

# 2021 Long Term Development Statement

Wales & West Utilities Ltd



REPORTS



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## Foreword



**Sarah Williams**

Director of Regulation & Asset Strategy

Welcome to our Long Term Development Statement for 2021. This document provides an indication of the usage for our pipeline system and likely developments. It is intended to help companies that are contemplating connecting to our system or entering into transportation arrangements to identify and evaluate opportunities. We may still be working in a very different way today due to the Coronavirus pandemic, but that has not stopped us from continuing to plan for the future of the gas network.

The statement reflects our 2021 planning process and incorporates a reappraisal of our analysis of the market and of the demands on our network. As such it contains the latest information on volumes, the processes we use to plan the development of the system (including demand and supply forecasts), the impact of greater integration of electricity and gas networks, and system reinforcement projects with associated investment.

This past year has been an important one in the designing and developing of our long-term plans, as well as listening and responding to the needs of our customers. The energy sector remains under the spotlight and is clearly central to delivering “Net Zero” by 2050. We’re dedicated to working collaboratively to support a Green Recovery out of Covid-19.

This is the first statement that we are publishing during our second price control period, known as RIIO-GD2. We are now working towards delivering the requirements of the final determinations.

Our current focus builds on the changes we are already seeing in the energy sector, with gas and electricity, transmission and distribution fast becoming a series of complex and dynamic interactions. All work undertaken is based on a broadly defined whole systems approach to decarbonisation.

Turning now to look back at our performance this year, some highlights of 2020/21 include:

- WWU continues to develop the Pathfinder 2050 model that enables low carbon alternatives to be evaluated at individual property level. The recently upgraded model allows us to view the impact of increased integration of the gas and electricity networks, and to provide impacts in terms of costs and CO2 reduction for customers.
- Our recently commenced collaboration with Energy Systems Catapult (ESC) and Costain seeks to develop our vision for the decarbonised future of our network into a more detailed conceptual design. Following literature review and expert interviews, ESC will model multiple scenarios based on whole-system approaches, developing pathways out to 2050 at five-year intervals.

Our focus on putting customers first has brought significant success again in 2021, this year our efforts have been recognised across the board with:

- Gained recertification of the ISO 14001 accreditation from the International Organisation for Standardization (“ISO”) following a recertification audit of the Environmental Management System which was undertaken.
- WWU gained recertification of the new international standard of ISO 45001, Occupational Health and Safety Management Systems. WWU is delighted to retain this certification to the newer and more onerous standard - this is an excellent success story and will place WWU at the forefront of businesses looking to make this accreditation upgrade. WWU is the first Gas Distribution Network (GDN) to achieve this.
- WWU received a “Gold Award” from RoSPA – for the eighth consecutive year – in recognition of our industry-leading health and safety performance and commitment.
- Safety Award at the IGEM Gas Industry Safety Awards.
- Accreditation for Achilles Health & Safety achieving 100% for the seventh successive year.

We are proud of all these achievements as we continually seek to further improve the service we provide to customers.



Sarah Williams  
Director of Regulation & Asset Strategy

# 1. Executive summary

## 1.1 Context

This document contains our annual and peak demand and supply forecasts. These forecasts have been developed in conjunction with National Grid – Electricity System Operator (NG-ESO) and through our own modelling and analysis.

We are required to publish this annual statement in accordance with Standard Special Condition D3 of our Gas Transporters Licence and Section 4.1 of the Uniform Network Code (UNC) Transportation Principal Document.

Our forecasting methodology has encompassed the results of our Regional Future Energy Scenarios (FES) innovation project, as well as the final results of our collaborative GDN Gas Demand Forecasting project.

Improved forecasting techniques include new approaches for forecasting flexible gas generation using electricity market information. Our forecasts are now presented in a range of low to high growth scenarios owing to some uncertainty in housing and power generation growth.

## 1.2 Demand and supply outlook

As a result of our modelling our peak demand is now forecast to increase in the range of 11 to 15% in the next 10 years.

We have continued to work with our biomethane customers who have sites that they wish to connect to our network. We have 19 biomethane sites delivering green gas into our network and although we have not connected any further sites this year, we also have a further 6 accepted enquiries. In total the 25 sites would provide heat to over 180,000 homes if fed into a traditional heating system, or around a million hybrids. Our current projections to achieve net zero are for a number of new sites to connect during RIIO-GD2.

Research suggests that significant feedstock is available to support further growth in this area, and with a high proportion of the country prioritising hydrogen the potential for our region is substantial.

We are already experiencing entry capacity issues in parts of our network and have had issues with a small number of sites being backed out at periods of low demand, usually overnight in the summer. We proactively reconfigure local pressure settings to allow the biomethane site to take priority over our adjacent natural gas sites, with some success. However, as the number of connections to our network continues to grow, we will need to look at longer term, more sizeable solutions such as compression and storage.

Our [OptiNet](#) project, a collaboration with Cadent, is looking to investigate how using compression and other new technologies in parallel might alleviate such constraints and increase entry capacity. Through our work with the Energy Networks Association (ENA) on the Gas Goes Green (GGG) initiative, we are also collaborating with Northern Gas Networks (NGN)

to explore the potential for bringing existing biomethane to grid. This is combined with a review on the available techniques and methods to facilitate this injection like central hubs and reverse compression.

### 1.3 Industry developments

The UK is committed to legally binding obligations to eradicate the UK's net contribution to climate change by 2050. The UK Government's June 2019 decision provided much greater certainty about the timeframes our sector has to deliver a zero carbon energy system.

We are fully committed to achieving these targets and believe that the gas network can contribute to this. We have a clear vision of the role our network will play to decarbonise heat, power and transport in our regions, what needs to happen to facilitate this, and how much investment is required in RIIO-GD2. Our network will be able to support the required quantities of green gas, eliminating the need to use fossil fuels. We will have the flexibility to support flexible generation and transport, which in turn, supports the decarbonisation of the electricity and transport sectors.

It is widely acknowledged that whole system solutions that optimise energy flows across gas and electricity transmission and distribution networks will play a major part in facilitating the delivery of a sustainable energy solution for the UK. Increased integration of gas and electricity networks will result in changes on one network having the potential to impact another.

This year's UK Climate Change Committee (CCC) Annual Progress Report to Parliament noted that "Regulatory frameworks may need to evolve as new vectors emerge and with an increasing integration between systems (e.g. hydrogen, which will need to be produced using carbon capture and storage (CCS) or renewable electricity and could supply power generation, heating, transport and industry). Ofgem's recent decarbonisation action plan sets out Ofgem's initial thinking on the impact of Net Zero on its activities. Ofgem should also set out ambitious requirements for reductions in leakage of methane from the gas grid."

These impacts have again been accounted for in the forecasting models and research that we have undertaken this year. A couple of examples are given below and these and other projects are discussed further in Appendix 4.

- **WWU Net Zero-ready gas network by 2035**, the WWU vision enables decarbonisation of heat, as part of a wider, whole system pathway to mitigate the threat of climate change. Our ambitious whole system vision is to decarbonise heat, power and transport in our regions, delivering a net zero ready network by 2035. Based on a broadly defined whole system approach, our vision will facilitate low cost, reliable and sustainable energy for generations today and in the future.
- **Our Flexible Generation Forecasting project** is a collaborative project to identify the key drivers and datasets that will enable us to improve whole system forecasting and network planning / operation in close to real time to the benefit of control centres managing gas and electricity networks. This is necessary because we are seeing significant changes in the ways in which gas electricity generation is moving from base load to a more flexible responsive mode of operation as it is used to balance the intermittency of renewable generation supplies.

We are partnering with ESO, SP Energy Networks and NGN and the contractors are Delta-EE and Afry.

#### 1.4 Investment implications

Our stakeholders have told us that maintaining a safe, reliable gas supply is a key priority. We adopt innovative techniques to ensure efficient investment in network health through use of monetised risk models and have fed this analysis into our business planning processes.

Going forward we anticipate new requirements for compression, storage and smart control to accommodate increasing demands for flexible gas usage and injection from our customers.

We also anticipate that hydrogen uptake will be accelerated in response to the Government's net zero announcement. The mains replacement programme means that our networks are largely hydrogen ready in our low pressure distribution networks. As a result, minimal additional investment would be required to make them properly hydrogen ready in order to support the transformation across to hydrogen. That said, the volumes of hydrogen required to maintain energy demand will be greater when compared to natural gas and this will drive some level of investment in the network.

Data from our Regional FES indicates that blended hydrogen will be injected by 2027 in Wales and by 2030 in the South West of England. We also anticipate significant use of pure hydrogen to support industry in South Wales from 2030 which would then offer opportunities for use in other cities along the M4 to Bristol during RIIO-GD4.

#### 1.5 Innovation

Innovation is part of our DNA. It has helped us deliver benefits that go far beyond financial benefits to encompass safety, customer experience, value and reliability.

From our engagement we know that investing in innovation and working collaboratively with the wider industry to support national strategic energy challenges is an important priority to our stakeholders.

Our innovation focus areas for the 2020s build on the ENA's Gas Network Innovation Strategy. They are centred on the steps needed to deliver a net zero ready network to support decarbonisation, providing more from our current network to the homes and businesses that rely on us in their daily lives. Our network facilitates secure and resilient energy for heat, power and transport and enabling cleaner, greener energy is central to our ambition.

We are pleased that Ofgem have allowed the Network Innovation Allowance (NIA) expenditure in their final determinations and are keen to work with them to develop the rules of the NIA and Strategic Innovation Fund (SIF) including the use of the benefits measurement framework.

The continuation of the NIA funding mechanism will allow us to collaborate widely to create solutions to meet the challenging targets of Net Zero and address consumer vulnerability. Additionally, in supporting innovation, Ofgem has also developed the Net Zero & Heat Policy re-openers and the new SIF mechanism.