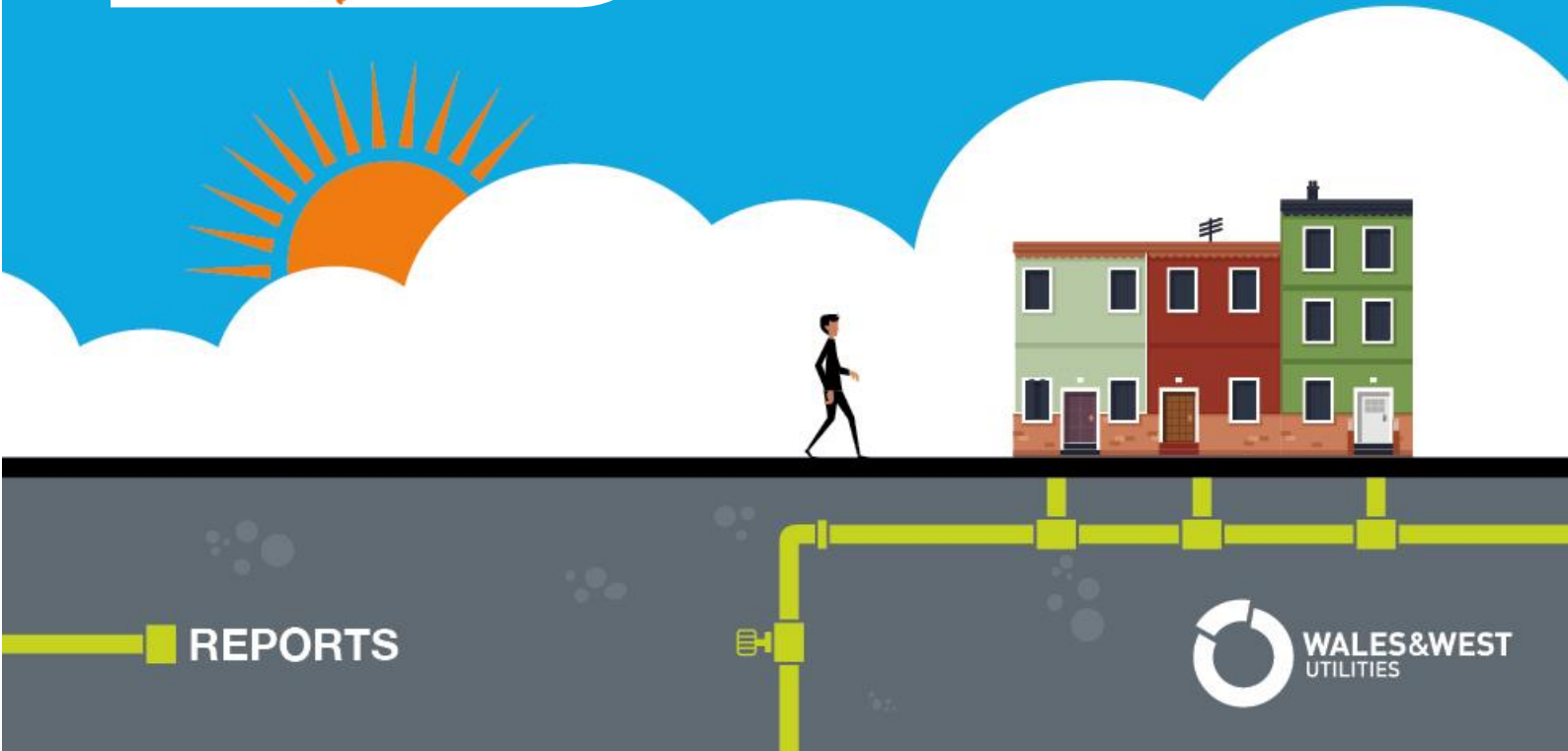
2020 Long Term Development Statement Summary

Wales & West Utilities Ltd



Foreword

Welcome to our Long Term Development Statement for 2020, a year that will certainly live long in the memory. 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. Coronavirus may have changed the way we work; however, we continue to plan for the future of the gas network.

Andrew Hopkins - WWU
Director of Asset Management, Health, Safety & Environment

The statement reflects our 2020 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 and associated investment.

This past year has been an important one in the designing and developing of our long-term future plans, responding to the Covid-19 pandemic as well spending more time than ever 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. Our response includes a commitment to deliver a net zero ready network by 2035 and we’re dedicated to working collaboratively to support a Green Recovery out of Covid-19.

We are publishing the statement just a few months before we receive the final determination of our business plan from Ofgem for the period 2021-26. Our plan sets out our ambitious vision, which is for our network to be net zero ready in our regions by 2035. This is our response to the climate change challenges we face, informed by the needs and wants of our stakeholders and underpinned by extensive research (both our own, and that of others). Our vision will also support the UK Government’s commitment to a zero carbon energy system

Our vision takes account of 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. It is based on a broadly defined whole systems approach to decarbonisation.

Turning now to look back at our performance this year, some highlights of 2019/20 include:

- The ENA Pathways project was launched in Wales and South West England in January 2020 and nationally that has progressed into the Gas Goes Green programme of work. The Pathways project report recommended a balanced approach to decarbonising heat, power and transport, with the headlines indicating a strong role for hydrogen for industry and large cities and the remaining areas dominated by wind / biogas hybrids. The Gas Goes Green programme sets out the detailed project areas and the road map to deliver them.

- We continue to play an important role in supporting third parties such as community energy projects and local authorities as they look for solutions to their energy needs and, in the case of local authorities, seek to act on their climate emergency declarations. This year we are undertaking a Tools of Engagement innovation project. This project will seek to create a set of tools and materials that will help local authorities better understand the energy system and the role they can play in helping to achieve net zero.

Our focus on putting customers first has brought significant success. It has also helped us meet our outputs under our regulatory framework, which we are on track to deliver for the full eight years. Our efforts have been recognised across the board with:

- Reaccreditation from the British Standards Institution, BSI for BS18477 for Inclusive Service Provision; demonstrating that we provide an inclusive service, available, usable and accessible to all consumers regardless of personal circumstance.
- Named winner in the Oil & Gas Industry Sector in the RoSPA Health and Safety Awards – the longest running industry awards scheme in the UK.
- Accreditation for Achilles Health & Safety achieving 100% for the seventh successive year.
- Initiative of the Year award from our Network Awards Partnership for our 'Above and Beyond Project'.

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

Andrew Hopkins
Director of Asset Management, Health, Safety & Environment

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 UK 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 Transportation Principal Document.

Our forecasting methodology has encompassed the results of our Regional 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 3 to 8% 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 do have a further 5 accepted enquiries. In total the 24 sites would provide heat to 177,000 homes if fed into a traditional heating system, or around a million hybrids. Our current projections to achieve net zero are for a further 25-35 sites to connect during GD2.

Research[1] 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.

[1] https://www.smarternetworks.org/project/nia_nggd0093

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.

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. Our business plan, which we published in December 2019, set out our ambitious plan to decarbonise heat, power and transport in our regions, delivering a net zero ready network by 2035.

We have a clear vision of the role our network will play, what needs to happen to facilitate this, and how much investment is required in 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 UKCCC 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 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 taken into account 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.

- **The HyHy** project examined how hydrogen and hybrids could decarbonise the heating of a city sooner and more effectively than alternatives. This model-based feasibility study sets out an achievable path to net zero which keeps disruption to communities and cost to customers as low as possible. The project studied the Welsh capital of Cardiff and simulated the decarbonisation of home heating in several different ways. It showed that using smart-controlled hybrid heating systems – where you pair a boiler with an air source heat pump – can reduce carbon emissions quicker. Hybrid installations of this kind use renewable electricity when it is available, and green gas like hydrogen and biomethane when it is not. It also reduces the amount of green gas needed to heat homes, relying on

electricity for 80% of the time and on hydrogen or biomethane to meet peak heat demand.

- **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, SPEN 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.

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 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.

In preparing our business plan, and having discussed our proposals with wide-ranging stakeholders, we have determined our innovation focus areas for the 2020s. These areas build on the ENA's Gas Network Innovation Strategy. They are centred on the steps needed to deliver a net zero ready network by 2035, 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 to see Ofgem have allowed the Network Innovation Allowance (NIA) expenditure we requested in our business plan in their draft 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.