions, meetings at conferences or exhibitions, and through the use of social media like Facebook or Twitter.

The Hornet



A Wales & West Utilities collaboration event

As part of our desire to be as accessible to customers and other stakeholders as possible, we have recently rebranded our business, including a refresh of our major communication channels like our website.

We take advantage of this, and our social media strategy, to promote the work we do on innovation. As part of this, we have developed a series of animations to promote our challenge areas and make it easier for people to bring ideas to us which can be viewed at [www.wvuutilities.co.uk/innovation](http://www.wvuutilities.co.uk/innovation). If you are reading this online, you can click on the image below.



## Why innovate?

Our sector is dynamic and innovative – and the innovation incentives play a part in this.

We recognise the importance of always challenging ourselves and each other to find better ways of doing things. Put simply, it is just good business practice – generating cost savings, improving service and ensuring safety standards and reliability of supply. Innovation is supporting our core company priorities and values at every level of our business.

And what's really great is that our colleagues are fully engaged in shaping and designing our future, too. From supporting our values-based culture by generating ideas to implementing innovations and embedding what we have learnt and developed at every stage, colleagues are key to this success so that all our innovations deliver real benefits for our customers so they have a gas supply that is affordable, safe, reliable and sustainable.

**Operations Health & Safety Manager Robert Williams showcases our HAV monitoring system to delegates at the 2015 Low Carbon Networks and Innovation Conference**



## Project progress update

In 2015/2016, we invested £1.1 million in 33 innovation projects, with support funding from the NIA incentive. So far this year, we have finished 14 projects, including:

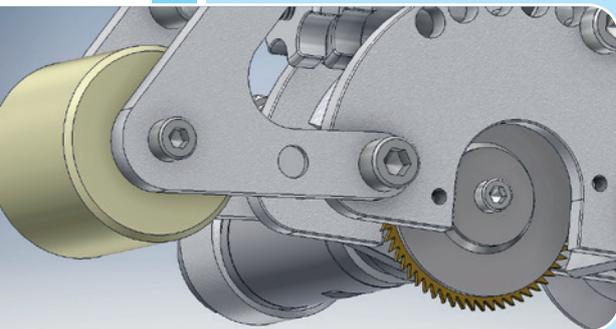
- research work modelling the future of our industry and the future needs of our customers
- researching the suitability of lead crystal battery technology
- ways of reducing leakage from our network
- research on investment prioritisation methods
- work to treat and, where appropriate, reuse sludge from redundant gasholders.

The projects that we have ongoing include more work on the future of the industry, developing new and safe ways of exchanging fittings, assessing pipe lining systems, and work to use sound to detect pipeline features. We are also continuing our work on protecting our customers from the dangers of carbon monoxide, with a trial of intelligent CO monitors.

The graphic below outlines a selection of our 2015/2016 projects – the summaries demonstrate the need and challenge we have addressed and the impact that the innovation has on our business and our customers.

### Rapid Steel Pipe Cutter

**KEY FACTS:** Finishes – October 2016    Collaboration – Wales & West Utilities only



#### NEED

We want to use the most efficient methods of replacing our old metal gas pipes

#### CHALLENGE

To develop a hand-held tool that will safely, swiftly and successfully cut through steel pipes without damaging the newly inserted PE pipe to give improved value from our essential works

#### IMPACT

Reduce the size and duration of our street works activities that affect our customers – minimising disruption and reducing cost



## Development of gas industry specification for polymeric pipe lining systems for multi-occupancy buildings

**KEY FACTS:** **Finished** – December 2015 **Collaboration** – Wales & West Utilities, NGN, NGGD & SGN

Delivering  
**VALUE**  
FOR MONEY 

### NEED

We want to develop alternative methods to upgrade our old metal gas pipes on high rise buildings

### CHALLENGE

To develop a specification that can be used to assess the performance of a riser pipe lining system

### IMPACT

A structured approach to allow GDNs to assess riser lining technologies equally and make informed decisions on their requirements – providing a cost-effective and efficient way to extend the life of riser systems with less disruption to our customers

## Futurewave phase 3

**KEY FACTS:** **Finishes** – February 2017 **Collaboration** – Wales & West Utilities, NGN, NGGD, SPEN & SSE

### NEED

Energy consumers have no tools to help them make informed energy choices between energy sources, e.g. gas, electricity and oil

### CHALLENGE

Create an online energy option comparison platform that also acts as a funding and development hub that helps match innovative ideas with investment backing

### IMPACT

Will simplify customers' lives and support the development and efficient delivery of energy solutions

Driving  
**OUTSTANDING**  
SERVICE 

If you're reading this online, you can click on the image, right, or go to [www.projectfuturewave.com](http://www.projectfuturewave.com)

# Futurewave

The new path to better energy solutions



## Concur

**KEY FACTS:** Finished – June 2016    **Collaboration** – Wales & West Utilities, NGN, NGGD, NP, SPEN & SSE

### NEED

Customers expect more from companies, and businesses that provide them with services and utilities are no different. With customers potentially confused between suppliers and energy networks, the industry as a whole needs to keep pace with customers' requirements

### CHALLENGE

To deliver a feasibility study in order to understand customers' knowledge of the energy industry, utilities' use of customer data and to explore existing and future channels of communication between utilities and customers

### IMPACT

Studies showed that creating a new industry-wide customer database using combined data could deliver benefits to existing and future customers

Driving  
**OUTSTANDING  
SERVICE**



## Smart Pressure Sensor

**KEY FACTS:** Finishes – May 2017    **Collaboration** – Wales & West Utilities only



### NEED

We want to improve the availability and accuracy of our gas pressure test readings

### CHALLENGE

Develop a tool that combines with a smartphone app to provide us with a digital record telling us where and when it's been taken, and its success result

### IMPACT

Improved gas tightness testing and recording to ensure the safety of our customers and colleagues

Demanding  
**SAFETY  
ALWAYS**



## Intelligent CO monitors

**KEY FACTS:** Finishes – September 2016    **Collaboration** – Wales & West Utilities, NGN & NGGD

Doing all we can to  
**SAFETY**  
ALWAYS 

### NEED

We want to test a new design of battery-powered CO monitors that allow CO to be monitored remotely

### CHALLENGE

To demonstrate that the new CO monitors are reliable and efficient as well as economically viable and make sure they protect from the dangers of CO – including at low exposure levels

### IMPACT

Confidence that the new CO monitors can deliver a reduction in call-outs to CO false alarms and an increase in reporting speed

## Network outputs measure risk trading methodology

**KEY FACTS:** Finishes – April 2017    **Collaboration** – Wales & West Utilities, NGN, NGGD & SGN

Doing all we can to  
**PROVIDE**  
**A RELIABLE**  
**GAS SUPPLY**  
& PROMOTE SUSTAINABILITY 

### NEED

A common framework to assess the health and risk of our assets to enable effective and efficient decision-making

### CHALLENGE

To develop a consistent reporting methodology between GDNs to allow risk trading between gas assets

### IMPACT

Optimised investment in our assets and maintaining the low cost of gas transportation to our customers

## Project Blackout

**KEY FACTS:** Finished – July 2016    **Collaboration** – Wales & West Utilities only

Doing all we can to  
**PROVIDE**  
**A RELIABLE**  
**GAS SUPPLY**  
& PROMOTE SUSTAINABILITY 

### NEED

To develop a way to control the flow of gas remotely during a fault situation

### CHALLENGE

To send an automated gas flow profile to a site that is held locally to maintain the ideal flow of gas and reduce the urgency of sending resources to site

### IMPACT

We will provide a safe and reliable gas supply to our customers




 Designing


 OUR FUTURE

## Designing our future

The future is now. At Wales & West Utilities we are passionate about having a leading voice on the challenges and opportunities to develop energy plans that will play a vital role in identifying and developing secure, affordable and sustainable energy systems that meet the needs of our customers now and in the future. We have a range of projects that we have started this year to help us do so and a selection are explained below.

### Bridgend Future Modelling

**KEY FACTS:** Finished – December 2015    **Collaboration** – Wales & West Utilities only

#### NEED

We need to find out what a future energy network that could address the energy trilemma would look like – so our customers can receive affordable, secure and sustainable energy, particularly heat

#### CHALLENGE

To complete a series of case studies to model future energy demand, the potential ways to meet that demand and the ability of the residents to pay for the changes

#### IMPACT

Our case studies have been shared with policymakers to help them and us to invest wisely in a low carbon future

### H21 Leeds

**KEY FACTS:** Finishes – January 2017    **Collaboration** – Wales & West Utilities & NGN

#### NEED

We want to see if a hydrogen-based distribution network for cooking and heating would be possible

#### CHALLENGE

Research the challenges, benefits, risks and opportunities of converting a major UK city to hydrogen using the existing gas network

#### IMPACT

Our progress suggests that using the existing gas network to distribute hydrogen is feasible and it could play a key role in the future energy mix



## Gas CHP impact study

**KEY FACTS: Finishes** – January 2017

**Collaboration** – Wales & West Utilities, NGN & Element Energy

### NEED

We want to understand the role gas distribution networks could play in the deployment of Micro CHP (mCHP) technologies – and the impact it could have on the future energy mix

### CHALLENGE

To identify the potential benefits of mCHP technologies and how they could contribute to meet both peak energy and heat demand

### IMPACT

Identifying important outcomes that will help gas distribution networks to facilitate the growth of mCHP technologies

## CO<sub>2</sub> capture through mineralisation

**KEY FACTS: Finished** – June 2016

**Collaboration** – Wales & West Utilities, NGN & Cambridge Carbon Capture Ltd

### NEED

Renewable sources of gas like biomethane need acid gas removal before entering the distribution network. The current process vents CO<sub>2</sub> to the atmosphere. An alternative is desired

### CHALLENGE

Demonstrate the feasibility of CO<sub>2</sub> capture through mineralisation and assess the potential route to market

### IMPACT

Mineralisation of CO<sub>2</sub> would support GDNs work to meet carbon reduction targets, while the process is a negative CO<sub>2</sub> emitting fuel – the more it's used, the less CO<sub>2</sub> there will be in the atmosphere

## Impact of distributed gas sources in UK

**KEY FACTS: Finishes** – October 2016

**Collaboration** – Wales & West Utilities, NGGN, SGN & Element Energy

### NEED

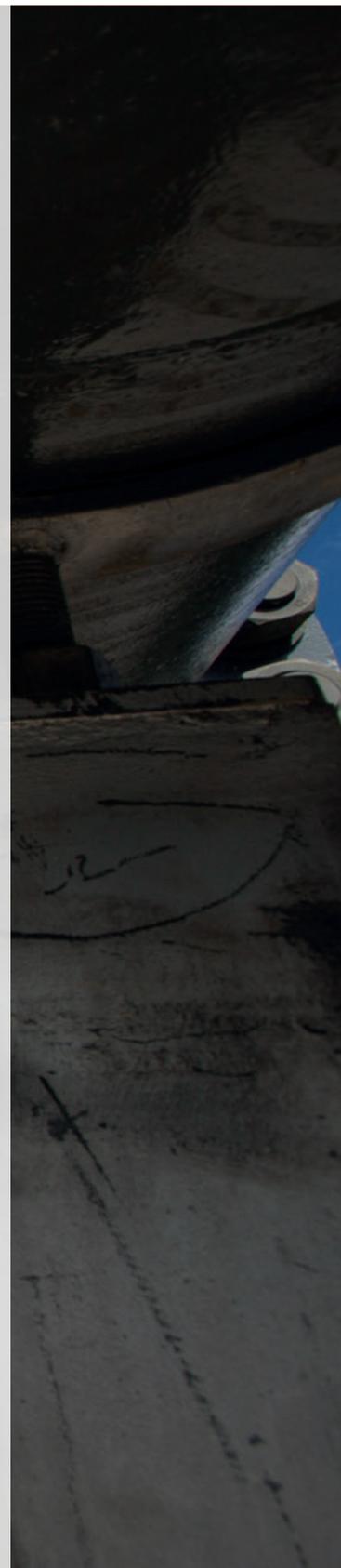
We want to understand the impact on gas distribution networks of new sources of distributed, unconventional and greener gases

### CHALLENGE

Produce an assessment to better understand the implication of distributed, unconventional sources of gas for distribution networks

### IMPACT

A recommended action plan to overcome the barriers identified to accommodate new greener gas sources within our network





## Learning and sharing

By working together with others, trialling new techniques and implementing our successful projects as well as learning from successful projects completed by others, we can continue to meet the needs and expectations of our customers today and into the future.

### What have we learnt this year?

Collaboration is the new competition

Of the  
**33**  
projects we  
worked on in  
2015/2016

**22**  
of them are in  
collaboration with at  
least one of the other  
gas networks

We've achieved successes through innovation, but we know that we haven't got all the answers within our company. So, we've learnt that collaborating with others, including businesses and universities, to share problems and ideas will deliver the intended result, be it new products, services, processes or research. We also work within the Welsh Assembly's open innovation scheme to learn from others both inside and outside the utility industry, while the Energy Innovation Centre continues to be a source of ideas and technologies to help us meet our challenges.

#### Projects

Some examples of completed projects that have added value to our business are:

### Ductile iron window cutter tool

**KEY FACTS: Shared** – January 2015

**Who has learned** – Wales & West Utilities, NGGD, NGGT & SGN

#### WHAT WE SHARED

The trial results and supporting information of a hand-held tool successfully developed from a conceptual idea to a commercially ready product

#### WHY

To share the benefits of the new method to safely, swiftly and successfully cut through ductile iron pipes without damaging the newly inserted PE pipe to give improved value from our essential works

#### IMPACTS AND BENEFITS

A reduction to the size and duration of our street works activities that affect our customers – minimising disruption and reducing cost

## Acoustek

**KEY FACTS: Shared** – June 2016

**Who has learned** – Wales & West Utilities, NGGD, NGN & SGN

### WHAT WE SHARED

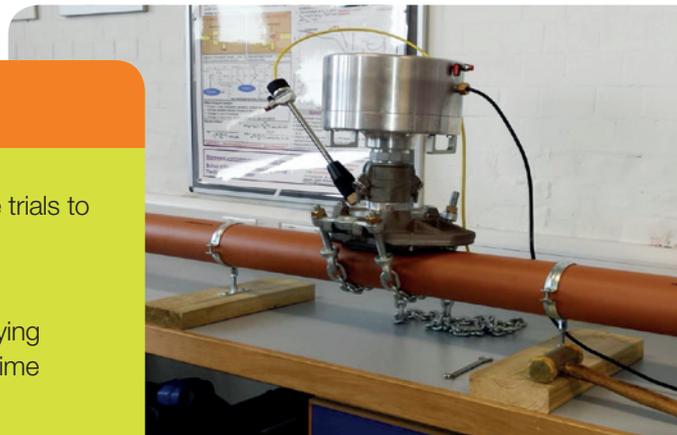
The results of an exciting new technology successfully tested in live trials to detect blockages or features within a pipeline using sound waves

### WHY

To give our engineers newer, quicker and lower-cost ways of surveying blocked or damaged pipes without needing to dig up roads every time

### IMPACTS AND BENEFITS

The learning from this project will be developed into the next project phase



## Low Carbon Networks and Innovation Conference

A team of colleagues were among 1,200 delegates for one of the most important energy events of the year – the 2015 Low Carbon Networks and Innovation Conference.

Our stand featured information on five successful projects and our colleagues played a key role in presenting a range of breakout sessions. These included sessions on the future of gas, as well as organising two project demonstrations and participating in a careers event.

Staged over three days in Liverpool, the conference was a chance for us to share some of our most innovative work and see first-hand what other networks and businesses were working on.



## Gas Innovation Governance Group

We work in an exciting and constantly shifting industry, so there are always plenty of changes and innovations on the horizon. We currently chair the Gas Innovation Governance Group (GIGG), a collaboration forum hosted by the Energy Networks Association. It brings together the ownership groups of all of the regulated gas distribution and transmission companies.

Through our influence of the chair position, we have led the group to put more of a focus on the outcomes of completed gas innovation projects to identify common learning points for future projects. Seeking to learn and discover new possibilities in this way gives us the maximum chance to review and adapt to the latest available technologies to improve the quality of our projects and give us the best chance of successful delivery.

**14 NIA projects  
completed by  
Wales & West Utilities  
and shared with  
the industry  
this year**

## Looking ahead

Our core business priorities and values will remain central to our innovation strategy in the future. We continue to focus on the future role of gas to help deliver the UK's energy requirements.

Using our strong connections with academia, industry experts, housing providers and the government, we will seek opportunities during 2016/2017 to demonstrate potential solutions to the findings of our earlier research projects. We will continue to participate in projects that will trial and demonstrate emerging technologies and seek to further understand and overcome the barriers identified in our NIA projects such as Bridgend Future Modelling. The challenges of this will be to discover how cost effective, sustainable and practical these emerging technologies can be.

We have also built an energy simulator – taking into account heat, light and power demands. We have used this to assess the Cornwall Energy Island programme (a joint venture between Cornwall County Council and the Eden Project). The results of this study demonstrated that the proposed solution (to make Cornwall self-sufficient on renewable energy alone) is not technically feasible. We will be working with Cornwall Energy Island to assess other potential ways of meeting Cornwall's energy needs, particularly focusing on biomethane and hydrogen.

Additionally, we plan to study the impact of climate change to our assets.

We held four engagement workshops across our network in April 2016, which were attended by 107 of our stakeholders including local authorities, charities and customer groups. In table discussion groups, we explained the work we have already done so far on climate change impact mapping, in addition to our plans to build on the work to further communicate and share learning with the wider utility sector. All of the table discussion groups agreed with this planned activity, with 53% of attendees notably wanting us to do more than we propose. Taking the pilot project through to a demonstration scale testing in a live asset management environment helps to meet the expectations of our stakeholders and secure the resilience of our network in a changing climate.

It will take three years to complete and will involve a full-scale demonstration to develop climate change impact mapping for the Wales & West Utilities distribution geography.

## Annual project summary

NIA ref	Title	Outline	Status	Collaboration between	Completion date
<b>Wales &amp; West Utilities-led projects</b>					
NIA_WWU_032	Assessment and benchmarking of low carbon heating technologies	Reviewing emerging heating technologies to detail the cost and carbon savings of each	Complete	WWU	04/2016
NIA_WWU_024	Bridgend Future Modelling	Developing a bottom-up analysis of the alternative low carbon heating solutions	Complete	WWU	06/2015
NIA_WWU_026	Bridgend Future Modelling – Phase 2 – Willingness to Pay	Investigating customer ability and desire to pay for alternative energy sources	Complete	WWU	08/2015
NIA_WWU_028	Bridgend Future Modelling – Phase 3 – Required Policy Changes	Research to examine current policies and financial incentives schemes that may facilitate a low carbon energy future for the UK	Complete	WWU	12/2015
NIA_WWU_009	Investment prioritisation in distribution systems	Identifying and recommending transferable practices from the water sector	Complete	WWU, NGGD, NGN, SGN	11/2015
NIA_WWU_023	Lead crystal battery assessment	Research to assess the benefits of battery technology	Complete	WWU, UKPN, SGN, NGN	10/2015
NIA_WWU_0016	Treatment and reuse of gasholder sludge	Developing a full-scale, cost efficient, sustainable solution	Complete	WWU	11/2015
NIA_WWU_017	Iron mains condition assessment system (phase 3)	Looking at developing a tool, systems and processes to travel through and determine the condition of live 12" diameter iron mains	Complete	WWU, NGGD	05/2015
NIA_WWU_025	Project Futurewave – Phase 2 (Digital Prototype)	Developing an electronic platform to help customers decide on the best energy option for their home	Complete	WWU, NGN, NGGD, SSE, SPEN	01/2016
NIA_SGN_0045	Orbis Oxifree (TM198) corrosion coating	Validate Orbis Oxifree Corrosion Prevention Coating's suitability for use on gas networks	Complete	WWU, NGGD, NGN, SGN	05/2016
NIA_WWU_030	Project Blackout	Designing and developing a solution to manage flow at offtake stations if there is a power outage	Ongoing	WWU	07/2016
NIA_WWU_031	Cornwall Energy Island	A study to understand the self-sufficiency of localised energy generation and usage	Ongoing	WWU	07/2016
NIA_WWU_022	Gas CHP impact study	Understanding the benefits and challenges presented by the technology	Ongoing	WWU, NGN	09/2016
NIA_WWU_029	Rapid steel pipe cutter	Designing and developing a prototype cutter for steel mains	Ongoing	WWU	10/2016
NIA_WWU_021	Smart pressure sensor device	Developing a pressure sensing device that will allow digital measurement of test and installation pressures	Ongoing	WWU	05/2017
NIA_WWU_020	Smarter network control	Investigating an alternative Pressure Control System to the current manually intensive systems	Ongoing	WWU	11/2015
<b>National Grid Distribution-led projects</b>					
NIA_NGGD_0007	Development of DANINT FWAVC software for new gas chromatograph	Reviewing and trialling engineering software for data management of gas composition	Complete	WWU, NGGD, NGN, SGN	04/2016

Continued >

NIA ref	Title	Outline	Status	Collaboration between	Completion date
NIA_NGGD_0032	Intelligent CO monitors	A trial deployment of Smart Compliance Ltd sensors, which will allow the remote monitoring of CO alarms	Complete	WWU, NGGD, NGN	03/2016
NIA_NGGD_0033	Multi-occupancy building Cured In Place Lining (HTC Serline)	Assessing the performance of HTC's small bore riser pipe lining system	Complete	WWU, NGGD, NGN	07/2015
NIA_NGGD_0035	Multi-occupancy building Cured In Place Lining (Nu Flow)	Assessing the performance of Nu Flow Technologies' small bore riser pipe lining system	Complete	WWU, NGGD, NGN	12/2015
NIA_NGGD_0055	Development of gas industry specification for polymeric pipe lining systems for multi-occupancy buildings	Developing a specification test procedure protocol to enable the validation of "fitness-for-purpose" of any technology for riser pipe lining systems	Complete	WWU, NGGD, NGN, SGN	12/2015
NIA_NGGD_0056	Network outputs measure risk trading methodology	Developing processes and practices to measure the value delivered through spend on gas assets	Complete	WWU, NGGD, NGN, SGN	12/2015
NIA_NGGD_0059	Impact of distributed gas sources on the GB gas network	Identifying the economic, technical and operational impacts of new gas sources	Ongoing	WWU, NGGD, SGN	01/2017
NIA_NGGD_0058	Network outperformance measure risk trading methodology – Stage 2	Using the phase 1 process/procedure to assess more asset groups	Ongoing	WWU, NGGD, NGN, SGN	04/2017
NIA_NGGD_0072	Project Futurewave – Phase 3 (Pilot)	Develop and pilot the digital platform with UK customers	Ongoing	WWU, NGN, NGGD, SSE, SPEN	02/2017
<b>Northern Gas Networks-led projects</b>					
NIA_NGN_118	CO <sub>2</sub> capture through mineralisation	Demonstrating the feasibility of a new way of capturing carbon from renewable gas	Complete	WWU, NGN	07/2016
NIA_NGN_142	Project Concur	Investigating the feasibility of collaboratively improving customer service for the sector	Complete	WWU, NGGD, NGN, NP, SPEN, SSE	06/2016
NIA_NGN_049	Technologies and strategies to reduce gas leakage expenditure profile	Understanding any transferable practices for leakage management	Complete	WWU, NGN	07/2015
NIA_NGN_114	H21 Leeds Citygate	Studying the possibility of converting a major UK city to hydrogen using the existing pipes and equipment	Ongoing	WWU, NGN	01/2017
NIA_NGN_119	Alternative ECV Exchange Kit	To design, develop and trial a new method to exchange a fitting	Ongoing	WWU, NGN	07/2016
<b>SGN-led projects</b>					
NIA_SGN_0023	Cured In Place Pipe (CIPP) stage two	Testing the available methods of liner for use as a rehabilitation technique	Complete	WWU, NGGD, NGN, SGN	04/2015
NIA_SGN_0044	Acoustek	Investigating the use of sound to detect pipeline features	Ongoing	WWU, NGGD, NGN, SGN	05/2016
NIA_SGN_0094	Energy Map and Plan	Researching the energy network of the future	Ongoing	WWU, NGGD, NGN, NGGT, SGN	12/2016

For further information on our projects, including project progress and closure reports, please go to the learning portal at: [www.smarternetworks.org](http://www.smarternetworks.org)