

## **ESO RIIO-2 Business Plan Annex 6**

9 December 2019

How our plan meets Ofgem's and the  
Challenge Group's requirements

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## 1. How our Business Plan meets Ofgem’s requirements

Using Ofgem guidance from the following:

- Sector Specific Methodology Annex published on 14/03/2019<sup>1</sup>.
- Sector Specific Methodology Decision and further consultation published on 24/05/2019<sup>2</sup>.
- Sector Specific Methodology Core document published on 24/05/2019<sup>3</sup>.
- RIIO-2 Business Plan Guidance published on 31/10/2019<sup>4</sup>.

we have established the requirements that specifically apply to the ESO and indicated where this information can be found in our final ESO RIIO-2 Business Plan and supporting Annexes.

### 1.1 Long-term vision and strategy

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
1 ESO Sector Specific Consultation- <i>Price control process</i>	Para 4.13, p. 23	“We would expect that the ESO would develop a business plan that looks across a five-year time horizon, and in some cases demonstrating with that plan the ESO’s vision for its intentions beyond five years. We also propose to continue to use the ESO’s incentives scheme to drive the ESO to deliver longer term value”	This has been demonstrated throughout the main Business Plan and is incorporated into the chapter structure. See: <ul style="list-style-type: none"> <li>• Part 1 Context where we set out our mission and longer-term vision for the energy system.</li> <li>• Part 2 Our proposals, where each Theme chapter is preceded by a five-year strategy.</li> <li>• Annex 2 - Cost-benefit analysis (CBA) report where we have demonstrated our</li> </ul>

<sup>1</sup> [https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2\\_eso\\_annex\\_0.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_eso_annex_0.pdf)

<sup>2</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)

<sup>3</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2\\_sector\\_specific\\_methodology\\_decision\\_-\\_core\\_30.5.19.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_core_30.5.19.pdf)

<sup>4</sup> [https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2\\_business\\_plans\\_guidance\\_october\\_2019.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2_business_plans_guidance_october_2019.pdf) - Even though this guidance is not specific to the ESO, we have incorporated more generic elements wherever possible.

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
			costs and benefits across a five-year and our ten-year periods.
2 ESO Sector Specific Decision – <i>Price Control Process</i>	Para 3.15, p. 21	<p>“By the beginning of the RIIO-2 price control period the ESO must have in place:</p> <ul style="list-style-type: none"> <li>• a long-term vision for the energy system that includes the ESO’s views on its own roles and responsibilities in future. This vision could look out to 2030 or beyond.</li> <li>• a medium-term strategy that outlines the ESO’s strategy for progressing towards the long-term vision over the five-year RIIO-2 period. This strategy should take into account those elements of the price control arrangements that are expected to be fixed across the full five years.</li> <li>• a shorter-term business plan that details the ESO’s costs, activities, deliverables and performance metrics for delivering its strategy over the first two years of the RIIO-2 period”.</li> </ul>	<p>This has been demonstrated throughout the main Business Plan and is incorporated into the chapter structure. See:</p> <ul style="list-style-type: none"> <li>• Chapter 1 Introduction and context, section 1.2 for the long-term vision.</li> <li>• Theme chapters 4 – 8 for the medium-term strategy, costs, activities, deliverables and performance metrics.</li> <li>• Annex 1 – Supporting information provides a mapping of the costs, activities, deliverables and metrics.</li> <li>• Annex 7 has more information about the performance metrics.</li> </ul>
3 RIIO–2 Business Plan Guidance	Para 2.44 p. 15	<p>“We therefore expect that alongside the December submission of their business plan:</p> <p>Network companies will each make a “Digitalisation Strategy”</p>	<p>We have submitted a Digitalisation Strategy alongside our Business Plan<sup>5</sup>. See: Chapter 8 Digitalisation and open</p>

<sup>5</sup> <https://www.nationalgrideso.com/about-us/business-planning-riio/riio-2-draft-business-plan>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		publicly available, including on their websites. This iteration (and future iterations) of the Digitalisation Strategy should include a plan for how the company will continue to improve its Digitalisation Strategy, with particular focus on getting and acting on feedback from current and future users of Energy System Data.	data unlocking zero carbon system operation and markets is consistent with this strategy.
4 RIIO-2 Business Plan Guidance	Para 3.6 p.22	<p>“We informed networks that they are expected to clearly propose and evidence how their Business Plans are able to flex to support achieving the Net Zero target in line with a range of pathways. In that letter, we set out that it would be a minimum requirement for companies to:</p> <ul style="list-style-type: none"> <li>• identify where their baseline investment plan may impede the efficient achievement of any of a plausible range of pathways through which this target could be achieved, and</li> <li>• propose how their Business Plans can flex to address these impediments and facilitate timely investments which support potential pathways.”</li> </ul>	<p>Main Business Plan: We cover our commitments to meeting the UK’s net zero commitments by 2050 in chapter 1 Introduction and context, section 1.2. We cover how our Business Plan can flex to meet a changing energy landscape in section 1.5 and how we will manage uncertainty in section 3.2. At the beginning of each Theme chapters 4 – 7 we outline how our plans will help achieve the UK’s net zero target.</p>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
	Para 3.7 p.27	<p>“In providing this information, companies should:</p> <ul style="list-style-type: none"> <li>carefully consider the need for investment in anticipation of need where such investment supports Net Zero pathways. Given the important role played by the energy sectors in achieving the Net Zero target, Ofgem will thoroughly consider proposals of this nature, and</li> <li>outline their plans to coordinate with the UK government, devolved administrations, local government and relevant customers to more efficiently support the achievement of the Net Zero pathways.”</li> </ul>	

## 1.2 Stakeholder engagement

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
5 ESO Sector Specific Consultation- <i>Price control process</i>	Para 4.24, p. 25	“We expect the ESO to continue, and build on, its current efforts to build stakeholder views into its business planning”.	<p>Main Business Plan:</p> <ul style="list-style-type: none"> <li>Chapter 2 - A plan informed by our stakeholders, sets out our approach to enhanced stakeholder engagement and how stakeholder views have been built into our business planning</li> <li>Chapters 4 – 8 all contain a dedicated section that sets out the stakeholder views we have taken into account</li> </ul>
Sector Specific Core Consultation - <i>Giving Consumers a Stronger Voice</i>	Heading box, p. 21	“We expect network companies to work with the Customer Engagement Groups in Distribution, User Groups in Transmission and for the ESO, and the RIIO-2 Challenge Group to challenge and scrutinise their Business Plan proposals. We will take into account the views of these groups in our assessment of each company’s Business Plan”.	

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
ESO Sector Specific Consultation – <i>Introduction</i>	Para 2.13, p. 10	“Our work on Enhanced Engagement and Whole Systems are also relevant to the ESO. Our positions in this area are covered in chapters 3 and 5 of the Core Document. We generally expect the overall Enhanced Engagement measures to apply to the ESO, though we cover some ESO-specific considerations in chapter 4 of this consultation”.	<ul style="list-style-type: none"> <li>Annex 3 - Stakeholder report, where we detail how we have responded to our user group feedback.</li> </ul>
6 ESO Sector Specific Decision – <i>Cost Assessment</i>	Para 6.26, p. 38	<p>“In the development of the business plan we expect the ESO to closely consult with stakeholders, and as a result: propose activities, deliverables and performance metrics that are set at stretching levels build stakeholder consensus around activities, deliverables and performance metrics, and seek to ensure that its priorities are developed in light of those of stakeholders demonstrate long-term thinking in terms of whole system approaches, innovation and consumer value”.</p>	<p>Our stakeholder consultation approach is detailed in chapter 2, and we describe how we tested our proposals in 2.3.3. Section 2.5 sets out how we have sought to understand consumer value.</p> <p>Activities, deliverables and performance metrics are set out in chapters 4-8 with a summary mapping in Annex 1 – Supporting information. Stakeholder feedback received on them is included in the Theme chapters and in more detail in Annex 3 – Stakeholder report.</p> <p>Whole system approaches are covered in the Theme chapters, with a particular focus in chapter 7 - Theme 4.</p> <p>Innovation is covered in chapter 11 – Innovation at all levels of our business.</p>

### 1.3 Benchmarking and cost efficiency

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
ESO Sector Specific Consultation – Cost assessment	Para 6.17, p. 36	“For all costs projected by the ESO we propose to require that, where possible, historical costs, appropriate benchmarks and proportionate cost benefit analysis are provided alongside the associated deliverables for reference”.	Main Business Plan: <ul style="list-style-type: none"> <li>Chapter 1 Introduction and context, section 1.4.1 outlines how we calculated benefits</li> <li>Chapter 3 Assumptions underpinning our plan, section 3.1 outlines our approach to efficiency and benchmarking</li> </ul>
RIIO-2 Business Plan Guidance	Para 2.63 & 2.64 p20	<p>“Expenditure categories or activity costs to which an ongoing efficient assumption has been applied, along with evidence of how these assumptions have been derived. For example:</p> <ul style="list-style-type: none"> <li>any proposed comparator industries for the purpose of cost assessment, along with a justification for those proposed</li> <li>an explanation of how any historic data has been used to derive efficiency forecasts, including a justification for the time period selected and how forecasts capture enduring effects from efficiencies generated in previous price controls</li> <li>a comparison of efficiency forecasts against efficiency gains realised in previous periods</li> <li>interactions with innovation funding (past and future)</li> </ul>	<ul style="list-style-type: none"> <li>Cost tables, commentary and cost-benefit analysis sections in all Theme Chapters 4-8 explain how we have tested our proposed costs alongside our deliverables, and present the results of our CBA</li> <li>Chapters 10 and 12 outline the benchmarking we have done on IT costs and shared business support services.</li> <li>Chapter 11 provides information on the benefits of previous innovation projects, and where we expect innovation to contribute to outcomes in RIIO-2</li> </ul> <p>There is more detailed information on all if this in:</p> <ul style="list-style-type: none"> <li>Annex 1 – Supporting information, section 1 – Summary investment tables and section 4 - Benchmarking process</li> <li>Annex 2 - Cost-benefit analysis (CBA) report</li> <li>Annex 4 - Technology investment report.</li> </ul>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		<ul style="list-style-type: none"> <li>interactions between ongoing efficiency forecasts and output quality.</li> </ul> <p>This information should align with the data provided in the BPDTs.”</p>	

#### 1.4 Activities, deliverables, costs and metrics

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
8 ESO Sector Specific Consultation- <i>Price control process</i>	Para 4.25, p. 25	<p>“We would expect the ESO business plan to look slightly different to that of the other sectors as it would be framed around the ESO’s performance principles”.</p>	Each of the Theme chapters map to one of the three Roles. You can see this mapping in section 1.1 and in chapters 4 - 7.
9 ESO Sector Specific Consultation – <i>Cost assessment</i>	Para 6.26, p. 38	<p>“We propose to introduce requirements for the ESO to include the following in its business plan:</p> <ul style="list-style-type: none"> <li>costs broken down by activity and with major deliverables assigned to activities</li> <li>historical costs and associated deliverables, where possible, for each activity</li> <li>comparable benchmarks for activities and deliverables, where relevant, to allow assessment of the relative efficiency of the proposal</li> <li>proportionate cost benefit analysis and justification for the proposed expenditure.</li> <li>identification of uncertainties around</li> </ul>	<p>This has been demonstrated throughout the main Business Plan and is incorporated into the chapter structure. See:</p> <ul style="list-style-type: none"> <li>Part 1 Context, section 1.4</li> <li>Part 3 Assumptions underpinning our plan, section 3.1 Efficiency</li> <li>Theme Chapters 4 – 8</li> <li>Part 3 Setting the ESO up for success</li> <li>Annex 1 – Supporting information, section 1 – Summary investment tables</li> <li>Annex 2 - Cost-benefit analysis</li> </ul>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		<p>deliverables, where applicable, with cost ranges for potential outcomes</p> <ul style="list-style-type: none"> <li>• evidence of the ESO’s assessment of the efficiency of the proposed activities and deliverables, e.g. external benchmarking or market testing</li> <li>• clear demonstration of the ESO’s consideration of longer-term costs and benefits”.</li> </ul>	<p>(CBA) report, including a description of the alternative options we considered, but did not take forward</p> <ul style="list-style-type: none"> <li>• Annex 7 – Metrics and measuring performance, where we have outlined how we will measure our outputs against the various activities in the Business Plan.</li> </ul>
<p>RIIO–2 Business Plan Guidance</p>		<p>“As also confirmed in May 2019, the ESO would set out how it will deliver against these roles in its two-year business plan. For each role, the ESO should set out specific outputs and deliverables which have clear and justified timelines, as well as well-specified, stretching performance metrics. The ESO should explain how the outputs, deliverables and metrics in the plan link back to our defined outcomes and impacts, and therefore maximise benefits for consumers. It should also justify how the plans deliver value for money through robust cost benchmarking”.</p>	
<p>10 ESO Sector Specific Decision – Cost Assessment</p>	<p>Para 6.12, p.32-33</p>	<p>“To ensure the ESO’s costs are transparent and we are able to effectively assess the efficiency of these, we expect its plans to include separate reporting of business support costs, with a clear description of how these have been</p>	<p>Business support costs are reported separately in chapter 12 – Leveraging value from shared functions. Our IT costs are reported separately in chapter 10 – Technology</p>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		allocated from wider National Grid group.”	underpinning our ambition, with more detail in Annex 4 – Technology Investment report.  Annex 8 – Shared services provides more detail on how these have been allocated from the National Grid group.
11 Core Decision Document – <i>Innovation</i>	Para 10.61, p. 85	“We ask companies to explain what additional innovation allowance they need within their Business Plan, explaining why they would not be able to fund this innovation using their totex allowances. We would like companies to include high-level areas of focus for NIA spending, rather than individual projects, and how much funding they believe is necessary for these areas of focus.”	Main Business Plan: <ul style="list-style-type: none"> <li>Chapter 11 – Innovation at all levels of our business sets out our proposed innovation allowance, why we think this is the appropriate amount, and what the focus areas of this spending would be.</li> <li>Each Theme chapter outlines how innovation will contribute to the proposals in that chapter. There is a summary of these at the end of chapter 11.</li> <li>We have also outlined the stakeholder feedback we received on innovation in chapter 11.</li> </ul>
Sector Specific Core consultation document- <i>innovation</i>	Para 8.17, p. 68	“In their Business Plans, we expect companies to demonstrate how they will be applying innovation through their BAU activities, and what the consequential impact might be on their future expenditure requirements. We will also take into account the arrangements they will have in place to make the transition to BAU happen and the quality of their plans to involve third parties within their innovation programmes”.	
	Para 8.18, p. 68		
	Para 8.19, p. 68	“Additionally, we propose that the Enhanced Engagement framework (network	

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		<p>companies’ Customer Engagement Groups / User Groups and the independent RIIO-2 Customer Challenge Group) should be used, where necessary, to challenge the level of ambition within companies’ innovation strategies”.</p>	
		<p>“Our assessment of their level of ambition will consider the views of these engagement groups, and this will be a factor in our application of any financial reward or penalty”.</p>	
RIIO–2 Business Plan Guidance	Para 2.75 p.22	<p>“Companies should set out the desired structure of their proposed RIIO-2 NIA and how much risk they are willing to take on themselves against their NIA. For example:</p> <ul style="list-style-type: none"> <li>• whether they seek an annual allowance or an allowance over the length of RIIO-2</li> <li>• the compulsory contribution they are willing to make towards RIIO-2 NIA projects or against their overall allowance</li> <li>• any other wider features they seek to propose to support their allowance, such as reopeners to reassess the level of NIA funding needed during RIIO-2.”.</li> </ul>	
12 Core Sector Specific Consultation – <i>Cyber Resilience</i>	Para 6.99, p. 42	<p>“Network companies are invited to submit Business Plans in December 2019 for Transmission, Gas Distribution and the ESO,</p>	<p>Our Business IT Security Plan is contained in Annex 9 – Business IT security report. The ESO does</p>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		<p>covering the RIIO-2 period, which include the following two sections:</p> <p>A Business IT Security Plan (which would be considered BAU expenditure) – focused primarily on IT security for business systems</p> <p>A Cyber Resilience Plan – which is expenditure focused primarily on Operational Technology (OT), in response to the NIS Regulations”.</p>	<p>not focus on OT so is not required to produce a separate Cyber Resilience plan.</p>
	<p>Para 6.103, p. 43</p>	<p>“For both plans, Ofgem is not expecting these to include the cost of general technology refresh or end of life replacement. Ofgem expects such projects to form part of more general system investment plans, which should already include appropriate cyber security measures”.</p>	
	<p>Para 6.105, p. 43</p>	<p>“Both plans should include efficient, appropriate and proportionate measures, to deliver necessary enhancements to the overall security and resilience of the systems and networks used to operate essential services. When submitting these plans, a clear and coherent strategy with a robust risk-based approach to assessing and managing risk must be taken. Current risks, vulnerabilities, threats and mitigation options are expected to be documented, together with the relative benefits of the options considered”.</p>	

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
13 ESO Sector Specific Decision – <i>Roles and Principles</i>	Para 2.20-2.21, p. 16	“As part of its RII0-2 Business Plan to be submitted in December, we are requesting the ESO to include an Early Competition Plan. The ESO must set out how it intends to develop proposals and arrangements for early competition.	These requirements have since been superseded by the publication of Ofgem’s Electricity System Operator’s Early Competition Plan Letter. <sup>6</sup>

### 1.5 Financial working assumptions

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
14 ESO Sector Specific Decision – Cost Assessment	Para 6.24, p. 37	“To ensure the assumptions used as part of its business planning are transparent, we expect the ESO to outline in its business plans any areas where it considers there are future uncertainties that may have a significant bearing on its costs”.	<p>Main Business Plan:</p> <ul style="list-style-type: none"> <li>• Chapter 1 Introduction and context, section 1.5 where we have discussed a flexible business plan for a changing energy landscape</li> <li>• Chapter 3 Assumptions underpinning our plan, sections 3.2, 3.3 and 3.4 where we have discussed uncertainty and future scenarios</li> <li>• Annex 1 – Supporting information, section 5 – Assumptions about our role and those of other parties</li> <li>• Annex 2 – Cost-benefit analysis</li> </ul>

<sup>6</sup> <https://www.ofgem.gov.uk/publications-and-updates/electricity-system-operator-s-early-competition-plan-letter>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
			<p>(CBA) report where we set out the sensitivity analysis we have performed on benefits</p> <ul style="list-style-type: none"> <li>• Annex 4 - Technology investment report</li> </ul>
15 RIIO–2 Business Plan Guidance	Para 3.47, p. 29-30	<p>“We believe it is important that the ESO sets out its plans to remain licence compliant, including its obligation to secure financial resources, financial facilities and to maintain an investment grade credit rating. We propose that the ESO should address this in its business plan for RIIO-2, explaining the steps it has taken, and/or will take, under a range of plausible circumstances. For Ofgem to make an informed decision at Draft Determinations in summer 2020, we will need to understand in detail the cost and size of the ESO’s financial resources and facilities”.</p>	Chapter 9 Financing our plan provides all of this detail. There is further detail of our analysis in Annex 5 - Finance report
16 RIIO–2 Business Plan Guidance	Para 3.52, p. 31	<p>“We propose a notional gearing assumption of 55% for the purposes of WACC working assumptions and business plans. However, the ESO should assess the overall risk of its business plan and make realistic and well-justified proposals for notional gearing”.</p> <p>“The equity issuance transaction cost allowance will be assessed following business plan submission. The ESO should consider and</p>	<p>All of these assumptions have been incorporating in our modelling, as set out in chapter 9 Financing our plan and Annex 5 - Finance report</p> <p>Information about DRS is covered in Annex 5 – Finance Report, section B2</p>

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
		report potential and planned equity issuance as part of their business plan submission".	
		"The ESO should submit its plans for Directly Remunerated Services (DRS) as part of its business plan. We will consider treatment of DRS in light of operational practice to date and the information in company business plans".	

## 1.6 Resources

Ofgem document/ chapter	Ofgem document reference	Quote	Where you can find this information in our Business Plan
17 Core Sector Specific Consultation and Decision Document – Workforce planning	Footnote 13, p. 38	<p>"Our December proposals did not include the ESO. While it will have similar challenges in attracting and retaining the skills they need to operate the system, we consider this separate to the workforce planning issues addressed here. The ESO should reflect on its unique resource challenges in its own Business Plan submission".</p> <p>"Companies should plan to deliver a modern, diverse, high quality, well-trained workforce fit for the future as part of their regular Business Plan submissions".</p>	<p>We have set out our detailed workforce planning approach in chapter 14 – People, culture and capability. There is more discussion in:</p> <ul style="list-style-type: none"> <li>• Chapter 10 - Technology underpinning our ambition, section 10.6.1</li> <li>• Chapter 12 - Leveraging value from shared functions, section 12.1</li> </ul>

## 2. How our Business Plan responds to the Challenge Group’s feedback

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 providing challenge to both the regulated companies and Ofgem. We have engaged with the group in line with their priorities work plan set out by Ofgem in February 2019.

Prior to the latest meeting in October 2019, we were provided with formal written feedback from the Challenge Group on our draft October submission. The below table details the feedback we received and how we have responded to this in the final Business Plan.

	Challenge Group Feedback	What we have done in response to this feedback
1. Stakeholder engagement	Many of the stakeholders you have engaged are existing industry participants.	We have highlighted throughout the Business Plan, particularly in chapters 4-8, where we have engaged with non-industry participants e.g. local government, potential service providers and academia. Annex 3 – Stakeholder report, section 6 lists all the stakeholders we have engaged with and the sectors they represent.
	It is not clear from the plan how this engagement translates into buy in by stakeholders who will need to help deliver the plan.	We have drawn out more clearly in the plan, particularly in chapters 4-8, where we have received buy in from stakeholders to being involved in the delivery of our proposals as a result of our engagement. For example, we set out that we have received design authority expressions of interest in chapter 4 and DNO support for joint training of control staff in chapter 7.
	<b>In relation to financing:</b> There is evidence that you have consulted stakeholders in relation to your Plan but no indication of detailed engagement in relation to financing and certainly not to specific financing issues and the trade-offs that those imply.	We have engaged extensively on the financing aspects of our plan which is detailed in Annex 3 – Stakeholder report, section 5.1. We have also set out more clearly the views we received from stakeholders within chapter 9 of

	<b>Challenge Group Feedback</b>	<b>What we have done in response to this feedback</b>
		the plan, and in Annex 5 – Finance report.
2. Plan Ambition and long term vision	<p>Ofgem’s planning guidance requires a 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>The plan sets out a challenging ambition for zero carbon power system operation by 2025. It also considers a wide range of potential future scenarios and their impacts on delivery.</p> <p>Overall, the plan does not yet show how this ambition links to the chosen activities with their associated costs, deliverables and performance measures.</p>	<p>We have included in our final Business Plan an activity architecture which:</p> <ul style="list-style-type: none"> <li>• sets out sequential numbering of activities and deliverables; and</li> <li>• demonstrates the linkages between the ambition, activities, costs, deliverables and performance measures.</li> </ul> <p>The hierarchy of activities is summarised in Annex 1 – Supporting information, section 2.</p>
3. Outputs	<p><b>Theme 1</b></p> <p>The plan aims to enhance system control IT systems, including proposals for a digital twin. While a positive outcome is forecast, the full project scope does not yet seem to have been defined or alternative options fully evaluated. The plan should show the inter-dependencies associated with planned activities in Theme 2.</p> <p>Risks to delivery and mitigations should be addressed. Performance measures and targets should be improved and aligned with CBA benefits.</p>	<p>Alternative options have been included into chapter 4 - Theme 1 and in more detail in Annex 2- Cost-benefit analysis (CBA) report. We have also added to the ‘Confidence we can deliver’ section in chapter 4 to acknowledge that the project scope is not complete at this stage. We intend to carry out the scoping activity as part of the design authority process with stakeholders in a transparent manner.</p> <p>Interdependencies sections have been added to chapters 4 and 5 (Themes 1 and 2 respectively).</p> <p>Risks to delivery and mitigations are set out in Annex 2 – Cost-benefit analysis (CBA) report, section 2. In Annex 4 – Technology investment report we set out the risks associated with the individual IT investments associated with all the Themes.</p> <p>Performance measures and targets have been developed</p>

Challenge Group Feedback	What we have done in response to this feedback
<b>Theme 2</b>	<p>further with stakeholders since our draft October submission and these are detailed in chapter 4 – Theme 1, and in Annex 7 – Metrics and measuring performance. We have indicated how these align with CBA benefits and how they come together as a package of measures for the Theme 1 outputs in Annex 2 – Cost-benefit analysis (CBA) report and in Annex 7 – Metrics and measuring performance.</p> <p>These responses on risk and performance measures apply to each of the Themes in this table, with the chapter in the business plan varying depending on which Theme is being discussed.</p>
<p>The plan aims to develop new digital market platforms including short/real-time flexibility markets, and long-term capacity markets which should be valuable. However, it is unclear whether the ESO has</p> <p>a) considered all the design options and gained support of stakeholders/Ofgem/BEIS for the market designs they are planning to implement, and</p> <p>b) whether the ESO is the right organisation to deliver and operate this new IT system.</p> <p>The plan should show how future market design changes may be efficiently accommodated within the IT development plans. The full project scope does not yet seem to have been defined or alternative options fully evaluated.</p> <p>Risks to delivery and mitigations should be addressed. Performance measures and targets should be improved and aligned with CBA benefits.</p>	<p>a) The stakeholder views paragraph of chapter 5 -Theme 2, section 5.2.3.1 of our Business Plan demonstrates that a majority of service providers are supportive of closer to real time markets for response and reserve. For other operability markets, such as stability, we have provided a call out box in section 5.2.3 that outlines our procurement approaches to balancing services. The call out box explains that for these less mature markets we are adopting a learning by doing approach through Pathfinder projects that allow us to work with others to test different procurement approaches to meet operability needs. Furthermore, we outline how detailed markets design will be carried out with stakeholders, potentially through a whole system markets programme under the Power Responsive banner.</p>

Challenge Group Feedback	What we have done in response to this feedback
<p>The plan should also set out how the ESO's code management leadership and performance will be improved to ensure that market changes can be successfully implemented.</p>	<p>b) A range of service providers, suppliers and DNOs have expressed concern about the prospect of large centralised IT projects. Consistent with the approach to IT delivery outlined in Theme 1 and Annex 4 - Technology investment report, the single markets platform will be a modular system delivered in an agile way. In addition, it is expected that much of the development and integration will be outsourced to our delivery partners. In chapter 10 – Technology underpinning our ambition, we describe our more agile and modular approach to developing systems which means that IT development plans will be able to more efficiently accommodate market design change.</p> <p>Our proposed activity A6.4 in Theme 2 - Transform the process to amend our codes, will allow the strategic change that stakeholders are really pushing for to be prioritised and implemented efficiently, while ensuring that it is much simpler and less time consuming to make incremental improvements. We will develop a transparent prioritisation process and agreed criteria that are aligned to the strategic direction set by BEIS and Ofgem.</p>
<p><b>Theme 3</b></p> <p>The plan includes initiatives to enhance the NOA and introducing commercial intertrip schemes, potentially leading to significant consumer benefits. The plan should address how delivery interdependencies with other industry</p>	<p>We have highlighted, in Theme 3, the interdependencies between activities and discussed how we will work with industry participants to deliver them (including working with industry working groups, market participants, TOs, DNOs and BEIS).</p>

	<b>Challenge Group Feedback</b>	<b>What we have done in response to this feedback</b>
	<p>participants and network companies can be achieved.</p> <p>Risks to delivery and mitigations should be addressed. Performance measures and targets should be improved and aligned with CBA benefits.</p> <p><b>Theme 4</b></p> <p>The plan aims to improve operational and planning data interaction with DNOs/DSOs leading to significant consumer benefits. However, the full scope does not yet seem to have been defined or alternative options fully evaluated.</p> <p>The plan should describe how the key risks are addressed and particularly how joint scoping and delivery interactions will be agreed with other industry participants. Performance measures and targets should be improved and aligned with CBA benefits.</p>	<p>We have added, in the description of activity A15.6 (Theme 4), a reference to the recent Transmission-Distribution data exchange publication from the ENA Open Networks project<sup>7</sup>. This will form the basis of the first stage of our work in RIIO-2 in this area. We also recognise, consistent with Open Networks, that this is just a first phase and that in RIIO-2 more granular data can help us work with other network organisations to efficiently manage an increasingly decentralised grid. These will be developed further through industry forums including Open Networks and the Energy Data Taskforce ahead of RIIO-2. We have also added more detailed milestones to the roadmap for this activity.</p>
<p>4. Costs</p>	<p>While you have made improvements in a number of these areas, we think your plan can still be improved to provide a direct link between your activities, costs, deliverables and performance targets.</p> <p>It should set out the different options and factors you have considered in designing a plan so we can have confidence that it offers the optimum approach to benefit current and future consumers.</p>	<p>As set out above, we have included in our final plan an activity architecture which:</p> <ul style="list-style-type: none"> <li>• sets out sequential numbering of activities and deliverables; and</li> <li>• demonstrates the linkages between the ambition, activities, costs, deliverables and performance measures.</li> </ul>

<sup>7</sup> <http://www.energynetworks.org/assets/files/ONP-WS1B-P4%20Data%20Scope%20-%20Final%20Report-FINAL.pdf>

Challenge Group Feedback	What we have done in response to this feedback
	<p>The hierarchy of activities is summarised in Annex 1 – Supporting information, section 2.</p> <p>The different options we considered in developing our plan, and the reasons for progressing or rejecting them, have been added to chapters 4-7 (Themes 1-4) and in more detail in Annex 2 – Cost-benefit analysis (CBA) report.</p>
<p><b>Capex:</b> Your plan (Annex 4, Appendix A) describes 34 IT projects, which will contribute to delivery of the four themes. However, the vast majority of these projects appear to be at the scoping stage. Please describe how these projects will be managed to ensure that delivery can be achieved, particularly how it addresses changes in scope, cost and timing. What contingency has been included? What lessons have you learned from previous projects, both successful and unsuccessful and how has this influenced your plan?</p> <p>The Gartner benchmarking report you have provided says that synergies of considering these IT investments across a portfolio has not been considered. Why have these potential savings not been captured?</p> <p>Your plan should describe how you intend to govern and control these IT services and costs, which we understand will be delivered to you by National Grid Group. What delivery and contracting options have you considered, and how will you ensure successful delivery e.g. delivery/performance incentives? How will you ensure that the charges from National Grid Group are best value for consumers?</p>	<p>The majority of projects are at the scoping stage to reflect where we are in the business planning cycle and that our Business Plan has yet to be agreed with Ofgem. Our two-year planning cycle will allow us to update these investment proposals in our next Business Plan.</p> <ul style="list-style-type: none"> <li>• Phased delivery plans enable projects and investment cases to be reviewed regularly and therefore any changes to scope, cost and timing to be incorporated more easily.</li> <li>• Our approach outlined in chapter 10 - Technology underpinning our ambition, is largely a response to lessons learned. This sets out that we will introduce platform architecture, iterative delivery, supplier frameworks, delivery capability, and high levels of engagement. These are summarised in Annex 4 – Technology investment report, section 15. Appendix D: Lessons learned.</li> <li>• Gartner reviewed our portfolio on a line by line basis, testing each investment against their benchmark. They do not consider the investments as a holistic portfolio. In developing our proposal, we consider the</li> </ul>

Challenge Group Feedback	What we have done in response to this feedback
	<p>synergies that come from reuse and consolidating applications on a modular, scalable architecture. Our portfolio is below the upper quartile of Gartner's range and reflects the nature of our historical applications. We must keep the lights on, delivering vital services while building our transformational platform architecture in parallel.</p> <ul style="list-style-type: none"> <li>• Additionally, Gartner has benchmarked our central technology investments and operations.</li> <li>• Benchmarking information can be found in chapter 10 - Technology underpinning our ambition, section 10.7 RIIO-2 investment benchmarking. The full Gartner report is available in Annex 4 – Technology investment report, section 18. Appendix G: Gartner benchmark report.</li> <li>• We have included an overview of our governance structure and how we ensure value in chapter 10 - Technology underpinning our ambition, section 10.6.</li> <li>• The shared service model was agreed with Ofgem during legal separation and the allocation approach is set annually with Ofgem. A new annex (Annex 8 – Shared services) sets out this process.</li> </ul>
<p><b>Opex:</b> Your plan describes in several places the support costs from National Grid Group, including costs of business service IT, hosting, enterprise data, etc. What</p>	<p>We have introduced a new Annex 8 – Shared services, which sets out all the shared services costs from the National Grid group and</p>

Challenge Group Feedback	What we have done in response to this feedback
<p>options have you considered - do these costs represent value for money?</p> <p>Your plan should describe (with a clear reconciliation) all the shared service costs from National Grid Group, also describing how you control the services and costs delivered to you by National Grid Group and how you ensure best value for consumers.</p>	<p>how these are allocated to the ESO.</p> <p>Within Annex 4 – Technology investment report, sections 7-11, we show all the shared technology investments and the options considered. This has been benchmarked by Gartner as within range. The exception to this is IT operations and tooling, which was introduced as a new category after the benchmarking had taken place. The full Gartner report is available in Annex 4 – Technology investment report, section 18. Appendix G: Gartner benchmark report.</p>
<p>Your plan sets out your approach to innovation with a set of specific innovation projects in your baseline plan, alongside your proposed NIA projects. However, the ESO will be at the heart of the energy transition and the associated innovation that comes from it. How does your plan ensure that you are able to support future innovation developments initiated by others? What impact will this have on your IT development programme for example?</p>	<p>Details have been added to chapter 11 on how we will engage with third parties, including the types of external events and work groups we will establish or participate in. We set out that we will seek to engage further to create more opportunities to support third parties with their own innovations, via contributing funds, resources, data or endorsement (e.g. through letters of support).</p> <p>We have made provision for known innovation projects (see Annex 4 – Technology investment report, section 2.11 450 Future innovation productionisation). There are currently no new Network Innovation Competition (NIC) bids in the pipeline. The next submission opportunity is at the end of 2019 with the earliest Ofgem approval at the end of 2020. Any new project would not start before the RIIO-2 period. Given that NIC projects take two to three years, any implementation into business as usual would not</p>

5. Innovation

	<b>Challenge Group Feedback</b>	<b>What we have done in response to this feedback</b>
6. Resilience	<p>We have not evaluated your resilience plans for cyber and physical security.</p> <p>Your plan provides a helpful description of your approach to resourcing and workforce planning. How resilient is this plan to the increasing organisational demands caused by the wide range of planned IT and associated operational practice developments?</p>	<p>take place until the latter part of the five-year RIIO-2 period.</p> <p>Our Business IT security report has been included with our final submission in Annex 9 – Business IT security report.</p> <p>We believe that our plan is resilient to increasing demands from an IT perspective. We have set out in more detail in chapter 10 – Technology underpinning our ambition, section 10.6, how our IT operating model and delivery approach will support these future demands. Some of our proposals also specifically intend to support the IT transformation. For instance, in Theme 1 our proposals for Control Centre simulation and training (A2) are designed to ensure that our people are trained in using the new Control Centre systems (A1), which are also proposed in Theme 1.</p>
	<p>In Annex 2, your CBAs take account of some potential uncertainties and risks around market factors, third party factors and delivery factors. While you are not required to propose uncertainty mechanisms in your plan, a large number of future uncertainties are evident which will impact your proposed deliverables.</p>	<p>We have set out the uncertainties associated with the proposed activities in Annex 2 – Cost-benefit analysis (CBA) report. In chapter 3 – Assumptions underpinning our plan, we explain that we do not have formal uncertainty mechanisms but that our regulatory framework is designed to be flexible through having a two-year planning cycle and pass-through funding. This flexibility should allow for adjustment of deliverables to account for uncertainties if and when they occur.</p>
6. Uncertainty	<p>For delivery factors i.e. implementation of new systems to time, quality and cost, under your control, please identify the key uncertainties and risks and how you</p>	<p>We have identified key risks and proposed mitigation measures at an investment line level (see Annex 4 – Technology investment report, sections 2-6) and at a</p>

<b>Challenge Group Feedback</b>	<b>What we have done in response to this feedback</b>
<p>propose to manage these to ensure that you deliver the optimum outcome for consumers.</p>	<p>portfolio level (see Annex 4 – Technology investment report, section 14. Appendix C: Portfolio risks).</p>
<p>Both the notional and actual companies have been modelled using Ofgem’s assumptions. You presented a reasonable set of sensitivities. The non-compliant ESO case has been clearly distinguished from the Ofgem required cases. However, your target ratios and the minimum required thresholds were not well explained and therefore difficult to assess.</p>	<p>We have improved our articulation of target ratios and minimum required thresholds in section 9.4 of chapter 9 – Our financeability assessment, and section A.6 of Annex 5 – Finance report.</p>
<p>You have also not complied with Ofgem’s request that you should analyse key alternative inputs to those they propose; this applies particularly to gearing levels.</p>	<p>We have considered the impact of several changing circumstances on our plan, modelling a number of sensitivities against the notional and actual company, including analysis on high gearing levels. This can be found in section 9.4 of chapter 9 – Our financeability assessment, and section A.6 Annex 5 – Finance report.</p>
<p>It is important to be clear in all submissions what models or tools your quantitative output is based on. It is acceptable at this stage (though not in December) to use only your own internal financial models but important that in December the main plan and financeability analysis refers to outputs from the Ofgem business plan financial model.</p>	<p>A final version of Ofgem’s business plan financial model (BPFM) was received on 21 November 2019. All the analysis undertaken in the financeability assessment of our Business Plan (see chapter 9 – Financing our plan, and Annex 5 – Finance report) has been undertaken using Ofgem’s model on a best endeavours basis.</p> <p>Specifically, we have used BPFM version 7.4 as provided by Ofgem on 21 November 2019. Multiple versions of the BPFM are required in order to provide Ofgem with the</p>

7.Financing

Challenge Group Feedback	What we have done in response to this feedback
<p>We also expect transparency (i.e. clear cross-referencing to supporting files) and submission of any model or tool used for any supplementary analysis included in the Business Plan, including bill impact estimations.</p>	<p>data and analysis requested.<sup>8</sup> Additional versions have been used to perform additional sensitivity testing and to consider options to improve financeability. This approach has been agreed with Ofgem.</p> <p>All versions used to generate the cases discussed below have been supplied to Ofgem alongside this business plan.</p>
<p>We note that there are issues still outstanding with Ofgem in relation to the most appropriate structure for debt financing of your plan, particularly in relation to the required working capital facility and the impact of the incentive arrangements which are eventually agreed.</p> <p>We also note the uncertainty surrounding the target ratios the credit rating agencies will eventually apply in rating you. This uncertainty appears to have led you to analysis based on an unduly pessimistic view of the required target ratios and, as a result, to conclude that neither the Notional nor the Actual Company are financeable on the basis of Ofgem’s working assumptions.</p>	<p>Please see the response above.</p> <p>We have assumed that the fixed cost of the working capital facility will be funded on a pass-through basis and that there is a £0 expected incentive result (see chapter 9 – Financing our plan, and Annex 5 – Finance report).</p> <p>We have set out how we have interpreted credit rating ratios for the purpose of a financeability assessment. This is in section A.6 of Annex 5 – Finance, report assessment of financeability.</p> <p>We have concluded that, under Ofgem’s working assumptions, we are debt financeable in the RIIO-2 period but that there is not an adequate equity investor proposition. As a result, targets selected for credit metrics are not driving a need for further remuneration to support debt financeability.</p>

<sup>8</sup> Functionality of BPFM is limited to one set of baseline information, should a scenario or sensitivity require an amended data set a new model must be completed. In particular, different versions of the BPFM are required for the notional and actual company.

Challenge Group Feedback	What we have done in response to this feedback
<p>It would have been helpful to show analysis based on alternative thresholds reflecting the favourable regulatory regime which is proposed (totex pass through and limited downside penalties) and what steps you have taken to persuade the rating agencies to take this into account. We are not able to determine from your analysis how far the targeting of a rating lower than BBB+ might change your assessment of financeability and what the resulting trade-offs for the consumer might be.</p>	<p>As above, we consider the ESO to be debt financeable within the working assumptions so there is no need to target lower thresholds. We highlight that the ESO's peers target higher credit metrics than the Baa1 rating that we seek to maintain.</p>
<p>In any event, we are far from convinced that such a large premium over Ofgem's working assumptions for cost of debt (67bps versus 25bps, including upfront financing costs) and equity (9.36% versus 7.81%) allowances is necessary nor that private sector service companies, which you cite, are useful comparators for your risk profile (or, for that reason, for determining cost of capital allowances)</p> <p>You appear to have dismissed all measures to aid financeability other than increasing the allowances for cost of capital and additional revenue. You have rejected changes to both depreciation and capitalisation rates as routes to improving financeability but have not considered other routes such as reducing gearing or other measures that could reduce the risks which are of concern to the rating agencies, such as timing of cashflows.</p>	<p>We believe that we are debt financeable on both a notional and actual capital structure basis based on Ofgem's financial framework and working assumptions. However, we do not believe they provide an attractive equity investor proposition.</p> <p>We have reviewed our analysis and considered the impact of potential levers (dividend yield assumption, capitalisation rate, regulatory depreciation period and additional remuneration) on this equity financing challenge (see section 9.4.3 of chapter 9 – Our financeability assessment and section A.6 of Annex 5 – Finance report).</p> <p>Many of the potential levers to support financeability are focused on enabling the acceleration of cash from future periods. These levers can improve certain metrics in the short term, but they present a number of challenges and do not address the lack of remuneration for certain risks and activities. Of the options reviewed, we believe the only solution that creates the conditions to support the type of ESO that stakeholders want, and provides for a more sustainable ESO, is the inclusion</p>

Challenge Group Feedback	What we have done in response to this feedback
	<p>of additional remuneration for our services and risks that are not fully funded.</p> <p>We show the impact that alternative assumptions for parameters such as total market return have on the cost of equity in the Annex as an illustration. However, these are issues generic to all the networks regulated by Ofgem and are not ESO specific. We have adopted Ofgem's assumption and have not proposed an alternative cost of equity.</p> <p>Equally, we use Ofgem's working assumption of 0.25% for the cost of debt. Ofgem has not yet determined the detail of our debt mechanism. Our plan outlines how the mechanism could work using an indexation approach such that the proposal would be based on relevant agreed market data and does not represent a request for a premium (see section 9.3.2 of chapter 9 – Cost of debt and section A.5 of Annex 5 – Finance report).</p>
<p>We also consider that most of the risks (e.g. legal, reputational) which you cite as requiring higher allowances, are sufficiently remunerated through the cost of capital derived from the CAPM.</p>	<p>We acknowledge that many of our risks are covered by the capital asset pricing model (CAPM) to some extent, but not sufficiently. A CAPM based return is applied to the RAV, but for some activities there is very little RAV and so insufficient provision of equity return, e.g. market services activities. Where activities are not represented by assets in the RAV the current RAV*WACC cannot remunerate the risks.</p> <p>We have continued to work alongside KPMG to develop our risk analysis since October 2019, responding to Ofgem's feedback</p>

	<b>Challenge Group Feedback</b>	<b>What we have done in response to this feedback</b>
		<p>by more explicitly using CAPM. KPMG's latest report considers the relative concentration of systematic risk compared to the network companies and explains why the ESO is subject to higher levels of systematic risk that is not sufficiently remunerated through CAPM.</p> <p>We have updated our risk analysis in section 9.5 of chapter 9 – Proposed alternative assumptions and section A.7 of Annex 5 – Finance report. KPMG's report can be found in Annex 5, section 14. Appendix C.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Deep dive questions</p> <p>1. IT project delivery - taking project 500, Zero Carbon Delivery (which aims to enhance operational and planning interaction with DNOs) as an example, please describe:</p> <p>a) what solution and scope options did you consider and why was this one chosen?</p> <p>b) what implementation options did you consider and why was this one chosen?</p> <p>c) what are the key inter-dependencies that are required to ensure a successful outcome?</p> <p>d) when, how, and at what cost this will this project be delivered?</p> <p>e) what are the key risks and how do you plan to mitigate them – what contingency and change control do you have in place? Please also describe the level of delivery risk you ascribe to this project compared to your other planned IT projects.</p>	<p>Project 500 is an IT investment detailed in Annex 4 – Technology investment report (section 5.5 500 Zero carbon operability) for a monitoring and control system to facilitate zero carbon operation.</p> <p>This system was proved on a small scale through an £8.5 million NIC innovation project, enhanced frequency control capability (EFCC).</p> <p>We have added more detail, from the EFCC Closure Report, to our investment description for this project in Annex 4 – Technology investment report. We have also added more information about the risks, uncertainties and mitigations.</p> <p>Similarly, we have reviewed and added further detail in line with this Challenge Group feedback to the other investment descriptions in in Annex 4 – Technology investment report, sections 2-6.</p>	

Challenge Group Feedback	What we have done in response to this feedback
<p>2. Shared services - please detail the individual elements of your current and planned future support costs that the ESO currently pays to National Grid Group and reconcile these to your plan. In addition, please provide the justification for these charges and describe the governance arrangements that are in place to agree these and deal with any disputes. In particular, please justify the decisions for</p> <ul style="list-style-type: none"> <li>a) the ESO to migrate its business support systems to National Grid's Sap4/Hana platform, and</li> <li>b) for funding £37m of National Grid's £80m IT hosting cost</li> </ul>	<p>We have included a new Annex 8 – Shared Services, which sets out the shared services unified cost allocation model (UCAM) in detail and therefore the justification for these charges. This annex also sets out what the shared services charges will be in the RIIO-2 period.</p> <ul style="list-style-type: none"> <li>a) We have provided more detail as to why our business support systems are being migrated to Sap4/Hana in Annex 4 – Technology investment report, section 7.5. Finance systems.</li> <li>b) The ESO's proportion of National Grid group's IT hosting cost has been updated for our final plan and is set out in section 9 of Annex 4 – Technology investment report.</li> </ul>

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