2026 Exit Capacity Planning Methodology Statement

January 2026

WALES&WEST UTILITIES

Introduction

In December 2020 OFGEM published its RIIO-2 Final Determinations for the transmission and gas distribution price controls. These set out the key elements of the price control from 1 April 2021 to 31 March 2026. This included a new licence obligation for the gas transporter licence holders to comply with an enhanced obligations framework in relation to the exit capacity booking process.

Standard Special Licence Condition (SSC) A57 (Exit Capacity Planning) of the gas transporter licence requires the licence holder to comply with the Exit Capacity Planning Guidance.[1]

The Guidance sets out requirements across three key areas of capacity booking activity.

- **Methodology:** Gas Distribution Networks (GDNs) must provide information on the structure of their networks known as Network Topology, and both GDNs and National Gas Transmission (NGT) must provide information on their forecasts of demand and the details of the processes in place to calculate these forecasts.
- **Engagement:** The GDNs and NGT must collaboratively work with each other and with other stakeholders to maximise booking efficiency across the gas transportation network.
- **Reporting:** licensees must report annually to the Authority on capacity booking methodology, stakeholder engagement, decision-making and data to demonstrate efficient booking outcomes.

The purpose of this document is to fulfil the requirement set out within the Exit Capacity Planning Guidance (ECPG) to publish a methodology statement detailing the process used to assess National Transmission (NTS) exit capacity requirements, as outlined in paragraphs 3.2-3.6 of the Guidance.

This document covers the end-to-end process including the following process steps:

- Collection and processing of actual demand data
- Customer engagement and data collection
- Population of network analysis and other models
- Load and demand forecasting

In addition, the document explains how these forecasts inform our NTS Exit Capacity bookings.

If you have any queries, would like any further information, then please contact our planning team to discuss.[2]

1 Exit Capacity Planning Guidance | Ofgem

2 LTSAnalysisRequests_NMU@wwutilities.co.uk

Collection and Processing of Actual Demand Data

Pre-Forecast Data

Each year, the Central Data Services Provider (CDSP), Xoserve, provides the GDNs with summary data to support the development of their demand forecasting processes. This data is provided by the second Friday in February, it includes historic consumption and shrinkage during the previous calendar year, normalised to the Seasonal Normal Composite Weather Variable (CWV) conditions.

The dataset provides throughput volumes broken down into the following categories:

- NDM 0 to 73.2MWh per annum
- NDM 73.2 to 732MWh per annum
- NDM >732MWh per annum
- DM
- Shrinkage
- Industrial and non-standard demand data
- Total Local Distribution Zone (LDZ)

These volumes incorporate adjustments related to individual sites and aggregate Non-Daily Metered (NDM) reconciliations. They include the re-phasing of such adjustments into earlier years where appropriate.

New Loads Connected & Accepted

We receive confirmation from our connections team of the total number of new loads connected and disconnected in each LDZ in the previous calendar year. The data also includes the aggregate number of connected loads at year-end.

Large Load Data

Xoserve provides information on any large load consuming more than 58.6 GWh per annum, including:

- Loads connected during the previous calendar year
- Loads expected to connect to LDZ networks within the ten-year forecast period
- Any known or anticipated changes to existing loads exceeding 58.6 GWh per annum

DS8 – Large Load Data Report

A draft DS8 Large Load Data Report is produced, highlighting significant changes. This information is required to:

a) Update or add relevant loads to our network analysis models

b) Support National Gas Transmission (NGT) in their own demand forecasting activities

The DS8 is reviewed to ensure data accuracy and to confirm that any judgement-based decisions are appropriate, justified, and proportionate to the associated demand.

For each qualifying load, the information provided should include, where applicable:

- Expected 1-in-20 peak day demand
- Annual demand
- Supply type
- Category or nature of the load
- Expected date of first gas flow

- Any anticipated phasing or incremental build-up of demand

Summary

All relevant information from internal business sources and Xoserve is provided to NESO's Demand Forecasting team for inclusion in their forecasting process. The files sent across include:

- Information from the DS8 review
- The Local Transmission System (LTS) Quoted UIP and Non-Standard report from the Connections team
- Pre-Forecast information from Xoserve.

Further details on Xoserve's published methodology can be found here

Customer Engagement and Data Collection

Summary

Regular, structured engagement with our stakeholders as detailed above is essential to support accurate offtake capacity bookings and efficient planning of our network. In this section of the methodology, we have demonstrated the range of stakeholders that we engage with during this process.

Large Load Customer

If a customer's demand is significant enough to have a substantial impact on the network, we engage with them with regards to their demand and usage patterns across the day / year and future strategies e.g. in relation to decarbonisation and the potential to offer interruption services. This engagement can take the form of questionnaires to the user and/or meetings as required.

Connections Enquiry Data

Relevant monthly data on Industrial and Commercial (I&C) enquiries is made available throughout the year to inform our demand forecasting process. An annual report is compiled by the end of January for the previous calendar year using data from core Business Services systems. The report details I&C enquiries for loads > 4166 scm/h (45,132 kWh) or 0.1 mcmd plus those identified by separate load type tags e.g. power generation, compressed natural gas (CNG) fuelling sites and green gas entry.

Internal tracking spreadsheets detail sites with whom we have Advanced Reservation Capacity Agreements (ARCAs) which require financial commitment from the customer due to reinforcement are kept up to date as required. This information can be included separately in the pre forecast information sent to NGT.

Industrial & Other Non-Standard Demands

We have responded to evolving customer requirements by providing new commercial services to support flexible gas-fired generation, unregulated supplies and other sites with atypical demand profiles. We continue to work with other GDNs to promote consistency across the industry where practicable and engage with customers to ensure our approaches remain aligned with expectations.

Entry Customers

Although embedded green gas supplies are not considered during the annual plan cycle with regards to reducing our Offtake bookings i.e., they do not offer a guaranteed supply.

We engage regularly with our 22 connected entry sites throughout the year on a site-by-site basis and via industry forums e.g., Green Gas Technical Forum hosted by the Future Energy Networks (FEN). Currently a worst-case assumption that biomethane sites will not flow on a peak 1-in-20 demand day is applied in our planning processes. This is because there is no contractual obligation on network entry sites to supply gas

under peak demand conditions, so capacity cannon be subtracted from our offtakes from the national transmission system.

It is anticipated that hydrogen blending will play a larger part in our forecasting and planning process in future years once a clear direction has been received from the HSE and Department of Energy Security and Net Zero. In the meantime, we continue to investigate the impact of blended Hydrogen across the network and develop our strategy. Stakeholder Engagement and any available data or information will be utilised in this process.

Local Authorities

In the last few years our involvement in Local Area Energy Planning has increased considerably at town, Local Authority, regional and national levels. Insight from this activity – such as local heat-pump deployment expectations – is incorporated into our forecasting processes.

Further information on our work to support the future of energy is available here

Our below 7 bar planning team liaise with local authorities to gain the latest views on growth and probability of growth on the distribution network from domestic and small I&C projects.

Other GDNs

We participate in, and occasionally lead, a regular GDN planning forum to collaborate on network planning and emerging industry changes, including the introduction of the ECPG. NGT are invited to participate when relevant. The forum supports consistent planning approaches where practical.

National Gas Transmission, National Energy System Operator & 3rd Parties

Each year – usually in March or April – we hold an initial bilateral meeting with NESO to receive an overview of their draft forecast scenarios. Meetings are also held with NGT at several stages of the process and 3rd parties are invited to observe these discussions as per the new ECPG requirements. The meetings cover:

- Expected NTS Exit Capacity and pressure requirements.,
- Requests for Assured Pressure changes from either organisation,
- NGT's capacity baselines and response to booking proposals, including any likely rejections.

We also engage with NGT and other system users through forums such as Transmission Workgroup, which deals with changes to commercial arrangements. These groups aim to ensure that arrangements allow efficient access to and use of the Total System for customers.

National Energy System Operator (NESO)

Engagement with NESO also takes place outside the ECPG process regarding the development of the Future Energy Scenarios (FES) process. Network only discussions happen through regular NESO-led Forum meetings.

Load and demand forecasting

Annual Demand

We use the NESO forecasts for our expected annual throughput volumes. These are produced in line with the TD76 requirements and incorporate econometric modelling:

GasDemandForecastingMethodology2020_v1.pdf

In recent years we have recognised that the relationship between peak and annual was changing. We made the decision to develop our own forecasting for peak demand independently of annual demand.

Background to the WWU Peak Forecasting Approach

In 2010, WWU undertook a review of forecasting capability in response to significant variance in the peak forecast data received from NESO each year. As part of this project a peak-day model was produced by LPC Delta to forecast future demands for non-daily metered loads.

This model takes into account several key drivers, including:

- Underlying load growth
- Weather sensitivity
- projected improvements to boiler efficiency
- The latest Composite Weather Variables (CWV) from Xoserve.

Peak-day forecasts for larger sites are derived based on trends from available data, and outputs from stakeholder engagement surveys.

Forecast Scenario Development

WWU develops a series of sensitivities to capture uncertainty and reflect potential developments in the energy landscape. These sensitivities consider factors such as:

- Growth of major load categories such as flexible gas-fired generation, CNG fuelling and data centres
- The impact of any future housing standard on domestic connection growth
- Emerging industry developments , including hydrogen deployment
- Economic Variables such as energy prices.

Details of these sensitivities are presented to our Business Performance Development Committee. The final selection of sensitivities to be used in our planning forecast is subject to executive approval.

Population of Network Analysis and Other Models

Software Utilised

Synergi Gas

We use Synergi Gas' Unsteady State Model (USM) v 4.9.4 to undertake transient analysis and LTS modelling. The software supports several flow equations, including Smooth pipe law; AGA; Chen, Colebrook-White; GERG and Sancham. Synergi Gas is developed and supported by DNV.

Capacity Models

To assess Pressure Reduction Installation (PRI) and offtake capacities at a component level, we use **GasCalc v5.0**. We also use **PRISM** to calculate site capacities and identify component constraints. Our **PRI Capacity Data** collates capacity data from site-specific assessments alongside peak hourly flow rates, to enable us to report on utilisation and identify constraints. We utilise the DNV tool **HTREC** to determine heating requirements at our sites, heat-recovery distances on outlet pipework and available heating capacity available from existing systems.

Storage Simulation Model (Consus)

Our Consus model is used to determine the storage required for volumetric systems in our LDZs. Where sites have unique operating patterns—particularly flexible generation sites with increasingly dynamic behaviour driven by electricity market conditions—individual site storage modelling is carried out.

Annual Model Build

Data from the approved planning forecast is applied in Synergi Gas to develop our transient analysis models. Models are built annually for peak demand days to meet our 1:20 licence obligation, as well as for D13, D46, D150 & D300 (where D1 = highest demand day of the year).

These models are geographically accurate representations of each LDZ, incorporating:

- Network infrastructure parameters including length, diameter, material, roughness, wall-thickness, altitude
- balancing parameters including supply and demand nodes and within-day profiles e.g. for electricity generation as detailed above.

Model Validation

Our LTS models are validated in accordance with the relevant industry standard and company procedure:

- **IGEM/GL/2 Edition 3**: Planning of gas transmission and storage systems operating at pressures exceeding 16 bar.
- **T/PM/NP/2**: WWU Management Procedure for Validation of High-Pressure Distribution Network Analysis.

We maintain three LTS models subject to revalidation on a three-year cycle. Partial or full ad-hoc validation is undertaken if material changes occur or if discrepancies are identified.

Reinforcement Assessment

Models are developed to:

1. Optimise LTS network performance and storage within pressure constraints, ensuring security of supply for downstream distribution systems and directly connected customers
2. Identify any physical or commercial constraints relating to pipelines or offtakes.

Where constraints are identified, the following options for resolution are considered:

1. Network reconfiguration
2. Network reinforcement
3. Commercial services such as interruption
4. Use of additional NTS Capacity (Flat, Flex, Pressure)

Initial steps focus on optimising or reconfiguring the network to either enhance available storage or deliver minimum extremity pressures depending on the type of constraint. We challenge assumptions regarding system parameters to ensure we are not applying unnecessary limitations.

Once optimisation has been explored, we would also consider the option of Interruptible contracts with our customers which can reduce peak demand. We also investigate the availability of flex capacity from the NTS, which effectively serves as an alternative to physical storage, prior to considering reinforcement of the pipelines or above-ground installations. In our view, this method delivers cost-efficient and customer-focussed solutions to constraints.

The outputs from the annual modelling process for each LDZ are saved in the model data forms. Assurance checks are carried out to ensure that the models have been built and balanced correctly in line with the agreed strategy.

Section H Model Build

As per requirements set out in the Transportation Principal Document of the Uniform Network Code, we also provide capacity and pressure requirements away from peak 1 in 20. This is known as the Section H requirements and sets out our flat, flex and pressure requirements for a range of demand requirements away from peak:

Day 13, Day 46, Day 150 and Day 300 (summer) with Day 0 or 1 being peak 1 in 20.

To achieve this data output, we build a suite of demand models down the demand curve for each year of the forecast period and send this back to NGT by the end of October.

Under the new ECPG regime, NGT will use the demand data provided in Section H returns to inform their substitution methodology and capacity planning process.

Network Planning Policies & Procedures

In addition to the industry standard IGEM/GL/2 Edition 3: Planning of gas transmission and storage systems operating at pressures exceeding 16 bar and our model validation procedure listed above, we adhere to the following internal planning policies and procedures throughout the annual plan cycle:

T/PL/NP/18.1 - Network Planning.
T/PL/NP/4 - Above 7 bar Network Analysis
T/PM/NP15 - Management Procedure for Planning and Network Analysis Requirements
T/PM/NP24 - Management Procedure for Network Planning Policy (T/PL/NP18.1)

Network Considerations

South West

The South West part of our network covers a vast area of mainly domestic demand. There can be significant temperature differences between the Northern and Southern extremities of the network which can result in volatility in the gas usage by temperature sensitive loads during shoulder months.

The LTS is made up of three volumetric systems and several pressure-controlled networks. The pressure-controlled networks can be difficult to manage as they are more reliant on NTS Flex capacity due to the absence of system linepack. South West is the only area in the WWU network where the volumetric systems are fed by multiple offtakes, these need to be balanced efficiently to deliver as much storage as possible while keeping the systems within their pressure parameters.

There are also several Bullet Storage sites that interact with these volumetric systems. The South West Network is at an extremity of the NTS and so flexibility from the NTS can be limited. In recent years this has necessitated the use of commercial approaches to mitigate the impacts of this limitation.

North Wales

We have a single offtake feeding our North Wales LDZ, a network which is split into two systems of large diameter pipelines covering a large geographic area but with relatively low overall demand in comparison to its size. These features result in a network with quite low gas velocities due to the distance that the network covers. There can be significant pressure drops across the

network from Offtake to extremity and time of flight means that it can take a while for any adjustments at the offtake to be seen at the system extremity.

The coastal part of the supply system is unique in that it contains a large HP Volumetric System within larger HP Volumetric system which means that both sections must be managed together to drive out the most storage.

South Wales

In South Wales, all three offtakes are fed by the same NTS feeder. It contains more industrial commercial loads than the other LDZs, including a higher concentration of connected power generation. It is also unique in that some offtakes have both a Volumetric and a Pressure control outlet feeding different parts of the network. Our West Wales feed sees high pressures drops across the network but lower velocities at its extremities.

Some parts of the network under summer conditions can see higher pressures at the extremity then at the offtakes due to altitude difference and the large diameter of the LTS mains.

Commercial Solutions

Where network constraints are identified we consider the use of commercial solutions as a means of reducing demand prior to consideration of physical solutions. In recent years we have held annual interruption auctions for this purpose but have not had any bids. This has reinforced the message that our customers reiterate year after year, that a reliable and constant gas supply is important to them.

Since 2012, we have introduced Network Entry Agreements (NExAs) which allow us to connect customers even if we are unable to secure the small additional amounts of storage required for the site at peak demand. These agreements are for loads which are likely to have a significant impact on our network because of their likely operating profiles and / or locations.

In some cases, NExAs will include terms to ensure flows are managed appropriately at times of high demand when we have not been able to procure sufficient NTS flex capacity to make up for a shortfall in linepack storage. In this scenario additional terms are included in the NEXA to manage sites' operating profiles on days where the network would otherwise be constrained.

These commercial solutions are used where the alternative pipeline or other storage physical solutions presented an inefficient spend for the very small amounts of storage, required per site.

Production of offtake-level capacity and pressure requirements

Principles

The following principles and assumptions are applied when producing offtake level capacity and pressure requirements:

- NTS Offtake capacity must be available to satisfy our 1:20 licence condition.
- NTS Flat Capacity must be guaranteed through purchase of annual or enduring capacity as there are circumstances where NTS may not release capacity through daily auctions, see: ExitCapacityReleasev16.2clean.pdf
- NTS Flat Capacity cannot be offset by embedded biomethane supply as these supplies are not subject to flow obligations.
- NTS Assured Pressure is more valuable than NTS Flex because of the notice periods / restrictions around use of NTS Flex Capacity.
- NTS Assured Pressure and NTS Flex are discretionary products, so a high level of certainty is needed before it is released back to NTS on a permanent basis.
- Requirements signalled through the provision of Section H to NGT provide protection against NTS substitution.
- It is appropriate to use information from modelling as well as actual flow data, operating strategies and information from stakeholders and wider industry to manage uncertainty and to determine final bookings.

Network Co-operation Requirements

We recognise the provisions of the Offtake Arrangements, Section I and the System Flexibility Restriction Notice (SFRN) which provide for cooperation between the GDN and NTS control centres in relation to flow swaps, assured pressure adjustments and the release of additional NTS Flex capacity to support daily operation and maintenance requirements.

Assured Offtake Pressure (AOP) Reduction Requests

Following significant growth in embedded flexible gas generation in recent years to support deployment of intermittent renewable generation across Great Britain, our storage requirements have increased significantly.

As detailed in the principles above, the use of LDZ Linepack is a better option for GDNs than the use of NTS Flex, which is subject to notice periods under the Offtake Arrangements Document, Section I and can be withdrawn through processes defined in the SFRN.

Since NTS Flex and NTS AOP are discretionary products, a high degree of certainty would be required before agreement was made for a permanent reduction of AOP including where NTS Flex Capacity was available instead.

Where NGT request a reduction in AOP, analysis will be undertaken to determine whether this can be agreed based on our forecasts of future requirements.

AOP, Flat and / or Flex Bookings for All Years

Our considerations for flat capacity bookings take account of requirements in later years and the implications of User Commitment should we need to increase bookings.

Recent changes in the NTS substitution methodology enable NGT to take account of data provided in our Section H data and exclude ECP forecasted capacity from 'Substitutable Capacity'. This means that for capacities within baseline we will be able to signal requirements through section H submissions without triggering User Commitment by securing annual flat capacity in the July bookings for October (T-1).

Where capacities are above baseline, we would book enduring capacity to meet requirements for our 1-in-20 demand forecast including future loads for which a financial commitment has been made.

Pressure and flex increases are requested at the point of site enquiry through ad-hoc processes available and as mentioned above.

In many cases a reduction in 1-in-20 demand forecast does not result in a reduced need for storage or assured offtake pressure, because some new connecting loads have a more dynamic demand profile. For example, a power station moving from 24-hour operation to 16-hour operation would have a 1/3 reduction in flat capacity but a significant increase in storage required.

Following the implementation of Uniform Network Code Modification 0678 the cost implications of different booking patterns have reduced with consistent NTS Flat Capacity prices being applied at all NTS Offtakes.

Scenarios considered as part of the booking process

The key factors that would feed into booking scenarios mean that there are usually few options to consider. To summarise:

- Where User Commitment is in place at Offtakes, we are unable to reduce bookings.
- The absence of a definitive way to recover Flex and / or Pressure reductions means that these are avoided on an enduring basis. AOP is valued over NTS Flex.
- NTS Baseline Capacity and Physical Capacity headroom will constrain bookings in some locations.
- Several of our Offtakes are single feed.
- Injection from Green Gas sites cannot be relied upon to meet our 1-in-20 requirements as their contracts are not for firm flow.

Comparison to FES Pathways generated by NESO

Demand scenario projections are provided by NESO to GDNs in May each year. These are produced in line with the FEP process for each of the Future Energy Pathways. A five-year central forecast is also supplied. The NESO projections and forecast are subject to review to ensure differences can be explained.

Comparisons are also undertaken with data received in previous years to understand how NESO drivers are changing. In addition, significant attention is paid to the large load projections. These are often different to assumptions within the GDN e.g. for peak generation figures, NESO may apply diversity so that the national generation figure reflects national requirements whereas GDNs will book sufficient capacity for our large loads to operate on a 1:20 in line with their bookings without making assumptions about which loads NESO would call into operation.

Consultation Outcome

As required by the ECPG, we last published our methodology statement on 31st January 2025. The Joint Office invited industry stakeholders to review this methodology on 14th November 2025 and provided a link to the Wales & West Utilities website. The results of the 2025 consultation can be found in our 2026 Methodology Consultation Results Report published on our website.

Appendix A: Planning Process Overview

inc. Exit Capacity Planning Guidance (ECPG) and Annual Plan Cycle - Calendar of Actions

This process is for illustrative purposes only. Exact timelines can vary from one distribution network to another.