Engagement Log
NGET_A7-8.02_Engagement Log (Future of Transmission & Managing Uncertainty)
December 2019

As a part of the NGET Business Plan Submission

nationalgrid

Section	Progress	Status
Pre-engagement	✓	Final
Post-engagement	✓	Final
Challenge & review	✓	Final
Conclusions	✓	Final

ENGAGEMENT LOG

Priority: Enable the ongoing transition to the energy system of the future

Topic: Future role of electricity transmission and managing uncertainty

Author: Ivo Spreeuwenberg
Final Document Date: 28/11/19
Document Version Number: 5

CONTENTS

SECTION	PAGE
EXECUTIVE SUMMARY	2
1. PRE-ENGAGEMENT 1.1. What is the topic and why is it being engaged on? 1.2. What are the desired outcomes for engagement? 1.3. What existing insight has been utilised? 1.4. What is the engagement approach?	4
2. POST-ENGAGEMENT 2.1. What were the engagement outcomes and how has this influenced options? 2.2. What was the feedback on the engagement approach? (incl. Truth assessment) 2.3. What were the initial National Grid conclusions?	10
3. STAKEHOLDER GROUP CHALLENGE & REVIEW 3.1. What challenges, actions and points of clarification were raised? 3.2. What was the outcome of the Stakeholder Group challenge and review?	30
4. CONCLUSIONS 4.1. What impact has this engagement had on National Grid and the RIIO-T2 business plan? 4.2. How do the business plan proposals and outputs align to stakeholder engagement outcomes?	37
5. DOCUMENT CHANGE CONTROL	40
6. APPENDIX 6.1. Engagement principles checklist 6.2. Business plan / engagement topic prioritisation framework 6.3. Stakeholder segments 6.4. Engagement approach – spectrum 6.5. Detailed outputs from engagements (embedded documents)	40

EXECUTIVE SUMMARY

The engagement in this log, covering the **future role of transmission and managing uncertainty in the T2 period** topic area, primarily impacts on our plans within the stakeholder priority, *I want you to enable the ongoing transition to the energy system of the future* – Chapter 7 of the main business plan narrative, but also has implications on other areas, such as *I want you to make it easy for me to connect and use the network* – in Chapter 8. Through the future role of transmission, we explored the changing role of the electricity transmission network in the long-term against the rapid changes in how customers could use the network in future as a result of the decarbonisation, decentralisation and digitalisation of energy. Through managing uncertainty in the T2 period we have explored how we establish a RIIO-T2 baseline for the customer driven elements of our business plan and how uncertainty should be managed through the period.

Innovative analysis was undertaken by National Grid to ascertain the likely network impact of energy scenarios that go beyond the credible envelope of the Future Energy Scenarios in the longer-term (i.e. 'stress testing' the future as an approach to thinking about uncertainty) as an input into the stakeholder engagement material for the future role of transmission. We published a discussion document in July 2018 to initiate the stakeholder conversation. This piece of work has attracted international attention and we continue to engage on this topic in our leadership role within industry. In addition, extensive work was undertaken both within National Grid and with other gas and electricity network companies to establish a Common Energy Scenario, translate this into a detailed scenario to build a baseline business plan for the T2 period and develop mechanisms that deal with uncertainty. Our consultation document on dealing with uncertainty and the Common Energy Scenario outcomes are also available online.

In planning engagement, considerable insight was gathered from publicly available documents published by stakeholders across a number of segments. The engagement approach was a mixture of *involve*, *consult* and *inform* (see Appendix 6.4) depending on stakeholder type and mapping. The engagement plan in the table below was devised and delivered, with key learnings captured at each stage and fed into future engagements to improve the approach (see Section 2.2).

Channel	Who	When (green = complete)
Initial workshop	NGET stakeholder list invite	July 2017
Online discussion document + online survey	NGET stakeholder list + personal networks	July 2018
Topic specific blog posts	General broadcast	24th July + 15th Aug 2018
Webinar	Targeted stakeholder list	15th Aug 2018
LinkedIn + Twitter campaign	General industry broadcast	As above
Bilateral	Ofgem, BEIS	19th + 26th Sept 2018
Network magazine article	General industry broadcast	Oct 2018
Bilateral	DNOs	Across Sept/Oct 2018
ENA "common energy scenario" working group	All regulated network companies	Sept 2018 – March 2019 (9 substantive meetings)
Stakeholder playback document of draft plan	Broad group of stakeholders	4th February 2019
Webinar on playback doc.	Broad group of stakeholders	13th February 2019
Uncertainty consultation (incl. playback of outcomes for future role of transmission)	NGET stakeholder list	26th Feb 2019
Uncertainty webinar 1&2(incl. playback of outcomes for future role of transmission)	NGET employees and external stakeholders with an interest	19th and 20th Mar 2019
Round table events (responding to 'Truth' feedback)	Broad list (including think tanks and innovators)	27th Nov 2018 + 3rd Apr 2019
Global Grid Forum (joint US / UK engagement)	Energy companies and academics	10th September 2019
Canadian Electricity Association	Representatives from Canadian network companies	12th September 2019
Consumer acceptability testing	Domestic and Non-domestic consumers	October 2019

A summary of this engagement and the outcomes, replicated in Chapter 7, Section 3 of the main business plan narrative, is shown in the table, below. These outcomes were reviewed and confirmed by external experts (Truth and Frontier Economics in November 2018 and September 2019 respectively).

	**Engagement on the role of electricity transmission in the long term and managing uncertainty in the short to medium term**	
	Future role of transmission	*Managing uncertainty in the T2 period*
Purpose and approach	We published a discussion document in July 2018 supported by an online survey, social media, a webinar and bespoke sessions to cover all relevant stakeholders to: a) Inform in an area with limited analysis and debate in the public domain. b) Gather views on priorities and the future role of transmission to shape our engagement. c) Consult on the need for the transmission network in the long-term to allow for more effective development of the RIIO-T2 price control framework and our business plans.	We published a consultation document in February 2019 supported by a webinar to: a) Playback the outcomes of our engagement on future of transmission. b) Inform about our current approach to business planning and uncertainty. c) Consult stakeholders on how scenarios should be used for T2. d) Involve stakeholders in where we should propose a baseline allowance. e) Shape our input into the Common Energy Scenario work
What stakeholders told us	Stakeholders told us that: • decentralisation and decarbonisation are trends most likely to impact transmission in the long term • despite uncertainty, there is a need for electricity transmission in the long term • decarbonisation, reliability and lower costs for consumers are top priorities • facilitating flexible energy services and enabling customer solutions are also important to certain segments • we should play an active role in enabling the energy transition and ensure electricity transmission is not a blocker to EV uptake • delivering whole system solutions is important • we should undertake timely reinforcement where required.	Stakeholders told us that: • FES with additional regional insights are a suitable range for planning our business • our approach to setting an England & Wales scenario is reasonable • majority support for setting a baseline allowance that is least likely to change over T2 • it is appropriate to review existing uncertainty mechanisms and consider the introduction of new ones, particularly where these facilitate potential whole system solutions • there is merit in the development of an anticipatory investment mechanism.
What consumers told us	Quantitative acceptability testing showed strong support for investments needed to support future changes in electricity supply and demand (91% support for proposals). Planning the energy system of the future was ranked 3rd after only reliability and protecting the network. This relative level of support remained when consumers were asked to also consider the impact on bills. Further qualitative testing, through focus groups, confirmed these results. Whilst results differed across domestic and non-domestic consumers, both showed a strong willingness to pay for investments to accommodate renewable energy. Combined, the results from our consumer engagement suggest that these types of investments should be near the top of our priorities.	
Examples of key trade-offs and how engagement influenced our plans	This strand of engagement confirmed stakeholders priorities we had compiled from prior engagements (set out in our 'Listen Report'). The **insights we gained** gave us confidence in the long-term role of electricity transmission and, therefore, in extending the current approach to managing medium-term uncertainty in the price control using 'unit cost allowances'. It also shaped our input to the Common Energy Scenario work and the England and Wales scenario upon which our plan is based**, changing our assumptions** on regional demand variations and Solar PV capacity. A **key trade-off** was whether we should play a passive role (responding to network issues), or a more proactive role (highlighting whole system issues and potential solutions) in enabling the energy transition. DNOs and, on some topics, the ESO, thought we should play a more passive role, whilst most other stakeholders wanted us to be proactive. This trade-off was debated twice in the Independent Stakeholder Group. Based on the views of most stakeholders, we decided that an active role is appropriate and are putting forward proposals for an anticipatory investment process, consideration of non-network solutions and our thinking on how to resolve some of the key challenges in this draft plan.	
How we've responded to Stakeholder Group/ Challenge Group	The **Independent Stakeholder Group** challenged our approach to uncertainty mechanisms and whether we are doing enough to ensure the price control is sufficiently flexible to allow net-zero 2050 targets to be met. In response to this challenge, we have broadened our suite of mechanisms and have undertaken extensive statistical analysis and probabilistic modelling of uncertainty to develop the detail. The **Challenge Group** has influenced our plans by stipulating a requirement to work with other networks to create a Common Energy Scenario and to submit a baseline plan that is consistent with this scenario. They also challenged us to ensure our plan can flex to support the pathways to net-zero. The broader suite of mechanisms we are proposing in response to the Stakeholder Group, and set out in Section 7, address this.	

1. PRE-ENGAGEMENT

1.1 WHAT IS THE TOPIC AND WHY IS IT BEING ENGAGED ON?

The **stakeholder priority, *I want you to enable the ongoing transition to the energy system of the future*** *(Chapter 7 of main business plan narrative)*, is comprised of several topic areas as illustrated in Figure 1. This priority is what the electricity transmission network will need to do over the RIIO-T2 period to facilitate the ongoing transformation of the energy industry due to the trends of decarbonisation, decentralisation and digitisation. Stakeholders have encouraged us to plan and communicate more in this area:

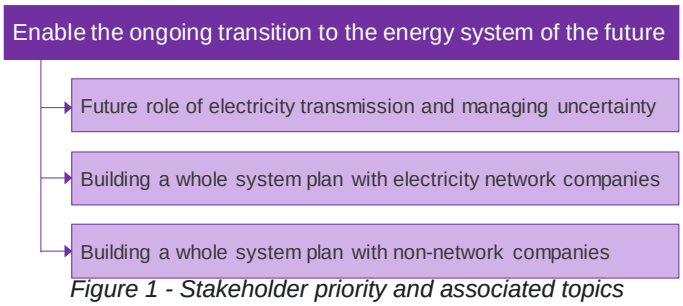


Figure 1 - Stakeholder priority and associated topics

> *"National Grid needs to be quite focused and quite clear about where it sees the future and what role it's going to play in delivering that future."*
>
> *"The system that we've used over the last few decades is not ready and not suitable to embrace this new change in technology that is coming onto our system."*
>
> *"Be more proactive, use the knowledge in the industry and customers to establish their needs and design a strategy."*
>
> *"They tend to talk about relatively short-term issues, whereas they do think about long-term issues."*

This log is focussed on the ***future role of electricity transmission and managing uncertainty*** topic area. Whilst the outcomes of engagement on this topic area primarily influence *Chapter 7 – Enable the ongoing transition to the energy system of the future*, they also have a material impact on *Chapter 8 – Easy to connect and use the network*.

Our proposals for the T2 period in these areas are influenced through a combination of (i) our licence obligations, annual processes and ongoing stakeholder engagement, as well as (ii) bespoke engagements undertaken in building our T2 business plan.

Many of our proposals are either heavily or exclusively influenced by our licence obligations, evolving annual processes run by the ESO and together with DNOs as well as ongoing stakeholder engagement, as shown in Figure 2. Our licence obligations and the industry code framework set out how we must plan the network and interface with other parties. We must design the network to maintain compliance with the Security and Quality of Supply Standards, adhere to the procedures and requirements across the ESO / TO interface in the SO-TO Code and work with the DNOs as set out in the Grid Code. These set the boundaries of engagement and where bespoke engagement can influence our T2 proposals.

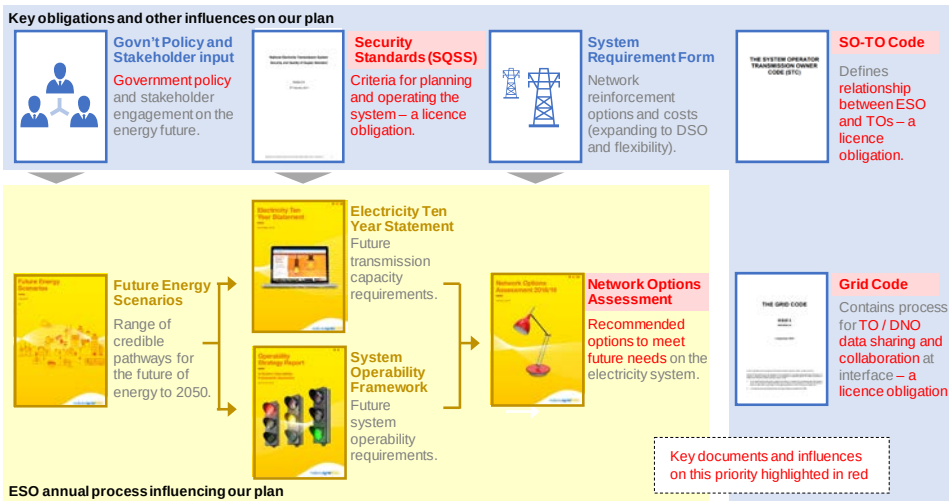


Figure 2 - Key obligations, processes and ongoing engagement influencing our proposals

Bespoke engagement in this topic area explores the changing role of the electricity transmission network over the long term against the rapid changes in how customers could use the network in future as a result of the decarbonisation, decentralisation and digitalisation of energy. The existing approach to planning the transmission network (i.e. Future Energy Scenarios and Network Options Assessment) and RIIO regulatory framework (i.e. Uncertainty Mechanisms and

Network Output Measures) already have a number of mechanisms to deal with uncertainty in the short to medium term. The future role of electricity transmission looks at the likely network impact of energy scenarios that go beyond the credible envelope of the Future Energy Scenarios in the longer-term, checking that application of similar short to medium term mechanisms remains in consumer's interests. Through managing uncertainty in the T2 period we explored how we establish a T2 baseline for the customer driven elements of our business plan, how uncertainty should be managed through the period and how we can help achieve the UK's net-zero that came into force on 27th June 2019.

Engagement outcomes for this topic area have informed future engagements in other topic areas and have a direct link to our baseline TOTEX plan for the T2 period. They also indirectly impact all aspects of our plans through the existential nature of some of the questions it tackles and the areas of focus it highlights for us. Therefore, it is deemed to have **high materiality**. The nature of the topic makes it inherently complex, leading to a **low ease of engagement.**

1.2 WHAT ARE THE DESIRED OUTCOMES FOR THIS ENGAGEMENT?

The desired outcomes from this engagement are:

For the future role of electricity transmission, to: (i) inform stakeholders in an area with minimal analysis and debate in the public domain (ii) gather stakeholder views on their priorities and the future role of electricity transmission to shape our plans, and (iii) directly address the debate about the need for a transmission network in the long-term to allow for more effective development of the RIIO-2 price control framework and our business plans using the insights gained. Outcomes from this engagement will inform the follow-on, more detailed engagement on the stakeholder priorities that will make up our RIIO-T2 business plans.

For managing uncertainty in the T2 period, to: (i) Playback the outcomes of our engagement on future of transmission, (ii) inform about our current approach to business planning and uncertainty, (iii) consult stakeholders on how scenarios should be used for T2, (iv) involve stakeholders in where we should propose a baseline allowance and (v) shape our input into the Common Energy Scenario work.

Successful engagement on these topics will be measured by:

1. The Independent Stakeholder Group guidelines; expressed as the 18 engagement principles checklist (See Appendix 6.1 for details)
2. The AA10000 stakeholder engagement standard. In summary:
    - clearly defined scope
    - uses an agreed decision-making process
    - focus on issues material to the organisation and/or its stakeholders
    - creates opportunities for dialogue
    - is integral to organisational governance
    - is transparent
    - has a process appropriate to the stakeholders engaged
    - is timely
    - is flexible and responsive
    - adds value both for the organisation and its stakeholders

In addition, we will consider to what extent we have received quality feedback (input that genuinely shapes our plans and approach), the ability to make a positive impact on the debate about the role of transmission in the long term and establish a baseline business plan and approach to managing uncertainty in the T2 period. This will allow for engagement on other topics within this priority and the building of our stakeholder-led business plan.

1.3 WHAT EXISTING INSIGHT HAS BEEN UTILISED?

The ongoing transformation of the energy industry is a subject of much investigation, discussion and debate. As a result, **considerable insight is publicly available** indicating both the direction of travel and the views of many of our stakeholders. In addition to the FES[i], NOA[ii] and other ongoing processes referred to above, and set out in Figure 2, some examples of additional relevant insights considered for this work are:

Publicly available insights on the future role of electricity transmission

Distribution Network Owners

Energy Networks Association – *Future Worlds*

"'Future Worlds' is the output of a substantial stakeholder engagement process to map and describe a number of potential future electricity networks ("Future Worlds") capable of supporting the smart decentralised energy industry that the UK is transitioning towards." LINK TO DOCUMENT

Think tanks & innovators

IET + Energy Catapult – *Future Power System Architecture*

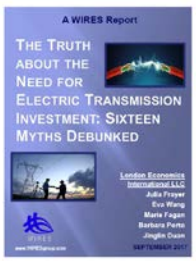
"The FPSA project was commissioned by DECC to assist ministers, officials and industry professionals…The project has identified *thirty-five* new or significantly modified functions required to meet 2030 power system objectives." LINK TO DOCUMENT

Distribution Network Owners

UK Power Networks – *Future Smart*

"Power flows are no longer uni-directional across our networks making the task of operating them and maintaining reliable supplies more complex, and potentially more costly in the absence of new innovative solutions. A coordinated approach to system operations and planning with National Grid, the GB System Operator, is needed to deliver value for consumers." LINK TO DOCUMENT

Transmission Owners (international)



WIRES Group – *The truth about the need for electric transmission investment*

"Debunking myths and long-held beliefs about investment in electric transmission that influence the thinking or actual decisions of policy makers, regulators, and the public about the need for, and benefits of, this critical infrastructure." LINK TO DOCUMENT

Consumers

UK Energy Research Centre – *Transforming the Energy System Public Values, Attitudes and Acceptability*

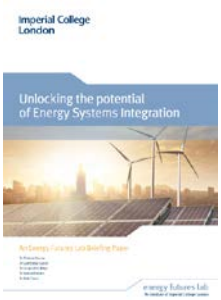
"The core conclusion from the research is that the British public wants and expects change with regard to how energy is supplied, used and governed…. the research has illuminated a wide range of novel insights on public attitudes regarding: energy policy drivers; elements of energy system change; and the underlying values and principles that people draw on when engaging with this issue." LINK TO DOCUMENT

Large Customers

Energy UK – *Future of Energy*

"To support this vision, Energy UK will set out a series of thought pieces that propose options to address the issues we have raised within this paper. These will consider key issues such as…Transporting energy to and from customers through transmission and distribution networks…" LINK TO DOCUMENT

Academics



Imperial College – *Unlocking the Potential of Energy Systems Integration*

"A further anticipated benefit of Energy System Integration is a reduction in the capital and operational costs of energy networks through exploitation of the greater flexibility offered by integration – although there is little evidence to support a quantification of this benefit at this stage." LINK TO DOCUMENT

Transmission Owner / Distribution Network Owner

SSEN – *North of Scotland Future Energy Scenarios*

"…the application of the FES assumptions on a regional level is limited. In the north of Scotland, SHE Transmission have seen developments that have not always matched the prevailing GB trends." LINK TO DOCUMENT

Government

Committee on Climate Change – *Net Zero – The UK's contribution to stopping global warming*

"This report responds to a request from the Governments of the UK, Wales and Scotland, asking the Committee to reassess the UK's long-term emissions targets. Our new emissions scenarios draw on ten new research projects, three expert advisory groups, and reviews of the work of the IPCC and others…. The Committee on Climate Change recommends a new emissions target for the UK: net-zero greenhouse gases by 2050." LINK TO DOCUMENT

Regulatory

Ofgem – *RIIO-2 Business Plan Guidance*

"Forecasting costs for the duration of a price control is challenging…Uncertainty mechanisms allow changes to a company's allowed revenues to be made in light of what happens during the price control period and help to ensure that consumers only pay for the outputs that are delivered." LINK TO DOCUMENT

Analysis and engagement specifically on the role of the electricity transmission network into the long term was lacking from the material available. As a result, **we undertook a considerable amount of development and analysis work, including on bespoke energy scenarios that go beyond the 'credible envelope' contained within the FES publication**. This work started with the Future Energy Scenarios produced by the Electricity System Operator, which itself gathers input from 650 stakeholders about potential future outcomes. Both a (1) High Decentralisation and a (2) High Electrification of Transport scenario were created to push the boundaries of plausibility (a recognised strategic approach for thinking about long term uncertainty). The focus of the analysis on these two scenarios was to investigate two key questions, as illustrated in Figure 3, below.

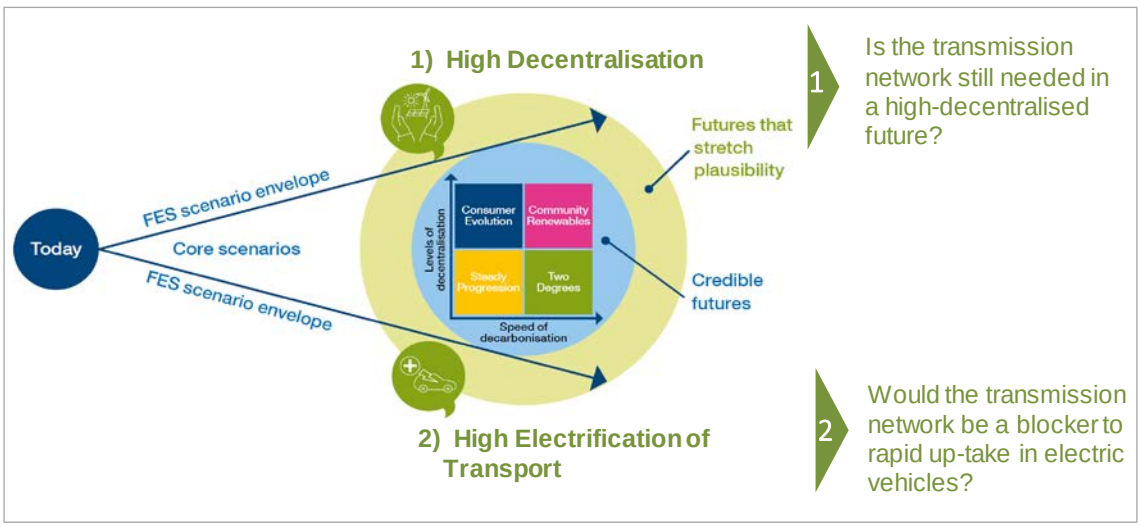


Figure 3 - Futures that stretch plausibility investigated

The results of the analysis are summarised in a suite of documents including slide decks and a discussion document, which was published on our website in July, 2018. LINK TO DOCUMENT

The three key conclusions arising out of this work that are included in the engagement material are set out in Figure 4, below.

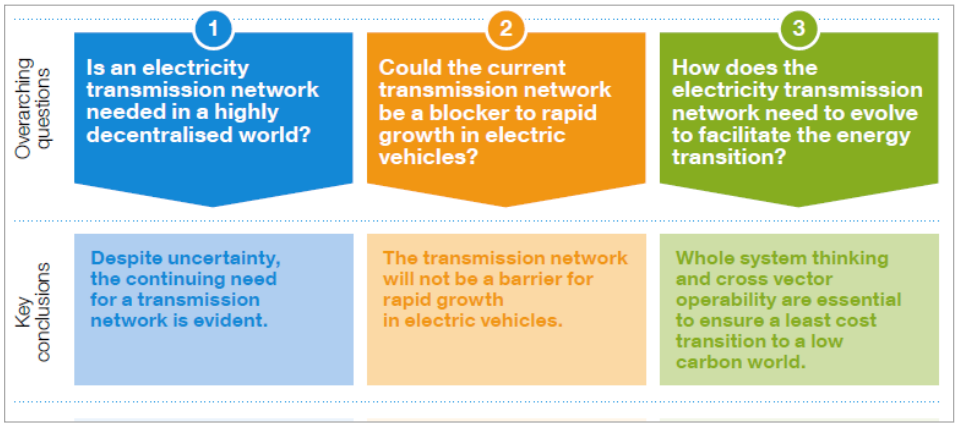


Figure 4 - Conclusions of National Grid analysis

We also produced a detailed consultation document on the topic of energy scenarios and managing uncertainty which was published on our website on the 26th of February, 2019 LINK TO DOCUMENT

This document set out (i) what we had heard from stakeholders to date on the future role of electricity transmission and (ii) our current thinking on business planning and managing uncertainty for the T2 period. This document allowed for engagement to take place through other channels (e.g. the group of regulated network companies working on a "common energy scenario" and a series of webinars). The contents of this engagement material are set out in Figure 5, below.

Area of Impact	Timescale	Aspect of managing uncertainty	Focus of this document
1) Business planning	Long term *(significant uncertainty beyond 2030)*	• The need for and role of electricity transmission networks **beyond the T2 period**	i. **Playback of what you have told us** through our engagement activities in August, September and October 2018
	Medium term *(range of possible futures up to 2030 including the RIIO-T2 period)*	• The **approach to business planning** for the future	ii. **Introducing our approach** to business planning
		• The **range of possible future scenarios** NGET should plan against	iii. **Seeking your views** on the range of futures we are planning against
2) Setting the RIIO-T2 price control		• Setting a **baseline allowance** for T2 expenditure against which uncertainty mechanisms will operate	iv. **Seeking your views** on developing a single scenario used to set a baseline revenue allowance
		• Appropriate **uncertainty mechanisms** that adjust the baseline allowance based on what actually needs to be delivered	v. **Seeking your views** on our proposed approach to uncertainty mechanisms in the T2 period

Figure 5 – Material for managing uncertainty engagement

1.4 WHAT IS THE ENGAGEMENT APPROACH?

The approach chosen to engaging with stakeholders is both topic and stakeholder specific. Stakeholder mapping across segments (see Appendix 6.3 for a full list) was undertaken to establish the approach, as illustrated in Figure 6.

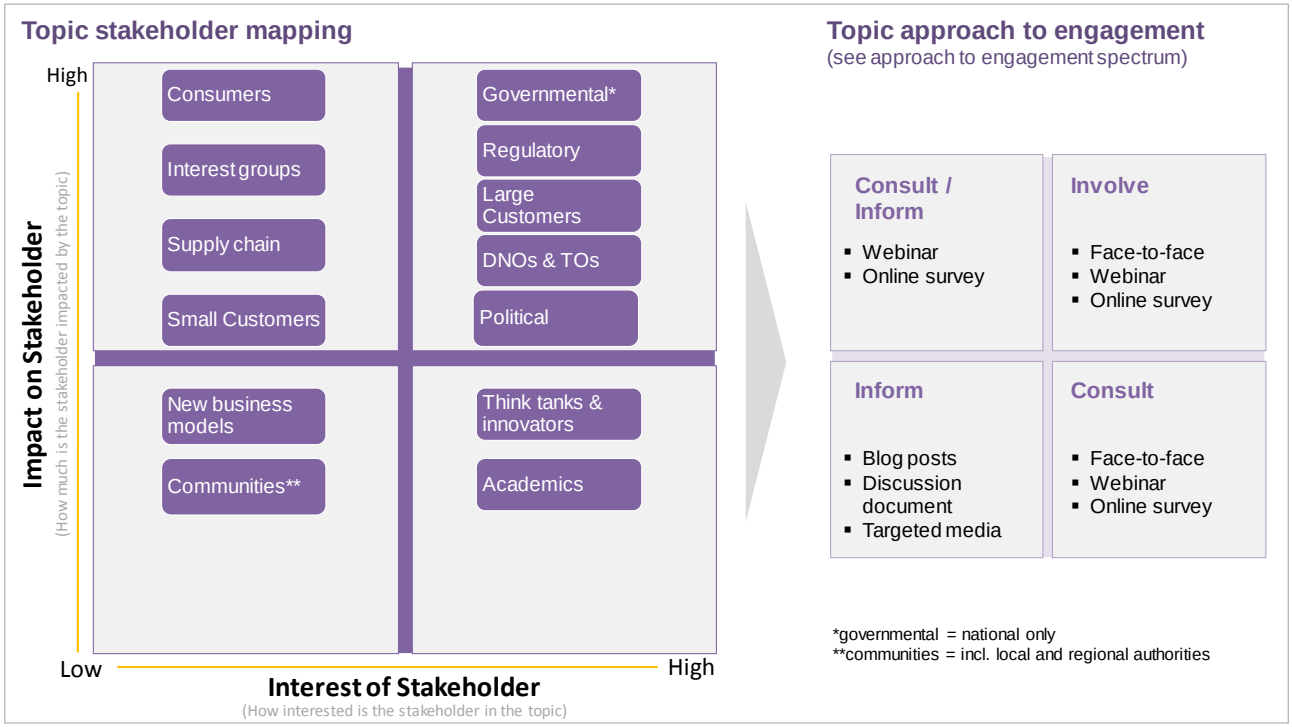


Figure 6 - Stakeholder mapping and engagement approach

The mapping of stakeholders based on their interest in the topic and how much they are impacted by it (Figure 6 – left) allowed for the tailoring of our engagement approach. The resulting 2 x 2 topic approach to engagement matrix (Figure 6 – right) sets out where on the spectrum of engagement the plan will aim and what channels will be used to achieve the aim. (see Appendix 6.4 – setting out the goals of engagement and promise to stakeholders for each part of the spectrum) Our engagement approach is a mixture of *involve*, *consult* and *inform* (each with a different level of stakeholder influence, as defined in Appendix 6.4), depending on stakeholder segment. We sought to give stakeholders with the highest impact and interest the highest level of influence, limited by the boundaries of engagement described in Section 1.1. Political stakeholders were moved from the bottom left to the top right box through challenge from the Independent Stakeholder Group at SG3 in October 2018.

A combination of blog posts, discussion documents, online survey, webinars and face-to-face meetings were used. Whilst webinars themselves are not particularly innovative, they have not been used before by National Grid's Electricity Transmission Owner business, so this approach was new ground for us.

Channel	Who	When (green = complete)
Initial workshop	NGET stakeholder list invite	July 2017
Online discussion document + online survey	NGET stakeholder list + personal networks	July 2018
Topic specific blog posts	General broadcast	24th July + 15th Aug 2018
Webinar	Targeted stakeholder list	15th Aug 2018
LinkedIn + Twitter campaign	General industry broadcast	As above
Bilateral	Ofgem, BEIS	19th + 26th Sept 2018
Network magazine article	General industry broadcast	Oct 2018
Bilateral	DNOs	Across Sept/Oct 2018
ENA "common energy scenario" working group	All regulated network companies	Sept 2018 – March 2019 (9 substantive meetings)
Stakeholder playback document of our draft T2 business plan	Broad group of stakeholders	4th February 2019
Webinar on playback doc.	Broad group of stakeholders	13th February 2019
Uncertainty consultation (incl. playback of outcomes for future role of transmission)	NGET stakeholder list	26th Feb 2019
Uncertainty webinar 1 (incl. playback of outcomes for future role of transmission)	National Grid employees	19th Mar 2019

Uncertainty Webinar 2 (incl. playback of outcomes for future role of transmission)	Broad group of stakeholders with an interest in the issue	20th March 2019
Round table events (responding to 'Truth' feedback)	Broad list (including think tanks and innovators)	27th Nov 2018 + 3rd Apr 2019
Global Grid Forum (joint US / UK engagement)	International energy companies and academics	10th September 2019
Canadian Electricity Association	Representatives from Canadian network companies	12th September 2019
Consumer acceptability testing	Domestic and Non-domestic consumers	October 2019

……

2. POST-ENGAGEMENT

2.1 WHAT WERE THE ENGAGEMENT OUTCOMES AND HOW HAS THIS INFLUENCED OPTIONS?

Engagement outcomes are captured separately for the (i) initial workshops, (ii) future of electricity transmission online discussion document, online survey and topic specific blog posts, (iv) future of electricity webinar, (v) future of electricity transmission bilateral / bespoke sessions, (vi) managing uncertainty in T2 consultation and webinar, and (vii) Common Energy Scenario work through the ENA.

i) INITIAL WORKSHOPS

Initial workshops with stakeholders were held in July 2017 across London, Nottingham and Newcastle as part of our ongoing engagement. These sought to understand and check our understanding of stakeholder priorities and seek early views on some key areas. One of these key areas was the future role of electricity transmission.

Channel	Segmental analysis		Organisations	
Initial regional workshops (42 attendees)	Academics	1	AMT-Sybex	Jacobs UK
	Consumer bodies	3	Arenko Cleantech	National Grid ESO
	Large customers	3	Balfour Beatty	National Trust
	Regulatory	3	Campaign for National Parks	Natural England
	Supply chain	4	Cardiff University	Network Rail
	Small / new cust.	5	Catapult Offshore Renewable	Northern Power Grid
	Interest groups	6	Centrica	Ofgem
	Other	7	Citizens Advice	Outokumpu Stainless
	Network companies	10	Dan and Adam Ltd	RINA Consulting
			Energy Networks Association	SSEN
			Environment Agency	SPEN
			Explain Market Research	The Wildlife Trusts
			Indigo Power	Waters Wye Associates
			Innogy Renewables	Western Power Distribution
			Intergen	Which?
			Hope Cement	Willis Towers Watson

Stakeholder representation combined across the three regions was a good spread of stakeholders across the segments identified for engagement on this topic. When we asked stakeholders about their priorities our active contribution to the debate on the future of energy scored relatively highly (as shown in Figure 7, below), reinforcing our view that stakeholders want us to do more in this area and supporting our plan to engage on the future role of electricity transmission.

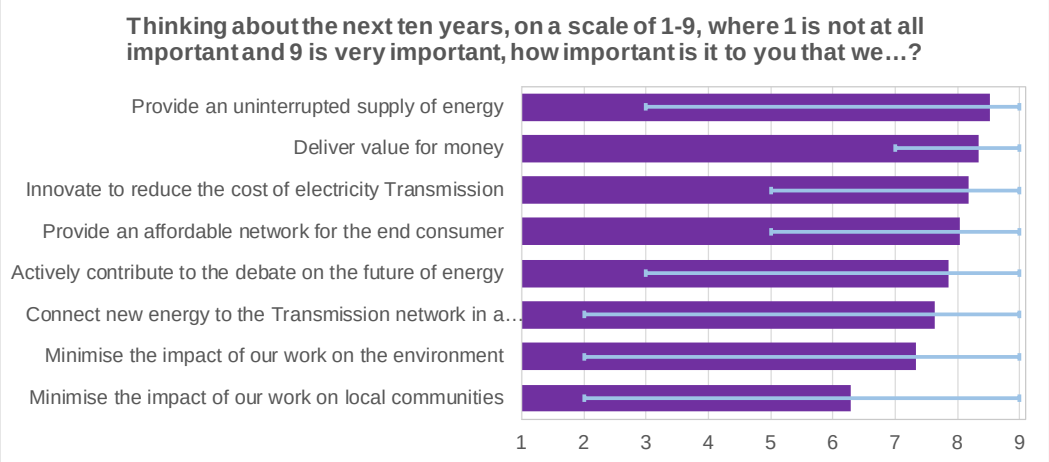


Figure 7 - Stakeholder priorities (purple bar = average, error bar = max & min scores)

As part of the regional workshops we also asked stakeholders about the future role of the electricity transmission network over the next decade. The results of this poll are shown in Figure 8, below. The data from this survey indicates that stakeholders believe that the current roles and importance of the electricity transmission network is greater than today, on average. However, there was considerable variability on some of the responses (denoted by the blue error bars).

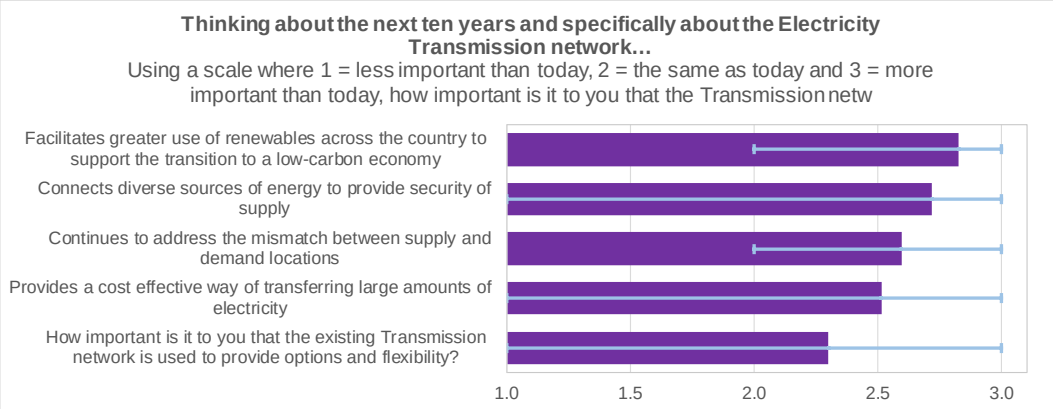


Figure 8 - Future role of the electricity transmission network

The workshops also ran a session to capture stakeholder views on the extent of transmission likely to be required in future (a paper template including a spectrum from less need through to same need and more need from electricity transmission was used). Unfortunately, many tables at the workshop did not properly capture the outputs from this session, which required stakeholders to place post-it notes onto the spectrum. This meant that the outputs could not be used to inform our thinking. A learning for future engagement, which has been picked-up across all subsequent engagements, was to ensure that outputs are robustly captured and attributable to individuals / organisations.

More detailed outcomes from engagement through this channel are available in the associated write up of that was played back to our stakeholders and is now available on our website. LINK TO DOCUMENT

ii) FUTURE OF ELECTRICITY TRANSMISSION ONLINE DISCUSSION DOCUMENT, ONLINE SURVEY AND TOPIC SPECIFIC BLOG POSTS

The online discussion document, as introduced in section 1.2 (LINK TO DOCUMENT), was used to engage stakeholders on this topic and share the outcomes of our analysis. Stakeholder feedback was gathered through both an online survey and a webinar, as set out below, and blog posts with related material were published to help promote participation (POST 1 + POST 2) The document and opportunities to contribute were also promoted via LinkedIn and Twitter.

Channel	Segmental analysis		Organisations	
Online survey (15 identifiable respondents)	Large Customer	1	Osaka Gas	Siemens Plc
	Network company	2	3M UK Plc	Landsnet
	Consumer	3	Individual expert	G59 Professional Services
	Other	4	BT Plc	Power Grid Engineering
	Supply chain	5	Consumer	ABB Grid Systems
			National Grid Ventures	Eskom
			National Grid ESO	Dubai Electricity and Water Authority
				Consumer

Despite the promotion activities, not many stakeholders actively participated in and completed our online survey attached to the document. As a result, the survey itself was not as useful as it could have been. Lessons learned are captured in section 2.2. Nevertheless, insight was gained and views from organisations operating in other countries were received (e.g. Landsnet from Iceland, Eskom from South Africa, etc.) that would not otherwise have helped inform our thinking. Figure 9, below, shows the verbatim input received on areas stakeholders thought we should consider as driving change beyond the trends we had considered. Stakeholders also shared their views on what is driving change and the future role of electricity transmission. This feedback was used to develop our next phase of consultation on this stakeholder priority and in building the detail of our business plans.

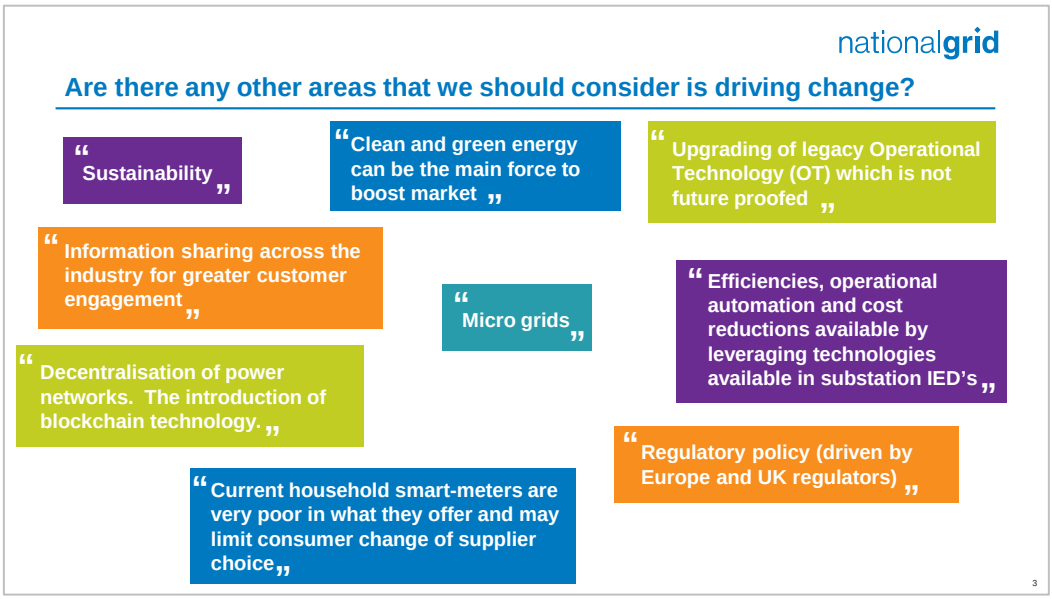


Figure 9 - Online survey verbatim feedback

More detailed outcomes from engagement through this channel are available in the associated PowerPoint file embedded in Appendix 6.5. This, along with the outcomes from other channels, were also written up and played back to our stakeholders as part of the managing uncertainty engagement, set out below.

iii) FUTURE OF ELECTRICITY TRANSMISSION WEBINAR

The webinar format is one that we have not used before in the electricity transmission owner business. It is a format that we have seen other organisations use successfully and one that a number of our stakeholders had mentioned they would welcome. We held our first webinar on the 15th of August, 2018 as a way to gather more views on this topic (informed by our discussion document) and to trial the webinar format with our stakeholders.

Channel	Segmental analysis		Organisations	
Webinar (29 attendees)	Governmental	1	Atkins Global	Green Alliance
	Interest Group	2	Burns and McDonnell	MEUC
	Small Customer	2	Cenex	Npower
	Large Customer	5	Copa Data	Powerlink
	DNOs & TOs	6	DP Energy	Pöyry
	Supply Chain	6	Drax	Ricardo
	Other	7	Energy Networks	Royal HaskoningDHV
			Energy UK	Siemens
			ENWL	SP Energy Networks
			ESB	SSE
			GE	TNEI
			Government Wales	Wilkins Hunter

A good number of attendees dialled into our webinar across a spread of stakeholder segments. The webinar itself was an hour in duration and was split 50 / 50 between National Grid presenting and stakeholder interaction through polling, free text feedback and Q&A. Considerable feedback and insights were gained with much less resource (both for us and stakeholders) than other channels. Stakeholders shared their views on their priorities, what is driving changes in the industry and the future role of electricity transmission. A recording of the webinar is available online LINK TO RECORDING.

Figure 10, below, shows the verbatim input from webinar attendees when asked what their priorities were for the next decade. Much of the input is consistent with the stakeholder priorities we have established through the Listen phase of our engagement. However, the issue of predictability and transparency of charges was raised by one of our large customers – something we have heard through our customer satisfaction surveys as being an issue before. Despite a limited role for the Transmission Owner in setting charges, we considered how we might be able to encourage development of the RIIO-2 framework in a way that reduces the volatility of our revenues, and hence the charges customers pay. This has directly influenced our detailed proposals for dealing with uncertainty in the T2 period.

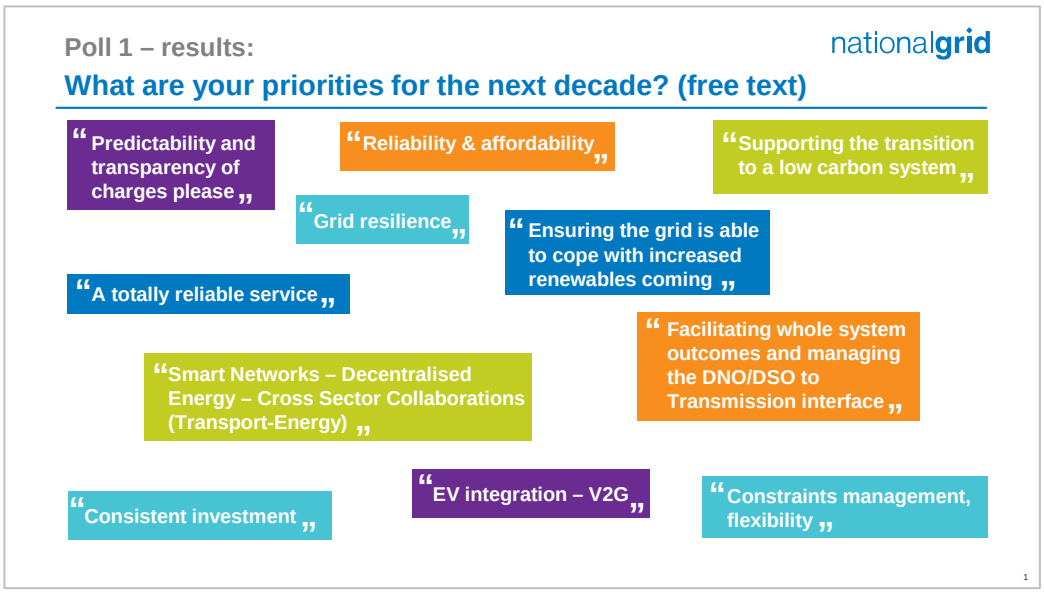


Figure 10 - Webinar verbatim feedback on priorities

Figure 11, below, shows a segmental analysis of responses to our poll on whether stakeholders agreed with the conclusion in our discussion document that, despite uncertainty, a continuing role for the electricity transmission network is evident. This shows that the majority of our stakeholders who responded are positive about the future need for the network, with some being unsure. One stakeholder, from a Distribution Network Owner (DNO), did not agree that the future need for the network is evident. This is something that we have covered in our bilateral engagements with DNOs – in the case of the individual that disagreed with a continuing role for the electricity transmission network, they told us that they did not have sufficient time to digest our discussion document prior to being asked and subsequently indicated that they agreed that there was likely a continuing role, but that the nature of that role is likely to change.

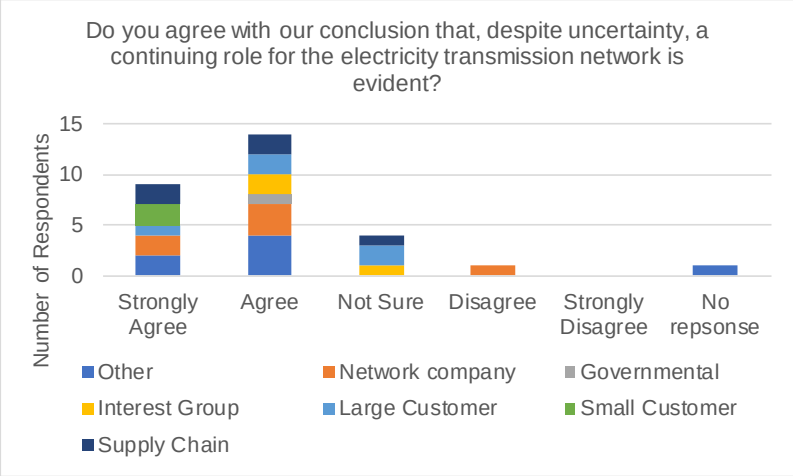


Figure 11 - Webinar segmental analysis of views on future of transmission

More detailed outcomes from engagement through this channel are available in the associated PowerPoint file included in Appendix 6.5. This, along with the outcomes from other channels for the future role of transmission topic, were written up and played back to stakeholders through our managing uncertainty engagement.

iv) FUTURE OF ELECTRICITY TRANSMISSION BILATERALS / BESPOKE SESSIONS

For bilateral sessions, we adopted the interactive tool provided by www.mentimeter.com to capture feedback dynamically through the sessions. This is a tool and approach that we have not used before and it was initially trialled through the BEIS session held on the 19th of September 2018. The use of this tool was very successful and popular with stakeholders. It has been applied across several subsequent engagements.

BEIS bespoke session

Channel	Segmental analysis		Organisations
BEIS bespoke session	Governmental	18	BEIS

The session with BEIS was organised as a lunch time talk on whether electricity transmission would be required in future and 18, majority manager level, attendees came along. Material for the session included most of the slides used for the webinar and some additional, detailed case studies. The audience was very engaged and interested and this was reflected in the how interactive the session was. One learning from this is that a more intimate, bespoke session with less stakeholders is useful for stakeholders like BEIS. As a result, this format was repeated with Ofgem on the 26th October 2018 and used for other topics in further engagements – incorporating the learnings set out in section 2.2.

Figure 12, below, shows the verbatim output from the BEIS session attendees when asked what their priorities were for the next decade. Much of the input is consistent with the stakeholder priorities we established through the Listen phase of our engagement (e.g. decarbonisation, cost, environment, energy security). Responses appeared on the slides as stakeholders submitted them, which people really liked and which stimulated conversation. One person submitted 'flying cars' as their priority, which added some light-heartedness into the session and opened up some in the room who were perhaps less comfortable with speaking up. After the session we learned that the government was indeed doing some policy thinking on flying cars in preparation for the launch of a Regulators' Pioneer Fund. Our learning from this experience is that interesting insights can be gained around the edges of engagement and feedback should always be investigated seriously regardless of how odd it may seem at first.

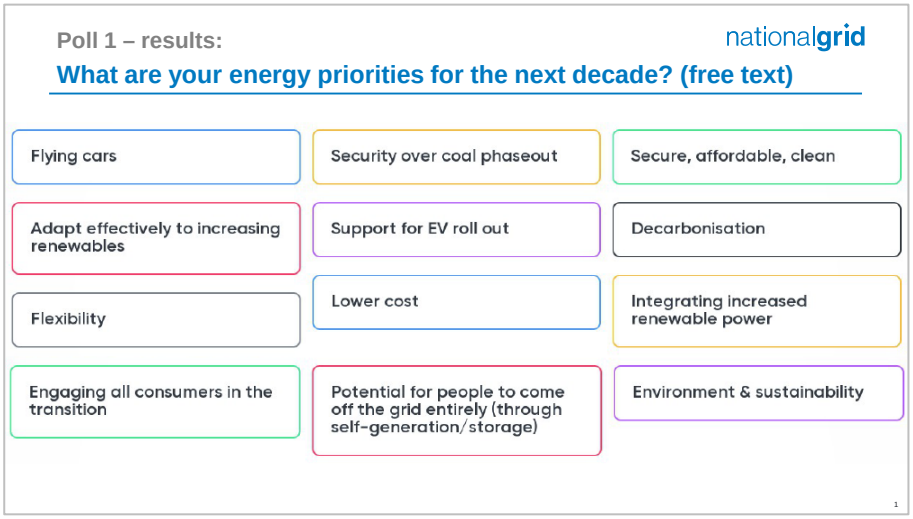


Figure 12 - BEIS verbatim feedback on priorities

Figure 13, below, shows responses to our poll on whether stakeholders agreed with our conclusion set out on the day that, despite uncertainty, a continuing role for the electricity transmission network is evident. This shows that, similar to polls run through other channels, the majority of BEIS employees who responded are positive about the future need for the electricity transmission network, with some being unsure. Our take-away from this interim result was that further bilateral engagement may be required for those that are not sure and/or the way we present our RIIO-2 plans needs to be clear on how we will deal with any residual uncertainty on the need for electricity transmission in the long term.

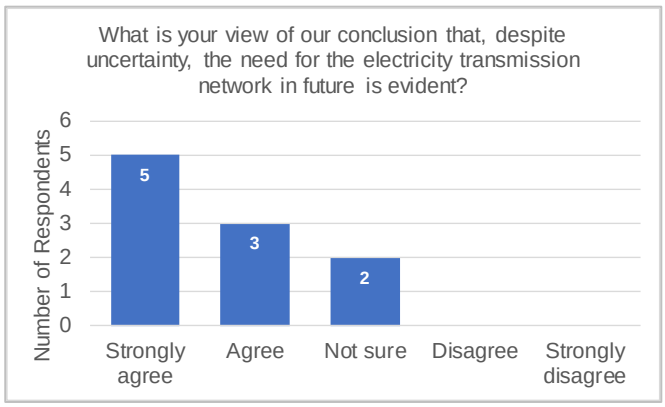


Figure 13 - BEIS view on future need for electricity transmission

ADE bespoke session

We ran a very similar type of session to that with BEIS at the Association for Decentralised Energy. This covered not only the future role of electricity transmission, but also touched on our business planning approach and explored potential opportunities for demand side response in resolving transmission issues. This engagement session is covered across both this and the 'Whole system planning with non-network companies' engagement log. Material relevant to the future role of electricity transmission is included here.

Channel	Segmental analysis		Organisations	
Bespoke session (9 attendees)	New business models	3	ADE	Grid Beyond
	Large customer	3	Smartest Energy	Eon
	Small Customer	2	Centrica	EdF
	Other	1	Stark Energy	Flextricity
			Enel X (formerly Enernoc)	

When asked via a free text question about their energy priorities for the next decade participants highlighted flexibility markets, decarbonisation and enabling customer solutions. Verbatim responses are shown in Figure 14, below.

Figure 14 - ADE verbatim feedback on priorities

When asked to provide their view on our conclusion that there is a need for the transmission network in the future, the majority of respondents agreed that this need is evident as shown in Figure 15. This result is very similar to the spread of responses when engaging other stakeholder segments through other channels.

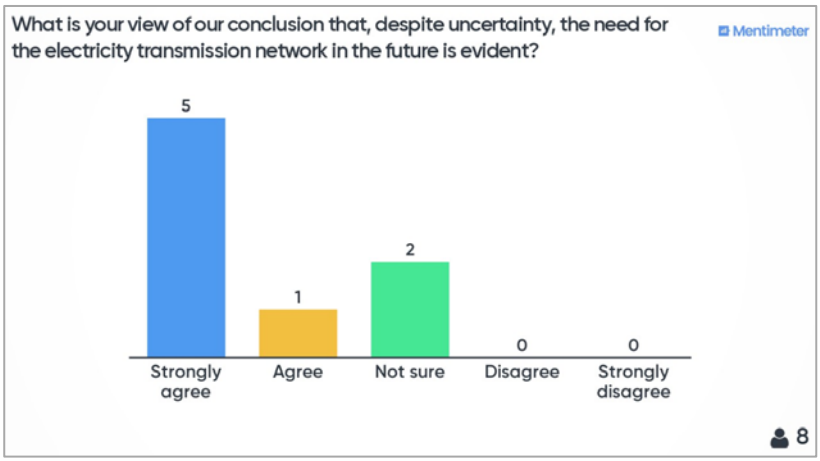


Figure 15 – ADE member view on future need for electricity transmission

v) MANAGING UNCERTAINTY IN T2 CONSULTATION AND WEBINAR

Much of the approach to managing uncertainty is decided by the ESO (through NOA for investment) and by Ofgem and it's RIIO-2 Challenge Group (on energy scenarios, setting baseline allowances and uncertainty mechanisms), but we could obtain useful insights from stakeholders to feed into these processes by engaging broadly in this area.

A CONSULTATION DOCUMENT was produced to articulate (i) what we had heard from stakeholders to date and (ii) our current thinking on energy scenarios and managing uncertainty in one place in order to facilitate engagement through other channels (e.g. the group of regulated network companies working on a "common view of the future"). Contents of the engagement material covered both our approach to business planning and to setting the RIIO-T2 price control. As our stakeholder playback document had already been published in February, stakeholders were able to consider our proposals in this area in the context of our overall plans for the T2 period.

We learned from previous engagements that using webinars and trade associations can be a great way to make it easy for stakeholders to engage so used that approach on this topic. Some material in our consultation was used for a session at EnergyUK attended by many of our customers and all material was heavily drawn on for a webinar held on 20th March 2019, which was attended by a broad range of stakeholders. The table below sets out the stakeholders that participated.

Channel	Segmental analysis		Organisations	
Consultation, Webinar and EnergyUK bespoke session (33 attendees / respondents)	Large customer	9	Centrica	PWC
	Other	7	ENWL	RES
	Network company	5	ESB	RWE Trading
	Small / new customer	5	EUK	Siemens
	Regulatory	3	Frazer Nash	Sembcorp
	Academic	2	Green Frog	Shakespeare Martineau
	New business model	1	Innogy	Shell

	Supply chain	1	Nottingham Trent Uni Northern Power Grid Ofgem Origami Orsted OVO Energy PA Consulting	SHET SPEN SSE University of Manchester Vitol Waters Wye Associates

Both the webinar and the session at Energy UK were very well attended by a good spread of stakeholder segments. As well as sharing our initial thinking on these topics we used interactive and WebEx polling to gain stakeholder views. Some polls were run at both sessions, as shown in Figure 16, below, whilst other more detailed polls were more suited to the webinar channel, as shown in Figure 17.

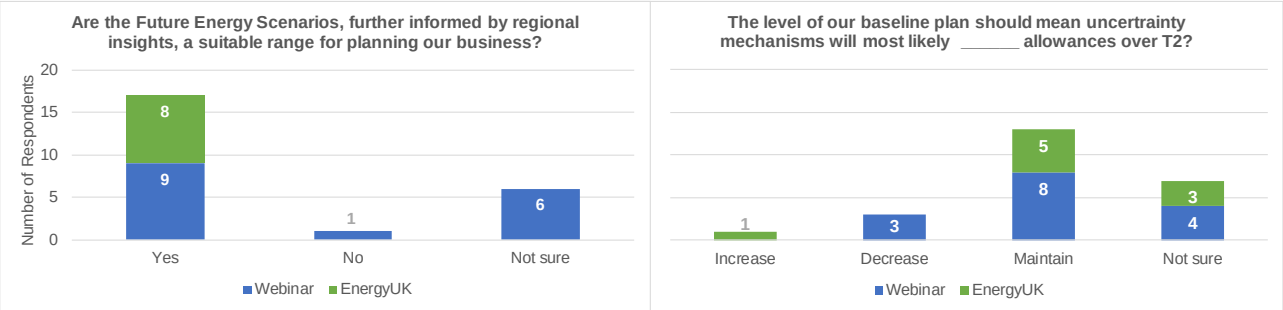


Figure 16 - Results of polls run in both webinar and Energy UK

Poll results were relatively consistent across the 2 channels when the same question was asked, despite considerable differences in the stakeholder segments represented (i.e. the Energy UK session was almost entirely large or small/new customers). This consistency increased confidence in the outcomes. The numbers of 'not sure' responses are indicative of the complexity of the subject matter. This may have been mitigated by spending longer with these stakeholders to build their knowledge and understanding. However, anecdotally from stakeholder comments during the sessions, the level of 'not sure' responses likely also correlate well with stakeholders that would express a lower level of interest in the polling topic.

These polls showed relatively strong support for the use of FES and regional insights for the purposes of planning our business. When following up with the distribution network company respondent who disagreed, we found that they were unclear about how we were incorporating regional energy demand insights. Following further clarity gained from this discussion, we revised our approach to incorporating regional demand assumptions into our view of the future. Whilst less strong, most respondents thought that our baseline T2 plan should be set in a manner that is our best view of future requirements – i.e. that should result in automatic uncertainty mechanisms being most likely to maintain allowances over the period.

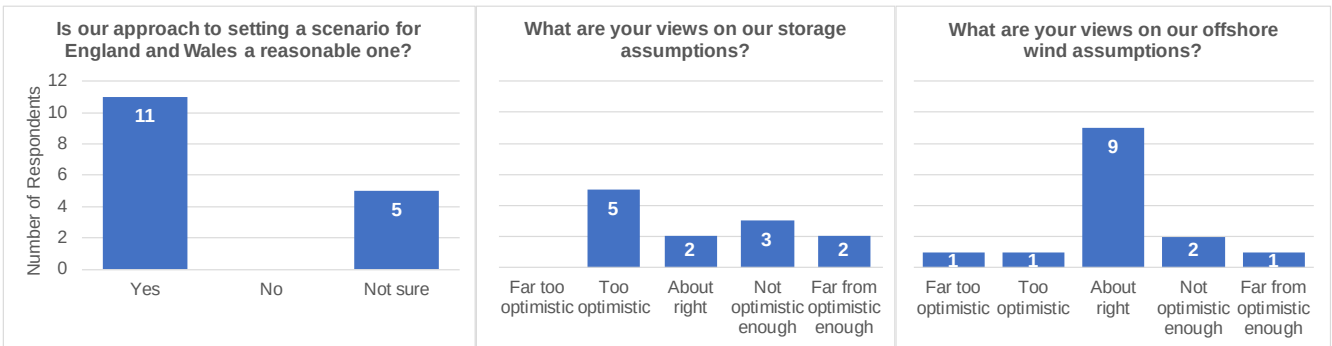


Figure 17 - Results of more detailed polls run in webinar only

Results from the more detailed polls run in our webinar, shown in Figure 17, were used to inform our input into the Common Energy Scenario work with the other regulated network companies. Through these polls, we (i) confirmed that the majority of stakeholders agreed our approach to setting a detailed energy scenario for England & Wales was reasonable, (ii) learned that there was not a consensus view on whether our energy storage assumptions were too optimistic, about right or not optimistic enough and (iii) found that most stakeholders agreed that our offshore wind assumptions are about right. As a result, we reviewed our storage assumption inputs to the Common Energy Scenario work.

Figure 18, below, shows the results of a poll to test customer views on the concept of anticipatory investment. Six out of ten respondents agreed that the exploration of such a mechanism for the T2 period could have merit, whilst only three out of ten did not. This result gave us the confidence to continue to explore such a mechanism and include our proposals in our draft business plan for the T2 period.

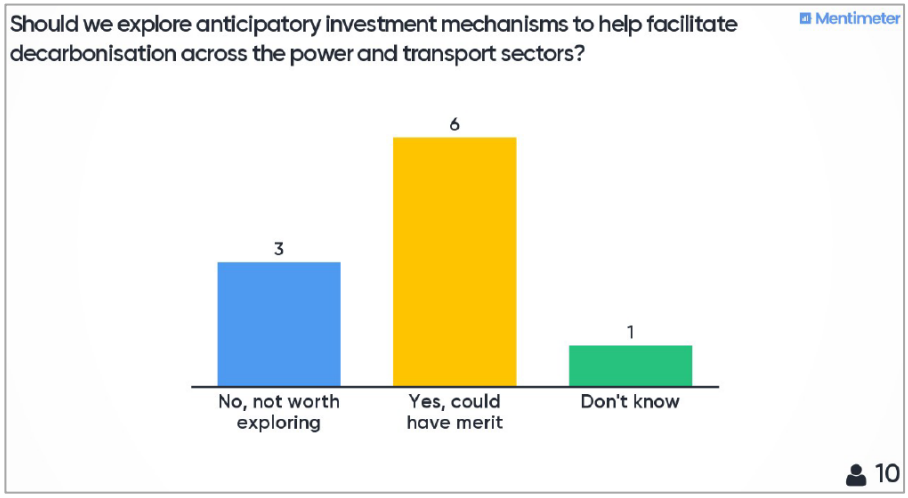


Figure 18 – Results from poll on anticipatory investment at Energy UK

vi) COMMON ENERGY SCENARIO WORK THROUGH THE ENA

Ofgem and the RIIO2 Challenge Group requested that network companies agree a set of common factors and assumptions for developing their core view of the future, upon which to build their baseline business plans for the T2 period. To achieve this, we collaborated extensively and shared knowledge, including the insights gained through our prior engagements described above, over the course of a six-month period.

Through this process a common reference point was developed across companies, benefiting Ofgem's decision making process and ultimately, consumers. The report highlights the drivers that networks consider most materially impact RIIO-2 and subsequent price controls, together with supporting evidence. It also provides numerical ranges behind their uptake assumptions, with highlights ranging across the energy system, from anticipated electric vehicle uptake to changes in electricity generation and gas supply. Figure 19 shows the process that was followed.

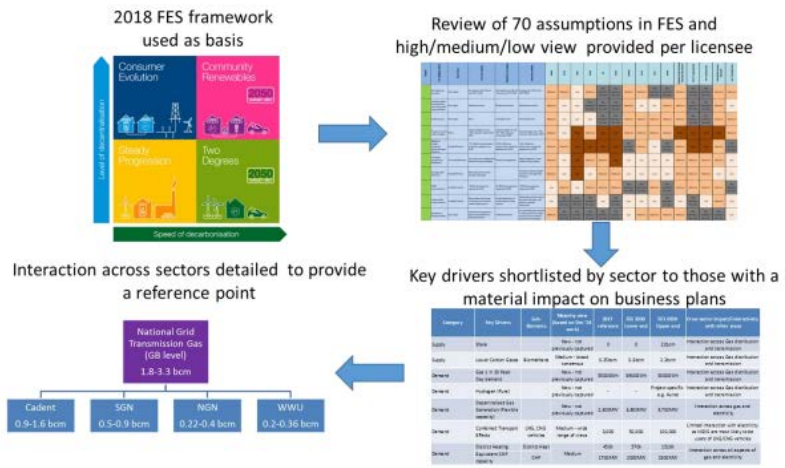


Figure 19 - Common Energy Scenario process

The ENA working group took an iterative approach, engaging regularly with Ofgem's RIIO-2 Challenge Group to ensure that the final product met their requirements.

Figure 20 shows the output capacity ranges for England & Wales for different technologies across the FES, output from the Common Energy Scenario work and our initial view of the most likely outcome for the T2 period based on our stakeholder engagement.

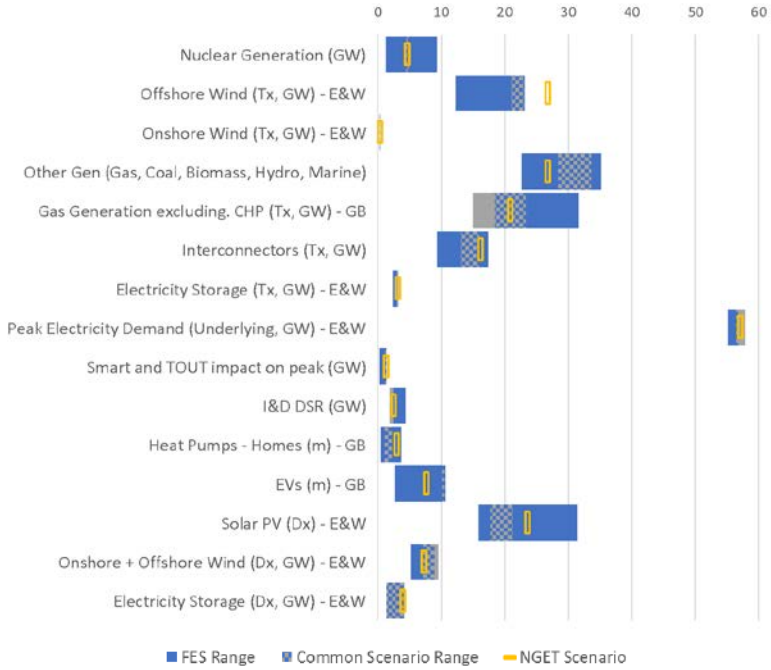


Figure 20 – Initial technology capacity ranges for the T2 period

vii)CONSUMER ACCEPTABILITY TESTING

As part of developing our plans for RIIO-T2, we worked with a number of expert external agencies to undertake a programme of consumer research to test the willingness to pay and acceptability of our business plan. Details of this work are set out in Annexes *A6.04 Willingness to pay report*, *A6.05 Interactive online tool research report* and *A6.06 Acceptability testing reports*.

At the heart of our research was a quantitative survey that has measured the acceptability of the business plans; supported by qualitative research to ensure we have a rich and detailed understanding of consumers views on our proposals.

The acceptability testing research consisted of three key stages:

Stage 1 Qualitative research to understand consumer views in general on the energy industry, energy bills and National Grid; and to support the design and development of the quantitative survey of Stage 2;

Stage 2 Quantitative research to understand acceptability across a representative sample of consumers, including a pilot and main study; and

Stage 3 Qualitative research to drill down into the acceptability findings of Stage 2, and to explore in depth the key issues around acceptability and affordability.

We received the draft report summarising Stage 3 of the programme, which tested and validated the quantitative survey findings from Stage 2, giving a deeper understanding of consumer views on our business plans.

Summary of feedback:


Newport focus group

Quantitative acceptability testing showed strong support for investments needed to support future changes in electricity supply and demand (91% support for proposals).

Planning the energy system of the future was ranked 3rd after only reliability and protecting the network. This relative level of support remained when consumers were asked to also consider the impact on bills. Further qualitative testing, through focus groups, confirmed these results.

Whilst results differed across domestic and non-domestic consumers, both showed a strong willingness to pay for investments to accommodate renewable energy, even when ahead of definite need as shown in Figure 21.

Table 3: Recommended Domestic Electricity Willingness to Pay Values (£/consumer/year)

Attributes	WTP (£)
Risk of powercuts	
2 hours decrease in the hours of powercuts at a 1.5% probability	7.70
4 hours decrease in the hours of powercuts at a 1.5% probability	9.70
Every fewer day to recover from a blackout	3.58
Undergrounding Overhead Transmission Lines	
20 miles additional underground in National Parks etc.	6.87
20 miles additional underground in other areas	6.46
Improving visual amenity of Overhead Transmission Lines	
Additional visual impact work in National Parks etc.	4.14
Additional visual impact work in National Parks and other areas	4.81
Additional transmission site environment improved	
25 additional sites	8.92
45 additional sites	10.78
Investing in innovation projects	
Medium Scale Projects compared to Small Scale Projects	2.38
Large Scale Projects compared to Small Scale Projects	3.11
Supporting local communities	
Current level of community activities	8.26
Current level of community activities and additional funding to charities	8.46
Investing in EV Charging Infrastructure	
Invest before definite need	9.55
Investing in infrastructure to connect to renewable generation	
Invest before definite need	11.78

Source: NERA Analysis.

Table 6: Recommended Non-domestic Electricity Willingness to Pay values in Percentage (% bill/consumer/year) and Monetary Terms (£/consumer/year)

Attributes	WTP (%)	WTP (£)
Risk of powercuts		
2 hours decrease in the hours of powercuts at a 1.5% probability	1.20%	43.30
4 hours decrease in the hours of powercuts at a 1.5% probability	1.86%	66.95
Days to recover from a blackout		
2 fewer days to recover form a blackout	0.67%	24.15
Undergrounding Overhead Transmission Lines		
20 miles additional underground in National Parks etc.	1.25%	45.02
20 miles additional underground in other areas	1.27%	45.90
Improving visual amenity of Overhead Transmission Lines		
Additional visual impact work in National Parks etc.	0.76%	27.36
Additional visual impact work in National Parks and other areas	0.94%	33.68
Every additional transmission site environment improved	0.05%	1.68
Investing in innovation projects		
Medium Scale Projects	0.29%	10.56
Large Scale Projects	0.29%	10.56
Supporting local communities		
Current level of community activities	0.53%	19.23
Current level of community activities and additional funding to charities	0.53%	19.23
Investing in EV Charging Infrastructure		
Invest before definite need	0.90%	32.38
Investing in infrastructure to connect to renewable generation		
Invest before definite need	1.08%	38.89

Source: NERA Analysis.

Figure 21 – Results of willingness to pay study

The results of our online slider tool (Figure 22) was more divisive on this topic, with almost an even split between those favouring immediate action and those preferring to wait, with respect to investment to connect renewable energy to the network. Respondents in Wales and London were most supportive, whilst those in Scotland were significantly more likely to want to wait for project confirmation.

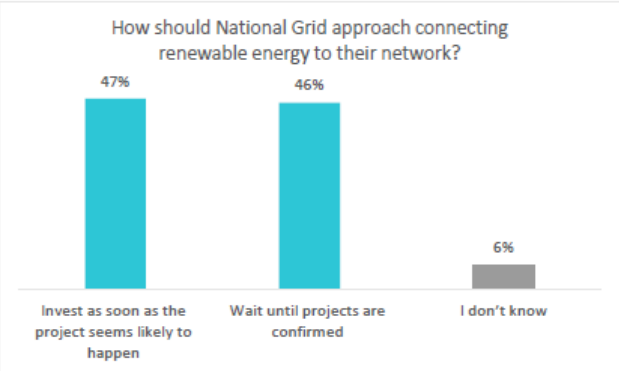


Figure 22 – Results of slider tool question on investing ahead of definite need

Combined, the results from our consumer engagement suggest that these types of investments should be near the top of our priorities.

2.2 WHAT WAS THE FEEDBACK ON THE ENGAGEMENT APPROACH?

Feedback has been collected for all engagements and acted upon in an iterative manner to improve the engagement approach as the programme of engagement for this topic area progressed. This section contains (i) specific channel feedback for the online survey, webinar, BEIS session, ADE session, Energy UK session and managing uncertainty webinar, (ii) the Truth assessment of engagement on this topic area and (iii) Frontier Economics assurance of how stakeholder engagement was reflected in our July business plan.

(i) Specific channel feedback

Online survey / discussion document - feedback was gathered through the online survey. Respondents were asked, "How they found the document?", and presented with a slider that they could position between 0 and 100, with 100 being most positive. From the 11 respondents to this question, most feedback was positive as shown in Figure 23. Nevertheless, the number of respondents likely indicates that we did not publicise the online survey well enough and/or encourage participation by stakeholders in the most effective manner. This is something we considered in future engagements.

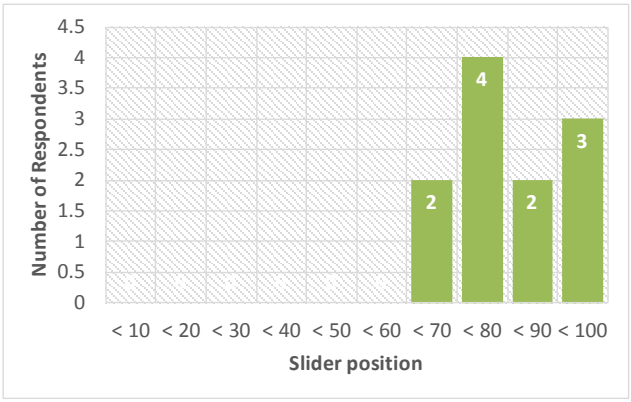


Figure 23 - Online survey respondents' views on discussion document

Webinar - feedback was gathered through polling undertaken in the WebEx program, including 3 quantitative and one qualitative (free text). Key insights from this included the benefits of clearly sign-posting our pre-read in advance, that stakeholders liked the interactive nature of the webinar, that free-text polls were very effective at capturing rich insights that go beyond quantitative polling. Finally, it was clear from this first webinar that many stakeholders prefer this channel to others and we therefore incorporated it into our forward engagement plan. Detailed outputs of feedback are shown in Figure 24.

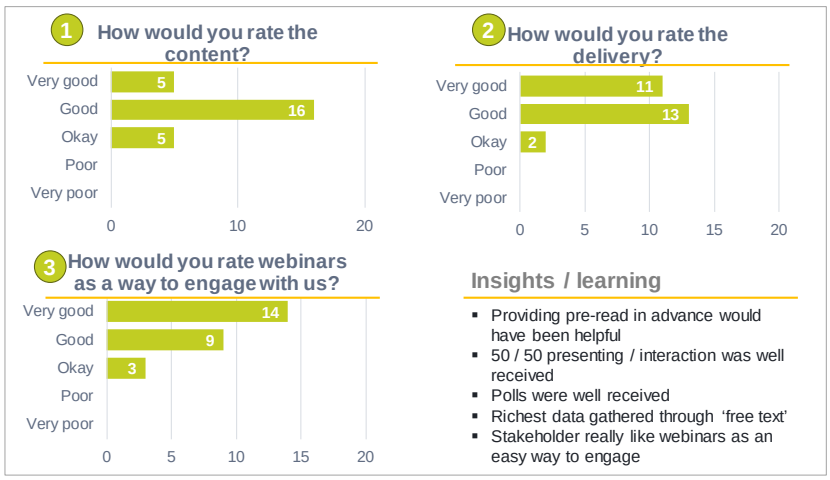


Figure 24 - Webinar feedback

BEIS session - feedback from the BEIS session was gathered through polling undertaken in *mentimeter.* Key insights from this included the fact that stakeholders like interactive sessions utilising polling and also that some of the content was too detailed for the stakeholders present. As a result, we will continue to integrate interactivity and polling into future sessions across all our engagement and reconsider how we tailor content for different stakeholder types. Detailed outputs of feedback are shown in Figure 25.

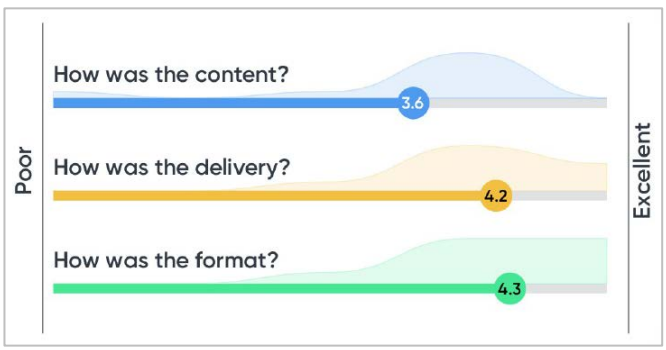


Figure 25 - BEIS session feedback

ADE session - feedback from this session was gathered through polling undertaken in *mentimeter.* Key insights from this reinforced the use of interactive polling as a good tool for running these types of sessions and recording outputs

accurately. Asking participants how they wanted to be engaged was very useful. Similar to what customers have told us in other engagements, many customers prefer to be engaged through their trade association as a matter of convenience for them, as shown in Figure 26.

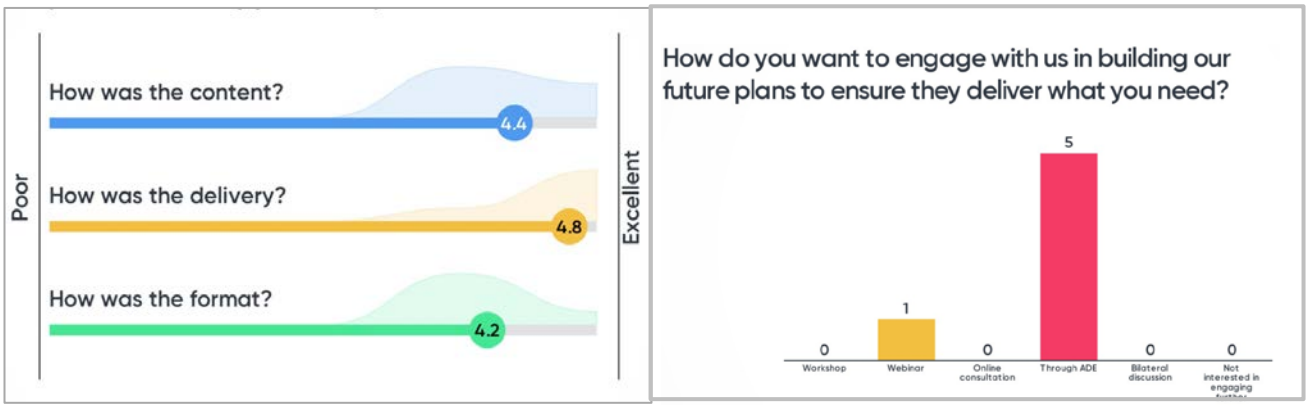


Figure 26 - ADE session feedback

Energy UK session - feedback from this session was largely gathered verbally over the coffee break after the session had completed due to time constraints. Attendees were very positive about the use of Energy UK as a forum to engage and the use of the Mentimeter interactive polling approach, consistent with our learning from prior engagements. When asked how they would like to be engaged in future, customers indicated a preference for webinars, followed by workshops and trade association sessions, as shown in Figure 27.

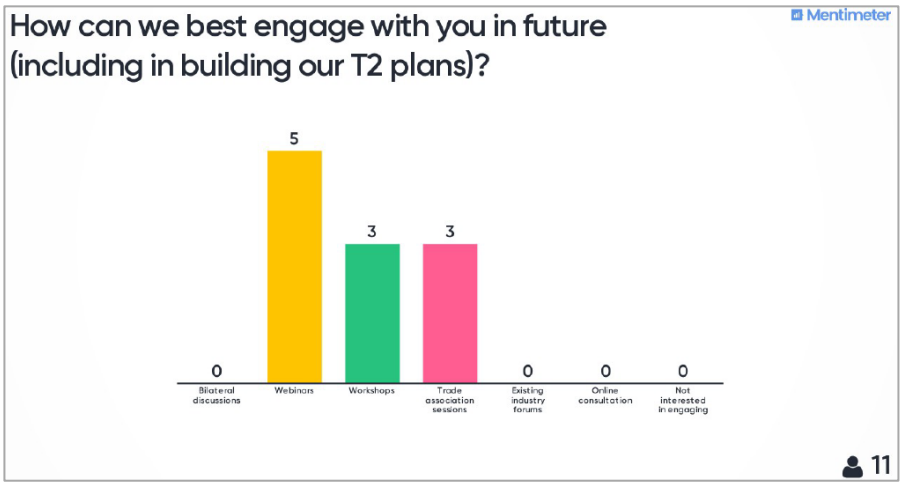


Figure 27 - Energy UK session feedback

Managing Uncertainty webinar - feedback from this session was gathered verbally at the end of the session due to time constraints. Most stakeholders in attendance were extremely positive about the format, content and delivery. One stakeholder indicated a preference for more 'free text' response options, as opposed to the sole-use of multiple choice polling within this session. This was the first webinar we ran that did not use free-text questions in addition to multiple choice. Whilst multiple choice was appropriate for most questions in this engagement, to allow us to process and interpret the results, it was clear that some stakeholders value the opportunity to provide their views via free-text. On reflection, we may also have missed the opportunity to receive additional insights not directly related to the questions asked and options given by not providing a mixture of different question types. This is a learning we took forward into future engagements.

(ii) Truth assessment – November 2018

Truth was commissioned to provide a comprehensive appraisal and debrief of the relevant knowledge/ insights National Grid already holds on stakeholders and to assess the robustness of engagement being undertaken. A summary of their assessment for this topic is set out, below. Further detail of Truth's assessment on this topic is available in the detailed report provided in *Annex A6.03 Truth Reports.*

"These engagements have been successful in answering the baseline question what is the role of the electricity transmission network in the long term and if there is a need for a transmission network at all. Specifically, the desired outcomes for the engagements applied to relevant stakeholder groups is as follows:

	Desired outcomes from engagements		
Relevant segments for engagement	**Inform stakeholders in an area with limited analysis and debate in the public domain**	**Gather stakeholder views on priorities and the future role of electricity transmission to help NG shape its plans**	**Directly address the debate about the need for a transmission network in the long term to allow for more effective development of RIIO-2 price control framework**
Governmental	■	■	■
Regulatory	■	■	■
Large customers	■	■	■
DNOs and TOs	■	■	■
Consumers	■	■	■
Interest groups	■	■	■
Supply chain	■	■	■
Small customers	■	■	■
Think tanks/ innovators*	■	■	■
Academics*	■	■	■
Consumer bodies	Less relevance compared to priority stakeholder groups		
New business models			
Political			
Communities			
■ Satisfactory/ fit for purpose ■ Action needed			

Stakeholder coverage

While some stakeholder groups are borderline in terms of their involvement i.e. consumers and small customers, it is unlikely that additional engagement would undermine or offer any significant refinement to the outcome already secured from the other stakeholders.

Quality of engagement

The engagements are generally of good quality, questions well-structured and the outputs appear to have been carefully analysed. The results are thematically unified and there is a consistent narrative that addresses the headline questions. Weaknesses in design and execution are highlighted as opportunities for improvement e.g. response rates to online surveys."

We noted Truth's recommendation of more coverage from the stakeholder segments, think tanks / innovators and academics. In order to address this, we used our programme of topical Round Table events with a broad cross-section of stakeholders, including innovators and academics, to discuss this topic and gather additional insight. Sessions were held on 'Whole System' on the 27th of November 2018 and on 'Localised Energy' on the 3rd of April 2019. Relevant attendees include Innovate UK, Energy Systems Catapult, Imperial College London and Cardiff University. Feedback from these events was consistent with insights gained form other stakeholders and channels.

(iii) Frontier Economics assurance – September 2019

We commissioned Frontier Economics to carry out an assurance of how our stakeholder engagement was reflected in our July draft business plan. The aim of the work was to identify whether the proposed actions in our business plan are supported by the stakeholder evidence from the engagement that we carried out. Frontier Economics also assessed how well the logic between stakeholder evidence and business plan actions is documented, and identified any gaps or areas for improvement, either in the engagement logs or in the draft business plan.

In their key findings for our plan overall, Frontier noted:

Broadly we found that the stakeholder evidence supported the actions proposed in NGET's draft July business plan. There were a relatively small number of areas where we feel that the stakeholder evidence itself could be strengthened, but we did not find any material areas of discrepancy between stakeholder views and the proposals in the business plan.

There are some areas where we feel the documentation of the key messages received from stakeholder evidence, the link between the evidence and the actions, or the actions themselves, could be improved.

Key findings for this stakeholder priority and how we have addressed these in our business plan are shown in the table, below.

Frontier's key findings for this priority	How we have addressed this feedback
General:	
Overall the engagement logs and evidence support the actions that are being taken. There are some clearly defined and strong priorities that emerge in the conclusions of the engagement log. These conclusions can be mapped to multiple actions and where this happens the link between the evidence and the proposed action is clear and intuitive.	No action
The mapping between the structures of the various engagement logs and this chapter is complex. There are three different engagement logs that are relevant for the chapter and there are some cases where there is evidence referred to in the business plan, but this does not seem to be in the engagement log. In general, this chapter could have greater clarity if there was some explicit cross referencing to the relevant engagement logs to provide clear evidence of support for actions.	We have restructured *Section 3 – What our stakeholders are telling us* of the business plan narrative and the content of the engagement logs to align around 3 main strands of engagement and made a much clearer link with *Section 4 – Our proposals for the T2 period.* We have also developed 'Golden Threads' for each stakeholder priority to clearly show the linkage between engagement and proposed outputs on a page. These are provided in Annex ET.01 Golden Thread summaries and the thread for this priority is replicated on page 39 of this log.
Some actions are driven by factors other than engagement and it may provide more clarity if the business plan chapter is more explicit about where certain actions are motivated by other factors (e.g. license obligation, existing liability, etc.).	We have added narrative to the start of *Section 3 – What our stakeholders are telling us* to clearly show that our proposals are a product of both (i) licence obligations, annual process and ongoing stakeholder engagement as well as (ii) bespoke engagements undertaken in building our T2 business plan to make this clear.
Specific improvements identified:	
One of the engagement logs supporting this chapter is still incomplete and whilst it provides a detailed set of initial conclusions it was not always clear on the detailed evidence supporting these initial conclusions. Once the engagement log is completed it should provide a better evidence base.	All engagement logs have been fully completed, aligned to one of three strands of engagement and more clearly linked to proposals in the main business plan narrative as well as in the Golden Thread Annex
Some actions clearly address stakeholder priorities but the business plan write up does not reference this. NGET may wish to consider clearly referencing for each action which stakeholder priorities are addressed.	Proposals have been re-ordered and more clearly linked to a stakeholder priority within *Section 4 – Our proposals for the T2 period.* *Section 5 – The justification of our proposals* also more clearly references where a proposal addresses other stakeholder

	priorities, such as the ESO's target to be able to operate a zero system by 2025.
There are a number of whole system actions proposed. However, DNOs were clear that they preferred the ESO to lead the whole systems assessment. It would be good to have some explanation addressing this feedback. Currently it is not clear how or if this feedback was addressed.	The business plan is now very clear on where the ESO will lead whole system assessments, predominately through its Network Options Assessment Pathfinder projects, and where the process will be more trilateral in nature. In hindsight, our conclusion from engagement with DNOs in July that they had a, "preference for a fully ESO led process" was not representative of what we heard from all DNOs. This conclusion was therefore re-worded to read that DNOs, "stated a preference for a strong ESO role in whole systems, particularly through NOA expansion, and agreed an interim approach to building T2 plans". We believe this is more representative of what we heard from this group of stakeholders. This is further addressed within Section 5.3 (ii) of our business plan narrative.
Optimise with the ESO - the engagement log and business plan are both clear that this is about offering services to the ESO which may enable it to save money. However, the write up in both the business plan and the engagement log may be able to offer additional clarity if there is documentation of the ESO having requested support in these areas.	We have improved both the business plan narrative and relevant engagement log to be more clear in this area. In the business plan, the start of *Section 3 – What our stakeholders are telling us* has been re-written to be much more clear on the key role of the ESO in the industry and the annual process run by the ESO strongly influencing our plan. This ESO process involves publishing of future system requirements through both the Electricity Ten Year Statement and the System Operability Framework. *Section 5 – The justification of our proposals* of our business plan now also directly references and links to relevant ESO documents supporting our proposals. In the engagement log, we note the bilateral engagements we have had with the ESO in building our plans.
The business plan references evidence that stakeholders are willing to pay for investments that may not be needed to support decarbonisation. However, this evidence doesn't seem to be in the engagement log and it is not clear what evidence is being referred to. It would be helpful if this evidence could be clearly referenced.	The reference in our July draft business plan was only based on initial results of the willingness to pay study and did not include the results of our online slider tool survey. As a result, it is not worded in an ideal manner, given the final results across all consumer research undertaken. This has been rectified in our final business plan to ensure that there is no ambiguity / chance of misinterpretation.

2.3 WHAT WERE THE INITIAL NATIONAL GRID CONCLUSIONS

Initial conclusions from the programme of engagement in this topic area are detailed below, split between (i) the future role of electricity transmission, (ii) managing uncertainty and (iii) Common Energy Scenario work

(i) Future role of electricity transmission

Initial conclusions in this area, summarised in Figure 28, helped to focus detailed engagement in other areas, how our plans should address key stakeholder priorities, gave us confidence in the future need for and role of electricity transmission and highlighted the decarbonisation of transport as an area that stakeholders believed the transmission network could be a blocker to rapid EV uptake.

Our engagement

- Exploring the long-term role of the electricity transmission network
- Inform stakeholders and gather their views – over 70 stakeholders between July and October 2018
- Blog posts, discussion document detailing our analysis, webinar, session with our User Group, BEIS, Ofgem, ADE and ongoing discussions with DNOs
- Discussion document available at https://www.nationalgridet.com/node/127801

Our conclusions

Priorities
- **New focus areas** within the stakeholder priorities (e.g. enabling customer solutions),
- **Things to draw out** in how our RIIO-T2 plans address priorities (e.g. how we could facilitate flexibility),
- Plan **further engagement**, focussed on these areas.

Trends
- Stakeholders broadly **agreed with our areas of focus**, and
- **Insights gathered** through analysis of futures that stretch the level of decentralisation and the speed of decarbonisation of transport and engagement **valuable in building our plans.**

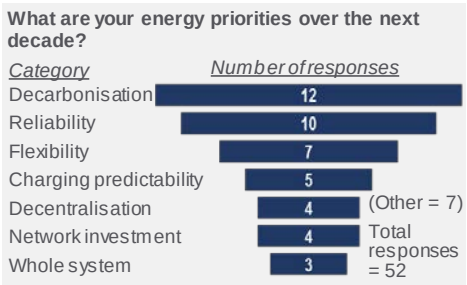
Outcomes
- **Ongoing need for transmission** recognised by most; planning to **focus on RIIO-T2 timescales,**
- Some believed the network could be a blocker to **EV uptake – we will continue to engage heavily,**
- **Need for a whole system approach** strongest; building our plan in this manner important.

Figure 28 - Initial conclusions from future role of electricity transmission engagement

Conclusions are drawn in three categories: (a) energy priorities, (b) trends in focus and (c) outcomes of our analysis. Summaries of these conclusions in each category are set out below.

a) Energy priorities

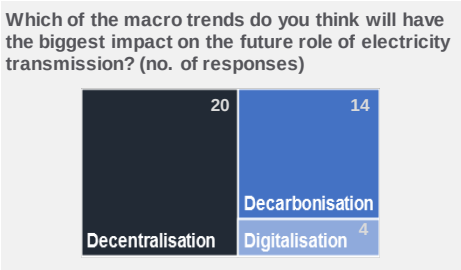
To help shape our engagement approach and business plan focus we tested stakeholders' energy priorities. When we asked about their energy priorities through a free text question and responses were categorised, most stakeholders indicated that their **priorities are decarbonisation and reliability** related (22 out of 52). Detailed categorisation, below.



Conclusions: We will use insights from this engagement to focus what we propose to deliver within the stakeholder priorities we've already established (e.g. enabling customer solutions), to draw out how our RIIO-T2 plans address priorities (e.g. charging predictability) and to plan further engagement, focussed on these areas (e.g. flexibility providers).

b) Trends in focus

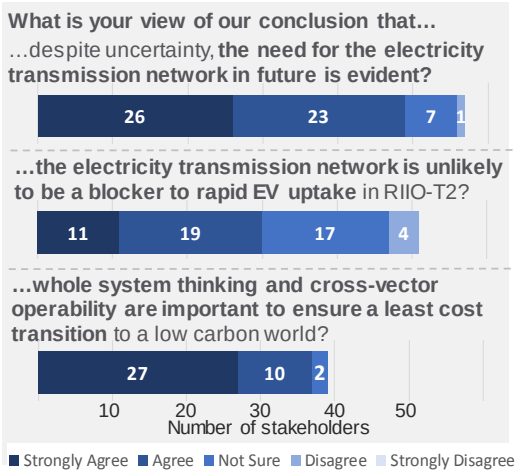
We tested whether our focus on stretching the decentralisation and decarbonisation assumptions of the Future Energy Scenarios in our analysis was sufficient. The majority of respondents (34 out of 38) indicated through multiple choice that these focus areas are the trends most likely to impact the future role of electricity transmission.



Conclusions: Stakeholders broadly agreed with our areas of focus. We will utilise the valuable insights gathered through analysis of futures that stretch the level of decentralisation and the speed of decarbonisation of transport (e.g. ensuring the network is resilient to rapid changes in demand) in building our plans.

c) Outcomes of our analysis

We tested stakeholders' views on the three primary conclusions of our analysis through multiple choice questions as set out, below.



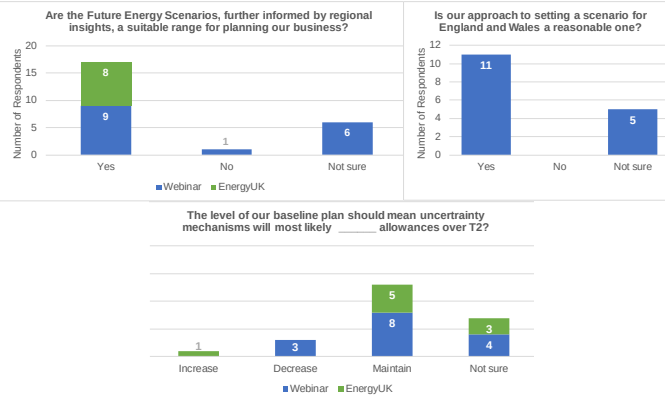
Conclusions: Most stakeholders recognise the ongoing need for transmission despite uncertainty, allowing for planning to focus on RIIO-T2 timescales. Less agreed that the network would not be a blocker to EV uptake, so we will continue to engage heavily in this area and seek to provide solutions. The need for a whole system approach was most positive; building our plan in this manner is important. We have put in place a multi-phased programme of bilateral engagement with each of the Distribution Network Operators and the Electricity System Operator to collaborate on our plans, supported by additional multilateral workshops.

(ii) Managing uncertainty

a) Use of energy scenarios to build our baseline T2 plan and ongoing business planning

We explained the importance of energy scenarios in planning for an uncertain future, our proposed approach in building our T2 plan and on an ongoing basis within the price control period. To guide the assumptions, we should use in building our plans and our inputs to the Common Energy Scenario work we asked stakeholders what they thought about our proposals through multiple choice questions as set out, below.

Responses:



(larger version of graphs also shown above)

Conclusions:

Most stakeholder thought that the Future Energy Scenarios (published by the ESO), further informed by regional insights were a suitable range for planning our business against an uncertain future.

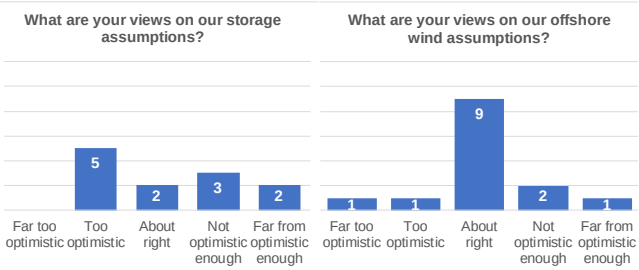
Most stakeholders agreed that our approach to building an England & Wales scenario to underpin our baseline business plan for the T2 period (and our input into the Common Energy Scenario work) is reasonable.

Most stakeholders thought that our baseline plan should be set at a level such that uncertainty mechanisms would most likely maintain allowances over the T2 period.

b) Detailed underlying assumptions

We shared all our underlying assumptions for how the energy market could develop out to 2030 with stakeholders, including the latest FES views and invited feedback. We tested our storage and offshore wind assumptions explicitly through specific multiple choice questions as these were areas that we were least sure about.

Responses:



(larger version of graphs also shown above)

Conclusions:

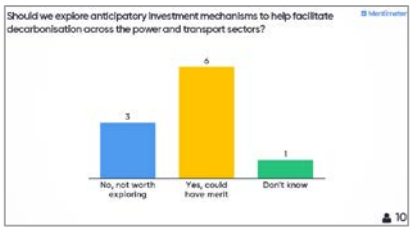
Most stakeholders agree that our offshore wind assumptions, although relatively high, were about right. (this was before the result of the 2019 CfD round with wind achieve sub 40 £/MWh strike-prices).

There was less consensus about our relatively ambitious view of energy storage likely to connect prior to 2030. As a result, we further tested this through our engagement with flexibility providers (set out in the Engagement Log – A7.01 Whole system – non-network companies) and changed our inputs to the Common Energy Scenario and the assumptions underpinning our plans.

c) Potential for anticipatory investment

We discussed the concept of anticipatory investment both with more informed stakeholders (mostly customers) and through our consumer engagement. We tested whether the concept was something that our customers would support through a multiple-choice question.

Responses (Customers):

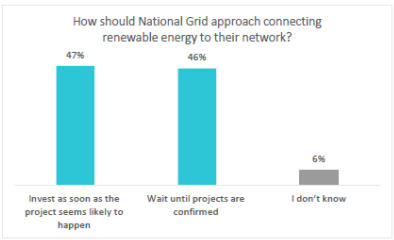


(larger version of graphs also shown above)

Conclusions:

Many stakeholders agreed that exploring anticipatory investment mechanisms to facilitate decarbonisation could have some merit. However, there were a number that did not think they were worth exploring. As a result of this input we developed a proposed process for anticipatory investment in the T2 period and further developed it with the independent stakeholder group.

Responses (Consumers):



(larger version of graphs also shown above)

Conclusions:

Whilst the results of the willingness to pay testing suggested consumers were relatively positive about investment to facilitate decarbonisation ahead of definite need, the results of our online slider tool were more mixed, showing a split down the middle of those supportive and those that were not.

We did not interpret this result as ruling out the potential of an anticipatory investment process, but it does indicate the importance of consumer representation within the process. We have factored this into our proposed approach.

(iii) Common Energy Scenario work

In their July Business Plan Guidance document, Ofgem instructed all network companies to submit business plans based on the lowest end of the range for each technology category. As a result, we adjusted the assumptions underlying our plans from that shown in Figure 20, above, to comply 100% with this requirement. Figure 29, below, shows a simplified version of how the energy scenario assumptions underpinning our plans have been adjusted to comply with Ofgem's requirements. We have had to go to below the minimum in a small number of cases to maintain an internally consistent energy scenario.

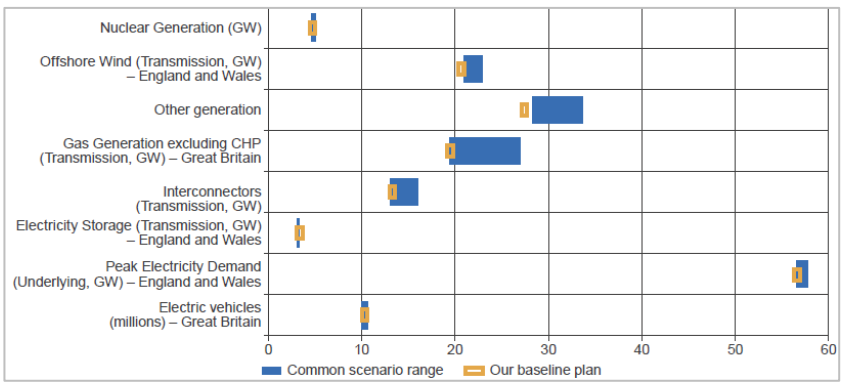


Figure 29 - Final technology capacity ranges for the T2 period

The impact of this revised energy scenario on our investment plans in the T2 period was not overly significant because the Common Energy Scenario is a 2030 snapshot and many of the categories where our view, based on stakeholder engagement, was higher than the low end had relatively small levels of expenditure in the T2 period to deliver capacity for 2030. Re-phasing these projects to deliver later, therefore only shifted early project development expenditure out of T2 into T3.

If we are to meet net-zero 2050 targets, it is unlikely that delivering the Common Energy Scenario alone is sufficient and we continue to believe that categories such as offshore wind will require expenditure above that now included in our baseline plan. Ofgem's business plan guidance also requires companies to show how their plans are able to facilitate targets and we received challenge from both the independent Stakeholder Group (i.e. User Group) and Ofgem's RIIO-2 Challenge Group on this issue. In response, we ensured that our engagement on managing

uncertainty in the T2 period and our subsequent development of uncertainty mechanisms that will adjust our allowances to meet customer requirements were sufficiently robust to allow us to deliver requirements for net-zero.

3. STAKEHOLDER GROUP CHALLENGE & REVIEW

We circulated drafts of this engagement log in advance of the Stakeholder Group meeting on the 3rd of October 2018 and in advance of the meeting on the 20th of June 2019. Pre-meeting calls were held to collect feedback on the log and any points of clarification, as set out in Section 3.1.

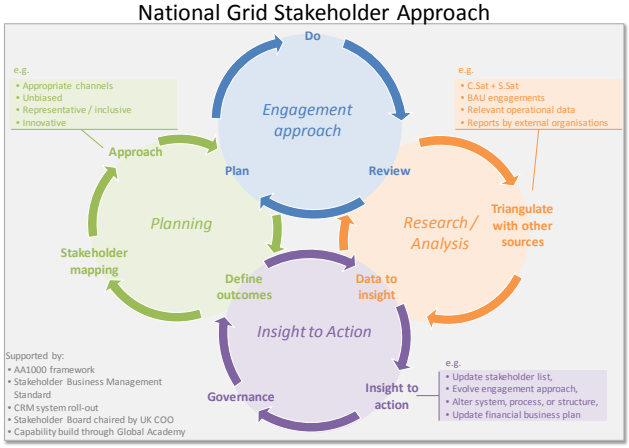
Points of clarification and interest were raised on our underlying assumptions and conclusion on the future role of electricity transmission, whether there is sufficient consideration of the potential need for more transmission to facilitate the decarbonisation of power and transport and on how stakeholder views are being captured and processed.

Challenges prior to sharing the first version of our draft business plan with the Group were focussed on how scenarios are utilised for business planning, whether sufficient trends had been considered and, how stakeholder views are being captured and processed. After having shared an early draft of the relevant chapters of a main business plan narrative with the Group challenges were focussed on more specific aspects of our business plan, such as the clarity of our proposals on uncertainty mechanisms, our definition of whole systems, seeking further justification for why certain costs were included in our plans, how our plans can meet net-zero targets, and how an anticipatory investment approach could work.

Key actions addressing the questions and challenges of the Group include our consultation on how we propose to manage uncertainty in RIIO-T2 (including scenarios), an infographic created for the Group on National Grid's engagement process covering the following in an iterative manner: (i) planning, (ii) engagement, (iii) research / analysis and (iv) turning insight into action. Further detail and additional actions taken are set out in section 3.

3.1. WHAT POINTS OF CLARIFICATION AND INTEREST WERE RAISED?

Topic specific feedback and points of clarification				
ID	**Date**	**Meeting**	**Point of Clarification**	**National Grid Response**
5	07/2018	SG2	I) Why doesn't the high decentralised scenario include a view on DSR? II) Given the GLA's energy for Londoners, is it right to assume that there is minimal generation and storage in the capital or does this include their plans but still dwarfed by demand? III) Could I have more information on why it is 2.5 x to connect generation at distribution compared to transmission?	I) The highly-decentralised scenario includes the highest level of DSR contained within the underlying FES17 scenario that it was built out from (similar to Community Renewables in FES18). The level of domestic, I&C and vehicle-to-grid amounts to 12GW at times of peak demand by 2030. II) The highly-decentralised scenario also has considerable levels of generation and storage within London, but this is still much less than total demand – particularly on a winter evening with no solar PV contribution. III) The figure of 2.5x more cost to connect generation to distribution compared to transmission is only valid for sizes in the hundreds of MW because of the limited capacity of lower voltage distribution circuits; at smaller capacities, it will often be cheaper to connect to distribution (all else being equal).
Source			**Feedback**	**National Grid Response**
Pre-meeting calls			National Grid should consider the evidence required to draw the story together – i.e. likelihood of the electricity transmission getting bigger, not smaller. One Group member is seeing very large scale renewable projects with investment by big businesses i.e. not small / regional investments and believes Oil and Gas companies are diversifying into this area. (8MW wind turbines	• In preparing for the RIIO-T2 period we will ensure that our business is ready to deliver against any future energy outcome. We monitor developments closely and are conscious that, as decarbonisation continues, demand on the transmission system could increase (e.g. a rapid uptake in electric vehicles or decarbonisation of heat) • The "common view of the future" that energy networks have compiled for the purposes of RIIO-2, and our input to this process, includes considerable volumes of offshore wind; more than doubling current installed capacity by 2025.

	in Aberdeen harbour, 120MW solar – transmission level investments)	• More information on how we use energy scenarios and plan to manage uncertainty in RIIO-T2 is available in our consultation document available HERE.
Pre-meeting calls	National Grid should give consideration to vehicle charging at transmission level – investment by Shell and BP and work with consumers to understand what they might want …including existing customers of plug ins.	• We have undertaken considerable engagement and development work to establish a rapid charging solution at strategic motorway service areas across the country • Some of these would be transmission connected, whilst others are best to connect to the distribution network and we continue to engage • Further information about our proposal can be found HERE • Our proposals are also summarised from ***page 25 of the accompanying report on our business plan*** for the stakeholder priority "I want you to enable the ongoing transition to the energy system of the future"
Pre-meeting calls	Not always clear on the questions we've asked stakeholders – pre-defined or open questions	• Engagement on this topic has used multiple approaches to asking stakeholders questions, ranging from multiple choice to free text specific and open questions; different question types are suited to different topics and stakeholders
Pre-meeting calls	Capturing insights – quotes are interesting but how is it being pulled together	• Verbatim quotes captured through stakeholder feedback are analysed alongside other sources of insight to assess which elements of feedback we should act on directly and or immediately, to assess and to identify trends that should be addressed. • This was summarised in the summary, infographic of our approach to engagement, which was shared with the Stakeholder Group in SG3 (also available on Huddle): National Grid Stakeholder Approach 
Pre-meeting calls	A gap on academic engagement on electricity future of network	• This was also highlighted by the "Truth" assessment and we are addressing this through picking up the topic at round-table events attended by Imperial College and Cardiff University

Some of the above points of clarification and interest were shared and discussed at the Stakeholder Group meeting on the 3rd of October. The two summary slides used at the meeting to describe the outputs of engagement undertaken up to that point and share our views of what went well, what didn't go so well and what we're doing about it are included below, Figure 28 and 29, for information.

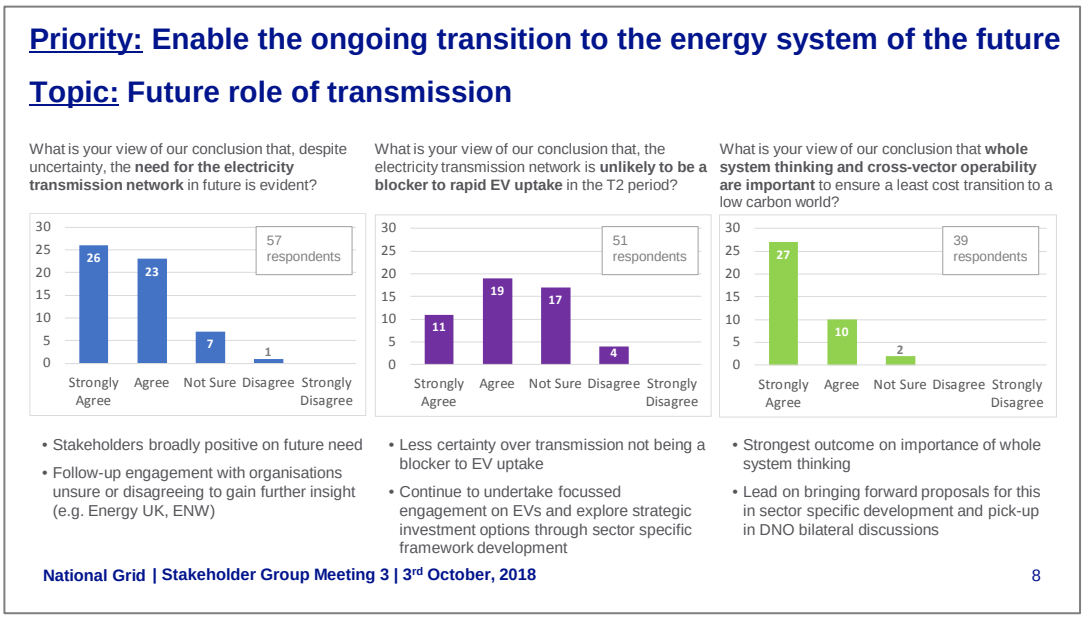


Figure 28 - Slide 1 of 2 used at SG3 on 3rd Oct.

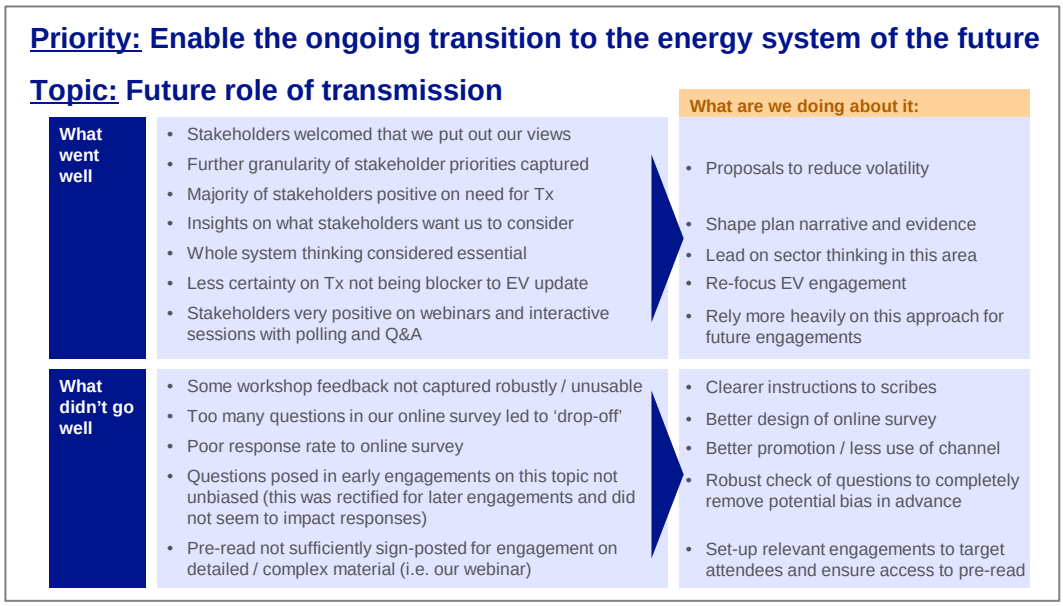


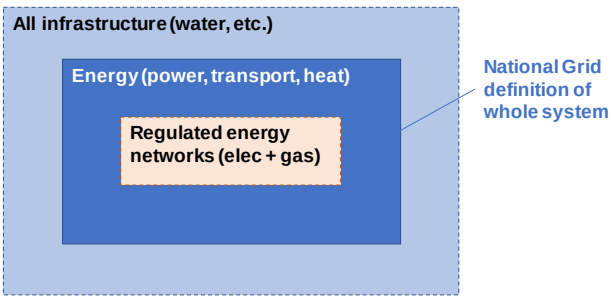
Figure 29 - Slide 2 of 2 used at SG3 on 3rd Oct.

The following section sets out the challenges from the independent Stakeholder Group on the engagement and business plan proposals for the key stakeholder priority – *I want you to enable the ongoing transition to the energy system of the future*. These challenges, and the National Grid response, apply across all three strands of engagement relevant to this priority set out in Figure 1. Challenges and responses, including updates to our business plan proposals were discussed during meetings of the Stakeholder Group and/or during sessions with the sponsor and buddy for a given topic area. As we worked to address each of the Stakeholder Group's challenges through the iterative Enhanced Engagement process, these were either closed, where the Group had confidence in the action taken, or remained open where this was not the case.

3.2 WHAT WAS THE OUTCOME OF THE STAKEHOLDER GROUP CHALLENGE AND REVIEW?

Topic specific challenges from Stakeholder Group discussion					
ID	**Date**	**Meeting**	**Challenge**	**National Grid Response**	**Status**
4	07/18	SG1	How does NG set its approach in the context of relevant legal requirements, for example meeting the 4th and 5th carbon budgets?	Our 'baseline' business plan will be consistent with the common energy scenario, as stipulated by the RIIO2 Challenge Group. We propose that the funding to deliver this baseline will be adjusted by unit cost allowances, building on our experience of these mechanisms in T1. With the right funding mechanisms in place we are confident that our plans will ensure our business is ready to respond to facilitate the supply and demand impacts of the commitment to decarbonise. Combined with the development of a suitable anticipatory investment mechanism, our plan will allow us to proactively enable the more ambitious 'net zero' targets set out in the recent report by the Committee for Climate Change.	**Closed** (as per 5th June Sponsor report)
5	07/18	SG1	How does NG see its business plan supporting the big strategic decisions of the 3Ds?	See answer above. Our draft July business plan clearly sets out how we will support these trends.	**Closed** (as per 5th June Sponsor report)
13	07/18	SG2	Style, methods and accessibility of the stakeholder engagement activities to be clearly evidenced.	Presented to the group as part of SG3. These aspects are all logged within the relevant engagement log for each topic area.	**Closed** (as per 5th June Sponsor report)
14	07/18	SG2	The carbon gap between the non-climate change act scenarios (steady progression and consumer evolution) isn't quantified- but we should anticipate that government will intervene to ensure the CC act is met. If the TO wishes to invest to meet a non-CC Act scenario, it may be expensive to change course to meet the CC Act. NG should quantify this cost so we can assess how this may affect future customers.	With the right regulatory framework, we will be ready to facilitate the governments climate ambitions. However, we have a licence obligation to facilitate all changes to the energy market (those compliant and non-compliant with the climate change act). The Common Energy Scenario, against which Ofgem has required us to build our baseline plans for the T2 period is not compliant with 2050 net-zero targets. Automatic uncertainty mechanisms, building on the experience in T1, are therefore a critical aspect of our T2 plan to ensure we can facilitate net-zero targets. Provided these mechanisms are put in place for T2, our plan is capable of meeting targets. As a result, we do not currently have plans to calculate the cost / impact of not meeting them.	**Closed** (as per 5th June Sponsor report)
19	10/18	SG3	Ensure each chapter and outcome considers energy scenario / future	The reports submitted to the Stakeholder Group on the 3 priorities to covered in the 16th April 2019 meeting do include this consideration (see accompanying material). More information on how we use energy scenarios and plan to manage uncertainty in RIIO-T2 is available in our consultation document available HERE.	**Closed** (as per 5th June Sponsor report)
20	10/18	SG3	Need a systematic way to identify key trends/scenarios to test our BPs against	Our business planning team have undertaken analysis that led to our input into the work undertaken through the ENA across all energy networks to consider key trends and produce a "common view of the future". Ofgem's Challenge Group have been clear that they wish to see business plan submissions based on this common view. Our ongoing work to calculate Unit Cost Allowances for uncertainty mechanisms will utilise Monte Carlo analysis to test these allowances against thousands of possible future energy outcomes to ensure they are robust. (more information about how these mechanisms work and how Unit Cost Allowances are calculated is available from the briefing note put on huddle and from page 28 and 29 of the accompanying report on our plans for "enabling the transition")	**Closed** (as per 5th June Sponsor report)

21	10/18	SG3	Plug Stakeholder Engagement process into NOA process	Network Options Assessment is a process owned and run by the Electricity System Operator. We have provided this feedback to them. The role of the Network Options Assessment (NOA) process is to assess which network solutions that are the most economical and in considering what that process should be, considerable engagement does take place by the NOA committee. For specific projects the Network Owner does the engagement, examples of which National Grid took the Group through during the webinar on Investment Planning. For further information please refer to this link https://www.nationalgrideso.com/insights/network-options-assessment-noa.	**Closed** (as per 5th June Sponsor report)
22	10/18	SG3	More detail on what existing insights have been used (especially on consumer views)	The engagement log has been updated to provide even more details in this area. Whilst consumers generally do not have explicitly formed views on the future role of electricity transmission, their priorities and values can be ascertained and this insight does inform our thinking and direction. There were also a very small number of informed consumers who responded to our online consultation.	**Closed** (as per 5th June Sponsor report)
23	10/18	SG3	Need to identify why we have chosen a certain part of the engagement spectrum when mapping - approach to engagement	This has been updated in further iterations of the engagement log.	**Closed** (as per 5th June Sponsor report)
29	10/18	SG3	How do we map when engagement / outcome of our engagement translates into an output or bespoke incentive? (e.g. would we say output would have been set at output or target 'x' but as a result of feedback received it will now be set at 'y'?)	During the meeting the Stakeholder Group were taken through the Spider Diagram Concept depicting the golden thread from the output from stakeholder engagement through to resulting outcomes, costs and impact on consumer bill. Concept agreed to in principle subject to application/demonstration to business plan priorities. Next Steps: ET to apply to priorities. Now part of the 'Golden Thread' Annex.	**Closed** (as per 5th June Sponsor report)
30	11/18	SG4	Issue is which scenario to follow, albeit that is an issue for the whole industry	The following points were discussed with the Group: 1)What is the right range of futures to plan business? 2)How should we set our baseline allowance? 3)Mechanism for anticipatory investment? Further engagement undertaken on managing uncertainty directly addressed these questions with stakeholders and the relevant outcomes are reflected in the business plan.	**Closed** (as per 5th June Sponsor report)
31	11/18	SG4	Seems a lot of engagement has been done with the big organisations/ suppliers but not so much with the smaller suppliers. How do we manage that gap?	The Stakeholder Group was taken through the detail of which stakeholders were engaged across this topic area, which goes far beyond large organisations. Details are set out in Section 2 of the engagement log.	**Closed** (as per 5th June Sponsor report)
32	11/18	SG4	Innovation: We talk about innovation to maximise capacity. How do we measure success on that?	The innovations we've delivered in the T1 period (e.g. power flow controllers) are included in our T2 baseline plans and unit cost allowance calculations. The TOTEX incentive mechanism, part of the RIIO-T2 framework, will continue to incentive 'business as usual' innovation, which will result in lower costs to consumers.	**Closed** (as per 5th June Sponsor report)
88	04/19	SG7	Page 16 in the ongoing transition paper talks about £140m comprising £90m on wayleaves. At £18m per annum, there should be some assessment available of the areas of claim on injurious affection which this money was purported to be. The number of claims is likely to be low but individual claims of high value due to the cost of diverting 400kV assets. It would be helpful to know how much of the	The £90m included in the April draft of our business plan is for easements (i.e. not wayleaves). Our overhead line network is largely held on terminable wayleaves (just over 60%) posing a litigation risk which can be avoided by securing the assets voluntarily through the negotiation and acquisition of easements (permanent rights) with landowners for capital payments. The costs allocated in our plan are for the acquisition of easements over the T2 period and are consistent with the historic cost trend in T1.	**Closed** (as per 17th September Sponsor session)

			NG network is secured on wayleaves/easements to understand whether the £90m is proportionate to the outstanding risk.		
91.1	04/19	SG7	The business plan should set out clear explanations of the uncertainty mechanisms that are proposed with respect to connection uncertainty.	Discussed 24/5/19 -- Our plan will be clear on these mechanisms for the entirety of the customer driven elements of our plan. We are currently undertaking detailed analysis to design, calibrate and test our proposed uncertainty mechanisms for RIIO T2. We are also participating in a specific series of Ofgem working groups on load-related uncertainty mechanisms (first meeting 22th May 2019). The July draft plan will provide a detailed description of our approach to working up these mechanisms. A full explanation will be included, along with results of our analyses, in future iterations of our business plan submission, upon completion of the on-gong empirical work. 1/7/19 Update shared with SG8 Pre-Read -- Chapter 7 + 8 - Section 7 'How we will manage risk and uncertainty (new table of mechanisms added to make it very clear what is being proposed) + detailed annex shared late on the 5th of June; the annex describes the detail of how we will go about calculating the unit cost allowances that underpin most of the uncertainty mechanisms over the coming months. 17/09/19 Sponsor/Buddy session deep dive into unit cost allowance calculations.	**Closed** (as per 17th September Sponsor session)
92.1	04/19	SG7	What is NGET's definition of Whole systems? What are the boundaries?	Our definition of whole systems includes power, transport and heat as we think this is required in order to deliver the government's ambition to rapidly decarbonise at lowest cost to the consumer. It is broader than Ofgem's narrow definition of 'Regulated gas and electricity networks', but more narrow than what some stakeholders have called for (e.g. in response to Ofgem's RIIO-2 consultations) to include all infrastructure, such as water.  We envisage that our proposition for a strategic network of ultra-rapid charging points at motorway service areas to overcome range anxiety and unlock one of the barriers to decarbonising transport is best delivered by both the TO and DNOs. Our proposal identifies a network of 54 sites that ensure the majority of the population are within 50 miles of an ultra-rapid charging point. Of these 54 sites, 60% are near existing National Grid substations and may therefore be best delivered by us. We are still working across all our stakeholders to ensure that our solution to this challenge can be delivered in whole system manner. We are not requesting baseline funding for this proposition, but proposing that it would be a good candidate for an anticipatory investment process.	**Closed** (as per 5th June Sponsor report)
92.2	04/19	SG7	Justify why the TO should be bearing the cost of roll out of motorway service area plan as opposed to DNO.	We envisage that our proposition for a strategic network of ultra-rapid charging points at motorway service areas to overcome range anxiety and unlock one of the barriers to decarbonising transport is best delivered by both the TO and DNOs. Our proposal identifies a network of 54 sites that ensure the majority of the population are within 50 miles of an ultra-rapid charging point. Of these 54 sites, 60% are near existing National Grid substations and may therefore be best delivered by us. We are still working across all our stakeholders to ensure that our solution to this challenge can be delivered in whole system manner.	**Closed** (as per Sponsor email 28th October, after review of responses)

				We are not requesting baseline funding for this proposition, but proposing that it would be a good candidate for an anticipatory investment process.	
94	04/19	SG7	Economic modelling – NGET to demonstrate that there is a need for these costs (£26 m).	Discussed 24/5/19 - Our draft business plan originally included £2m for economic modelling tools and capabilities (not £26m). We play an important role identifying network issues, designing solutions to resolve these issues and providing detailed information to the Electricity System Operator to allow them to carry out the NOA process. After separation from the ESO, we no longer have the tools and capability to undertake the economic modelling required to assess the detailed characteristics of network issues. This assessment would allow us to compare the consumer benefits of using our assets in more flexible and dynamic way with the potential cost of reduced asset life. We would be better able to propose whole system solutions that combine network assets and flexibility solutions in a way that delays the need to invest in additional capacity and reduces ongoing system operation costs. 1/7/19 Update shared with SG8 Pre-Read We understand from the ESO that a release of an economic assessment model for stakeholders is imminent. We have removed these costs from our draft plans.	**Closed** (as per 17th September Sponsor session)
121	08/19	SG9	NG to demonstrate how stakeholders will be involved to further elaborate on the strategy for anticipatory investment	We have drawn on existing stakeholder insights in pulling together our proposal for an Anticipatory Investment process in the T2 period (as opposed to requesting an allowance for specific investments). As well as the challenge and review from the independent Stakeholder Group, we have been undertaking further bilateral engagement with some key stakeholders to continue to evolve our proposals for the final submission of our business plan in December. Session have been held with Citizens Advice, Ofgem and policy makers. We envisage further stakeholder involvement, potentially coordinated by Ofgem, across the transmission and distribution sectors post the submission of our business plan in December to get this important area of policy for meeting net-zero at minimum cost to consumers right.	**Closed** (as per Sponsor email 28th October, after review of responses)
122	08/19	SG9	NG to clearly articulate what they envisage their preparatory/ engineering and T2 costs may be and explain why network consumers should be paying for this.	Update provided 21/10/19 - We are not requesting any baseline funding for these activities in our T2 submission. We propose that the Anticipatory Investment process would assess the need, efficient cost and allow funding when required. Network consumers should fund these costs when they arise as part of the assessment process will require companies to demonstrate how consumers benefit from any investment (i.e. the net present value for network consumers of any investment would be positive).	**Closed** (as per Sponsor email 28th October, after review of responses)
123	08/19	SG9	In practice, due to the pace of cost reduction in electric vehicles and offshore wind, anticipatory investment may well be necessary during the T2 period. NG to demonstrate how its framework will respond to an earlier need for investment, reflecting the changing needs of consumers.	Update provided 21/10/19 - The juxtaposition of the strong incentive Ofgem has put in place for network companies to only put the most certain costs in their baseline submissions (i.e. the business plan incentive that exposes companies to a 10% additional penalty for any costs Ofgem deem as uncertain) and the challenge of meeting net-zero targets require that the regulatory framework is flexible enough to provide funding within the T2 period when investments that benefit consumers are required. In response to this challenge we are creating our vision of a roadmap to net-zero that will map out what is required in this space. The onus is on all stakeholders to come together and ensure the Anticipatory Investment process can deliver the best whole system solutions to net-zero challenges in an agile manner.	**Closed** (as per Sponsor email 28th October, after review of responses)
124	08/19	SG9	In the framework for Anticipatory Investment, NG to highlight how strategy, purpose, the framework for delivery and timing will be addressed	Update provided 21/10/19 - In response to this challenge we are creating our vision of a roadmap to net-zero for our final business plan submission. This will be comprised of an overarching road-map in the executive summary, supported by greater detail within each of the relevant chapters (including Chapter 7 - Enable the transition).	**Closed** (as per Sponsor email 28th October)

125	08/19	SG9	NG to ensure that proposals reflect what has been requested in Ofgem as per their August '19 letter.	Update provided 21/10/19 - Our October business plan does this on pages 55 to 57. This will be reflected more explicitly in our December plan -- i.e. within our proposed process. However, we will not be providing the full suite of evidence requested by Ofgem because we are not asking for any funding at this point.	**Open**
126	08/19	SG9	NG to be clear about their leadership role in whole systems	Update provided 21/10/19 This will be reflected in our December plan; see Challenge 124	**Closed** (as per Sponsor email 28th October
127	08/19	SG9	NG to demonstrate the contestability options with major projects.	Update provided 21/10/19 This is set out on pages 48 to 51 of the October business plan.	**Closed** (as per Sponsor email 28th October)

……

4. CONCLUSIONS

4.1 WHAT IMPACT HAS THIS ENGAGEMENT HAD ON NATIONAL GRID AND THE RIIO-T2 BUSINESS PLAN?

The engagement carried out through this strand on the future of electricity transmission and managing uncertainty has had a material impact on our business plan, as noted throughout the log. The table below summarises the key impacts from across all aspects of the enhanced engagement process.

Examples of key trade-offs and how engagement influenced our plans	This strand of engagement confirmed stakeholders priorities we had compiled from prior engagements (set out in our 'Listen Report'). The **insights we gained** gave us confidence in the long-term role of electricity transmission and, therefore, in extending the current approach to managing medium-term uncertainty in the price control using 'unit cost allowances'. It also shaped our input to the Common Energy Scenario work and the England and Wales scenario upon which our plan is based**, changing our assumptions** on regional demand variations and Solar PV capacity. A **key trade-off** was whether we should play a passive role (responding to network issues), or a more proactive role (highlighting whole system issues and potential solutions) in enabling the energy transition. DNOs and, on some topics, the ESO, thought we should play a more passive role, whilst most other stakeholders wanted us to be proactive. This trade-off was debated twice in the Independent Stakeholder Group. Based on the views of most stakeholders, we decided that an active role is appropriate and are putting forward proposals for an anticipatory investment process, consideration of non-network solutions and our thinking on how to resolve some of the key challenges in this draft plan.
How we've responded to Stakeholder Group/ Challenge Group	The **Independent Stakeholder Group** challenged our approach to uncertainty mechanisms and whether we are doing enough to ensure the price control is sufficiently flexible to allow net-zero 2050 targets to be met. In response to this challenge, we have broadened our suite of mechanisms and have undertaken extensive statistical analysis and probabilistic modelling of uncertainty to develop the detail. The **Challenge Group** has influenced our plans by stipulating a requirement to work with other networks to create a Common Energy Scenario and to submit a baseline plan that is consistent with this scenario. They also challenged us to ensure our plan can flex to support the pathways to net-zero. The broader suite of mechanisms we are proposing in response to the Stakeholder Group, and set out in Section 7, address this.

The table below outlines how what our stakeholders have told us through this strand of engagement links to the proposals we are making to enable the ongoing transition to the energy system of the future and the consumer benefits – relevant proposals are highlighted.

Stakeholder feedback	Proposals for the T2 period	Output type	Consumer benefit
1) Provide a network that enables the transition to net-zero by 2050 at lowest cost to consumers	Innovate and invest in the network reinforcement to facilitate a changing energy market and keep costs down	PCD	Decarbonised economy Lower system operation costs
	Invest in protection and control coordination studies, changes required to maintain security of supply and identify future requirements for zero-carbon operation by 2025	PCD	Decarbonised economy Reliable supply
	Invest to facilitate closure of conventional generation and secure easements to maintain access and minimise costs	PCD	Decarbonised economy Lower network costs
2) Facilitate competition and new business models to minimise costs	Facilitate competition by highlighting projects meeting contestability criteria, consenting contestable projects and protecting consumers in incumbent delivery	PCD	Lower network costs Lower system operation costs
	Innovate by facilitating non-network solutions	Commitment	
3) Deliver electricity whole system solutions across network companies	Optimise with the ESO through a new mechanism to reduce whole system costs and installation of system monitoring to allow for zero- carbon operation by 2025	LO	Decarbonised economy Lower network costs
	Optimise with DNOs by identifying whole system opportunities, establishing an ongoing process and investing in [redacted] reactor units	ODI PCD	
What stakeholders are telling us	**Proposals**	**Output type**	**Consumer benefit**
4) Enable all energy whole system solutions	Seek to implement a suitable anticipatory investment mechanism that allows solutions to unlock rapid decarbonisation to net-zero 2050.	Commitment	Decarbonised economy Lower network costs and barriers to entry Clean air
	Provide strategic network options that have the potential to help overcome some of the challenges of decarbonising at lowest cost to consumers.	N/A	

4.2 HOW DO THE BUSINESS PLAN PROPOSALS AND OUTPUTS ALIGN TO STAKEHOLDER ENGAGEMENT OUTCOMES?

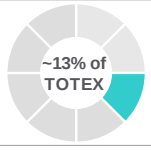
The golden thread concept was developed with our independent stakeholder group to help stakeholders understand the engagement we have undertaken, the outcomes of that engagement and how this translates into outputs we will deliver in the T2 period. Full golden threads for our plan are included in the Annex ET.01 Golden Thread Summaries. The relevant golden thread for this stakeholder priority is shown, below.

Engagement

Consumer Priorities

I want an affordable energy bill | I want to use energy as and when I want it | I want a sustainable energy system

Stakeholder priority and context



I WANT YOU TO ENABLE THE ONGOING TRANSITION TOWARDS THE ENERGY SYSTEM OF THE FUTURE

T2 Total £936m*

*excl. contestable projects

Topics

Provide a network that enables transition to net-zero 2050 at lowest cost to consumers	Facilitate competition/ new business models	Delivery electricity whole system solutions with network companies	Enable all energy whole system solutions

Obligations

- Facilitate aims of government energy policy
- Compliance with industry codes and standards including CUSC, SQSS and STC
- Plan and operate an economic and efficient system and implement ESO NOA recommendations

Stakeholders

Stakeholders with an outsized impact on our plans within this priority: The Government(s), the Electricity System Operator, Distribution Network Operators and Ofgem

Other stakeholders: High impact and interest - : political, network companies, large customers, new business models (e.g. flexibility & storage developers), supply chain

High impact or interest: Academics, think tanks and innovators, interest groups, consumer bodies, small/new customers, transport, and communities (directly affected)

Approach

Government, ESO & DNOs = **empower**; High impact and high interest stakeholders = **collaborate**; high impact or high interest = **consult or involve**

What we've heard

Engagement on long-term role of transmission and managing uncertainty

- Need for transmission in long-term clear, despite uncertainty
- We should play an active role in enabling the transition
- Delivering whole system solutions is important
- We should undertake timely reinforcement where required
- Our approach to setting an E&W scenario is reasonable
- Appropriate to review existing uncertainty mechanisms and consider new ones, especially targeted at whole systems
- Merit in developing an anticipatory investment mechanism

Engagement to build a whole system plan with electricity network companies

- Work to agree a Common Energy Scenario for RIIO-T2
- Agreed E&W view of EV growth and heating electrification
- DNO data submissions should inform investments at interface
- Voltage issues have large potential for whole system solutions
- ESO should play key role in whole system collaboration; particularly through the expanded NOA process
- Unanimous support for development of uncertainty mechanisms that allow for whole system solutions during T2

Engagement to build a whole system plan with non-network companies

- Technical challenges to overcome to realise full potential of flexibility in solving network issues
- Flexibility can delay Tx/Dx interface investment and complement boundary capability, but limited T2 opportunity to replace network capacity altogether
- We should think broadly about where we could provide solutions to net-zero challenges
- A whole system approach is required to minimise costs
- We should set out a roadmap to achieving net-zero

Key trade-offs and how engagement influence our plans

- Provided confidence in extending T1 approach to managing uncertainty and shaped future energy assumptions
- Concluded on a pro-active approach to enabling transition
- Expanded suite of uncertainty mechanisms and approach to their development in response to challenge
- Removed reactor costs from baseline (~£184m) and developed an uncertainty mechanism to allow whole system solutions to be identified and delivered within the T2 period
- Proposals based on a whole system approach involving ESO, DNOs and TOs
- Removed proposal to invest £2m to develop an economic modelling capability
- Expanded whole system thinking beyond network companies and broadened solutions to net-zero challenges

Outputs

Measure

Innovate and invest in network reinforcement	Enable ESO zero carbon operation by 2025	Invest to maintain access and minimise costs	Facilitate competition and new business models	Electricity whole system optimisation with DNOs	Electricity whole system optimisation with ESO	Enable whole system solutions to net-zero challenges
Type: PCD Target: Deliver 22.5GW boundary capability Incentive: TIM	Type: PCD Target: Complete modelling & identify future requirements Incentive: TIM	Type: PCD Target: Separate sites and secure easements Incentive: TIM	Type: PCD Target: Deliver 4 consented projects + commitment Incentive: TIM	Type: PCD Target: MVar reactive capability Incentive: TIM, CAM	Type: LO, PCD Target: Deliver STC requirements Incentive: TIM	Type: Commitment Target: N/A Incentive: N/A
Deliver 22.5 GW of boundary capability recommended by ESO through the NOA process	Model secondary systems, identify future requirements and change settings where required	Proactively secure essential services at shared sites and convert wayleaves to easements	Deliver large (>£100m) consented projects ready for competition and work with flexibility providers to identify opportunities	Work with ESO/ DNOs to provide optimal solutions to network issues	Deliver STC system monitoring obligation ESO/TO optimisation mechanism	Process to facilitate investment ahead of clear need and options to overcome net-zero challenges

Comparison to T1

12.4 GW boundary capability	N/A	Work spans across multiple price controls	3 projects >£500m (T1 threshold) consented	[redacted] reactors delivered	Minimal system monitoring in T1	New measure

Costs

Cost at T1 (annual average)

£77m (excl. Western HVDC)	N/A (not a T1 activity)	£26m	£12m (projects >£500m)	£16m	£3m	N/A (not a T1 activity)

Work needed

• Uprate circuits, network reconfiguration, etc. to enhance boundary capacity by 22.5 GW • Respond to NOA recommendations and maintain compliance with SQSS	• Build model of all secondary systems • Undertake analysis to understand impact of low fault levels + inertia • Change settings • Identify future requirements (subject to determination)	• Continuation of programmes started before T1 period • Secure permanent easements to maintain access • Deliver site separations to allow conventional power station closures and continue site operation	• Help develop an early competition model • In lieu of a model for early competition, progress large (>£100m) projects with a NOA proceed signal to consents – ready for late competition • Work with flexibility providers to identify opportunities	• Work with DNOs and the ESO to deliver whole system opportunities • Invest in [redacted] reactor units for £31m to reduce system operation costs • New reactive uncertainty mechanism	• Offer range of flexibility services to ESO for market testing at no cost • Install system monitoring equipment required to comply with STC • New reactive uncertainty mechanism	• Extensive collaboration across stakeholders to continue to establish and participate in an anticipatory investment process • Continued development of potential solutions to net-zero challenges

Cost at T2 (total and annual)

Total: £507m Annual: £101m	Total: £31m Annual: £6m	Total: £135m Annual: £27m	Total: £182m Annual: £36m	Total: £31m Annual: £6m	Total: £48m Annual: £10m	No expenditure proposed

Approach to uncertainty

Boundary capacity unit cost allowance	Within period determination	(No volume uncertainty)	Consented route length unit cost allowance	Static reactive unit cost allowance	Dynamic reactive unit cost allowance	Anticipatory process and harmonic filter within period determination

Consumer benefit

• Facilitate decarbonisation of power, transport and heat – net-zero 2050 • Minimise cost of operating network and reduce wholesale energy costs by at least £250m/annum	• Minimise the cost of networks in RIIO-T2 period and beyond	• Facilitate decarbonisation of power • Minimise network costs	• Facilitate decarbonisation of power, transport and heat – net-zero 2050

nationalgrid

5. DOCUMENT CHANGE CONTROL

Version Number	Date Updated	Updated by	Comments
0	10/08/18	Charon Balrey	Template updated post SG2 comments and to include iterative nature of engagement
1	19/09/18	Ivo Spreeuwenberg	First draft of log for 'Future of Transmission'
2	29/03/19	Ivo Spreeuwenberg	Log updated to include SG3 comments, challenges and actions, as well as post-engagement outcomes, the assessment of engagement undertake by TRUTH and conclusions
3	28/06/19	Ivo Spreeuwenberg	Minor updates post SG8 meeting
4	25/10/19	Ivo Spreeuwenberg	Managing uncertainty engagement added to log, Stakeholder Group challenges, Frontier assessment and conclusions updated
5	28/11/19	Ivo Spreeuwenberg	Final updates and conclusions ready for submission

6. APPENDIX

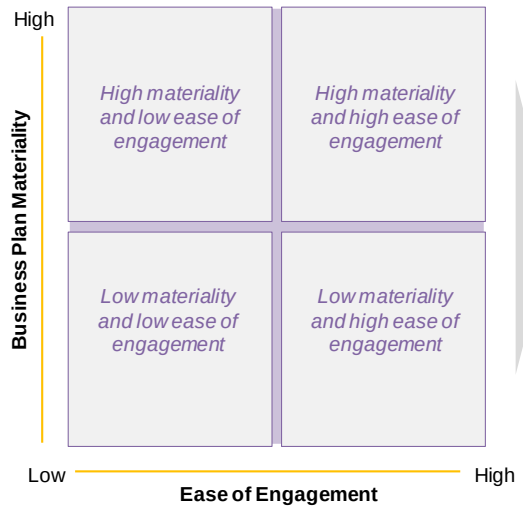
6.1 ENGAGEMENT PRINCIPLES CHECKLIST

Principle		Check
1	Define and map your stakeholders - anyone who believes they are affected by your decisions. Recognising the different threads of the public interest – stakeholders, customers, consumers, citizens, communities (geographical and interest)	
2	Be clear what you want to achieve with "engagement" – have clear policy objectives and measures of impact; (incl. where you most need to engage)	
3	Understand the "spectrum of participation" and difference between each part of that spectrum: inform, consult, involve, collaborate, empower	
4	Engage early in the process, review and improve throughout	
5	Leadership – effective stakeholder engagement must be led from the top of the organisation	
6	Commitment – to listen to stakeholders' views and act on or respond to them	
7	Objectivity – an open approach to obtaining stakeholders' views and to interpreting them. Seek to understand views on a range of topics and on all aspects of the business plan, rather than pre-determining their priorities or seeking to endorse your own priorities	
8	Transparency – to build stakeholder trust and show that you take their views seriously (incl. how we've considered views, weighted and managed trade-offs)	
9	Be inclusive: work with stakeholder groups to gather the fullest range of interests. Understand and balance the differences between different segments. Understand and balance the differences between existing and future stakeholders	
10	Be aware that those who often participate i.e. the "usual suspects" are not always representative	
11	Be accessible to all (e.g. in consideration of the tasks, timelines, contact person, tech., locations, challenges of communication, etc.)	
12	Use targeted approaches to tailor engagement to suit the knowledge and awareness of different groups	
13	An ongoing process that is embedded across the business – not just a stand-alone business planning/price control review exercise.	
14	Evidence based – use a full range of available sources of info to identify priorities, views and challenges (e.g. operational insight, bespoke research,	

15	Gather evidence through a range of methodologies and tools including willingness to pay, qualitative research, surveys, complaints intelligence, market data	
16	Be responsive – seek to adopt a flexible process to engagement, responding to the information revealed as the process progresses	
17	Demonstrate impact of engagement – ensure that the engagement design process plans for and allows evaluation of success	
18	Innovation – trying new and innovative ways of engaging	

6.2 BUSINESS PLAN / ENGAGEMENT TOPIC PRIORITISATION FRAMEWORK

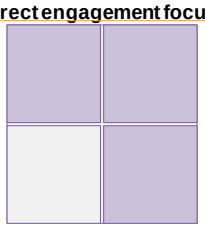
Business plan / engagement topic prioritisation framework



Stakeholder Group focus

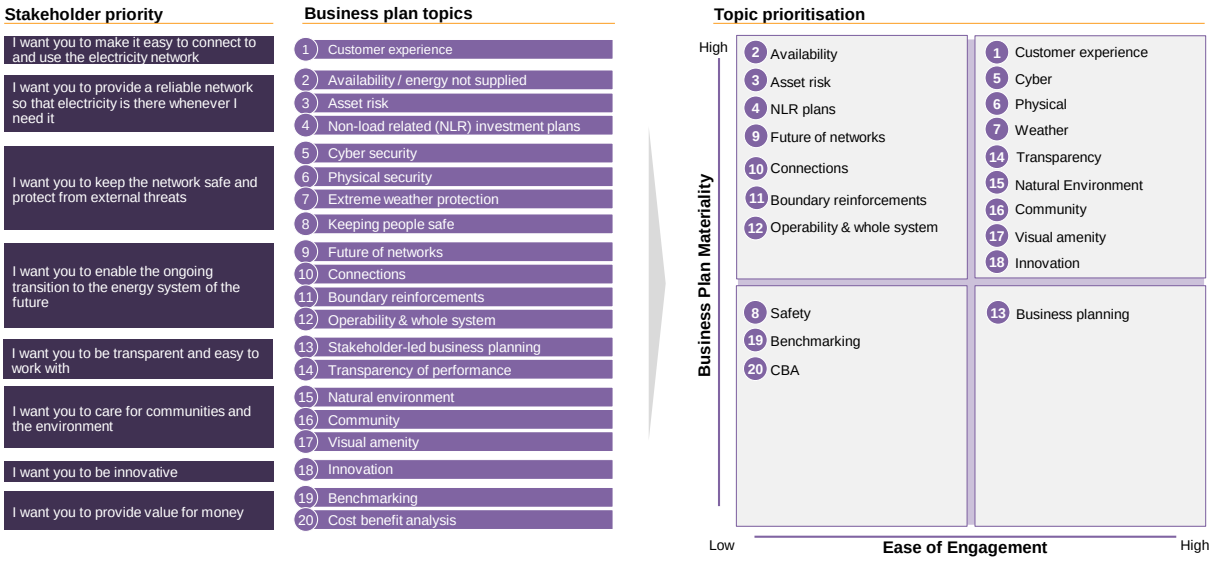
- All topics of high materiality given explicit time on the Stakeholder Group forward agenda
- Topics of low-materiality may not be explicitly covered on the forward agenda, but material is made available and can be covered by exception

Direct engagement focus



- All topics of high materiality and/or high ease of engagement will benefit from extensive direct stakeholder engagement
- Topics of low materiality and low ease of engagement primarily covered by inform only and potentially not until the propose phase

Business plan topics and mapping onto framework



6.3 STAKEHOLDER SEGMENTS

Stakeholder Segments – Electricity

Segment	Description	Example organisations
Political	Elected officials and advisors; Westminster + Cardiff	MPs, SpAds, Assembly Members
Governmental	Civil service and committees	BEIS, DEFRA, NIC, CCC
Regulatory	Energy and safety regulators	Ofgem, HSE
Consumers	Members of the public, commercial & industrial	Members of public and businesses
Consumers bodies	Members of the public, commercial & industrial	Citizen's Advice, NEA, Which?, MEUC, CBI
Communities	Local councils, community representatives	Greater London Authority, Anglesey County Council
Large customers	Large, often vertically integrated and international	Big 6, Drax, Orsted, Network Rail
Small / new customers	Small, often specialist organisations or non-energy	OVO Energy, Robin Hood Energy, JLR
Network companies	Other regulated energy network companies	UKPN, WPD, NPG, ENW, SPEN, SSEN
New business models	New business exploiting the '3 Ds'	Pivot Power, Limejump
Think tanks & innovators	Elected officials and advisors; Westminster + Cardiff	Energy Systems Catapult, IET, EIC
Interest groups	Groups representing special interests	Green Alliance, Sustainability First,
Academics	Energy specialists and researchers in academia	Imperial College, Exeter Uni., Newcastle Uni.
Supply chain	Developers and suppliers of network assets	Siemens, ABB, Prysmian
Other	Stakeholders not defined in other segments	Media, Consultants, EU bodies, etc.

6.4 ENGAGEMENT APPROACH – SPECTRUM

Approach to engagement – spectrum

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
STAKEHOLDER ENGAGEMENT GOAL	To provide stakeholders with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions	To obtain stakeholder feedback on analysis, alternatives and/or decisions	To obtain public feedback on analysis, alternatives and/or decisions	To partner with stakeholders in each aspect of the decision including development of alternatives and the identification of the preferred solution	To place final decision making in the hands of the stakeholder
PROMISE TO THE STAKEHOLDER	We will: ▪ keep you informed	We will: ▪ Keep you informed ▪ Listen to and acknowledge concerns and aspirations ▪ Provide feedback on how you have influenced our decision ▪ Seek feedback on drafts and proposals	We will: ▪ Work with you to ensure that your concerns and aspirations are directly reflected in alternatives developed ▪ Provide feedback on how you have influenced our decisions	We will: ▪ Work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible	We will: ▪ Implement what you decide

Adapted from the International Association of Public Participation – Public Participation Spectrum, 2007

6.5 DETAILED OUTPUT FROM ENGAGEMENTS

Online survey	Webinar	BEIS bespoke session	ADE session
[redacted]	[redacted]	[redacted]	[redacted]