

# Appendix 07.02.04

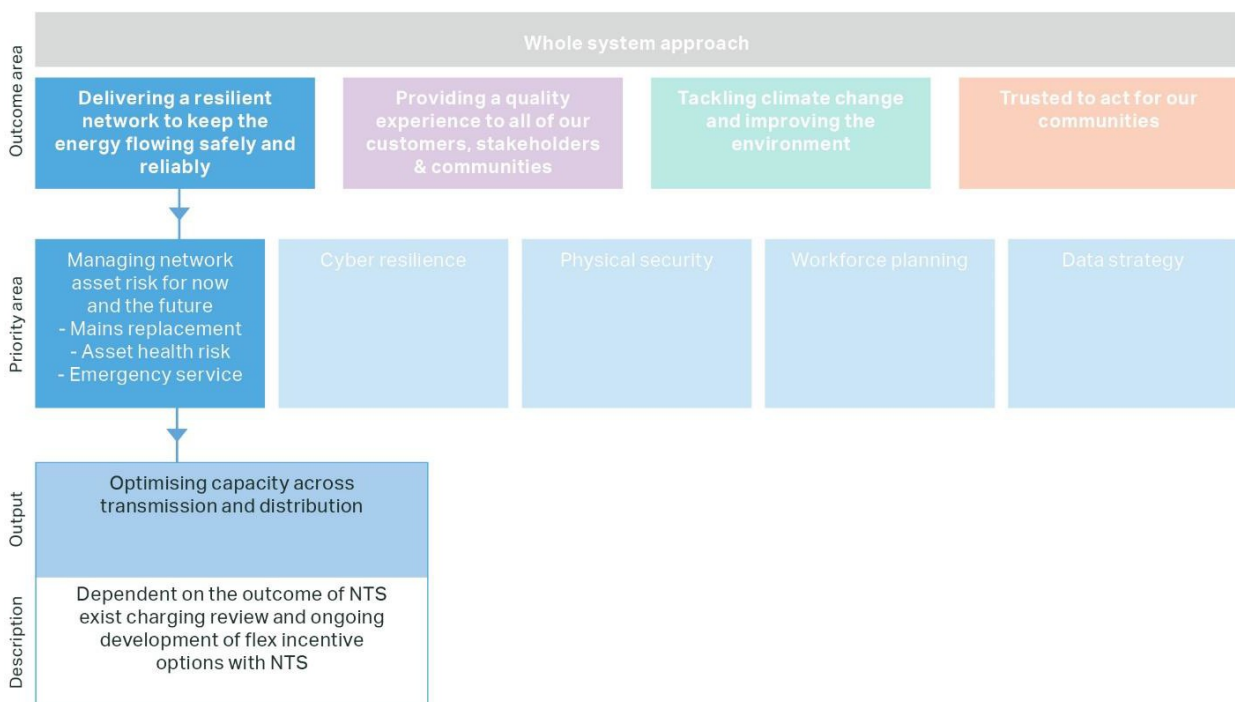
## Optimising capacity between transmission and distribution

**This output case describes the way we think we should be incentivised to efficiently book capacity on the gas National Transmission System to maintain the reliability of our network**

**During RIIO-2 we will:**

- Continue to meet our 1-in-20 reliability obligation at the most efficient cost (which is an established obligation and not being reviewed by Ofgem as part of RIIO-2)
- Propose that Ofgem update the way our financial incentive relating to exit capacity works, to reflect the changing energy system

**We will deliver:**



**Table of Contents**

1. Defining our customers' needs.....	3
2. Assessing the measurement options .....	8
3. Assessing performance levels.....	15
4. Customer testing .....	17
5. Our commitments.....	17
6. Delivering our commitments.....	19

**How we have developed our proposals:**

1. **We considered the customers' needs** – we must deliver a reliable supply of gas to our customers, this is included in our licence as an obligation to meet peak demand in a 1-in-20 year. This obligation is not up for debate in RIIO-2.
2. **We considered the context** – booking exit capacity to offtake gas from the National Transmission System (NTS) into our own network is one of the ways we ensure we can meet our customers' need for a reliable network.
3. **We considered how this will change in the future** – as variability of within-day forecasts will continue to become a more important indicator of peak demand than a daily average.
4. **We reviewed our RIIO-1 exit capacity incentive** – which incentivises us to book daily average peak capacity with the NTS more efficiently on a daily average basis ('flat' bookings), provided we meet our 1-in-20 obligation, but does not incentivise within-day ('flex' bookings).
5. **We considered different options for an incentive in RIIO-2** –
  - I. Removing the exit capacity incentive completely
  - II. Maintaining a flat-booking only incentive
  - III. Introducing a flex element to the incentive
  - IV. A full review of pricing arrangement for NTS capacity
6. **The best long-term solution is a full review** – however this would require a significant industry-wide process, which we do not feel is deliverable in time for RIIO-2.
7. **A flex incentive is the most appropriate update to this incentive** – to encourage us to book capacity in the most efficient way, reflecting its increasing importance.
8. **We have tested this with expert stakeholders** – this is a technical topic, so we have not asked customers to consider its detail during engagement, instead we have focussed on engagement with the NTS and other GDNs, who agree with further exploration of this area.
9. **This also aligns with customers' support for a whole-systems approach** – since incentives on GDNs encourage them to book capacity in a way that reduces the cost customers pay for the NTS.
10. **Ofgem will provide details of the incentive during draft determinations** – but we are asking them to consider including flex bookings in the incentive.

*Table 1 summary of our commitment*

Output: Optimising capacity across transmission and distribution	
<b>Common / Bespoke</b>	Common
<b>Output type</b>	ODI(F +/-)
<b>Comment</b>	We are proposing that Ofgem include flexible exit capacity bookings in their updated incentive for RIIO-2
<b>Target</b>	Meet our 1-in-20 Licence Obligation at all times (outside the scope of RIIO-2) Meet or outperform the costs we forecast to meet this obligation
<b>Cost implications (annual)</b>	No costs for our proposals, although exit capacity pass-through costs are included in our base plan
<b>Incentive range</b>	Ofgem to consult at draft determination
<b>CVP</b>	N/A – although any cost savings due to efficiency are shared with customers



## 1. Defining our customers' needs

### 1.1. What outcome do customers want?

Customers want a sustainable, secure and affordable energy supply, to heat their homes, cook and maintain other vital services. The **whole system** needs to work together to deliver this. Network companies play a key role in providing this, but our role must evolve to reflect the new realities of the energy transition.

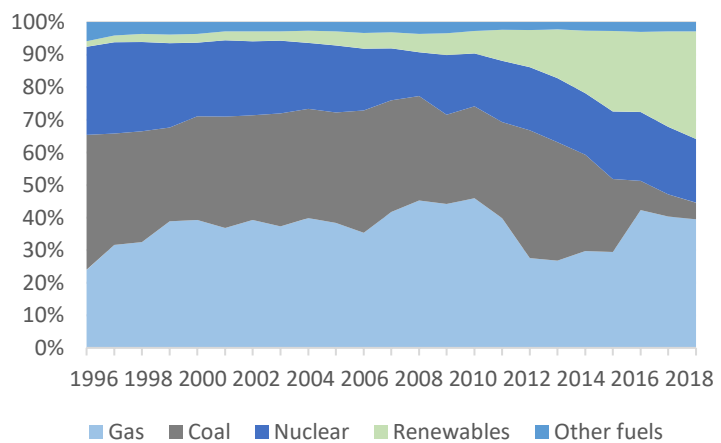
We have an obligation to provide safe and secure energy supplies at all times. This ranges from low demand in the summer, through to the peak levels of demand seen on the coldest days in winter, enabling customers to stay warm and supplying hot water and fuel for cooking. A reliable supply of gas is critical to customers' health and wellbeing, particularly for those in vulnerable situations.

For GDNs this currently means meeting our obligation to maintain sufficient capacity to meet our customers' peak demand of a 1-in-20 winter.

However, when meeting this obligation, we need to consider the impact of our actions on the whole energy system.

For example, the reliability of our network also supports the reliability of electricity supply, since gas provides the fuel for around 40% of the UK's electricity generation.

*Figure 1 Percentage of UK electricity generation by fuel*



Source: BEIS Digest of UK Energy Statistics, 2019

A second example is the way our decisions affect the decisions made by the operator of the transmission system, and therefore the costs they charge to their customers.

One of the ways we ensure the reliability of our network is the way we 'book' capacity from National Grid's gas National Transmission System (NTS).

Each year, we provide the NTS with a forecast of the peak capacity we will need to take from each point where our network connects to theirs (called offtakes). This is known as our **Exit Capacity** booking. The NTS then take this and the plans from other users of their network, and plans investment accordingly.

If all parts of the system work together, there will be enough capacity on the NTS to meet our needs and those of all other users, and the whole system will deliver the reliability customers need.

However, our bookings with the NTS also have a cost. The NTS charge us for capacity bookings based on the overall rate we book, which is recovered through our customer bills (in 2019/20, we expect these costs to be £94.6m). Additionally, the NTS base their investment plans on the bookings made by all users of their network, so if everyone books more capacity than they really need, customers see an increase in the NTS charges that are part of their bill.

The ultimate outcome customers should receive is the whole energy system working to balance cost and reliability collectively. For RII0-2, we want to consider how our approach to managing our network should evolve to reflect the pathway of whole-system thinking.

## 1.2. What insights are shaping our thinking?

We engaged with stakeholders and customers across a range of methods to understand their concerns about wider interventions to tackle fuel poverty, and identify what we can do to help.



Table 2 Engagement activities

Phase	Date	Source name	Source description	Questions asked	# of stakeholders	Score
Discovery	Nov-17	2017 regional stakeholder workshops	We held four workshops in different regions to seek feedback from key stakeholders on the early development of our business plan. Each workshop began with a short presentation, followed by roundtable discussions. Electronic voting was also used to ask stakeholders about preferred options.	The workshops explored a number of topics, including: safeguarding (e.g. PSR awareness, partnerships and innovation opportunities); the future role of gas and the decarbonisation of home heating. Cadent's general approach to its business plan was also discussed, for example the importance and coverage of the four outcome areas identified, the extent to which the plan should respond to the needs of specific customer groups or regions. - How strongly do you feel that networks should collaborate?	127	2.0

Discovery	Sep-18	Deliberative workshops	We delivered full day deliberative workshops in each of our regions to discuss what services customers find important, find our customer expectations of GDNs and gather feedback on our (at the time) four draft customer outcomes. The sessions began with information-giving and building knowledge of Cadent, then eliciting participants' views of services and priorities.	Participants were asked about their awareness of Cadent and expectations of a GDN. Participants were also asked for their views on the four draft outcomes in Cadent's business plan: keeping your energy flowing safely, reliably and hassle free; protecting the environment and creating a sustainable energy future; working for you and your community safeguarding those that need it most; value for money and customer satisfaction at the heart of all our services. The aim of the discussions was to shape these draft outcomes and identify any gaps.	206	3.0
	Oct-18	Domestic survey	We ran an online survey of a representative sample of our domestic customers (and non-customers). This aimed to test the findings of the earlier deliberative workshops and focus groups.	Participants were asked closed questions on 14 topics we could cover in the business plan (e.g. minimising leaks, affordability) and asked to rate how important they are. They were then asked more open questions about the level of importance and whether anything was missing from the list of 14. Finally, they were asked a multiple choice question on their preferred engagement methods for the future.	2,332	2.5
	May-19	Business surveys	We commissioned Traverse to survey 508 businesses with a view to understanding specific business customer wants and needs in order to inform our proposed services for our RIIO-2 2 business plan. The survey explored the general characteristics of the business and its gas use, such as whether it is connected to gas, how much it uses and the role that gas plays in the business. The effects of interruptions and business expectations were explored. In addition, views on delivering our four outcomes were also discussed: delivering a safe, resilient network; supporting the energy transition; providing a high quality and reliable service; and acting in a fair, transparent and responsible way.	The survey explored the general characteristics of the business and its gas such as whether it is connected to gas, how much it uses and the role that gas plays in the business. The effects of interruptions and business expectations were explored. In addition, views on delivering our four outcomes were also discussed: delivering a safe, resilient network; supporting the energy transition; providing a high quality and reliable service; and acting in a fair, transparent and responsible way.	508	2.5

<b>Acceptability Testing</b>	Sept-19	Exit capacity incentive testing, GDNs & NTS, July-Sept 2019	We met with the GDNs and the NTS to discuss our proposals for an exit capacity incentive. Overall, our proposals were received positively, and we agreed to explore the issues further.	N/A	4	2.5
	Oct-19	Phase 4 - Business interviews and surveys	We commissioned Traverse to test the acceptability and affordability of our proposed plan amongst business customers. This consisted of an on-line / face-to-face survey of 504 business customers and in-depth qualitative telephone interviews with 45 business customers. This showed that the plan had achieved high levels of acceptability and affordability from a business customer perspective.	Business customers were asked about the acceptability and affordability of our overall plan. If they said that the plan was unacceptable, they were asked to explain their response. If they said that it was neither acceptable nor unacceptable, they were asked what they would like to see in order to find it acceptable. Business customers were also asked to rate the acceptability of the outcome areas (environment, quality experience and resilience). Then, having learnt about the outcome areas, customers were asked as "informed customers" to rate the overall acceptability and affordability of the plan.	549	2.0

**Key to scoring**

Criteria	Robustness		Relevance
The score shown is based on a combination of the robustness of the source information (judged on whether it was recent, direct and representative) and the relevance to this area.	<1.5	One or zero criteria met	Limited relevance
	1.5 – 2.0	Two criteria met	Significantly relevant and contributory
	>2.0	All criteria met	Highly relevant and contributory

Exit Capacity is a complex and technical topic. The final decision on how this will be approached will be made by Ofgem, who have stated that they will consult on Exit Capacity incentives as part of their draft determinations after we submit our business plan.

We are committed to working alongside Ofgem throughout this consultation process to help provide possible measures and options to include in this consultation.

Therefore, we have focussed on engagement with a small number of informed stakeholders to understand their positions, and to work out the best way to balance the need to book enough Exit Capacity to meet reliability requirements while reducing costs.

This engagement has focussed on the detail of what we will propose in our plan, so it is covered in Section 4 on testing below.

### **Whole systems and collaboration**

However, at the same time, we have feedback from customers and stakeholders in support of a whole system approach, which is particularly applicable for Exit Capacity. While there is not universal support for adopting a whole systems approach (see responses to our discovery phase domestic customer survey below for a counter example), we believe the balance is strongly in favour of us thinking in this way when possible.

Customers and stakeholders generally see the value of coordination with other utilities to reduce costs. The example most often seized upon by customers is multi-utility working to minimise the disruption of street works through coordination. This received support at many engagements, including our 2017 regional workshops with 127 stakeholders, and our deliberative workshops with 206 customers.

In our domestic survey, less than half of the 2,332 respondents (38%) stated that collaborating with other companies is very important to them. Instead, 40% responded that this topic is quite important to them and 18% are neutral. Only 3% and 1% of respondents see this topic as either not very important or not at all important respectively. Some respondents commented that partnerships with other companies is unimportant to them because they feel that these topics do not have an impact on their daily life. In our public survey, collaboration was a topic many of the 165 respondents felt neutral about, as, similarly to the domestic customer survey, some felt that this does not necessarily impact them much.

The importance of whole system approaches was also highlighted by participants at the business customer workshops as part of acceptability testing.

Our engagement with industry stakeholders highlighted the importance of collaboration as several sectors face similar challenges that need to be tackled together.

### **1.3. Our strategy**

Each year, we prepare a 'strategy and demand' forecast to inform our approach to booking Exit Capacity. The decisions we make are informed first by the need to maintain a reliable network, and second by the price the NTS charges for capacity bookings. We also have a separate financial incentive relating to these bookings which informs our strategy. This is discussed below.

We look to use the prices NTS set at different offtake points from its network to move gas to cheaper offtakes where it does not impact the operation of the network. This in turn benefits the NTS and customers as cheaper offtakes have more available capacity and therefore the NTS is less likely to need to invest customers' money in reinforcing its network to make more capacity available at offtakes without sufficient capacity.



## 2. Assessing the measurement options



### 2.1. How is it currently measured?

#### 1-in-20 obligation

There are two elements to the way that our Exit Capacity bookings are currently measured.

Firstly, our licence requires us to maintain gas supplies at the level of daily demand corresponding to the worst winter experienced in 20 years (known as the 1-in-20 obligation).

This is an established approach to network planning and will continue into RIIO-2. Our priority for our strategy will be to meet this obligation and deliver a reliable service to all our customers.

We will also continue to engage with other GDNs to share our approach to meeting our 1 in 20 obligation. Although our networks are different and each GDN responds to different challenges on their networks, we can still share insights around process and changes we could make.

#### NTS Exit Capacity incentive

In RIIO-1, Ofgem set a framework which would encourage GDNs to effectively manage their network capacity to meet our 1-in-20 obligation at the lowest cost.

Ofgem introduced a Capacity Incentive in RIIO-1 and identified a target level of Exit Capacity bookings at the start of the price control. GDNs are then rewarded if they meet their 1-in-20 obligation while booking a lower level of Exit Capacity than this target.

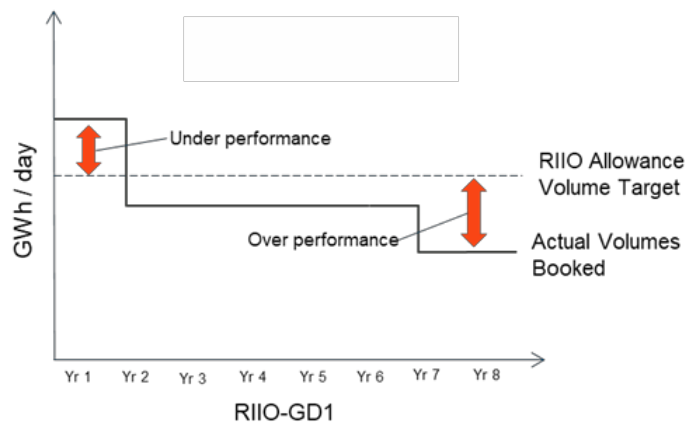
This ensures companies do not hoard capacity and incentivises us to book at an efficient level, helping the NTS to have the ability to manage their network effectively and invest efficiently. This results in lower costs for the NTS, which are then passed on to customers.

The incentive aligns our decision-making process more closely with customer benefits with respect to costs, since if we book an inefficient level of Exit Capacity we share the cost it imposes on customers. On the other hand, we share the benefit if we can meet our obligations more efficiently.

Improvements we have made during RIIO-1 include:

1. We made bookings at cheaper offtakes from the NTS rather than at more expensive points, where it is operationally possible to do this.
2. Where possible, we have used daily capacity products offered by the NTS when they have capacity available, reducing the amount we need to book on an annual basis.
3. We have invested in our gas network control system (Cosmos) to allow us to operate in new ways and make use of the daily products available.

Figure 2 Illustrative example of the incentive



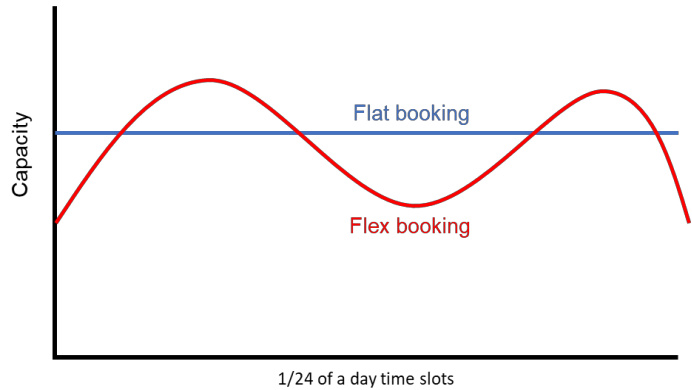
**Flat and flex bookings**

There is an important distinction to draw between two types of bookings. Each year we make flat and ‘flex’ Exit Capacity bookings with NTS for our peak day for the following six years.

This includes flat bookings, which are one rate of capacity set for the entire day, and flex bookings, which are broken down into slots of 1/24<sup>th</sup> of a day.

There are some important differences between the way these two types of booking are treated under current pricing arrangements and our Exit Capacity incentive:

*Figure 3 Our 1-in-20 peak day*



*Table 3 Flat and Flex comparison*

	Flat bookings	Flex bookings
<b>Pricing</b>	The NTS charges network users for the flat bookings they make	The NTS does not charge network users for the flex bookings they make
<b>Who ends up paying?</b>	Customers of the network user who made the booking	Spread across all gas consumers
<b>GDN incentive</b>	The Exit Capacity Incentive rewards efficient bookings and penalises inefficient bookings	No reward or penalty for efficient or inefficient bookings
<b>What behaviour is encouraged?</b>	Reducing costs for customers while still meeting the 1-in-20 obligation	Conservatively booking capacity, since there is no direct cost to you or your customers

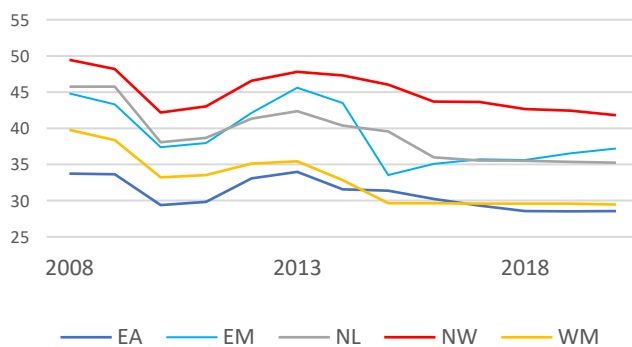
**Strengths and weaknesses of the current regime**

The Exit Capacity package for RIIO-1 was put in place at a time when flat Exit Capacity bookings were a good signal of the costs GDNs imposed on the NTS. Flat capacity bookings have fallen over the price control in all our regions, reducing costs to customers and helping the NTS to better plan investments.

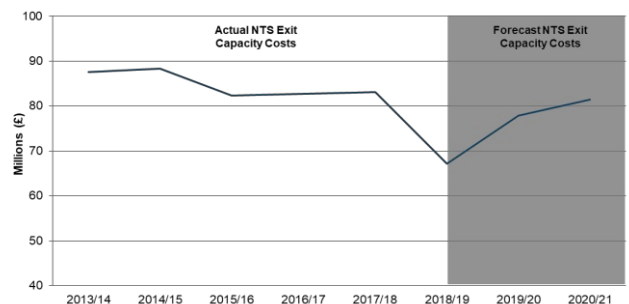
The avoidance of investment by the NTS is an example of a whole systems approach, since actions by GDNs can reduce its costs.

Over the RIIO-1 period, we have reduced our exit capacity costs, which has reduced the costs passed on to shippers and our other customers. Costs are forecast to increase in future years as our peak requirements are expected to increase, as well as the prices charged by the NTS.

*Figure 5 Flat capacity bookings (mcm/d)*



*Figure 4 Actual and forecast NTS Exit Capacity costs*



However, flex bookings are becoming a more important indicator of the capacity requirements of the NTS than previously (see below). Since network users do not pay for flex bookings, and they are not covered by the Exit Capacity Incentive, these have not fallen over the same period.

There is no incentive for network users to reduce these bookings, particularly when weighing up the risk of doing so with their 1-in-20 obligation.

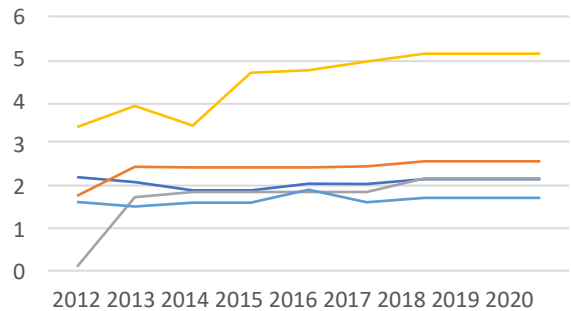
**Flex bookings are becoming more important**

The energy system is in a period of transformation. A number of elements of the transition mean that the flex bookings are likely to vary more over the course of a day. This means there will be a greater difference between flex and flat capacity bookings, and so flat capacity bookings will be a worse indicator of the overall capacity needed on the NTS.

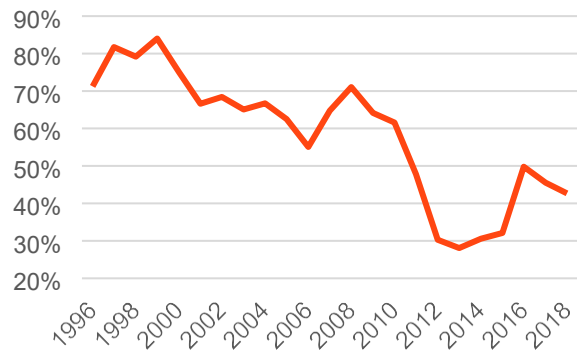
One reason for this is the changing role of gas-fuelled electricity generation in the UK. Previously, gas generators would have run for a large proportion of the time, causing a relatively steady demand for gas from our network. With the increase in renewable generation in the last ten years, their role has changed into peaking plants, filling in the gaps when more generation is needed. This is illustrated by the graph showing Combined Cycle Gas Turbine load factors, which measure what proportion of the time the plant is generating electricity.

Another indication of this trend is the increasing level of 'linepack swing', which is a measure of the change in pressure of the gas contained in the NTS over time. This is increasing, suggesting that over the course of a day, there is more variation in the level of capacity needed from the NTS.

*Figure 6 Flex capacity bookings (mcm/d)*

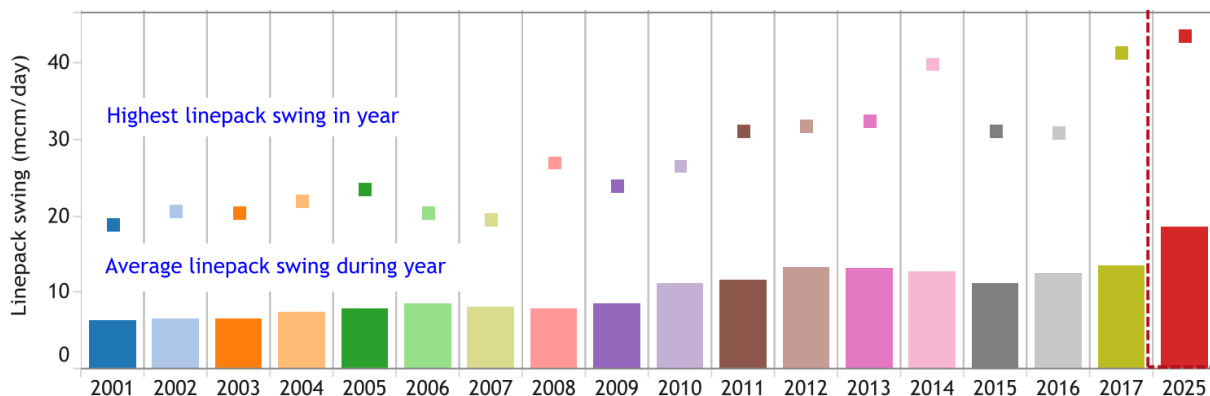


*Figure 7 Average CCGT load factor*



Source: BEIS Digest of UK Energy Statistics 2019

*Figure 8 Highest and average linepack swings*



Source: National Grid GFOP study instalment 2

A further driver of these swings is the increase in the amount of Liquefied Natural Gas (LNG) entering the UK.

Traditionally, the NTS flowed predominantly from North to South as most gas landed at St Fergus and northern and eastern terminals. LNG landing at Grain and Wales has shifted this dynamic.

This means that the NTS needs to operate with gas flowing in different directions.

Finally, there is inherent difficulty in predicting peak demand levels particularly in the face of economic uncertainty and increasingly erratic weather patterns.

Therefore, in RIIO-2 and into the future, flex Exit Capacity bookings should play a more prominent role in the future regulatory and pricing regime.

**UNC678**

In parallel to the RIIO-2 price control process, the industry has proposed further changes to the way NTS recovers costs from network users. The proposals seek to amend the Gas Transmission Charging Regime in order to better meet: the relevant charging objectives; customer or stakeholder provided objectives for gas transmission transportation charges; and to deliver compliance with relevant EU Codes, notably TAR NC.

There are eleven proposals from the industry, which essentially have variations on two approaches known as ‘capacity weighted distance’ and ‘postage stamp’. Capacity weighted distance takes into consideration distance and use of the network in the determination of prices, whereas the postage stamp approach does not.

Currently, these proposals sit with Ofgem for a decision. There is no formal deadline for the decision, but we would expect a new NTS pricing methodology to become effective from a gas year which commences every October. A new methodology will effectively result in changes to Exit Capacity prices and therefore change of Exit Capacity costs. This means that any elements relating to Exit Capacity in RIIO-2 need to take into account the potential changes being proposed, and the two need to support each other.

**2.2. Best practice examples**

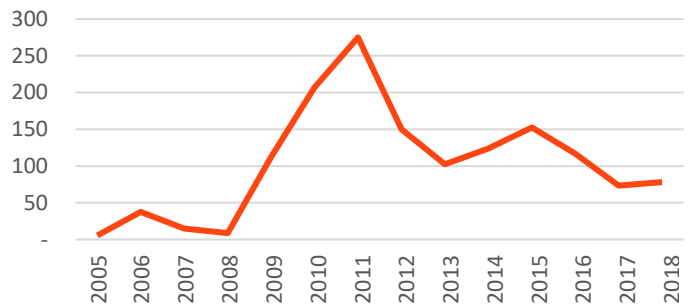
We work with other GDNs to share best practice on planning and meeting our 1-in-20 obligation at the lowest cost, which informs our strategy.

We have also engaged on a practical level with other organisations on the way they operate similar functions to our network control room to maintain reliable supplies:

- We have proactively engaged with the water industry, specifically control room operations, and have shared insights into how the impact of extreme weather around 1<sup>st</sup> March 2018 was managed. This was done through the Water Control Room Forum and included a presentation from us on the challenges of dealing with a peak day. This engagement has led to ongoing work with three water companies, for example on the way they collect and monitor information about their networks and reliability.
- We have developed and maintained a working relationship with the National Air Traffic Services (NATS) over the last three years. This has involved an open and honest exchange around the challenges facing the control rooms in dealing with a peak day, for example identifying and managing resource levels and fatigue of key staff.

However, the main insights we have in terms of best practice for incentives relating to Exit Capacity are taken from consultation during Ofgem’s Mid-Period Review of RIIO-1.

*Figure 9 LNG imports (TWh)*



Source: BEIS Digest of UK Energy Statistics 2019

- Some stakeholders were concerned by the rewards that GDNs earned from the incentive.
- We highlighted that the reward was a result of behaving in the way that the incentive was designed to encourage: by booking capacity efficiently, using the cheaper offtakes where possible, using the full range of products available (i.e. enduring, annual and daily capacity), and making full use of the inherent flexibility in our networks, while maintaining our 1-in-20 gas security of supply commitment.

Finally, a useful principle considered best practice for all charging arrangements is that those who impose costs on the system (e.g. the need to add more capacity to the NTS) should bear the costs of doing this (i.e. NTS charges should reflect costs).

### 2.3. What options have we considered?

The baseline licence obligation to ensure we can meet a 1-in-20 peak level of demand is not being considered as part of the RIIO-2 price control decision, and is an established principle in the way we plan our network (i.e. this aspect is not up for debate in RIIO-2). It sets a clear responsibility on us to maintain the reliable supply of energy that customers need.

Additionally, Ofgem's Sector Specific Methodology Decision includes two decisions related to the Exit Capacity incentive:

- The incentive will now be based on final prices for capacity offtake from the NTS, rather than a forecast of prices at the start of the price control. This removes the issue discussed above in Section 2.2, where GDNs could benefit from changes in price rather than more efficient bookings.
- The incentive will include a mechanism that enables a within-period adjustment of offtake capacity targets, to ensure ongoing alignment between targets and peak demand forecasts.

These changes address some of the objectives we would want to deliver through our Exit Capacity strategy in RIIO-2, namely:

- Deliver 1-in-20 capacity obligation and ensure a safe and secure supply to customers.
- Encourage efficient network planning decisions for distribution and transmission systems (a whole system approach).
- Manage price volatility and avoid windfall gains.
- Manage demand volatility and avoid windfall gains.

Therefore, the remaining options for RIIO-2 are around the way efficient Exit Capacity bookings are incentivised. Ofgem will consult on this incentive as part of their draft determinations after the conclusion of the proposed UNC modification 678 (see Section 2.1).

The remaining objectives that this incentive should meet are:

- To encourage GDNs to efficiently book Exit Capacity from the NTS
- To recover NTS costs from those who create the need for them
- To encourage whole-system outcomes wherever possible

We see four options for this:

*Table 4 Options for Exit Capacity Incentive*

<b>Option 1: Remove Exit Capacity Incentive entirely</b>		
<b>Description</b>	<b>Pros</b>	<b>Cons</b>
GDNs have no financial incentive to efficiently book Exit Capacity. Rely entirely on the 1-in-20 licence obligation to ensure GDNs book enough Exit Capacity to deliver a reliable system.	<ul style="list-style-type: none"> <li>• Clear responsibility to maintain reliability</li> <li>• Customers do not pay for any efficiency gains that are made</li> <li>• Simplifies the price control by removing an incentive</li> </ul>	<ul style="list-style-type: none"> <li>• No incentive to make efficient Exit Capacity bookings</li> <li>• Interplay between flat, flex and pressures not efficiently managed</li> <li>• No incentive to cooperate with others to deliver a better whole-system outcome</li> </ul>

<b>Option 2: Maintain current Exit Capacity Incentive for flat-only bookings</b>		
<b>Description</b>	<b>Pros</b>	<b>Cons</b>
GDNs are rewarded for reducing flat Exit Capacity bookings by sharing savings with customers and take a share of any cost increases due to inefficient bookings.	<ul style="list-style-type: none"> <li>• Responsibility to maintain reliability remains</li> <li>• GDNs are incentivised to reduce capacity bookings on a day-by-day basis</li> <li>• Encourages GDNs to reduce the costs they impose on the NTS</li> </ul>	<ul style="list-style-type: none"> <li>• Interplay between flat, flex and pressures not efficiently managed, with a missed opportunity to deliver further benefit to customers by incentivising efficient flex bookings</li> <li>• Does not reflect the changing nature of the energy system and the increasing importance of flex Exit Capacity bookings</li> </ul>

<b>Option 3: Introduce flex bookings to the Exit Capacity Incentive</b>		
<b>Description</b>	<b>Pros</b>	<b>Cons</b>
GDNs are rewarded for reducing flat and flex Exit Capacity bookings by sharing savings with customers and take a share of any cost increases due to inefficient bookings.	<ul style="list-style-type: none"> <li>• Responsibility to maintain reliability remains</li> <li>• GDNs are incentivised to reduce capacity bookings on a day-by-day and within-day basis</li> <li>• Encourages GDNs to reduce the costs they impose on the NTS through a whole system approach</li> <li>• Aligns with aims of UNC modification 678</li> </ul>	<ul style="list-style-type: none"> <li>• More complex incentive than the RIIO-1 Exit Capacity Incentive will be required</li> <li>• Not a completely level playing field, since non-GDN network users are still not incentivised to book flex capacity in the most efficient way</li> <li>• Savings made by the NTS due to lower bookings may not be passed on to consumers</li> </ul>

Option 4: Full review of NTS charging with cost-reflective charges		
Description	Pros	Cons
GDNs are rewarded for reducing flat and flex Exit Capacity bookings by sharing savings with customers and take a share of any cost increases due to inefficient bookings.	<ul style="list-style-type: none"> <li>Responsibility to maintain reliability remains for GDNs</li> <li>All network users are incentivised to reduce capacity bookings on a day-by-day and within-day basis</li> <li>All network users are encouraged to reduce the costs they impose on the NTS through a whole system approach</li> </ul>	<ul style="list-style-type: none"> <li>Long and high-effort industry and regulatory approval process to review and update charges</li> <li>Outside the scope of the RIIO-2 price control</li> </ul>

## 2.4. Which option is our preference and why?

We have assessed each of the options against the objectives:

*Table 5 Options appraisal*

Objective	Option 1 (no incentive)	Option 2 (flat only)	Option 3 (flat and flex)	Option 4 (full charging review)
To encourage GDNs to efficiently book Exit Capacity from the NTS				
To recover NTS costs from those who create the need for them				
To encourage whole-system outcomes wherever possible				

No delivery	Weak delivery	Some delivery	Delivery	Strong delivery
-------------	---------------	---------------	----------	-----------------

The assessment of the objectives shows that there is a clear progression from best-to-worst in terms of delivering secure and reliable energy supplies to customers while balancing the cost to achieve this.

Option 4, a full charging review represents the best long-term solution to deliver this, with all network users encouraged to make efficient decisions relating to NTS Exit Capacity. In particular, this goal is most in line with the support for a whole-systems approach that customers and stakeholders want.

However, this would require a significant industry and regulatory approval process to deliver. Therefore, this should be a long-term goal and any steps in RIIO-2 should support the journey toward it.

Therefore, our preferred option for RIIO-2 is Option 3, introducing a flex booking element to the existing Exit Capacity incentive.

### 3. Assessing performance levels



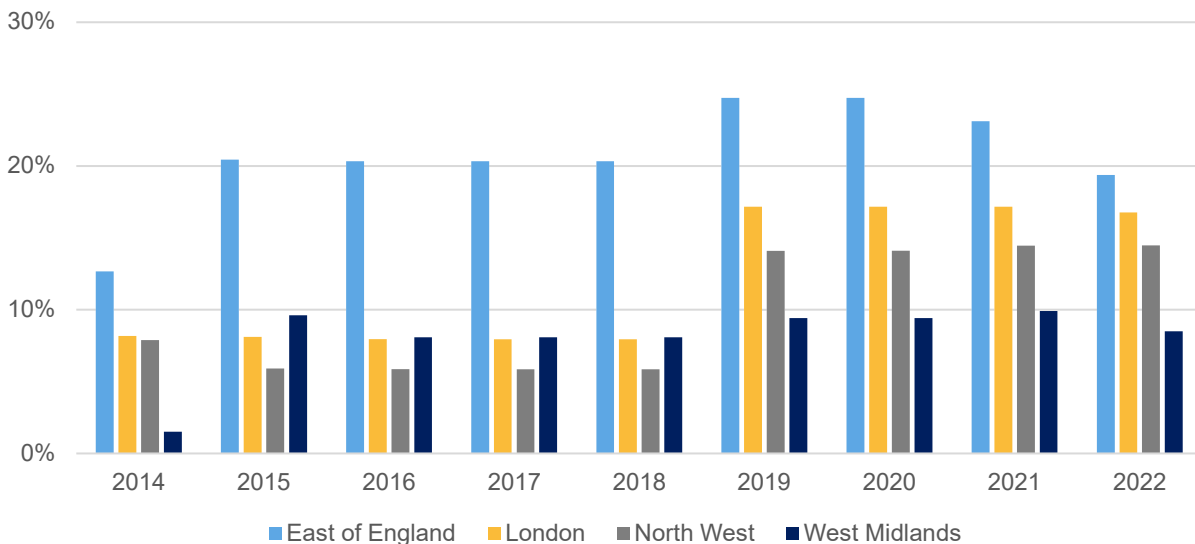
#### 3.1. What is our current and historic performance?

We have continued to meet our 1-in-20 obligation throughout RIIO-1. An example of when we have maintained this obligation during a relatively extreme event was during the ‘Beast from the East’ in early 2018. The level of Exit Capacity bookings we had forecast was sufficient to meet the needs of our network during this period of unusually high demand.

We have also shown strong performance in delivering this security of supply at an efficient cost. We have outperformed our target levels set for RIIO-2 and shared this benefit with customers as well as receiving a reward payment ourselves. We predict that over the course of RIIO-1, we will return approximately £60m to customers because of this incentive.

Over the course of RIIO-1, we have released significant capacity back for other uses:

*Figure 10 % of target bookings returned for other uses (included current forecast)*



Our current incentive does not include flex bookings. While we have reduced flat capacity bookings and achieved good performance in this area, we are not currently incentivised to book flex more efficiently.

#### 3.2. What performance levels have we considered?

Our initial targets continue the previous format where a volume target is set and using flat capacity charges to turn this into an incentive target.

We set our capacity booking strategy each year to meet our 1:20 peak day obligation. We consider a combination of enduring, annual and daily capacity products and select the most efficient booking approach. In doing so, we also consider the risk that daily capacity products may not be available in the event of constraints on the NTS, and ensure the level of enduring capacity plus use of available stock and storage within the Network would enable us to meet its peak day requirement in any of our Networks.



The result of this process is the following baseline set of targets for RIIO-2:

*Table 6 NTS Exit Capacity baseline targets*

Distribution Network	RIIO-2 Peak days from New NTS Forecast												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>East Anglia</b>	31.8	33.2	29.4	29.0	29.4	30.0	30.0	30.2	30.2	30.4	30.4	30.5	30.4
<b>East Midlands</b>	39.5	39.0	35.3	36.4	37.0	38.0	38.0	38.3	38.7	38.6	38.7	38.7	38.6
<b>London</b>	41.4	42.8	37.4	37.1	37.2	37.2	36.9	37.3	37.5	37.5	37.5	37.7	37.7
<b>North West</b>	46.9	46.7	43.0	42.8	44.1	44.1	43.2	43.6	43.8	43.7	43.9	44.0	43.9
<b>West Midlands</b>	34.6	34.2	31.2	31.8	32.3	33.3	33.3	33.6	33.7	33.7	33.8	33.9	33.8

As per Ofgem's Sector Specific Methodology Decision, we support their decision that these targets will be adjusted within period, so that our target levels update dynamically based on updated information on demand. This would mitigate the impact of variations in demand, which is inherently difficult to predict in the face of economic uncertainty and increasingly erratic weather patterns.

These forecasts translate into the following costs, which depend on whether the UNC modification is approved:

*Table 7 RIIO-2 NTS Exit Capacity costs - new forecast capacity and charging regime, without 678<sup>1</sup>*

	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-2 Total (£m)
<b>EoE</b>	<b>£26.64</b>	<b>£27.67</b>	<b>£27.35</b>	<b>£27.31</b>	<b>£27.34</b>	<b>£136.31</b>
<b>NL</b>	<b>£21.75</b>	<b>£22.60</b>	<b>£22.46</b>	<b>£22.41</b>	<b>£22.49</b>	<b>£111.69</b>
<b>NW</b>	<b>£43.56</b>	<b>£45.25</b>	<b>£44.61</b>	<b>£44.53</b>	<b>£44.68</b>	<b>£222.63</b>
<b>WM</b>	<b>£23.09</b>	<b>£23.98</b>	<b>£23.94</b>	<b>£23.90</b>	<b>£23.95</b>	<b>£118.85</b>
<b>TOTAL (£m)</b>	<b>£115.04</b>	<b>£119.50</b>	<b>£118.35</b>	<b>£118.14</b>	<b>£118.45</b>	<b>£589.48</b>

*Table 8 Table 7 RIIO-2 NTS Exit Capacity costs - new forecast capacity and charging regime, with 678<sup>1</sup>*

	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-2 Total (£m)
<b>EoE</b>	<b>£35.96</b>	<b>£36.63</b>	<b>£36.86</b>	<b>£36.63</b>	<b>£36.63</b>	<b>£182.70</b>
<b>NL</b>	<b>£23.13</b>	<b>£23.62</b>	<b>£23.79</b>	<b>£23.64</b>	<b>£23.64</b>	<b>£117.82</b>
<b>NW</b>	<b>£28.80</b>	<b>£29.30</b>	<b>£29.49</b>	<b>£29.30</b>	<b>£29.30</b>	<b>£146.20</b>
<b>WM</b>	<b>£17.20</b>	<b>£17.60</b>	<b>£17.76</b>	<b>£17.65</b>	<b>£17.65</b>	<b>£87.86</b>
<b>TOTAL (£m)</b>	<b>£105.09</b>	<b>£107.14</b>	<b>£107.91</b>	<b>£107.22</b>	<b>£107.22</b>	<b>£534.57</b>

These costs are included in our base plan as a pass-through of the amount we pay to the NTS for Exit Capacity, they are not retained by us.

<sup>1</sup> These are actual costs rather than nominal costs included in Business Plan Data tables and our main plan

For comparison, a summary of the charges in RIIO-1, including latest forecasts for future years are:

*Table 9 RIIO-1 NTS Exit Capacity charges<sup>2</sup>*

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	RIIO-1 Total (£m)
<b>EoE</b>	£26.30	£25.72	£23.06	£24.63	£25.58	£19.67	£21.84	£26.44	£193.22
<b>NL</b>	£18.21	£19.71	£18.80	£18.63	£19.62	£15.78	£17.23	£20.41	£148.40
<b>NW</b>	£37.52	£39.38	£37.74	£37.32	£38.48	£34.16	£36.11	£40.02	£300.73
<b>WM</b>	£20.16	£20.17	£19.35	£20.74	£22.43	£18.83	£19.49	£22.06	£163.22
<b>TOTAL</b>	£102.19	£104.97	£98.95	£101.32	£106.11	£88.45	£94.66	£108.93	£805.57

The period 18/19 through to 20/21 has shown an annual increase in costs. Over that period the volume of capacity booked in each Network has remained relatively stable and the reason for the increase has been generated by an increase in the NTS Exit Capacity prices across all regions.

The incentive described below in Section 5 would reward us if we are able to outperform these targets and save money for customers by meeting our 1-in-20 obligation for less than this level. Our goal will be to continue to innovate and identify ways we can reduce these costs without compromising the reliability our customers require.

#### 4. Customer testing



We have not tested our Exit Capacity booking forecasts with customers, although we have shared our strategy with other GDNs and the NTS for comment.

We have also discussed our proposals around including flex bookings in our incentive with stakeholders. Recent engagement with these stakeholders includes:

- Discussion of our proposals for a flex incentive with the NTS in September 2019, where they agreed that something is needed to influence in-day behaviour, although they are not yet sure what the appropriate methodology is.
- Discussion of our proposals for a flex incentive with other GDNs separately and then as a group in August and July 2019, where they all expressed general support to continue exploring this area, although they raised the concern that operational impacts would need to be mitigated (e.g. would we be encouraged to push our systems to the limits to avoid flex capacity bookings).

This engagement also all highlighted that the ongoing NTS capacity review, which considers a broader set of ideas than incentives may make related changes that work in the same direction.

In terms of incentive design, Ofgem has made clear that its intention is to consult on an Exit Capacity Incentive when it publishes draft determinations for RIIO-2. This will provide an opportunity for all interested stakeholders to provide their feedback on the incentive. We have not attempted to replicate this consultation process as part of our business plan.

#### 5. Our commitments



Our licence requires us to fulfil the 1-in-20 obligation. This cannot be compromised by any incentives introduced to the price control.

<sup>2</sup> As for the tables above, these are actual rather than nominal costs

In their Sector Specific Methodology Decision document, Ofgem confirms that its intention is to include a financial ODI that complements our licence obligation and encourages us to meet it as efficiently as possible.

### 5.1. Our proposed package

We support Ofgem’s proposal for a financial ODI as the most appropriate form of output for Exit Capacity:

*Table 10 Regulatory treatment*

Regulatory treatment	Criteria	Rating	Further explanation of assessment
<b>Reputational ODI</b>	Demonstrate this is important to customers and/or stakeholders	Green	This output balances reliability with cost, which customers indicate is important.
	Funded elsewhere in our plan, or inappropriate for funding	Red	While we pass through the cost of NTS Exit Capacity bookings, there is no mechanism to reward us for working to make these bookings more efficient or to reimburse us for costs incurred to improve performance.
	Can robustly measure performance improvement	Green	Our capacity bookings and the costs incurred can be measured against targets set before or during the price control.
<b>Financial ODI</b>	Demonstrate this is important to customers and/or stakeholders and they are willing to pay	Green	This output balances reliability with cost, which customers indicate is important. This delivers a cash benefit to customers rather than a service they are willing to pay for, since it is based on reduced costs for Exit Capacity bookings paid to the NTS.
	Not funded elsewhere in our plan	Green	While we pass through the cost of NTS Exit Capacity bookings, there is no mechanism to reward us for working to make these bookings more efficient or to reimburse us for costs incurred to improve performance.
	Can robustly measure performance improvement	Green	Our capacity bookings and the costs incurred can be measured against targets set before or during the price control.
<b>Price control deliverable</b>	Specific deliverable with a clear timeline and targets	Red	There are not specific initiatives that we can deliver to guarantee more efficient bookings. This is an ongoing process of innovation and iterative improvements.
	Demonstrable benefit to customers which they support	Green	As described for reputational ODI.

<b>Licence Obligation</b>	Absolute minimum, with significant customer harm if we do not deliver it		There is already a separate Licence Obligation covering the absolute minimum, that we maintain supplies to meet a 1-in-20 level of demand.
	Applicable to all GDNs		This output would be more effective in delivering value to customers if it was applied to all GDNs and not just us .

Doesn't meet criteria	Weakly meets criteria	Partially meets criteria	Meets criteria	Strongly meets criteria
-----------------------	-----------------------	--------------------------	----------------	-------------------------

Primarily, we commit to continue to meet our obligation to ensure we have booked sufficient Exit Capacity from the NTS to meet demand on a peak day in a 1-in-20 winter.

The decision on the Exit Capacity Incentive that encourages us to meet this obligation in the most efficient possible way will come later in the business planning process, once the outcome of UNC 678 is known.

Ofgem has indicated that it will consult on this incentive as part of draft determinations.

When it does, we propose this should include:

- Retaining Ofgem’s proposals from the draft determination to base the incentive on actual rather than forecast NTS prices. This represents both an upside and a downside risk for customers (i.e. they pay more if prices go up, but less if prices go down, while currently GDNs bear this risk). As such, further consideration should be given to how to make the incentive work best and be fair for all parties. To ensure parity, there could be a further option considered which is a hybrid of prices three years in advance and actual prices (50/50), so that customers and GDNs share this risk.
- Retaining the mechanism to adjust targets based on updated information on demand on a reasonable timeframe.
- Including a flat and flex element to the incentive, to encourage companies to efficiently book flex capacity.
- Considering incentive payments coming from the NTS (and as such all gas customers) rather than only our customers, since the benefit of reduced NTS costs accrues to everyone.
- Viewing this incentive as a step along the way to a fully cost-reflective charging regime for the NTS, since a flex-based incentive does not bring the interests of all parties involved in booking Exit Capacity into line with those of consumers.

## 6. Delivering our commitments



The commitments we are making with respect to Exit Capacity are a refinement to a fundamental set of processes within our organisation to manage capacity across our network. These are working well, as our performance described in Section 3 demonstrates. Our process for setting demand forecasts and capacity strategy is also already established and delivering a good outcome for our customers.

Our proposals for RIIO-2 build on what Ofgem has described as a successful incentive from RIIO-1, by bringing the increasingly important flex capacity bookings into the incentive’s scope.

We already have the skills to deliver this commitment, but the revised incentive will help to align the incentives we face when making decisions with those of our customers.

---

Customers will be protected from non-delivery of our commitment through the fact that the incentive is symmetrical. If we underperform against our target and incur more costs for inefficient Exit Capacity bookings, we will pay a penalty that reduces customer bills.