



Annex

A12.05 Network Capability Stakeholder Engagement Report

December 2019


As a part of the NGGT Business Plan Submission

nationalgrid

Summary


This report sets out the engagement that has taken place to allow our stakeholders to establish a robust understanding of the capability of the gas National Transmission System (NTS), how this relates to their needs and how our business plan links to the delivery of those needs.

Engagement Summary




5000+ stakeholders across 7 target segments


Stakeholder Segments




Core Energy Industry




Non-core infrastructure




Research & Development




Not for Profit / NGOs



Commentators



Political & Regulator




Consumer Communities


We engaged in

2018	2019
To clarifying and agree the term "Capacity Baseline" and understand consumer and stakeholder priorities	Wide engagement on the definition of network capability and the design metrics including industry trade offs


Engagement channels leveraged




1-2-1 Meetings



Webinars




Newsletters



Forums & Workshops

Engagement targeting based on:





Our engagement was supported by independent third party – Frontier Economics. Frontier Economics was engaged to ensure our questions and materials were posed in a non leading manner. They also worked with us to consider the most appropriate engagement channels.

Network Capability engagement highlights

- 1 Confirmed the need to balance between three consumer priorities – using energy as and when consumers want, an affordable bill and facilitating delivery of a sustainable energy system in order to achieve net zero.
- 2 Established the broader stakeholder priority of taking gas on and off the network where and when stakeholders want.
- 3 Tested stakeholders' appetite for disruption, which determined:
 - They value being able to flow gas without restriction or disruption
 - There was very little appetite for unplanned disruption on entry. Maximum 1-2 disruptions per year (for a maximum duration of 6 hours for some parties, shorter for others)
 - There was no tolerance for disruption on exit
 - Domestic consumers would generally like at least as much reliability as they have at present; and would be happy to pay more for investments in this area
 - Non-domestic consumers (large and small) would be happy to pay more in this area for a reduction in the probability of a supply interruption
 - Major energy users stressed the importance of reliability and the financial and commercial consequences of supply interruptions

For detailed information on the network capability investment proposals and the associated baseline metrics, please refer to Chapter 12 of the main NGGT Business Plan document, annex A12.03 on Network Capability Baseline metrics and annex A12.02 Network Capability Report.

Section 1 - Introduction

Background

Given network capability underpins our RIIO-2 business plan it was vital that we had a clear programme of engagement to ensure we adequately reflect our stakeholders' views, utilising the approach we have set out in chapter 10 for the overall engagement on our business plan.

The direction of our network capability focused work and engagement has been guided by findings from the initial stage of our RIIO-2 engagement, our "Shaping the future of the gas transmission" programme. This established the need to balance the three consumer priorities of using energy as and when consumers want, an affordable bill, and facilitating delivery of a sustainable energy system. It also established the broader stakeholder priority of taking gas on and off the network where and when stakeholders want.

Further to this we tested stakeholders' appetite for disruption, which determined that there was very little appetite for unplanned disruption on entry (maximum 1-2 disruptions per year – max 6 hours) and no tolerance for disruption on exit. Domestic consumers would generally like at least as much reliability as they have at present and would be happy to pay more for investments in this area. Non-domestic consumers (large and small consumers) would be happy to pay more in this area for a reduction in the probability of a supply interruption. Major energy users stressed the importance of reliability and have pointed out that there are financial and commercial consequences for them of supply interruptions.

Fundamentally the work to determine network capability will identify and deliver what is needed to meet these key stakeholder requirements. This insight, which we tested through various stakeholder engagement activities, was one of the key inputs for developing our network capability metrics.

Process followed to map out engagement for network capability

We targeted our network capability engagement at a subset of our 2000 stakeholder organisations. We aligned our stakeholders against stakeholder segments including: core energy industry, non-industry infrastructure, research and development, not for profit/NGO, political and regulatory, and consumer communities; targeting a cross-section from each of these sectors. We did this by taking into consideration size, influence and geography to get as full a range of input as possible.

We recognised the importance of ensuring the questions and content of this engagement was framed appropriately and non-leading, so we asked Frontier Economics¹ to work with us to challenge and review the material before it was used, giving us pointers on how to do this ourselves as we have developed our material further. We also worked with Frontier to consider the most appropriate channels for engagement given the complexity of the topic and required discussions. Through this we identified one-to-one meetings, webinars and trade association meetings to be the most appropriate channels to utilise.

What engagement did we carry out?

In late 2018 we held a workshop to ensure our stakeholders and Ofgem had a common understanding of capacity baselines. Capacity baselines were seen as the measure of the capability of the NTS, but they do

¹ Frontier are an economic consultancy. <https://www.frontier-economics.com/uk/en/home/>

not fully represent the physical capability and so the aim of the workshop was to ensure all parties understood what capacity baselines are and are not

In early 2019 we began our focused network capability engagement with webinars and one-to-ones, as well as seeking challenge from the independent stakeholder user group. This was designed to inform and shape the definition of network capability and design metrics in a way that is meaningful for stakeholders.

Since July, we have engaged our stakeholders to test the developed network capability metrics. We have also carried out an extensive programme of engagement with end consumers (domestic and non-domestic) to explore their views on the trade-offs underpinning the network capability need.

The output from our activities has been independently verified and triangulated by Frontier Economics. The purpose of the triangulation was to determine robust conclusions and requirements for our business plan, based on a fair reflection of our stakeholders' input. A summary of the engagement undertaken and the key messages we took from these can be found in table below, further detail on our engagement can be found in the annex of this document.

Stakeholder Engagement on Network Capability

Stakeholder segments engaged	<p>Customers: Gas Distribution, Networks, Shippers, Entry, Exit</p> <p>Consumers: Domestic, Non-Domestic, Consumers, Representatives</p> <p>Stakeholders: Regulators, Industry/Trade Bodies, Energy Industry, Consultants/ Supply Chain</p>
Engagement Objective	<p>Do our metrics give you useful information on the current and future capability of the gas transmission network?</p> <p>Are the levels of risks that consumers are exposed to suitable now and in the future?</p> <p>How should we balance the interactions across the 3 consumer priorities now and into the future?</p>
Channel/method	Webinars, one-to-ones, Gas Operations Forum, industry meetings and a consumer engagement programme
Key messages	<p>Overall acceptability of network capability proposals</p> <p>A very high proportion of domestic consumers accept the business plan proposals in this area. Stakeholders, including entry and exit customers, were also broadly supportive of the plans. Specific concerns were raised around flexibility and zonal capacity and the need to consider net zero. Some asked for more information on the bill implications of network capability.</p> <p>Use of metrics</p> <p>Stakeholders had mixed views on whether the level of information provided was sufficient.</p> <p>Most felt the metrics were either useful or somewhat useful. Additional information requested included: impact on flows/pressures during incidents; charts for all entry and exit zones; more detailed information around flows and pressures in each zone, and potential longer term impact; iterative feedback on the impact of asset closure/reduction on all zones; more on the quantification of risk; the level of capability we are proposing to retain. One stakeholder pointed out the analysis did not take account of the underlying value of the capacity to users.</p> <p>We found that there is broad support from stakeholders for our proposal for an enduring annual process for engaging on and producing network capability metrics.</p> <p>Trading of priorities and risk</p> <p>There is evidence that domestic and non-domestic consumers are prioritising reducing reliability risks over affordability.</p>

- Domestic consumers would generally like at least as much reliability as they have at present and would be happy to pay more for investments in this area.
- Domestic and non-domestic consumers would be happy to pay more in this area for a 1/10,000 reduction in the probability of a supply interruption.
- Major energy users stressed the importance of reliability and have pointed out that there are financial and commercial consequences for them of supply interruptions but have not directly commented on current levels and expected future levels of reliability.
- This is consistent with UKERC's study of domestic consumers², which finds that there is acceptance of additional costs among consumers for 'ensuring a reliable energy supply.'

There is some divergence on the trade-offs domestic consumers are making between reliability and affordability. A significant proportion of domestic consumers prefer to maintain current supply risk levels, while a slightly larger proportion prefers to pay more for a more secure supply. While it could be argued that NGGT should go further to reduce reliability risk, there is limited evidence suggesting that stakeholders are unhappy with the current levels of risk.

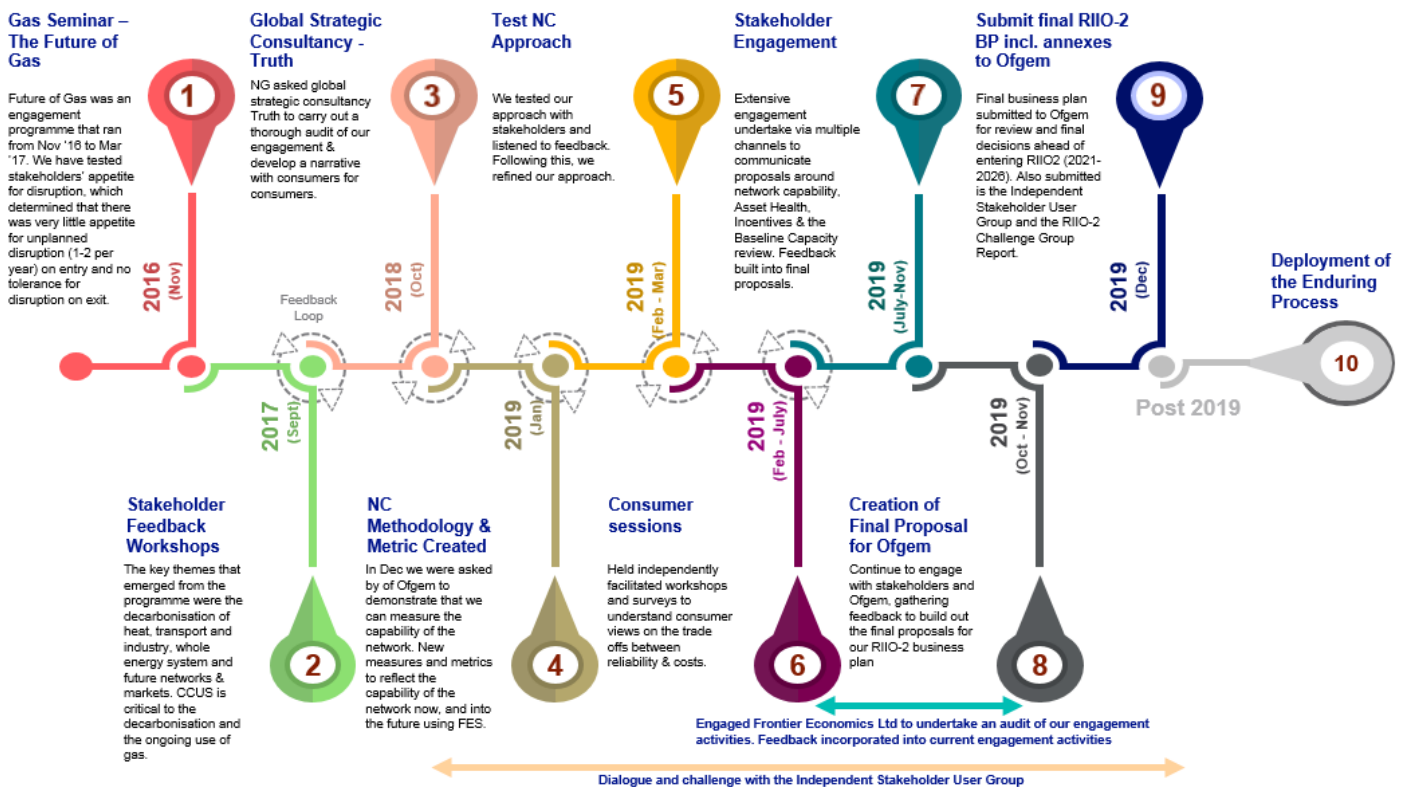
² <http://www.ukerc.ac.uk/publications/paying-for-energy-transitions.html>

Section 2 – Timeline and overview of engagement

High Level Timeline

The diagram below provides a timeline of how we have engaged with stakeholders through the RIIO-2 process, and how we have used feedback loops to build out and refine our proposals for the network capability metrics. The appendix contained within this document lists the details and outputs from each engagement activity.

Building the Gas RIIO2 Business Plan Through Stakeholder Engagement



Overview of the timeline

Going back to the summer of 2018, we engaged with stakeholders to establish more detail on their tolerance for disruption to flows. This engagement is covered in the Gas on and Off the NTS Engagement Log (annex A14.01).

Given an indication from Ofgem that they would require us to undertake a review of capacity baselines as part of the RIIO-2 business plan, we held a workshop in November 2018 to ensure that all our stakeholders had the opportunity to gain a common understanding of what capacity baselines are, and how they are used in our processes. The detail of this workshop can be found later in this document.

After Ofgem had set out its challenge in relation to network capability in December 2018, we began by creating engagement materials that showed the importance of being able to transfer gas between zones.

The latter capability is not something that stakeholders specifically ask for and as such we were keen to establish measures of this that could relate back to stakeholder need.

Feedback from stakeholders was that the information we were presenting was interesting background material, but that more information was required to link this to their needs. More information on stakeholder feedback can be found on the following link <https://www.nationalgridgas.com/insight-and-innovation/gas-future-operability-planning-gfop>

By May we had developed our analysis and were focussing on showing how the capability measured by the capacity baseline obligation was used at other times of the year. We had also developed a different way of showing the physical capability and comparing it with stakeholder requirements. We tested this approach at an [REDACTED] trade association meeting with and received feedback that that the approach made sense.

While we had continued to focus on developing a range of metrics, we now focussed on developing the metrics tested at the [REDACTED] meeting further. We were able to develop a sample of these for the July draft business plan and we tested these during various engagement opportunities in July.

We continued to receive positive feedback about the transparency provided by these metrics and decided that they should form the basis of the targets required by Ofgem in our December business plan. To ensure they were robust, we focussed our effort on ensuring the methodologies behind them were documented, robust and repeatable and in order to provide the required level of assurance, other developments on potential metrics had to be deprioritised.

The next table sets out the engagement activities that were carried out along with a summary of the engagement and what the outcomes were.

When	What/ Channel	Who	Summary	Outcome
Nov-18	Baseline Review Workshop	Shippers Ofgem Gas Distribution Networks Consultants	Workshop held in November 2018 to ensure that all our stakeholders had the opportunity to gain a common understanding of what capacity baselines are, and how they are used in our processes.	Established common understanding of capacity baselines and how they feed into NG processes. Sought and received feedback on the potential impact of changes to capacity baselines to stakeholders
Feb - July 2019	Consumer Engagement Programme: <ul style="list-style-type: none"> - Attitudinal research - Consumer Immersion Sessions x8 - Listening - Willingness to pay - Service Evaluation Tool - Accpetability Testing - Major Energy Users 	Consumers: Domestic Non-Domestic	Engaged consumers on issues and ranked then in terms of priority. Via this engagement, we could understand the priorities of consumers, where they felt we should be investing in the network and allowing us to see how aligned consumer and stakeholder views are.	Outcome referred to in the appendix of this document (P15).
Feb-19	Network Capability – Webinar	Customer (shipper) Trade bodies Customer (exit) Customer (entry) Consultant	To explore a potential approach to describing the capacity of the National Gas Transmission System. To gather feedback on the potential approach.	Feedback that the narrative and explanation made sense. Feedback that there was no "so what"; limited further comments could be provided until we linked it to the capability of the network via metrics. Outcome therefore that more work required to establish relevant metrics.

Mar-19	Capacity Access Review – questionnaire followed up with webinar		Understand stakeholder views regarding the current arrangements for accessing the NTS, and where the focus for change should be.	Capture of a number of different areas of the access regime that stakeholders felt should be reviewed. Agreement that access review should not be part of the RIIO-2 business plan submission. This view was subsequently accepted by Ofgem in their May 2019 decision document. NGG raised Mod 705R to progress the issues raised.
May-19	██████████ Trade Association Meeting May 19	Customer (Exit) Consultants Trade Bodies	Provided more information on the within day challenges that the Gas Future Operability (GFOP) team had identified. Showed the draft metrics that compared stakeholder flows, capacity baselines and physical capability in order to test whether they made sense.	Feedback that GFOP was useful information but there's still no "so what" to it. A problem statement is required. This was fed back to the GFOP team. Positive feedback that from the initial talk through the charts, they seemed to make sense. Wanted to understand more how they linked to the business plan submission but the visualisation was supported. As a result of this, the metrics were developed further for the July Draft business plan.
Jul-19	██████████ Trade Association Meeting July 19	Customer (Exit) Consultants Trade Bodies	Presented a refined range of our network capability metrics, testing this with various stakeholders.	Positive feedback that the metrics made sense. More narrative required on how it fitted together with the business plan. Asked to understand more about assumptions on within day changes.
Feb - Sept-19	Independent Stakeholder User Group	Stakeholder User Group	Presented a refined range of our network capability metrics, testing this with the Independent Stakeholder User Group.	. Feedback from SUG was positive with good feedback on the seven zones giving a good level of system approach. Some feedback received on the flame charts not being immediately intuitive but heading in the right direction.

Aug-19	██████████ Meeting Aug	██████████	Basis of meeting was to discuss progress on the overall RIIO-2 business plan, but to also cover off work undertaken on the development of our network capability metrics.	Keen to ensure we include net zero in our plan, and show the role incentives play in our decision making.
Aug-19	██████████ Trade Association Meeting, webinars	Trade Body Customer (Shipper) Customer (Exit) Customer (Entry)	Presented a refined range of our network capability metrics, testing these with various stakeholders.	Support for direction of travel - further work required to articulate the "so what".
Sept - Nov 2019	██████████ Trade Association, ██████████ ██████████, Gas Operational Forum, bilateral meetings, Webinars	Customer (Shipper) Trade Body, Customer (Exit), Customer (Entry), Regulators, consultants	Designed to share the latest articulation of network capability, capacity baselines and test our direction of travel with stakeholders.	Positive feedback about the development of the network capability metrics and supporting narrative Concerns expressed about impact of reductions in capacity baselines at St Fergus. Suggested new concept of "dormant capacity" to deal with Theddlethorpe and other decommissioned sites.
Oct-19	Capacity Baseline Webinars	Customer (Shipper) Trade Body, Customer (Exit), Customer (Entry), Regulators, consultants	To share direction of travel on capacity baselines and to capture feedback.	Broadly positive support for direction of travel Some concerns expressed about impact of potential reductions at St Fergus, recognition of why we have suggested the approach we put forward.

Oct-19	Understanding the capability of the network in an uncertain energy future – Webinar (Oct '19)	Regulator Customers Trade Bodies Consultants	Webinar designed to go into more detail on our modelling, availability and reliability assumption curves, and how these were used to build out the proposals contained within our RII02 Gas business plans.	Support that we had tried to explain, recognised lots of information provided with little time to digest. This will be followed up in future engagement planning.
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Further detail to our engagement activities and outputs from these can be found in the appendix to this document.

Section 3 – Conclusion and next steps

Conclusion

The network capability metrics and narrative that we have developed has been shaped by the feedback we have received during the engagement activities we have carried out. We have received positive feedback that this work has improved the understanding of our stakeholders about how our network and this business plan meets their needs. We recognise there is more information that stakeholders have asked for; we are still working to establish if there are more metrics that could add value to our stakeholders' understanding of the capability of the network (as described in the Network Capability Report) and to the extent that we are able to bring these metrics forward to test their value, we will do so.

Next steps for engagement

Our network capability specific engagement has now concluded. Post the December 2019 submission, National Grid intends to launch a broad programme of engagement on our RII0-2 Gas business plan with stakeholders. We will highlight what the key messages are and how stakeholder feedback has been reflected in our plans. We have also worked up our proposals for network capability to be an enduring process which we will test in the New Year.

Appendix - Detail of events

Baseline review Workshop (Nov 2018)

Given an indication from Ofgem that they would require us to undertake a review of capacity baselines as part of the RIIO-2 business plan, we held a workshop in November 2018 to ensure that all our stakeholders had the opportunity to gain a common understanding of what capacity baselines are, and how they are used in our processes.

Feedback from the session was gathered through open discussion sections in the workshop, and via polling.

Summary of most common views shared in discussions:

Question posed: Are there perceived issues with capacity baselines at current levels? If so, what are they and what is the current impact on you?

Response summary:

- High baselines mean low risk of interruption to flows which stakeholders appreciate
- Capacity Baselines currently may not reflect network capability. Investment plans may not reflect economic and efficient if based on baselines.
- Benefits to be delivered from reviewing baselines are not clear. No CBA available.
- Time is not right to review baselines. Charging review underway will alter behaviour. This should be understood before making further regime changes.
- No real issues with current capacity baselines- it is understood and utilised by industry

Question posed: What are the potential areas of impact to you if baselines were to change?

Response summary:

- Increased risk of not getting capacity where flow is wanted, perceived scarcity.
- Risk of more buyback/constraint costs passed to consumers
- Aggressive timeline for review with an artificial deadline and coincides with charging review causes concern that this will have detrimental effects for industry and consumers
- Increased risk of interruption will reduce flexibility and make UK market less attractive
- Cost uncertainty; costs which can't be predicted / forecast long term are an issue- affects stability
- Reducing baselines will make capacity substitution harder and make capacity generally more opaque and transparent
- Would ensure NGGT plans for network do not exceed baseline commitment
- Network allowances for NGGT would be for the optimal physical capability of network assets, and not to support high capacity baselines
- Concern that reduced baselines reduces resilience and flexibility

Question posed: What would you expect National Grid to do differently if baselines were to change?

Response summary:

- There would be less obligation for NGGT to make capacity available
- Physical access to network should not reduce
- Unsure there would be any difference to the network

Consumer Immersion Sessions (Feb 2019 – July 2019)

Prior to our direct engagement on Network Capability metrics, we engaged with consumers via eight consumer immersion workshops held in Birmingham and Edinburgh between February 2019 and July 2019. Participants were provided with information on NGGT's role within the energy sector and contribution to bills. They were asked to discuss their expectations of NGG in relation to reliability of gas supply and then to rank issues in terms of priority, and they were also asked about their willingness to pay more to tackle these issues.

Question posed: Consumers were asked about their priorities around:

- reliable supply of gas;
- affordability and keeping gas bills down;
- helping the fuel poor and vulnerable; and
- helping the move towards a low carbon economy

Via this engagement, we could understand the priorities of consumers, where they felt we should be investing in the network and also allowing us to see how aligned stakeholder and consumer views were. We were also able to build these viewpoints into our network analysis assumptions and modelling and used this to feedback into the creation of the Network Capability metrics.

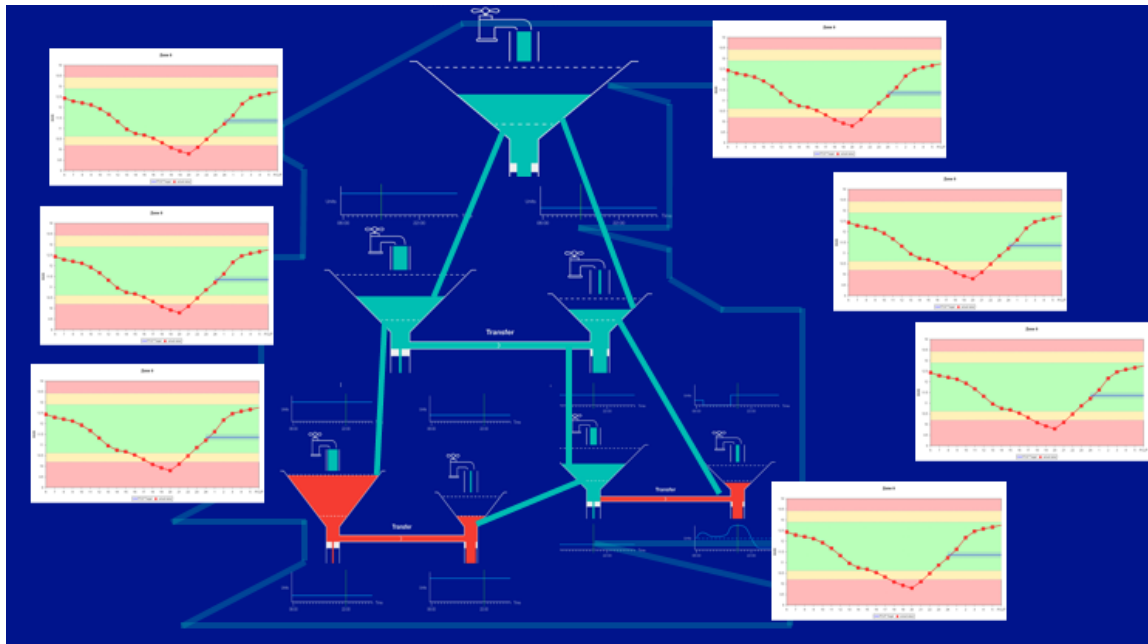
Network Capability – Webinar (Feb 2019)

In February, we held a webinar to explore a potential approach to describing the capability of the National Gas Transmission System and to gather feedback on the potential approach to measuring network capability.

We set out the challenge from Ofgem around 3 key areas; demonstrate we understand what stakeholders need, show how our network meets those needs and finally, to show how our business plan submission will continue to meet those needs going forward.

During this webinar, we introduced the concept of the 'sinks' which are a way of representing the way we manage the amount of gas in different parts of the NTS, and to show how we transfer gas between them while meeting the needs of our customers. We took stakeholders through various scenarios to explain the complexity of the gas transmission network, the variations of supply and demand, the interaction between zones, transfer capability between zones, and the effects of supply loss on the network. Via this engagement, we were able to

determine that although these 'sinks' did help to articulate the interaction of supply and demand on the network, it did not articulate for stakeholders the capability of the network.



Extract from webinar slides

During the webinar, we also took the opportunity to poll our stakeholder participants in order to understand their knowledge on the subject, their views on the material we were presenting, and also to seek further views and areas where we could make the metrics more effective for them to understand and use.

Polling questions asked during the session are listed below along with the responses we received (shown in tables):

- How impacted are you (or those you represent) by what we have just spoken about?
- How interested are you (or those you represent) by what we have just spoken about?
- Have we explained how we manage the difference between supply and demand within the gas day?
- Is it clear how we could link end of day flow requirements from entry and exit customers to the potential metrics?
- Is it clear how we could link customer requirements to change their minds to the potential metrics?
- Does this way of articulating the capability of the network work for you?
- Should we develop the metrics further?

Polling results:

NC Webinar (Feb) - Survey Results	Answers						Total
	E - Impacted a great deal	D	C	B	A - Not impacted at all	No Answer	
How impacted are you (or those you represent) by what we have just spoken about?	7	4	0	0	1	7	19
How interested are you (or those you represent) by what we have just spoken about?	10	2	0	0	0	7	19

NC Webinar (Feb) - Survey Results	Answers					Total
	A - Yes	B - Somewhat	C - No	No Answer		
Have we explained how we manage the difference between supply and demand within the gas day?	10	0	1	9	20	
Is it clear how we could link end of day flow requirements from entry and exit customers to the potential metrics?	3	7	1	8	19	
Is it clear how we could link customer requirements to change their minds to the potential metrics?	1	7	4	7	19	
Does this way of articulating the capability of the network work for you?	3	6	1	9	19	
Should we develop the metrics further?	9	2	0	8	19	

General feedback from the webinar:

- Ok at a high level, but would benefit from more detailed examples
- Not entirely clear on the “link to metrics” - simply info provision or drivers? What are metrics to be used for?
- Agree need to develop a way to articulate capability
- Would benefit from actual examples/ more detail

If you would like to watch any of the webinars we have run as part of our business plan engagement, please follow the link below.

<https://www.nationalgridgas.com/about-us/business-planning-riio/have-your-say-our-future-business-plans>

Capacity Access Review – Webinar (Mar 2019)

Ofgem first raised the possibility of an access review as part of their December 2018 RIIO Gas Sector Specific consultation engagement. In March 2019, we held a webinar to discuss arrangements for accessing unsold capacity. As part of RIIO, Ofgem are considering asking us to prepare a report on revised arrangements for accessing unsold capacities on entry and exit. National Grid were also looking at network capability assessment outputs, network capability target outputs and revised baseline obligated capacities.

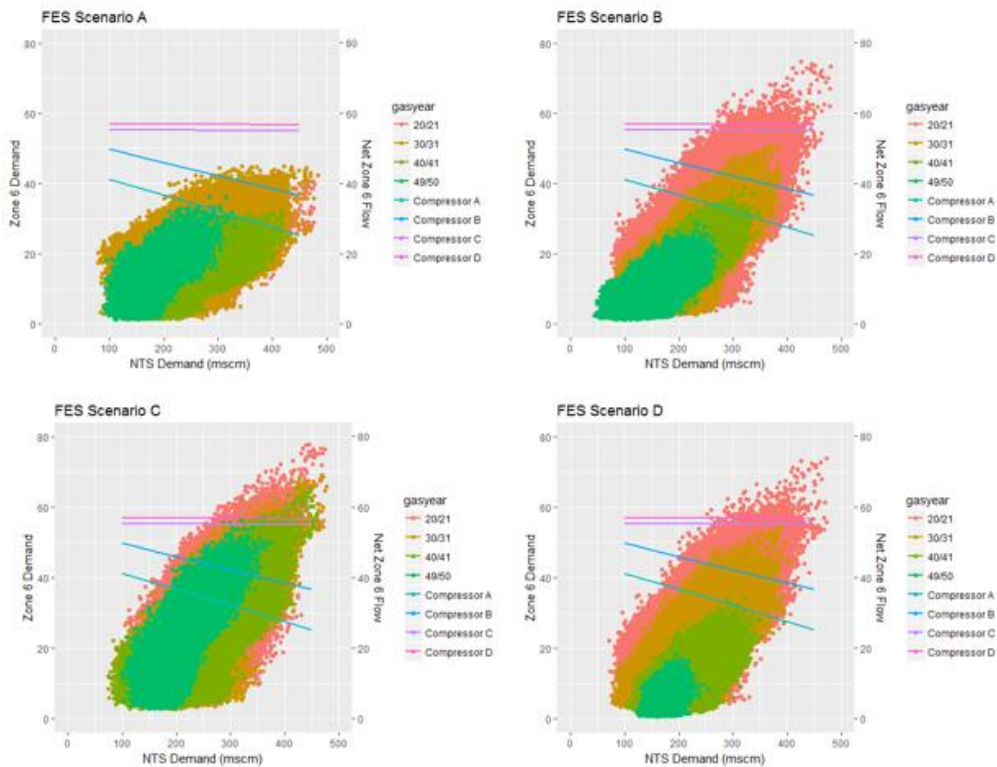
As part of the webinar we firstly sent out a survey via the Energy Networks Association (ENA) asking stakeholders for their views regarding the current arrangements for accessing the NTS, and where the focus for change should be. As part of the webinar, the results to the poll were relayed back during the webinar.

Ofgem descope the Access Review from RIIO in the May 2019 decision document. However, we agreed with Ofgem that we would continue work in this area outside of RIIO. National Grid have recently launched a Uniform Network Code (UNC) request (0705R NTS Capacity Access Review).

Trade Association Meeting (May 2019)

Following on from our engagement with various stakeholders and listening to their comments and feedback via the webinars held in February and March 2019 and our workshops, we introduced our first iteration of what has now become known as our network capability flame chart metrics.

We took the opportunity while engaging with [redacted] and their members to test our new network capability flame charts based around our 2018 Future Energy Scenarios (FES) (please see charts below).



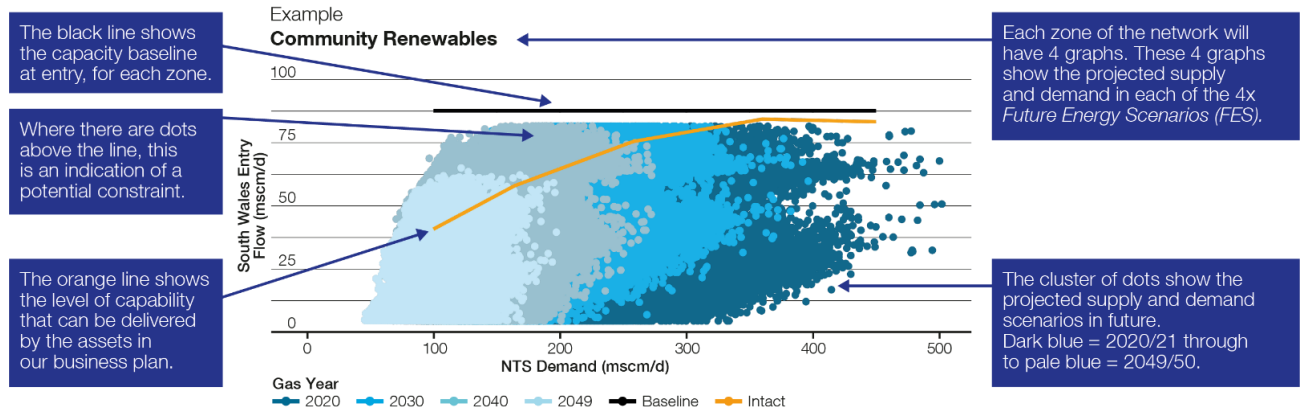
Network Capability Flame-charts

Our conversation with [redacted] and their stakeholders was wide ranging and we covered several topic areas. There was feedback that Gas Future Operability Planning (GFOP) was useful information but there's still no 'so what' to it. A problem statement is required. This was fed back to the GFOP team. There was positive feedback from stakeholders after the initial talk through of the charts, and it was feedback that they seemed to make sense. Stakeholders wanted to understand more on how the metrics linked to the business plan submission, but the visualisation was supported. As a result of this, the metrics were developed further for the July Draft business plan.

Trade Association Meeting (Jul 2019)

We met again with [redacted] and its members to present back to them our refined network capability metrics. Taking onboard stakeholder feedback, we made some significant adjustments to the metrics and sought additional feedback on the clarity of these (see chart below).

How to read the entry network capability metrics



How to read the Network Capability metrics

Positive feedback was received from stakeholders that the metrics were clearer, and easier to follow. However, further narrative was required on how it fitted together with the business plan. Stakeholders also asked to understand more about the assumptions on within day changes.

Independent Stakeholder User Group (Feb - Sept 2019)

Throughout the creation, development and iterations of the network capability metrics and baseline capacity review period, we engaged and consulted with the Independent Stakeholder User Group. We presented back to them our progress on metric development and the baseline capacity review and sought their feedback and challenge.

In July 2019, we presented back to the Stakeholder User Group on are engagement to date and an articulation of the network capability metrics. The metrics were well received by the SUG, with a key ask being, could National Grid articulate the narrative of financial consequences of network capability in delivering an efficient functioning of the gas market, incorporating direct and indirect costs (please see below).

ID	Date Identified	Meeting Ref	Stakeholder Group Challenge
151	23/07/2019	SG8.5	National Grid to articulate the narrative of financial consequences of network capability in delivering an efficient functioning of the gas market, incorporating direct and indirect costs

In September 2019, we presented back to the Stakeholder User Group on our engagement to date and the feedback from stakeholders on the network capability metrics. The feedback was well received by the SUG, with key asks identified from the session (please see below).

ID	Date Identified	Meeting Ref	Stakeholder Group Challenge
178	04/09/2019	SG10	Articulate a structured, annual process for network capability, which takes account of current policy, net zero sensitivities and stakeholder engagement
179	04/09/2019	SG10	Ensure the RIIO-2 proposals for investment at Wormington compressor are clearly articulated (including links to Milford Haven flows) and the needs case is proven under the full range of sensitivities
182	04/09/2019	SG10	Demonstrate that engagement has been undertaken in a systematic way, and questions framed with meaningful context such that stakeholders are given sufficient information to make informed decisions
183	04/09/2019	SG10	Provide evidence of, rationale for, and distributional impacts of trade-offs including those between current and future consumers

Feedback from this session was positive with several areas commented on as providing good clarity and approach. There was further discussion on the enduring process, including the annual report and ways to increase transparency. There was a call out on the flame diagrams requiring some 'working out'. This has been taken into account and built into future engagement sessions.

Meeting (Aug 2019)

In August, we met with [REDACTED] to discuss our RIIO-2 business plan. We tested our new network capability flame charts based around our 2018 FES scenarios, and to ask seek feedback on our proposals.

Feedback questions	Response
Do our metrics give you useful information on the current and future capability of the gas transmission network?	Keen to ensure we cover net zero in our plan and against our environmental measures, i.e. if we invest now will it be the wrong decision. Have we fully considered the impact on future customers and how are we explaining this?
Are the levels of risks that consumers are exposed to suitable now and in the future?	There was a general challenge on efficiency and whether these are all driven by our activities or have they been achieved through external efficiencies that we are now able to take advantage of.
Consumer - how should we balance the interactions across the 3 priorities now and into the future?	Due to the link between network capability and incentives, [REDACTED] wanted to understand how incentives play in driving our decisions.
Consumer - how should we balance cost and risk between current and future consumers?	Interested to understand the 1:20 obligations and how these are defined and set. We made it clear that it was both a HSE and licence obligation, but we need to do more to explain or refer to the material that is used to determine the levels.

██████████ Trade Association Meeting (Aug 2019)

At our meeting with ██████████ in August we presented a refined range of our network capability metrics, testing this with stakeholders and seeking their direct feedback.

Our messaging was well received and there was support for the direction of travel. However, there is further work required to articulate the 'so what'.

Network Capability & Incentives Webinar – 1 & 2 (Aug 2019)

During our engagement with stakeholders on network capability we undertook 2 webinars in August, inviting industry and our regulator to attend these sessions in order to gain a greater understanding of what is network capability and why it matters. The intention of the webinar sessions was to 1). Increase the understanding of stakeholders of the ability of our network to meet the needs of customers and consumers and how it is essential to our business plan. 2). To articulate how the metrics will inform how much we spend on running and maintaining the network, the level of risk that we're prepared to take in operating the network and give an indication on the financial and operational impacts on customers and consumers. 3). To gain stakeholder views on this.

There was 3 key aims we wanted to achieve via this engagement and ensure that stakeholders had the opportunity to further shape our proposals.

1. Demonstrate we can measure the capability of the network
2. Demonstrate we understand what our stakeholders want to do
3. Demonstrate that the business plan links to delivery of service

General feedback from the session and requests for additional information are shown below from our polling questions:

- Metrics are extremely useful and smart way to convey the information.
- Charts for all entry and exit zones required. Iterative feedback impact of asset closure/reduction on all zones. More insight required on quantification of risk.
- Impact on flows/pressures during incidents
- More detailed information around flows and pressures in each zone, and potential longer-term impacts.
- Would like to get under the skin a bit more - the why different for the different cases/scenarios
- Give a good insight to future demands in relation to capability.
- Visual nature is helpful
- More details needed
- Works at a high level would like to see the data underpinning the explanation and the options considered and rejected.

- Understand the concept, consider in layman's terms?
- Excels behind graphs needed

Following this feedback provided by stakeholders during the webinar, we built into our future engagement answers and reasoning to some of these questions. We also held an additional webinar on 16th August titled Webinar 3 – 'Network Capability Modelling – Understanding the capability of the network in an uncertain energy future'. This was designed to address questions raised around additional detail of data and assumptions (please see below for additional details).

██████████ Trade Association Meeting (Sept 2019)

In a follow up meeting with ██████████ and its members, we presented our refined network capability metrics and an update on the baseline capacity review. There was broad agreement to our network capability metrics, and questions around the baseline capacity review.

Following this feedback, it was agreed that National Grid would hold a series of webinars to provide more information on the baseline capacity review and to also provide stakeholders with an opportunity to feed into the process.

There was general agreement in the session to ensure that when considering the baseline capacity review to understand that just because flows may change, this does not mean that there is a direct change in peak demand. At St Fergus, stakeholders were generally nervous about reducing the baseline capacity.

There was broad agreement to our network capability metrics and to our proposals around an annual network capability process.

██████████ Trade Association Meeting (Sept 2019)

In a follow up meeting with ██████████ and its members, we presented our refined network capability metrics and an update on the baseline capacity review.

██████████ wanted to know the extent of decommissioning e.g. were we getting rid of the land/sites where assets decommissioned. We confirmed that funds for removing the compressor kit was in the business plan, but we would retain the land in case there is a future need. We want to ensure we are balancing future optionality with limited certainty we have now.

It was commented that there was a nervousness about the lack of an in-day network capability measure and that taking away compressors reduces flexibility. We have given the commitment that this will be pursued as the network capability work from this year will continue and will have an annual process. Our network analysis

includes assumptions about profiling and we're confident we can continue to meet stakeholder needs. We are still working on developing metrics for within day and this will be built into our annual process.

We were asked if there was there 'fat' in the NTS when we can lose 20% of compressors yet remain ok with so many less? We explained that many of those going were already on limited hours (<500hrs) due to legislation so the future plan is to have more reliable compressors that can run what is required so it's not that we didn't need what we had but simply we need less but better more reliable compressors going forward to provide same resilience. Totex ask has increased to focus on assets which have a long-term future and tailor spending on kit and cyber. Those which are not enduring will only get minimal spend to retain for a short period before decommissioning.

It was asked if there was no constraint risk for exit parties. National Grid covered our 1:20 peak and that with demand and supply patterns as a variable that there is always a risk of a constraint. Entry constraints would be more likely than exit constraints. The commercial regime exits to manage constraints and contracting is an option for NG to manage this. It was stressed that a constraint risk always exists.

██████████ representing gas generators said that to contract a way out of constraints with gas generators could mean 'the lights might go out.' 'Gas generators need to run when they are most needed' - they fill the intermittency gap of renewable generation (wind/solar pv) on electricity. We are worlds away from decades gone by when coal was another alternative. Now it's mainly just gas for flexibility on electricity. Interaction across gas and electricity transmission needs careful consideration.

Asked explicitly - Do you support proposal for enduring process & continuing to develop metrics?

Everyone said yes.

Gas Operations Forum (Sept 2019)

The September Gas Operations Forum was held in September in London and was an opportunity for us to engage with a wide variety of operational stakeholders and our regulator on the network capability metrics. We presented to the attendees at this session and also provided an opportunity to ask questions on the metrics and if the metrics provide stakeholders with the required level of detail and understanding.

There was little feedback from stakeholders at this session, however we signposted the webinar sessions we planned to hold in October as an opportunity of further engagement and option to hear in greater details our proposals and assumptions.

Webinar 1 – Baseline Capacity (7th October 2019)

The first webinar session was held on 7th October 2019 and was presented back to stakeholders as a session detailing our work on the network capability metrics, the work being undertaken as part of our baseline capacity review, and to sign post our intent to create an annual network capability process.

Feedback obtained during the webinar was in the form of a question and answer segment at various points of the presentation once we had relayed information. Please see questions below:

- a. Impact of reductions at sites where peak flow/bookings are less than baseline obligation?
- b. Limited case to reduce baselines on exit at this stage in time – any views?
- c. Limited case to change baselines at Bacton, Isle of Grain or Milford Haven at this point – any views?
- d. Limited case to change baselines at Easington, Barrow or Teesside at this point – any views?
- e. St Fergus – A reduction to 140mcmd may be a balanced position – any views?

General views when the phonelines were opened included:

- Stakeholders would like to retain capacity at individual exit points
- At Bacton, Isle of Grain and Teesside, stakeholders on the call saw no compelling reason to change baselines
- At Easington, Barrow and Teesside, stakeholders saw no issues with proposals
- At Theddlethorpe, stakeholders saw no issues with reducing the baseline capacity to 0mcmd, as long as the 'dormant capacity' could be available for substitution.
- At St Fergus, stakeholders were generally nervous about reducing the baseline capacity. Stakeholders wanted to know what would be the benefit to users of the network of this reduction. What would be the benefits to consumers (potential CM savings) and would there be a material impact on transportation charge?

Following on from these questions, we stated that we would address these questions in the second Baseline Capacity webinar.

If you would like to watch any of the webinars we have run as part of our business plan engagement, please follow the link below

<https://www.nationalgridgas.com/about-us/business-planning-riio/have-your-say-our-future-business-plans>

Webinar 2 – Baseline Capacity (14th October 2019)

The second webinar session was held on 14th October 2019 and was presented back to stakeholders as a session further detailing our work on the network capability metrics, the work being undertaken as part of our baseline capacity review, and to sign post out intention to create an annual network capability process. We also built into the presentation answers to the questions we received from the previous webinar. Taking on board lessons learnt

from the first session, we also created polling surveys throughout the presentation so we could collate stakeholder feedback.

Polling questions asked during the session are listed below:

- a. How impacted are you (or those you represent) by baseline capacity?
- b. How interested are you (or those you represent) by baseline capacity?
- c. Do you agree with our direction of travel of leaving exit capacity baselines as they are, recognizing the ongoing work with TxWG?
- d. Do you agree with our direction of travel that there is no case to change baselines at Bacton, Isle of Grain or Milford Haven at this point?
- e. Do you agree with our direction of travel that there is limited case to change baselines at Easington, Barrow or Teesside at this point?
- f. Do you agree with our direction of travel to reduce baseline capacity to zero and progress the concept of 'dormant capacity' at Theddlethorpe?
- g. Is there any other information you would like to see for Theddlethorpe?

Webinar 2 – Polling Results

Webinar 2 - Survey Results	Answers						Total
	E - Impacted a great deal	D	C	B	A - Not impacted at all	No Answer	
How impacted are you (or those you represent) by baseline capacity?	3	5	1	0	0	1	10
How interested are you (or those you represent) by baseline capacity?	5	4	1	0	0	0	10

Webinar 2 - Survey Results	Answers				Total
	A - Yes	B - Unsure	C - No	No Answer	
Do you agree with our direction of travel of leaving exit capacity baselines as they are, recognizing the ongoing work with TxWG?	7	3	0	3	13
Do you agree with our direction of travel that there is no case to change baselines at Bacton, Isle of Grain or Milford Haven at this point?	10	0	0	2	12
Do you agree with our direction of travel that there is limited case to change baselines at Easington, Barrow or Teesside at this point?	9	3	0	1	13
Do you agree with our direction of travel to reduce baseline capacity to zero and progress the concept of 'dormant capacity' at Theddlethorpe?	8	4	0	1	13

Webinar 2 - Survey Results	Answers							
	No	Interaction between "dormant" capacity and existing UNC processes requires more work	As above more detail on concept	Are there any other sites other than Theddlethorpe and Rough that potentially fall into this category?	More information on the business case for keeping it open needed.	Yes more on the business case for keeping it open needed	No Answer	Total
Is there any other information you would like to see for Theddlethorpe?	1	1	1	1	1	1	7	13

General feedback from the polling questions of the webinar included:

Do you agree with our direction of travel of leaving exit capacity baselines as they are, recognizing the ongoing work with TxWG?

- Can see no benefits of reducing baselines
- Network should be looking to maximise flexibility, not restrict it.
- There is a risk that revising exit capacity baselines will have material commercial impacts
- Are there any cases for increasing exit capacity?
- I'd be interested in seeing the level of substitution that is currently being used across the network and how you envisage this going forward
- The effect of the charging arrangements needs to be taken into account

Do you agree with our direction of travel that there is no case to change baselines at Bacton, Isle of Grain or Milford Haven at this point?

- Yes - NGG analysis in support of this approach
- Yes - Baselines close to intact capability
- Yes - If it has the potential for being used then it shouldn't be reduced
- Yes - Baseline capacity is currently required at these locations - that said, there's clearly scope for a dynamic approach to setting technical constraints depending on pressures and flows from other areas of the network. I believe this should be explored further - Fluxys TENP has a similar approach. Your forecast data shows that reducing the baselines would leave you in position where, under certain FES scenarios, that you would too close to baseline.

Do you agree with our direction of travel that there is limited case to change baselines at Easington, Barrow or Teesside at this point?

- Yes – As explained by Jenny
- Yes – Given the status by Rough
- Yes - Baseline capacity is required to accommodate the current flows
- Yes - As with exit, and previous comments made, reducing baselines will reduce network flexibility and substitution availability

- Again, given these Entry points are unconstrained it's not clear why you wouldn't reduce them to be economic and efficient
- Again, the CBA or impact analysis behind Grid's decision needs to be made clear.

Do you agree with our direction of travel to reduce baseline capacity to zero and progress the concept of 'dormant capacity' at Theddlethorpe?

- Yes - a flexible approach so future investment is not deterred
- More work required to explore the potential arrangements at entry points that have been decommissioned
- If there's no risk of people trying to exceed the 55 there seem to be no risk leaving it as baseline? So, I'm not totally sure what the benefit of moving it to dormant capacity is? would it be treated differently in your modelling for example? if so then if someone wants it is there a risk you've accidentally lost it because your modelling has assumed it's not there?
- Dormant capacity is an interesting concept. Would the capacity if not booked be used for other things such as storage availability?
- I agree that a new category makes sense to show that the capacity can be made available as the capability is still on the network.
- Again, not clear what the CBA is of keeping it open for "future customers" and no idea who these might be (new offshore developments, CCUS, Hydrogen, new CCGTs? Nitrogen??)
- Need to be assured of dormant capacity concept to support 0 baseline, accept there is a lot of detail to be worked up, including how such capacity can be considered as a donor for substitution

Is there any other information you would like to see for Theddlethorpe?

- Are there any other sites other than Theddlethorpe and Rough that potentially fall into this category?
- More information on the business case for keeping it open needed.
- Interaction between "dormant" capacity and existing UNC processes requires more work

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National Grid conclusions from Baseline Capacity webinars (1 and 2)

The conclusions drawn from these Baseline Capacity webinars have been fed into our final business plan along with other stakeholder engagement evidence to form our proposals around baseline capacity adjustments.

- There is broad consensus that capacity baselines should remain at their current levels across most areas.
- There was agreement that baseline capacity levels could be slightly decreased at St Fergus and Theddlethorpe.
- Stakeholders agreed with our direction of travel that there should be no reductions of baseline capacity at Bacton, Isle of Grain or Milford haven.

- Stakeholders broadly agreed that there is limited need for baseline changes at Easington, Barrow and Teeside at this point in time.
- Stakeholders broadly agreed with our direction of travel to reduce baseline capacity to zero and progress with the concept of 'dormant capacity' at Theddlethorpe.

Webinar 3 – 'Network Capability Modelling – Understanding the capability of the network in an uncertain energy future' (16th October 2019)

The third webinar session was held on 16th October 2019 and was presented back to stakeholders as a session detailing our work on the network modelling. The session was designed to bring stakeholders upto speed on the data underpinning our network capability metrics, the assumptions we have used in our modelling and how we have accounted for variations.

Taking on board lessons learnt from the first session, we also created polling surveys throughout the presentation so we could collate stakeholder feedback.

Polling questions asked during the session are listed below:

- How much would you say you know about Network Capability?
- How impacted are you (or those you represent) by Network Capability?
- How interested are you (or those you represent) by network capability?
- Have we given you enough information to understand the process of how we develop the network capability metrics?
- Have we given you enough information to understand how we produce the network capability metrics?
- Have we given you enough information to understand the network capability metrics?

Webinar 3 – Polling Results

Webinar 3 - Survey Results	Answers						Total
	E - Know a great deal	D	C	B	A - Know nothing	No Answer	
How much would you say you know about Network Capability?	0	2	6	1	0	11	20

Webinar 3 - Survey Results	Answers						Total
	E - Impacted a great deal	D	C	B	A - Not impacted at all	No Answer	
How impacted are you or those you represent) by Network Capability?	10	3	1	0	0	6	20
How interested are you (or those you represent) by network capability?	9	4	1	0	0	9	23

Webinar 3 - Survey Results	Answers				
	A - Yes	B - Somewhat	C - No	No Answer	Total
Have we given you enough information to understand the process of how we develop the network capability metrics?	9	8	1	3	21
Have we given you enough information to understand how we produce the network capability metrics?	8	6	1	6	21
Have we given you enough information to understand the network capability metrics?	7	9	0	4	20

General feedback from the polling questions of the webinar included:

Have we given you enough information to understand the process of how we develop the network capability metrics?

- Very thorough presentation
- Useful overview but need more detail on TOBY spaces. What weight has been given to the various inputs?
- Although given the process for modelling capability. Still not clear on impact of those in terms of commercial trade-off between capacity available and risk/reward/customer cost and impact. Will need to wait to see how incentive is combined.
- It seems quite complicated. There appears to be a huge amount of information that goes into these so it's difficult to understand in depth, but I can appreciate that it relies on a lot of iterations of data. I guess the results will depend on what weightings you put on certain areas.

Have we given you enough information to understand how we produce the network capability metrics?

- I can understand the requirement to analyse for certain events. It would be interesting to understand how much historical data is being used when applying these scenarios.
- Wasn't too sure how the OM knows to kick in and seems from the graphs there is still a delay before it gets back up to the typical line. What are the issues with this?
- What data has been used for DN within day linepack? Given large GWs of embedded gas generation in DNs this will have a large draw on linepack. What offshore wind has been assumed by 2030? 30 GW? CCGTs will only generate when not windy. How does this impact linepack usage?
- A lot of detail to digest in a few minutes.

Have we given you enough information to understand the network capability metrics?

- It is a lot to digest in a relatively short period, it really needs a more individually interactive session to properly challenge and review what is being presented.
- Graphs are ok but hard to see all the details
- Probability of what level of capacity very useful

- There seemed to be a lot of times where your compressors cannot meet network needs or have a constraint? What does that mean for the network?
- It is not clear how NGGT incorporated stakeholder feedback in deciding what level of physical capability was appropriate for RIIO-2. It is not clear how probability metrics will be used for the business planning processes.

National Grid conclusions from Webinar 3 – ‘Network Capability Modelling – Understanding the capability of the network in an uncertain energy future’ (16th October 2019)

The conclusions drawn from the Network Capability Modelling webinar have been fed into our final business plan along with other stakeholder engagement evidence to form our proposals around baseline capacity adjustments.

- There is broad agreement that people found the webinar useful
- Many stakeholders found the information useful, but would like greater detail on the assumptions and how they are used
- Through the annual process, we will need to consider how and with what information we engage stakeholders with, in order for them to have the level of detail and information that they find useful

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