# 2024 Exit Capacity Planning Outcomes Report

Final <u>October</u> 2024





# Wales & West Utilities 2024 Exit Capacity Planning Outcomes

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### Introduction

In December 2020 OFGEM published their 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 licences requires the licence holder ("licensee") to comply with the Exit Capacity Planning Guidance ("the Guidance").<sup>1</sup>

The Guidance comprises a set of requirements relating to the following 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 satisfy the requirement comprised within the Exit Capacity Planning Guidance (ECPG) document to publish a report, which details the outcomes of the application of the methodologies used.

If you have any queries, would like any further information or a version of the document in an unredacted state, then please contact our planning team to discuss.<sup>2</sup>

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<sup>&</sup>lt;sup>1</sup> Exit Capacity Planning Guidance | Ofgem

<sup>&</sup>lt;sup>2</sup> LTSAnalysisRequests NMU@wwutilities.co.uk

# **Analysis**

### **Demand Forecast Summary**

To meet our licence obligations, the National Transmission System (NTS) Exit Capacity that we book needs to be sufficient to ensure we can meet demand on a peak 1-in-20 winter day. Every Gas Year (GY) (1st October to 30th September), we are required to book exit capacity and pressure for each of our 17 Offtakes.

As per the Exit Capacity Planning Guidance document (ECPG), which forms part of our licence condition introduced under RIIO2 (Standard Special Condition A57: Exit Capacity Planning), Wales & West Utilities (WWU) are obliged to closely align the capacity bookings to the 1-in-20 Peak Day demand forecast. This ensures we remain compliant with this licence obligation and that our customers' gas supply is not put at risk. We have used our own recovery forecast scenario as a basis for our peak day flat, flex and pressure bookings, which is consistent with last year's approach.

Every year we also receive a projection from National Grid ESO (NG-ESO) based on four different future of energy pathways, as well as a 5-year forecast and counterfactual which offer a more accurate representation of what NG-ESO expect demand to be over the next 5 years for the DNs. As stated in our methodology document, we consider the information provided by NG-ESO for annual projections but for peak demand we use our own internal demand forecast. The two internal WWU scenarios considered this year are as follows:

### Partial Recovery Full Recovery

Our 'Partial Recovery' scenario is based on domestic demand recovering from cost of energy impacts in recent years out to GY 2025/26, albeit not returning to the levels seen previously. A continued but low growth will follow until GY 2029/30 due to industrial sectors like flexible generation, CNG fuelling sites and data centres – a newly emerging gas demand. Our 'Full Recovery' scenario differs in that demand recovers entirely to previous levels in GY 2025/26.

The WWU Business Performance and Delivery Committee approved the Partial Recovery forecast for use in this year's process. The overall trend for the network is a 5% increase in peak demand out to 2029/30, the breakdown for each Local Distribution Zone (LDZ) is as follows:

### **Wales South**

The peak demand forecast has stayed broadly the same as last year's forecast for GY 2024/25. We are anticipating a 12.8% increase in peak demand out to GY 2029/30 due, in part, to a recovery in the domestic load band by GY 2025/26 and high-level growth in industrial demand sector e.g. Power generation, vehicle fuelling and data centres predominantly

### Wales North

The peak forecast for GY 2024/25 is in line with last year's forecast. We are expecting a 7.2% increase out to GY 2029/30, again due to a recovery in the domestic load band as well as moderate projected growth in the industrial sector e.g. flexible generation, vehicle fuelling connections and data centres.

### **South West**

The peak forecast for GY 2024/25 has reduced by 2.6% compared to last year's view due to a slower forecast demand recovery. We are anticipating a 1% reduction out to GY 2029/30 due to no significant industrial growth being expected.

It is important to note that although considered in this year's process, we have not included any impact of the switch to Hydrogen, as it is forecasted to materially affect the WWU area only from 2030 onwards. It will play more of a part in the 2025 demand forecasting process.

See Tables 1, 2 & 3 for specific details of the booking outcomes when comparing this year to last year.

# **Significant Changes to Offtake Capacity Statement (OCS)**

### **Flat Capacity**

The only change made to our flat capacity bookings this year is an annual increase at our Gilwern offtake, due to the recommissioning of a single large customer. All other differences across the years are due to previous forecasts and bookings. The numbers and text are highlighted in orange for clarity and explained in the table.

We would have reduced our flat bookings further and in line with our forecasts but have been unable to due to existing User Commitment (UC) at all offtakes other than Gilwern, where the increase was required in any case. Please refer to table 5 for further details on the impacts of UC on our flat bookings from previous years.

Table 1: This year versus last year - Flat Capacity

Offtake Name	2023/24 OCS Flat booking (GWh/d)	2024/25 OCS Flat booking (GWh/d)	Changes to 23/24 (GWh/d)	Reason for Change to last year					
<u>Wales South</u>									
Wales North									
South West									

Offtake Name	2023/24 OCS Flat booking (GWh/d)	2024/25 OCS Flat booking (GWh/d)	Changes to 23/24 (GWh/d)	Reason for Change to last year
		-		

### **Summary of Flat Capacity**

Table 1 shows the main differences between this and last year's bookings for peak flat, comparing GY 2023/24 with GY 2024/25. As noted above, the only change made to flat bookings was an annual increase at one of our South Wales offtakes due to a large site recommissioning. Other increases were due to prior years' forecasts and OCS booking requests which resulted in UC. Where we would have liked to reduce our flat bookings at numerous offtakes, we were unable to overall due to existing or future UC. We have therefore

been unable to reflect peak demand reduction due to the impact of high energy costs in recent years in our bookings, even though our forecast peak demand generally decreased except for a few offtakes where large loads have offset these decreases.

We have slightly more capacity booked for our North Wales and South West LDZs when compared to last year's bookings, in both cases this is due to UC from previous years' forecasts. We had the potential to reduce our 2023/24 flat bookings at 11 Offtakes across our network area but were unable to make these changes due to existing or future UC periods. However, for South Wales the net flat capacity booked increased this year due to the increase at a single offtake.

It has been confirmed that UC triggered since the 2021 process will only be in place for 2 years following the changes to NGT's Exit Capacity Release Methodology Statement. All other UC entered in previous years remains at 4 years regardless of the year in which the UC was triggered. For this year's process UC applied at 16 of our 17 offtakes, but next year this will reduce to nine.

Annual flat capacity bookings are not available via an ad-hoc process with NGT even when demand is signalled in the section H data as increases soon.

### **Pressure**

We have not made any changes to our Assured Operating Pressure (AOP) requests during this years' booking cycle. Although we made no changes, the Start of Day (SOD) pressure at the relevant Offtake has reverted to its previously agreed level due to the anticipated large load coming back online in that area.

Table 2: This year versus last year – Assured Offtake Pressure

Offtake Name	2023/24 AOP, Start of Day (bar)	2024/25 AOP, Start of Day (bar)	2023/24 AOP, End of Day (bar)	2024/25 AOP, End of Day (bar)
Wales South	Of Day (Dai)	Of Day (Dai)	Day (bai)	Day (Dai)
Wales North	_			
South West				
1				

Offtake Name	2023/24 AOP, Start of Day (bar)	2024/25 AOP, Start of Day (bar)	2023/24 AOP, End of Day (bar)	2024/25 AOP, End of Day (bar)

Start of Day (SOD), End of Day (EOD)

### **Summary of Pressure Allocation**

Pressure reductions were again requested by NGT towards the start of the annual plan cycle. We were unable to accept the requested pressure reductions at peak demand due to the impact it has on our Local Transmission System (LTS) storage volumes, but we do consider and accommodate reductions where we can, albeit usually on a temporary basis. We considered the impact of accepting the additional pressure reductions requested at peak and the following table illustrates the additional network requirements/investment which would allow us to accept:

Table 3: Network impact to accommodate requested pressure reductions.

Offtake Name	Additional Flex required* (GWh/d)	Full or Partial Offtake Rebuild Required?	Pipeline Reinforcement Solution Feasible?

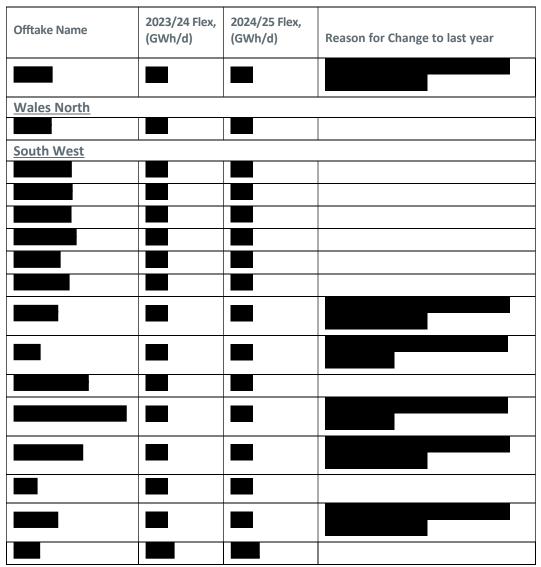
<sup>\*</sup>This is in addition to our existing flex capacity requirements

### **Flex Capacity**

During this years' booking cycle, we made requests for incremental increases to flexible capacity at two offtakes in the South West area. Where there is a material difference to last year, the numbers, text and reason is given in orange for clarity, see table 4 below.

Table 4: This year versus last year – Flex Capacity

Offtake Name	2023/24 Flex, (GWh/d)	2024/25 Flex, (GWh/d)	Reason for Change to last year					
Wales South	Wales South							



Non-material differences between the years are due to planning cv changes.

Table 4 gives a summary of our flex bookings agreed for this year compared to last year's figures.

NGT has agreed to our incremental flex increase requests at two of our Offtakes this year. The small increases that we request each year reflect the growth in flexible generation or industrial sites which cause an increase in our network storage requirements. Having previously operated with a small storage deficit at peak demand in some extremity parts of the network, the additional flex granted resolves this issue. Where storage constraints have emerged previously, we have relied on a commercial solution: a daily capacity process carried out in the control room via Offtake Profile Notices (OPNs) and commercial arrangements with customers to mitigate the risk of not being able to meet peak demand storage requirements.

### **ECPG Scenarios**

The range of demand scenarios covered in this year's booking cycle are detailed in our methodology statement and summarised in our demand summary on page 3 of this document.

We consider the balance between NTS Capacity products as follows:

- **Flat capacity** Flat capacity is required to meet our end of day demand projections and is not interchangeable with Flex or AOP.
- Assured Offtake Pressure AOP There is an interaction between AOP and Flex Capacity. We prioritise
  AOP over Flex capacity where we can use this in our network to generate linepack storage. Linepack
  storage is significantly more usable than Flex capacity as it can be used as needed without notice.
  Whereas the use of Flex Capacity has an impact on, and is impacted by the OPN requirements specified
  in Uniform Network Code Offtake Arrangements Document (UNC-OAD) Section I. On occasions to
  support maintenance, we may agree to use Flex Capacity in place of AOP on a short-term basis outside
  of the ECPG process.
- Flex Capacity Flex capacity can be used in place of NTS Pressure in circumstances such as to support maintenance, where we are unable to use AOP to generate linepack and where NGT are unavailable to provide AOP but are able to provide Flex Capacity.

The following table highlights the alternative offtake capacity booking patterns considered for the balance between offtakes by LDZ in the 2024 plan cycle.

South Wales
North Wales
South West
User Commitment Periods
We have included information on UC periods just to highlight this issue:

### **Network Impact of UC**

The maximum potential reduction in flat capacity for GY 2024/25 is **19.8 GWh/d** which equates to almost **£ 2M** in saved pass-through costs as per forecast capacity prices. This reduction could only have been realised if we were able to make the reductions at all relevant Offtakes, however, this is not possible due to UC. Reductions would have been possible at 11 of 17 Offtakes due primarily to the reduction in the domestic load band because of high energy prices.

UC periods are specified in the Exit Capacity Release Document and were reduced in 2021 from 4 to 2 years. OFGEM informally consulted in 2021 on removing UC for GDNs booking exit capacity up to and including baseline and we are monitoring the outcome of that consultation which will feed into our strategies for future booking cycles.

Table 5: Capacity Booking Patterns by Offtake and LDZ

# **Storage Outputs & Assumptions**

The percentages used for LDZ storage requirement have been derived from our Storage Simulation Model. A summary of our storage position is detailed below by topology.

The previous reduction in peak demand for GY 2023/24 due to the cost of energy crisis has reduced our flex storage requirement at several Offtakes. As a recovery is forecasted by GY 2025/26, our flex requirements also go back up. This combined with the uncertainty of future industrial growth has resulted in us deciding to keep our flex at levels previously booked, other than two offtakes in the South West where additional flex was needed to resolve a historical constraint.

We employ a strategy to book capacity products (flat, flex and pressure) to ensure that our bookings are efficient and so that network line pack storage is optimised.

Table 6: Storage Outputs South West LDZ, in GWh/d

Offtake Name	Topology	Storage Required, SSM	Linepack & Bullets	Flex Required	Flex Booked	Commercial Process

Table 7: Storage Outputs Wales South LDZ, in GWh/d

Offtake Name	Topology	Storage Required, SSM	Linepack	Flex Required	Flex Booked	Commercial Process

Table 8: Storage Outputs Wales North LDZ, in GWh/d

Offtake Name	Topology	Storage Required, SSM	Linepack	Flex Required	Flex Booked	Commercial Process

The inputs to our Storage Simulation Model cover all load bands from domestic to large industrial users. However, we have found that the inclusion of our Very Large Daily Metered Customers (VLDMCs) in the calculation for LDZ storage affects the general spread of storage needed and artificially increases it across the whole LDZ.

We periodically revalidate the usable volumes of our High-Pressure Storage Vessels (HPSVs) using the latest observed pressure data to ensure this information is kept up to date.

# **Interaction with other Networks**

**Internal to Wales & West Utilities** 

There are no inter LDZ transfer points.

**External to Wales & West** 

### **Final Outcomes**

### Year 1

Our bookings for GY 2024/25 can be found in Tables 1, 2 and 3 above along with any changes made to flat, pressure and flex capacity respectively.

We would have booked in line with the Wales & West Utilities partial recovery forecast which is 10% higher than the Counterfactual supplied by NG-ESO. However, existing and future UC periods restrict the way in which we can book flat capacity to be consistent with our forecasted values. For instance, if our forecast for a given offtake has reduced, UC may force us to maintain a higher booking, incurring pass-through costs.

For GY 2024/25, a **19.8 GWh/d** reduction could have been made which equates to approximately **£ 2M** reduction in costs.

### **Conclusion**

### **Forecast Versus Bookings**

Our network booking for flat capacity in GY 2024/25 exceeds our agreed Peak Day forecast. This is due to UC at offtakes in our North Wales and South West LDZs preventing the release of flat capacity to reflect the reduction in the domestic load band from high energy costs. For Years 2 to 7 (GY 2025/26 onwards), we have opted not to book additional enduring or annual flat capacity to cover recovery of domestic demand and potential large loads, in case these do not transpire, and UC leaves us with excess capacity. The impact of future demand recovery and potential large loads is reflected in our forecast, in our UNC section H submission and protected against substitution under the new methodology.

We believe that we have met the requirements of the ECPG by booking an efficient amount of capacity at each Offtake. Discrepancies between the forecast and booking are due to UC as detailed in Table 1 and uncertainty regarding the future operation of a large load customer in Wales South.

The table below shows the Peak Day Forecast and our corresponding capacity booking:

GWh/d	Yr 1 2024/25	Yr 2 2025/26	Yr 3 2026/27	Yr 4 2027/28	Yr 5 2028/29	Yr 6 2029/30	Yr 7 2030/31

Table 9: Peak Day Forecast versus Flat Capacity Booking

### **Off Peak Demand Data**

Provision of off-peak demand data is a requirement of ECPG. The following tables contain 'down the curve' or what is referred to as UNC section H information on Peak Flowrate, Flat and Flex Capacity by LDZ/Offtake and Topology (listed separately in Table 28). It gives our networks requirements for those demand conditions at and away from peak 1 in 20 demand level.

Peak 1 in 20 winter demand is referred to in the UNC as Day 0, Day 300 is a representative of a typical summer day demand, Day 13, Day 46, and Day 150 represent different demand profiles throughout the year in order

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of demand from high to low respectively: Day 0, Day 13, Day 46, Day 150, and Day 300. For further information, please refer to Section H of the UNC-TPD<sup>3</sup>.

<sup>&</sup>lt;sup>3</sup> <u>Microsoft Word - OAD Section H - NTS Long Term Demand Forecasting.doc (gasgovernance.co.uk)</u>

Wales South LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 10: Forecast Information per Demand Level: Peak day to Day 300 for 2024/25 (UNC Section H)

Wales North LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Flow		Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)									

Table 11: Forecast Information per Demand Level: Peak day to Day 300 for 2024/25 (UNC Section H)

South West LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												
				act Informa											

Table 12: Forecast Information per Demand Level: Peak Day to Day 300 for 2024/25 (UNC Section H)

Wales South LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 13: Forecast Information per Demand Level: Peak Day to Day 300 for 2025/26 (UNC Section H)

Wales		Peak 1 in 20	)		D13			D46			D150			D300	
North															
LDZ															
Offtake	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex
Name	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)
	(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)		

Table 14: Forecast Information per Demand Level: Peak Day to Day 300 for 2025/26 (UNC Section H)

South West LDZ	ı	Peak 1 in 20			D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)

Table 15: Forecast Information per Demand Level: Peak Day to Day 300 for 2025/26 (UNC Section H)

Wales South LDZ	F	Peak 1 in 20			D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)									

Table 16: Forecast Information per Demand Level: Peak Day to Day 300 for 2026/27 (UNC Section H)

Wales North LDZ		Peak 1 in 20			D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 17: Forecast Information per Demand Level: Peak Day to Day 300 for 2026/27 (UNC Section H)

South West LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 18: Forecast Information per Demand Level: Peak Day to Day 300 for 2026/27 (UNC Section H)

Wales South LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex
Name	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)
	(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)		

Table 19: Forecast Information per Demand Level: Peak Day to Day 300 for 2027/28 (UNC Section H)

Wales North LDZ		Peak 1 in 20	)		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 20: Forecast Information per Demand Level: Peak Day to Day 300 for 2027/28 (UNC Section H)

South West LDZ		Peak 1 in 2	0		D13			D46			D150			D300	
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												
			able 21. Fore												

Table 21: Forecast Information per Demand Level: Peak Day to Day 300 for 2027/28 (UNC Section H)

Wales South LDZ	Peak 1 in 20			D13			D46				D150		D300		
Offtake	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex
Name	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)
	(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)		

Table 22: Forecast Information per Demand Level: Peak Day to Day 300 for 2028/29 (UNC Section H)

Wales North LDZ	Peak 1 in 20			D13			D46				D150		D300		
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 23: Forecast Information per Demand Level: Peak Day to Day 300 for 2028/29 (UNC Section H)

South West LDZ		Peak 1 in 2	0	D13			D46				D150		D300		
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												
			Table 24. F												

Table 24: Forecast Information per Demand Level: Peak Day to Day 300 for 2028/29 (UNC Section H)

Wales South LDZ	Peak 1 in 20			D13			D46				D150		D300		
Offtake	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex	Peak	Flat	Flex
Name	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)	Flow	(mcm/d)	(mcm/d)
	(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)			(mcm/h)		

Table 25: Forecast Information per Demand Level: Peak Day to Day 300 for 2029/30 (UNC Section H)

Wales North LDZ	Peak 1 in 20			D13			D46				D150		D300		
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)

Table 26: Forecast Information per Demand Level: Peak Day to Day 300 for 2029/30 (UNC Section H)

South West LDZ		Peak 1 in 2	0	D13			D46				D150		D300		
Offtake Name	Peak Flow (mcm/h)	Flat (mcm/d)	Flex (mcm/d)												

Table 27: Forecast Information per Demand Level: Peak Day to Day 300 for 2029/30 (UNC Section H)

# South West LDZ Offtake Topology

Wales North LDZ

Offtake Topology

Wales South LDZ

Offtake Topology

**Table 28: Topology Information Per Offtake**