

**ESO RIIO-2 Business Plan – Annex 3**  
**Stakeholder report**

1 October 2019

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## Introduction

As we embark on this unprecedented opportunity to develop a new regulatory framework and business plan for the ESO, we need the insight and support of our customers and stakeholders so we can make sure that we focus on the right areas. Our plan must reflect stakeholders' needs and ultimately drive value for consumers. Our stakeholders have played a vital role in the production of our draft business plan and will continue to do so as we look to produce our final plan in Q4 2019.

In the main business plan, chapter 2 explains our overall stakeholder engagement strategy. The content from that chapter has been reproduced and expanded upon here, to allow you to read this Stakeholder report without referring back to the main business plan. In each chapter of the business plan, we have specifically demonstrated how stakeholder feedback and our understanding of consumers' needs now and in the future has helped shape our proposals.

This Stakeholder report provides more comprehensive details on our engagement approach and stakeholder feedback we have received in support or challenge of our proposals in the main document. This report summarises the discussions we had at the various engagement events where we took detailed notes when talking with stakeholders.

We have organised this report into five sections:

1. **A plan informed by our stakeholders** – This details our approach to engagement and how we have understood a broad range of views from across industry and from end consumers. It is largely a repeat of the what is within the main document.
2. **Our independent ESO RIIO-2 Stakeholder Group** – This details the set-up of our stakeholder group and chair, the role of the group and how their feedback has helped shape the development of our business plan.
3. **RIIO-2 Challenge Group** – This provides further information on our interaction with Ofgem's RIIO-2 Challenge Group, including what information we presented and submitted, the Challenge Group's feedback and how that has shaped our plan.
4. **A summary of our engagement activity** – This details the different types of channels we have used for engagement, the topics they covered and the representation of different stakeholder groups at each interaction.
5. **How stakeholder feedback has shaped our plan** – This provides a detailed summary of stakeholder feedback we have received in developing our plan, structured by topic, channel, the feedback we received and how it shaped our plan. Summaries of this feature in the main business plan document.

## 1. A plan informed by our stakeholders

### 1.1 The importance of stakeholder views

In this report, we set out what we have learnt from our engagement, and how we have structured our stakeholder engagement programme. The ESO continuously engages stakeholders and our RIIO-2 specific engagement is a natural extension of this. The summary of how stakeholders' views have shaped our proposals can be found in the main Theme chapters in the business plan, however further details by Theme and activities are all recorded in this supplementary Stakeholder report.

In the creation of this plan we have used stakeholder and consumer insight from a variety of sources, including:

- academic research
- webinars
- workshops
- bilateral meetings
- surveys
- consumer research

Alongside all these activities we have also, where possible, sought to use existing engagement channels in place across the ESO and utilise this stakeholder insight in the development of our plans such as Power Responsive and the *Future Energy Scenarios (FES)*<sup>1</sup>. Over 600 individual stakeholders were consulted as part of the *FES* engagements last year. Their views on the future of energy and the constructive challenge they provide in developing our future scenarios are critical to understanding the landscape we will be operating in and therefore activities we propose.

The engagement activities we have carried out during the development of our business plan are all set out below.

#### Our engagement objective

We are committed to working with our customers and stakeholders to help shape the future of the energy market and understand how best the ESO can deliver value for our customers and consumers. Through enhanced stakeholder engagement we will be able to create a plan that reflects their needs.

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<sup>1</sup> <http://fes.nationalgrid.com/>

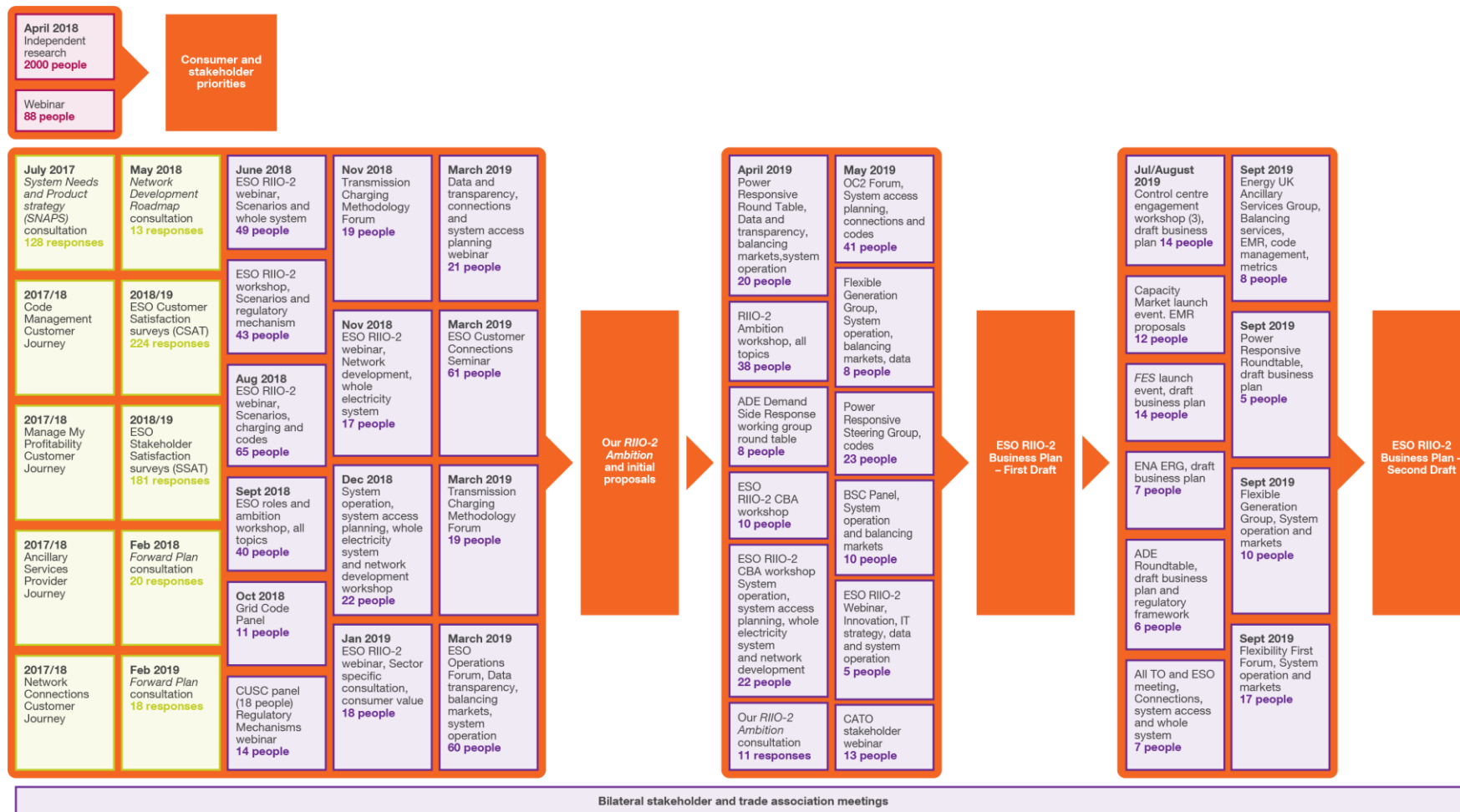


Figure 1 Stakeholder engagement overview<sup>2</sup>

<sup>2</sup> Please increase page zoom to 200 per cent to view this diagram

We have also embraced an enhanced engagement approach through the introduction of our ESO RIIO-2 Stakeholder Group (ERSG). Comprising members from across the industry, its role is to scrutinise the production of our plan and how effective we have been at engaging with stakeholders. The group will publish a report that sets out their views on our engagement activity and the development of our business plan on 22 December 2019.

### 1.1.1 Engagement key themes

Feedback from stakeholders has encouraged, supported, challenged and guided us towards our ambitious business plan. Similarly, the broad knowledge and experience of ERSG has created an environment of robust challenge and strong support to elevate the level of ambition in our plan. This builds on our current role and capabilities now to reflect the evolving role we can play as system operator in the future. The main points we have learnt are that we need to:

- be ambitious and proactive - creating value for consumers and delivering a high-quality service in all that we do
- set ourselves up strongly to deliver against the plan, including establishing the culture needed to deliver the proposals through all levels of the organisation
- adopt a principle of open data to help facilitate open and efficient markets
- transform our engagement approach to involve stakeholders throughout RIIO-2 in the development and execution of our major deliverables
- be mindful of how our proposals are dependent on wider industry change initiatives
- work closely with Distribution Network Operators (DNOs) to ensure a joined-up experience for market participants and connection customers across transmission and distribution
- make sure our funding model drives us to be ambitious and enables us to respond flexibly to new challenges as they arise, with strong incentives to deliver benefits for consumers over and above our day-to-day role.

As a result of stakeholder feedback, we have developed our business plan to:

- talk more holistically about ongoing activities, enhancements to them during the RIIO-2 period and transformational activities to help with understanding of our business plan
- refine and expand the cost benefit analysis and how we explain both the costs and benefits in the business plan
- provide clarity on the intention of our ambition on operating a carbon free electricity system and which activities contribute to its delivery
- include investment roadmaps to achieve our ambitions, including setting out those actions that will be taken forward during the remainder of the RIIO-1 period
- take an agile, modular approach to developing our new balancing and control capabilities, including building them offline
- transform engagement in delivering all our IT capabilities through fully involving stakeholders in their development through a design authority
- clarify how we will work with universities to secure an increased pool of appropriate resources
- remove our proposal to take on responsibility for the Capacity Market Rules

- make participation in our markets easier through delivering a single integrated platform for both balancing service markets and the Capacity Market
- clarify our proposed role in relation to leading the debate in Theme 4
- adopt a principle of open data – committing to sharing our data (in machine readable format) whilst ensuring that we are protecting data confidentiality and security
- better understand consumer views in the regards to the future energy system and show how our plan aligns to their priorities
- understand how our people, capability and culture need to change and have identified what we are going to do to manage this transition.

We also set out more detailed changes throughout the business plan and the feedback that has informed this Stakeholder report.

## 1.2 Our stakeholder engagement strategy

Our stakeholder engagement strategy takes a dynamic approach. It includes continuous feedback, which enables us to develop and refine our thinking into the prioritised activities that feature in this and subsequent business plans. We are inclusive in our engagement approach and work with a broad range of stakeholders of different sizes and across a number of sectors. We have evolved our engagement strategy to an ‘always on’ approach that removes linear time driven barriers and adopts a permanent invitation to engage.

As some of our key stakeholders, we have sought to engage specifically, and regularly with network companies, both bilaterally and as a group. With the Transmission Owners (TOs), we have discussed our respective proposals to determine where our plans may overlap and interact such that we can work collaboratively to move forward and deliver collective value for customers and consumers. We have engaged with DNOs through the Energy Networks Association<sup>3</sup> (ENA), our own engagement events and have had an open invite to engage bilaterally on how our proposals could interact with their future role and activities and how we can work more closely together.

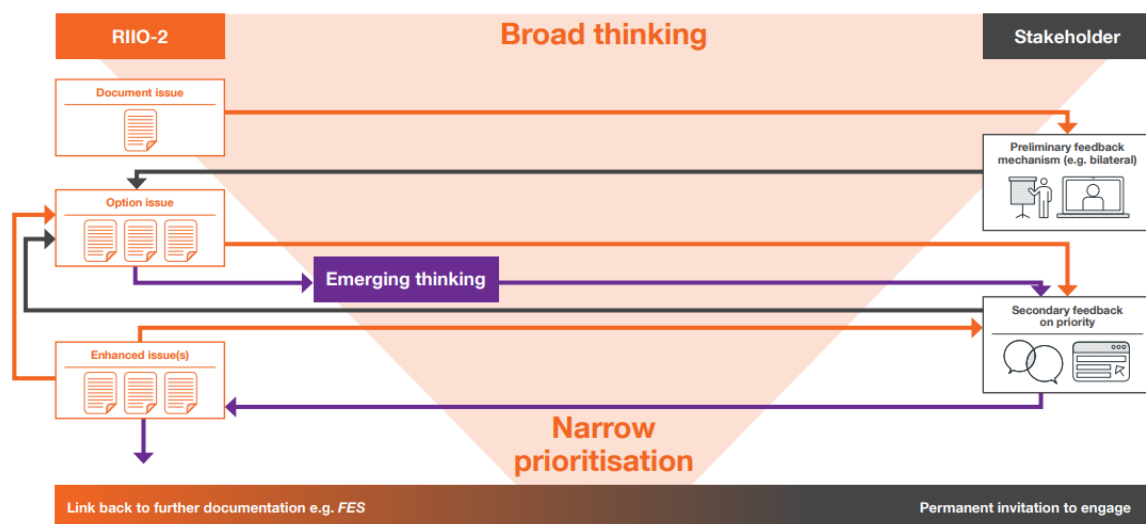


Figure 2: RIIO-2 stakeholder engagement strategy<sup>4</sup>

<sup>3</sup> <http://www.energynetworks.org/>

<sup>4</sup> Please increase page zoom to 200 per cent to view this diagram

We seek to use the principles of the AA1000 Stakeholder Engagement Standard in our engagement approach to establish a benchmark. It means that we plan, prepare, implement and improve engagement activity, to ensure that we maximise the value of our engagement and be respectful of stakeholders' time. We are not accredited to the standard, so have not assessed our performance against it. Instead, we commissioned an independent review of our stakeholder engagement approach earlier in the year to make sure we are taking a best practice approach in developing the business plan. The review was largely positive, based on stakeholder feedback and comparison with best practice organisations. Some enhancements to evolve our approach were recommended, many of which we have taken forward as we've developed our business plan.

### 1.2.1 Enhanced stakeholder engagement

The RIIO-2 enhanced engagement approach involves the establishment of an independent stakeholder group to provide challenge on and input to our business plan proposals. In addition, Ofgem has formed a RIIO-2 Challenge Group to independently assess business plan proposals across sectors and to provide challenge on Ofgem's regulatory approach. More information on our independent stakeholder group is below in section 2.

## 1.3 Dynamic engagement through the business plan process

We have taken an approach of continuous story creation, which fall into three broad areas – broad thinking, developing our proposals and testing our proposals. These are described in more detail below and reflected in the structure of this report. We began by understanding our consumer and stakeholder priorities to steer what we should deliver. These form the fundamental cornerstone of our plan.

“[ESO] RIIO-2 is leading the pack in terms of proactive engagement. Process isn't finished but so far, so good.”  
**Generator / supplier**

### 1.3.1 Broad thinking

To create the consumer and stakeholder priorities on the right, we commissioned an independent research study, reaching stakeholders, Members of Parliament and 2,000 members of the public. We also brought together the outputs of our day-to-day engagement activities from across the ESO and created additional activities as part of a coordinated programme of engagement for RIIO-2 to test and refine these priorities.

This included regular direct conversations, and an online stakeholder webinar with 88 attendees from 68 organisations. We made additional changes to these after they were presented to ERSG.



Figure 3: Our consumer and stakeholder priorities



You can find out more about how they were created on our website<sup>5</sup>.

Our Consumer and Stakeholder priorities are used throughout the business plan to assess how our activities will deliver value. We have highlighted at the beginning of each chapter which customer and stakeholder priorities are supported our activities

### 1.3.2 Developing our proposals

In developing the proposals in our business plan, we built on the priorities of consumers and stakeholders. We carried out a consultation on our high-level proposals through *Our RIIO-2 Ambition* in April, inviting written views. We also used a variety of engagement channels to maximise the range of stakeholders we reach and have effective conversations with, such as stakeholder workshops with roundtables, direct engagement, webinars and email bulletins.

### 1.3.3 Testing our proposals

In our July draft business plan, we shared how stakeholder views have shaped our proposals, to help us seek further feedback. Stakeholders were supportive of many of our proposals up to that point so our engagement since then has focused on:

- testing those proposals where we had not heard stakeholder consensus;
- working with stakeholders to develop performance metrics;
- understanding their views on our more detailed costs and benefits; and
- engaging further with TOs (bilaterally and as a group) on our respective RIIO-2 proposals and with DNOs on aspects of our proposals where we would like to work more closely.

“Whenever there are changes they listen – they will set up a meeting quickly, they are easy to engage. Set up is perfect.”

**Consumer interest organisation**

We will continue to work with our stakeholders to refine our proposals ahead of our final submission to Ofgem and also to understand their views on the plan as a whole.

The engagement channels we have utilised between the July draft business plan and the October one, have been similar to those we have used up to now. We ran three engagement events at the Electricity National Control Centre with a focus on understanding stakeholders’ views on the areas highlighted in the bullet points above. We supplemented these engagement events by attending existing trade association and Power Responsive events; the details of which are included below in this report. We are planning further engagement so we can test this business plan as a whole fully and our proposed metrics, before its final submission to Ofgem in Q4 2019.

### 1.3.4 Our engagement activity

Engaging with a representative group of stakeholders gives us confidence we have co-created the business plan proposals with an appropriate breadth of stakeholder views. We have mapped our stakeholders according to their interest in our Themes and activities, and the level of impact that changes to our role may have on their businesses.

This remains under continuous review as we develop our business plan. We use this approach to plan the most effective engagement channels for individual stakeholders across a range of sectors.

“Strongly welcome the ESO’s efforts to put forward an ambitious plan that sets clear goals and reflects stakeholder feedback.”

**Trade association**

<sup>5</sup> <https://www.nationalgrideso.com/about-us/business-plans/future-planning-2021-onwards/have-your-say-on-our-future-plans>

We aim to be accessible in our engagement and where possible, use and build upon the existing engagement opportunities that we have in place, such as our customer connections seminars, charging forums, FES workshops and electricity operational forums to make sure we use every opportunity to engage. Additionally, collaboration with other bodies will give us access to wider and more specialist views in a way that is more efficient for the ESO and our stakeholders. We've created further channels to make sure we reach a broad range of stakeholders for each Theme and over-arching topics such as whole electricity system.

Below is a summary of how we have engaged over and above our existing engagement channels.

<p><b>Face to face engagement, including:</b></p> <ul style="list-style-type: none"> <li>• Bilateral meetings</li> <li>• Workshops</li> <li>• Webinars</li> </ul>	<p><b>To date we have held:</b></p> <ul style="list-style-type: none"> <li>• 105 bilateral meetings</li> <li>• 9 Workshops</li> <li>• 9 Webinars</li> </ul>	<p><b>Which has resulted in engagement with:</b></p> <ul style="list-style-type: none"> <li>• Over 700 individuals from</li> <li>• Around 300 organisations</li> </ul>
<p><b>ESO RIIO-2 Stakeholder Group</b></p>	<p><b>To date we have held:</b></p> <ul style="list-style-type: none"> <li>• 7 meetings</li> <li>• 1 workshop</li> <li>• 1 control room visit</li> </ul>	<p><b>This has involved:</b></p> <ul style="list-style-type: none"> <li>• 19 of our key stakeholders</li> </ul>
<p><b>Written communications, including:</b></p> <ul style="list-style-type: none"> <li>• Bi-Monthly bulletins</li> <li>• Website</li> <li>• Thought pieces</li> <li>• Podcasts</li> </ul>	<p><b>To date we have published:</b></p> <ul style="list-style-type: none"> <li>• 7 bulletins</li> <li>• 4 stakeholder reports</li> <li>• 3 thought pieces</li> <li>• 1 podcast</li> </ul>	<p><b>These have reached:</b></p> <ul style="list-style-type: none"> <li>• Average of 900 individuals through our bulletins</li> <li>• 211 plays of the podcast</li> </ul>

Figure 4: Summary of our RIIO-2 engagement

### Stakeholder engagement numbers by segment

We have met with more than 700 individuals from around 300 organisations through some 1,100 interactions. Generators, service providers and suppliers were the groups most commonly represented.

In the figures below many stakeholders have been assumed to be representing more than one stakeholder segment. For example, one person may be classed as both a generator and a supplier, which will appear to inflate the numbers for these groups. The 'other' category includes non-domestic consumers, construction companies, automotive companies and charities.

“ESO are giving a good level of access to people and events. It’s all positive in terms of ability to contact and engage.”

**Distribution Network Operator**



Figure 5: Stakeholder interactions in RIIO-2 by sector

### Accessible ESO RIIO-2 engagement

The range of engagement channels and our ‘always on’ approach to engagement have resulted in stakeholders telling us that they find the ESO RIIO-2 programme to be very accessible and that they feel well engaged and consulted. All the stakeholders we asked, find it easy or very easy to engage with the ESO, and 93 per cent were satisfied or, very satisfied with the process. We will continue to use the broad range of engagement channels set out above and to look for additional appropriate channels / engagement opportunities to ensure we remain open to new approaches.

Stakeholders have also given us some useful pointers on how we can improve our engagement. We hope the business plan, Cost-benefit Analysis (CBA) Report and this Stakeholder report will address the desire to see more detail on our costs and benefits. Also, for us to play back the range of views we’ve received and how we’ve responded to them.

Over the last few months we have worked to refine and further improve our engagement. For example, in response to stakeholder feedback we’re engaging as much as possible through trade associations. We’ve also investigated enhancements to make the RIIO-2 parts of our website more accessible.

“All the transmission companies are going through the price control so prompts are useful and an importance level indicator would be useful too.”

**Network company**

## 1.4 Understanding consumer views

Understanding consumer views has been important to the development of our ESO business plan. As our engagement programme has progressed, we have further improved our approach to incorporating consumers' views. We have strengthened our understanding of their needs by undertaking additional research and engaging with a broader sector of stakeholders. This is alongside our direct engagement with consumer representative groups of domestic and non-domestic consumers and including such organisations on our ERSG. In our review of consumer research, we have learnt the following.

The UK Energy Research Centre<sup>6</sup> (UKERC) Synthesis Report<sup>7</sup> found that the British public wants and expects change with regard to how energy is supplied, used and governed. They are positive about the need for energy system change and do not prioritise demand over supply or vice versa. It also found that affordability is more important than the lowest cost possible regarding energy system change. The cost related to a number of attributes such as long-term stability versus fluctuation in cost, existing market structures, getting a 'fair deal' and trust in energy companies.

A second report by the UKERC 'Paying for energy transitions'<sup>8</sup> surveyed 3,150 consumers followed by five focus groups across the UK. The study found that generally the public are willing to pay towards the transition to a low carbon, reliable and affordable energy transition but believe this is alongside both government and energy companies making a more significant investment.

The group was presented with four goals the energy transition may address. The study found that all four were important and "one did not necessarily emerge as an overriding priority". The four goals were:

- ensuring energy is affordable for all households;
- increasing the use of low carbon energy sources;
- reducing overall energy use in the UK; and
- ensuring a reliable energy supply is continuously available.

These four goals very closely align with our original consumer priorities and also with four of the six long-term outcomes identified by Sustainability First as part of their New Pin<sup>9</sup> research findings. This verifies our thoughts are robust when understating what consumers expect in the future of energy and our plan is developed with this in mind.

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<sup>6</sup> <http://www.ukerc.ac.uk/>

<sup>7</sup> <http://www.ukerc.ac.uk/publications/energy-2050-synthesis-report.html>

<sup>8</sup> <http://www.ukerc.ac.uk/publications/paying-for-energy-transitions.html>

<sup>9</sup> <https://www.sustainabilityfirst.org.uk/new-pin/new-pin-pubs-sub>

How they fit together:

We want an affordable energy bill		We want a decarbonised system, fit for the future		We want a safe and secure energy system	We want energy to be available when we need it
Ensuring energy is affordable for all households		Increasing the use of low-carbon sources	Reducing overall energy use in the UK	Ensuring a reliable energy supply is continuously available	
Value for money		A clean/sustainable environment		Long-run resilience	
				Quality of service	

Key:

- ESO four consumer priorities
- UKERC: Four energy transition goals
- Sustainability First: Four long-term outcomes

Figure 6: Comparison of consumer priorities and goals

We do know, despite the above findings, that a significant proportion of people already struggle to pay their energy and water bills. The New Pin research found in 2015 that 10 per cent of households in England, 30 per cent in Wales and 39 per cent in Scotland were estimated to be in fuel poverty. In March 2019, as detailed by the BEIS Attitude tracker<sup>10</sup>, 30 per cent of a population surveyed across the UK was worried about paying their energy bills.

The report also found the public was most likely to be concerned about steep rises in energy prices in the future (75 per cent), the UK not investing fast enough in alternative sources of energy (69 per cent) and the UK becoming too dependent on energy from other countries (65 per cent). 84 per cent support the use of renewable energy.

For non-domestic consumers, we identified:

- New routes to market should be developed for community energy schemes. System operators should include community energy projects in their flexibility and capacity procurement strategies.
- Community energy groups should be invited and supported to participate in local trials for flexibility, demand management, peer-peer trading and other specific services to the grid, like network cost avoidance.
- Data from heat maps and grid data is intimidating for communities to use - is it possible to make data more accessible and easier to navigate?
- Local authorities and community energy groups were supportive of our ambition to operate a carbon free system as many of their members and customers were concerned about climate change and wanted to see more renewable energy available.
- They welcomed our proposals to remove barriers from entry to markets and their ability to aggregate their projects up to 1 MW.
- Providing further insight to policy recommendations and our data analysis was welcomed with *FES* being mentioned as a useful document they used to enable their business strategy and when engaging with BEIS.

<sup>10</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/800429/BEIS\\_Public Attitudes Tracker - Wave 29 - key findings.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/800429/BEIS_Public_Attitudes_Tracker_-_Wave_29_-_key_findings.pdf)

### 1.4.1 Consumers' willingness to pay

Through our independent survey of consumers, we got a very clear message that reliability and resilience are the highest priority for consumers, both now and in the future. We have drawn on other publicly available information to help us understand further consumers' willingness to pay for their different priorities<sup>11</sup>. The willingness to pay study commissioned by the four GB electricity and gas TOs<sup>12</sup> confirmed the relative priorities of the other consumer work as well as placing some values around the priorities.

In terms of reducing the risk of power cuts, the analysis suggests that consumers are willing to pay more to reduce the length of an interruption to power supply, which occurs with a 1.5 per cent probability, by one hour and also to reduce by a day the duration of a prolonged interruption causing widespread disruption.

UKERC's Paying for energy transitions report set out that generally domestic consumers are willing to pay towards the transition to a low carbon, reliable and affordable energy system but believe this is alongside both government and energy companies making a more significant investment.

The report looked at public views on paying for the energy change; and previous UKERC research showed that the assumption people only care about the cheapest possible option was not necessarily correct. The work shows "public understandings of the acceptability of a sustainable system change are affected by a range of personal and social values over and above the cost appearing on their bills."

### 1.4.2 How are we minimising cost to consumer bills?

The average UK customer's annual electricity bill is £612 based on Ofgem's latest analysis in August 2019. We estimate that the average UK household will be paying £1.65 on average for the ESO's internal activities during the first two years of RII0-2 (2018/19 prices). This equates to around 0.3 per cent of the total electricity bill and less than 0.2 per cent of the dual fuel bill. Although this is a slight increase in what consumers currently pay, it is in line with their priorities from a future energy system and our plans will generate around £2 billion worth of benefits over the next five years. In each of the Theme chapters we detail how benefits are realised through our transformational activities. Full details can be found in the CBA report.

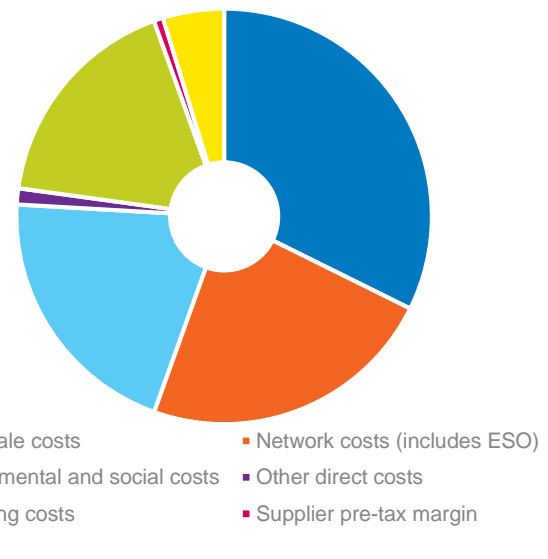


Figure 7: ESO contribution to the average electricity bill in 2018/19 prices

### 1.4.3 How has this influenced our plan?

Within the main business plan, we have highlighted what consumer and stakeholder priorities have been taken into consideration in the development of our proposals where relevant. Most of our transformational activities provide end consumer benefits and are the main factor of our Cost-Benefit Analysis process.

<sup>11</sup>Including the *Estimating Electricity and Gas Transmission Consumers' Willingness to Pay for Changes in Service during RII02* report <https://www.nationalgridet.com/document/131211/download> and UKERC's *Paying for energy transitions* report <http://www.ukerc.ac.uk/publications/paying-for-energy-transitions.html>

<sup>12</sup>Including the *Estimating Electricity and Gas Transmission Consumers' Willingness to Pay for Changes in Service during RII02* report <https://www.nationalgridet.com/document/131211/download> and UKERC's *Paying for energy transitions* report <http://www.ukerc.ac.uk/publications/paying-for-energy-transitions.html>

## 1.5 Let's keep talking

We need ensure we understand stakeholders' views on the business plan as a whole as well as parts that stakeholders are seeing for the first time in this version, such as our proposed performance metrics. We will be testing these through an engagement event at the beginning of October and through some existing meetings. Please get in contact via [box.ESO.RIIO2@nationalgrideso.com](mailto:box.ESO.RIIO2@nationalgrideso.com) if you'd like to talk to us about this directly.

### 1.5.1 How we will engage going forward

Stakeholder input and feedback has been incredibly important in helping us to develop our RIIO-2 business plan to this point. Engagement will continue to be important after we submit the final plan in December and move onto agreeing and then implementing the activities and changes the ESO will take forward in the RIIO-2 period.

### 1.5.2 Engagement in advance of the RIIO-2 period

After submission of our business plan to Ofgem in December we will continue to work with stakeholders as the RIIO-2 process progresses and in preparing to deliver some of the transformational activities set out in this plan. This will include:

- **Open public hearings** – understanding stakeholders' views on areas of disagreement or contention that are being discussed at Ofgem's open hearings.
- **Scoping of new activities** – in order to be ready to deliver many of the new activities at the beginning of the RIIO-2 period we will need to scope them further, with the help of stakeholders. In addition, some of our proposals, such as the Design Authority will be implemented in advance of the RIIO-2 period.

We will also work collaboratively with stakeholders to deliver our plans, particularly where delivery of the benefits of our activities depend on other parties taking actions alongside the ESO.

## 2. Our independent stakeholder group

We established the ESO RIIO-2 Stakeholder Group (ERSG) to ensure that stakeholders have a representative, formalised voice in how we develop our business plan for the next RIIO regulatory price control period. The group provides a focused review of our approach and conclusions but does not replace the wide-ranging engagement we need to undertake as we develop our business plan proposals.

The role of our stakeholder group is to challenge and test our approach to developing our proposals, and the way that we have engaged with stakeholders to reach our views.

We wanted to make sure the members of our ERSG were representative of our role in the industry and reflective of the wider industry across Great Britain. Therefore, members include current and future customers and service providers, key stakeholders and wider public interest organisations. The challenge provided by the group has proved invaluable in developing the business plan, pushing us to go further in our ambition, be more coherent about our approach to stakeholder engagement, and change how IT is developed in the company.

We also recognised the critical role that the independent chair of the group would play, so we followed a rigorous scoping and shortlisting process of possible candidates. Charlotte Morgan<sup>13</sup>, a partner in the Global Energy and Infrastructure Group at Linklaters, was appointed the independent chair of our stakeholder group in July 2018.

We anticipate continuing with an evolved version of the ESO RIIO-2 stakeholder group beyond development of this RIIO-2 business plan. It would have an ongoing role in challenging the development of our future business plans, potentially reviewing our performance and challenging our level and breadth of stakeholder and consumer engagement on an ongoing basis.

We will include a firmer proposal on the ongoing role of our stakeholder group in the final version of our business plan. Ofgem's RIIO-2 Challenge Group provides another welcome level of scrutiny and challenge to make sure we deliver a robust plan that will provide benefits for consumers.

As per a Challenge Group request, throughout the business plan we have stipulated in call out boxes where ERSG have agreed or disagreed with our proposals.

You can find more information about our group and their discussions so far on our website<sup>14</sup>. More information about our engagement with them and how we have responded to their feedback is further down in section 2.9.

### 2.1 Role of the group

The ERSG acts in an advisory capacity and is not a decision-making body. The role of the group is to challenge and test the ESO's business plan, and the way we have engaged with stakeholders and incorporated their feedback into our plan. Are we being ambitious enough with our plans? Are we properly reflecting the needs of the wider stakeholder community? Is our risk profile appropriate? The group looks at areas such as our total spend and efficiency

"I believe the ERSG has such an important role to play in delivering the RIIO-2 framework and, ultimately, driving value for end consumers."

**Charlotte Morgan,  
ERSG Chair**

"ESO is very committed to ERSG, which is to their credit. It's a diverse group which is good, and it's well constructed."

**ERSG member**

<sup>13</sup> <https://www.nationalgrideso.com/about-us/riio-regulatory-framework/riio-2-price-control-2021/our-riio-2-stakeholder-group/charlotte>

<sup>14</sup> <https://www.nationalgrideso.com/about-us/business-plans/future-planning-2021-onwards/our-riio-2-stakeholder-group/stakeholder-group-members>



targets, the focus of our innovation strategy and whether we are being truly representative of consumer and stakeholder views.

Following the final business plan submission in December 2019, the chair of the ERSG will produce a report for Ofgem on behalf of the members, summarising the parts of our plan it agrees with, and any areas of concern. The report will also assess the scope and quality of our stakeholder engagement.

The report will then act as a reference point for Ofgem on any areas of our business plan that might require further scrutiny by them, or Ofgem’s RIIO-2 Challenge Group.

## 2.2 Appointing the Chair

The chair has a critical role in leading the ERSG, so we developed a rigorous process for their selection and worked closely with Ofgem. We shared with Ofgem a long list of potential candidates and followed the below process.

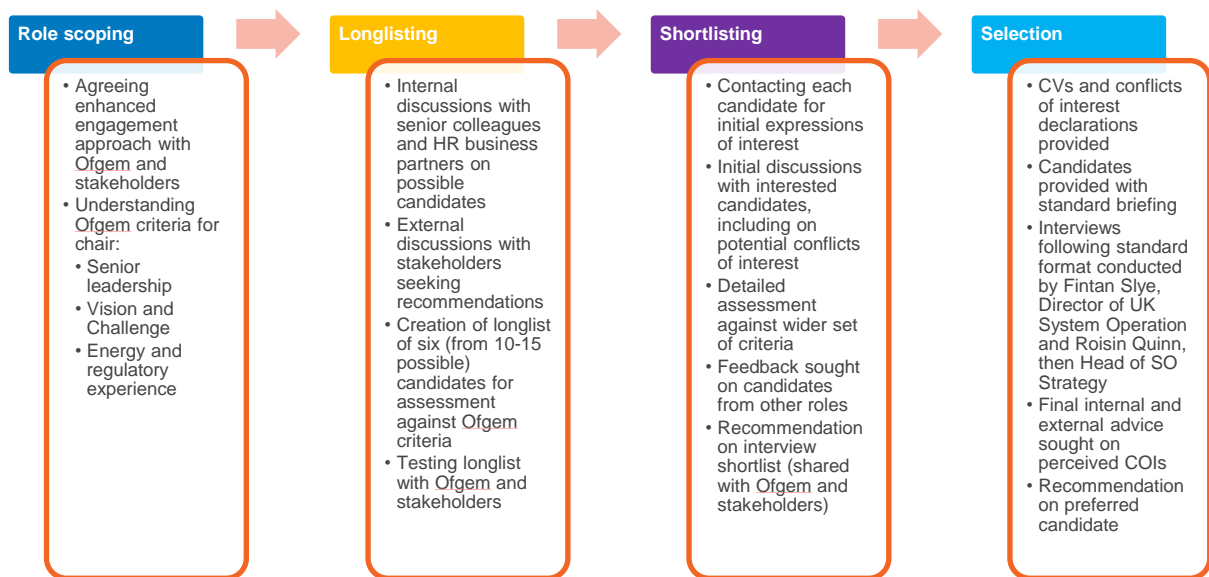


Figure 8: Process for appointing the Chair

Following this robust process and in agreement with Ofgem, we appointed Charlotte Morgan<sup>15</sup> as our Independent Chair.

## 2.3 Appointment of members

We wanted to ensure our members<sup>16</sup> were representative of our role and the wider industry across Great Britain. Members sit on the group in a personal capacity, rather than representing any particular organisation, or industry sector. Our group includes members with expertise across the breadth of the energy industry, from larger and smaller generators, network owners, energy suppliers, customers, service providers and consumer bodies amongst others. Their membership was proposed by the ESO and discussed with the Chair prior to their appointment. Members of the group are:

<sup>15</sup> <https://www.nationalgrideso.com/about-us/riio-regulatory-framework/riio-2-price-control-2021/our-riio-2-stakeholder-group/charlotte>

<sup>16</sup> <https://www.nationalgrideso.com/about-us/business-plans/future-planning-2021-onwards/our-riio-2-stakeholder-group/stakeholder-group-members>

Charlotte Morgan (Independent Chair)	Simon Roberts – Centre for Sustainable Energy
Stuart Cotten – Drax	Jamie Stewart – Citizens Advice Scotland
Peter Emery – Electricity North West	Nina Skorupska – Renewable Energy Association
Toby Ferenczi – Ovo	Nigel Turvey – Western Power Distribution
Stew Horne – Citizens Advice	Chris Veal – Transmission Investment
Jo-Jo Hubbard – Electron	Barbara Vest – Energy UK
Greg Jackson – Octopus Energy	Mathew Wright – Ørsted
Alan Kelly – Scottish Power Transmission	Fintan Slye – National Grid ESO
Andy Manning – Centrica	Kayte O’Neill – National Grid ESO
Catherine Mitchell – University of Exeter	Angelita Bradney – National Grid ESO
Nick Molho – Aldersgate Group	Sophie Hind (Technical Secretary) – National Grid ESO
Eddie Proffitt – Major Energy Users Council	

Table 1 ERSG members

## 2.4 Managing conflicts of interest

We use a range of measures to manage perceived conflicts of interest by individuals on our stakeholder group. These include:

- Under the terms of reference<sup>17</sup> of the stakeholder group, we made clear that appointments were based on their knowledge, expertise and experience as individuals, not as representatives for their organisations or sectors.
- Each member of the group was required to sign a form of non-disclosure agreement, that prohibits use of information that they obtain in their role on the group, for any other purpose (including commercial purposes).
- Each member was also required to complete a declaration of business interests form that requires them to disclose any business interests (such as shares, consultancy arrangements, directorships etc.) that they or their partner or spouse have in National Grid. We then considered any interests disclosed before making a final decision on the individual’s appointment to the panel and/or to share any information with them.
- Where individuals had an increased risk of a perceived conflict (such as individuals who work for an organisation that supplies services to the ESO) we assessed on a case by case basis whether it is appropriate for that individual to be excluded from forming part of the team that bids for or supplies services to the ESO during the term of their membership.
- During the start of each meeting, the Chair asks the group to disclose whether they may have perceived or actual conflicts of interest in any topics being discussed at the

<sup>17</sup> <https://www.nationalgrideso.com/document/137541/download>

meeting. The group then assesses whether that individual should leave the room during the discussion of that topic.

## 2.5 Induction of group members to the ESO

To enable effective discussion on our ESO proposals, we wanted the group to adequately understand our business, teams and our challenges and opportunities. To support this, the group's induction included:

- a visit to the Electricity National Control Centre, to see how we operate the system around the clock, and to give them the chance to speak to the team about their roles
- an introduction to the National Grid business, and how the UK business is regulated
- an introduction and overview of the ESO's regulatory framework, and incentives arrangement pre-and post-legal separation
- an overview of our performance to date during RIIO-1
- information about legal separation
- a review of Ofgem's RIIO-2 framework consultation and the ESO's response
- the development of the RIIO-2 programme plan, proposals and engagement prior to the formation of the group.

## 2.6 Running the group

To ensure the successful running of the group we need it to be appropriately resourced; we provide the group with necessary secretariat support as advised by Ofgem<sup>18</sup>. The Technical Secretary is an ESO employee, but on a day-to-day basis works in a role outside the RIIO-2 team. They act as independent support to the Chair and is the main point of contact for the group. Their main responsibilities include: keeping minutes for each meeting, managing the action and challenge logs, supporting the Chair and group in writing their report, and helping the Chair with any other administrative duties as necessary.

The Chair and wider group also have contact with members of the ESO RIIO-2 team, who provide support for the group meetings, pre-read, papers and contents for the day. They also help link in members with relevant subject matter experts within the business where required. The group also has three senior ESO members who provide the strategic view of the ESO business and detailed input into the discussions.

As set out in the ERSG Terms of Reference, the Chair will also "attend NGESO's Board meetings at least once a year" to provide an update on the stakeholder group. The Chair and the Board will be free to discuss suitable topics. In addition, the Chair will attend occasional meetings with Ofgem and the Chairs of equivalent groups to discuss the progress of the group and to share any challenges or best practice examples. The Chair is dialled into an appropriate part of the ESO Board in July 2019 and attended it in September 2019.

## 2.7 Group meeting dates

The group had initially been set up to meet quarterly for half a day. After the initial meeting in July 2018 the group decided that to be most effective in providing scrutiny and challenge and to cover the broad range of topics needed it would be more efficient to schedule further meetings and for a full day. Prior to this draft business plan being submitted, the group met on the following dates:

- 25 July 2018
- 14 November 2018

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<sup>18</sup> [https://www.ofgem.gov.uk/system/files/docs/2018/04/riio-2\\_enhanced\\_stakeholder\\_engagement\\_guidance\\_v13\\_final.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/04/riio-2_enhanced_stakeholder_engagement_guidance_v13_final.pdf)  
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- 30 January 2019
- 3 April 2019
- 4 June 2019
- 31 July 2019
- 12 September 2019

All information relating to these meetings can be found on our website<sup>19</sup>.

## 2.8 Ongoing role of the group

We anticipate continuing with an evolved version of the ESO RIIO-2 stakeholder group beyond development of this RIIO-2 business plan. It would have an ongoing role in challenging the development of our business plans, potentially reviewing our performance and challenging our level and breadth of stakeholder and consumer engagement on an ongoing basis. We will include a firmer proposal on the ongoing role of our stakeholder group in the December version of our business plan.

## 2.9 Group feedback

The following section details the information we presented to the group and the feedback they provided on those specific areas. Many actions came out of these meetings for the ESO to help us drive and deliver our business plan and to best demonstrate sufficient engagement, consumer benefit and industry feedback. All of the group's feedback was taken into account at the appropriate time in the development process. Many of the actions were to provide further information at a future meeting for the group.

In this section, we have also provided more detailed feedback from the group following our first draft business plan submission in July, the associated changes that were made for our October submission and ERSG's feedback on a draft version of this October business plan submission. These can be found in the subsequent tables.

The table below provides the current view of where ERSG agrees or disagrees with our proposals and why. Where ERSG has provided support with conditions, we set out our response in the fourth column. Further detail is provided in later tables that show how we have responded to all of the feedback we received from our Stakeholder Group.

<b>Business plan chapter</b>	<b>Stakeholder Group position</b>	<b>Comments</b>	<b>ESO response</b>
Theme 1 Ensure reliable, secure system operation to deliver electricity when consumers need it	Support		
Theme 2 Transforming participation in smart and sustainable markets	Support with conditions	Group agrees that action should be taken on codes and Capacity Market arrangements but questions whether it is the ESO's place to	Our final proposals take into account the ERSG and other stakeholders' feedback on our proposed role. As a result, we have removed the proposal to

<sup>19</sup> <https://www.nationalgrideso.com/about-us/business-plans/future-planning-2021-onwards/have-your-say-on-our-future-plans/eso-riio2-stakeholder-group>

		do this, and whether these decisions will be taken elsewhere.	manage the Capacity Market Rules. The Theme 2 chapter, Transforming participation in smart and sustainable markets, in the main document provides more detail on how we have responded to stakeholder feedback. Our proposals in relation to codes are to change how we carry out our current role, rather than to take on a new role.
Theme 3 Unlocking consumer value through competition	Support with conditions	Important and worthwhile proposals which are heading in the right direction. The group feels that the ESO is not committed to delivering the Competitively Appointed Transmission Owner (CATO) model and that this section is very weak. Also unsure whose role implementation of the Security and Quality of Supply Standard (SQSS) should be (TOs or ESO), and whether it is the ESO or relevant TO who has the primary responsibility for standards being met.	We are committed to competition in transmission – ‘competition everywhere’ is one of our success criteria. As required by Ofgem, our proposals for CATO will be in a separate early competition plan rather than the business plan – Ofgem’s open letter <sup>20</sup> published on 24 September provides more details. The Theme 3 chapter, Unlocking consumer value through competition, sets out more details on how we have responded to stakeholder feedback on our SQSS proposal. We will also clarify to ERSG separately our views on responsibilities in relation to SQSS as we do not feel this fits comfortably in the business plan.
Theme 4 Driving towards a sustainable whole energy future	Support		
Open Data unlocking zero carbon system operation and markets	Support		

<sup>20</sup> <https://www.ofgem.gov.uk/publications-and-updates/electricity-system-operator-s-early-competition-plan-letter>  
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Technology underpinning our ambition	Support	There has been an attempt to react on feedback but more improvements could be made. More information required on the consultation and engagement with academia which is an important part of innovation. Market collaboration should also play a larger part in innovation.	Since receiving this feedback we have further developed the Innovation at all levels of our business chapter to address these points. Our proposals for innovation in RIIO-2 include additional resources to enhance collaboration with academia and market participants.
Leveraging value from shared functions	Do not support	Hard to justify why dedicated teams in shared functions are not a part of the ESO. This model must be fully transparent and there must be assurances that there are no potential “leakage points”.	The shared services model means each National Grid business benefits from economies of scale and use of expertise in each area. This creates efficiencies for each National Grid business, as it costs less than each business having its own functions. We make sure that each National Grid business pays a fair share of the costs of these functions, using the transparent unified cost allocation model (UCAM) approach agreed with Ofgem. Allocations are reviewed annually to make sure these are fair, robust and have not been affected by changes to business activities. More information is in chapter 13, Leveraging value from our shared functions. Chapter 11, Technology underpinning our ambition, sets out more specific information on our IT operating model, including the role of the Head of IT for the ESO.

Driving focus on customers and stakeholders	Support	Quality of information provided on feedback from customers and stakeholders and how this has been reacted to is high.	
People, culture and capability	Support	The People, culture and capability chapter shows the company's understanding of current culture vs. where they need to get to. Could still add additional detail on change management aspects.	We will provide additional detail on change management capability to deliver our RIIO-2 proposals in our December business plan.

Table 2 ERSG position on business plan sections

The group provided detailed feedback on our July draft business plan submission, which is below. The references are to that version of the business plan, rather than the plan this annex accompanies. We have not replicated this for their feedback on the draft October business plan as their feedback was not focused on the Themes in the main and is covered by the detailed actions table.

### 2.9.1 Stakeholder engagement:

The group felt that enormous detail of stakeholder feedback had been captured and well threaded throughout the document. They felt the ESO had taken on feedback from different voices in industry and reacted well to the divergent insight and feedback.

The group thought it was good to see the ESO reviewing secondary material and not relying on its own engagement activities and consultations.

The group also supported the ESO's approach to direct consumer research in reviewing the relevant research that is in the public domain. They thought we had made good progress towards this but would like to see a wider range of engagement as they feel it is largely driven by industrial and commercial stakeholders.

The table below outlines the more detailed comments received from ERSG and how we have responded to this feedback.

### 2.9.2 Theme 1:

Overall the group felt that our ambition was clearly laid out, and it is clear what the ESO want to achieve by 2025. They thought that there was good evidence of stakeholder engagement particularly through sections 4.1 Overview, and 4.3 Training simulators. They thought the justification for the digital twin was strong, but more could be done to show external support for it.

The group thought that our cost and benefits in some areas could be more clearly presented. Also, that some of the justifications could be better detailed so it was easier to understand the breakdown of costs, and when they occurred.

The group felt that in some cases our language was quite generic and focused on what we want to achieve, rather than what will be done to achieve it. They questioned whether we would be able to deliver what we had set out to achieve, as we had not explained what needed to be done or the risks associated with delivery.

Another point the group made was on the culture of the company to transition away from an asset-based organisation into an environment that changes daily, noting the significant change needed and difficulty in doing so. On this point, the group felt it would be good to see organisation charts of the how business is now and how it expects to be, to help clarify reporting lines and governance.

The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.3 Theme 2:

Overall the group thought the deliverables are clear in this area, and they liked that progress can be easily measured against what is proposed to be achieved. They thought the rationale behind it is well articulated but thought some of the timelines would be challenging.

The group questioned some of the activities related to markets and whether they were transformational or should be an evolution of what we currently did. They felt that there was no clear justification of what was different and they thought this was unambitious. They also thought we needed to better understand how to create a market and get players involved.

The group noted many proposals in this area are not within the ESO's remit to propose and will be decided upon by external reviews and decisions by Ofgem and BEIS.

They thought the benefits were articulated within the narrative but could better explain how the total is reached from each activity.

The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.4 Theme 3:

The group felt the title for this section could be changed as it is not reflective of the contents, however they believed what we wanted to achieve in this area is good and had the potential for us to stretch our thinking further.

They felt there was more detail needed around the CATO proposals, with supporting narrative and justification of how there is no conflict of interest. When CATO was discussed again at the September meeting one member of the group felt that the ESO is not committed to delivering the CATO model and that this section is very weak.

Where the plan mentioned tools for probabilistic analysis, it was questioned whether the TOs and SO both needed to spend money in this area; responsibilities seem blurred.

The group felt that we reacted to the challenges that were given around the *Network Options Assessment (NOA)* content appropriately and they are in favour of the proposals. They thought if we were to remain technology agnostic, this would not fit with our ambition.

They also wanted more clarity and ambition around the direction we want to take the SQSS in and also discussed whether primary responsibility for meeting it sits with the ESO or TOs. This was discussed again at the September meeting.

It was noted that clearer deliverables and targets would be useful to see clearly what would be delivered and when in the five-year RIIO-2 period.

The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.5 Theme 4:

The group felt that stakeholder feedback has been well evidenced in this section and it was fairly clear where it had been acted on.



There was some disagreement amongst the group about the role the ESO should take in leading the debate. It was discussed and clarified that we should be providing recommendations as an expert however they wondered if we had the resource to do so.

They felt the whole system approach is set out well but was not sufficiently justified. The group disagreed on whether the ESO should adopt a more facilitative role or be providing direction and leadership.

There is further information needed on the costs and when they are spent, alongside clearer justification of the benefits which have the potential to be high. The group wanted to ensure there was no double counting.

The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.6 Technology underpinning our ambition:

The group felt the ESO had taken on previous challenges they made on this section and had acknowledged how important it is.

The group had some concerns over the governance of IT and whether the wider National Grid group was leading this, or the ESO; they didn't feel it was clear. There was discussion on whether the ESO really understood the implications of the proposals and what it means to take on the role they are setting out. Becoming more IT and platform-driven would require expertise and leadership within the ESO, and a question was asked if the ESO would have a Chief Information Officer as part of the leadership team.

The group said more information needs to be given around the Design Authority, detailing how it will be resourced and how they will get the right people involved. The group stressed the importance of having people in house who can understand and design what is required. They would like further information on how this transition would be managed.

The group like the confidence this section gave in the ESO being able to externally procure and internally build elements. They would like to see the strategy between procuring externally and building in house and what things should fall under each. Some of the group also had a concern about procurement being a shared service rather than directly in the ESO.

The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.7 Innovation at all levels of our business:

The group thought there was a lack of focus in this chapter. They thought the plan seemed focused on big innovation and missed micro innovations. They were unsure if this section was to ask for more innovation or explain the strategy.

The group felt the eight-year timeline was not fit for purpose as new initiatives would be obsolete by the time they are put into practice. They also wanted to understand why benefits are too difficult to calculate.

The group felt there was a lot of innovation discussed throughout our business plan and detailed in the timeliness and practising of delivery well however, this was not evident in the Innovation at all levels of our business chapter.

The group would like to see more on previous projects and their current positions. They would also like to see more evidence of stakeholder engagement and what has been done as result of the feedback. The table below shows the changes we have made to our October business plan as a result of this feedback.

### 2.9.8 People, culture and capability:

The group felt this section did not describe adequately what capabilities are needed within the business as well as the softer skill requirements. They would like to see how the balance of capabilities change and how that will be resourced.

The group felt that we hadn't addressed the cultural change required within the business to deliver our proposals. The group would like to see a current understanding of how people feel in the business as result of efficiency savings and legal separation noting the impact this has on culture such not be under-estimated. They would also like to the ESO to show an understanding of how and why they will need to change.

The group felt that recruiting 250 new people in a year was a huge jump and noted the HR budget is not in line with that. They wondered if we had thought of the wider implications on office space, etc.

The table below shows the changes we have made to our October business plan as a result of this feedback.

## 2.9.9 September ERSG Meeting

### Overarching

#### ERSG Feedback

#### What have we changed as a result of this feedback?

The company needs to be absolutely clear on policy dependencies of the business plan proposals and the timing of them. The group thought that the role of the ESO is to inform, enable, and facilitate.

We have clarified in section 7.2 of the Theme 4 chapter, Driving towards a whole-energy future, in our Lead the Debate section, that we will work with BEIS to facilitate timely development of its clean heat strategy, providing key inputs from a whole energy system perspective. We have also set out that our *FES* activity analyses the uncertainty and impact of policy, but the work itself has no specific policy dependencies. (Ref: 7.2 Leading the debate: providing energy analysis and market insights to drive the energy transition)

We have highlighted in Annex 2 – Cost benefit analysis (CBA) report where benefits are dependent upon specific regulatory decisions or activities.

The group considered that the narrative, particularly in Theme 1, was focused on the increase in FTE but that the evolution of capex year on year was less well explained.

We have split out the control centre architecture and systems cost justification into separate sections detailing evolution of capex and evolution of FTE (Section 4.2.3 in the Theme 1 chapter, Ensure reliable, secure system operation to deliver electricity when consumers need it). This also cross-refers to our IT investment summaries.

There is an assumption in some areas we will be getting new roles e.g. code manager and Capacity Market Rules. The group would like to see the contingency on what we will do if do not take responsibility for them.

We have removed our proposal to take ownership of the Capacity Market Rules. Our code manager proposal is evolving how we undertake a role rather than taking on a new role. If we did not become a code manager, we would continue to administer our codes in the same way as we do today.

The group wanted to see more collaborative language within the business plan on how we will work with others through our proposals.

We have reviewed and amended narrative across our plan to demonstrate where and how we plan to work with other parties to

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## Overarching

### ERSG Feedback

### What have we changed as a result of this feedback?

deliver our proposals and support some of their activities. We will undertake a further review of the tone for our final plan.

Further on collaboration, some members felt that in some areas the company was proposing to take over activities undertaken by other parties. There was a suggestion that it would be useful to have a clear map of the industry and who is responsible for what.

We will consider whether an industry map is required in our final business plan.

When reviewing the Leadership structure, the Group asked why there was no form of Change Management role. They believe this needs clear accountability and would like to understand where this sits.

We have recognised the importance of managing change in section 3.5 Delivery confidence and will further respond to this feedback in our final business plan.

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## Stakeholder engagement

### ERSG Feedback

### What have we changed as a result of this feedback?

Change figures in the Consumer willingness to pay section in chapter 2, A plan informed by our stakeholders, to references to people being willing to pay more for activities (rather than a specific number).

This has been changed in the business plan.

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## Deliverability of the plan

### ERSG Feedback

### What have we changed as a result of this feedback?

The group wanted to see proposed deliverables and delivery dates presented more clearly, particularly on what will be delivered in the next two years. They suggested something like a milestone chart.

We have included delivery roadmaps in each Theme chapter to show the key delivery milestones over the RIIO-2 period.

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<p>The group wanted to see more narrative on how we will manage the significant level of change associated with delivering our plan, including the governance around it. This was particularly in relation to the culture, people and capability changes.</p>	<p>We have recognised the importance of managing change in section 3.5 Delivery confidence and will further respond to this feedback in our final business plan.</p>
<p>The group wanted to understand to what extent the business plan has been a product of development from teams across the company versus the output of a single project team. The group asked whether management from across the company is committed to delivering the level of change required.</p>	<p>We will respond to the group directly on this feedback at our next meeting but can confirm the business plan has been developed by the teams who will be responsible for delivering it, with support from a project team.</p>
<p>One member noted that in recent engagements with the company they don't seem to have enough staff to do the job and that redundancies don't seem strategic. They wanted to ask specific questions on this area at the next meeting.</p>	<p>We will respond to the group directly on this feedback at our next meeting.</p>
<p>The group asked how the company is aligning and working with other parties in the industry such as TOs and DNOs to deliver some of the proposals and how they fit with the ambitions of those parties (for example for the connections and NOA proposals).</p>	<p>We have engaged with TOs and DNOs on our proposals through the ENA, bilateral meetings and engagement events, and we know that we need to work collaboratively with these parties to deliver efficient outcomes for consumers. We have added narrative across the Theme chapters of our plan on how we have, and will, work with DNOs and TOs going forward.</p>
<p>The group considers that the company should be an enabler in the industry but thought that some sections of the plan, for example the connections section in the Theme 4 chapter, came across as more controlling.</p>	<p>We have reviewed the connections section of our plan and have added to the narrative, particularly in Theme 4 Driving towards a sustainable, whole-energy future, section 7.3.3 Transformational proposals around how we will work with network parties to deliver a better service for customers.</p>
<p>The group said we could do more to bring out our commitment to delivering proposals set out for CATO in Theme 3 and thought this section needed more focus.</p>	<p>Following a request by Ofgem to deliver an Early Competition Plan proposal in its' RIIO-2 Sector Specific Methodology Decision</p>

and further consultation – Electricity System Operator<sup>21</sup>, this will be developed separately to the RIIO-2 business plan and therefore our proposals in this area have been removed from the plan.

**Efficiency of costs**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

The group requested that the company revise the costs and efficiencies chart in chapter 3, Assumptions underpinning our plan, to make it clearer which costs are as a result of changes to the energy landscape that mean it will be more expensive just to carry on what we’re doing now.

We have updated the chart and the commentary to explain that the cost increase is driven by investment in ongoing IT costs, namely cyber security and digital risk measures

The group asked the company to include a waterfall diagram to demonstrate where costs have gone up and down.

We have added waterfall diagrams to chapter 9, Cost movements between RIIO-1 and RIIO-2, of our business plan.

The group questioned how the company was setting itself up for the level of IT investment set out in the business plan from year one of RIIO-2.

We have added to the narrative on our delivery approach to IT investment in section 11.5.2 of chapter 11.

The group asked the company to be clear on whether the benchmarks for efficient spend are against today’s values or when the spend is planned.

The IT cost benchmarking has been undertaken using our proposed costs in RIIO-2 as set out in section 11.6 of chapter 11. The shared service cost benchmarking used 2020/21 costs and we have clarified this in chapter 13.

The group asked the company to include an assessment of our proposed activities against alternative options considered in the cost benefit analysis.

The options that we considered for our proposals but discounted have not been subject to cost benefit analysis in the same way as the proposals included in our business plan but we will consider

<sup>21</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2\\_sector\\_specific\\_methodoloy\\_decision\\_-\\_eso.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodoloy_decision_-_eso.pdf)

	how we could present some of the options analysis in our final plan.
Include an assessment of avoided bill increase as a result of our proposals if possible (rather than just the total amount on the consumer bill).	We have added the avoided bill increase in section 1.1 of chapter 1, Introduction and context of our business plan.
Put figures or ranges against the major benefit component bullet points on page four of executive summary of the plan.	This has been added to the plan.

### Theme 3

#### ERSG Feedback

#### What have we changed as a result of this feedback?

The company has not changed the title of Theme 3 'Unlocking consumer value through competition' in accordance with previous group feedback.	We have decided to retain the current title for Theme 3 as we want to be consistent with our RIIO-2 Ambition document and our July draft plan. We consider that the content is clear that it is about networks and we have included clarification that competition in markets is included under Theme 2 Transforming participation in smart and sustainable markets.
The company has not understood the challenge on responsibility for ensuring SQSS are met – i.e. where you have an independent SO and TO who is responsible for ensuring security across the entirety of the system?	We will respond directly to the group on this feedback. We think that the ESO and TOs have joint responsibility for delivering compliance with the SQSS.
The group reflected that to assume there would be no CATOs until RIIO-3 was not ambitious while recognising that the activity is contingent upon legislation. The group thought that the company lacked commitment to delivering onshore competition.	We have removed the CATO proposed activity from the Theme 3 chapter as we have been asked by Ofgem to develop an Early Competition Plan, as a separate proposal.
With respect to the proposal to develop the end of life assessment process in the NOA, the group questioned whether we had engaged with TOs sufficiently.	We have added more to section 6.2.3.2 in the Theme 3 chapter to clarify that we have undertaken some engagement and will continue to engage with TOs on the development of this

proposal. We understand that there is an interaction with the TO business plans.

## Metrics

### ERSG Feedback

### What have we changed as a result of this feedback?

The group asked the company to consider whether transparency over its' control room decisions in relation to carbon intensity will be made sufficiently transparent through current and proposed data availability or whether something more is needed.

We are reviewing this for our final plan but information on the carbon intensity of control room actions will be addressed by our Open Data proposals rather than by a performance metric.

The group asked if there should be a metric or more transparency on whether we get what we were offered by participants in the balancing market.

We will consider and engage with stakeholders on this further for our final plan.

Clarify the metric in section 7.4 in the Theme 4 chapter

We have clarified and updated this metric in our October plan but we will engage further with stakeholders on metrics in October and finalise these in our December plan.

In respect of Themes 1 and 2 the group questioned whether the rationale for choosing one asset over another for balancing purposes is already covered by our proposals on transparency of decision making.

We discuss transparency of decision making in our Open Data proposals in the Open data unlocking zero-carbon system operation and markets chapter.

## Technology underpinning our ambition

### ERSG Feedback

### What have we changed as a result of this feedback?

The group asked the company to include a summary of all 33 IT investment lines and their cost, adding up to the total investment.

We have added a table to Annex 4 – Technology investment report.

Clarify how or whether we will be offshoring any of our IT delivery.

We have clarified in section 11.5.2 Delivery approach that we offshore supporting capabilities across our projects delivery and



	ongoing support activities. This encompasses capabilities such as development, testing and third line support.
Include some narrative on how we will ensure we get value for money in our IT delivery contracts.	In section 11.5.2 Delivery approach we discuss how we have recently run a competitive tendering process that has enabled us to achieve a market-tested commercial agreement across multiple suppliers to support our application development and maintenance activities.
At this point can we be clear on what IT projects we'll outsource and insource? Can we either provide specifics on each or a higher-level narrative?	We have added to the narrative on this in section 11.5.2 Delivery approach.
It would be good to understand more about our model for sharing risks with suppliers.	In section 11.5.2 of the Technology underpinning our ambition chapter we have added some information about our framework contracts and risk sharing approach.
Expand on the narrative on how the shared services model works and why we think that's the best approach and won't constrain delivery of the business plan.	Changes have been made to chapter 13 and in chapter 15, People, culture and capability.
Make the narrative on us using Ofgem's approved methodology for apportioning costs for shared services, including IT, more explicit.	The allocation model is explained in chapter 13 and more detail on the IT component is set out in chapter 11.
Set the interdependencies of the proposed IT projects out more clearly.	We will consider how to present this most effectively in our final business plan.
In Theme 1, there is an assumption the reader is aware that the ESO can't continue with the current IT systems and why there is a need to spend money on new systems	We have reinforced our narrative in section 4.2.3 of the Theme 1 chapter to deliver electricity when consumers need it to explain the rationale for new investment and that our current systems will become obsolete. We explain that upgrading legacy systems will not enable us to meet our ambition.

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**Innovation**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

The group would like to see more information in chapter 12, Innovation at all levels of our business, on how we expect to work with academia and other third parties and how we will encourage industry collaboration.

We have set out more clearly how we expect to engage and work with third parties in section 12.2.2 of chapter 12.

Better explain our proposals for additional innovation funding and how this relates to a pass-through funding model.

We will look to address this action in our final business plan.

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**2.9.10 July ERSG meeting**

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**Overarching**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

A general comment was raised during this discussion that some of the group are unsure that ESO can deliver what is written. It feels like it could be more complicated than they can achieve.

This has been covered in our Delivery confidence section 3.5.

The group feel that the business plan could not actually be used to run the business. The document feels like it's more of a demonstration to Ofgem of how much is going on, more detail is needed on how these things will be done. More frankness about the challenges that must be faced is needed.

Underpinning the plan is a more detailed set of internal delivery plans. The business plan needs to be kept at an appropriate level so that Ofgem and stakeholders can understand what we propose to deliver and why our costs are efficient.

How the company will get to where it needs to could be better demonstrated by describing the starting point followed by the required activities to get you to the end point. This is critical in order to get approval for chunky investments as Ofgem will need robust justifications.

This should now come out more clearly through the Theme chapters with the inclusion of more information on our ongoing activities and costs alongside our proposed new transformational outputs.

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## Overarching

### ERSG Feedback

### What have we changed as a result of this feedback?

It would be really helpful to have an organisation chart so that lines of reporting are clear as well as ESO-SO-group interactions. This will give clarity around how decisions will be made. This is a common expectation for writing a business plan. Vision statement, org structure and reporting into Board arrangements.

This has been added to this October version of our business plan.

Bring as much specificity into the Theme chapters on who provided stakeholder feedback and the extent of support there was for particular proposals.

The narrative has been updated in all chapters and the types of stakeholder who gave specific feedback have been incorporated.

There is no description of risks from an organisational and operational perspective. This could be addressed by a sort of SWOT analysis approach.

We have now added section 3.5 Delivery confidence – which considers the high-level risks to the delivery of the business plan.

It was felt that the sections got weaker as you work through the document.

The document has been updated throughout to enhance the robustness and narrative, as well as the consistency.

Provide a red line version of the October business plan for the September ERSG meeting.

Due to the significant level of change we were unable to provide a red line version so provided a detailed table of changes.

Be clearer on our role in society.

This is currently work in progress.

Set out how we will resource the sharp increase in headcount over the first two years - give confidence we can do it.

This has been covered in the following sections:  
 - 15.2.2 Our estimated future people profile  
 - 15.4 How we will attract and retain our talent.

Explain in the foreword that the business plan has been written during a period of great uncertainty and list some of the issues associated with this.

The narrative has been updated to incorporate this.

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## Stakeholder Engagement

### ERSG Feedback

### What have we changed as a result of this feedback?

You need to demonstrate you have consulted on the business plan as a whole.

This will be addressed via our planned stakeholder event on 2 October 2019.

Continue to understand consumer views through the most appropriate means as thoroughly and often as possible.

Further engagement and research has taken place and has been included in the report to demonstrate our understanding of consumer views. You can see this in section 2.5 Understanding consumer views.

As engagement develops in RIIO-2, efforts should increase to engage a wider range of stakeholders.

We have included a more detailed view of our strategy in RIIO-2. This can be found in section 14.1.1.

Give the appropriate weighting to each engagement to ensure that industry engagements are not dominant.

We have captured other feedback and described where feedback has come from at a granular level. We have also presented a view of the proportions of stakeholders involved in our engagement overall and at each event.

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## Theme 1

### ERSG Feedback

### What have we changed as a result of this feedback?

More detail is required on the digital twin.

The narrative has been updated to provide further information on the architecture and systems we proposed to develop and the benefits of this. The investment roadmap has also been updated. These can be found in the Control Centre Architecture and Systems section 4.2. We have updated the narrative around the other options considered, including the pros and cons. This is in Annex 2 – CBA report (it was previously in the main narrative).

IT investment summaries have also been created in Annex 4 - Technology investment report that provides

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	<p>more detail around the specific IT investments we propose to make, including why they are needed, stage of development and the costs.</p>
<p>Some members questioned if the net benefit was a good return given the cost. Further justification is needed and to be able see the scale and range.</p>	<p>We have updated the benefits case for Theme 1 and included in the narrative that we see the Theme 1 proposals as unlocking the benefits in the other Themes. We had a range already, and this will also be in Annex 2 – CBA report.</p>
<p>On page 37 of the July business plan, the pie chart shows a capex spend over five years. The pie chart on page 37 needs to give more detail so it can understand what capex expenditure is being referred to.</p>	<p>In the July submission, we provided costs in two ways for each Theme:</p> <ul style="list-style-type: none"><li>1) the total transformational opex, the total transformational capex and the total ongoing costs;</li><li>2) the total opex and capex split per year. Additionally, the CBA report broke down the transformational capex and opex per year for the relevant areas.</li></ul>
<p>On Page 38 the bar chart shows the evolution of costs over a period and it provides a reasonable overview but is of limited use as it isn't clear what costs and expenditures are being incurred and when.</p>	<p>In the October submission, we have provided:</p> <ul style="list-style-type: none"><li>1) granular costs tables with opex, capex and FTE per year for each activity group;</li><li>2) costs per year for each investment, in the IT investment summaries.</li></ul>
<p>More detail is required on the digital twin.</p> <p>The way that costs and benefits are presented could be improved and further justification for preferred options could be given.</p>	<p>An updated benefit methodology is also in Annex 2 – CBA report, but we have pulled out the high-level calculation steps in the cost-benefit analysis section for each group of activities. This will also include the pros and cons of different options we have considered.</p>
<p>It would be useful to break down the costs of the digital twin to show when components are going to be invested in and paid for.</p>	
<p>More granular information is needed on the activities for expanding the control infrastructure. The language is quite generic and does not focus what will be done to achieve this.</p>	<p>The control centre architecture and systems narrative and timeline seeks to address this. We have included more detail on the capabilities we propose to develop and how they fit together. This information is in the</p>

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	Control centre architecture and systems section 4.2. The IT investment summaries will also provide further detail.
Section 7.3, Training simulators, mentions working closely with universities. The ESO should reference work being undertaken by BEIS, Department of Education and academics and link in with the discussions to show that they are aware of industry developments when talking about working more closely with universities to get the skills required.	In the section 4.3 Control centre training and simulation, we have outlined our discussions with academics and how these have helped shape our proposals.
Highlighting how the digital twin is an enabler to operating in a new world and using the stakeholder feedback you have been given would be good to evidence this proposal further.	This is picked up in the Control centre architecture and systems narrative section 4.2. We have referenced reports from the National Infrastructure Commission and the Energy Data Taskforce that highlight the benefits of digital twins.
Wording for rationales could be updated to better reflect how stakeholder feedback has been taken into account.	The narrative has been updated to show how stakeholder feedback has shaped the proposals.

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**Theme 2**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

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Concern over overlap between RIIO-1 and RIIO-2 activities, can't clearly see the difference.	An investment roadmap has been created with RIIO-1 activities leading to RIIO-2, and we have included a much better description of this.
Would like to see further explanation given on sandboxes and why the use of these is expected to speed things up.	We have added a call out box that shows it is an approach across all the markets activities rather than a standalone deliverable and we have provided more clarity on what it actually is.
Overall total benefits and individual activities benefits did not add up and need further explanation.	The cost and benefits have been refined and reviewed for October. An updated benefit methodology is in Annex

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	<p>2 – CBA report, but we have pulled out the high-level calculation steps in the cost-benefit analysis section for each group of activities. This also includes the pros and cons of different options we have considered.</p>
<p>The group questioned whether the information on markets is transformational. More clarity is needed to explain this activity.</p>	<p>The narrative has been updated in Theme 2 with further explanation on what this proposal seeks to achieve. It also highlights service providers told us through our extensive stakeholder engagement that this will transform the experience and significantly improve the efficiency of market participation for them.</p>
<p>Many of the proposals in this section aren't entirely for the ESO to decide. There was also mentions of external work that was ongoing that would be good for the ESO to be aligned with,</p>	<p>The narrative has been updated in Theme 2 with further explanation provided in to show alignment with other activities: We are conscious that there are multiple ongoing BEIS and Ofgem activities in relation to EMR (e.g. Five-Year Reviews of the Capacity Market) and we will continue to ensure there is co-ordination and consistency with these activities.</p>
<p>Asset register mentioned in this section but feels far off in terms of development.</p>	<p>We will continue to develop our understanding of the asset register that underpins the single market platform and how it will interact with our proposals.</p>
<p>There needs to be further demonstration that the company understand how to create a market but also how to ensure that players turn up to it. How to stimulate interest etc. What are the external dependencies which will drive the direction that we go in? What is the existing plan dependent on, where is further clarity needed?</p>	<p>New market characteristics and market platform all explicitly talk about removing barriers and attracting new players</p> <p>The plan is dependent on delivery of the milestones in the updated delivery roadmap included in this submission.</p> <p>In addition to the points above about how the market platform will reduce barriers to entry and therefore encourage more participants, the closer to real time</p>

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markets and reduction in minimum participation size will encourage participation as evidenced in section 5.2.3.

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**Theme 3**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

Consider changing title to reflect chapter covers planning and competition.	The decision was made to keep the title as it is to emphasise the importance of the principle of competition.
It was asked that the term technology agnostic is defined in the glossary.	This term has been added to glossary.
It was asked who is responsible for delivering SQSS, as there is a lack of clarity between the TO and SO. More clarity and ambition around the direction that they want to take the SQSS would be useful. View that SQSS should sit with ESO, to allow for more competition.	We have clarified that we will lead the review and agreed the scope with TOs. This can be found in section 6.3 Review of the SQSS.
The group felt more detail is required for the CATO proposals.	The narrative has been updated to explain that details will be included in the separate Early Completion Plan - section 6.4 Supporting the design and delivery of an early competition plan.
The group thought it would be good to have a section on probabilistic analysis and who should be spending money, the ESO or TOs	We have included probabilistic modelling as one of our areas of investment - section 6.2.3.4 Enhance our analytical capabilities. Our investment is not contingent on TOs also making an equivalent investment.
When the CATO arrangements have been discussed the ESO says there are no conflicts of interest for them but from the outside it does seem that there would be conflicts.	We have further reviewed this, reiterated our independent position and will address issues of conflicts of interest under the early competition plan - section 6.4 Supporting the design and delivery of an early competition plan.



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The group felt there needs to be a more coordinated approach for planning the offshore grid, and this is not mentioned in the plan.

We have incorporated this within our ongoing activities - section 6.2.2 Ongoing activities.

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The costs in this section are not explained in any detail. Costs for extending the *NOA* are allocated to three different areas. This might be sensible but it isn't clear if it is due to lack of detailed justification.

We have re-presented our costs to provide greater detail on their justifications and how the associated benefits will be achieved throughout the narrative - section 6.2.3.1 Implement and enhance competition to enable all solution types to compete to meet transmission needs.

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Could there be some more information on plans to unlock areas of the network where any further connection is not possible, e.g. South Wales?

The existing *NOA* carries out an annual cost benefit assessment of strategic investments to recommend whether it is advisable for network investment to take place.

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Targets and deliverables are a bit vague. What will actually be delivered within the five years?

We have developed a detailed timeline chart setting out the key milestone dates and reflected this in the narrative across the Theme.  
We have also incorporated some proposed metrics - section 6.5. We set our targets as part of the *Forward Plan* process with Ofgem.

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**Theme 4**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

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In section 10.1 there is a lack of clarity in the language used in what the ESO sees their role to be in leading the debate. ESO's role in this respect needs to continue to be discussed with stakeholders.

We have engaged further with stakeholders to test the proposed policy development role. We have reflected their views and clarified what we see our role as being alongside others in the industry and existing policy makers. See section 7.2.

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The business plan should clearly highlight where more direction or clarification is required from Ofgem and BEIS, in order to achieve the targets.

We have now proposed some metrics and will set targets as part of the *Forward Plan* process with Ofgem. This can be found in sections 7.1 - 7.4, Metrics sub sections. We have noted Ofgem's recent publication on Distribution System Operation (DSO) and have articulated that our proposal is consistent with their least regrets approach to this work.

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The ESO has a powerful role in the decarbonisation debate and should be signposting what needs to be done if we want to meet the targets. Still feels like their sense of their role in society isn't clear.

We have highlighted in this and other Themes how we will enable the UK to transition to a zero-carbon electricity system by 2025 and help it fulfill its net zero emissions commitment by 2050. This can be found in the five-year strategy section.

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In section 10.3 and 10.4 the activities described are not clearly laid out and this could be improved.

We have reviewed and applied a revised structure to these sections for clarity and for consistency with the preceding ones. These now set out our ongoing activities before detailing the transformational proposals, including their overall benefits, cost details and metrics. This can be found in sections 7.1 - 7.4.

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There needs to be more information on costs. It would be useful to understand why costs are peaking in 2023-24 and to have each year broken down by deliverable.

We have developed a timeline chart, setting out our key deliverables. We have expanded on the proposed costs, highlighting what the additional FTEs will be doing and where efficiencies are expected from improved processes and systems. This is reflected across our narrative on our proposed transformation activities. 2023/24 is the start of RIIO-ED2 so costs are forecast to increase in line with increased delivery of DSO tools and processes. Our revised assumptions now see costs increasing further through RIIO-2 as cross vector considerations advance to delivery timescales.

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The structure of the chapter is confusing. Need to move section 10.5.3 earlier in the document as it sets ESO approach to DSO transition.

We have moved the text to earlier in the section as suggested. It has also been updated to reflect Ofgem's recent publication on DSO.

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There is some confusion caused by the terminology used in this section. Whole energy system vs whole system vs whole electricity system.

We have clarified what we mean by whole electricity system - section 7.1 Whole Electricity System Outcomes. We have reviewed the section to better clarify when we are using whole energy system and whole electricity system terms and introduced them separately as suggested.

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Potential benefits are very high in this section and it isn't clear where it comes from as it is not obvious from the CBA, and there are potential issues with double counting. There is no direct cost or benefit attached to the enhanced advisory role, it's implied but not brought out.

We have reviewed and recalculated all our CBAs, ensuring they are appropriately attributed to the proposed activity and that there is no double counting. Only qualitative benefits will be attributed to our proposed role to support policy development in section Leading the debate – section 7.2.3 Transformational activities.

---

In section 7.4 there is a recognition that more collaboration is going to be important which is welcome but activities seem to plan to give more power to the ESO and less to the DSO. ESO may need to adopt more of a facilitative role as the system becomes more decentralised.

We have set out what our resource and funding expectations and assumptions of TOs and DSOs are, to support a more coordinated approach to delivery of non-network solutions to system needs (detailed in Theme 3).

We have also developed a detailed timeline of our proposed key deliverables for enhanced coordination, taking into account RIIO-ED2 timescales and known existing planned activities, such as establishing connections portals.

We have expanded on how we will co-ordinate our role with TOs and DNOs in respect to delivering whole electricity system outcomes and in network access planning. This is referenced in section 7.1 Five-year strategy, Whole system outcomes, and in section 7.5.

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This is to enhance the Network Access Policy (NAP) process with TOs and work more closely with DNOs and distributed energy resources (DER) to facilitate network access. (Note that our focus is more on ways of working with DNOs as, for TOs, the SO-TO Code provides detail of how we are required to work together, whereas there is not yet a distribution equivalent).

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**Technology underpinning our ambition**

**ERSG Feedback**

**What have we changed as a result of this feedback?**

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The group stressed the importance of having people in house who can understand and design what is required. More information is required on how this transition would be managed. How will you get these people in house?

In chapter 15, section 15.4.3, we explain how we will retain intellectual property (IP) by in-housing key knowledge roles.

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Who will own the IP associated with these things?

Wherever possible, ESO would own IP unless in the benefit of the consumer for us not to.

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There is too much jargon in this section, which suggests a potential lack of understanding of the challenge. There needs to be a better articulation of the capabilities and expertise that will be needed.

More technical areas have been re-written to ensure they are understood better.

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The Design Authority section needs to explain how they will resource it and get the right people in, whilst ensuring that people with vested interests are not involved.

Terms of reference have been drafted for the Design Authority and are summarised in chapter 11. This will be further developed by testing with industry.

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The group would like to see what the strategy is between procuring externally and building in house, what things should fall under each of these?

IT investment summaries have been provided in Annex 4 - Technology investment report that provides more detail around the specific IT investments we propose to make, including why they are needed, the stage of development reached, the costs and timelines

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A general comment was made here that it isn't very clear what's part of the 2-year proposal and what's part of the five-year proposal?

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associated with them and this also includes the procurement strategy.

"The approach to architectural transition", figure 55 in Architecture approach section 11.5.3.

## Innovation at all levels of our business

### ERSG Feedback

### What have we changed as a result of this feedback?

Innovation timelines in figure 49 didn't make sense to some of the group. The eight-year timeline is not fit for purpose as new initiatives will be obsolete by the time they are put into practice. It feels as though there is a lack of focus in this chapter, it would be better to focus on a handful of projects at a time and achieve timely delivery.

More context has been given as to what the timeline represents. This is from once ideas leave R&D, not necessarily for individual projects (which may be further developed along the Technology Readiness Level scale). Also, more justification for these timescales have been given.

Themes in section 13.4. made sense but more focus on what is critical may help to speed up processes.

More explanation of why these proposed innovations are listed against the Themes is given at beginning of section 12.4 Ongoing innovation in RIIO-2.

P148 says that benefits are too difficult to calculate, why is this?

Additional justification for this has been provided, particularly why this is difficult for the ESO as most benefits are indirect and long-term. See section 12.1.3 Realising benefits from innovation.

P150 describes a central team which frees up core teams from certain tasks. Debated whether this was the right model.

More detail has been provided on the proposed team structure and reason behind a central team and embedded Innovation Leads. See section 12.2 Building our Innovation Capability.

On p152 it is not clear how the stakeholder views have been acted on. Will the feedback mentioned be delved into further for the next version of the business plan?	Stakeholder views have been added with a table showing exactly how we have responded to each stakeholder feedback action.
The chapter should reference the other innovation pieces throughout the plan to really highlight how much there is.	Section 12.4 Ongoing innovation in RIIO-2, details the proposed innovation from each chapter.
Fig 51 innovation cycle diagram ends with closing down the project and starting a new project. Not easy to tell how these are implemented into ongoing activities.	This diagram has been removed from the October business plan.
The plan seems more focused on big innovations than micro innovations.	We don't believe small, incremental innovations should be eligible for innovation funding; this should be part of ongoing activities funding processes. This frees up the innovation stimulus for higher risk, more potentially disruptive innovations.
Some confusion about whether the ESO was using this section to ask for more funding on innovation or not.	The narrative has been updated in sections 12.1.2 Investing in innovation in RIIO-2, detailing what funding is being asked for and the rationale of retaining an innovation stimulus.

## People, culture and capability

### ERSG Feedback

There is no recognition that the company is currently in a transition. It is moving away from an asset bias into an environment which is changing daily. Change managing an organisation on this size and scale is incredibly difficult. There is not enough description of what they will need to change internally and how they will achieve it. There isn't a demonstration of the organisational and cultural change that will be required to achieve all of this.

### What have we changed as a result of this feedback?

The exec summary and landscape section emphasises how the landscape is changing and how we as a company need to change with it. We have taken the feedback and strengthened the Our culture section 15.5, to ensure we have the change readiness as an organisation to enact the change required. There is also a more overarching "delivery confidence" section.

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They were interested to know more about what assumptions have been made on the performance and engagement levels of our employees, and the impacts of ongoing changes.

Culture and capability are a focus area in this version of our business plan as is our employee value proposition which will be an important lever of employee engagement.

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It was unclear to our stakeholders what kind of organisation the ESO is aiming to build longer term. For example, is the ESO going to be a procurement organisation or software company?

Today we would describe ourselves as an engineering company with commercial expertise. This question will somewhat be covered in the chapter 15. The challenge we took from the group was whether we are being too narrow minded about what the company is today. In this version of the business plan we have aimed to show how we are thinking differently about what the company needs to be by continuing as a core Engineering company with an emphasis on data analytics.

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Our stakeholders asked for more detail to be provided both on the current and target state of the following in the next submission:

- capabilities and soft skills requirements
- FTEs and Theme allocation, people costs
- culture
- office space requirements.

This feedback is reflected in our submission, where we are providing additional detail on the mentioned elements.

We have assessed space requirements and are able to accommodate the FTE increase across our existing sites.

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### Cost benefit analysis

#### ERSG Feedback

There are no details of a CBA against other options.

#### What have we changed as a result of this feedback?

We agreed that there are no other options (other than the baseline assumptions) so this has been added to the CBA report. The logic is that our own judgement or stakeholders have removed options based on their feedback and the CBA is a final check to ensure value for consumers.

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There needs to be clarity on what the costs are in each Theme. There is a lack of justification on where the expected costs have come from. All Themes have cost justification included.

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Re-work balance between CBA report and main document to avoid confusion and challenge around lack of detail.

This has been re-balanced so there is more information in the main report and an easier to understand flow in the CBA report.

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## 2.10 ERSG Meetings

The following tables provide an overview of the information we presented at each of the ERSG meetings and the feedback we received from the Group as we developed our proposals.

25 July 2018

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>Scenarios</b>	<p>The ESO presented options on how to analyse the future energy landscape, by either using <i>FES</i>, or scenarios developed by an industry party. This would form the basis of the business plan proposals. The ESO's preference was to use <i>FES</i>. They also presented the stakeholder feedback they heard to date, on the proposals and the areas of uncertainty/commonality agreed across the scenarios.</p>	<p>The group believed that:</p> <ul style="list-style-type: none"> <li>• using <i>FES</i> provided the right starting point, particularly as it went through a rigorous stakeholder engagement cycle. They noted however, there was a range of scenarios, and questioned if it would be more beneficial to have a 'best' view, or if multiple views should be formed.</li> <li>• for whichever scenario used, there needed to be sufficient flexibility to grow with the pace of change.</li> </ul>	<p>ESO to provide information on the following for the next meeting:</p> <ul style="list-style-type: none"> <li>• Description of the commonalities across the scenarios.</li> <li>• Description of the underlying analysis undertaken to this point and how it will be developed.</li> <li>• Description of key dependencies (with a focus on those areas that the ESO can influence).</li> <li>• Updated list of areas of change and uncertainty.</li> </ul>	<p>The information requested was provided at a later meeting.</p>
<b>ESO vision to outputs</b>	<p>The ESO presented the current roles and principles which were defined as part of the <i>Forward Plan</i> and asked whether it should be built upon for RIIO-2.</p>	<ul style="list-style-type: none"> <li>• The group agreed with the proposed ordering of the priorities with a strong focus on consumer.</li> </ul>	<ul style="list-style-type: none"> <li>• ESO to provide further thought to the wording of the priorities and the trade-offs between different stakeholder types.</li> </ul>	<p>The priorities were updated as result. The Consumer Priorities prefix 'I want' was changed to 'We</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	<p>The ESO wanted to ensure this fitted with the consumer and stakeholder priorities that they had shared, to produce outputs. They presented a variety of options to be taken forward.</p>	<ul style="list-style-type: none"> <li>Some suggestions were made to enhance the priorities.</li> <li>They also asked for further clarification on the definition of consumers, noting that this may not just be end users, and of stakeholders.</li> <li>Also discussed was the importance of the ESO's role in providing thought leadership around the trade-offs between the priorities of these groups.</li> <li>They agreed to the proposed approach of incorporating customer and stakeholder priorities with the roles and principles.</li> </ul>		<p>want'. The stakeholder priority 'I want accurate and user-friendly information was updated to 'I want access to comprehensive, accurate and user-friendly information.'</p> <p>The stakeholder priority 'I want transparent and stable charges' was updated to 'I want transparent and forecastable charges.'</p>
<b>Regulatory mechanism</b>	<p>The ESO:</p> <ul style="list-style-type: none"> <li>will have its own regulatory structure, and due to its unique role in industry, a new model is likely required.</li> <li>presented five potential funding</li> </ul>	<ul style="list-style-type: none"> <li>The group was interested in what these models might mean for the financeability of the organisation. They also noted that it would be hard to calibrate a completely performance-based structure, without understanding the baseline and the potential for risk of unintended consequences.</li> </ul>	<p>The ESO to consider how to further engage with the group in advance of publishing the thought piece on regulatory mechanisms and provide further detail of developed thinking.</p>	<p>A separate workshop was run in September for ERSG members to deep-dive into the regulatory mechanism work. The outputs of this workshop helped shape the thought</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	<p>models that had been explored with stakeholders and of these “performance” and “layered” were favoured.</p> <ul style="list-style-type: none"> <li>proposed to take forward these two models to develop in more detail, noting they would publish a thought piece in October.</li> </ul>	<ul style="list-style-type: none"> <li>Feedback from the members in the room and in written correspondence prior to the meeting, indicated that a layered model may be appropriate at the start, but with a view to move to performance in the longer term once baseline expectations are established.</li> <li>It was also suggested by one member, that a mix of models may be appropriate as in some parts of the US.</li> </ul>		<p>piece we published in October 2018.</p>

14 November 2018

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<p><b>SO Mission and the consumer and stakeholder priorities</b></p>	<p>The ESO presented its new SO Mission, informed by stakeholder engagement and shared the updated consumer and stakeholder priorities.</p>	<ul style="list-style-type: none"> <li>The group reacted positively to the update and felt that these were an improvement. There was however, a discussion around whether an additional stakeholder priority should be added, around being flexible and adaptive, driving innovation and through that, improving competition.</li> </ul>	<p>The ESO to draft an additional stakeholder priority to include flexibility, innovation and competition.</p>	<p>An additional stakeholder priority was added: ‘I want you to be adaptable and innovative.’</p>

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<b>Using scenarios</b>	<p>The ESO presented further work it had developed on what the future energy landscape could look like. Key areas of uncertainty were identified in a commonality scorecard, and an eight-step approach to develop options and manage uncertainty were presented.</p>	<ul style="list-style-type: none"> <li>• The group discussed that Ofgem was considering the use of a single scenario across all RIIO-2 business plans, and how these pieces of work may interact. This is being considered by Ofgem’s RIIO-2 Challenge Group.</li> <li>• The group fed back views on the scenarios posed, and some members felt that the ESO was being more passive than directive in terms of picking preferences. Some questioned if the ESO should favour scenarios that met decarbonisation targets.</li> <li>• The use of scenarios was also discussed in terms of regional differences and whether it was appropriate to feed this in.</li> <li>• Some members also sought clarification around whether the ESO was positioning itself as a top-down (command and control, national markets), or bottom-up (leave to markets, regional focus) organisation in terms of how it interacts with wider industry, and how this might affect consumer costs. The ESO representative, explained that the key difference</li> </ul>	<p>The ESO to report back to group:</p> <ul style="list-style-type: none"> <li>• The outcome of Challenge Group discussions around use of scenarios.</li> <li>• Any future views on how it works with DSOs around regional scenarios.</li> <li>• Interplay between managing longer term-costs and length of price control.</li> <li>• Potential impact of 1.5 degrees target on scenarios and ESO plans.</li> <li>• Views on ESO role as top down vs. bottom up.</li> </ul>	<p>All actions were presented back to the group at a later meeting.</p>

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<b>ESO ambition and strategy</b>	The ESO presented the forward strategy to test the key enablers and the seven principles developed to inform their business plan proposals out to a 2030 vision.	<p>between these models was complexity. In some cases, it made sense for consumers to have national, centralised markets and other more regional versions driven by system needs.</p> <ul style="list-style-type: none"> <li>Following specific discussions on the enablers, there was a broader discussion around how the principles might develop further as the ESO's role becomes more defined.</li> <li>The ESO's role in articulating, informing and implementing policy outcomes was discussed and it was suggested that this could be brought out more.</li> <li>The question around how these align with the vision of the SO across gas and electricity was raised and the ESO agreed to provide more clarity on this when discussing principles in future.</li> </ul>	<ul style="list-style-type: none"> <li>Follow up with Greg Jackson as to how the ESO could learn from other companies that use automated platforms.</li> <li>Articulate three models of data management (slider on controlling/not, what regulatory framework might be, segment customers, range of information, etc.).</li> </ul> <p>Consider:</p> <ul style="list-style-type: none"> <li>how innovation and digitisation is captured in the Theme 1 ambition</li> <li>drafting an additional enabler (Theme 2). around market design</li> <li>rewording enabler to replace "driving competition" with</li> </ul>	<ul style="list-style-type: none"> <li>Meeting took place between Fintan and Greg</li> <li>This is something we will take forward at the appropriate point in development</li> </ul>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>Whole electricity system</b>	<ul style="list-style-type: none"> <li>The ESO presented a paper identifying six key topics around driving efficient whole system outcomes. A set of sliders on where the ESO's thinking was produced, and the group debated these.</li> </ul>	<ol style="list-style-type: none"> <li>Market and information provision.                             <ul style="list-style-type: none"> <li>Discussion in this area focused around how data should be provided and how it could be used.</li> <li>The predominant view was that although data granularity was important, some analysis may also be useful for the market so the ESO may want to consider a move towards B on the slider.</li> </ul> </li> <li>Governance – framework accessibility and alignment.                             <ul style="list-style-type: none"> <li>It was felt that the ESO's positioning in this area was about right. Members expressed views about the importance of working with other code administrators and DSOs.</li> </ul> </li> </ol>	<p>phrases like "in order to ensure competitive markets" or "in order to enhance competition"</p> <ul style="list-style-type: none"> <li>how the link with gas articulated fully when discussing principles.</li> <li>ESO to provide information on the types of platforms that would be covered under topic 3 (whole system – technology – facilitating new routes to market).</li> </ul>	<p>In Theme 2 we discussed our activity to work with DNOs to ensure co-ordinated and consistent flexibility markets for needs across the whole electricity system. We also provided additional information in single markets platform and further clarification on how our platform will</p>

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		<ul style="list-style-type: none"> <li>• One member felt that open code governance should be replaced with direct ESO changes as directed by government policy.</li> </ul> <p>3. Technology – facilitating new routes to market.</p> <ul style="list-style-type: none"> <li>• It was felt that the ESO’s positioning in this area was about right and that the ESO is well placed to set out views on what platforms for facilitating routes to markets could be.</li> <li>• However, a member expressed a view about why the ESO is not currently doing this now, and questioned whether the capability existed within the ESO? The ESO agreed to come back to the group on examples of the types of platforms it was considering would fall into this space.</li> </ul> <p>4. Options development – clarifying responsibilities across the T-D interface.</p> <ul style="list-style-type: none"> <li>• The group were split about the positions in this space and</li> </ul>		<p>work with distribution markets.</p>

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		<p>recognised that there was a broader debate taking place around the T-D interface including ongoing work with the ENA Open Networks project. There was debate around local vs. national markets, and the role for regional congestion markets managed by DSOs.</p> <ul style="list-style-type: none"> <li>• ERSG members fed back on the importance of making it clear to stakeholders how these markets interact and opportunities to participate.</li> </ul> <p>5. In a highly-distributed world, what is the ESO's role in system event preparedness and response?</p> <ul style="list-style-type: none"> <li>• Members agreed that the ESO's positioning more to the Future World<sup>22</sup> A (working with DSOs) would help manage security of supply better.</li> </ul> <p>6. To what extent should the ESO tailor its approaches to regional</p>		

<sup>22</sup> [http://www.energynetworks.org/assets/files/14969\\_ENA\\_FutureWorlds\\_AW05\\_INT\[2\].pdf](http://www.energynetworks.org/assets/files/14969_ENA_FutureWorlds_AW05_INT[2].pdf)



Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		<p>differences in innovation and framework development?</p> <ul style="list-style-type: none"> <li>The group was broadly aligned in a view that there is some value in consistency and common approaches but that regional differences may need to be recognised in some cases.</li> </ul>		
<b>Network planning</b>	<p>The ESO explained how further work is taking place as to how network planning can drive more value in RIIO-2. The following four options were presented to the group. One or more could be taken forward, they are not alternatives:</p> <ol style="list-style-type: none"> <li>Expand the <i>NOA</i> to include a wider range of transmission network needs.</li> <li>Expand the <i>NOA</i> to assess more voltage levels.</li> <li>Fundamentally review the SQSS.</li> <li>Define the role of the ESO in facilitating</li> </ol>	<p>The discussions are captured per option below:</p> <ol style="list-style-type: none"> <li>It was felt that the <i>NOA</i> giving visibility to reinforcements that might be needed was useful, but it was questioned whether it would be suitable to fit alongside the connection offers process. <i>NOA</i> providing views on alternatives to end of life asset replacement was also seen to be positive.</li> <li>There was some surprise that this had been discounted as an option by the ESO, particularly because the ESO is independent in this space. There was broad agreement that more engagement should take place</li> </ol>	<ul style="list-style-type: none"> <li>ESO to undertake further engagement on expanding the <i>NOA</i> to assess more voltage levels.</li> </ul>	<p>An engagement plan was created and stakeholder views were fed back into the plan. An adapted proposal on lower voltage levels was included in the business plan as a result.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	competition in the build of onshore transmission networks.	<p>with stakeholders to consider this option further.</p> <p>3. ERSG felt that the ESO's position that a fundamental review was likely to be required was sensible given that it has been updated an improved on an incremental basis over the year.</p> <p>4. There were some strong views expressed that this was an area which the ESO should pursue vigorously.</p>		
<b>Codes</b>	<p>The ESO presented four options that could be considered for its role in codes during RIIO-2. These included:</p> <ol style="list-style-type: none"> <li>1. Continue as Code Administrator for the codes it already administers today.</li> <li>2. Step up to a new role as Code Manager for the codes it administers today.</li> <li>3. Step away from the current Code Administration role.</li> </ol>	<ol style="list-style-type: none"> <li>1. A number of members expressed views that current code governance arrangements were not fit for purpose however, there were different views on how these issues could be addressed. Some ERSG members felt there was some mileage and potential efficiency to be gained in bringing some of the network codes and associated work together. Funding of the Code Administration function was also discussed, and whether this should be pulled out as a separate layer in the regulatory settlement. There was broad agreement that changes were</li> </ol>	<ul style="list-style-type: none"> <li>• ESO to take feedback on board in further development of their options.</li> </ul>	<p>All of the feedback was taken into consideration in the development of our proposals.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	<p>4. Grow the Code Administration role, actively seeking codes to manage.</p>	<p>needed in this space, and the transition to Code Manager was welcomed, with some members feeding back that this was required now rather than in RIIO-2.</p> <p>2. There was a broad conversation around this topic, and what the group felt the role of Code Manager should entail, with some participants feeling it was unclear how Code Manager was different to Code Administrator.</p> <p>3. This was not seen to be a credible option given the ESO's role in delivering a few the codes.</p> <p>Some members felt this to be a risky prospect, given sensitivities that there are several existing Code Administrators.</p>		
<p><b>A forward look</b></p>	<p>The ESO representative presented a forward look up to the final submission, including ERSG meetings and business plan milestones.</p>	<ul style="list-style-type: none"> <li>The group felt that there was a great deal of material to cover in the meetings and debated whether any of the meetings should be either lengthened or additional dates added. A member who sat on another RIIO-2 group, suggested there might be more focus on challenging the</li> </ul>	<p>ESO to:</p> <ul style="list-style-type: none"> <li>Communicate future additional ERSG dates asap so that the group can add to diaries.</li> <li>Consider improvements suggested in terms of how the meeting is run.</li> </ul>	<p>We completed all actions by the following meeting, which included improving the way information was presented on the day, the amount of essential pre-read and how to better</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		<p>stakeholder engagement that had been undertaken, as this will need to be covered in the final report.</p> <ul style="list-style-type: none"> <li>• They also suggested some ways in which the agenda could be improved to ensure that more material could be covered, and this was also picked up in the closed session.</li> <li>• In terms of future content, a member suggested that they would like more information on workforce capability, and another asked to see more information on ESO costs.</li> </ul>		structure the agenda.

### 30 January 2019

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>ESO RIIO-2 ambitions</b>	The ESO presented emerging thoughts on the ambitions for RIIO-2 ahead of the March document publication.	The group believes stakeholders are looking for an ambitious ESO and they don't believe it has been identified what that is. As a result, there was strong feedback that the ambition statements are not really ambitious – they describe what the ESO should be doing anyway.	The ESO to consider how to incorporate this feedback within the document for publication.	All of the feedback was taken into consideration in the development of <i>Our RIIO-2 Ambition</i> document and the narrative was updated.

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		<ul style="list-style-type: none"> <li>The ESO also needs to better articulate what it is doing that's new. The statements need to be worded in a simple and compelling way and need to be part of an engaging and exciting portrayal of the opportunity it's embracing.</li> <li>To achieve some of these ambitions, the ESO may need changes in licence obligations (either for them or other parties).</li> <li>The ESO needs to be clearer when it talks about whole system ambitions, and whether the ESO means system or sector.</li> </ul>		
<b>Stakeholder engagement</b>	<ul style="list-style-type: none"> <li>ESO presented their approach to stakeholder engagement, what had been done and planned.</li> </ul>	<ul style="list-style-type: none"> <li>The group thought the ESO should use its engagement activities to provide views and evidence from stakeholders as to what kind of company they want the ESO to be (ambitious, leader, market provider, etc.).</li> <li>They felt the ESO could learn from other sectors such as water on how to demonstrate good robust engagement.</li> </ul>	<p>The ESO to consider how to better demonstrate the programme of engagement and thread throughout the development of its business plan.</p>	<p>We provided an update at a later meeting and did the following:</p> <ul style="list-style-type: none"> <li>Reviewed water companies' business plan submissions and associated Ofwat assessments to see what best</li> </ul>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		<ul style="list-style-type: none"> <li>• They understood the ESO had undertaken a vast amount of engagement but did not see how this was as result of a clear strategy or programme. They thought the ESO needed to:                             <ul style="list-style-type: none"> <li>• be really clear on who they are engaging with and why</li> <li>• have a clear strategy and process of engagement activities</li> <li>• better document the outcome of engagement and how it's going to get them what they need.</li> </ul> </li> </ul>		<p>practice and key learnings we could take to incorporate into our business plan development.</p> <ul style="list-style-type: none"> <li>• Commissioned an independent review of our stakeholder engagement strategy and narrative.</li> <li>• Better threaded our story of engagement through our ambition document and draft plans.</li> </ul>
<p><b>Ofgem's sector specific methodology</b></p>	<p>The ESO presented their initial assessment of Ofgem's consultation proposals and summarised where further clarification is needed as well as the two main areas of</p>	<ol style="list-style-type: none"> <li>1. Overarching                             <ul style="list-style-type: none"> <li>• The group felt the ESO needs to understand and address Ofgem's concerns, when it is proposing something different.</li> </ul> </li> <li>2. Funding model                             <ul style="list-style-type: none"> <li>• Members said the ESO needs to consider what</li> </ul> </li> </ol>	<p>The ESO to develop their views, and further engage with stakeholders as they build the detail to formally respond to Ofgem.</p>	<p>We developed a programme of engagement with key stakeholders to understand their views as we developed our position.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	<p>concern for the ESO. These are:</p> <ul style="list-style-type: none"> <li>• length of price control</li> <li>• funding model and incentives.</li> </ul>	<p>pass-through looks like without an excessive cost disallowance and audits etc., and whether it becomes acceptable at any point. If not, the ESO will need to explain that it has considered a middle way.</p> <p>3. Length</p> <ul style="list-style-type: none"> <li>• The ESO needs to consider which of DNOs or TOs it makes most sense for the ESO to align to, and whether they could accept and want to propose some sort of hybrid model, including uncertainty mechanisms.</li> <li>• The group expects the ESO to clearly set out what they are planning to invest in over five-plus years in the <i>Our RIIO-2 Ambition</i> document.</li> </ul> <p>4. Competition</p> <ul style="list-style-type: none"> <li>• The ESO is fully supportive of the extension of competition in transmission build.</li> <li>• There was however, a question of who takes on the</li> </ul>		

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		additional roles involved? If the ESO doesn't think that should it be them, they should propose who they think should carry out those roles.		

3 April 2019

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>Towards 2030: Our ESO RIIO-2 Ambition</b>	<ul style="list-style-type: none"> <li>• ESO presented the content of <i>Our RIIO-2 Ambition</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Generally good feedback with acknowledgement the level of ambition has greatly improved and is more in line with their expectations of an ambitious ESO.</li> <li>• Some confusion over all the documents and how they fit together.</li> <li>• Question asked if the ESO has the capability, knowledge and resource to deliver the ambitious activities as articulated.</li> </ul>	<p>All feedback will be reviewed in the development of the business plan, and the proposals for consumer engagement will be brought back to group at a future meeting.</p>	<p>All feedback was considered in the development of the business plan development. This included:</p> <ul style="list-style-type: none"> <li>• Completing consumer research on available information to ensure our proposals were meeting their needs</li> <li>• Creating a comprehensive</li> </ul>



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		<ul style="list-style-type: none"> <li>Some thought it was missing the ESO-DSO relationship and transition.</li> <li>The group challenged the consumer engagement had done to date and how they thought it was lacking in the ambition document and how it should be more of a focus.</li> <li>The group also thought the additional cost would need to be well justified to Ofgem in a price control they are looking to cut costs.</li> <li>A member commented that the CBA could be strengthened for the July document, and be more specific.</li> </ul>		<p>CBA Report to detail the methodology, assumptions and our calculations.</p> <ul style="list-style-type: none"> <li>Better articulating our justification within the narrative.</li> </ul>
<b>Network competition</b>	<ul style="list-style-type: none"> <li>The ESO presented a summary of what was in the paper provided for pre-read. The ESO is a strong believer in competition in all its forms. They have been actively supporting Ofgem with the work on the CATO model, but had questions on if there more that could be done?</li> </ul>	<ul style="list-style-type: none"> <li>The group thought it was difficult to reach interested stakeholders through generic engagement, and needed to do something more targeted to get a range of views for this area</li> <li>One member questioned whether the ESO should run the tenders given it is still part of the National Grid Group, others thought the ESO was</li> </ul>	<ul style="list-style-type: none"> <li>Further development of ESO's position needed, and more targeted engagement with interested parties need to take place.</li> </ul>	<p>An engagement plan was created and targeted stakeholder views were fed back via bilateral meetings and a dedicated webinar. An update was provided to ERSG at a later meeting.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
	<ul style="list-style-type: none"> <li>Should the ESO include resourcing in RIIO-2 to help launch the regime, and should the ESO be putting their name forward to run the tender process?</li> </ul>	<p>best placed and could manage potential conflicts of interest.</p> <ul style="list-style-type: none"> <li>The group thought the potential options were too high-level to understand the ESO's activities in this area and more development and detail is required.</li> <li>The Chair would like an update when further engagement with the right parties has taken place.</li> </ul>		
<b>Connections</b>	<ul style="list-style-type: none"> <li>The ESO presented a summary of the paper which was shared as part of the pre-read. There is now a need for visibility across the whole system (transmission and distribution). This process needs to be improved to provide greater transparency.</li> </ul>	<ul style="list-style-type: none"> <li>Members asked if DNOs were willing to adopt a "central hub" approach which the ESO was proposing; the ESO confirmed they were supportive.</li> <li>One member questioned if having a single hub would be less useful than having open protocols for interfacing, with straightforward Application Planning Interfaces (APIs).</li> <li>ERSG would like more detail on the magnitude of costs and how much value this proposal would generate. There was also a question on who would be paying the brunt of the costs</li> </ul>	<p>The ESO was challenged on who should be paying the brunt of the costs for this change and are asked to better articulate the value. An update is to be provided when item returns to ESG.</p>	<p>We engaged on this further at our April event and incorporated stakeholders' views back into the business plan. The narrative was updated to better explain the detail of the value it creates.</p>

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		<p>and whether it should be consumers or those connecting to the system.</p> <ul style="list-style-type: none"> <li>• Most agreed it would be useful to make it easier to connect to the system, and it would be attractive for things like data centres who may move overseas if the ESO can't cope with their requests.</li> </ul>		
<b>System access planning</b>	<ul style="list-style-type: none"> <li>• The ESO summarised that the nature of the system is changing, and more time needs to be spent on the impacts of outages across the system. This will require more resource than it currently has today.</li> <li>• Proposals include increased transparency and immediacy of information and working with TOs and DNOs on system access requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• There was general support for the proposal as outlined in the ambition document.</li> <li>• The chair asked how costs are assessed, just for the ESO or across the whole system? We confirmed that we are looking to minimise costs from a whole system perspective.</li> <li>• The group asked if this was just a transmission level proposal, or would expand to the distribution level? We confirmed it was just transmission for now but could look to expand it to distribution too.</li> </ul>	<ul style="list-style-type: none"> <li>• No actions from this session.</li> </ul>	

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>Innovation</b>	<ul style="list-style-type: none"> <li>The ESO presented a summary of the paper that was shared as part of the pre-read materials. It discussed funding available for innovation as part of business as usual vs the ring-fenced innovation and the ESO's preference.</li> </ul>	<ul style="list-style-type: none"> <li>The group felt like the outlined approach to innovation feels like a regulated approach and is constrained.</li> <li>They felt it was more about the funding proposals rather than an innovation strategy, and they would like to see more on the strategy.</li> <li>The group agreed innovation was important and stakeholders want the ESO to be innovative, but don't see the proposal shows how ESO is being driven by innovation.</li> <li>The group asked how innovation was fostered at a board level and how "disruptive innovation" was enabled in the business.</li> <li>It was suggested that as part of the business demonstrating what they will do and how the culture will change there needs to be a chapter on company culture and how this kind of organisation is created.</li> </ul>	<p>The Chair asked that the ESO comes back to a later session with more information on the strategy and examples of innovation work underway or planned, to demonstrate what funding will go towards.</p>	<p>This action was completed at the following meeting.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>Reliable and secure system operation</b>	<ul style="list-style-type: none"> <li>The ESO presented a summary of the paper that was shared as part of pre-read. There were two options to operate the system in a very different way to how its currently done. The proposals included to start again and build a new control room or to build on top of what is already there.</li> </ul>	<ul style="list-style-type: none"> <li>The group asked out of which two options that were presented would be best meet the ambition, and what the difference in cost was? They also asked how the ESO intends to involve stakeholders in the new system and how the cost impact on users would be assessed? We confirmed this was currently being considered.</li> <li>Concerns were expressed that it wasn't clear from the paper what will be developed and what the proposed money will be spent on.</li> <li>One member of the ERSG advised that the ESO should be looking to the tech industry to input into these plans, not just the electricity industry. It will require openness around specifications and plans.</li> <li>Resource and expertise required to deliver this was also highlighted as a concern. Capability should be built in house rather than using contractors so there is internal expertise.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to consider how it will involve stakeholders in the development of new system(s).</li> <li>The ESO to engage the tech industry on how such a project could be delivered and use their expertise.</li> <li>The ESO to confirm their resourcing and retention of skills and capability in this area.</li> <li>The ESO to bring this back to a future meeting with more detail.</li> </ul>	All actions were in progress or completed by the following meeting with the further detail requested, presented.

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
<b>IT strategy and cyber</b>	<ul style="list-style-type: none"> <li>The ESO presented the paper which was included as part of the pre-read material. Proposals included enhancements in a more modular way, and increased collaboration with stakeholders.</li> <li>A clearer way to communicate and a “one stop shop” for market participants to access data, policies and codes.</li> <li>Other key points included, facilitation of a level playing field, and investment in response to cyber threats.</li> </ul>	<ul style="list-style-type: none"> <li>There was concern over the detail on the level of change required for IT and systems throughout other papers. They felt there was no over-arching strategy in this paper about what will be done.</li> <li>The group felt it was more focused on engagement than on the specifics of how technology will be used.</li> <li>They questioned the costs and capability needed to become a technology-based company, and clearly communicating how the ESO will meet this challenge.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to ensure they include how they expect to achieve the cultural change required for the future, to deliver IT proposals and wider ambitions in the business plan.</li> <li>The ESO to include IT strategy and cyber as an item at a future meeting and ensure that there is more detail included.</li> </ul>	All actions were in progress or completed by the following meeting with the further detail requested, presented.
<b>Open and transparent markets</b>	<ul style="list-style-type: none"> <li>The ESO presented a summary of the paper it provided for pre-read and asked the group several questions.</li> </ul>	<ul style="list-style-type: none"> <li>Members questioned the 1 MW minimum size for balancing market participants and how the ESO had arrived at that? They asked if the ESO had considered the IT implications associated with this.</li> <li>In terms of data, the group suggested it would be useful to</li> </ul>	<ul style="list-style-type: none"> <li>No actions from this session.</li> </ul>	

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of actions
		<p>understand what level of asset information is needed vs what is available?</p> <ul style="list-style-type: none"> <li>• When they were asked about the design of balancing markets, they said it ultimately came down to the cost of IT and benefits gained to redesign it with all other changes happening. Throughout, they acknowledged that the ESO has a role in ensuring it is appropriate for a low carbon future.</li> <li>• The ESO needs to be careful in trade-offs between implementing things too quickly with the current pace of change but also staying ahead of the curve.</li> <li>• In terms of codes, the group was supportive of the ambition, but that the ESO needs to be mindful of the current code review that is ongoing.</li> </ul>		

4 June 2019

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>Stakeholder and consumer engagement</b>	<ul style="list-style-type: none"> <li>The ESO presented enhancements which had been made to the stakeholder strategy since the January meeting, following internal and external reviews.</li> </ul>	<ul style="list-style-type: none"> <li>The group felt the ESO has taken positive steps to address feedback from stakeholders and consumers. However, greater clarity is needed on the source of feedback in the main body of the report.</li> <li>More evidence of where academic work has been consulted and incorporated into the plan, and how it has informed the ESO's understanding. They also felt it would be good to have further clarity what feedback the ESO is and isn't taking on board and being clear when feedback is not agreed with.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to better reference the types of stakeholders that gave feedback in the main part of the report.</li> <li>The ESO to provide a further segmentation of types of stakeholders engaged.</li> <li>The ESO to further engage with academics on consumer research.</li> </ul>	<ul style="list-style-type: none"> <li>The content was updated to better reference sectors of stakeholders and what feedback they gave.</li> <li>Further details have been included in this Stakeholder report.</li> <li>Consumer research engagement was undertaken.</li> </ul>
<b>Ofgem's sector specific strategy decision</b>	<ul style="list-style-type: none"> <li>The ESO presented an overview of Ofgem's decision for the ESO</li> </ul>	<ul style="list-style-type: none"> <li>One member asked if it was still possible to disagree with both models that Ofgem had set out, or whether these were now finalised as the only possible options.</li> <li>Some members agreed that this seemed like an oversimplification and that a</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to set out what the two options mean for the business plan, and what impacts they have for consumers for the July meeting.</li> </ul>	<p>Action completed at the following meeting.</p>



Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
		<p>margin for risk should be allowed.</p> <ul style="list-style-type: none"> <li>• One member commented that by looking at the difference in prices of IT projects that have a fixed price vs variable price, it would be clear why it's better to hold margin.</li> <li>• It was questioned whether Ofgem was trying to push the ESO towards something other than what has been set out in the business plan.</li> <li>• The Chair raised her concerns about a lack of clear communication between the company and Ofgem.</li> </ul>		
<b>Business plan overview</b>	<ul style="list-style-type: none"> <li>• The ESO presented an overview of the business and the type of company the ESO is trying to become.</li> </ul>	<ul style="list-style-type: none"> <li>• The group commented that it was quite difficult to see what the overall value is against the cost, and that it would be helpful to have a summary table bringing all of this together.</li> <li>• Some of the group felt that the benefits were subjective and fluffy, and more info was needed on how these figures were arrived at.</li> </ul>	<ul style="list-style-type: none"> <li>• The ESO to include summary table of costs and benefits in the business plan, and to provide a demonstration of the impacts to existing costs.</li> </ul>	<p>This has been added to this version of the business plan.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<p><b>Theme 1: Ensure reliable, secure system operation to deliver electricity when consumers need it</b></p>	<ul style="list-style-type: none"> <li>The ESO presented and summarised Theme 1 of the business plan.</li> </ul>	<ul style="list-style-type: none"> <li>There were some questions from the group about the digital twin concept included in this section of the plan.</li> <li>A member of the group highlighted the challenge that market participants are going to have in the different ways they wish to interact. How can the ESO strive to ensure that what’s being delivered is fit for purpose for as many people as possible, which may entail more traditional providers needing to change their ways?</li> <li>There was a general consensus from the group that this seemed like the right solution given the small additional cost vs large potential consumer and security benefit. Although some needed further clarity on what the digital twin solution involves, including to what level will be twinned.</li> <li>The group felt that people and capability is the biggest</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to engage further with universities and educational institutions.</li> <li>The ESO to be clearer on what the digital twin will be.</li> </ul>	<ul style="list-style-type: none"> <li>An engagement plan was created and targeted stakeholder bilateral meetings were arranged.</li> <li>A clearer explanation has been given on what a digital twin is and a further call on the IT proposals including the digital twin is planned for 4 October.</li> </ul>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
		delivery challenge facing the ESO.		
	<ul style="list-style-type: none"> <li>The ESO presented an overview of the IT strategy section of the business plan, along with how feedback from previous meetings had been incorporated.</li> </ul>	<ul style="list-style-type: none"> <li>The presenters were asked where the Design Authority would sit – would it be a senior, budget level group or more detailed?</li> <li>A concern was raised about the resource implications that this could put on market participants. The kind of resources needed by these groups is very expensive, and small businesses may not be able to spare this.</li> <li>The Chair summarised that there had been a major step forward in this area since previous discussions, but more depth is needed in terms of demonstrating understanding of the cultural and operational change required.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to provide further detail around the Design Authority and their terms of reference.</li> </ul>	Further information has been provided in the business plan.

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>Theme 2: transforming participation in smart and sustainable markets</b>	<ul style="list-style-type: none"> <li>The ESO presented and summarised Theme 2 of the business plan.</li> </ul>	<ul style="list-style-type: none"> <li>One member commented that they didn't get the sense that much would be changed through the Ofgem codes review, more just a case of digitising the codes.</li> <li>The costs and benefits relating to this section were discussed. The group felt that the accuracy in the figures was not helpful and that it would better to have a range.</li> <li>The group said there was real opportunity in this area to demonstrate the benefit, and so it needs to be well supported and move Ofgem's focus from the cost to the magnitude of benefits that can be achieved.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to consider how it phrases these ambitions and make clear that they are stepping stones to markets as close to real time as possible.</li> </ul>	<ul style="list-style-type: none"> <li>We did this by extending the investment roadmaps to start earlier so you can see stepping stones to markets.</li> <li>We also included additional narrative on the link between operability needs/ NOA and markets.</li> </ul>
<b>Open data and unlocking zero-carbon system operation and markets</b>	<ul style="list-style-type: none"> <li>The ESO presented an overview of proposals to make its data open and accessible and provide a clear route to services.</li> </ul>	<ul style="list-style-type: none"> <li>The group asked who will have access to the data and whether this approach would cause any security issues.</li> <li>The Chair asked what type of data will be held back?</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to better articulate what it is doing before RIIO-2 and what it will do after.</li> </ul>	<p>As above, explained through extension of the investment roadmaps.</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>Theme 3: unlocking consumer value through competition</b>	<ul style="list-style-type: none"> <li>The ESO presented and summarised Theme 3 of the business plan.</li> </ul>	<ul style="list-style-type: none"> <li>A member asked why this wasn't being done before 2021.</li> <li>Overall there was a general view this was a good idea.</li> </ul>	<ul style="list-style-type: none"> <li>There is a need for the ESO to explain its approach and action plan for better recognising other parties' costs within their calculations.</li> <li>The ESO to better explain the range of scenarios in calculating the benefit.</li> </ul>	<ul style="list-style-type: none"> <li>We included qualitative whole system CBA work explicitly pulling out where the ESO is pushing costs onto third parties.</li> <li>We are not, in general, calculating the benefits in different scenarios. This is usually because we judge the benefits to be independent of scenarios, or we don't have the data to do it</li> </ul>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>Theme 4: Driving towards a sustainable whole</b>	<ul style="list-style-type: none"> <li>The ESO presented and summarised Theme 4 of the business plan.</li> </ul>	<ul style="list-style-type: none"> <li>The group asked for some further clarity on what the company is proposing to do here, particularly around the connections portal which</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to provide further justification and clarification of costs in this Theme.</li> </ul>	<p>accurately enough.</p> <ul style="list-style-type: none"> <li>Some benefits, especially in Theme 3, use data from the <i>NOA</i> or forecast costs which will have scenarios inherently built into them. We have generally taken an average if this is the case.</li> <li>We have performed sensitivity analysis on the benefits to try to account for possible variation, but the scenarios will be more H/M/L rather than <i>FES</i>.</li> </ul> <p>All actions have been completed and updates can be seen in the Theme 4 Driving towards a</p>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>energy future</b>		<p>was discussed at the previous meeting.</p> <ul style="list-style-type: none"> <li>The group felt that the capex cost figure in this section (£70 million) was quite high compared to what is being proposed.</li> <li>The group commented that they would like to see more clarity between the ongoing and the transformational activities in the report.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to make it clear what is business as usual and what are transformational activities.</li> </ul>	<p>sustainable, whole-energy future chapter and supporting annexes.</p>
<b>Innovation</b>	<ul style="list-style-type: none"> <li>The ESO presented further information on their approach to innovation in RIIO-2 and examples of projects.</li> </ul>	<ul style="list-style-type: none"> <li>The group had a conversation around at what point does an innovation project become business as usual and how it is funded.</li> <li>One member felt that innovation is presented in the business plan as a standalone element, and it needs to be demonstrated that it is integrated into the culture of the business.</li> <li>The group thought that the fact that the innovation team doesn't deliver the projects was positive in demonstrating that</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to further develop thinking on how it would like to be funded for innovation.</li> <li>The ESO to sharpen its narrative around company culture for innovation and how it fosters it in others.</li> </ul>	<ul style="list-style-type: none"> <li>Narrative has been updated to better articulate how we would like to be funded in RIIO-2</li> <li>Innovation has been highlighted as key capability needed in the future and the narrative has been updated to show how innovation will fostered within the organisation.</li> </ul>

Topic Presented	Summary of detail presented	ERSG Feedback	Actions	Result of Actions
<b>People and capability</b>	<ul style="list-style-type: none"> <li>The ESO presented an overview of the its strategy for resourcing effectively across the four Themes in its business plan.</li> </ul>	<p>innovation is being built into the business.</p> <ul style="list-style-type: none"> <li>Most other companies have a different structure where the innovation team do deliver the change, and it's harder to embed as ongoing activities in this way.</li> <li>The group asked whether there's potential for competition for resource between the ESO and DNOs who will be looking for similar people?</li> <li>The group highlighted the importance of flexible working and other benefits in attracting a good workforce. They also highlighted a moral responsibility of how you behave in this space, in attracting people from other countries etc.</li> </ul>	<ul style="list-style-type: none"> <li>The ESO to continue developing its resource strategy.</li> </ul>	<p>Further detail has been provided in this version of the business plan and annexes.</p>



### 3. RIIO-2 Challenge Group

As part of Ofgem's enhanced stakeholder engagement approach, it has set up an independent RIIO-2 Challenge Group whose purpose is to assess, scrutinise and challenge companies' business plans in parallel to the companies' user groups. The group has a role in provide challenge to both the regulated companies and Ofgem.

#### 3.1 Engagement with Ofgem's RIIO-2 Challenge Group

Date	Purpose
<b>29 November 2018</b>	<ul style="list-style-type: none"> <li>• Introductory meeting for the ENA consistent view of the future group, to present on their work to date and specifically:               <ul style="list-style-type: none"> <li>• a breakdown of changes across time (e.g. what is likely to happen within RIIO-2, RIIO-3 and beyond);</li> <li>• an explanation of changes in demand over time and how this relates to current forecasts, and</li> <li>• how the companies will forecast the impacts of the energy transition.</li> </ul> </li> </ul>
<b>30 November 2018</b>	<ul style="list-style-type: none"> <li>• Introductory meeting for ESO business representatives and the chair of our stakeholder group. We presented on the following topics:               <ul style="list-style-type: none"> <li>• our role as the ESO;</li> <li>• the changing energy landscape;</li> <li>• ESO performance in RIIO-1;</li> <li>• the incentive framework for 2018-21;</li> <li>• the ESO in RIIO-2; and</li> <li>• working with network companies.</li> </ul> </li> </ul>
<b>4 December 2018</b>	<ul style="list-style-type: none"> <li>• The consistent view of the future working group received a formal request for further information and gave clear timelines as to when it expected to see further developed work. This included:               <ul style="list-style-type: none"> <li>• key drivers that could materially affect business plans;</li> <li>• an updated range of scenarios and assumptions to obtain a consistent view of the future;</li> <li>• how scenarios and assumptions feed into the proposed common view of business plans; and</li> <li>• a common view of the future with a set of scenarios and assumptions, together with an independent commentary by the ESO on how these fit with the latest <i>FES</i> analysis.</li> </ul> </li> </ul>
<b>22 January 2019</b>	<ul style="list-style-type: none"> <li>• The ESO received a formal request from the Chair of the RIIO-2 Challenge Group to provide information on historic expenditure trends, which included actual data and original</li> </ul>

	price control forecasts since 1 April 2007 and the key reasons for differences.
	<ul style="list-style-type: none"> <li>• They requested a 30-page limit submission by 25 March, which we adhered to.</li> </ul>
<b>12 February 2019</b>	<ul style="list-style-type: none"> <li>• The consistent view of the future working group was invited to present to the RIIO-2 Challenge Group and discuss further how the key drivers identified feed into the proposed common view for business plans, and the range of scenarios for which we will plan.</li> </ul>
<b>15 April 2019</b>	<ul style="list-style-type: none"> <li>• Further to the submitted report to the RIIO-2 Challenge Group on 25 March on historical expenditure, the ESO was formally requested to provide answers to supplementary questions.</li> <li>• Responses to the majority of the questions were requested by 24 April, with responses to the two final questions by 15 May, which we adhered to.</li> </ul>
<b>30 April 2019</b>	<ul style="list-style-type: none"> <li>• The ESO met the RIIO-2 Challenge Group and answered questions on topics included in the 25 March and 24 April submissions on historic forecasting and spend.</li> </ul>
<b>30 July 2019</b>	<ul style="list-style-type: none"> <li>• The ESO presented the Challenge Group with an overview of the draft business plan. This included answering questions on our planning assumptions, cost profiles from RIIO-1 to 2 and Cost Benefit Analysis.</li> </ul>

Table 3: Engagement with Ofgem's RIIO-2 Challenge Group

After the ESO attended the July meeting, we were provided with formal written feedback from the Challenge Group on our draft July submission. The below table details the feedback we received and how we have responded to this in this business plan submission. This table is also replicated in Annex 6 – How our plan meets the Challenge Group's requirements.

	Challenge Group Feedback	Location in the business plan
1. Introduction	Include costs broken down by activities and sub-activities, with clear, well-defined metrics and deliverables assigned to each of these	✓ Each Theme chapter in the business plan, as well as chapter 12, chapter 13 and chapter 14, Driving focus on customers and stakeholders, provide costs broken down by activities and sub-activities. Detailed deliverables are provided in tables at the end of each Theme chapter. Our proposed metrics are described alongside the relevant deliverables in the Theme chapters.
	Include historical costs and associated deliverables for each activity and, where possible, each sub-activity	✓ Each Theme chapter includes the historical cost for each activity as an average cost since legal separation. This best reflects the structure of the ESO today and is the most

	<p>appropriate comparison. Detailed historical costs per activity are in the data tables. Detailed deliverable schedules are included in the Theme chapters.</p>
<p>Include clear links between activities, sub-activities and the performance criteria or a distinct measure of the output or deliverable to be achieved through the activities and sub-activities</p>	<p>✓ Each Theme chapter clearly sets out what outputs or deliverables will be achieved through our proposed activities. Annex 4 - Technology investment report provides more details of the IT solutions that underpin our proposed activities and deliverables.</p>
<p>Separate reporting of business support costs, with a clear description of how these have been allocated from wider National Grid Group</p>	<p>✓ Chapter 13 sets out the separate reporting of business support costs. Section 11.4 of chapter 11 explains the ESO share of group IT costs. Further detail on how shared costs are allocated to the ESO is explained in section 13.1.</p>
<p>Comparable external benchmarks for activities and deliverables, where relevant, to allow assessment of their relative efficiency and evidence of the ESO's steps to determine the efficiency of these, e.g. external benchmarking or market testing</p>	<p>✓ Benchmarking has played a major part in ensuring that our proposed costs are efficient. All of our proposed IT costs have been benchmarked by Gartner and our Application Development and Maintenance Partners using a cross-sector methodology, Further information can be found in chapter 11.</p> <p>Our shared service costs have been subject to cross-sector benchmarking by Hackett, and have found to be equivalent to the most efficient companies. Further information can be found in chapter 13.</p> <p>We also conducted some high-level international benchmarking of overall ESO costs, described in section 3.1. Overall, more than 70 per cent of our proposed costs have been subject to activity benchmarking.</p>
<p>Proportionate cost benefit analysis and justification for the proposed expenditure</p>	<p>✓ As agreed with Ofgem, our new and transformational activities have been subject to cost-benefit analysis. This is described in detail in Annex 2 – Cost benefit analysis report, with high-level results in all Theme chapters of the main document. Overall our proposed new activities will deliver net benefits of £2 billion to consumers over the RIIO-2 period.</p> <p>The Theme chapters provide details on why we think our proposed costs are justified, for example using historic activity costs or unit costs. One example on our balancing services</p>

	market costs is in section 5.2.2 of the Theme 2 chapter.
	<p>Identification of uncertainties around deliverables, with cost ranges for potential outcomes, where applicable</p> <p>✓ Against each of the new and transformational deliverables in the Theme chapters, we have set out the uncertainties and dependencies that could affect the outcomes. We have translated this into ranges for the benefits that could be achieved. One example is section 6.2.3 which provides a benefit range for our <i>NOA</i> transformational activities, based on assumptions about other parties' actions. Much more detail is in Annex 2 - Cost benefit analysis report.</p>
	<p>Clear demonstration of the ESO's consideration of its longer-term vision for the energy system, for example in terms of whole system approaches, innovation, consumer value and long-run costs and benefits.</p> <p>✓ Section 3.2 of chapter 3 sets out our longer-term vision for the energy system and what different scenarios mean for the ESO and other participants. Each Theme chapter begins with a five-year strategy that provides the strategic context to our proposals. Chapter 12 gives more details on our approach to innovation.</p>
	<p>Your ambition is to be able to operate a carbon free, flexible whole power system in 2025. Please describe the specific activities or outcomes that your plan must deliver to achieve this</p> <p>✓ At the end of Annex 6 we have provided further information on the actions needed to operate a carbon free, flexible electricity system in 2025. There is also a table showing how our business plan proposals will contribute to this objective.</p>
2. Plan Ambition	<p>Please provide further details of the additional actions you will be taking during the RIIO-2 period to facilitate NetZero...</p> <p>✓ At the start of each Theme chapter we set out how the activities proposed within that chapter will facilitate the UK's commitment to net-zero emissions by 2050.</p>
	<p>... particularly your plans to facilitate cross-vector solutions ie. electricity, gas, transport, water and heat</p> <p>✓ Our Lead the debate proposals in Theme 4: Driving towards a sustainable, whole-energy future outline how we will step up to facilitate solution development across many constituent areas of a whole energy system transition to net zero, including clean heat, Carbon Capture Use and Storage (CCUS), electric vehicles, and energy data.</p>
	<p>Your plan ambitions appear to assume extensive coordination with other industry participants and may be conditional upon multilateral agreements or future legislative or regulatory decisions.</p> <p>✓ These assumptions are explained in Annex 1 which includes more information on our performance in RIIO-1, benchmarking, metrics, and assumptions underpinning our business plan, part E. Section 3.3 of the plan provides more detail on our overall approach to uncertainty.</p>

What assumptions have you made about your role in relation to, for example,

- a) future power system operation alongside DSOs, aggregators and others, and
- b) future ownership of co-ordination of power market IT systems and platforms?
- c) future governance of codes and market rules?
- d) future relationships with network operators and owners

What are the alternatives you have considered and what are the implications to your plan from these assumptions? How are you seeking the most efficient solutions?

3. Stakeholder Engagement

You have acknowledged that your stakeholder engagement to develop the plan is incomplete. Please ensure that this work is complete and fully justified as part of your October plan.

We shall continue to look for evidence of how each of your proposals and commitments has been built on high-quality engagement with relevant stakeholder groups, and what difference this engagement has made to your plans.

✓ Our stakeholder engagement is as complete as it can be, ahead of the final plan being submitted. We have full explanations of stakeholder feedback and how we've responded throughout the business plan. Chapter 2 and this detailed Stakeholder report, set out details of how stakeholder feedback has informed our plan at every stage of development. We continue to engage stakeholders as we finalise our plan, for example we have organised an event to discuss our October draft plan the day after submission, on 2 October.

Set out briefly how your RIIO-2 strategy for engagement matches the principles in Ofgem's business plan guidance (paragraph 2.8); show the cost of your approach, and explain how you will measure the value and impact of your engagement strategy at all levels in the business

✓ This is explained in chapter 14, section 14.1.1 of the business plan (Our stakeholder strategy in RIIO-2).

Summarise (in a short appendix if necessary) where and how your engagement with your User Group and with the RIIO-2 Challenge Group has influenced your plan

✓ Engagement with our user group is explained at a high level in section 2.4 in the business plan. More details on engagement with the user group and the RIIO-2 Challenge group is covered in Annex 6 and in this Stakeholder report. We have also shown, throughout the main report, how we've

	<p>responded to stakeholder group feedback in the relevant sections.</p>
<p>You say you have used the AA1000 standard as a benchmark for your methods. We would be interested to understand your ranking or any comparative score that resulted from this work.</p>	<p>✓ In section 2.2 we set out that we are not accredited to AA1000SES so have not assessed our performance against it. Instead we commissioned an independent review of our stakeholder engagement approach earlier in the year which confirmed that we are taking a best practice approach.</p>
<p>Given the unique nature of your mission, will you use benchmarks from outside the energy sector to measure the effectiveness of your future stakeholder engagement? Please give details if so.</p>	<p>✓ Yes, we will use benchmarks from across the energy sector and beyond as part of our stakeholder strategy detailed in section 14.1.1. We will undertake benchmarking through a combination of this best practice review; networking and forums, considering entering ourselves for awards to see where we come out; and bilaterals with those renowned for good customer experience. We will do this with a range of organisations - not just those in the energy sector - in order to establish what more we could and should be doing, rather than what is being done within our own industry. We are also considering becoming accredited to AA1000SES.</p>
<p>Will your senior management pay and rewards be linked to delivery of your commitments or other measures of consumer benefit and, if so, to what extent?</p>	<p>✓ Yes. This is covered in section 15.4.2. Senior management pay and reward is linked to achievement of personal objectives and the ESO performance scorecard. The set of personal objectives will include achievement of the commitments in the business plan. Furthermore, the bonus has five measures, one is specifically relating to achievement of SO incentives (which will be linked to consumer benefit) and another relating to Customer Satisfaction.</p>
<p>4. Future Scenarios</p> <p>You state that your plan is designed to be consistent against a range of futures as defined in the latest <i>Future Energy Scenarios (FES)</i>. Please describe how these alternative futures have impacted your plan assumptions.</p>	<p>✓ Section 3.2 provides information about how we have used the latest <i>FES</i> to develop our plan. Section 3.3 further explains how we deal with uncertainty in our plan. The energy landscape assumptions that underpin our plan can be found in Section E of Annex 1, which includes more information on our performance in RIIO-1, benchmarking, metrics, and assumptions underpinning our business plan. These also outline at a high-level how the activity, timeline, cost and benefit could potentially change if the assumption does not bear out. We have included risks and mitigations for the specific activities in Annex 2</p>

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	<p>–CBA report. Our CBA includes market, delivery and third party sensitivities to give a range of potential benefits. Annex 2 – CBA report also explains where we have explicitly or implicitly used a range of <i>FES</i> scenarios, eg in forecasts of constraint costs. The CBA will also be updated with each two-year forecast of costs and activities.</p>
<p>In Theme 1, you set out your proposals to invest in a new state of the art system operation and balancing IT systems. Please provide further details to justify your choice of solution and provide a detailed implementation plan.</p>	<p>✓ Section 4.2.3 describes our proposals and Annex 4 - Technology investment report sets out the justification for our choice of solution and a detailed implementation plan. The main components are the new network control tool (IT investment line 110), the new enhanced balancing capability tool (IT investment line 180) and the data and analytics platform (IT investment line 220).</p>
<p>In Theme 2, you set out your proposals to invest in a new market platform. Please provide further details to justify your choice of solution and provide a detailed implementation plan.</p>	<p>✓ Section 5.2.3.3 describes our proposals and Annex 4 - Technology investment report sets out the justification for our choice of solution and a detailed implementation plan. The main component is the single markets platform (IT investment line 400).</p>
<p>In Theme 3, you set your proposals to expand the <i>NOA</i> to enable competition and non-network solutions. Please set out the specific actions and delivery timetable you expect to achieve during RIO-2. What assumptions do you expect TOs or DNOs should be making in their plans with regard to these investments or non-network solutions?</p>	<p>✓ Section 6.2.3 and the investment roadmap set out the specific actions and delivery timetable. Options to meet network needs developed by the TOs as part of their business plans should still pass through the same levels of rigour in determining whether they would be the preferred / recommended solution when evaluated through a cost benefit assessment process against third party options. We are keen to ensure that any options recommended in expanded <i>NOA</i> or other ESO-driven needs process are appropriately funded for both TOs and DNOs and are encouraging network companies to continue to progress discussions on this with Ofgem. In our discussions with TOs and our formal feedback on their own business plans, we have suggested to TOs that they should ensure appropriate funding mechanisms are in place to deliver investments in non-network solutions. Section E of Annex 1, which includes more information on our performance in RIO-1, benchmarking, metrics, and assumptions underpinning our business plan highlights the assumptions we have made about network operators, network owners and other parties.</p>

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In Theme 4, you set your proposals to enhance electricity system co-ordination, mainly with DNOs. Please set out the specific actions and delivery timetable you expect to achieve during RIIO-2. What assumptions do you expect TOs or DNOs should be making in their plans with regard to these investments or non-network solutions?

✓ Section 7.4 sets out our proposals in this area and the delivery timetable. Options to meet network needs developed by the TOs as part of their business plans should still pass through the same levels of rigour in determining whether they would be the preferred / recommended solution when evaluated through a cost benefit assessment process against third party options. We are keen to ensure that any options recommended in expanded NOA or other ESO-driven needs process are appropriately funded for both TOs and DNOs and are encouraging network companies to continue to progress discussions on this with Ofgem. In our discussions with TOs and our formal feedback on their own business plans, we have suggested to TOs that they should ensure appropriate funding mechanisms are in place to deliver investments in non-network solutions. We continue to engage with DNOs through the ENA on this and will encourage them to take similar steps in the development of their RIIO-ED2 plans. Section E of Annex 1 which includes more information on our performance in RIIO-1, benchmarking, metrics, and assumptions underpinning our business plan highlights the assumptions we have made about network operators, network owners and other parties.

5. Plan Costs

We are concerned that your totex bid is higher than necessary, and that the efficiencies and innovations you realised during RIIO-1 have not all been brought forward, because it is not possible to track them based on the information provided to date.

✓ Section 3.1 provides details on how we have brought forward £7 million annual efficiencies from RIIO-1, as well as the benchmarking we have done to ensure we start RIIO-2 at the efficiency frontier. We commit to a 1 per cent efficiency stretch target on our ongoing and shared service operational costs, to ensure we stay at this frontier in RIIO-2.

IT expenditure  
Please provide a detailed breakdown of your proposed expenditure and its justification. In particular, for the digital twin and replacement control infrastructure – please provide a detailed justification for these IT projects setting out the ongoing activities costs, the stage of development you have reached, your design

✓ Annex 4 - Technology investment report provides details on all our proposed IT investments. The references are as follows:  
Theme 1 – replacement control system architecture & digital twin (the digital twin forms part of the replacement control system architecture, so the investments are the same)  
110 Network control  
140 ENCC Operator Console  
180 Enhanced balancing capability



<p>assumptions and scope of works, your cost justification, your proposed procurement approach, your timing, your proposed outputs, and the alternative design/cost options you have considered. These projects should include:</p> <ul style="list-style-type: none"> <li>• Theme 1 – replacement control system architecture</li> <li>• Theme 1 – digital twin</li> <li>• Theme 2 – market portal</li> <li>• Theme 3 – NOA modelling</li> <li>• Theme 4 – modelling, databases, etc</li> </ul>	<p>220 Data and analytics platform</p> <p>Theme 2 – market portal</p> <p>400 Single markets platform</p> <p>420 Auction capability</p> <p>Theme 3 – NOA modelling</p> <p>390 NOA enhancements</p> <p>Theme 4 – modelling, databases</p> <p>350 Planning and outage data exchange</p> <p>360 Offline network modelling</p>
<p>Why have operating costs increased e.g. support from National Grid, when you are implementing an efficiency programme during RIO-1? What opex and capex efficiencies do you expect to realise during RIO-2?</p>	<p>✓ Our costs in RIO-2 include an efficiency assumption of £7 million opex per year, based on the efficiencies we have achieved in RIO-1. Our capex plans have benchmarked to ensure they are efficient, and we will review these again in 2023 when we publish our next business plan. More information is provided in section 3.1. Support from National Grid has not increased – in fact the cost of shared business support functions has gone down from £22 million in RIO-1 to £15 million per year in RIO-2. The increase in average annual costs from RIO-1 (£173 million from 2013/14 to 2018/19) to RIO-2 (£250 million) is explained in chapter 9 with the change being mainly due to the proposed £61 million new and transformational investments to deliver £2 billion<sup>23</sup> net consumer benefits. Other cost increases are balanced by cost decreases in other areas, leaving IT investments to improve cyber security and implement mandatory regulatory change as the main driver behind the residual £9 million cost increase.</p>
<p>What are the costs in your plan allocated from National Grid Group and what are you doing to optimise these costs?</p>	<p>✓ The ESO receives shared business support services from National Grid Group. These are set out in chapter 13. Section 13.1 explains the transparent cost model used to allocate the ESO's share. This shared services model means each National Grid business benefits from economies of scale and use of expertise in each area, as well as taking a proportion of the costs for each function. This creates</p>

<sup>23</sup> The NPV applies to the five-year RIO-2 period  
 ESO RIO-2 Annex 3 - Stakeholder report • 1 October 2019 • 87

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efficiencies for each National Grid business, as it costs less than each business having its own functions. The shared service costs in this section have been benchmarked for efficiency. Furthermore, they include a one per cent efficiency stretch target to ensure we keep pace with the efficiency frontier in RiIO-2. Shared IT infrastructure costs are also allocated to the ESO under the same methodology. More detail is in section 11.4.

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Are the benefits identified for Themes 1 to 4 realistic? Have they been tested with the industry?

✓ Yes, we believe they are realistic. We have reviewed the benefits and dependencies and set this out in the Theme chapters of the business plan and in Annex 2 – CBA report. We tested the cost benefit analysis through our stakeholder engagement over the summer and will continue to test as we finalise the plan. Our CBA methodology was also reviewed and challenged by an external party to ensure it was robust.

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The options and CBA analysis are currently high level – please provide more detailed evidence about counterfactuals, options, probabilities, etc, that you have considered. Please provide evidence to show there is not double counting of benefits.

✓ More detailed evidence about baseline assumptions, options, probabilities, etc is in Annex 2 – CBA report. This report also explains how some options were eliminated through our early stakeholder engagement. We have also provided summaries of this information in each Theme chapter. Part of our stakeholder engagement was to better understand realistic counterfactuals and to eliminate unviable options. For our October plan we have undertaken more sensitivity analysis, so we can talk about likelihood (high, medium, low) rather than detailed probabilities. Our Annex 2 - CBA report also sets out how we have avoided double counting, for example, if multiple activities are all necessary to unlock some of the benefits then, to avoid double counting, we only attribute the benefit to one of the activities. Specific measures taken are described under each activity. For example, to avoid double counting of asset savings and carbon saving we have assumed that each Regional Development Programme (RDP) will save either carbon or asset build in equal proportions, under our benefit calculations for Theme 4.

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In your October plan, please set out the elements of your totex that may be subject to uncertainty

✓ In section 3.3 we explain that we do not have formal uncertainty mechanisms because our regulatory framework is designed to be

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mechanisms triggered by contingent events e.g. justification of major IT projects, agreement for market reforms.

flexible through having a two-year planning cycle and pass-through funding. We therefore do not have formal uncertainty mechanisms as part of our regulatory framework, though the ESO may use reopeners for cyber and physical security investments in line with the other RIIO network companies.

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Also, for your October plan submission, please provide information on your cost forecasts in the main body of the Plan document, showing how you have justified a change from your current run rate for opex and capex.

✓ Each of the Theme chapters sets out detailed justification for our cost forecasts, and why these are different from our run rate, which we have calculated as the RIIO-1 average cost for this activity since legal separation. We think this gives the best comparison as it reflects the ESO business and its activities and team structures today.

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Beginning with your annualised average actual data for RIIO-1 (covering 2013/14 to 2018/19), set out the key upward cost drivers, with a detailed justification of the need, the options that have been considered, the scope of the intervention, the volumes, the timings, and the unit costs. Then set out the key downward cost drivers, capturing the benefits from efficiency, innovation, competition, and workload volume or scope changes. Finally, show the forecast cost for RIIO-2.

✓ In section 9.3 we have conducted this analysis at ESO level and for seven layers of activity.

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... including any revisions you have made from your draft 1 July submission.

✓ Please see figure 1 and the detailed explanatory tables in Annex 6 which explains the revisions that have been made since the 1 July draft submission.

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Please provide the following downward sensitivities for your totex forecasts together with the assumptions, decisions and potential impacts underlying each. The sensitivities we require are:

- A forecast for capex and opex expenditure which is no greater than the annual average of RIIO-1 actual to end March 2019. Your major new IT projects should be detailed separately as being subject to potential reopeners once justified.

✓ We have provided this information in section 9.4.

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- A forecast for capex and opex expenditure which is no greater than the annual average of RIIO-1 actual to end March 2019 and which includes an additional real efficiency reduction of 2 per cent per annum. Your major new IT projects should be detailed separately as being subject to potential reopeners once justified.

6. Plan Delivery

In your October plan, please describe the key risks to delivery of your plan ambition, and how you have mitigated these. In particular, please describe how are you going to deliver the IT projects, processes and applications for the ESO, e.g. contracting, staging strategies etc? Do you have the capability within the ESO to manage this?

✓ Key risks to delivery of the plan and the mitigation are covered in chapter 3. There is more information about how we are going to deliver IT projects in chapter 11 and chapter 15.

*Table 4: Challenge Group feedback on the July draft business plan and our response*

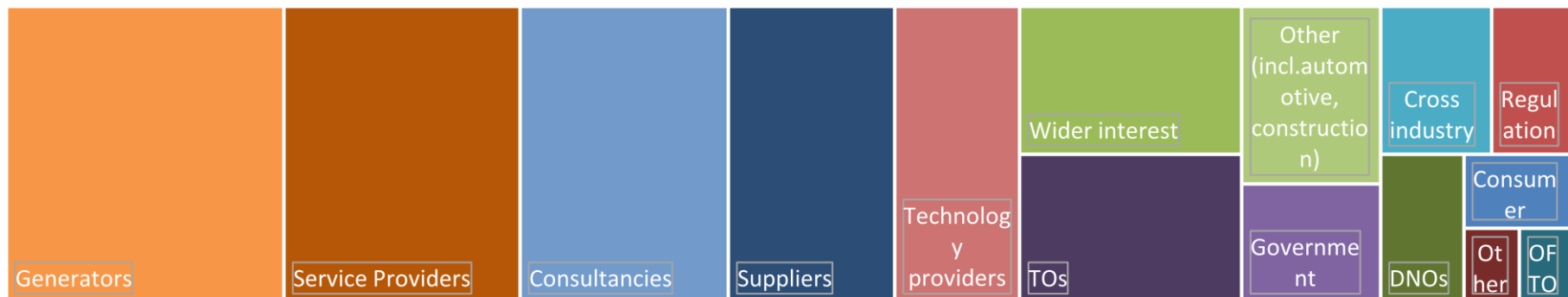
We will continue to engage with the RIIO-2 Challenge Group as we develop our business plan submission for December, in line with the work plan published by Ofgem in February 2019.

## 4. A summary of our engagement activity – who and how

### 4.1 Our nine webinars, nine workshops and 22 other (forums, seminars, trade association meetings etc.)

We have carried out a range of stakeholder engagement as we have developed the business plan. This has provided us with a wealth of feedback that has directly shaped the proposals in the business plan and this document. These RIIO-2 specific engagement events build on the engagement that takes place as part of delivering our day to day responsibilities.

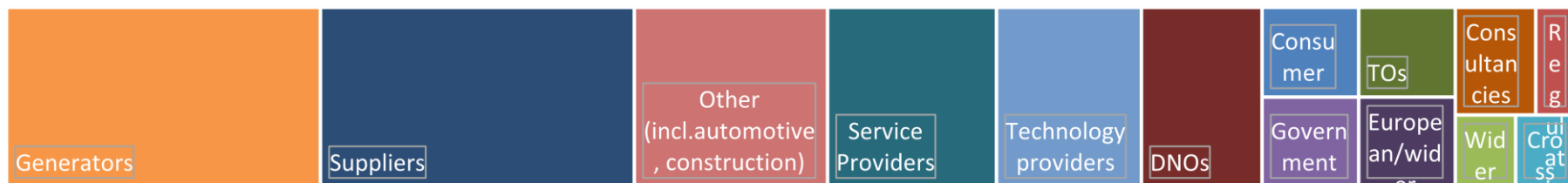
Channel	Date	No. of attendees	Topic(s)	Purpose of discussion
RIIO-2 webinar	26 April 2018	88 individuals, 68 organisations	Development of consumer and stakeholder priorities for RIIO-2	<ul style="list-style-type: none"> <li>To test with stakeholders whether we have identified the right stakeholder and consumer priorities.</li> </ul>



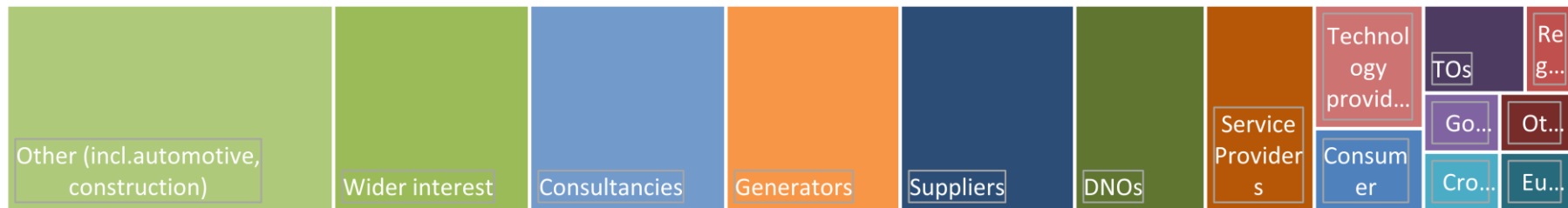
<b>RIIO-2 workshop</b>	22 June 2018	43 individuals, 43 organisations	Scenarios, regulatory mechanisms	<ul style="list-style-type: none"> <li>To engage stakeholders on using the <i>FES</i> scenarios and how we should account for the changing energy landscape.</li> <li>To engage stakeholders on our initial thinking on the ESO's regulatory framework and possible funding models.</li> </ul>
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<b>RIIO-2 webinar</b>	28 June 2018	49 individuals, 37 organisations	Scenarios, whole system	<ul style="list-style-type: none"> <li>To engage stakeholders on the use of <i>FES</i> 2018 as a basis for the business plan, and test with them which changes in the energy landscape will have the biggest impact on consumers and the industry.</li> <li>To test with stakeholders their top three focus areas for whole energy and whole electricity.</li> </ul>
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<b>RIIO-2 webinar</b>	30 August 2018	65 individuals, 47 organisations	Scenarios, charging, codes	<ul style="list-style-type: none"> <li>To engage stakeholders on our approach to using a commonality scorecard to manage uncertainty.</li> <li>To engage stakeholders on our code manager role and areas of charging identified for potential change.</li> </ul>
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<b>RIIO-2 workshop</b>	28 September 2018	ERSG members	Funding models	<ul style="list-style-type: none"> <li>To share our updated thinking on the ESO's funding model and incentives with ERSG and give them an opportunity to further input and shape our thinking.</li> </ul>
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<b>ESO 2030 ambition workshop</b>	28 September 2018	40 individuals, 36 organisations	ESO roles and ambition	<ul style="list-style-type: none"> <li>To engage stakeholders on the ESO's roles in managing system balancing and operability, facilitating competitive markets, facilitating whole system outcomes and supporting competition in network solutions.</li> </ul>
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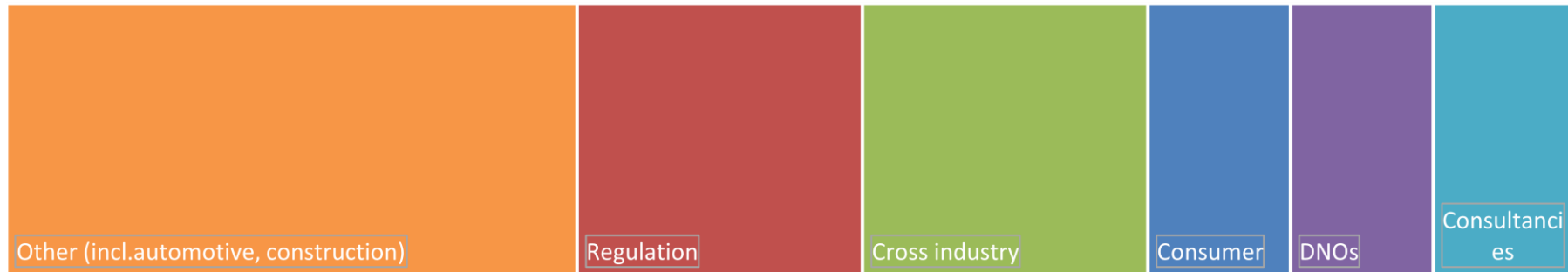
<b>FES Workshops</b>	18 & 25 October	126 stakeholders, 93 organisations <sup>24</sup>	Scenarios	<ul style="list-style-type: none"> <li>To test with stakeholders our approach to using scenarios and assumptions</li> </ul>
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<sup>24</sup> Total number for all four FES Workshops



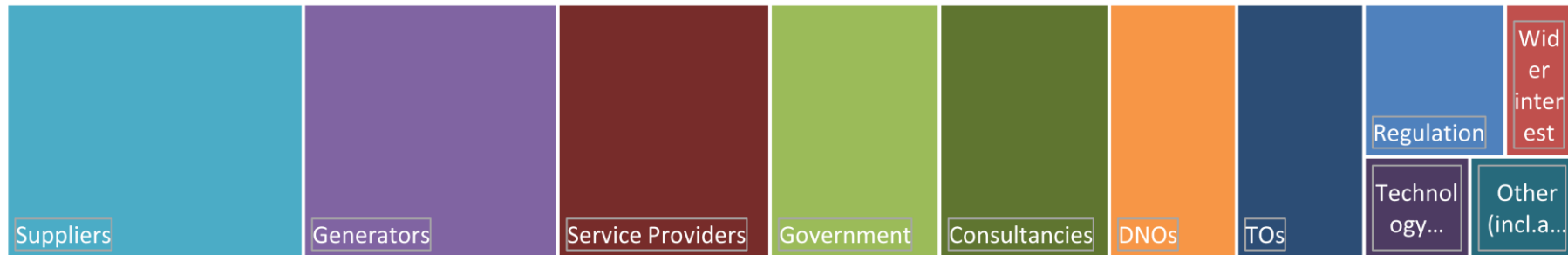
<b>Grid Code Panel meeting</b>	17 October 2018	11 individuals	Codes	<ul style="list-style-type: none"> <li>The ESO's role in code administration and associated funding.</li> </ul>
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<b>CUSC Panel meeting</b>	26 October 2018	14 individuals	Codes	<ul style="list-style-type: none"> <li>The ESO's role in code administration and associated funding.</li> </ul>
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<b>RIIO-2 webinar</b>	17 October 2018	27 individuals, 21 organisations	Thought piece on regulatory mechanisms	<ul style="list-style-type: none"> <li>To engage stakeholders on the thought piece we published and encourage them to respond to the consultation questions.</li> </ul>
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<b>Transmission Charging Methodology Forum</b>	14 November 2018	19 individuals, 19 organisations	Charging	<ul style="list-style-type: none"> <li>To engage stakeholders on the future of charging in RIIO-2.</li> </ul>
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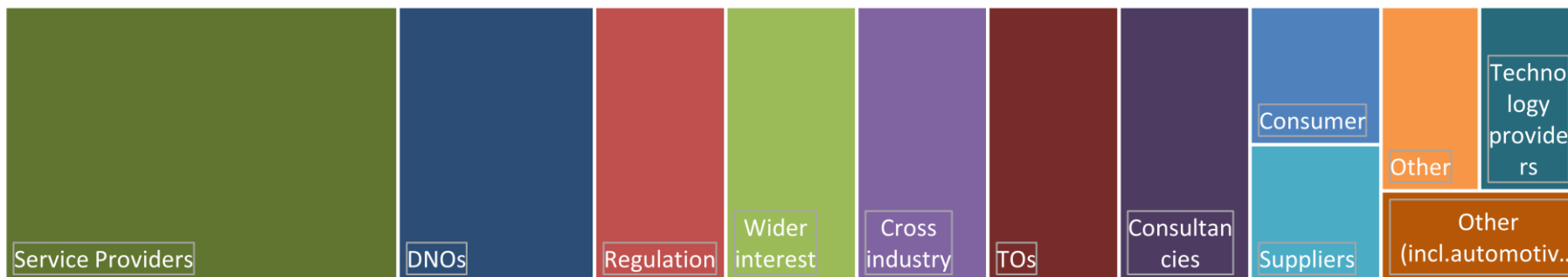
**RIIO-2 webinar** 11 November 2018 17 individuals, 15 organisations Network development, whole electricity system

- Seek views on initial thinking on proposals.

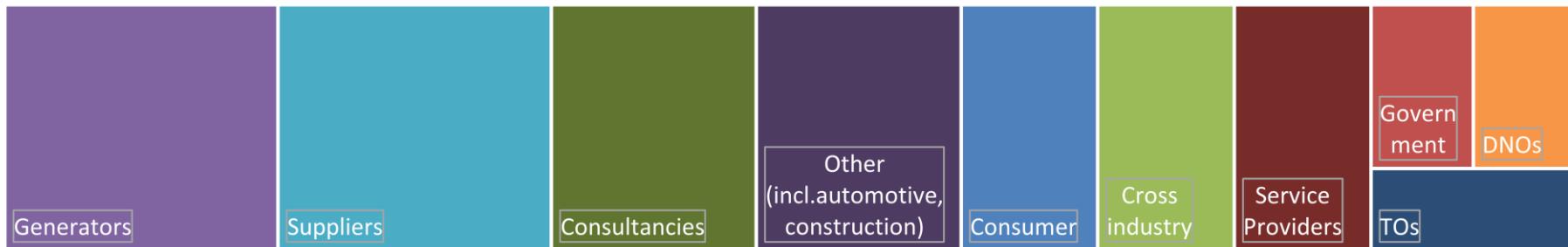


**RIIO-2 workshop** 17 December 2018 22 stakeholders, 20 organisations System operation, system access planning, whole electricity system and network development

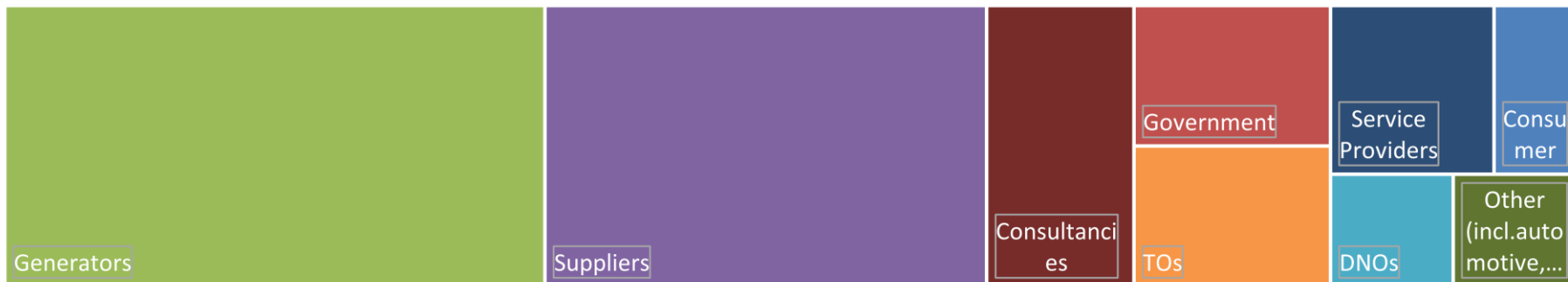
- Explore stakeholder views on some of the more technical aspects of the ESO role.



<b>RIIO-2 webinar</b>	28 January 2019	18 stakeholders, 17 organisations	Sector specific consultation, key messages, December workshop, consumer value	<ul style="list-style-type: none"> <li>To engage stakeholders on our key messages to Ofgem's sector specific consultation, what we heard at the December workshop and consumer benefit.</li> </ul>
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<b>RIIO-2 webinar</b>	21 March 2019	21 individuals, 18 organisations	Data and transparency, connections and system access planning	<ul style="list-style-type: none"> <li>To engage with stakeholders on what they have told us so far and how this has shaped our ambition.</li> </ul>
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<b>ESO Customer seminars</b>	5 and 7 March 2019	61 individuals, 40 organisations	Connections	<ul style="list-style-type: none"> <li>To test our proposed activities with stakeholders who have or are going through the connections process.</li> </ul>
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<b>Transmission Charging Methodology Forum</b>	13 March 2019	19 individuals, 19 organisations	Charging	<ul style="list-style-type: none"> <li>To give stakeholders and update on the development of our RIIO-2 proposals.</li> </ul>
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<b>ESO Operations Forum<sup>25</sup></b>	26 March 2019	60 stakeholders, 45 organisations	Data and transparency, balancing markets, system operation	<ul style="list-style-type: none"> <li>To engage stakeholders on our proposals for system operation, balancing markets and data.</li> </ul>
<b>Power Responsive Round Table</b>	10 April 2019	20 individuals, 18 organisations	Data and transparency, balancing markets and system operation	<ul style="list-style-type: none"> <li>To seek stakeholder views on our ambition for each topic and proposed activities for the development of our July business plan.</li> </ul>



<sup>25</sup> No visual data is available for this engagement.

<b>RIIO-2 workshop</b>	11 April 2019	38 individuals, 28 organisations	All RIIO-2 ambition and proposed activities	<ul style="list-style-type: none"> <li>To seek stakeholder views on our ambition and proposed activities for the development of our July business plan.</li> </ul>
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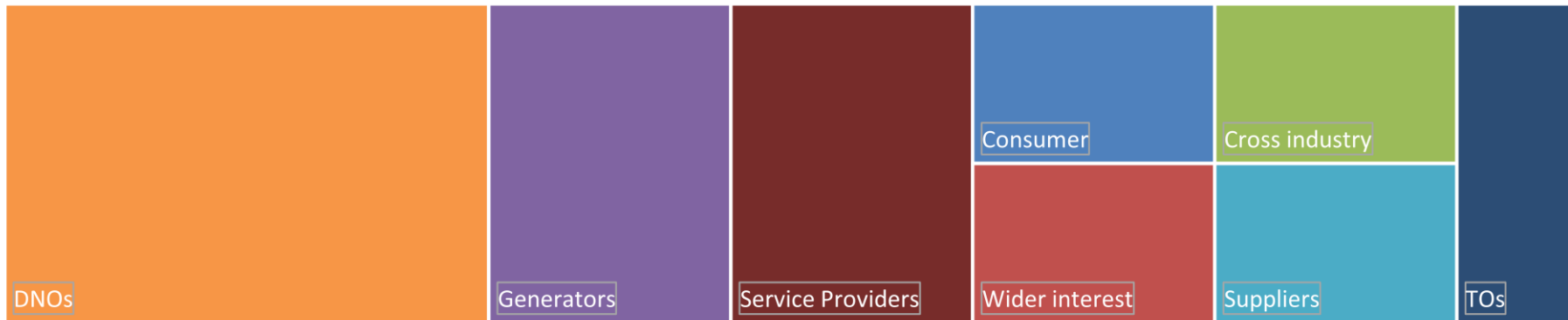
<b>ADE Demand Side Response (DSR) working group round table</b>	23 April 2019	8 individuals, 7 organisations	System operation, Capacity Market, whole electricity system and data and transparency	<ul style="list-style-type: none"> <li>To engage the working group on our ambition and proposed activities.</li> </ul>
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**CBA workshop**    25 April 2019    10 individuals, 10 organisations    Cost benefit analysis    • To engage stakeholders on our proposed methodology for undertaking cost-benefit analysis

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**IS Change Forum**    30 April 2019    43 individuals    System operation and the Design Authority    • To engage stakeholders on our proposed approach to implementing new balancing systems

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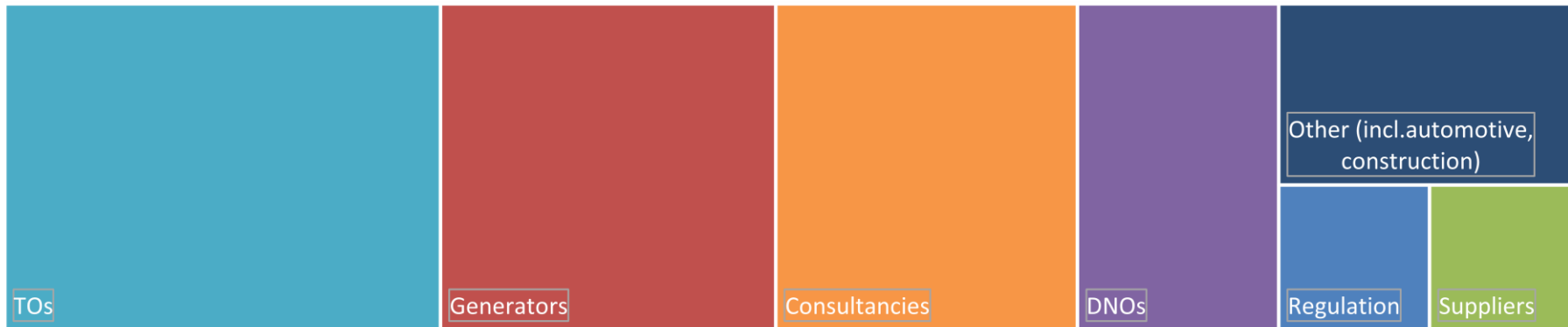




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<b>OC2 Forum</b>	1 May 2019	41 individuals, 26 organisations	System access planning, connections and codes	<ul style="list-style-type: none"> <li>To engage stakeholders on our ambition, system access planning, connections and codes.</li> </ul>
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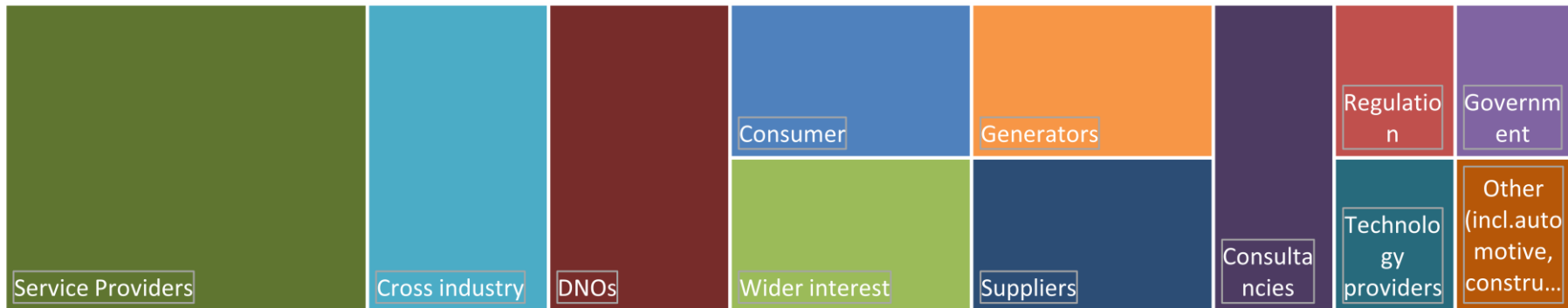

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<b>Flexible Generation Group</b>	3 May 2019	8 individuals, 6 organisations	System operation, balancing markets, data	<ul style="list-style-type: none"> <li>To seek stakeholder views on our ambition for each topic and proposed activities for the development of our July business plan.</li> </ul>
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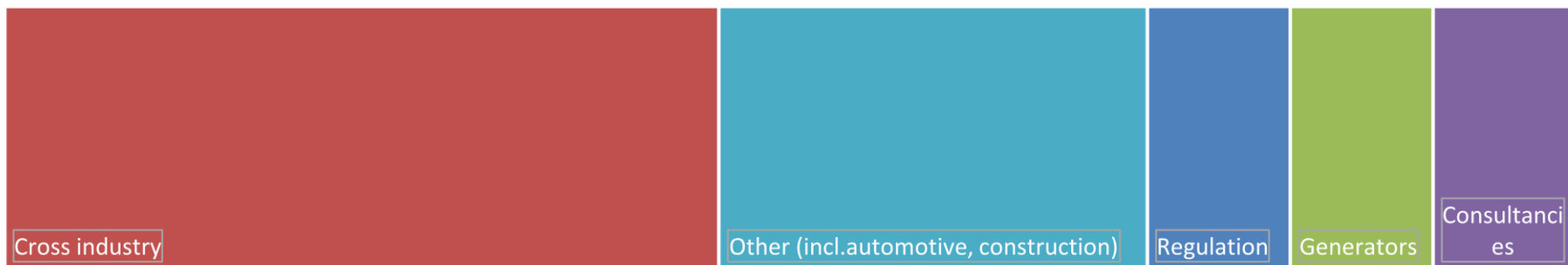
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<b>Power Responsive Steering Group</b>	3 May 2019	23 individuals, 19 organisations	Codes	<ul style="list-style-type: none"> <li>To seek views on our codes proposals.</li> </ul>
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<b>BSC Panel</b>	9 May 2019	10 individuals	System operation and balancing markets	<ul style="list-style-type: none"> <li>To seek stakeholder views on our ambition for each topic and proposed activities for the development of our July business plan.</li> </ul>
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<b>RIIO-2 webinar</b>	21 May 2019	5 individuals, 5 organisations	Innovation, IT strategy, data and system operation	<ul style="list-style-type: none"> <li>To provide and update and seek views on our further developed proposals.</li> </ul>
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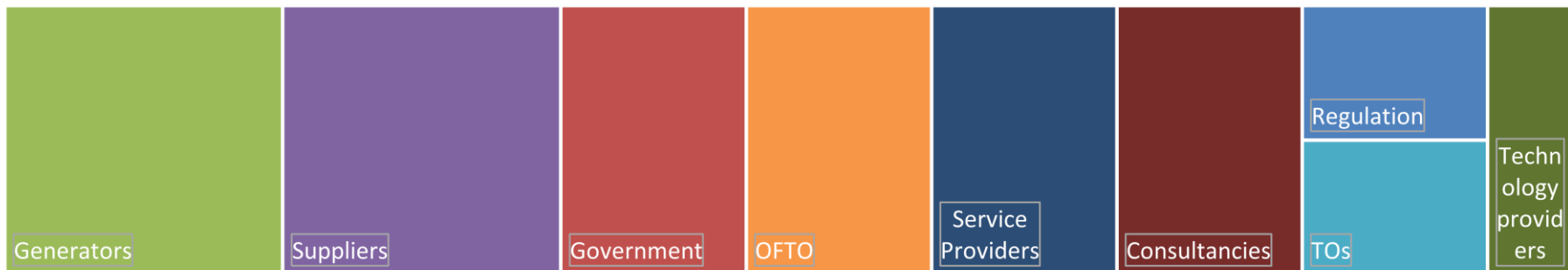
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<b>Onshore competition stakeholder webinar</b>	22 May 2019	13 individuals, 13 organisations	Onshore competition	<ul style="list-style-type: none"> <li>To seek further and more expert views on onshore competition models and the ESO's role in the process.</li> </ul>
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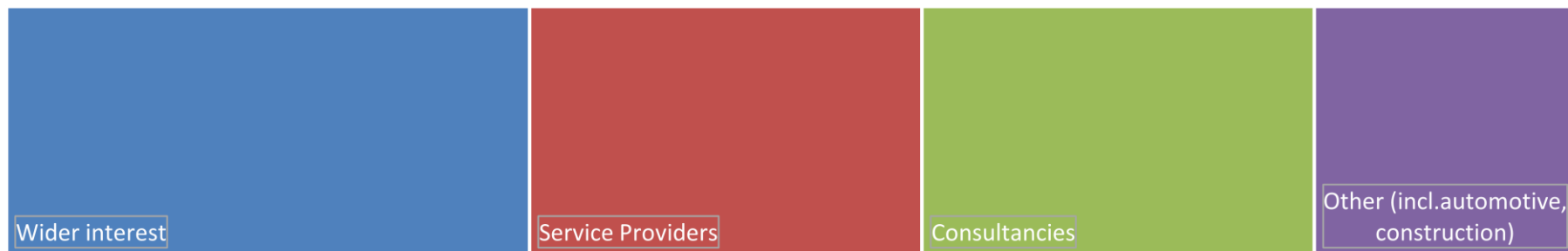
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<b>Control centre engagement workshops</b>	16 & 30 July and 8 August 2019	14 individuals, 11 organisations	Our draft business plan proposals	<ul style="list-style-type: none"> <li>To present our draft plan including cost &amp; benefit</li> <li>To seek further views on topics where we had received mixed stakeholder opinion up to July</li> </ul>
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<b>Capacity Market launch event</b>	17 July 2019	12 individuals, 4 organisations	EMR	<ul style="list-style-type: none"> <li>To discuss our EMR proposals, particularly around taking ownership of the Capacity Market Rules</li> </ul>
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<b>Future Energy Scenarios launch event</b>	18 July 2019	14 individuals, 13 organisations	Energy analysis and insight and our RIIO-2 draft plan	<ul style="list-style-type: none"> <li>To seek further views on the role we might take in making policy recommendations from our <i>FES</i> analysis</li> </ul>
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<b>ENA Electricity Regulatory Group</b>	24 July	7 individuals, 5 organisations	Our RIIO-2 draft business plan proposals	<ul style="list-style-type: none"> <li>To engage stakeholders on the detail of our draft business plan, particularly on topics across the Themes most relevant to DNOs</li> </ul>
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<b>ADE trade association round table</b>	1 August 2019	6 individuals, 5 organisations	Our draft RIIO-2 business plan and ESO funding mechanism	<ul style="list-style-type: none"> <li>To engage stakeholders on the detail of our draft business plan, particularly around Themes 1 and 2</li> </ul>
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<b>All Transmission Owners and ESO meeting</b>	9 August 2019	7 individuals, 4 organisations	Connections, System Access and Whole system	<ul style="list-style-type: none"> <li>To discuss areas of all the RIIO-2 plans where there may be overlap or interaction and how we look to co-ordinate these activities accordingly</li> </ul>
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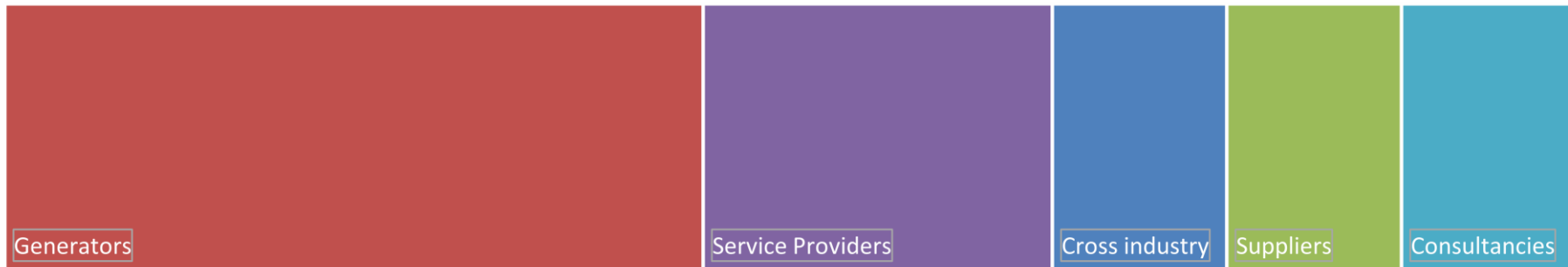
**Energy UK  
Ancillary  
Services Working  
Group**

2 September  
2019

8 individuals

Our RIIO-2 draft business plan proposals, with a focus on balancing and wholesale markets

- To engage stakeholders on the detail of our draft business plan, particularly around Themes 1 and 2



**Sub-set of Power  
Responsive  
Steering Group**

4 September  
2019

5 individuals

Our RIIO-2 draft business plan proposals, with a focus on balancing and wholesale markets

- To engage stakeholders on the detail of our draft business plan, particularly around Themes 1 and 2



<b>Flexible Generation Group</b>	6 September 2019	10 individuals	Our RIIO-2 draft business plan proposals, with a focus on balancing and wholesale markets	<ul style="list-style-type: none"> <li>To engage stakeholders on the detail of our draft business plan, particularly around Themes 1 and 2</li> </ul>
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<b>Flexibility First</b>	11 September 2019	17 individuals	Our RIIO-2 draft business plan proposals, with a focus on balancing and wholesale markets	<ul style="list-style-type: none"> <li>To engage stakeholders on the detail of our draft business plan, particularly around Themes 1 and 2</li> </ul>
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## 4.2 Stakeholder engagement numbers by segment

We have met more than 700 individuals from around 300 organisations through some 1,100 interactions. Generators, service providers and suppliers were the groups most commonly represented. It is worth noting that in the figures below many stakeholders have been assumed to be representing more than one stakeholder segment. For example, one person may be classed as both a generator and a supplier, which will appear to inflate the numbers for these groups. The other category includes non-domestic consumers, consultants, charities and technology suppliers.



Figure 9: Representation of different stakeholder groups in our engagement interactions

**Webinars:** We saw over 300 interactions through our webinars with similar representation from stakeholder segments as our overall engagement. The main difference is that we saw a higher proportion from the other category, demonstrating that this channel is valued by parties less directly connected to the future development of the energy industry such as non-domestic consumers or construction firms.



Figure 10: Representation of different stakeholder groups in webinars

**Workshops:** We saw over 700 interactions at our stakeholder workshops. Service providers were the most represented group at our workshops followed by generators and other. Our workshops also saw a higher proportion of stakeholders from cross-industry bodies such as trade associations and “wider interest” including academics.



Figure 11: Representation of different stakeholder groups in our workshops

**Bilateral meetings:** We have had an open offer to arrange bilateral discussions on our RIIO-2 priorities, vision and proposals with interested parties and have held over 100 bilateral meetings throughout 2018 and 2019. Our bilateral engagement shows a more even distribution across our stakeholder segments than other engagement channels with consumer bodies, and wider interest parties well represented.



Figure 12: Representation of different stakeholder groups in our bilateral meetings

## 5 How stakeholder feedback has shaped our plan

Here is a summary of all our stakeholder engagement and how we have used stakeholder feedback to inform and shape our plan. We have structured these tables by discussion area (e.g. regulatory mechanisms) or by Theme and then by the activities that sit in the main body of our plan. As we set out earlier in this document, our engagement has evolved throughout the business plan development process and we show here what engagement we have done as the process develops.

### 5.1 Regulatory Framework

#### 5.1.1 Phase 1 Broad thinking

Channel	Aim of Event	Feedback we received	How this has shaped our plan
Ofgem framework consultation responses 2 May 2018  11 Responses	<ul style="list-style-type: none"> <li>Ofgem to seek views on their proposed RIIO-2 framework</li> <li>We used this to understand stakeholders' views at that point.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders are generally supportive of the ESO having a separate price control to the TO.</li> <li>It was recognised that a Regulatory Asset Value (RAV)-based model would not be appropriate given the nature of the ESO business, and with a small asset base alternative remuneration models needed to be considered.</li> <li>One stakeholder suggested a model based on remuneration of reasonable costs with a profit margin, and another cautioned against the ex-post model used for the Data Communications Company (DCC).</li> <li>Some stakeholders agreed that the funding model should be supplemented with appropriate incentives.</li> </ul>	<ul style="list-style-type: none"> <li>We took this feedback into account as we explored and assessed different potential funding model for the ESO.</li> </ul>

5.1.2 Phase 2 Developing our ambition and activities

Channel	Aim of Event & Options presented	Feedback we received	How this is shaping our plan
<p>ESO RIIO-2 workshop 22 June 2018</p>	<ul style="list-style-type: none"> <li>To develop a set of principles for a successful ESO regulatory framework.</li> </ul>	<ul style="list-style-type: none"> <li>An industry trade body pointed out the importance of avoiding windfall profits.</li> </ul>	<ul style="list-style-type: none"> <li>We added the principle that the framework should ‘prevent windfall gains and losses that are not justified by underlying performance’</li> </ul>
<p>43 attendees</p>	<ul style="list-style-type: none"> <li>We presented eight principles we thought would measure a successful regulatory framework and sought feedback if these were comprehensive enough.</li> </ul>	<ul style="list-style-type: none"> <li>A consumer body suggested that transparency would be important to include in the principles.</li> <li>In our stakeholder workshop, an additional principle was suggested around delivering carbon and cost reductions.</li> </ul>	<ul style="list-style-type: none"> <li>We added the principle that the framework ‘is sufficiently simple and transparent for the ESO, Ofgem and industry stakeholders to understand.’</li> <li>We did not include an additional principle. We considered that carbon reduction is included in the fourth principle. Additionally, the first principle of encouraging the ESO to deliver value covers cost reduction as well as recognising the potential for necessary short-term cost increases, to drive longer term savings, and the importance of meeting customer and consumer needs.</li> </ul>
	<ul style="list-style-type: none"> <li>To provide an overview and gain feedback on five possible funding models for the ESO: RAV,</li> </ul>	<ul style="list-style-type: none"> <li>Some stakeholders suggested looking elsewhere for examples of models:                             <ul style="list-style-type: none"> <li>National Air Traffic Services for an example of a performance model; and</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>We looked at the funding models for these suggested organisations to identify where we could pull out appropriate features. We also met</li> </ul>

Channel	Aim of Event & Options presented	Feedback we received	How this is shaping our plan
	<p>margin, layered, performance, commitments.</p> <ul style="list-style-type: none"> <li>The options presented were the five different funding models and we asked stakeholders which funding models we should take forward to explore in further detail.</li> </ul>	<ul style="list-style-type: none"> <li>Independent System Operators (ISOs), such as those in the USA.</li> <li>Stakeholders pointed that the activities the ESO undertakes, and the risks we hold, must inform the ESO's final funding model.</li> </ul>	<p>Gatwick Airport to understand their model further.</p> <ul style="list-style-type: none"> <li>We agreed with stakeholders that the activities the ESO undertakes and the risks we hold must inform the ESO's final funding model.</li> <li>We planned and carried out further engagement with them over the following months, to understand the outcomes stakeholders wanted from us and identify how to deliver these. We built this into our development of proposals for a funding model.</li> <li>We also undertook to provide a clearer explanation of the risks the ESO holds, given feedback that many stakeholders do not understand this.</li> </ul>
<p>ESO RIIO-2 webinar 28 February 2018  49 Attendees</p>	<ul style="list-style-type: none"> <li>To provide an overview of the information we presented at the event, on our principles and potential funding models.</li> <li>The options presented were the five different funding models and we asked stakeholders which funding models we should</li> </ul>	<ul style="list-style-type: none"> <li>There was very little, or no qualitative or poll support, for the RAV and margin models, or the ESO/customer contract approach in the commitments model.</li> </ul>	<ul style="list-style-type: none"> <li>In the workshop, we had originally proposed the commitments model as one of the models we would continue to develop.</li> <li>We continued to focus on understanding the outcomes that stakeholders wanted and developed a strong focus on outcomes in the funding model.</li> </ul>

Channel	Aim of Event & Options presented	Feedback we received	How this is shaping our plan
	take forward to explore in further detail.		<ul style="list-style-type: none"> <li>We did not pursue the commitments model any further due to concerns around the ESO/customer contract approach.</li> </ul>
<p><i>ESO RIIO-2</i> Thought piece 15 October 2018</p>	<ul style="list-style-type: none"> <li>To provide an overview of a suitable regulatory framework for the ESO, and seek feedback on our thinking around incentives, financeability, risks and options for a funding model.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders generally supported the layered model and its principles.</li> </ul>	<ul style="list-style-type: none"> <li>We continued to develop our view that a two-year price control is not ideal for the ESO, which is a message we heard from multiple stakeholders, both in response to our thought piece and in bilateral meetings.</li> </ul>
<p>Podcast 16 October 2018 200 plays</p>	<ul style="list-style-type: none"> <li>We presented two options of potential funding models to stakeholders which had more detail around how they could work in practice, listing the benefits and challenges of each.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders agreed with the pros and cons of each potential funding model.</li> </ul>	<ul style="list-style-type: none"> <li>On the funding model, we took into account the messages in responses to the thought piece that the ESO's framework should enable us to deliver on decarbonisation, provide value to consumers and be transparent.</li> </ul>
<p>Webinar 17 October 2018 28 Attendees</p>		<ul style="list-style-type: none"> <li>Stakeholders had views on whether asymmetric incentives would be appropriate for the ESO.</li> </ul>	<ul style="list-style-type: none"> <li>We also heard in responses to the thought piece that incentives need to be complementary to the funding model and work to drive additional behaviours. This has influenced our position that the funding model and incentives need to be designed in parallel to ensure they each incentivise different behaviours</li> </ul>



### 5.1.3 Phase 3 Testing our ambition and activities

Channel	Aim of Events	Feedback we received	How this is shaping our plan
Various Bilateral meetings December 2019 - March 2019	<ul style="list-style-type: none"> <li>To engage with stakeholders on the ongoing development of our proposals for a funding model.</li> <li>Ofgem’s sector specific strategy document sought views on potential models they were considering; we engaged with stakeholders on these options as well as our own further thinking</li> </ul>	<ul style="list-style-type: none"> <li>Some stakeholders believe a pass-through funding model would not work, as it would not mimic a competitive environment or give the ESO incentive to focus on the priorities for industry. They also believed it would not provide incentive for the ESO to be more efficient.</li> <li>A smaller number could see the benefits of a pass-through approach.</li> <li>Stakeholders believe if the ESO is best placed to do something and hold the risk, the ESO should have a funding model that remunerates us for that.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Most stakeholders were supportive of a layered funding model.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Stakeholders had mixed views on introducing a cost disallowance – a few were supportive, with one saying it should only be used in extreme circumstances where other stakeholders disagreed with the proposal.</li> <li>All agreed that an uncapped, unknown disallowance poses too much risk to the ESO.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>One stakeholder thought the sharing factor incentivised the ESO not to spend in order to get the efficiency incentive benefits, whereas others thought removing it wouldn’t create additional consumer benefits.</li> </ul>	<ul style="list-style-type: none"> <li>We took this feedback into account in our response to Ofgem’s Sector Specific Methodology consultation on 14 March 2019.</li> <li>We proposed: <ul style="list-style-type: none"> <li>A layered model approach to enable transparency and tailored remuneration to each of the ESO’s varied activities.</li> <li>A model that we believed would achieve stakeholders’ expectations of us to be more agile and ambitious, while remaining efficient – this included a flexibility mechanism to enable us to respond to rapid changes in the energy landscape, and the retention of a sharing factor to encourage efficiency.</li> <li>A softer sharing factor on underperformance to avoid the risk of spending less to receive additional benefits.</li> <li>Two-yearly proportionate reviews within a longer price control, to provide a balance</li> </ul> </li> </ul>

Channel	Aim of Events	Feedback we received	How this is shaping our plan
		<ul style="list-style-type: none"> <li>• They acknowledged if it was removed there would need to be some way to drive efficiency.</li> <li>• Stakeholders strongly supported the ESO having strong incentives, although there were mixed views on how they should be applied.</li> <li>• Some stakeholders would like to see a downside within the incentives framework where others thought positively skewed incentives would drive better behaviours.</li> <li>• Many stakeholders thought consumer benefit should be at the heart of incentives.</li> <li>• Stakeholders have consistently said they want us to be agile, ambitious, innovative and strongly incentivised.</li> </ul>	<p>between flexibility and certainty.</p> <ul style="list-style-type: none"> <li>• Improvements to strengthen the incentive scheme, in order to more effectively drive the ESO deliver additional benefits for consumers.</li> </ul>
<p>Various bilateral meetings following the publication of Ofgem’s Sector Specific Decision Document</p> <p>June 2019 – August 2019</p>	<ul style="list-style-type: none"> <li>• To engage with stakeholders on Ofgem’s decision and further consultations within the document.</li> </ul>	<ul style="list-style-type: none"> <li>• Many stakeholders raised the concern that the proposed funding models are not suitable for an asset-light organisation and will negatively affect the delivery of our ambition.</li> <li>• There was some confusion as to why a purely RAV*WACC model was being proposed rather than a layered model including margins, after previous negative views provided from stakeholders on a RAV*WACC model alone.</li> <li>• There was a concern raised around what the models could potentially do to our risk profile. Stakeholders felt there needs to be more consideration on the risk asymmetry especially if</li> </ul>	<ul style="list-style-type: none"> <li>• We took all of this feedback into account as we continued to look at how we could be potentially funded in RIIO-2.</li> <li>• In our response to the decision document we set out our concerns around Ofgem’s proposals and detailed our own suggestion for a layered funding model for the ESO. We believe our preferred model will best deliver consumer benefit, recognise the type of business the ESO is and ensure we are a flexible, sustainable and</li> </ul>

## How stakeholder feedback has shaped our plan

Channel	Aim of Events	Feedback we received	How this is shaping our plan
		<p>we were exposed to significant downside incentives.</p> <ul style="list-style-type: none"><li>• Stakeholders agreed we need be sufficiently funded to be able to do our job effectively.</li><li>• Stakeholders agreed we should be incentivised to drive down costs and one stakeholder mentioned they did not believe a cost pass through model would achieve this.</li><li>• One stakeholder had concerns that this model does not incentivise us to offer long term contracts and with the risk of a cost disallowance will introduce more risk.</li></ul>	<p>financeable business, set up for the future.</p>

## 5.2 The Changing Energy Landscape: Scenarios

We have talked to stakeholders about the changing energy landscape at the following events:

### 5.2.1 Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
<i>FES</i> conference and workshops during 2017	<ul style="list-style-type: none"> <li>Scenarios needed to better reflect the changing energy landscape and rate of change. This included elements of specific topics such as heat, transport, power demand and flexibility, gas supply and electricity supply.</li> </ul>	<ul style="list-style-type: none"> <li>For 2018, the four scenarios were updated on new axes to include two levels of decentralisation and two levels of decarbonisation.</li> <li>Updates were made to modelling processes to ensure it captured some of the changes identified under specific topics.</li> <li>All this means that the scenarios we are using to base the business plan on, are robust and endorsed by stakeholders.</li> <li>More information can be found here.<sup>26</sup></li> </ul>

<sup>26</sup> <http://fes.nationalgrid.com/media/1346/future-energy-scenarios-2018-stakeholder-feedback-document-published-feb-2018.pdf>

### 5.2.2 Phase 2 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
<p>ESO RIIO-2 workshop 22 June 2018</p>	<ul style="list-style-type: none"> <li>Stakeholders did not see the creation of a single ‘best-view’ of the future energy landscape as credible, due to the level of change and uncertainty facing the industry.</li> <li>Most stakeholders agreed that we should seek to understand the commonalities across the four <i>FES</i> 2018 scenarios and asked that we provide more detail on these as we develop our thinking.</li> </ul>	<ul style="list-style-type: none"> <li>We continued to use <i>FES</i> 2018 as the foundation of our plan. We carried out more detailed analysis of the areas of change/ uncertainty when <i>FES</i> 2018 had been published and more information was available.</li> <li>We created a commonality ‘scorecard’ and a process in which we intended would be used to help manage uncertainty although our two-year business planning cycle means this is no longer relevant.</li> </ul>
	<ul style="list-style-type: none"> <li>We should focus further analysis on the possible technical and policy changes that could significantly affect industry processes or consumer value.</li> </ul>	<ul style="list-style-type: none"> <li>We reduced and consolidated some of the technology topics, for example specific generation technologies into broad categories like renewable technologies. We balanced the lists between the technology and policy, and market categories.</li> </ul>
	<ul style="list-style-type: none"> <li>In terms of the challenges and uncertainties, stakeholders felt the area of digitisation and big data needed to be considered further and asked for more of a balance between the technical changes, the policy and market changes, with some saying our original list was “too technocratic”.</li> <li>Top areas of change and uncertainty highlighted by stakeholders:</li> </ul>	<ul style="list-style-type: none"> <li>We refined our areas of change/ uncertainty to specifically include digitisation and have incorporated this into our work on IT as part of our business plan development.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>• Digitisation of the energy system</li> <li>• Electrification and decarbonisation of transport</li> <li>• Change in Government energy policy</li> <li>• Local generation and storage</li> </ul>	
<p>ESO RIIO-2 webinar 28 June 2018</p>	<ul style="list-style-type: none"> <li>• Stakeholders broadly supported using <i>FES</i> as the basis for our analysis of the energy landscape for RIIO-2 and didn't have any alternative suggestions</li> <li>• There are a few key challenges stakeholders believe we need to be wary of when basing our future business plan on scenarios.</li> <li>• There is also a broad range of other changes that could impact the landscape. The top three being:               <ul style="list-style-type: none"> <li>• Increasing renewable generation capacity</li> <li>• Increased decarbonisation of transport</li> <li>• Increased digitisation across the energy sector</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• As above</li> </ul>
<p>ESO RIIO-2 webinar 28 August 2018</p>	<ul style="list-style-type: none"> <li>• Over two-thirds of stakeholders agreed or somewhat agreed the process created for using the commonality scorecard and the scorecard itself was a good approach to establishing the commonalities between scenarios per activity.</li> </ul>	<ul style="list-style-type: none"> <li>• The process was further developed and refined to test with stakeholders at a future event with working examples.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
Establishment of 'consistent view of the future' networks working group.	<ul style="list-style-type: none"> <li>Ofgem and the RIIO-2 Challenge Group requested that all the network companies should agree a set of common factors and assumptions for developing their core view of the future for the next price control period.</li> </ul>	<ul style="list-style-type: none"> <li>The consistent view is based on <i>FES</i> 2018, again this supports our plan to use this as the basis of our business plan analysis (see above).</li> <li>We have received additional scrutiny from Ofgem's RIIO-2 Challenge Group, which has provided guidance, for example around central assumptions and ensuring whole energy system thinking is fully embedded within the business plan.</li> <li>We continued to build on this and referenced the consistent view of the future in the July draft of our business plan. In this version of the business plan we are aligned to Ofgem's guidance around how to use it. Please see the assumption section of the business plan.</li> </ul>

### 5.2.3 Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
<i>FES</i> workshops October 2018	<ul style="list-style-type: none"> <li>Scenarios process (using <i>FES</i> to determine how certain or common an outcome is): Stakeholders were broadly supportive of the proposed approach, however some stakeholders challenged if three levels of uncertainty were required.</li> <li>It was suggested that the eight-step process should start with "outcomes" rather than</li> </ul>	<ul style="list-style-type: none"> <li>We continued with the proposed approach, ensuring each step of the process was sufficiently documented.</li> <li>We confirmed that level 2 should be used for genuine binary choices as indicated by <i>FES</i> or, for example, where a policy decision may reasonably go one of a few ways.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>activities. The options we develop, and subsequent activities, will be developed around meeting out 2030 ambition.</p> <ul style="list-style-type: none"> <li>Some stakeholders were concerned that the ESO could categorise much of the uncertainty as level two due to its place as a middle ground.</li> <li>There were discussions around regionalisation of the key drivers.</li> </ul>	<ul style="list-style-type: none"> <li>We discussed regional points with Scotland stakeholders and <i>FES</i> has looked to enhance its regional analysis.</li> </ul>
	<ul style="list-style-type: none"> <li>Uncertainty mechanisms: Stakeholders felt that a shorter price control can help manage uncertainty but had concerns this could lead to price signals changing too often, which could hinder investment decisions. Incremental smaller changes on a regular basis are better than making big changes on a less regular basis.</li> <li>Stakeholders questioned how we would deal with big uncertainties. A specific example on renationalisation was given.</li> <li>There was a lack of support for mechanistic trigger points (e.g. on the number of EVs or installed wind capacity).</li> <li>There were suggestions to structure the business plan for different timeframes e.g. short, medium and long term for different investment types.</li> <li>There was varied feedback as to what trigger points should look like, and how to ultimately</li> </ul>	<ul style="list-style-type: none"> <li>We continued to develop our thinking on managing uncertainty through our regulatory frameworks work stream.</li> <li>We explained the commonality scorecard is designed to ensure the ESO is proactive in looking at specific regulatory and/or policy decisions that may arise. On renationalisation, we stated that we would be proceeding in the manner set out in Ofgem’s Framework Decision document.</li> <li>We confirmed that this was being picked up by the regulatory mechanism work.</li> </ul>



Channel	Feedback we received	How this is shaping our plan
	manage uncertainty, with several stakeholders questioning how a more mechanistic approach would work for the ESO.	

### 5.3 Theme 1: Ensure reliable, secure system operation to deliver electricity when consumers need it

A summary of the key themes from our engagement activity:

- Stakeholders asked for clarity on our 2025 carbon-free ambition. Some asked if the ESO would be forcing the system to be carbon-free, while others wondered if it meant operating a no-transmission or no-synchronous generation system.
- Some stakeholders said they would like to see a roadmap out to 2025 to understand how key milestones would be delivered.
- Although many stakeholders were supportive of the proposal to develop new balancing and control capabilities, due to the challenges the operating environment brings to the system, some had concerns over the scale and deliverability of big IT projects.
- Most stakeholders were in favour of us setting up a design authority as we look to develop a digital twin for our control room infrastructure. Stakeholders want us to be transparent with how the system is created and how decisions are made. They also wanted further clarity on what the digital twin is.
- Stakeholders support us working in partnership with universities to develop enhanced training courses and agree we should develop enhanced simulation to match our new control centre tools we're developing.

#### 5.3.1 Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
Customer and market provider feedback	<ul style="list-style-type: none"> <li>• We heard that we need to deliver more effective systems, to be able to adapt more quickly and to have a more proactive role in supporting the markets to deliver what we need from a system operation perspective.</li> </ul>	<ul style="list-style-type: none"> <li>• We have used this feedback to propose a set of activities that will provide the control and dispatch capability required by us and our stakeholders.</li> <li>• We have proposed the delivery of new capability in a more agile way with stakeholders at the heart of the design and testing processes.</li> </ul>
Balancing Programme feedback	<ul style="list-style-type: none"> <li>• The ESO needs to have more open communications on the Electricity</li> </ul>	<ul style="list-style-type: none"> <li>• We have learned our lessons from the EBS programme and understand how important it is for stakeholders to be transparent about</li> </ul>

	Balancing System (EBS). Concern was also expressed on how it is progressing.	progress. This has directly influenced our plan to propose a design authority approach to system development in RIIO-2.
The ESO <i>Forward Plan</i> development processes for 2018/19 and 2019-21	<ul style="list-style-type: none"> <li>Stakeholders, particularly service providers, have urged us to complete the roll-out of the ancillary services dispatch platform (ASDP) as soon as possible.</li> <li>Stakeholders, particularly service providers and generators, would like greater transparency of control room decision making.</li> </ul>	<ul style="list-style-type: none"> <li>We are aware of the impact that our system replacements have on stakeholders and the importance of implementing new systems on time. We have applied this to our RIIO-2 proposals to provide as much transparency as possible to stakeholders and be clear on implementation milestones.</li> <li>We will provide greater transparency on control room actions through our 'Open Data' proposals. The Design Authority proposal in Theme 1 will also increase transparency for stakeholders on how systems are being set up for dispatch.</li> </ul>

### 5.3.2 Phase 2 Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
ESO 2030 ambition workshop, 28 September 2018 RIIO-2 stakeholder workshop, 17 December 2018	We talked to stakeholders at workshops about our system operation role. The key themes consistent across all round table discussions from these events were: <ul style="list-style-type: none"> <li>We need to be clear on the respective roles and responsibilities between the ESO and DSO.</li> <li>Stakeholders, particularly service providers, want more transparency around the</li> </ul>	In response to each of the key themes: <ul style="list-style-type: none"> <li>We have proposed to provide clarity in the ESO and DSO roles as part of our RIIO-2 activities, and we will need to make sure that consistent arrangements develop across transmission and distribution that allow services providers to appropriately stack revenue streams.</li> <li>As part of our smart data and transparency activities, we are proposing to develop a</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>decisions that are made in the control room to understand the value of services to us.</p> <ul style="list-style-type: none"> <li>• We need to get better at delivering large IT programmes and be clear on the risks / delays to projects.</li> <li>• If the ESO is going to promote long term solutions to operability challenges, then we need to look at long term contracts.</li> <li>• A different control architecture is required as we move to a digital platform where the world is connected more peer to peer with parties contracting with a central organisation, with a distribution network or with each other.</li> </ul>	<p>data portal that will provide the platform to share operational decisions and outcomes.</p> <ul style="list-style-type: none"> <li>• We know that we must build our capability around delivery of IT projects and the trust of stakeholders in this respect – this has been built into our IT strategy. Our proposal to use a cross-industry design authority to develop new system operation capability also looks to address this concern from stakeholders on IT delivery.</li> <li>• We will continue to assess the role of longer-term contracts within our balancing services markets.</li> <li>• We propose to refresh our system operation capabilities as part of our RIIO-2 activities.</li> </ul>

### 5.3.3 Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
	<b>Our zero-carbon ambition</b>	
Operational forum, trade association round tables, bilateral meetings and Flexible Generation Group.	<ul style="list-style-type: none"> <li>• We presented our ambition to “transform the operation of the electricity system so that, by 2025, it can operate carbon free” at several forums and groups.</li> </ul>	<ul style="list-style-type: none"> <li>• Further detail around how we will meet our ambition will be developed as we build our business plan and through further stakeholder engagement.</li> </ul>
Across March, April and May 2019	<ul style="list-style-type: none"> <li>• The ambition has been very positively received by most of the stakeholders. As a next step, people want to understand the</li> </ul>	<ul style="list-style-type: none"> <li>• We have clarified what we mean by the ambition within this plan and that this is</li> </ul>

cost of and the milestones to achieving the ambition to understand if it is achievable.

- More widely stakeholders asked us to clarify what the ambition means and whether we intended to drive zero carbon market solutions. We have been asked for this clarification across several engagement forums particularly by service providers and generators.
- A few stakeholders at the operational forum, at our RIIO-2 event in April and at the OC2 Forum, thought it may be too ambitious and that we shouldn't underplay the challenges around operating a zero-carbon network e.g. inertia.

ability to run a carbon-free system if that's what the market provides.

### Transforming our balancing and control capabilities for a zero-carbon system

ESO operational forum, 26 March 2019

- We presented our ambition and hosted a lunchtime stand to discuss our proposed activities:
- We discussed our proposal to upgrade control capability and the options to achieve it with two service providers, a consultancy and a generator. All but the generator were supportive of the offline build option. The generator was concerned that a cross-industry design group could become a 'talking shop'.

- We have subsequently engaged stakeholders further on how the cross-industry Design Authority will work in practice and how we involve stakeholders to assess the impact of system development to their businesses.

RIIO-2 stakeholder event, 11 April 2019

At our round table event, we talked through the proposals set out in our ambition document and heard:

- We agree that further 'big bang' IT projects are to be avoided and that is why we propose to undertake modular

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- Stakeholders want us to avoid 'big bang' IT projects because they always fail in the energy (and other) sectors and were supportive of a more modular / agile build approach to new control capability.
  - They agreed with the concept of a cross-industry design authority to involve end users in defining capability requirements although emphasised that all market participants will be able to get involved – it needs to be representative.
  - The National Infrastructure Commission is proposing a 'digital twin' and the ESO could get involved with that.
- development of systems in a more agile delivery approach.
  - We have subsequently engaged further with stakeholders on how we can most effectively set up the Design Authority and make it representative.
  - We will see how we could get involved with this initiative.

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Power Responsive and Association of Decentralised Energy (ADE) round tables, April 2019

We had the opportunity to speak to stakeholders in more detail about our system operation proposals at Power Responsive and ADE round tables.

The key themes from these engagement activities were:

- Stakeholders want to see a roadmap of the key milestones to achieve the ambition / activities and want to know that these will be fixed (with consequences for non-delivery).
  - The agile development approach used recently by the ESO for the Platform for Ancillary Services (PAS) system worked well.
  - We need to benchmark across other sectors and other countries.
- We have developed a roadmap for replacing our control and balancing capability in this plan, but we will test and develop this further with stakeholders to ensure that it is achievable before submitting our final plan. We will also discuss how to measure our performance.
  - We will be adopting an agile development approach for new system capability and this will be modular in nature.
  - We will undertake benchmarking activity and further stakeholder engagement in line with stakeholder suggestions.
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- In terms of our resourcing proposal, it was generally agreed a mix of power system and computer science knowledge is needed for control engineers, but with increasing focus on the latter. We need to look at what other sectors are doing to plug data skills gaps.
  - We had recommendations from stakeholders as to who we should engage with further for our system operation proposals.

IS change forum, 30 April 2019

We hosted a stand at the forum to talk about our IT strategy and system operation proposals:

- Stakeholders were supportive of our proposal to replace control capability.
  - All those we spoke to supported and were enthused by our Design Authority proposal for capability development and implementation, some remarking that recent PAS system development had been positive.
  - We received expressions of interest to be part of the cross-industry Design Authority from two market participants.
  - We identified two further opportunities for engagement; one on adoption of AI, the other was the idea of an IT hackathon that should include energy and non-energy industries.
- This echoes what we heard at previous engagement sessions.
  - We will continue to take the proposal forward.
  - We have taken note of these expressions of interest but would undertake a more formal process, to determine Design Authority representation.
  - We will engage further on IT development, as suggested by stakeholders, ahead of the RIIO-2 period.

Flexible Generation Group, 3  
May 2019

- There was general agreement that control capability requires upgrading, but stakeholders said that we needed to learn from previous projects and ensure transparency around progress along with prioritised and agile delivery.
- We need to make it clear what systems market participants will need to interface with and don't change requirements once they have been set (so that market participants don't waste money). We also need to learn the lessons from EBS.
- The group wanted to see a roadmap of deliverables.
- Our proposal to use a cross-industry design authority intends to address this concern.
- It is absolutely our intention to make system interface requirements transparent to the industry and that a cross-industry design authority approach should deliver that.
- We have provided a roadmap within this plan.

ESO *Our RIIO-2 Ambition*  
document consultation, April  
2019  
11 Responses received

- A summary of the views we received:
- More information is required on the activities that we are proposing for stakeholders to assess whether we can meet our ambition.
  - There appears to be some overlap between our *Forward Plan* and RIIO-2 proposals e.g. the introduction of real-time inertia monitoring.
  - For the new tools that we are proposing to implement, it must be clear (through trials and impact assessments) that they will add benefit e.g. AI reduces balancing costs.
  - As we had heard in our face to face engagement, respondents want to see a roadmap or programme of deliverables
  - This business plan intends to provide further detail on how we intend to meet the ambitions we have set.
  - We have tried to clarify in this plan exactly what will be delivered and in what timescales.
  - We have provided information in this plan around the benefit of our proposals.
  - We set out a roadmap and more detail in this plan for how we intend to meet our ambition.



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that will meet the 2025 zero-carbon ambition.

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Control centre engagement events, 16 & 30 July and 8 August 2019

We used our control centre events to talk more to stakeholders about our proposal to use a design authority and how we ensure it is representative of industry participants.

- A renewable energy company said it was very supportive of the approach and we should to be subject to external challenge. Also, that Ofgem has been talking about releasing funding to enable small parties to attend these types of things;
- A consumer body suggested that we could invest more time with smaller parties to support their needs and ensure they can be involved. They also questioned whether a consumer lens in the process would be required;
- A member of local government and an energy technology company asked whether trade associations could be involved to ensure that the Design Authority is representative;
- A consultancy asked if it should be called an advisory board if it didn't have the remit to say no to the ESO whereas two DNOs and a consumer body thought it was reasonable that the ESO had the final decision making authority as long as we justify our actions; and

- We agree that the Design Authority should provide an avenue for external challenge to our approach and that smaller market participants should have the opportunity to participate;
  - We will further consider the role of particular stakeholders in the Design Authority process, including Trade Associations and consumer interest groups;
  - We agree that the ESO should have the final decision-making authority within the Design Authority but that the Authority will ensure that the ESO is held to account;
  - We will further consider what should be discussed in the Design Authority meetings as we develop Terms of Reference within the coming months.
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- A generator thought that the Design Authority would be like a project management discussion and stressed that transparency on scope, timelines and budget were critical for industry participants. They also wanted the lessons learnt from EBS to be explored before the start of RIIO-2.
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### **Enhancing our resourcing, talent acquisition, training and simulation capability<sup>27</sup>**

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RIIO-2 stakeholder event, 11 April 2019

We asked stakeholders at our round table event about our resourcing proposals, particularly our proposals on training control engineers:

- It was generally agreed that our control engineers of the future require a mix of power system and computer science knowledge, but with increasing focus on the latter.
  - We need to look at what other sectors are doing to plug data skills gaps.
  - A supplier thought that we didn't necessarily need control engineers to have market knowledge and that it's not the ESO's job to solve market-wide recruitment issues. A service provider and a DNO also agreed that it wasn't the ESO's role to bridge industry skill gaps alone.
  - We have engaged further on this proposal to determine what skill sets stakeholders think we should develop.
  - We have engaged stakeholders more specifically on the proposals on resourcing at our control centre events.
  - We already have links with the mentioned universities, and we have now engaged further with these and other institutions on possible future partnerships.
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<sup>27</sup> Resourcing, talent and training are covered in chapter 15, People, culture and capability, in the main business plan document.

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	<ul style="list-style-type: none"> <li>Stakeholders questioned whether universities were running programmes already e.g. Strathclyde and Bath.</li> </ul>	
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019</p> <p>11 Responses received</p>	<p>We had two comments on our resourcing proposals:</p> <ul style="list-style-type: none"> <li>Ensuring that people as well as systems are 'upgraded' for the new world is vital and often missed.</li> <li>There appears to be little mention of talent retention within our resourcing proposals.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that having the right people with the right capability will be key to our future success as system operator.</li> <li>We agree that retention is an essential element of a resourcing strategy and have sought to develop our proposals further in this area.</li> </ul>
<p>Control centre engagement events, 16 &amp; 30 July and 8 August 2019</p>	<p>We asked stakeholders about our training proposals and whether we should be taking a leading role to develop skills for the wider industry. In summary:</p> <ul style="list-style-type: none"> <li>A renewable energy company said that currently the ESO is not a training organisation but there is no reason why we couldn't partner with others to deliver to deliver a good training package;</li> <li>A consumer body and a DNO wondered if it was our role to think about the needs of the wider industry and whether an organisation such as the ENA was better placed. However, a consumer body thought that someone had to do something about the skills shortage. They also wondered whether we could have different training packs with different companies; and</li> <li>A consultancy, a renewable energy company and a generator agreed that the</li> </ul>	<ul style="list-style-type: none"> <li>The majority of stakeholders supported us in taking a leading role in training for the wider industry.</li> <li>We will continue to work with the ENA and DNOs to gauge interest in working together on developing training packages.</li> <li>In the meantime, we will continue discussions with academia on how we could partner to deliver training that is tailored more to our business requirements.</li> </ul>

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	<p>ESO should be leading on training for the industry and that if we rely on separate approaches we will get a mismatch in system operation language and approaches.</p>	
<p>Energy Networks Association Electricity Regulation Group (with DNOs), 24 July 2019</p>	<ul style="list-style-type: none"> <li>• One DNO asked whether if we were proposing to build into the simulator the Low Voltage (LV) networks or whether there is potential to build it in if DNOs think that could work.</li> <li>• The same DNO also asked whether our proposed training package would be focused on training people or designing the algorithms to sit within the control systems.</li> <li>• One DNO thought that system balancing will become a lot more automated in the future – we need to make sure that our (ESO and DNO) visions align in this space and that we are not being short-sighted</li> </ul>	<ul style="list-style-type: none"> <li>• Our proposed simulator will be scoped and built primary for the transmission network but could be adapted for lower voltage networks if DNO parties see value in us doing so.</li> <li>• Our training package is currently looking at training future control centre engineers, but we set out in our plan how the skill sets of those people are changing to be more data and IS focused.</li> <li>• We agree that we should work closely with DSOs as they become established to ensure efficient development of whole system operation.</li> </ul>
<ul style="list-style-type: none"> <li>• Discussions with academia, 12 – 16 August 2019</li> </ul>	<p>We spoke to three academic institutions about possible opportunities for working together to tailor training for future control room staff. The key points were:</p> <ul style="list-style-type: none"> <li>• All three universities were positive about potentially working with us to provide more tailored training around system operation;</li> <li>• They talked about different options for supporting our needs including guest lecturing, dissertation project setting, on-line or distance learning and possibly setting up</li> </ul>	<ul style="list-style-type: none"> <li>• We have used these discussions to feed into our training proposals based around a phased approach, which will allow us to trial some relatively quick options in the short term, test for results and then go on to develop a more bespoke module or course in the longer term.</li> <li>• We will continue to discuss these options and our thinking with these institutions over the coming months.</li> </ul>

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	<p>new modules within existing courses / evolving current material;</p> <ul style="list-style-type: none"> <li>• We need to make a clearer link between the skills people have and how they can use them in the ESO; and</li> <li>• One university thought that we have a role in leading wider industry training needs and working with DNOs to support the DSO transition in this context.</li> </ul>	
<b>Restoration</b>		
RIIO-2 stakeholder event, 11 April 2019	<ul style="list-style-type: none"> <li>• We heard support for our proposals particularly from service providers.</li> <li>• Mixed views on what role different technologies (renewables) and demand side can actually play in providing restoration services.</li> <li>• The ESO should do more to bring creativity to Black Start solutions and bring down the cost.</li> </ul>	<ul style="list-style-type: none"> <li>• We discuss in our plan, in Theme 1, that we have started and will continue to run a fully competitive Black Start procurement process with submissions from a wide range of technologies connected at different voltage levels on the network.</li> </ul>
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019</p> <p>11 Responses received</p>	<p>A summary of views from respondents are as follows:</p> <ul style="list-style-type: none"> <li>• Stakeholders, including a trade association and a supplier, support using learnings from innovation projects, taking these into ongoing activities and extended into future scenarios such as cold and stationary Black Starts.</li> <li>• A renewable developer and generator commented that there was a lot of mention of DER participation in restoration, but that</li> </ul>	<ul style="list-style-type: none"> <li>• Our restoration proposals look to take the output from the Black Start Network Innovation Competition (NIC) project and implement the findings.</li> <li>• While Black Start provision from DER is the focus of the NIC innovation project, we also set out in Theme 1 that we will continue to develop restoration markets to reduce barriers to entry for all market participants and promote participation from a wide range of technologies</li> </ul>

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large-scale transmission-connected renewables could offer service provision. To encourage participation, the ESO should provide a view of requirement early in the build process.

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connected at different voltage levels on the network.

## 5.4 Theme 2: Transforming participation in smart and sustainable markets

A summary of the key themes from our engagement activity:

- Stakeholders have told us that having a single, integrated portal for ESO markets will transform the experience and significantly improve the efficiency of market participation for service providers.
- The sandbox market environment was welcomed by stakeholders who are sometimes frustrated by our ability to move quickly enough in response to changing market conditions.
- Service providers have welcomed the move to closer to real time markets where they will drive value for consumers.
- Service providers, generators and industry associations have requested further clarity on:
  - How our market development and platform proposals will support aligned and consistent national and local markets for flexibility
  - How our RIIO-2 proposals build on our ongoing work to reform balancing services markets.
- Stakeholders have consistently told us codes are not fit for purpose and would welcome significant improvement in this area but would like us to be mindful of the ongoing review by BEIS and Ofgem.
- The balance of stakeholder feedback does not support the ESO taking on administration of the Capacity Market Rules.

### 5.4.1 Build the future balancing service and wholesale markets

#### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
Ancillary services customer journey - Deep dive provider experience sessions with a representative sample of small, medium and large service providers in June and July 2018.	<ul style="list-style-type: none"> <li>• Newer providers struggle with workload and capacity as they often work extremely hard to secure funds, a contract etc. leaving them little time to build and set up.</li> <li>• Information doesn't always flow between teams and manual data entry is common.</li> </ul>	<ul style="list-style-type: none"> <li>• Key focus areas for our proposed activities include:               <ul style="list-style-type: none"> <li>• transforming the service provider experience to make it easier to offer services to the ESO</li> <li>• enhancing transparency of both our processes and data</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• The ESO needs to be able to move at pace to respond to the changing market</li> <li>• There is a thirst for transparency. Providers want to understand the decision-making processes behind the scenes, for example, across payments and dispatch.</li> </ul>	<ul style="list-style-type: none"> <li>• adopting tools and approaches that will allow us to respond to market change in a more agile manner.</li> <li>• In particular, our market portal proposal was developed explicitly to address the pain points identified by service providers in terms of the level of effort required to participate in our markets and to enhance overall transparency of the process and our decision making.</li> </ul>
<p><i>System Needs and Product Strategy (SNAPS) consultation in July 2017 – over 100 responses from a wide range of stakeholders</i></p>	<ul style="list-style-type: none"> <li>• Standardisation is the way forward for future products. Standardised products may lead to secondary trading and to more efficient stacking of services.</li> <li>• A mix of short-term markets and long-term contracts is the preferred option.</li> <li>• Potential to trial alternative procurement approaches such as auctions was well received.</li> </ul>	<ul style="list-style-type: none"> <li>• We are building the need for standardised products, the ability to use short and long-term contracts as well as test new approaches into our proposals.</li> <li>• Our day ahead auction for response and reserve and sandbox approach will enable us to respond to this feedback.</li> </ul>

**Phase 2 Developing our ambition and activities**

<b>Channel</b>	<b>Feedback we received</b>	<b>How this is shaping our plan</b>
<p>ESO 2030 ambition workshop, 28 September 2018 RIIO-2 stakeholder workshop, 17 December 2018</p>	<ul style="list-style-type: none"> <li>• Balancing services markets should be shorter-term, technology neutral and operating closer to real-time, at least in day ahead timescales, greater insight is required into the future needs for these markets.</li> </ul>	<ul style="list-style-type: none"> <li>• Our proposal to move to day ahead auctions for response and reserve products aims to directly address this point, moving procurement closer to real time.</li> </ul>



Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>• Transparency was identified as the key principle both to stimulate markets and provide foresight into future ancillary services requirements.</li> <li>• Participants need better information on market structure and liquidity to decide which markets they should be investing in.</li> </ul>	<ul style="list-style-type: none"> <li>• Our market platform proposes to give access to both historical and forecast data to support investment cases and decision-making.</li> </ul>
	<ul style="list-style-type: none"> <li>• Market arrangements need to be flexible and delivery of change should be agile.</li> </ul>	<ul style="list-style-type: none"> <li>• Our sandbox proposal will address stakeholder calls for us to respond more quickly to the changing market, allowing us to trial new services in an agile manner.</li> </ul>
	<ul style="list-style-type: none"> <li>• Whilst change should be delivered incrementally, it is important to set out a clear strategic direction of intent.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Our RIIO-2 Ambition</i> document was designed to provide a clear strategic direction of intent.</li> </ul>
	<ul style="list-style-type: none"> <li>• The ESO was considered well placed to take a leading role in defining future markets.</li> </ul>	<ul style="list-style-type: none"> <li>• We have proposed an activity to review wholesale and balancing markets although as this activity does not start in the first two years of the RIIO-2 period, detailed content on this topic has been removed from the business plan.</li> </ul>
Power Responsive Steering Group – January, April and October 2018	<ul style="list-style-type: none"> <li>• Demand Side Flexibility providers need to see a ‘whole pot’ of opportunity. Customers want to know which DSF services are stackable to access multiple revenue streams. This can be beneficial when prices are less certain or reducing due to increased liquidity or to wider industry changes.</li> </ul>	<ul style="list-style-type: none"> <li>• In our proposal for the market portal we have included the ability for providers to register an asset and see what ESO services the asset can qualify for across our markets.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
Power Responsive Steering Group notes can be found on their website <sup>28</sup>	<ul style="list-style-type: none"> <li>• DSF providers need to understand when future balancing problems may arise for the system and what problem needs solving by when.</li> <li>• Steering Group members suggested that including information on longer term requirements and price trends would help demand side providers to understand their cost-benefit proposition and returns on investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Our proposed data platform, integrated with the market portal, will provide information on current and future balancing issues.</li> </ul>
	<ul style="list-style-type: none"> <li>• Most mature markets (e.g. frequency) are solving national issues. But some system operability issues are becoming more regional. So it is important to understand the interplay between ESO and DNOs.</li> <li>• Conflict between transmission and distribution requirements can create a confusing landscape to the demand side provider, and limit a provider's ability to move between markets, particularly if different markets/services don't align.</li> </ul>	<ul style="list-style-type: none"> <li>• In <i>Our RIIO-2 Ambition</i> document, we have committed to working collaboratively with the DNOs, sharing necessary data and accelerating development of markets at distribution level.</li> <li>• We will design our systems to integrate this data into our electricity control room processes, and the cost signals that these markets provide will allow the ESO to take a whole system view when making decisions.</li> </ul>
	<ul style="list-style-type: none"> <li>• Regular auctions – there was a general preference for market-based mechanisms to facilitate competitive prices and regular procurement exercises to build a track record.</li> </ul>	<ul style="list-style-type: none"> <li>• A key pillar of our proposed approach to market development is the Day Ahead auction for response and reserve, providing a stable market with regular and predictable procurement timescales.</li> </ul>

<sup>28</sup> <http://powerresponsive.com/updates/>

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Channel	Feedback we received	How this is shaping our plan
Bilateral meetings and ongoing activities engagement with market participants	<ul style="list-style-type: none"><li>• Many of our stakeholders participate in both the balancing services markets and the Capacity Market. From analysis of their feedback on the separate markets, we recognised that they experienced similar pain points with both, and that there is significant duplication of effort in managing their participation in both markets.</li></ul>	<ul style="list-style-type: none"><li>• We therefore moved away from our original proposal of a new platform for balancing alongside an improved Capacity Market portal, and instead we will deliver a single integrated platform, to participate in balancing service markets and the Capacity Market.</li><li>• This approach has the added advantage that it will be simpler to build and maintain than two separate systems.</li></ul>

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## Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
<p>We tested the proposals in <i>Our RIIO-2 Ambition</i> document with in-depth discussion at two interactive forums in April 2019:</p> <ol style="list-style-type: none"> <li>1. Power Responsive Steering Group round table, attended by 19 stakeholders</li> <li>2. ESO RIIO-2 stakeholder workshop attended by 30 organisations including wider interest representatives, aggregators, generators, suppliers, networks and academics.</li> </ol>	<p><b>Overall comments</b></p> <ul style="list-style-type: none"> <li>• Our ambitions in this area were widely welcomed. However, we were cautioned not to try to be all things to all people.</li> <li>• We were asked to provide more clarity on when activities would be delivered. What are the key milestones to be achieved at what point?</li> <li>• There was some confusion about how the proposed activities relate to ongoing activities such as our <i>SNAPS</i> work and PAS.</li> </ul>	<ul style="list-style-type: none"> <li>• We have sought to clarify this point specifically to the activities below.</li> <li>• We have provided an initial view in our business plan.</li> <li>• In our business plan, we have sought to be much clearer on what we are delivering in the current regulatory period compared to what we are doing in RIIO-2.</li> </ul>
<p>We also had the opportunity to test our proposals at group meetings of the ADE and Renewable UK as well as through bilateral meetings with several interested stakeholders.</p>	<p><b>A single day-ahead response and reserve market</b></p> <ul style="list-style-type: none"> <li>• Strong support across all stakeholder segments for the move to procurement closer to real time. However, many large and small market participants highlighted the need for longer term price signals.</li> </ul>	<p>We will work with stakeholders to ensure the objectives and scope of the wholesale and balancing markets review address issues regarding longer term price signals as appropriate.</p>
	<p><b>A single, integrated portal platform for ESO markets</b></p> <ul style="list-style-type: none"> <li>• The platform sounds like a potentially problematic large IT system. We shouldn't be talking about one platform but rather a federated IT architecture (FIA); supporting semi-autonomous independent systems ESO-DSO-aggregator-supplier.</li> </ul>	<ul style="list-style-type: none"> <li>• We emphasised that the ESO market platform will interface with other relevant systems and processes. We see the platform as part of an integrated ecosystem that includes ESO-DSO-aggregator-supplier etc. rather than a</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Several stakeholders expressed concern about our capacity to deliver large IT projects.</li> </ul>	<ul style="list-style-type: none"> <li>monolithic system covering all markets and networks.</li> <li>In our Technology underpinning our ambition chapter, we outline how we will transform our IT capability and delivery approach to support our proposed RIIO-2 activities.</li> </ul>
	<ul style="list-style-type: none"> <li>The proposed concept and functionality of the market platform was very well received by a wide range of stakeholders.</li> <li>However, we need to provide clarity on what the platform is and is not.</li> </ul>	<ul style="list-style-type: none"> <li>In our business plan, we have made it very clear as to what markets we anticipate the platform will cover.</li> <li>We have also clarified that the purpose of our platform is to make it easier for people to sell services to the ESO rather than for all flexibility services on all networks.</li> </ul>
	<b>A design for the markets of the future</b>	
	<ul style="list-style-type: none"> <li>Based on the views provided by those we have engaged, there is a general agreement on need to reform wholesale and balancing markets with a focus on efficient price discovery. Of those expressing a view, a large majority of parties (including all the smaller market participants) were in favour of the ESO leading this activity, but a minority did not agree, and felt others should be involved or that this activity was broader than our core responsibilities.</li> <li>Several stakeholders also called for greater clarity on the scope and the desired outcome.</li> </ul>	<ul style="list-style-type: none"> <li>Our intention would be to work with key stakeholders to scope the project and define the desired outcome, to ensure that the project is collaborative and meeting stakeholder needs and expectations from the start. Especially noting some of the above stakeholder concerns about our role.</li> <li>As this activity does not start in the first two years of the RIIO-2 period, detailed content on this topic has been removed from the business plan.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>It was widely suggested that the review should join up with the long-term future of the Capacity Market, as well as other industry transformations, such as charging and access significant code review (SCR), as well as code reform and decarbonisation of heat and transport.</li> <li>It was suggested that the review should be framed in terms of “how do you enable sharp enough signals to drive value?”</li> </ul>	<ul style="list-style-type: none"> <li>We share this view and will scope the exercise to ensure that dependencies with other strategic programmes of work are accounted for.</li> </ul>
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019</p> <p>11 Responses received</p> <p>Draft business plan, July</p> <p>One written response received</p>	<p><b>A single day-ahead response and reserve market and a single, integrated portal platform for ESO markets</b></p> <ul style="list-style-type: none"> <li>A broad range of stakeholders including trade associations, generators and suppliers, were overwhelmingly supportive of our ambition to transform access to ESO markets and associated activities, including the market platform and Day Ahead auction for response and reserve. However, there was also a call for further detail on the proposals.</li> <li>We have been asked to provide more clarity on how our work to transform balancing markets at the transmission level is aligned with the development of flexibility markets at the distribution level.</li> <li>One stakeholder commented on the need for more detail on how the ESO market portal would be aligned with the ENA Open Networks project, and other potential market designs.</li> </ul>	<ul style="list-style-type: none"> <li>We have continued to develop these proposals, building on the aspects highlighted as desirable by stakeholders.</li> <li>We have included significantly more detail on the proposals in our draft business plan.</li> <li>As an active member of the ENA Open Networks project, we are at the heart of emerging thinking on future markets for flexibility. Through this project, we are developing co-ordinated thinking and processes, which will feed into the development of our portal.</li> <li>We recognise the need for more proactive leadership in this space and have recently indicated that we believe</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Some stakeholders proposed that the ESO should take a more proactive leadership role in operating the whole electricity system and coordinating national and local markets for flexibility.</li> </ul>	<p>an approach consistent with Future Worlds<sup>29</sup> World B (co-ordinated procurement and dispatch) is a pragmatic least regrets way forward building on our existing ways of working.</p> <ul style="list-style-type: none"> <li>We have developed our RIIO-2 business plan in alignment with this position.</li> <li>We have provided more clarity on our intention to ensure interoperability between our single market platform and those at the distribution level and that we will work with DNOs and others to achieve this.</li> </ul>
	<ul style="list-style-type: none"> <li>One trade association has proposed several detailed commitments and metrics that they believe we should be committing to in our RIIO-2 business plan. These include committing to closer to real time procurement for all balancing services and PAS-style dispatch for all services.</li> </ul>	<ul style="list-style-type: none"> <li>Our RIIO-2 business plan is broadly consistent with the proposals received. Where we have not been able to explicitly commit to the proposals, for example regarding closer to real time procurement for all services, we have been explicit as to the reasons and the next steps in these areas.</li> </ul>
	<ul style="list-style-type: none"> <li>A large generator/supplier raised the concern that sandboxes can promote niche markets, with the risk that this will not deliver the most efficient procurement from the market as a whole.</li> </ul>	<ul style="list-style-type: none"> <li>The intention of the sandbox is not to develop niche markets, but to rapidly test developments to existing markets, new markets and new products before rolling them out fully in our market environment.</li> </ul>

<sup>29</sup> [http://www.energynetworks.org/assets/files/14969\\_ENA\\_FutureWorlds\\_AW05\\_INT\[2\].pdf](http://www.energynetworks.org/assets/files/14969_ENA_FutureWorlds_AW05_INT[2].pdf)

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>A number of stakeholders have expressed concern about the ESO's capability to deliver complex IT projects. There is a general concern about delays to project delivery.</li> </ul>	<p>It will ensure that IT systems integration doesn't slow down market development.</p> <ul style="list-style-type: none"> <li>In our Technology underpinning our ambition chapter, we outline how we will transform our IT capability and delivery approach to support our proposed RIIO-2 activities.</li> </ul>
	<b>A design for the markets for the future</b>	
	<ul style="list-style-type: none"> <li>A large generator/supplier commented that they did not think there was justification for the ESO leading a review of wholesale markets, and that we should focus on well-functioning markets for system operation and balancing.</li> <li>A majority of stakeholders have expressed support for this activity, noting more strongly that this needs to take into account wider developments in the industry such as the Capacity Market review and the ongoing SCR for charging and access.</li> </ul>	<ul style="list-style-type: none"> <li>Well-functioning markets for system operation and balancing are at the heart of our proposals to design the markets of the future. However, we believe that this activity cannot be conducted in isolation from other elements of the market such as a wholesale and capacity due to the interactivity of the different markets. We will therefore continue to develop this proposal in our business plan.</li> <li>As this activity does not start in the first two years of the RIIO-2 period, detailed content on this topic has been removed from the business plan</li> </ul>
	<ul style="list-style-type: none"> <li>It is important that all of the major changes in the industry (such as charging and access SCR) are coordinated to avoid unnecessary cost.</li> </ul>	<ul style="list-style-type: none"> <li>We share this view and have signposted the key industry change initiatives that impact on our activities.</li> </ul>



Channel	Feedback we received	How this is shaping our plan
<p>As part of our open invitation to have bilateral sessions, we have also engaged a range of stakeholders including two wider interest groups, service providers, generators and suppliers</p>	<p><b>A single day-ahead response and reserve market and a single, integrated portal platform for ESO markets</b></p>	
	<ul style="list-style-type: none"> <li>• Stakeholders were broadly supportive of the move to Day Ahead auctions and encouraged us to do so as quickly as possible.</li> <li>• We need to be clearer about the relationship between our proposals and the ENA Open Networks project.</li> <li>• A wider interest group and a generator also expressed thought that we should take a leading role in the DSO transition, setting the standards for DNOs or providing a platform for all markets. A wider interest group and a generator also expressed the opinion that there should be one larger market rather than many inefficient local markets.</li> </ul>	<ul style="list-style-type: none"> <li>• In our business plan, we have proposed to deliver the Day Ahead auction for response and reserve against a timeline that we think is very aggressive.</li> <li>• As set out above, as an active member of the ENA Open Networks project, we are at the heart of emerging thinking on future markets for flexibility. Through this project, we are developing coordinated thinking and processes which will feed into the development of our portal.</li> <li>• We recognise the need for more proactive leadership in this space and have recently indicated that we believe an approach consistent with Future Worlds World B (coordinated procurement and dispatch) is a pragmatic least regrets way forward building on our existing ways of working.</li> <li>• We have provided more clarity on our intention to ensure interoperability between our single market platform and those at the distribution level and that we will work with DNOs and others to achieve this.</li> </ul>
	<ul style="list-style-type: none"> <li>• We need to be a lot clearer on the relationship between our RIIO-2 proposals and our ongoing</li> </ul>	<ul style="list-style-type: none"> <li>• In our business plan, we have articulated how our RIIO-2 proposals build on the</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	work under SNAPS and other related work such as the development of other platforms.	progress made against <i>SNAPS</i> commitments.
	<b>A design for the markets of the future</b>	
	<ul style="list-style-type: none"> <li>A number of stakeholders including a large generator and wider interest groups, expressed support for us to lead the discussion for reviewing markets in a holistic way but also noted the important role for BEIS and Ofgem in driving legislative change.</li> </ul>	<ul style="list-style-type: none"> <li>We are clear in our proposals that the scope of this work does not go beyond making recommendations and that we will approach this work as an industry wide collaboration process.</li> <li>As this activity does not start in the first two years of the RIIO-2 period, detailed content on this topic has been removed from the business plan</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<b>A single day-ahead response and reserve market and a single, integrated portal platform for ESO markets</b>	
	<ul style="list-style-type: none"> <li>A service provider told us that the single market platform is a great ambition as the current approach is time consuming given the number of markets. A single platform is important to be able to reduce that time-consuming element.</li> <li>A trade association and a service provider told us that the market platform “should draw out more clearly transmission and distribution aspect and need for alignment across national and local markets and portals” e.g. everyone use Electricity Forward Agreement (EFA) blocks, easy to go from one market to another.</li> <li>A trade association told us that the ESO needs to be conservative and produce a detailed plan.</li> </ul>	<ul style="list-style-type: none"> <li>We have provided significantly more detail on how our RIIO-2 proposals in this area build on our ongoing work in RIIO-1, including a delivery roadmap covering both periods.</li> <li>We have provided more detail on the processes that the single market platform will cover.</li> <li>We have provided more clarity on our intention to ensure interoperability between our single market platform and those at the distribution level and that we will work with DNOs and others to achieve this.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
Trade association roundtables, August and September 2019	<ul style="list-style-type: none"> <li>• Broad support for our proposals in this section but request for further information on how the proposals align with changes outlined in the product roadmaps and other developments during the RIIO-1 period.</li> <li>• A wide range of generators and service providers had questions on the functionality of the single market platform and whether it would support end-to-end processes.</li> <li>• A wide range of generators and service providers had questions on alignment of our proposals for flexibility markets and the single market platform with market and platform developments at the distribution level.</li> <li>• A generator and a trade association asked for further information on the asset register that underpins the single market platform.</li> </ul>	<ul style="list-style-type: none"> <li>• We have provided further narrative on the importance of consistent and aligned markets at the local and national level.</li> <li>• Further detail on transparency is included in chapter 8, Open data unlocking zero-carbon system operation and markets.</li> </ul>
Power Responsive roundtable, September 2019	<ul style="list-style-type: none"> <li>• A number of large and small service providers told us that we need to be much clearer on our role in markets, particularly across transmission and distribution.</li> <li>• We need to be clearer on interoperability and how our proposals for the markets and the single market platform will interact with distribution level markets.</li> <li>• Consistency of what is procured and how is very important across markets.</li> <li>• The market requires greater transparency on what we need and when.</li> </ul>	

Channel	Feedback we received	How this is shaping our plan
Meeting with a distribution network company	<ul style="list-style-type: none"> <li>The single market portal needs to better show interoperability between transmission and distribution markets. For example, one registration process for both transmission and distribution parties</li> <li>They highlighted the importance of working with DNOs to develop the market platform.</li> </ul>	

## 5.4.2 Transform access to the Capacity Market

### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
Customer satisfaction surveys and customer feedback	<ul style="list-style-type: none"> <li>There are continued frustrations with the EMR portal which, if improved, could help to provide the level of support through the Capacity Market process that stakeholders desire.</li> <li>We have also heard that the overall process and rules are complex particularly for new entrants.</li> </ul>	<ul style="list-style-type: none"> <li>This has shaped our <i>Forward Plan</i> proposals to improve / replace the Capacity Market portal, and our RIIO-2 proposed activity to develop a common platform for balancing services and the Capacity Market.</li> <li>It has also shaped our previous proposal to take on the development of Capacity Market Rules.</li> </ul>

## Phase 2 Developing our ambition and activities and Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 Stakeholder engagement event, 11 April 2019	<p><b>Take on responsibility for management of the Capacity Market Rules</b></p> <ul style="list-style-type: none"> <li>• General agreement that there is frustration about the Capacity Market Rules and regulations and the change process. Agreement that the process needs to be improved and that the rules should be simplified.</li> <li>• There were varying views on what role the ESO should have in this area. Some argued that this is ultimately about changes to regulations and rules which are seen as the government's responsibility, but the ESO could help to shape the vision for regulation. Others considered that the ESO could take a stronger role in driving the regulatory change process.</li> </ul>	<ul style="list-style-type: none"> <li>• The balance of stakeholder feedback did not support the ESO taking on accountability for administering the Capacity Market Rules and we have therefore removed these proposals from our business plan.</li> </ul>
ADE DSR working group meeting, 23 April 2019	<ul style="list-style-type: none"> <li>• Stakeholders at two out of the three round table sessions questioned the EMR ringfence and whether this was still required following legal separation of the ESO.</li> <li>• The group questioned why the ESO was better placed to manage the rules than Ofgem</li> <li>• It was felt that the change process was only really required due to the complexity of the</li> </ul>	<ul style="list-style-type: none"> <li>• We believe that the legal separation of the ESO removes any conflict of interest and Ofgem has consulted on this in its five-year review in April 2019. The conclusion to this consultation will inform the direction of any removal of the ringfence.</li> <li>• The balance of stakeholder feedback did not support the ESO taking on accountability for administering the Capacity Market Rules and we have therefore removed these proposals from our business plan.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received</p>	<p>rules and that if they were written more simply it would clarify requirements for participants.</p>	
	<p><b>Deliver an enhanced platform for the Capacity Market within the single, integrated ESO market platform</b></p>	
	<ul style="list-style-type: none"> <li>• There was general support for developing a new enhanced Capacity Market portal and combining with the balancing services portal.</li> </ul>	<ul style="list-style-type: none"> <li>• We have included our proposals for access to the Capacity Market through the Market Platform in our business plan.</li> </ul>
	<p><b>Take on responsibility for management of the Capacity Market Rules</b></p>	
	<ul style="list-style-type: none"> <li>• There is general support for reforming the Capacity Market Rules but mixed views about transferring responsibility for the ESO. Some parties believe our proposals will lead to a more efficient process. One generator expressed the opinion that Ofgem should continue to administer the rules.</li> <li>• Stakeholders requested further information on our proposals in this area as well as further explanation for the transfer of responsibility.</li> </ul>	<ul style="list-style-type: none"> <li>• The balance of stakeholder feedback did not support the ESO taking on accountability for administering the Capacity Market Rules and we have therefore removed these proposals from our business plan.</li> </ul>
<p>As part of our open invitation for bilateral meetings, we have also engaged a range of stakeholders including two wider interest groups, service providers, generators and suppliers</p>	<p><b>Take on responsibility for management of the Capacity Market Rules</b></p>	
	<ul style="list-style-type: none"> <li>• Members of a wider interest group confirmed that current arrangements for managing the Capacity Market Rules were not satisfactory but asked for further explanation of why we thought we were better placed to take them on.</li> </ul>	<ul style="list-style-type: none"> <li>• The balance of stakeholder feedback did not support the ESO taking on accountability for administering the Capacity Market Rules and we have therefore removed this proposal from our business plan.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
Capacity Market launch event, July 2019	<ul style="list-style-type: none"> <li>We asked stakeholders, including market participants, consultants and academics, whether we should take on accountability for administration of the Capacity Market Rules. Whilst the feedback was evenly split for and against, the parties advocating against were more robust in their views than those for.</li> </ul>	<ul style="list-style-type: none"> <li>The balance of stakeholder feedback did not support the ESO taking on accountability for administering the Capacity Market Rules and we have therefore removed this proposal from our business plan.</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<ul style="list-style-type: none"> <li>Capacity Market rule administration should sit outside Ofgem, could be ESO, could be Elexon. We need to convince people; Code Administrators Code of Practice (CACoP) scores improvement is a good start but there is a way to go. There needs to be a track record of progress and we should step into the role of code manager as early as possible.</li> <li>A trade association and market participant questioned where the financial benefit was of us doing it versus Ofgem and noted Ofgem do a pretty good job already.</li> <li>Felt the "transforming participation in Capacity Market" benefit is possibly too low (£38 million net) given size of the market, but "transform access to the Capacity Market" is too high (£46 million net) given the low clearing prices vs. size of that market.</li> </ul>	
Trade association roundtables, August and September 2019	<ul style="list-style-type: none"> <li>Stakeholders, including large and small generators, and transmission and distribution connected, told us that they due to dissatisfaction with our performance as EMR</li> </ul>	

Channel	Feedback we received	How this is shaping our plan
	Delivery Body, they did not want us to take on accountability for administration of the Capacity Market Rules.	

### 5.4.3 Develop code and charging arrangements that are fit for the future

#### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
	<b>Code management / market development and change</b>	
As part of our customer journey work which started in March 2017, we have engaged via bilateral meetings with stakeholders from various sectors across the industry (generators, suppliers, interconnectors, industry bodies, DNOs, interconnectors)	<p>We gained considerable insight, including:</p> <ul style="list-style-type: none"> <li>• Current code change is tactical rather than strategic;</li> <li>• Code change and the process can be opaque for new entrants;</li> <li>• Questions on the independence of parties involved in the process; and</li> <li>• Lack of upfront work on code change means that motives and drivers for the change are unclear.</li> </ul>	<ul style="list-style-type: none"> <li>• We have started and will continue to make changes to our current service provision.</li> <li>• We have ensured that our list of possible characteristics for the code manager role reflects this feedback and we therefore think that many of the issues identified can potentially be addressed by a code manager e.g. requirement for a 'critical friend' and more strategic code modification.</li> </ul>
2017 and 2018 Code Administrators Code of Practice (CACoP) survey results.	<ul style="list-style-type: none"> <li>• Poor results reflected the discussions we have had in our customer journey discussions e.g. feedback received on information on our website, frustrations with the modification process and greater support required for smaller players / new entrants.</li> </ul>	<ul style="list-style-type: none"> <li>• As above, we are making changes prior to RIIO-2 and feedback in the latest survey shows, for example, that we have improved our service provision for smaller companies. Our RIIO-2 proposals to be a code manager and to</li> </ul>



Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Significantly improved scores in 2018 reflect our focus on addressing the issues that stakeholders have raised with us.</li> </ul>	<p>reform the governance process will enable us to improve further.</p> <ul style="list-style-type: none"> <li>This feedback has also led us to discount our Option 1 which is to simply continue our role as a code administrator as this option will not meet the needs of our stakeholders.</li> </ul>
Bilateral meeting with a wider interest organisation in November 2018	<ul style="list-style-type: none"> <li>Across our engagement on codes, we have heard from only one 'wider interest' stakeholder that we should potentially step away from our current codes role. When we discussed this further, their concern was around perceptions of the independence of the ESO and making decisions in the right interests.</li> <li>This stakeholder also agreed with others' frustrations around the number of mods and some mods taking a long time to progress. This stakeholder also, however, recognised that other code administrators have more flexible funding arrangements that could make mod processes more responsive to stakeholder needs.</li> </ul>	<ul style="list-style-type: none"> <li>We have taken on board the concerns surrounding independence and have received positive feedback on our level of independence since separation of the ESO from NGET.</li> <li>We think possible enhancement of code objectives under a code manager role to better represent the interests of consumers will be important. We will also further consider what funding arrangements could facilitate a more effective code management service.</li> <li>In its sector specific consultation published in December 2018, Ofgem confirmed that it does not currently intend to remove our role as code administrator from the ESO.</li> </ul>

## Phase 2 Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
<b>Code management / market development and change</b>		
<p>We sought to engage stakeholders about the role of a code manager at our RIIO-2 webinar, at the October 2018 Customer (Connections) seminars, and at a Grid Code and a Connection and Use of System Code (CUSC) panel meeting.</p>	<ul style="list-style-type: none"> <li>• Building on the feedback that parties require more support in the code modification process, in our RIIO-2 webinar we asked a poll question on the potential characteristics of a code manager. Most respondents agreed that the characteristics we had presented were appropriate. The following comments were provided by those who responded we had 'mostly' described the right characteristics provided:               <ul style="list-style-type: none"> <li>• Something needs to be done about the dominance of the 'big six' on the CUSC panel.</li> <li>• Needs to be independent.</li> <li>• What about facilitating greater competition with codes (wherever there are benefits to the consumer of doing so).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• We looked to further explore the characteristics of a code manager with additional stakeholders and presented to code panel members (see below). In these discussions, we heard more about what resource requirements a code manager might need.</li> <li>• We have adopted the characteristics as endorsed by stakeholders as we develop our thinking on the transition to code manager.</li> </ul>
<p>Customer (Connections) seminars in October 2018</p>	<ul style="list-style-type: none"> <li>• We offered a round table discussion on this topic at the seminar but there was limited uptake by stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>• The customer seminar wasn't the right forum for this discussion. As a next step, we decided that engaging with the code panel members directly at panel meetings would be beneficial.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
CUSC panel meeting, 26 October 2018 and Grid Code panel, 17 October 2018	<ul style="list-style-type: none"> <li>• There is a perceived conflict between the ability to raise modifications and be a good ‘critical friend’.</li> <li>• A code manager role will require modelling / analysis resource and legal resource to do the legal text.</li> </ul>	<ul style="list-style-type: none"> <li>• We will look to address any potential conflicts in the code manager role in future detailed design work and test this further with stakeholders.</li> <li>• We have factored additional legal and modelling resource into our plan</li> </ul>
<b>Transform the process to amend our codes (funding this role)</b>		
ESO RIIO-2 Stakeholder Group workshop, 24 September 2018	<ul style="list-style-type: none"> <li>• An example of the layered funding model was shared with the ERSG members and there was a consensus that it was right to pull out code administration as a layer in the model.</li> </ul>	<ul style="list-style-type: none"> <li>• Ofgem has confirmed that the ESO will be funded through a RAV/WACC model with cost pass-through for efficient costs across all of our roles in RIIO-2.</li> </ul>
Bilateral meeting, consumer interest organisation in November 2018	<ul style="list-style-type: none"> <li>• In a bilateral meeting, a consumer interest organisation also agreed that a code administration funding layer was appropriate and allows for better benchmarking between different code administrators and introduces competitive pressures.</li> </ul>	<ul style="list-style-type: none"> <li>• We are continuing to work with Ofgem to look at our different roles to assess if additional funding arrangements are required.</li> </ul>
Grid Code panel meeting, 17 October 2018	<ul style="list-style-type: none"> <li>• A panel member suggested that an allowance should be put in place to fund the ESO for developing the legal text associated with code change.</li> <li>• We also heard this from CUSC panel members on 26 October.</li> </ul>	

Channel	Feedback we received	How this is shaping our plan
CUSC Panel meeting, 26 October 2018	<p>One panel member, a TO, talked about the following attributes for a potential code manager funding arrangement:</p> <ul style="list-style-type: none"> <li>• There is benefit in an agile funding model that unlocks the right value of funding at the right time.</li> <li>• Needs to be transparency in the process and level of funding.</li> <li>• Even with a short-term funding duration, such as an annual process there needs to be an element of certainty for the code administrator to control opex resources etc. Therefore a funding model with an element of baseline and a process that provides additional top up against workload / outputs could work.</li> </ul>	
2030 Ambition workshop, 28 September 2018	<p><b>Transform the process to amend our codes</b></p> <ul style="list-style-type: none"> <li>• Stakeholders raised common concerns on the existing market frameworks in terms of too much complexity, the slow pace of change and limited opportunity for smaller / new players to participate in modifications.</li> </ul>	<ul style="list-style-type: none"> <li>• This has shaped and formed our ambition to remove code governance as a perceived barrier to change and to transform the code amendment process.</li> </ul>
CUSC Code Panel discussion, 26 October 2018	<ul style="list-style-type: none"> <li>• In our CUSC Code Panel discussions, one stakeholder set out that we need to align the obligations of driving towards consumer value outcomes with the objectives that sit within the code and we have also heard this through our customer journey work.</li> </ul>	<ul style="list-style-type: none"> <li>• A 'stronger consumer value objective' sits within our understanding of possible characteristics of a Code Manager.</li> </ul>

## Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this has shaped our plan
RIIO-2 Stakeholder event, 11 April 2019	<b>Transform the process to amend our codes</b>	
	<ul style="list-style-type: none"> <li>Stakeholders at the round table sessions supported the ambition to remove code governance as a barrier to entry.</li> <li>Recognition that the codes can also be a barrier to flexibility and innovative projects.</li> </ul>	<ul style="list-style-type: none"> <li>We have continued to develop our proposals for a more agile and accessible code change process in our business plan.</li> </ul>
	<ul style="list-style-type: none"> <li>The stretching level of ambition was noted in code reform and a couple of stakeholders were concerned that we would not have the appropriate level of resource to deliver this activity effectively.</li> </ul>	<ul style="list-style-type: none"> <li>In our business plan we have laid out a delivery and resourcing plan that we think will set us up for success.</li> </ul>
	<ul style="list-style-type: none"> <li>There were divided views as to whether we should be a proactive code manager or remain as a code administrator to improve our service provision.</li> <li>Many stakeholders, including large and small market participants, were in favour of us taking a proactive role in this area.</li> </ul>	<ul style="list-style-type: none"> <li>We have started, and will continue, to improve our code administration service provision, but consider that we can add significantly more value through a code manager role.</li> </ul>
	<b>Work with all stakeholders to create a fully digitised Grid Code by 2025</b>	
	<ul style="list-style-type: none"> <li>Stakeholders were generally supportive of the proposal but, as above, a small number of stakeholders noted the ambitious nature of the proposals and questioned our ability to deliver.</li> </ul>	<ul style="list-style-type: none"> <li>In our business plan, we have laid out a delivery and resourcing plan that we think will set us up for success. To facilitate a level playing field for all parties, being able to access,</li> </ul>

Channel	Feedback we received	How this has shaped our plan
	<ul style="list-style-type: none"> <li>A plain English “lite” version of the code was proposed as a possible alternative to a fully digitalised version.</li> <li>A number of stakeholders, whilst supportive overall, highlighted that we need to ensure that market participants still understand the obligations on them if you simplify the Grid Code. The obligation will still be on individual parties to ensure that they are compliant with the code.</li> </ul>	<p>understand and use the relevant parts of the code are very important.</p> <ul style="list-style-type: none"> <li>We agree with this point and have reflected this in our business plan.</li> </ul>
<p>ADE DSR working group meeting, 23 April 2019</p>	<ul style="list-style-type: none"> <li>More clarity was requested on what the ‘principles based’ Grid Code actually means? And what are the principles to be applied?</li> <li>There was a suggestion to start simple with principles and then bolt on / add to those for the exceptions or what you need over and above the minimum.</li> </ul>	<ul style="list-style-type: none"> <li>The Energy Code review, happening now, is driving the principles-based approach and we will soon know more about this and the direction of travel.</li> <li>We have been clearer in the business plan that the first activity to deliver the digitalised whole system grid code will be to define objectives, scope and outcome together with stakeholders.</li> </ul>
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received</p>	<p><b>Transform the process to amend our codes</b></p> <ul style="list-style-type: none"> <li>Whilst support was expressed for our proposals in this area, one party cautioned that we should not try to pre-empt the work of the ongoing codes review.</li> </ul>	<ul style="list-style-type: none"> <li>We fully support the Energy Codes Review and have set out the changes that we believe should be made to our codes based on industry engagement to date.</li> <li>We recognise that our RIIO-2 proposals will require amendment, should they not</li> </ul>

Channel	Feedback we received	How this has shaped our plan
		<p>align with the outcomes of the Energy Codes Review.</p> <ul style="list-style-type: none"> <li>We have articulated the relationship of our proposals to the Energy Codes Review in our business plan.</li> </ul>
	<b>Work with all stakeholders to create a fully digitalised whole system Grid Code by 2025</b>	
	<ul style="list-style-type: none"> <li>Further information was requested on Grid Code and SQSS revision, as well as further information on coordination between these pieces of work.</li> </ul>	<ul style="list-style-type: none"> <li>Further detail on creation of digitalised Grid Code and the rationale for it are provided in this business plan.</li> </ul>
	<ul style="list-style-type: none"> <li>There was general support for creating one integrated Grid Code. One stakeholder expressed the need to ensure that in addition to enhancing the accessibility of the code we should also reappraise the content.</li> </ul>	<ul style="list-style-type: none"> <li>We will be engaging a wide range of stakeholders as we deliver this work in the RIIO-2 period. The scope of our engagement will include testing the appetite for reappraising the content of the code in addition to simplification and making it more accessible.</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<ul style="list-style-type: none"> <li>There needs to be a clearer process on why code modifications are being prioritised</li> </ul>	<ul style="list-style-type: none"> <li>We have been clearer that we will develop a transparent prioritisation process and agreed criteria that are aligned to the strategic direction set by BEIS and Ofgem.</li> <li>We have been clear that stakeholder-led change will continue to be important and will feed into this process.</li> </ul>

As part of our open invitation to have bilateral sessions, we have also engaged a range of stakeholders including two wider interest groups, service providers, generators and suppliers

### Work with all stakeholders to create a fully digitalised whole system Grid Code by 2025

- Stakeholders support the proposal to move to a streamlined, digitised Grid Code, but cautioned that if we are directing parties to the part of the code that applies to them, liabilities are appropriately managed.
- It was also noted that this is a huge undertaking and questioned the deliverability by 2025.
- We agree that liabilities need to be appropriately managed and have made this point in our business plan.
- We have sought to resource this activity appropriately to ensure we can deliver in the planned timescales.

Trade association roundtables, August and September 2019

- Asked for more clarity on our proposals to digitalise the Grid Code
  - Does it include reforming content?
  - What does digitalise really mean?
- A service provider challenged us that we were presuming the outcome of the BEIS-Ofgem Energy Codes Review
- We have been clear that our intention is to determine the scope, objectives and approach together with stakeholders at the outset of this activity in 2021. This will ensure that there is a consensus on the direction of this work from the beginning.

Meeting with distribution network company

- How does our grid code proposal fit with the broader codes and standards review work?
- Supportive of whole system grid code, challenge is to make sure our governance is agile and inclusive
- We have included a call out box that articulates how our proposals interact with the Energy Codes Review
- Our proposals on transforming the process to amend our codes aim to be agile and inclusive.



## 5.4.4 Look at fully or partially fixing one or more components of Balancing Services Use of System (BSUoS) charges

### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
RIIO-2 webinar, 30 August 2018; Charging Futures, September 2018; Charging Forum, October 2018.	<ul style="list-style-type: none"> <li>• At each of these forums we asked stakeholders the same question: 'How significant an issue [within the current charging arrangements] is:               <ul style="list-style-type: none"> <li>(a) volatility</li> <li>(b) predictability</li> <li>(c) whole system signals</li> <li>(d) the lack of a level playing field?</li> </ul> </li> <li>• Typically, the highest scoring options in terms of the biggest perceived issues for charging were the predictability and volatility of charges.</li> </ul>	<ul style="list-style-type: none"> <li>• This feedback has directly informed our proposed activity to fix one or more elements of the BSUoS charge if it is deemed appropriate to do so.</li> </ul>
Transmission Charging Methodology Forum, 14 November 2018	<ul style="list-style-type: none"> <li>• We asked the group to make recommendations as to how the perceived issues of volatility / predictability could be addressed. Many of these responses were suggestions to flatten or fix BSUoS or to improve forecasting of the components of charges.</li> <li>• Members also thought that greater transparency of information and access to data that can impact charges would be useful so that industry parties can take their own view on cost drivers.</li> </ul>	

## Phase 2 Developing our ambition and activities and Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
Transmission Charging Methodology Forum, 13 March 2019	<ul style="list-style-type: none"> <li>The group agreed that the proposal was a positive step and there was consensus that people wanted us to take it forward. It was also noted that we need to understand the financing costs of this proposal and that information from suppliers on risk premia would also be needed.</li> </ul>	<ul style="list-style-type: none"> <li>We will continue to take this proposal forward in our final version of the business plan, in accordance with the work that the BSUoS task force is doing, and look at the potential financing costs associated with fixing elements of the charge.</li> </ul>
RIIO-2 stakeholder event, 11 April 2019	<ul style="list-style-type: none"> <li>Increasing stability of the charge will improve forecastability, particularly for smaller players. The groundwork for this activity will be undertaken by the BSUoS task force.</li> </ul>	
ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received	<ul style="list-style-type: none"> <li>One stakeholder did not support this activity in isolation given the ongoing charging and access review.</li> </ul>	<ul style="list-style-type: none"> <li>This activity is not being progressed in isolation from wider industry developments. We would only seek to proceed with this activity if it aligns with any ongoing industry review processes, including SCRs relating to charging and access, and it is demonstrated to be in the interests of consumers.</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<ul style="list-style-type: none"> <li>A supplier felt the BSUoS saving was high and wanted to understand more how the risk to the ESO was 10 per cent vs. the risk to all of the industry?</li> </ul>	<ul style="list-style-type: none"> <li>We have included additional explanation (including the ESO vs. industry risk) to the business plan and the CBA report referencing the BSUoS Task Force report.</li> </ul>

## 5.5 Theme 3: Unlocking consumer value through competition

A summary of the key themes from our engagement activity:

- Stakeholders have told us they would like us to introduce competition in solutions to meet transmission network needs and supported our proposals to expand our approach to seek both network and non-network solutions
- Most stakeholders supported our proposals to extend *NOA* to other areas of development however some wanted clarification on how this would complement work undertaken already by the TOs
- Stakeholders had mixed views on whether a fundamental review of SQSS was required or necessary
- Stakeholders have expressed different views regarding our role in future competitive processes for transmission assets. Some feel the potential for conflicts of interest whereas others thought it could be managed.

### 5.5.1 Network development

#### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
<p><i>Network Development Roadmap</i> consultation, May 2018 – we sought industry feedback on our thoughts and approach to developing our network planning processes.</p>	<p>We received 13 responses to this consultation from network companies, potential market participants and academics:</p> <ul style="list-style-type: none"> <li>• Many respondents saw value in expanding the <i>NOA</i> process such that network and non-network providers can compete to meet transmission system needs.</li> <li>• Respondents thought that we could apply a <i>NOA</i> type approach to other needs, including solutions that meet both transmission and distribution needs and wider works in connection offers.</li> </ul>	<ul style="list-style-type: none"> <li>• We are taking this development forward in <i>Forward Plan</i> timescales but as a continuation of this work, our RIIO-2 proposal is to fully embed the extensions to this process to facilitate competition.</li> <li>• We have proposed to extend the <i>NOA</i> approach to planning currently covered by TOs in connection agreements and end-of-life asset replacement, if the case exists to do so.</li> <li>• We are also proposing to improve coordination across transmission and distribution network boundaries, through facilitating consistency across lower voltage levels.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Respondents generally wanted to understand in more detail how a probabilistic approach to analysis might be applied.</li> </ul>	<ul style="list-style-type: none"> <li>Since the consultation, in our <i>Network Development Roadmap</i>, we have sought to clarify this and have taken forward work in <i>Forward Plan</i> timescales, to adopt probabilistic modelling.</li> <li>In RIIO-2 we propose to continue to invest in this area further.</li> </ul>

## Phase 2 Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 webinar, 1 November 2018	<p>We presented our initial thinking on how the <i>NOA</i> process could be extended and sought views, via a poll, on which areas it could be extended to:</p> <ul style="list-style-type: none"> <li>A Yes – connection wider works (13 per cent)</li> <li>B Yes – end of life asset replacement (13 per cent)</li> <li>C Yes – lower voltage levels (9 per cent)</li> <li>D Yes – all of the above (13 per cent)</li> <li>E Yes – but it's not on your list (0 per cent)</li> <li>F No – none of the above (13 per cent)</li> </ul> <ul style="list-style-type: none"> <li>We also asked whether there would be merit in us carrying out a fundamental review of the SQSS in RIIO-2; six stakeholders supported a review whereas two were unsure.</li> </ul>	<ul style="list-style-type: none"> <li>There were mixed views from the poll. The majority of voters thought we should extend the process in some form, so we undertook further engagement with more stakeholders to understand what we should take forward in our RIIO-2 proposals. The December RIIO-2 stakeholder workshop provided that opportunity for further engagement.</li> <li>Again, and recognising that this is a fairly technical subject, we would explore this question further with stakeholders at our December RIIO-2 engagement event.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
RIIO-2 Stakeholder workshop, 17 December 2018	<p>We talked to stakeholders in a series of round table sessions about extending the <i>NOA</i> process and a possible SQSS review. The key messages we heard from stakeholders were:</p> <ul style="list-style-type: none"> <li>• General support for looking at extending a <i>NOA</i> type approach into additional areas in terms of a consistent methodology or co-ordination role.</li> <li>• Less appetite for ESO doing the assessments, particularly lower voltage given it's a very different network.</li> <li>• General interest in seeing more specific proposals on what extending the <i>NOA</i> would look like so that a more informed view can be formed. E.g. how would it affect timeframes for connections.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Agreement that revisions are needed to the SQSS. However, no clear agreement on whether that should involve fundamental review or continuation of existing processes.</li> </ul>	<ul style="list-style-type: none"> <li>• We have taken forward proposals to extend the <i>NOA</i> process.</li> <li>• Given stakeholder feedback around whether we should be doing the assessment we were minded to remove the proposal to undertake assessments at lower voltages but sought to engage further on this point.</li> <li>• We noted stakeholder requests to provide more detail on how extending the <i>NOA</i> could work in practice and sought to engage further with network companies on this.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• We have taken forward the proposal to review the SQSS and explored further with stakeholders on the extent of such a review.</li> </ul>

### Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 stakeholder event, 11 April 2019	<p>At round table sessions, we discussed our network development proposals as set out in our ambition document. We heard:</p> <ul style="list-style-type: none"> <li>• All stakeholders agreed that we should be looking to embed competition in network planning.</li> </ul>	<ul style="list-style-type: none"> <li>• We have taken forward our proposals for extending the <i>NOA</i> process in our business plan.</li> <li>• As we develop the detail of our proposals further we will ensure that we are transparent and provide fair and open</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Stakeholders also supported the ESO in expanding its network planning approach to a wider set of transmission network needs.</li> <li>However, two generators raised that we should be careful of the impact that approach could have on the energy market, in terms of contracting with providers in particular locations.</li> </ul>	<p>opportunity for all to avoid negative impacts to the energy market.</p>
	<p>We asked if stakeholders agreed that the ESO is not best placed to assess lower voltage networks in <i>NOA</i>, and whether instead we could be taking on a supporting role to DNOs as they develop and embed their own assessment processes.</p> <ul style="list-style-type: none"> <li>Stakeholders generally agreed that the ESO is not best placed to undertake the assessments at lower voltages but were supportive of the ESO having a role in providing support and a consistent analytical approach to network planning at lower voltage levels.</li> <li>However, one generation stakeholder considered that we could undertake these assessments depending on the respective future roles of DSOs and the ESO and that these still need to be clarified.</li> </ul>	<ul style="list-style-type: none"> <li>We have heard general stakeholder support and therefore plan to take forward our proposal to improve coordination across transmission and distribution network boundaries, through facilitating consistency and assessments at lower voltage levels.</li> <li>We recognise that roles are still unclear and we have proposed elsewhere in our plan to facilitate clarification of roles between DSOs and the ESO.</li> </ul>
	<p>We asked if stakeholders thought that the SQSS should be reviewed and whether it would be a light touch review or a fundamental review:</p> <ul style="list-style-type: none"> <li>Of the seven stakeholders that had a view (from generation, service provider, government and network sectors), the majority were supportive of a review of the SQSS</li> <li>A service provider questioned if you needed a standard at all and pointed to approaches used in other countries.</li> </ul>	<ul style="list-style-type: none"> <li>We agree with stakeholders in that we believe that a review of the SQSS is required and consider that the standard itself is still needed.</li> <li>We discuss in this plan how a more proportionate review of the standard may be appropriate and we have engaged further with the TOs on this subject to seek their views.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>There were no definitive views as to whether it should be a light touch or wholesale review, but stakeholders thought that a full review could take a long time and would need a timetable associated with it.</li> </ul>	
Meeting with the three onshore TOs, 29 April 2019	<ul style="list-style-type: none"> <li>We discussed possible options for how to review the SQSS with TOs. All contributors agreed that a fundamental review would not be helpful, but that some form of review beyond the usual update processes is required.</li> </ul>	<ul style="list-style-type: none"> <li>We have proposed to lead a focused and targeted review of the SQSS within Theme 3.</li> </ul>
ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received	<ul style="list-style-type: none"> <li>Three of the responses to our consultation have highlighted areas within our ambition document that appear to have overlap with activities in our <i>2019/21 Forward Plan</i>, particularly around expansion of the <i>NOA</i> and modelling developments.</li> </ul>	<ul style="list-style-type: none"> <li>We have clarified in our plan exactly what will be delivered and in what timescales across <i>Forward Plan</i> and <i>RIIO-2</i> deliverables.</li> </ul>
Network Development Event, 16 May 2019	<p>At this event we discussed how to apply commercial solutions to network challenges:</p> <ul style="list-style-type: none"> <li>Stakeholders (particularly service providers) highlighted that optimising the alignment of how we communicate and tender different needs could significantly help more providers to enter the market by supporting the business case needed for them to invest in new assets.</li> </ul>	<ul style="list-style-type: none"> <li>As our modelling of these issues and potential solutions grows, we will need to continue to improve how we communicate future needs and we will continue to engage stakeholders on our approach.</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<p>We discussed the assessment of non-network and network solutions further with stakeholders and their views were:</p> <ul style="list-style-type: none"> <li>Stakeholders from generation, consultancy and renewables sectors agreed that introducing non-network solutions to the <i>NOA</i> process would bring value but thought that the process needs to be highly transparent.</li> </ul>	<ul style="list-style-type: none"> <li>We will continue to develop our approach to assessing network and non-network solutions and involve stakeholders in this process.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	They wanted a roadmap of when this would be done and to understand how the assessment would be made between regulated and non-regulated solutions.	

### 5.5.2 Supporting the design and delivery of an early competition plan

Prior to publication of our draft business plan in July, we undertook the stakeholder engagement set out in the following table on the role we should take in developing competition in onshore transmission. We have since been asked by Ofgem, in its RIIO-2 Sector Specific Methodology Decision and further consultation – Electricity System Operator<sup>30</sup>, to develop an Early Competition Plan proposal (as discussed in the Theme 3 chapter of our business plan). We are keen to progress this and, in anticipation of Ofgem establishing the enabling approaches, have initiated some workshops to begin engaging and collaborating with those interested in the regime, such as design, construction or financing companies that might participate in a Competitively Appointed TO (CATO) competition. We will continue to work iteratively with Ofgem to develop this proposal and engage widely with stakeholders, including the RIIO-2 Challenge Group and ESO Stakeholder Group (ERSG), to ensure proposals are practical and maximise consumer value. The Early Competition Plan will be published separately from our business plan, along with the stakeholder feedback received in its development. We have kept the stakeholder feedback carried out in developing the business plan in this report for completeness.

### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
ESO 2030 Ambition workshop, September 2018	<p>We discussed our role in supporting competition in network solutions at our round table event where we heard:</p> <ul style="list-style-type: none"> <li>The earlier in the network development process competition is introduced the more opportunity for innovation and cost reduction.</li> </ul>	<ul style="list-style-type: none"> <li>We engaged stakeholders further via subsequent engagement channels on their preference for an early or late model for CATO and the role that the ESO might take in terms of consenting.</li> </ul>

<sup>30</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2\\_sector\\_specific\\_methodology\\_decision\\_-\\_eso.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_eso.pdf)



Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>• There was a call for clarity on where the risk lies, particularly for consenting, under the CATO model.</li> <li>• In order for a developer to add value in the CATO model they would need to be involved before the need is defined.</li> </ul>	
RIIO-2 webinar, 1 November 2018	<ul style="list-style-type: none"> <li>• We looked to test what role the ESO should play in facilitating competition in advance of legislation to enable CATOs and sought views, via a poll, on whether we were asking the right questions (what role should the ESO play pre and post legislation and what was the preferred model for competition).</li> <li>• Six out of eight stakeholders confirmed that, yes, we were asking the right questions.</li> </ul>	<ul style="list-style-type: none"> <li>• We looked to take our initial thinking and test it further with a wider group of stakeholders in subsequent engagement events.</li> </ul>

### Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 stakeholder event, 11 April 2019	<p>At round table sessions, we discussed the proposals set out in our ambition document. We heard:</p> <ul style="list-style-type: none"> <li>• Stakeholders generally preferred the early model due to the greater potential for innovation and cost savings for consumers.</li> <li>• Some, however, did see merit in the late model and the argument for keeping different options available – using the appropriate model in each circumstance.</li> </ul>	<ul style="list-style-type: none"> <li>• We agree that flexibility in which model to apply may hold merit.</li> </ul>
	<ul style="list-style-type: none"> <li>• There are a range of different industry bodies who could carry out the tender process for onshore competition.</li> </ul>	<ul style="list-style-type: none"> <li>• We have thought about the types of other organisations that have the skills to carry out the tender process but will consider</li> </ul>

Channel	Feedback we received	How this is shaping our plan
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019</p> <p>11 Responses received</p>	<ul style="list-style-type: none"> <li>If the ESO was responsible for tendering we would be likely to consider the benefits to the system and the more technical considerations, but we may not have the appropriate resource and capability post-legal separation.</li> <li>Some stakeholders (from networks, generators and developer sectors) were concerned that we may not be sufficiently independent from National Grid Electricity Transmission (NGET) or that we didn't have the necessary skill set to run the tender process. Others from network, local government and service provider sectors thought we were well placed to carry out the tender process.</li> </ul>	<p>this role as we develop the overall process further.</p> <ul style="list-style-type: none"> <li>We will continue to work with Ofgem and stakeholders on the detail of respective roles and capabilities.</li> <li>We understand that stakeholders may have this concern, but we are now legally separate from the National Grid TO and have a number of strong measures in place to prevent the transfer of information and conflicts in our governance.</li> </ul>
	<ul style="list-style-type: none"> <li>One respondent commented that while they could see the logic for a larger role for the ESO to support Ofgem in running the competitive tenders for delivery of onshore transmission, it would create potential conflicts of interest due to the implications for National Grid's TO business.</li> <li>Another respondent said that they would like to see more details of the process for the ESO achieving the ambition of considering all viable options to solve network challenges, including opening the Strategic Wider Works</li> </ul>	<ul style="list-style-type: none"> <li>We note the risk that an enhanced role for the ESO could be seen as being at odds with the aims of National Grid's TO business. This is one of the key reasons behind the legal separation of the ESO within the National Grid Group, such that it can better demonstrate independence of thought and operation.</li> <li>Until we have further detail from Ofgem regarding their preferred model for competition in onshore transmission, it is difficult for us to get into the detail of exactly how we will work with them to achieve their aims. However, we would anticipate any tender process to involve a</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	(SWW) <sup>31</sup> process to market participation and associated tender processes.	<p>clear articulation of requirements, and a full engagement process to maximise the potential for submission of solutions to system needs.</p> <ul style="list-style-type: none"> <li>• We note that Ofgem have stated they will consider their interim Competition Proxy Model<sup>32</sup> (CPM) and Special Purpose Vehicle models for SWW<sup>33</sup> within RIIO-1, pending clarity on the legislative approach for CATO. For how we will seek to meet other network challenges, please refer to our plans for enhancing the NOA process.</li> </ul>
Bilateral meetings, May 2019 – we have spoken to TOs, a consultancy and a developer.	<p>We talked about our ambition document and asked stakeholders for their reflections. In summary, we heard:</p> <ul style="list-style-type: none"> <li>• On whether the early or late model is more appropriate, two stakeholders thought that the early model is better in the long term for savings for consumers but because the process is very new for the UK it may be a good idea to start off with the late model, which should be easier to implement.</li> <li>• A stakeholder thought it would be useful to see the pros and cons of the early and late models to be able to compare.</li> </ul>	<ul style="list-style-type: none"> <li>• We note these views and agree that further consideration of the type of model to apply may be required.</li> <li>• We commented on some of the costs and benefits of the late model in our response to Ofgem’s Sector Specific Consultation<sup>34</sup>.</li> </ul>

<sup>31</sup> <https://www.ofgem.gov.uk/electricity/transmission-networks/critical-investments/strategic-wider-works>

<sup>32</sup> <https://www.ofgem.gov.uk/publications-and-updates/update-competition-proxy-delivery-model>

<sup>33</sup> <https://www.ofgem.gov.uk/ofgem-publications/138794>

<sup>34</sup> <https://www.nationalgrideso.com/document/139766/download>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>One stakeholder disagreed with our rationale for not undertaking a consenting role if a late model were to be adopted. However, another commented that this work could be contracted out to third parties.</li> </ul>	<ul style="list-style-type: none"> <li>This will be explored further as we engage stakeholders on the Early Competition Plan.</li> </ul>
	<ul style="list-style-type: none"> <li>A TO and a developer expressed concern about the ESO's role in onshore tenders given our position within the National Grid Group.</li> </ul>	<ul style="list-style-type: none"> <li>As above, we are now legally separate from the TO and have a number of strong measures in place to prevent the transfer of information and conflicts in our governance.</li> </ul>
Dedicated webinar, 22 May 2019	<p>Following feedback from our RIIO-2 stakeholder group we held a webinar with 11 expert attendees to discuss the detail of onshore competition. We heard similar feedback to our earlier engagement sessions but also:</p> <ul style="list-style-type: none"> <li>Mixed views as to whether an incumbent TO should be able to participate in a tender if it has undertaken the preliminary works under a late model (a TO thought that they were best placed as they know their network and stakeholders).</li> </ul>	<ul style="list-style-type: none"> <li>There is further work required to determine specific roles and arrangements and this will be carried out as part of developing the Early Competition Plan.</li> </ul>
	<ul style="list-style-type: none"> <li>A TO thought that there could be more work undertaken to develop the early model in advance of legislation.</li> <li>A developer recognised that the ESO's work on the NOA is valuable and should continue to give visibility of potential opportunity ahead of the CATO regime being implemented.</li> </ul>	<ul style="list-style-type: none"> <li>We will explore this further with Ofgem.</li> </ul>
Control centre engagement events, 16 & 30 July and 8 August 2019	<p>We talked further with stakeholders about CATO models and the role we could take in a future process. We heard:</p>	<ul style="list-style-type: none"> <li>We continue to progress work on our Early Competition Plan in line with Ofgem's request and will engage</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>• A renewable energy company and a consultancy thought that the early model was a sensible first step and had greater scope for innovation.</li> <li>• On the subject of who should manage the tender process, stakeholders understood the nervousness expressed in our previous engagement about the ESO running tenders given our position in the National Grid Group. Although two consultancies and a generator were not sure that Ofgem was better placed to do it.</li> </ul>	stakeholders further on the detail of our role.

We will use the stakeholder feedback summarised here, in addition to further views we receive, as we develop and engage on our Early Competition Plan. These will be presented as part of the Early Competition Plan process rather than in this report.

## 5.6 Theme 4: Driving towards a sustainable whole-energy future

A summary of the key themes from our engagement activity:

- Stakeholders have told us whole energy system solutions are essential to transformation of the energy landscape and highlighted the importance of working with other network companies to ensure consistent processes, efficient and appropriate exchange of data and information, and coordinated standardised experiences that work for customers.
- Stakeholders have shown some support for us to inform policy development as there is recognition that we could use our unique perspective, particularly on the system operability and network costs of different pathways, to provide more support to policy makers and help to drive the energy system transition.
- Our proposal to create a connections portal which guides customers through the process was welcomed by stakeholders who could also see merit in having access to connection and delay charges, user liabilities and construction progress through the portal.

### 5.6.1 Leading the debate

#### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
Each year from October to February we hold a large number of workshops with a wide range of stakeholders to inform the development of <i>FES</i>	<ul style="list-style-type: none"> <li>• Stakeholders have commented that our analysis should be more directed at policy makers and that we should be facilitating debate on how the UK can deliver different pathways.</li> </ul>	<ul style="list-style-type: none"> <li>• We have clarified our proposal on Leading the debate in Theme 4.</li> </ul>

#### Phase 2 - Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
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RIIO-2 Stakeholder engagement event, 11 April 2019	<ul style="list-style-type: none"> <li>A number of stakeholders wished to clarify that it is government that sets energy policy and it is our role to inform policy development through analysis.</li> </ul>	<ul style="list-style-type: none"> <li>We are developing our proposal based on this understanding.</li> </ul>
ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received	<ul style="list-style-type: none"> <li>All stakeholders are supportive of the ESO providing insight and analysis to support government in the formation of energy policy. However, there were mixed views on whether the ESO should be making policy recommendations.</li> <li>One large generator/supplier felt that our proposals to make policy recommendations, went beyond the boundary of our role. In contrast, a large renewable generator highlighted that the ESO has a unique position as the interface between multiple market actors, and that we should be offering positions on how to address decarbonisation.</li> </ul>	<ul style="list-style-type: none"> <li>We have continued to work with stakeholders to develop and refine our proposals for how we can apply our skills and insight to drive consumer value. The result is detailed within Theme 4 of this plan.</li> </ul>

### Phase 3 - Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
Control centre engagement events, 16 & 30 July and 8 August 2019	<p>We sought to explore further views at our control centre events on what our role should be with respect to making policy recommendations from the <i>FES</i>. We also discussed what role we should take in facilitating regional <i>FES</i> publications by other parties and our role in being an advocate for the consumer. We heard the following:</p> <p><b>Policy recommendations:</b></p> <p>A consultancy and two generators agreed that:</p> <ul style="list-style-type: none"> <li>We should not be making value judgements off the back of our <i>FES</i> analysis particularly as these are only possible futures.</li> </ul>	<p>Following this feedback, we have sought to clarify our role in this area. We propose to undertake bespoke analysis and industry engagement to inform policy development and decisions.</p>

- We should be providing the analysis and facts to the market and to policy makers for them to make their own views (and the raw data for others to do their own analysis).
- The ESO should have a whole system lens and be impartial.

Conversely, two DNOs, a consumer body, a member of local government and an energy technology company thought that we should go further from the *FES* analysis and make policy recommendations, saying that we were well placed to do so.

#### **Regional *FES* development:**

- Some stakeholders, including a DNO and a supplier, thought that regional *FES* should build on each other and 'add up' to the national picture.
- Others (a supplier, a member of local government and a renewables company) thought that regional differences should exist and we just need to understand how assumptions differ across them.
- A consultancy company thought that we should be taking a leading role on ensuring consistency across regional scenarios which can very quickly become misleading for industry.

- We agree that there is value in having different analysis and conclusions from different parties.
- We will look to align processes and data capture across regional *FES* development where appropriate and is in the consumer interest to do so.
- We will look to work closely with those producing regional *FES* to ensure we understand each other's approaches.

#### **Consumer Advocate:**

- A consumer interest body questioned how we might interact with consumer advice organisations in this space and that various consumer organisations have different specialisms.
- A generator thought that we should consider direct engagement with consumers but that it wasn't a priority.

We have clarified our role in relation to consumer engagement in Theme 4 Driving towards a sustainable, whole-energy future and chapter 14. We will develop our presence as a balanced and neutral partner to consumers, becoming a consumer champion across the energy markets and providing data and marketing



	<ul style="list-style-type: none"> <li>• A consultancy representative wasn't sure whether we could be a consumer advocate without talking to consumers directly and building a level of trust.</li> </ul>	to enable behaviour change around energy use.
<i>FES</i> 2019 launch event, 18 July 2019	<ul style="list-style-type: none"> <li>• Most people we spoke to about our proposals were supportive of the ESO stepping into a role where we make policy recommendations from the <i>FES</i> analysis. These included stakeholders from the renewable energy, supplier and gas distribution network sectors.</li> <li>• One supplier company thought that we were ultimately a commercial organisation and that we should remain impartial in our analysis.</li> </ul>	As set out above, we propose to undertake bespoke analysis and industry engagement to inform policy development and decision making.
Trade association round table, 1 August 2019	<p>Members of the trade association had different views on the role we should adopt in the policy area:</p> <ul style="list-style-type: none"> <li>• One member thought that we should be driving change by leading the debate;</li> <li>• Another trade association member and a service provider thought that we shouldn't be trying to position ourselves in the centre of the system or making recommendations from potentially incorrect information.</li> <li>• Instead, a service provider thought we could make our assumptions more explicit or that we could set out what policies would need to be in place to achieve each scenario.</li> </ul>	As set out above, we propose to undertake bespoke analysis and industry engagement to inform policy development and decision making.

## 5.6.2 Taking a whole electricity system approach to connections

### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
<p>Via our satisfaction survey process, we have interviewed a total of 57 customers across networks, large and small customers, and different fuel types in 2018/19.</p> <p>Customers scored us an average of 7.96 / 10 for connections and generally provided positive feedback on our current connections service level.</p>	<p>The areas for improvement that customers have fed back to us are:</p> <ul style="list-style-type: none"> <li>• They have seen improvement in the level of collaboration to achieve mutually beneficial results between the ESO and customer but there is more to do.</li> <li>• More timely responses to queries – a question was raised as to whether this should be achieved through more staff.</li> </ul>	<ul style="list-style-type: none"> <li>• This feedback, coupled with the recent growth in connection applications to the ESO, has led us to propose activities in RIIO-2 that will help us to provide a more flexible customer account and contract management service.</li> <li>• Our proposals will provide easier access to connection and contract information from the ESO and a central place to access TO and DNO information.</li> </ul>
	<ul style="list-style-type: none"> <li>• Customers want us to challenge the TOs more and to not just be a ‘post box’ in the process.</li> </ul>	<ul style="list-style-type: none"> <li>• As part of our engagement programme, we have talked to the TOs about our respective RIIO-2 proposals but also about our day-to-day service provision to customers.</li> </ul>
	<ul style="list-style-type: none"> <li>• Customers would appreciate more consistency across transmission and distribution processes (quality of process too).</li> </ul>	<ul style="list-style-type: none"> <li>• This feedback has directly informed our proposals. Where our RIIO-2 proposals have the potential to interact with other network companies, we will drive consistency in look and feel where possible.</li> </ul>
<p>Customer journey work, 2018/19 - we interviewed a number of customers to understand their</p>	<p>The main themes of feedback were that customers can experience:</p> <ul style="list-style-type: none"> <li>• Lack of timely responses to queries</li> </ul>	<ul style="list-style-type: none"> <li>• We have used these key themes to build upon our <i>Forward Plan</i> proposals with our RIIO-2 proposals. The central hub and online customer portal proposals will provide a central place for prospective</li> </ul>

Channel	Feedback we received	How this is shaping our plan
experiences from our connections process.	<ul style="list-style-type: none"> <li>Lack of transparency and customers expect a more collaborative approach</li> <li>Lack of efficiency.</li> </ul>	and contracted customers to find information about the connection process and about their connection agreements. We think that these 'self-serve' tools will allow customers and stakeholders to more efficiently navigate the connections process, with support from the ESO.

## Phase 2 Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
Customer connections seminars, March 2019 – presentation and round table discussion.	<ul style="list-style-type: none"> <li>We asked attendees of the seminars, via a poll, whether they had any views on possible activities that we could propose for RIIO-2. 23 stakeholders voted and many votes were in support of the central connections hub proposal with 12 votes. The online account management proposal received eight votes and working more closely with DNOs received 11 votes.</li> </ul> <p>We also asked whether we were missing anything (again via a poll) and we received these views:</p> <ul style="list-style-type: none"> <li>Some focus on accuracy of information in Transmission Entry Capacity / Embedded<sup>35</sup> registers would be of assistance.</li> </ul>	<ul style="list-style-type: none"> <li>We have continued to develop and take forward all our proposals for further stakeholder engagement since this event given that they received a similar level of support from stakeholders.</li> <li>This is something that we will continue to work on in <i>Forward Plan</i> timescales</li> </ul>

<sup>35</sup> <https://www.nationalgrideso.com/connections/registers-reports-and-guidance>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Shorter lead time to service procurement (for example, the week-ahead trial, for more items, and shorter).</li> </ul>	<ul style="list-style-type: none"> <li>We believe that this feedback relates to our balancing services proposals.</li> </ul>
	<ul style="list-style-type: none"> <li>Do what you already do 100 per cent right before adding new stuff.</li> </ul>	<ul style="list-style-type: none"> <li>We do not think we have the option to stand still, particularly with the pace of change of the energy industry. But we recognise that we still need to get the basics right for our customers and that our RIIO-2 proposals will support this.</li> </ul>
	<ul style="list-style-type: none"> <li>Continue focus on wider access to the Balancing Mechanism (for DER)</li> </ul>	<ul style="list-style-type: none"> <li>This is a reference to proposals elsewhere in our business plan but enhancements to our connections process will facilitate connection of greater DER volumes.</li> </ul>
	<ul style="list-style-type: none"> <li>Transparency of connection charges including use of system, application fees and securities.</li> </ul>	<ul style="list-style-type: none"> <li>This is something we have taken forward as information we will include in the online customer portal.</li> </ul>
	<p>In the afternoon of the customer seminar we hosted round table discussions on RIIO-2 to understand further views and requirements. Four stakeholders from a TO, a DNO, and two renewable energy developers attended. These stakeholders were generally supportive of all proposals particularly around the following:</p> <ul style="list-style-type: none"> <li>There are a lot of processes and information gathering involved across different parties so streamlining these and having access to information in one place is useful.</li> <li>If TOs are producing system capacity heatmaps then these should be in a common format and companies should share best practice.</li> </ul>	<ul style="list-style-type: none"> <li>These stakeholders were positive about our proposals and so we will continue to develop them.</li> <li>We have and will continue to engage with transmission and distribution network companies to ensure that our Central Connections hub proposal will bring value for customers in an efficient way.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Some standardisation across transmission and distribution connection processes would be beneficial.</li> <li>The ESO is best placed to look across transmission and distribution and take a balanced view.</li> <li>The ESO could be able to provide additional information and alternative connections approaches at the time of application.</li> </ul>	

### Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 webinar, 21 March 2019	<p>We asked our webinar attendees for their reflections on our RIIO-2 proposals and to prioritise them according to their own business requirements. Generally, our proposal to provide improved access for DER to available headroom across T/D interfaces came out as the highest priority, closely followed by 'working with network organisations'. In addition, we heard:</p> <ul style="list-style-type: none"> <li>One stakeholder highlighted that there was some overlap between these proposals and those commitments in our <i>Forward Plan</i>.</li> </ul>	<ul style="list-style-type: none"> <li>In terms of overlap with <i>Forward Plan</i> activities, building on our earlier customer journey work, we intend to scope out the functionality of our proposed Customer Connections portal during the remainder of the RIIO-1 period.</li> <li>This will enable us to efficiently plan and deliver the portal within a two-year period at the start of RIIO-2. We will ensure this pathway is clearly communicated to stakeholders.</li> </ul>
	<ul style="list-style-type: none"> <li>A generator fed back that the online connections portal was a 'nice to have' and that if the connection experience is positive, they are not concerned if it is online.</li> </ul>	<ul style="list-style-type: none"> <li>Other stakeholders during our engagement have been positive about an online portal but we will seek further views on this when we engage on detailed costs and benefits.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>Webinar attendees also provided some ideas in terms of what information the customer connections portal could provide:</p> <ul style="list-style-type: none"> <li>• delay costs and user liabilities</li> <li>• charging statements and methodologies.</li> </ul>	<ul style="list-style-type: none"> <li>• We will incorporate stakeholder ideas for portal content into the scoping phase of the project.</li> </ul>
RIIO-2 stakeholder event, 11 April 2019	<p>At round table discussions with small and large generation companies and network companies, we heard:</p> <ul style="list-style-type: none"> <li>• The majority of stakeholders welcomed our proposals, and</li> <li>• smaller companies valued the proposals to provide more information online and in one place for multiple network companies.</li> </ul>	<ul style="list-style-type: none"> <li>• We have taken forward all proposals in our business plan and have incorporated further detail for stakeholders.</li> </ul>
	<ul style="list-style-type: none"> <li>• DNOs and one generator questioned the value of a central connections hub if customers were simply signposted elsewhere.</li> <li>• However, this was countered by views that a central connections hub would be beneficial specifically for location-neutral projects, particularly if we could provide guidance on the most efficient connection voltage.</li> </ul>	<ul style="list-style-type: none"> <li>• We have continued to seek views on what information and therefore value the central connections hub proposal will provide.</li> </ul>
	<ul style="list-style-type: none"> <li>• DNOs were keen to understand more about our proposals to facilitate connection of DER and could see benefit in the ESO expanding the Appendix G process further.</li> </ul>	<ul style="list-style-type: none"> <li>• We have and will continue to engage with DNO companies further on our whole electricity system proposals to ensure that create benefit for our customers and for consumers.</li> </ul>
	<ul style="list-style-type: none"> <li>• One large generation company did not think that our proposals were ambitious and sounded like business as usual for the ESO. They reflected that we should be</li> </ul>	<ul style="list-style-type: none"> <li>• We will continue to monitor feedback, but currently we understand that most stakeholders believe our proposals to be ambitious, including the ERSG.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>proposing to look at areas such as queue management and capacity hoarding.</p>	<ul style="list-style-type: none"> <li>We believe that both suggested areas for focus are already being considered through Ofgem's work on access and forward looking charges as well as the ENA's Open Networks project.</li> </ul>
	<ul style="list-style-type: none"> <li>We asked whether it should be customers or consumers that pay for these proposals given that customers will directly get the benefit but stakeholders wanted to see further cost / benefit analysis before taking a view.</li> </ul>	<ul style="list-style-type: none"> <li>We have engaged further on the costs associated with our plan. Discussions on the funding model and related mechanisms should determine how costs are recovered.</li> </ul>
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received</p>	<p>We received the following views in respect of our connections proposals:</p> <ul style="list-style-type: none"> <li>One network company fed back that they did not think that the ESO is best placed to give guidance on where to connect, or to provide dedicated connections account managers for DER. They also thought that we should be careful not to create unnecessary duplication in the process.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that we should not duplicate activity undertaken by other parties. We have heard from some of our stakeholders, for example at our event in April, that they would welcome a central hub for connection information and guidance on where to connect especially where a project is location neutral.</li> </ul>
	<ul style="list-style-type: none"> <li>A trade association welcomed our ambition in this area and thought that a number of the activities would help to deliver it.</li> <li>They welcomed clarity on whether the ESO intends to act as the connection account managers for DER or to coordinate with current connection account managers within the DNOs.</li> </ul>	<ul style="list-style-type: none"> <li>It is our intention to coordinate where there may be issues across the transmission and distribution boundary and ultimately facilitate a smoother application process for DER customers.</li> </ul>
	<ul style="list-style-type: none"> <li>A consumer interest organisation expressed concern that our ambition to "reduce friction for participants in their interactions anywhere on the electricity network" lacked</li> </ul>	<ul style="list-style-type: none"> <li>We sought to understand the views of this stakeholder in more detail to be able to</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>substance and was not necessarily within the control of the ESO.</p> <ul style="list-style-type: none"> <li>• A supplier said that they supported the activities and welcomed the intent to work with DNOs to take a whole electricity system view.</li> <li>• They set out that they had had encountered difficulties when distribution connections have an impact on the transmission network.</li> <li>• They also raised that there is ongoing ENA work to standardise connection procedures across DNOs, and that where appropriate this could be extended to the ESO and TO approaches if it seen beneficial, but that the DNO standardisation should be achieved first.</li> <li>• Dedicated connections account managers are encouraged however it is unclear if these should sit in the ESO or DNO.</li> </ul>	<p>clarify our proposals to address the concern.</p> <ul style="list-style-type: none"> <li>• We will ensure that we learn from the approach that the ENA is taking on standardisation, but we want to ensure that where value can be derived sooner, that we facilitate delivery of that value.</li> </ul>
All TO and ESO meeting, 9 August 2019	<ul style="list-style-type: none"> <li>• We talked about our respective connections proposals with the TOs as we understood from published RIIO-2 draft plans and previous discussions that we were all considering developing connections portals. The TOs told us that they are looking to develop online solutions for their aspects of the connections process.</li> </ul>	<ul style="list-style-type: none"> <li>• We agreed that we should coordinate on our respective proposals to ensure that we ultimately deliver an efficient product for customers and that we will have further meetings to discuss scope and technical solutions across all portals.</li> </ul>



### 5.6.3 Taking a whole electricity system approach to promote zero-carbon operability

#### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
<p>The ENA's Future Worlds consultation, July 2018 – this considered how a range of relevant industry functions and activities (such as system design and operation) will change to meet the challenges of the future energy landscape.</p>	<p>From the 47 responses received by the ENA to this consultation, we learned the following in respect of the ESO role specifically:</p> <ul style="list-style-type: none"> <li>• The strongest consensus, supported by analysis, is for the co-ordinated and collaborative future provided through World B.</li> <li>• Responses highlighted the importance of working with other network companies to ensure consistent processes, efficient and appropriate exchange of data and information, and coordinated standardised experiences that work for customers.</li> <li>• They indicated a need for aligned codes and frameworks to support the energy transition.</li> <li>• They highlighted that the ESO should continue to play a role in overall management of the national electricity system, including in times of system stress and emergencies.</li> </ul>	<p>We developed five key areas of focus for our whole electricity system work which informed our stakeholder engagement. We looked to explore the potential RIIO-2 business impacts and role for the ESO across these five areas:</p> <ul style="list-style-type: none"> <li>• information provision;</li> <li>• framework accessibility and alignment;</li> <li>• facilitating routes to market;</li> <li>• clarifying responsibilities across the transmission-distribution interface; and</li> <li>• system event preparedness and restoration.</li> </ul>

## Phase 2 Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
ESO Ambition stakeholder workshop, 28 September 2018	<b>Aligned commercial, technical and regulatory arrangements across transmission and distribution</b>	
	<ul style="list-style-type: none"> <li>Codes need to move from a predictable engineering environment to one that can manage risk in a data-driven system whilst maintaining a robust engineering standard.</li> <li>The codes need to accommodate innovation.</li> </ul>	<ul style="list-style-type: none"> <li>Our proposals for transforming code governance and to employ a principles-based approach in our Grid Code proposal seek to address this.</li> </ul>
	<ul style="list-style-type: none"> <li>There is a risk that an uncoordinated approach to the future ESO/DSO model means that industry cannot effectively engage with and respond to the change. A lot of frustration was expressed on this topic.</li> </ul>	<ul style="list-style-type: none"> <li>We intend to work closely with DNOs on the activities that we have proposed for RIIO-2 but we also intend to continue to work closely with parties through the ENA to support the DSO transition.</li> </ul>
	<ul style="list-style-type: none"> <li>There was a call to simplify and unify governance to drive alignment across transmission and distribution. We need to look at the synergies across the two models and pull it all together under one governance structure.</li> </ul>	<ul style="list-style-type: none"> <li>We have sought to address this in our Theme 2 code proposals.</li> </ul>
	<ul style="list-style-type: none"> <li>The ESO has visibility of the impact of code changes and that there is an opportunity for the ESO to promote alignment across the codes.</li> </ul>	<ul style="list-style-type: none"> <li>Through our proposal to step up to a code manager, we will take a more coordinated view across the codes.</li> </ul>
	<b>Provision of information and tools to enable efficient whole system decisions across operational and investment timescales</b>	
	<ul style="list-style-type: none"> <li>All data on transmission and distribution network costs and constraints needs to be available together. We need to be brave and publish the data.</li> </ul>	<ul style="list-style-type: none"> <li>Our proposals on the data portal and working more collaboratively with network parties aim to address this request.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Markets should facilitate a common understanding on costs for all decisions across transmission and distribution, including a clear articulation of the needs required.</li> <li>There is currently no one party in place to facilitate the new world, the ESO could play a facilitate and connect role inclusive of large and small.</li> </ul>	<ul style="list-style-type: none"> <li>We will work with DNOs to ensure consistent articulation of needs, costs and decisions.</li> <li>Our proposals for a central connections hub look to provide a single point where parties can find information about different networks.</li> </ul>
RIIO-2 webinar, 1 November 2018	<ul style="list-style-type: none"> <li>We asked attendees of the webinar whether our five identified areas of work were the right areas to focus on. Stakeholders broadly agreed that they were the right areas.</li> <li>We also asked if stakeholders could prioritise across the five areas – the key area of priority was the Clarifying responsibilities across the transmission-distribution interface, closely followed by Information provision and Facilitating routes to market.</li> </ul>	<ul style="list-style-type: none"> <li>The five areas have all been taken forward into our RIIO-2 proposals. We have engaged further with stakeholders on the detail around their priority areas to further shape those proposals.</li> </ul>
We explored the five areas with stakeholders in more detail via an ESO whole electricity system consultation in December 2018 (to which we received seven responses) and a RIIO-2 workshop, 17 December 2018	<p><b>Information provision</b></p> <ul style="list-style-type: none"> <li>We need to be brave about publishing data but be clear on parties' roles and who should publish what information.</li> </ul>	<ul style="list-style-type: none"> <li>We have carried out further engagement on what data stakeholders want access to and how they want to use it to inform our data portal proposal.</li> </ul>
	<p><b>Aligned and accessible frameworks</b></p> <ul style="list-style-type: none"> <li>We need a regulatory framework that defines what we should be doing at whole electricity system level – clarity on how parties work together.</li> <li>Review of the code governance process is required.</li> </ul>	<ul style="list-style-type: none"> <li>Our proposals to review the code governance process and the Grid Code seek to address this feedback.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<b>Consistent and Transparent Flexibility Markets</b>	
	<ul style="list-style-type: none"> <li>• Links in with data and someone is required to coordinate across networks.</li> <li>• Markets need to work on a regional, local and national level.</li> <li>• Need to design solutions to fix the problem with appropriate lengths of contracts.</li> <li>• Consistent and transparent markets are required.</li> </ul>	<ul style="list-style-type: none"> <li>• Our market platform proposal (under Theme 2) seeks to address this feedback. We also set out in our plan that we will work with stakeholders, including DNOs, to ensure that ESO markets are consistent and coordinated with other markets throughout the RIIO-2 period.</li> </ul>
	<b>Clear coordinated roles and responsibilities</b>	
	<ul style="list-style-type: none"> <li>• We need clarity of roles – what is the difference between ESO and DSO?</li> <li>• Need a process to define roles and to include stakeholders (who should be leading this e.g. ENA, ESO, Ofgem).</li> </ul>	<ul style="list-style-type: none"> <li>• In our work on whole system operability we set out how we intend to ensure there are clear roles and responsibilities for system operators.</li> <li>• This will be particularly evident in the run up to RIIO-ED2 in April 2023.</li> </ul>
	<b>System risk and resilience</b>	
	<ul style="list-style-type: none"> <li>• We need to understand the risk and how digitalisation and decentralisation will impact – how could automation help.</li> <li>• We need to define our role and the roles of others.</li> <li>• How could the ESO report better on system security on a longer-term basis.</li> <li>• Could we provide more information on future system operability?</li> </ul>	<ul style="list-style-type: none"> <li>• Our restoration proposals within this plan (under Theme 1), seek to build upon the work being undertaken by the Black Start Task Force and the NIC project to bring a whole system solution for restoration.</li> </ul>

### Phase 3 Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 stakeholder event, 11 April 2019	We discussed our proposals with stakeholders on operability from our ambition document, and we heard the following:	
	<b>Create a common portal to share network data</b>	
	<ul style="list-style-type: none"> <li>• Open data for all will deliver the most innovation and consumer value, and that investors and technology companies need consistent data from different network companies to give value to their propositions.</li> <li>• Stakeholders could see there being value in seeing transmission, distribution and ESO data in the same format and timescales.</li> </ul>	<ul style="list-style-type: none"> <li>• This is something that we have discussed further with network companies in our ongoing engagement with them.</li> </ul>
	<b>Work with DNOs to develop clear roles and responsibilities</b>	
	<ul style="list-style-type: none"> <li>• The ESO and DNOs have complimentary capabilities, which creates a good basis for a future partnership.</li> <li>• We should be looking to use the two-year period between RIIO-2 and ED2, to test ways of working between the ESO and DNOs. We should be starting now to work out where challenges and conflicts may arise, with a view to solving them before the start of RIIO-ED2.</li> <li>• We can help DNOs by defining what is different about being a DSO and what capabilities are required.</li> </ul>	<ul style="list-style-type: none"> <li>• We agree that the ESO and the DNOs working together will be a positive relationship and we continue to work with all network companies through the ENA and our own engagement programme.</li> <li>• We will work with DNOs to develop clear roles and responsibilities ahead of RIIO-ED2.</li> </ul>
	<b>Review of the SQSS and Grid Code</b>	

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>The SQSS is no longer fit for purpose and needs a review. We should be however, investing effort to support parties that will be affected by SQSS change.</li> <li>Stakeholders could see value in combining transmission and distribution codes. Perhaps with a first step of harmonising definitions to align them.</li> </ul>	<ul style="list-style-type: none"> <li>We have received wide support for a review of the SQSS and, following further engagement, have proposed to undertake a targeted review in Theme 3 of our plan.</li> <li>We need to recognise the potential impact of framework changes on stakeholders and consider implementation timescales and approaches appropriately.</li> </ul>
<p><b>Develop and deliver arrangements that optimise network operation across the whole electricity system and ensure the system remains operable in a zero-carbon future</b></p>		
	<ul style="list-style-type: none"> <li>We don't need to decide what future world we want to end up in just yet but in the meantime consistency across DNOs and between transmission and distribution is key.</li> <li>DNOs tend to be less expert at markets than the ESO and if the ESO is going support the DSO transition then it should be paid for doing so.</li> </ul>	<ul style="list-style-type: none"> <li>We will seek to drive consistency across transmission and distribution where our current roles allow.</li> <li>DSO transition arrangements are yet to be determined but we continue to be involved through ENA and other engagement.</li> </ul>
	<ul style="list-style-type: none"> <li>Stakeholders, including a consumer interest organisation, at one round table agreed that while they were very supportive of our ambition to be able to operate a zero-carbon network by 2025, we shouldn't look to achieve it at any cost.</li> <li>We must think about long and short-term consumer benefit. We shouldn't bake in sub-optimal solutions just to ensure we hit our ambition and must take an agile</li> </ul>	<ul style="list-style-type: none"> <li>We agree that it would not be optimal for consumers to overspend in order to deliver on the ambition we have set. We will ensure that our plan remains agile throughout the RIIO-2 period and beyond.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>approach if it looks like we may not achieve it, for example, a year out.</p>	
	<ul style="list-style-type: none"> <li>• A generator representative thought that the zero-carbon system operation ambition would not be met because we need things like inertia markets to be in place now so that there is a business case for change.</li> <li>• In response one stakeholder thought that wind could provide a lot more services than it does currently.</li> </ul>	<ul style="list-style-type: none"> <li>• We have proposed in Theme 2 to develop and implement an inertia market but we will seek further views following publication of this plan on whether stakeholders think all of our proposals together as a package will allow us to meet our 2025 ambition.</li> </ul>
	<ul style="list-style-type: none"> <li>• Incorporate whole electricity system thinking into the network design and development process.</li> </ul>	<ul style="list-style-type: none"> <li>• Our Theme 3 proposals intend to meet this criterion.</li> </ul>
	<ul style="list-style-type: none"> <li>• One stakeholder questioned whether it would be beneficial to use innovation funding for Regional Development Programmes (RDPs), which would facilitate the sharing of outputs at the end. There was some agreement on this point.</li> </ul>	<ul style="list-style-type: none"> <li>• The RDPs were developed as part of ongoing innovation in order to start delivering consumer value sooner.</li> <li>• We will endeavour to share outputs as we undertake more RDPs in future.</li> </ul>
	<ul style="list-style-type: none"> <li>• RDPs should be applied to more whole system opportunities like heat and transport and should be much larger in nature.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes, we agree that RDPs could be wider in scope in future and that an agile approach and would lend itself to broader issues in future.</li> </ul>
	<ul style="list-style-type: none"> <li>• RDPs are very network focused, which makes it more difficult for service providers to understand how they can meet a need.</li> </ul>	<ul style="list-style-type: none"> <li>• We consider that RDPs are more system operator focussed to meet an operational need but if there is a greater wish to understand information about them then we can facilitate that.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>The learning from each RDP will de-risk and lower the cost of applying that solution in a new place, so there should be ongoing benefit.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that this may be the case, but we also consider that each RDP may be applied in a different way and to very different system needs.</li> </ul>
	<ul style="list-style-type: none"> <li>Two attendees discussed whether the RDPs were sticking plasters to system issues and whether these issues could be more proactively resolved to avoid the need for RDPs.</li> </ul>	<ul style="list-style-type: none"> <li>We are looking to determine a strategy in <i>Forward Plan</i> (RIIO-1) timescales for possible applications of RDPs into the RIIO-2 period.</li> </ul>
ADE DSR working group, April 2019	<ul style="list-style-type: none"> <li>A stakeholder asked how flexible we are around the adoption of different worlds (other than World B)? They were concerned that we get along a path of World B but then need to change path – need to look at least regret options.</li> </ul>	<ul style="list-style-type: none"> <li>We have adopted a least regret approach to this and we think that our preferred option of deeper relationship with DSOs under a World B scenario combines the natural evolution of the ESO role with the lowest cost of industry implementation and facilitates a whole system view that will deliver consumer value.</li> </ul>
Bilateral meetings, various, April 2019	<p>A renewable generation company fed back that they think:</p> <ul style="list-style-type: none"> <li>The ESO should lead in the DNO to DSO transition and that we should set standard for DSOs.</li> <li>There needs to be a large market formed for all the products being developed - doesn't think local products for local markets would be efficient.</li> </ul>	<ul style="list-style-type: none"> <li>We think we have a role to play in facilitating clarification of roles between the ESO and DNOs rather than set standards.</li> </ul>
	<p>Another generation company provided their views on whole system operability. They:</p> <ul style="list-style-type: none"> <li>questioned whether World B was the right world to base our thinking (and IT design) upon</li> </ul>	<ul style="list-style-type: none"> <li>These comments relate to Baringa's assessment of the ENA Future Worlds work.</li> </ul>



Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>disagreed with Baringa's interpretation of World B</li> <li>recognised that the codes and frameworks elements of our proposals will be influenced by Ofgem and BEIS review.</li> </ul>	<ul style="list-style-type: none"> <li>We understand the costs compared relate to network organisations only.</li> <li>We believe broader consideration of overall industry costs need to be considered to understand which future pathway delivers greatest consumer value.</li> </ul>
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019 11 Responses received</p>	<p>We received the following views on our <b>whole system operability proposals</b>. Most stakeholders who commented positively supported our ambition and proposals in this area, with one saying that we should be doing more in this space due to our unique position in the industry.</p>	
	<ul style="list-style-type: none"> <li>One stakeholder said that they recognise a RDP may be efficient in some areas but cannot be assumed it will always deliver the best value for consumers so we do not recommend a wholesale rollout.</li> <li>Where constraints exist, the proposed RDP should be fully tested against other traditional investment and market solutions to identify the greatest consumer value.</li> </ul>	<ul style="list-style-type: none"> <li>We think that a tactical application of an approach to meet specific regional needs is required and in line with a clear strategy rather than a wholesale rollout and this is reflected in our proposals in Theme 4.</li> <li>We will ensure that other methods to meet the need are explored and that the RDP itself explores options.</li> </ul>
	<p>On the common portal for sharing data:</p> <ul style="list-style-type: none"> <li>One stakeholder said they were supportive of improving data sharing between network operators and improving modelling across system boundaries. They thought using a common portal is sensible.</li> <li>The same stakeholder thought that it could be expanded to provide data to all market participants and could draw upon work by the ENA on the standardisation of data and a common resource register.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that we should be drawing upon the work being undertaken by the ENA on data. Our work here will also be consistent with Energy Data Taskforce recommendations.</li> </ul>

## 5.6.4 Delivering consumer benefits from improved network access planning

### Phase 1 Broad thinking

Channel	Feedback we received	How this is shaping our plan
Customer satisfaction surveys, 2018 – we surveyed generation companies, DNOs and TOs	<p>Customers were generally positive about our outage planning process and service although we have still sought to improve our processes in RIIO-1. Some of the other customer comments we received are:</p> <ul style="list-style-type: none"> <li>• Want to see better coordination between the ESO and DNOs to better align outages with all parties involved.</li> <li>• Transmission outages and changes to those outages can have impacts on DNOs' networks that the ESO does not understand.</li> </ul>	<ul style="list-style-type: none"> <li>• This is feedback that has directly influenced our proposals to work more closely with DNOs and to assess the whole system impact of outages on the transmission system.</li> <li>• Again, this is something that we want to address and looked to explore further at our RIIO-2 engagement event in December, at the OC2 Forum and with DNOs.</li> </ul>

### Phase 2 developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 stakeholder event, 17 December 2018	<p>The key themes from these discussions were:</p> <p>In terms of the ESO's role, we need to:</p> <ul style="list-style-type: none"> <li>• Increase transparency of outage constraint costs for industry parties, otherwise how can they act to reduce their impact on them.</li> <li>• Understand the value associated with reducing short notice outage churn.</li> </ul>	<ul style="list-style-type: none"> <li>• This is something that we will look to provide more transparency on.</li> <li>• We have undertaken a cost benefit analysis of our proposals within this plan.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
	<p>In terms of possible incentives in this area, stakeholders agreed that there is merit at looking at incentives. However, network companies thought we should:</p> <ul style="list-style-type: none"> <li>• Consider what is the baseline against which good or poor performance could be measured</li> <li>• Avoid unintended consequences e.g. TOs putting in long outage requests just so that they can do some simple things to perform well under an incentive</li> <li>• Consider that TOs need flexibility on outage planning to be efficient.</li> </ul>	<ul style="list-style-type: none"> <li>• We sought further views on incentivising network parties at our stakeholder event on 11 April (see below). We have also engaged with TOs on this subject.</li> </ul>
	<ul style="list-style-type: none"> <li>• In terms of whole system thinking, some stakeholders fed back that transmission outages and system access can have consequences for distribution networks.</li> </ul>	<ul style="list-style-type: none"> <li>• We have developed a proposal to manage deeper outage co-ordination across the transmission/distribution interface and to better understand the whole system cost of outages.</li> <li>• We also propose to notify more parties, connected to distribution networks, of transmission outages that may impact them.</li> </ul>

### Phase 3 testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 webinar, 21 March 2019	We asked attendees whether they would support further development of our proposals. There was support for different proposals across different stakeholders. We also heard:	

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>One stakeholder asked, in relation to our proposal to extend the TOGA system: What is the lowest voltage being considered for outage notifications?</li> </ul>	<ul style="list-style-type: none"> <li>We are proposing to notify affected parties connected to distribution networks of transmission outages that could materially affect them.</li> <li>We are not intending to directly notify parties of distribution network outages but welcome views on this point.</li> </ul>
	<ul style="list-style-type: none"> <li>A generation company pointed out that there are some parallels between our proposal to enhance outage coordination across the transmission – distribution interface, and Ofgem’s Sector Specific Consultation content where Ofgem has proposed to implement a single Network Access Policy and to apply it to DNOs.</li> </ul>	<ul style="list-style-type: none"> <li>We support Ofgem’s proposal to implement a single Network Access Policy and that this could be applied to DNOs / other parties. We think that our proposals are complementary to Ofgem’s.</li> </ul>
	<ul style="list-style-type: none"> <li>There needs to be common compensation tools across transmission and distribution if you are trying to coordinate effectively. There must also be a common view between parties as to how much embedded generation / DSR is connected – the ESO and DNOs need to address this to deliver "deeper coordination" on outage planning.</li> </ul>	<ul style="list-style-type: none"> <li>We agree with the comments made by this stakeholder and it is for such reasons that we have proposed to work more closely with DNOs to co-ordinate and communicate outage notifications.</li> </ul>
RIIO-2 stakeholder event, 11 April 2019	<p>We shared our proposals with stakeholders and we heard the following:</p> <ul style="list-style-type: none"> <li>Transparency of information about outages (for distribution connected parties) is an important first step for more bespoke constraint management services, and that our proposal to introduce text alerts from the TOGA system are only useful if parties can respond in some way.</li> </ul>	<ul style="list-style-type: none"> <li>This was counter to the feedback we heard at our December event where we heard that transmission outages can have cost impacts to distribution connected parties so we want to ensure that they have information on forthcoming outages as a first step</li> </ul>

Channel	Feedback we received	How this is shaping our plan
		<p>even if they cannot necessarily respond.</p> <ul style="list-style-type: none"> <li>• Longer term, we think that information on outages could be incorporated into the customer portal we are proposing in our connections proposals.</li> <li>• We agree that the potential exists for constraint management services across the transmission-distribution interface and see greater outage coordination as a step towards facilitating this.</li> </ul>
	<ul style="list-style-type: none"> <li>• Stakeholders agreed that there could be benefit in greater collaboration across transmission and distribution on the impact of outage plans. However, there were differing views as to whether the ESO should notify distribution-connected parties directly of outage impacts or whether the ESO should interface with the relevant DNO.</li> </ul>	<ul style="list-style-type: none"> <li>• Our outage system, TOGA, is already accessed by some distribution parties and we believe that extending this functionality to smaller parties can drive consumer benefit.</li> <li>• We are aware that many relevant stakeholders operate across GB and value consistency.</li> </ul>
	<p>We asked stakeholders if they thought there was merit in incentivising network companies to minimise costs associated with short notice outage changes:</p> <ul style="list-style-type: none"> <li>• There were mixed views on this with network parties being unclear as to the benefit an incentive would provide over and above the existing obligations.</li> <li>• One network company also thought that the ESO should be assessing TO outage plans before RIIO-2 to ensure that they are efficient.</li> </ul>	<ul style="list-style-type: none"> <li>• We have talked with network companies about the merits of an incentive and how that incentive could be designed.</li> <li>• We are currently not expecting to undertake a review of the TO outage plans for the RIIO-2 period outside of normal code processes.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
<p>ESO <i>Our RIIO-2 Ambition</i> document consultation, April 2019</p> <p>11 Responses received</p>	<ul style="list-style-type: none"> <li>One network company commented specifically on our system access proposals saying they will require wider industry agreement before being taken forward and we need to be mindful of the existing obligations of parties to notify system outages.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that we will require further and more detailed engagement on these proposals before the RIIO-2 period.</li> </ul>
<p>All TO and ESO meeting, 9 August 2019</p>	<p>We talked about our respective proposals for system access with the TOs. The key points of the discussion were:</p> <ul style="list-style-type: none"> <li>We set out our proposal to expand the Scotland mechanism to facilitate short term outages changes to the England and Wales TO;</li> <li>One TO thought that there was more value to be gained for consumers by challenging and changing outages in the two to three year ahead timeframe and we should be braver in this respect; and</li> <li>On the subject of new incentives in this area, two TOs thought that existing code and licence obligations were sufficient to drive positive behaviours and value.</li> </ul>	<ul style="list-style-type: none"> <li>We agree that there is further consumer value to be delivered from medium to longer term review and change in outages and this complements the proposals that we have made in our plan.</li> <li>Any incentive in this area would need to be carefully designed to avoid unintended consequences and ensure that the interactions and additional requirements on all parties involved are understood.</li> </ul>

## 6 Open data unlocking zero-carbon system operation and markets

### Phase 1 Broad thinking

Channel	Feedback we received	How is this shaping our plan
<p>In 2017 and 2018, as part of our “Manage my profitability customer journey”, we</p>	<p>We received a lot of insight into user experience of the information that we provide, particularly around charging. Other aspects included:</p>	

<p>conducted deep dive sessions with a representative sample of the Big six, large independent and small independent retailers, to understand their experience of being an ESO customer.</p>	<ul style="list-style-type: none"> <li>Information provided is often incomplete or unreliable.</li> <li>There is no opportunity to question or interrogate the data provided by the ESO and supporting narratives are not provided.</li> <li>Information sharing is not consistent and information is hard to retrieve.</li> <li>Frequency of information sharing does not meet user requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Our ambition and proposals for open data and transparency have been developed explicitly to address these concerns.</li> <li>Our preferred option includes the commitment to share our data management capability and share a much wider range of data, simple insight to explain the data, query functionality and far more accessible and usable data sets.</li> </ul>
<p>In May and June 2018, we conducted an Ancillary services customer journey with a representative sample of small, medium and large service providers.</p>	<ul style="list-style-type: none"> <li>There is a thirst for transparency. Providers want to understand the decision-making processes behind the scenes, for example, across payments and dispatch.</li> </ul>	
<p>SNAPS consultation in July 2017 – over 100 responses from a wide range of stakeholders.</p>	<ul style="list-style-type: none"> <li>Transparency of market information was identified as one of the key enablers of efficient markets in the consultation on reform of balancing services procurement.</li> </ul>	

## Phase 2 - Developing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
<p>ESO 2030 Ambition workshop, 28 September 2018; RIIO-2 stakeholder</p>	<ul style="list-style-type: none"> <li>Stakeholders want more data including market dynamics, such as real time market data, and a strong emphasis on problem statements such as locations of constraints and how these problems are being solved.</li> </ul>	<ul style="list-style-type: none"> <li>Our proposals for open data have been developed directly in response to the feedback we have received on our ambition, to make as much as our data open and accessible as possible.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
workshop, 17 December 2018	<ul style="list-style-type: none"> <li>Some stakeholders called for all possible market and operational data to be made available in its rawest form for those who want it.</li> <li>In addition to the raw data which can be difficult to use, analysis and insight is also required to facilitate a level playing field for all parties to participate equally in markets.</li> <li>There is a strong desire for one source of the truth as multiple platforms could develop adding unnecessary complexity.</li> <li>We need to be mindful of risks and unintended consequences of sharing more data such as cyber security, data privacy and the potential for market gaming.</li> </ul>	<ul style="list-style-type: none"> <li>Our ESO platform proposes to give access to both historical and forecast data to support investment cases and decision-making.</li> </ul>
Power Responsive Steering Group – January, April and October 2018	<ul style="list-style-type: none"> <li>Demand Side Flexibility providers need to understand when future balancing problems may arise for the system – and what problem needs solving by when.</li> <li>The steering group members suggested that including information on longer term requirements and price trends, would help demand side providers to understand their cost-benefit proposition and returns on investment.</li> </ul>	<ul style="list-style-type: none"> <li>Our proposed ESO platform, integrated with the market platform, will provide information on current and future balancing issues.</li> </ul>
Power Responsive Steering Group notes		



Channel	Feedback we received	How this is shaping our plan
can be found on their website <sup>36</sup>		

### Phase 3 - Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
RIIO-2 webinar, 21 March 2019	<ul style="list-style-type: none"> <li>We shared our developing thinking on our ambition around data sharing and transparency and asked attendees two survey questions about their data and transparency requirements: <ul style="list-style-type: none"> <li>Question 1: What is your requirement for data, analysis and functionality? We presented the three options documented in our business plan and asked stakeholders which option best met their needs. Option 1 – simply share raw data; Option 2 – share raw data with simple explanation and insight; Option 3 - share raw data and advanced analysis and insight as well as providing greater interaction and tools to allow stakeholders to manipulate the data.</li> <li>Stakeholders told us that they would like the functionality provided in option 3 but that we should focus on delivering the fundamental requirements of option one. Some stakeholders also commented that we needed to provide a certain level of insight and explanation to support stakeholders in use of the data that we provide.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>We have used the feedback received on question one, alongside other feedback document here, to inform our choice of preferred option, option 2.</li> <li>We will use the feedback on question 2 to prioritise our work to process and share data and information as we conduct this work in the RIIO-2 period.</li> </ul>

<sup>36</sup> <http://powerresponsive.com/updates/>

Channel	Feedback we received	How this is shaping our plan
	<ul style="list-style-type: none"> <li>Question 2: What further types of data will be useful to you? Please prioritise: We presented four generic data categories and asked stakeholders to prioritise which data sets were of most value to them. In order of preference stakeholders selected are forward-looking view of system requirements; whole electricity system view of constraints; real-time margins and utilisation; and transparency on control room decision making processes.</li> </ul>	
<p>We tested the proposals in <i>Our RIIO-2 Ambition</i> document with in-depth discussion at two interactive forums in April 2019:</p> <ul style="list-style-type: none"> <li>Power Responsive Steering Group round table, attended by 19 stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of future requirements will allow parties to innovate to come up with new solutions to problems.</li> <li>Transparency of control room decision making is essential to foster market confidence and greater participation.</li> </ul>	<ul style="list-style-type: none"> <li>We have factored these requirements in to our proposal in the business plan.</li> </ul>
<ul style="list-style-type: none"> <li>ESO RIIO-2 Stakeholder workshop, 11 April 2019, attended by 30 organisations</li> </ul>	<ul style="list-style-type: none"> <li>We need to look at other developments in this area such as the BEIS Energy Data Taskforce.</li> <li>At the workshop, we asked the same survey questions as we asked at the RIIO-2 webinar in March 2019. The responses were mostly in favour of options one and two. In addition, we heard that we should not try to provide too much insight and analysis as this may prevent other, better placed, parties from innovating in this space. This is consistent with the comments received in the webinar that we should focus our attention on getting the data out in a usable format with a limited amount of insight sufficient to help stakeholders understand and use the data.</li> </ul>	<ul style="list-style-type: none"> <li>In our business plan, we have articulated how we see our work on open data supporting the ambitions of the BEIS Energy Data Taskforce.</li> <li>This feedback has informed our identification of our preferred option in this business plan; option 2.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
<p>We also had the opportunity to test our proposals at group meetings of the ADE and Renewable UK as well as through bilateral meetings with several interested stakeholders.</p>		
<p>ESO <i>Our RII0-2 Ambition</i> document consultation, April 2019 11 Responses received</p>	<ul style="list-style-type: none"> <li>• Large generator/suppliers as well as an industry body representing smaller parties all strongly supported our ambition and proposed activities for data and transparency. Examples of data that stakeholders would like to see published include: demand; generation; frequency; power flows; system constraints; line outages; and balancing actions.</li> <li>• Stakeholders also told us it would be helpful and valuable for the ESO to publish data in a range of formats, including simple reports that allow easy access to information suitable for any user together with downloadable data files and Application Programming Interfaces (APIs) that facilitate access to data for those market participants and other interested parties.</li> </ul>	<ul style="list-style-type: none"> <li>• We will reflect these requirements in our work to develop our ESO data portal.</li> </ul>
<p>As part of our open invitation for bilateral sessions we have also engaged a range</p>	<ul style="list-style-type: none"> <li>• Greater transparency around control room decision making was requested.</li> <li>• The members of a wider interest group told us that they wanted as much data as possible in machine readable</li> </ul>	<ul style="list-style-type: none"> <li>• These requests are all included in the scope of our ESO platform proposal.</li> </ul>

Channel	Feedback we received	How this is shaping our plan
of stakeholders, including two wider interest groups, service providers, generators and suppliers.	format and that we should focus on ESO portal option one – focus on getting the data out.	
	<ul style="list-style-type: none"> <li>• Future requirements for balancing services was highlighted as a key piece of market intelligence to inform commercial decisions.</li> </ul>	
Power Responsive roundtable, September 2019	<ul style="list-style-type: none"> <li>• The balancing services market requires greater transparency on what we need and when.</li> </ul>	This is included in the scope of our plans to assess and publish the data that we hold.

## 7 Cost benefit analysis

### Phase 1 & 2 Broad thinking and Developing our ambition and activities

Channel	Feedback we received	How is this shaping our plan
ESO RIIO-2 Stakeholder Workshop 25 April 2019	A wide range of stakeholders (including academics, generators, a DNO, service providers and TOs) broadly supported our process. They acknowledged the challenge of this for the ESO given we do not directly interact with consumers and our benefits are potentially wider ranging and hard to monetise.	The process we created was used within our July draft business plan to provide a simplified CBA while awaiting the finalised Ofgem model. We continued with our process but moved to the Ofgem CBA model for this version of the business plan. In doing this we continued building on our analysis to date and refreshed and expanded our benefits analysis in key areas based on updated costs, <i>FES 2019</i> and the ENA consistent view of the future.
	Stakeholders supported our approach being consistent with the HMRC <i>Green Book</i> and other Network CBAs on spend to ensure consistency and enable Ofgem to easily compare.	For the October draft business plan, Ofgem's model has been used and this means we will have aligning views on discounting and depreciation of capex investments. It also allows easy comparison across all the RIIO companies.
	Stakeholders thought we need to better define the question we are asking when completing a CBA. What are we looking to CBA and why?	The ESO activities were split in to ongoing and transformational (new) activities – with the transformational activities being justified by the benefits they will deliver for consumers alongside stakeholder evidence. This was tested further to ensure the right level as been achieved. e.g <i>de minimus</i> / certainty of benefit.
	Stakeholders felt there were limited areas where a robust CBA could be undertaken in the topics presented	Only some transformational activities have a proportional CBA (11 in total across the ESO out of 16

– they gave investment in the control centre as an example where a robust CBA could be undertaken.

transformational activities) including investments in the control centre.

Channel	Feedback we received	How is this shaping our plan
	In regard to scenarios and sensitives, stakeholders supported using <i>FES 2018</i> to underpin our benefits analysis but struggled to see how some activities would vary due to different energy landscapes. They felt there was potentially more value in looking at changing cost bases, varying start days of major projects or significant policy shifts	<i>FES 18</i> was used as the basis for the July submission. There were some benefit areas that were sensitive to a <i>FES</i> scenario and others not related to the energy landscape e.g. policy assumptions. We have also specifically called out the assumptions across the submission and updated with <i>FES 19</i> data and the ENA consistent view of the future.
	There is a trade-off between all the benefits for society e.g. cost vs service, but the prioritisation must be Ofgem's decision.	Ofgem set the framework for our CBA and we use this alongside our stakeholder engagement and commercial / technical judgement as evidence when making their assessment
	If you are using scenarios to underpin the CBA analysis, how do you justify the cost and could it potentially push an activity in a certain direction?	No single <i>FES</i> scenario is a base of the analysis – there is a broader assumption around commonalities rather than a specific pathway. This was also updated to incorporate <i>FES 19</i> data.

### Phase 3 - Testing our ambition and activities

Channel	Feedback we received	How this is shaping our plan
Control centre engagement events, 16 & 30	A stakeholder felt that there was no flow through in narrative about how Theme 1 activities will unlock benefits in other themes.	The narrative was updated to better show the dependencies between themes and how different activities can enable others.

Channel	Feedback we received	How this is shaping our plan
July and 8 August 2019	A stakeholder felt that in Theme 2 the benefit for “transforming participation in the balancing market and Capacity Market” was possibly too low (£38 million net) given the size of the market, but “transform access to the Capacity Market” was too high (£46 million net) given the low clearing prices versus the size of that market.	The CBA has been reviewed and updated accordingly in the development of the proposals and further engagement.
	A stakeholder felt the BSUoS saving was high and wanted to understand more how the risk to the ESO was 10 per cent versus the risk to all of the industry? Although they agreed with our approach, they thought we were being conservative with our estimates.	The CBA has been reviewed and updated accordingly in the development of the proposals and further engagement.
	One stakeholder questioned if it only takes two years to realise £600 million of benefits	We believe our CBA is robust has been rigorously tested and reviewed although will continue to refine and engage on it.

## 8 Technology underpinning our ambition

Phase 1 Broad thinking, Phase 2 Developing our ambition and activities, Phase 3 Testing our ambition and activities

Channel	Feedback we received	How is this shaping our plan
After feedback from the ERSG, a series of 1:1s were arranged to gain specific, focused insight for chapter 11, Technology underpinning our ambition, May – June 2019.	<ul style="list-style-type: none"> <li>• We should be write the narrative in a simpler way by removing IT jargon.</li> <li>• We were asked if our IT spending is efficient and it was suggested we should provide alternative options that we have considered. We were asked if we had fully understood and benchmarked our costs.</li> <li>• Stakeholders wanted to see clear deliverables that could be checked at the end of the price control period. It was questioned how we can demonstrate that we have achieved our technology ambitions?</li> <li>• We need to lead on data alignment and the market would be disappointed to wait to have access to data. Transport for London is a good example where making data available is more important than a portal.</li> <li>• It is important to highlight culture and sourcing as one of the biggest challenges.</li> <li>• It is important to invest in IT as it provides the value for money on the consumer bills.</li> <li>• We need to include capacity within the investment proposals to respond to technologies as they come along</li> <li>• Stakeholders thought that how we deliver is important. They felt the focus was more on</li> </ul>	<p>In response to this feedback, we have made multiple changes to chapter 11. The changes we have made include:</p> <ul style="list-style-type: none"> <li>• Simplified technical language to make it more accessible to a non-technical reader while still retaining the insight.</li> <li>• Re-structured the chapter to have a more intuitive and consistent flow.</li> <li>• Listed the individual technology investments and roadmaps within Annex 4 - Technology investment report. We also included technology options where appropriate.</li> <li>• We have included a benchmarking report in Annex 4 - Technology investment report.</li> <li>• Updated our operating model to show services provided by group IT and resources dedicated to ESO.</li> <li>• Extended our response within chapter 15.</li> <li>• The Design Authority has been extended to a two-tier approach – one tier focused on strategic direction, the second tier focused on project delivery.</li> <li>• The shared investments sections has been expanded with additional definition included in Annex 4 - Technology investment report.</li> </ul>



technology than how we are going to adapt. The industry would like to see more about how we improve our delivery processes. If we require investment from industry, there needs to be good trust between all parties.

Our application development and maintenance (ADAM) partners (Capgemini, IBM, TCS, Wipro) support us in technology design and delivery. We have dialogue to shape the approach and scale of investments. Engagement is on-going.

We have shared our ambitions and the scope of our investment lines to gain advice and feedback regarding our approach. Specifically, this includes:

- What solution options are available to us and what is the recommended approach.
- Without breaching client confidentiality, providing insight into relevant industry investment comparators.
- Supporting our teams to develop high-level technical designs.
- Defining the digital twin concept, technology design, and target use-cases
- Guidance for complex programme delivery including offshore application development.

- This support has helped us to develop a realistic technical response with solution options that underpin our business ambitions.
- This insight is reflected holistically within chapter 15 and more specifically within Annex 4 - Technology investment report where investment lines are detailed on a case-by-case basis.

Technology benchmarking with Gartner, an industry recognised, independent technology benchmarking organisation.

Two iterations of benchmarking, February – July 2019

- We have shared our ambitions and the scope of our investment lines with Gartner to gain advice and feedback regarding our proposed levels of investment.

- In response to Gartner's feedback, we have been able to validate our assumptions and adjust anticipated investment levels where appropriate.

Bi-lateral meetings (TfL, Redbull Racing,

There are a wide range of organisations that through consultation, observations and experience, have

This insight is reflected holistically within the Technology underpinning our ambition chapter

<p>Department for Work and Pensions, Ercot, CaliSO, Statnet).</p> <p>Various from March – September 2019</p>	<p>helped to inform our perspective in the following areas:</p> <ul style="list-style-type: none"> <li>• How to become a data-centric organisation and the need to expose data quickly without waiting for perfection</li> <li>• How to adapt strategy and operational activity based on simulation and modelling</li> <li>• How to manage complex projects such as Critical National Infrastructure (CNI) data centre migration and management</li> <li>• Insight into alternate approaches to balancing services.</li> </ul>	<p>and more specifically within Annex 4 – Technology investment report where investment lines are detailed on a case-by-case basis. Specifically:</p> <ul style="list-style-type: none"> <li>• Our approach to our operating model</li> <li>• Guiding our data quality expectation and transparency</li> <li>• Shaping our expectations about the variety, veracity and velocity expectations of simulations and to start small and grow simulations iteratively</li> <li>• Managing the challenges and complexity of CNI environments and the risks and costs associated with aged technical assets.</li> </ul>
<p>IS Change Forum where we present active projects and proposed strategic approach, April 2019</p>	<ul style="list-style-type: none"> <li>• Chief Development Officer at Arenko Group presented on the need for technologies to be more responsive to emerging technologies</li> <li>• We received positive feedback about our recent moves towards iterative delivery and the fact that this methodology will become the dominant methodology.</li> <li>• We received positive feedback about our proposal for greater industry engagement through a design authority</li> <li>• We received positive feedback about our proposal to move towards more modular, and iterative solutions</li> </ul>	<p>This insight is reflected holistically within the Technology underpinning our ambition chapter and more specifically within Annex 4 – Technology investment report where investment lines are detailed on a case-by-case basis.</p>

## 9 People, culture and capability

### Phase 3 - Testing our ambition and activities

Channel	Feedback we received	How is this shaping our plan
Control centre engagement events, 16 & 30 July and 8 August 2019	At the events, we asked stakeholders to rate the nine dimensions of our operating model (leadership, culture, governance, process, capabilities, organisation, systems, management information, performance information) and indicate where we are now and where we should be in the future. We received seven responses across the two events, with the largest gap identified in systems.	We will use this to inform our culture transformation roadmap. We will consider mechanisms to reinforce our desired culture across the various components of the operating model with a focus on ensuring our systems enable the culture we are seeking to achieve. .
Trade union (TU) engagement	We have held specific sessions with the full time TU officers and local TU representatives to outline our business plan ambitions. The TU has asked for information on future FTE requirements and capability requirements.	We have included significant detail on our future FTE and capability requirements in the business plan, including our resourcing and capability strategy to meet the future requirements.

## 9 Metrics

### Phase 3 - Testing our ambition and activities

Channel	Feedback we received	How is this shaping our plan
Control centre engagement events, 16 & 30 July and 8 August 2019	<b>Theme 1 metrics</b>	
	Stakeholders have highlighted the importance of our work to minimise balancing costs.	We propose to measure and report the total balancing costs monthly in line with feedback from stakeholders.
	We understand from stakeholder feedback on the <i>Forward Plan</i> that demand and wind generation forecasts are an important area, and one which they would like to see more progress in.	We propose to measure demand and wind generation forecast accuracy. We would like to explore stakeholder and Ofgem views further in this area to agree the most effective measurement method and ensure that we are providing the appropriate level of visibility to give confidence in our performance.
	We have heard positive feedback from some stakeholders on our proposal for a metric providing confidence and transparency to market participants on our control centre actions. Some commented that ESO actions are often taken in real-time for operability or economic reasons, and that such factors would need to be considered.	We will further explore a metric on the percentage of times we have dispatched in merit order.
	Some stakeholders mentioned that transparency of system health was important and something they currently had limited visibility of.	We will further explore a metric for system health.
We have heard from stakeholders that they believe we should be measuring our ability to run a zero-carbon	We considered a metric for the level of low carbon generation on the system however we are also aware that as the ESO we need to be fuel agnostic	

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<p>system in line with our stated ambitions and while we agree that this would be a useful metric.</p>	<p>and as such cannot have a metric that leads us to have a preference on fuels. Instead we have created proposals in our business plan which create the necessary markets to allow for a greater level of low carbon generation.</p>
<p>We consulted stakeholders on a metric for our training simulator proposal, using the working method of a measure of the number of people who have been trained. We received feedback from our stakeholders that they do not believe that this metric is one that would provide visibility of the performance of the ESO.</p>	<p>We have removed this metric from our proposals</p>
<p><b>Theme 2 metrics</b></p>	
<p>Service providers and trade associations consulted have consistently told us that measuring the proportion of balancing services that are procured through competitive markets would be an appropriate measure for the outcome we are seeking to achieve.</p>	<p>We will progress further detailed work on this metric.</p>
<p>We also engaged stakeholders on a further two metric proposals:</p> <ul style="list-style-type: none"> <li>• Reduction in procurement lead-time of services due to introduction of the single market platform; and</li> <li>• Increase in number of service providers following introduction of platform and revised service terms (to facilitate smaller providers).</li> </ul> <p>We received very mixed feedback on these proposals with many service providers suggesting that simply measuring these numbers is not a good reflection of the quality of our outputs.</p>	<p>We will engage further on these metrics before the final business plan to inform the decision on further development.</p>

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Service providers and trade associations consulted have told us that it is appropriate for us to continue to survey our customer satisfaction as part of the CACoP process.	We will continue to survey via CACoP.
Service providers and trade associations consulted have told us that for the Capacity Market it would be appropriate to measure market liquidity / concentration e.g. Herfindahl-Hirschman Index (HHI) and accuracy of auction parameters.	We will continue to progress work on this metric.
<b>Theme 3 metrics</b>	
We have received positive feedback regarding the value savings that are passed on to the customer since its introduction in RIIO-1.	We propose to continue this metric in RIIO-2 as we continue to drive for optimal network solutions and would propose using our calculation methodology set out in our <i>Forward Plan</i> .
An energy technology company thought that we could measure the number of system needs identified that are then put through the NOA network vs non-network process.	We have proposed to survey stakeholders on their satisfaction of the NOA process which should identify if stakeholders think that a greater number of system needs should be assessed by it (NOA).
A generator suggested we could measure how quickly we roll out pilot projects to across the system once tested.	We will discuss this type of metric further with stakeholders.
<b>Theme 4 metrics</b>	
For connections, a consumer interest organisation thought: <ul style="list-style-type: none"> <li>that there was still a place for surveying our customers but added that we shouldn't bombard them with surveys; and</li> </ul>	<ul style="list-style-type: none"> <li>We agree and propose to continue to survey customers on the quality of their connections experience.</li> <li>We think that questions around information provision can be factored into the survey question design.</li> </ul>

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- that we could measure whether customers had the relevant information required through the connection process.

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For whole system operability, a consumer interest organisation thought we could have a more deliverable-based metric i.e. have we done what we said we would do in our business plan. And perhaps something around bringing stakeholders along with us to deliver whole system solutions.

We will engage stakeholders further on metrics for operability and the suggestions made. We will also explore whether we can measure the direct benefit of operability initiatives on balancing costs.

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We will continue to add to the above summary tables as we undertake further engagement on our business plan before submitting our final business plan in December. In particular, we intend to engage stakeholders on:

- how the plan works together as a whole;
- the assumptions behind, and level of, consumer benefit that we have attributed to our proposals; and
- the metrics that should be used to measure our outputs.

## An alphabetic list of all the stakeholders that we have engaged with to date

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
4D Energy	Other	Banks Group	Consultancy
ABB	Technology provider	Baringa Partners	Consultancy
Association for Decentralised Energy (ADE)	Cross industry	Baywa	Other
Aggregate Industries	Service Provider	Be Storage	Service Provider
Air Products	Technology provider	British Electrotechnical and Allied Manufacturers Association (BEAMA)	Wider interest
Aldersgate Group	Cross industry	Department for Business, Energy & Industrial Strategy (BEIS)	Government
Association of Manufacturers of Domestic Appliances (AMDEA)	Other	Birmingham University	Wider interest
American Superconductor Corporation	Other	Boxergy	Other
Anesco	Service Provider	British Ceramic Confederation	Other
Aquind	Generator	British Steel	Other
Arenko	Service Provider	Bryt Energy	Generator
Arup	Consultancy	Buccleuch	Other
Atkins	Consultancy	Burns Mcdonnell	Consultancy
Aurora Energy	Wider interest	Cadent Gas	DNO
Avon Utilities and Generation	Service Provider	Cardiff University	Wider interest
Balfour Beatty Investments	Other	California ISO	Other



## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Carlton Power	Generator	Department for Work and Pensions	Government
Centre for Connected and Automated Vehicles	Wider interest	Diamond Transmission Corporation	OFTO
Centre for Sustainable Energy	Wider interest	DNVGL	Consultancy
Centrica	Supplier, Generator	Drax	Generator
CEPA	Consultancy	E4Tech	Consultancy
Challenging Ideas	Wider interest	EA Technology	Consultancy
Chameleon Technology	Other	Energy and Climate Intelligence Unit (ECIU)	Wider interest
Citizens Advice	Consumer	Ecotricity	Supplier
Citizens Advice Scotland	Consumer	EcuSol	Other
Clearstone Energy	Other	EDF	Supplier, Generator
Cognito Software	Other	Edinburgh University	Wider interest
Committee on Climate Change	Wider interest	Eelpower	Service Provider
Community Energy England	Wider interest	Eirgrid	Other
Cornwall Insight	Wider interest	ElectraLink	Other
Corrie Energy Partners	Other	Electric Power Research Institute	Wider interest
Crown Commercial Service	Government	Electricity Efficiency	Other
Delta EE	Consultancy	Electricity North West	DNO
Denchi Power	Supplier	Electricity Supply Board	Generator
Department for Transport (DFT)	Government	Electron	Technology provider

## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Element Power	Consultancy	Energy and Utilities Alliance (EUA)	Cross industry
Elexon	Cross industry	European Marine Energy Centre	Generator
Energy Networks Association (ENA)	Cross industry	Exeter Energy Policy Group	Wider interest
Enappsys	Consultancy	ExxonMobil	Other
Encraft	Consultancy	Facta NV	Other
EnelX	Service Provider	Falckgroup	Generator
Energy Bridge	Consultancy	Flexible Power Systems	Technology provider
Energy Potential	Consultancy	Flexitricity	Service Provider
Energy Systems Catapult	Wider interest	Flogas Britain Limited	Other
Energy UK	Cross industry	Fluence	Service Provider
Energy Unlocked	Consultancy	Formac	Other
Engage consulting	Consultancy	Forsa Energy	Other
Engie	Generator	Frazer Nash	Consultancy
Envirotech Energy Solutions Ltd	Consultancy	Fred Olsen Renewables	Generator
Envision Energy	Other	Freewheel Consulting	Consultancy
Eon	Supplier, Generator	Gas Networks Ireland	DNO
Equinor	Generator	Gasrec Limited	Supplier
ERCOT	Other	Gazprom	Supplier
ESB	Generator	Geo	Other

## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Glen Dimplex	Other	Infinergy	Other
Grain LNG	Other	Infinis	Service Provider
Green Frog Power	Service Provider	Innogy Renewables UK Ltd	Generator
Green Power	Other	Jacobs	Other
Greenspan Energy	Consultancy	JLL	Other
Grid Beyond	Service Provider	John Laing/Foresight	Other
Grid Edge Policy	Consultancy	Kaluza	Other
Gyron LLP	Other	Karpowership	Other
Halo Clean Tech	Technology provider	Kings College London	Wider interest
Harbour Energy	Service Provider	Kiwi Power	Service Provider
Harmony Energy Storage	Service Provider	Korean Power Exchange	Other
Haven Power	Supplier	KPMG	Consultancy
Highview Power Storage	Service Provider	Kregor	Consultancy
Hitachi	Technology provider	Levelise	Other
Hive Energy	Other	Liberty	Other
Horizon Nuclear Power	Generator	Lime Jump	Service Provider
Howard Kennedy LLP	Other	Linklaters	Other
Hudson Energy	Supplier	London Mayor's Office	Government
IBM	Technology provider	Long Harbour	Other
Imperial College	Wider interest	Low Carbon Contracts Company	Other
Indigo Power	Supplier	Low Carbon Gas Ltd	Supplier

## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Low Carbon Vehicle Project	Cross industry	Nokia	Technology provider
Livermore Software Technology Company (LSTC)	Other	Norges Bank Investment	Other
Major Energy Users Council (MEUC)	Cross industry	Noriker	Service Provider
Mallory Land	Other	Northern Powergrid	DNO
Manx Utilities	Generator	Nottingham City Council	Government
Marchmont Hill	Other	Npower	Supplier
Marchwood Power	Generator	NR Electric UK Ltd	Technology provider
Mercedes-Benz	Other	Nuvve	Other
Mineral Product Association	Cross industry	Octopus Energy	Service Provider, Supplier
Moixa	Service Provider	Ofgem	Regulation
Mott MacDonald	Consultancy	Oil and Gas Authority	Regulation
Murphy Group	Other	Open Energi	Service Provider
Mutual Energy	European/wider	Opus Energy	Supplier
National Grid	TO	Orsted	Generator
National Grid Ventures	European/wider	Ovo	Supplier
Natural Power	Consultancy	PA Consulting	Consultancy
Navigant	Consultancy	PassivSystems	Service Provider
Network Rail	Other	Pcubed	Other
New Stream Renewables	Generator	PE Systems Ltd	Technology provider
Nissan	Other	Peak Earth	Consultancy

## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Peakgen	Service Provider	S & C Electric Company	Technology provider
Peterborough Environment City Trust	Wider interest	Saint Gobain	Other
Piclo (previously Open Utility)	Other	Samad Power Limited	Technology provider
Pivot Power	Other	Scottish Government	Government
Power and Renewables	Consultancy	Scottish Power	Supplier
Powervault	Technology provider	Scottish Power Renewables	Generator
PSC Consulting	Consultancy	Scottish Renewables	Wider interest
Qmulus	Other	Severn Trent	Other
Quorom	Other	Sharp	Technology provider
Rambol	Consultancy	Shear Water Wind	Generator
Reactive Technologies	Service Provider	Shell	Other
Redbull Racing	Other	Scottish Hydro Electric Power Distribution (SHEPD)	DNO
Reg Power Management	Service Provider	Scottish Hydro Electric Transmission (SHET)	TO
Regen SW	Wider interest	Siemens	Technology provider
Renewable Energy Association	Cross industry	Simec	Generator
Renewable UK	Cross industry	Simon Griew Consulting Ltd	Consultancy
Res Group	Generator	Smartest Energy	Supplier
Rolls Royce	Other	Solar Associates	Consultancy
RWE	Supplier	Solar Trade Association	Wider interest

## Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
System Operator for Northern Ireland (SONI)	Other	Tesla	Service Provider
Scottish Power Energy Networks (SPEN)	TO	Transport for London (TFL)	Other
Scottish and Southern Electricity (SSE)	Supplier	The Crown Estate	Other
Stag Energy	Service Provider	TINV	Consultancy
Stantec UK	Consultancy	TNEI Energy Consultancy	Consultancy
Stark	Other	Transmission Investment	OFTO
Statkraft	Service Provider	UCL Energy Institute	Wider interest
Statnet	Other	UK Power Reserve	Service Provider
Statoil	Generator	UK Power Networks (UKPN)	DNO
Stemy Energy	Service Provider	Ulster University	Wider interest
Storelectric	Service Provider	Ultimetrics	Other
Sustainability First	Consumer	Uniper	Generator
Swan Barton	Consultancy	United Kingdom Onshore Oil and Gas	Other
Swansea University	Wider interest	United Utilities	Service Provider
SWECO	Consultancy	University of Oxford	Wider interest
Tata Steele Europe	Other	University of Strathclyde	Wider interest
Teal Hippo	Consumer	University of Warwick	Wider interest
Tech UK	Cross industry	University College London	Wider interest
Terna	European/wider	University of Manchester	Wider interest

Stakeholders we have engaged with

<b>Organisation</b>	<b>Sector</b>	<b>Organisation</b>	<b>Sector</b>
Upside Energy	Service Provider	Wales and West Utilities (WWU)	DNO
Utility First Ltd	Supplier	Waters Wye	Consultancy
Vattenfall	Generator	Welsh Government	Government
Vector	Other	Welsh Power	Service Provider
Ventient	Generator	Wheatley Solutions	Other
Ventoludens	Other	Wileys	Other
Veolia	Service Provider	Wirsol	Generator
Verizon	Technology provider	Wood Group	Consultancy
Verv	Other	Western Power Distribution (WPD)	DNO
Viridor	Service Provider	Yellow Wood Energy	Consultancy
Vitol	Service Provider	Zenobe Energy	Service Provider
VPI-Immingham	Service Provider	ZTP	Other

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Faraday House, Warwick Technology Park,  
Gallows Hill, Warwick, CV34 6DA

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