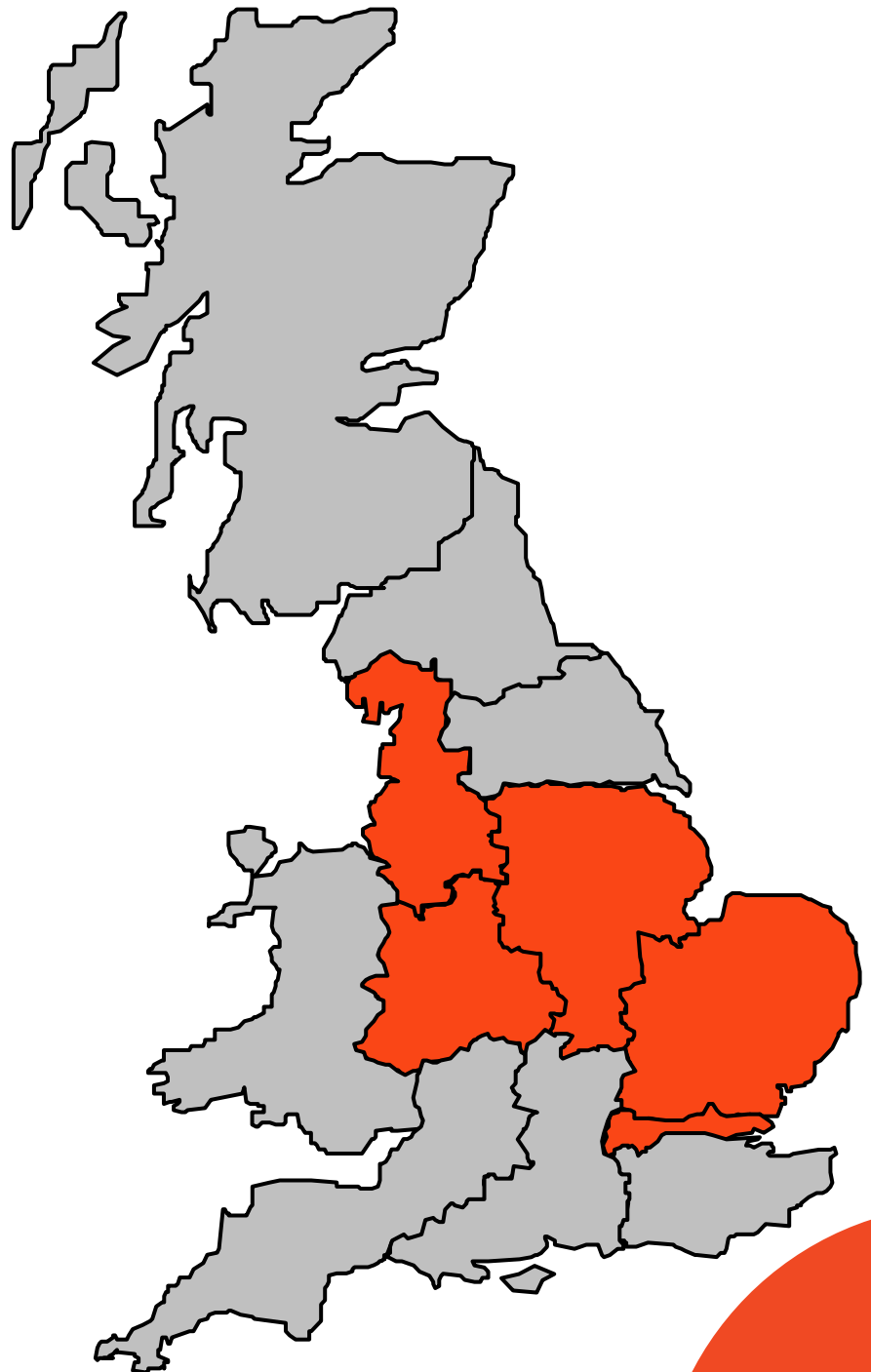


# Exit Capacity Planning Guidance 2021 Outcomes Report

**Dave Adlam**

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# Analysis

## Demand Forecast

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### Context

To meet our license obligations, the NTS Exit Capacity that we book needs to be sufficient to ensure we are able to meet demand on a peak 1:20 winter day. Every Gas Year (1st October to 30<sup>th</sup> September), we are required to book exit capacity from the National Transmission System for each of our 50 offtakes.

As per the Exit Capacity Planning Guidance document (ECPG), which forms part of a new licence condition introduced under RII02 (Standard Special Condition A57: Exit Capacity Planning), Cadent are now obliged to closely align the capacity bookings to the 1-in-20 Peak Day demand forecast. Cadent will book up to the approved Peak Day demand forecast, thereby ensuring we remain compliant with the 1-in-20 licence obligation and not put it at risk.

Cadent have used the 2021 5-year Central Forecast provided by National Grid ESO as we do every year.

Under Cadent's Gas Transporter Licence Standard Special Condition A11 Cadent has an obligation to demonstrate its ability to meet our 1:20 Peak Day Demand, this approach pursues full compliance with regards to that obligation.

Every year we receive from NG-ESO a forecast based on four different scenarios, as well as a central forecast which is their view of a more accurate representation of where NTS expect demand to be over the next 5 years for Cadent.

The four Future Energy Scenarios are;

- Leading the Way
- System Transformation
- Consumer Transformation
- Steady Progression

For the third year, along with Future Energy Scenarios, NG-ESO have provided a "Central Forecast" which they believe is an accurate forecast for the level of expected demand in each distribution network. This forecast shows sustained growth consistent with the Steady Progression Scenario discussed above. As a result of the recommendations above by NG-ESO, and following formal governance process within Cadent, the Cadent Board approved the use of the Central Forecast.

As a result, the overall trend on each network, as received from NG-ESO, is as follows:

- **East Anglia**  
Peak forecasts are above the highest recent observed peak demand of the 1st March 2018, 3.7% above for Gas Year (GY) 2021/22. The peak demand forecast

only drops by 1.2% from 2021 to 2025. The reason for the increase in year 1 is predominantly down to the gas-fired peaking power stations connected to this LDZ.

- **East Midlands**

Peak forecasts are well above the highest recent observed peak demand of the 1st March 2018, 5.4% above for GY 2021/22. The peak demand forecast only drops by 0.5% from 2021 to 2025. The reason for the increase in year 1 is predominantly down to the gas-fired peaking power stations connected to this LDZ. This represents ~28% of the total installed gas-fired reciprocating engine capacity in GB.

- **North London**

Peak forecasts are above the highest recent observed peak demand of the 1st March 2018, 2.6% above for GY 2021/22. The reason for the increase in year 1 is predominantly down to general growth in the LDZ. The peak demand forecast drops by 1.2% from 2021 to 2025.

- **North West**

Peak forecasts are well above the highest recent observed peak demand of the 1st March 2018, 6.7% above for GY 2021/22. The peak demand forecast only drops by 0.5% from 2021 to 2025. The reason for the increase in year 1 is predominantly down to the gas-fired peaking power stations connected to this LDZ. This represents ~27% of the total installed gas-fired reciprocating engine capacity in GB.

- **West Midlands**

Peak forecasts are slightly above the highest recent observed peak demand of the 1st March 2018, 1.2% above for GY 2021/22. The reason for the increase in year 1 is predominantly down to general growth in the LDZ. The peak demand forecast only drops by 1.1% from 2021 to 2025.

See Tables 1, 2 & 3 for details of the demand forecast.

**Table 1 – This year -v- last year**

LDZ	2020/21 Peak Day Forecast (mcm/d)	2021/22 Peak Day Forecast (mcm/d)	Increase from 2020/21 Peak day forecast (mcm/d)
EA	30.192	31.079	0.887
EM	38.333	40.016	1.683
NL	37.322	37.500	0.168
NW	43.631	46.004	2.373
WM	33.641	33.715	0.074
<b>Total</b>	<b>183.119</b>	<b>188.314</b>	<b>5.186</b>

**Table 2 – This year down the Demand Curve**

Yr 1	EA	EM	NL	NW	WM
<b>Pk</b>	31.079	40.016	37.500	46.004	33.715
<b>D13</b>	27.107	33.745	32.365	38.639	28.879
<b>D46</b>	19.951	25.905	23.660	29.289	21.229
<b>D150</b>	12.948	17.849	15.546	20.482	14.584
<b>D300</b>	4.903	7.808	5.854	9.490	5.519

**Table 3 – Future years**

	EA	EM	NL	NW	WM
<b>Yr 2</b>	30.797	39.768	37.159	45.718	33.410
<b>Yr 3</b>	30.561	39.524	36.874	45.421	33.274
<b>Yr 4</b>	30.772	39.762	37.149	45.739	33.525
<b>Yr 5</b>	30.704	39.818	37.046	45.792	33.345
<b>Yr 6</b>	30.704	39.818	37.046	45.792	33.345

Our approach meets the 1:20 peak day obligation with a combination of Enduring, and Annual capacity products for years 1, 2 & 3, and addresses the risk that daily capacity products may not be available in the event of an NTS constraint being called. In this circumstance, the level of enduring capacity plus our annual capacity bookings would enable us to meet the Peak Day requirement in all of our Networks. For years 4, 5 & 6 Enduring capacity is booked as required.

Cadent takes a holistic approach to both capacity planning and asset investment and one feeds into the other to ensure that we have the most efficient overall operational approach and asset investment strategy for our networks.

We are compliant with Standard Special Licence Condition (“SSC”) A57 (Exit Capacity Planning) of the gas transporter licence and Standard Special Condition A11, and as outlined above have mitigated the associated risk of insufficient capacity for a peak day. We have also ensured that we have sufficient pressures in our networks at each extremity point.

Prior to the introduction of SSC A57, Cadent used a combination of annual and daily products to meet our 1 in 20 requirements. Under RII02 we now use long term products only as these are more efficient and have resulted in an increase in our annual capacity bookings.

Increases in demand forecasts have resulted in a need for some increases in assured pressures to meet the requirement for capacity at certain offtakes.

# Interaction

## With Other Networks

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### Within Cadent

The EM and WM networks have transfer points at 3 locations these are managed through the bookings process.

### External to Cadent

Cadent has transfers with Scotia Gas Networks (SGN) at 3 locations; 1 with EM and 2 with NL. At all 3, gas is taken from SGN in to the Cadent network. Following the application of the accepted demand forecast to the network models, the requirement was communicated to SGN on the standard template used in previous years.

Acknowledgement was received from SGN that the forms had been received and no further communication was received to suggest that there would be any issue with accommodating the requested flows.

## Final Outcomes

### Bookings

#### Years 1-3

For this first 3 years of the period, the existing Enduring Bookings for flat capacity were supported by annual bookings where needed. Where the booked capacity differs from the forecast demand, this is due to the minimum change possible in Enduring Bookings. In all cases the booked capacity is slightly higher than the demand forecast.

Due to industry changes affecting the regulatory framework, such as the removal of the capacity incentive and the introduction of the ECPG, some reductions to the Enduring Bookings were also made in year 1. The sites where reductions were made are listed in Table 4 below:

**Table 4 – Sites with reductions to the Enduring booking**

LDZ	Site
	This information
	has been redacted
	due to its
	sensitivity in line
	with BEIS and the
	CPNI general
	principles of
	security around its
	wider disclosure

#### Years 4-6

For years 4-6 any changes needed were made to the Enduring Bookings. These are shown in the tables below:

**Table 5 – Sites with increases to the Enduring booking for Year 4**

LDZ	Site	LDZ	Site
EA	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security	EM	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security
NL	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security	NW	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security
WM	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security		

**Table 6 – Sites with increases to the Enduring booking for Year 5**

LDZ	Site
	This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security

No increases to Enduring Bookings were made for Year 6.





















**Table 9 – SOD and EOD Pressures**

EA - 2021/22	Topology	1:20 peak day		Day 13		Day 46		Day 150		Day 300	
		SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD
		Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures
		This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security around its wider disclosure									

EM - 2021/22	Topology	1:20 peak day		Day 13		Day 46		Day 150		Day 300	
		SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD
		Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures
		This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security around its wider disclosure									

NL - 2021/22	Topology	1:20 peak day		Day 13		Day 46		Day 150		Day 300	
		SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD
		Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures
		<p>This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security around its wider disclosure</p>									

NW - 2021/22	Topology	1:20 peak day		Day 13		Day 46		Day 150		Day 300	
		SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD
		Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures
		<p>This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security around its wider disclosure</p>									

WM - 2021/22	Topology	1:20 peak day		Day 13		Day 46		Day 150		Day 300	
		SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD	SOD	EOD
		Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures	Pressures
		<p>This information has been redacted due to its sensitivity in line with BEIS and the CPNI general principles of security around its wider disclosure</p>									

# Conclusion

## Forecast -v- Bookings

### Meeting Our Requirements

For all years our bookings are in line with our agreed Peak Day forecast and therefore we have met the requirements of the ECPG. Discrepancies between the 2 are either due to modelling factors, such as linepacking or rounding, the restriction on the minimum change that is possible to existing bookings or due to inter-LDZ transfers of gas.

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

**Table 10 – Peak Day Forecast -v- Booking**

EA	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Forecast	31.079	30.797	30.561	30.772	30.704	30.704
Booking	31.091	30.831	30.615	30.810	30.747	30.747

EM	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Forecast	40.016	39.768	39.524	39.762	39.818	39.818
Booking	40.895	40.663	40.438	40.668	40.727	40.727

NL	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Forecast	37.500	37.159	36.874	37.149	37.046	37.046
Booking	36.857	36.607	36.399	36.610	36.860	36.860

NW	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Forecast	46.004	45.718	45.421	45.739	45.792	45.792
Booking	46.148	45.882	45.606	45.903	45.954	45.954

WM	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Forecast	33.715	33.410	33.274	33.525	33.345	33.345
Booking	33.130	31.925	31.790	32.041	32.723	32.723

**For all feedback or queries, please contact:**

Dave Adlam  
ECC Manager  
Cadent  
Brick Kiln Street  
Hinckley  
LE10 0NA

[LTSPPlanning.AnalysisRequests@cadentgas.com](mailto:LTSPPlanning.AnalysisRequests@cadentgas.com)