

Final report of the ED2 Customer Engagement Group for UK Power Networks

January 2022



UK Power Networks
**Customer
Engagement
Group**

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Foreword from the CEG chair

From Ann Bishop, Chair of the Customer Engagement Group (CEG) for UK Power Networks

Welcome to the CEG's report on UK Power Networks' Final Business Plan for the period 2023 to 2028, known as RIIO-ED2.

Ofgem, the energy sector regulator, is rightly concerned to ensure that customers and stakeholders have a stronger voice in how the DNOs plan, innovate and invest to meet and balance a range of objectives: keeping the lights on; supporting vulnerable customers; keeping what customers pay the DNOs as low as possible; navigating the uncertainties inherent in government policy and customer sentiment; and contributing to more innovative and informed pathways to Net Zero. Ofgem has provided new tools in its methodology to support this.

The CEG has been in place for over two years and has gone through an independent and rigorous process to test UK Power Networks' aspiration to put customers and communities at the heart of Net Zero. We have been impressed by the company's openness to scrutiny, proactive response and 'can do' approach to problem solving. We are unanimously of the view that this is a good and distinctive business plan which makes good use of Ofgem's methodology.

This report provides an overview of the process we have been through to challenge UK Power Networks' plans, the areas we scrutinised and our conclusions. We would welcome any comments or questions you may have. Further information on how to get in touch is on page 47.

Of course, the work doesn't stop with the submission of the Final Business Plan. We acknowledge, as the company does, that it will continue to finesse its thinking as customer views and behaviour evolve, policy develops and actions take effect. We hope that the CEG's extensive scrutiny will provide a useful input as such changes take effect.

I would like to thank the Board of UK Power Networks, the CEO Basil Scarsella, the management team and the many members of staff with whom we have worked for their time and significant contributions to our ability to do our job.

We appreciate the engagement we have had with customers and stakeholders through the process, Ofgem, the Challenge Group and my fellow CEG chairs. I am particularly grateful to my CEG members who have brought a range of knowledge, experience and perspective to the task and have worked flexibly and positively to maintain the independence of the CEG and reach unanimous conclusions.

1 Summary of conclusions

Ofgem's Enhanced Engagement Guidance¹ asks the Customer Engagement Groups (CEGs) to answer the question

"Does the Business Plan meet the CEG's expectations of what would constitute a good DNO Business Plan considering the requirements of Ofgem's Business Plan Guidance published on 22 April 2021?"

The CEG for UK Power Networks concludes that the company's Final Business Plan is a good plan for RIIO-ED2 in that it recognises the changes affecting the energy system, includes an integrated strategy for decarbonisation that responds to the challenges, and contains commitments, most of which are well specified and have regard to the needs and preferences of customers and stakeholders. These include commitments for monitoring and managing delivery.

The CEG for UK Power Networks is unanimous on its overall assessment and its findings and conclusions as expressed in this report.

UK Power Networks and the CEG recognise that any plan can always be better and that many aspects of UK Power Networks' Plan will continue to develop as policy evolves, insights improve and actions take effect.

Our main considerations in reaching this conclusion are set out below.

Does the Plan show that UK Power Networks has responded to changes in the energy system?

The CEG concludes that the Final Business Plan has convincing chapters on all relevant requirements for ED2 and that it makes effective use of the tools for managing uncertainty that Ofgem has designed for ED2. This includes proposals for uncertainty mechanisms and projects that take the form of consumer value propositions.

We think it is important to consider a wider range of scenarios so as to avoid decisions in ED2 that might unduly constrain attractive options thereafter. Subject to this proviso, the CEG finds that UK Power Networks' decarbonisation strategy represents an agile and low-cost way of proceeding in ED2 on the route to get to Net Zero.

Does the Plan give customers and stakeholders a stronger voice in ED2?

The CEG concludes that UK Power Networks' customers and stakeholders have had a stronger voice in the creation of the Final Business Plan. UK Power Networks intends that it will become stronger again in ED2, in response to its experience and learning during the business planning process.

The Final Business Plan acknowledges the importance and impact of customer behaviour and sentiment, particularly in relation to forecasting demand. The Plan includes a well-designed and ambitious plan for future research and engagement setting out the resources and internal changes needed and proposals for knowledge management within the business, and for

¹ <https://www.ofgem.gov.uk/publications/riio-ed2-enhanced-stakeholder-engagement-guidance-version-2> Appendix 1 Question 1

monitoring the effectiveness of the plan. Many of the elements of the ongoing engagement plan will be implemented before the start of ED2.

Does the Plan address the needs of customers and stakeholders?

UK Power Networks has conducted an extensive programme of customer research and stakeholder engagement for its ED2 Business Plan and combined the results with information from other sources to show that its commitments are consistent with customer and stakeholder evidence.

The complexity of the sector, the monopoly position of the networks and the diversity of customers and issues to be researched posed difficulties for the ED2 customer research programme. These considerations mean that the design and execution of customer research has to be of a higher standard than has historically been the case in regulated infrastructure sectors.

The CEG has been assiduous in its scrutiny of this area and the nature of the challenges and the resulting improvements are acknowledged in the Plan.

How does the Plan reflect the circumstances of UK Power Networks' three regions?

The CEG concludes that UK Power Networks' Final Business Plan responds to regional and local considerations and proposes an innovative and ambitious approach to engaging with all of its local authorities in ED2.

In ED1 UK Power Networks established strong central control over planning, investment, operations and customer service which led to substantial improvements in the performance of all three networks.

The Final Business Plan recognises the need for local planning to support the transition to Net Zero. It highlights the importance of local authorities and stakeholders in the transition and recognises that local authorities are at different stages of maturity in their Net Zero plans. UK Power Networks proposes a differentiated process for collaboration with the local authorities that is backed by substantial dedicated resources, including an impressive data and analytics capability, which local authorities can access. We observed UK Power Networks' engagement with the local authorities, and they welcomed the proposals.

How confident are we in UK Power Networks' ability to deliver the commitments and outcomes set out in the Plan?

The CEG is confident in the ability of UK Power Networks to deliver the Plan, based on its strong record of delivering the commitments in ED1 and our experience of working with UK Power Networks, our understanding of management policies and our observation of meetings which demonstrated a strong performance management and delivery culture.

UK Power Networks has in place a broad approach to organisational resilience and has completed an external review of the maturity of these arrangements which gave them high marks. We found that the company's succession planning was appropriate and as robust as far as such plans can be.

UK Power Networks' responsiveness to the CEG's challenges leads us to conclude that it is willing to learn and adapt. Some aspects of implementation depend on Ofgem's determinations on uncertainty mechanisms and consumer value propositions (CVPs) and are outside UK Power Networks' control.

Consumer value propositions

The Business Plan Guidance asks whether the CEG supports the CVPs².

The CEG found that UK Power Networks' three proposed CVP projects were well conceived. Each of them meets Ofgem's criteria³, including that they go beyond business as usual and predict additional benefit to customers. They propose to make use of a new regulatory tool that Ofgem has provided to improve the regulatory regime by encouraging the DNOs to take leadership in areas of importance to customers and stakeholders.

The CEG thinks that proposals would be strengthened by the results of further work to evidence the benefits. The most important part of this would be well designed and executed customer research to establish customers' understanding of and support for each of the CVPs and the nature and amount of the incentives.

It is for Ofgem to decide whether the projects and the scale of the rewards to UK Power Networks in the proposals as set out in the Final Business Plan are in line with its intentions for CVPs.

Impact of the CEG

It is hard to assess the CEG's value for money, as we cannot observe what the Final Business Plan would have been like had the CEG not existed. We challenged UK Power Networks across the board and UK Power Networks acknowledges that the challenge has been instrumental in encouraging the company to improve its plan.

Our scrutiny was most persistent in the following areas.

- The strategic approach to Net Zero, the allocation of risk to customers and the use of the uncertainty mechanisms.
- Responding to the difficulties UK Power Networks experienced in its ED2 customer research programme.
- Aspects of network reliability.
- The scope of UK Power Networks' whole systems thinking.
- Reflecting regional circumstances in the plan
- The justification of the CVPs and the associated reward structure.

We believe that the CEG was instrumental in improving the Business Plan in these areas. This is not to say that the CEG's challenges were always valid, but the process of challenge and response resulted in insights that led UK Power Networks to improve its Plan.

² The CVP is a new mechanism in RII0 2. "Companies may bid for a reward on the quality aspects of its plan as revealed through the CVP. In its CVP, a company should demonstrate the additional value its plan will generate for existing and future consumers and consumers in vulnerable situations. The reward will be reflective of this additional value."

³ An exception was Ofgem's requirement that the proposal should "take account of any distributional impacts on different types of consumers." The plan does not address this. We observe that distributional effects are inherent in the nature of UK Power Networks' CVPs and it is not clear what useful information the company could provide about their distributional consequences.

2 Introduction

The ED2 process

In common with the other Distribution Network Operators (DNOs), UK Power Networks is required by Ofgem, the economic regulator of the distribution networks, to submit a regulatory business plan for the period 1 April 2023 to 31 March 2028. Ofgem will use the plan in setting DNO revenue allowances for the period, which is known as RIIO-ED2. The DNOs submitted their ED2 plans on 1 December 2021 and Ofgem will make its decisions in late 2022.

The ED2 price review is happening at a time of fundamental change in society, the economy and the environment and the DNOs' plans and Ofgem's decisions will be subject to change and uncertainty from many sources. The changes will have implications for the energy system, the DNOs, their stakeholders and not least their customers – how they live their lives, how they make the transition to Net Zero, and the size of their energy bills.

The Customer Engagement Groups

Ofgem wanted to enhance its own assessment of the DNOs' business plans. It required each DNO to establish a Customer Engagement Group (CEG) to challenge its business plan from customer and stakeholder perspectives. Ofgem's description of the role of the CEG in its Enhanced Engagement Guidance⁴ is to

“... provide independent challenge to the company and views to Ofgem on whether companies' Business Plans address the needs and preferences of consumers and other stakeholders⁵”

Ofgem will receive input from the independent RIIO-2 Challenge Group (CG)⁶. Unlike the CEGs, each of which has one DNO and makes its report on the merits of the individual business plan, the CG challenges all the DNOs and makes comparisons between them.

The CEG for UK Power Networks was established in late 2019. Appendix A describes our terms of reference and the approach we have taken. The members of the CEG bring a range of relevant knowledge and experience and their biographies are on the CEG's website:

<https://ceg.ukpowernetworks.co.uk/>

The criteria against which we reviewed UK Power Networks' Business Final Plan were derived from Ofgem's Business Plan and Enhanced Engagement Guidance documents and subsequent unpublished guidance from Ofgem. The full set of criteria we used to challenge early versions of the Plan is in Appendix B to this report. Ofgem's remit for the CEGs excluded the two most significant determinants of UK Power Networks' bills in ED2, the level of totex and the return on and of capital invested in the networks. We have not considered these matters and our report does not contain any conclusions that might be based on such consideration.

⁴ Op cit, para 3.2

⁵ By stakeholders Ofgem means “... individuals, companies, organisations or communities that are impacted directly and indirectly by the activities of the network companies. This includes existing and future consumers.”

⁶ <https://www.ofgem.gov.uk/energy-policy-and-regulation/engagement/forums-and-working-groups/riio-policy-challenge-groups>

Audiences

The principal audiences for our report are Ofgem and the CG. Ofgem will have regard to the CEG reports, reports from the CG and other information when considering the DNO business plans. This document is the report to Ofgem of the CEG for UK Power Networks.

The content and vocabulary of regulatory proceedings can be complex and technical. We are keen to make our report as accessible as possible, so we have tried to limit our use of jargon. There is a helpful Glossary in Appendix 4 of UK Power Networks' Final Business Plan⁷.

Structure of the report

The rest of this report is structured as follows.

Section 3 – Context for the ED2 business plans

Section 4 – Engagement with UK Power Networks and approach to challenging and assessing its Final Business Plan

Section 5 – Our reviews of the chapters of the Final Business Plan

Section 6 – Next steps

⁷ <https://ed2.ukpowernetworks.co.uk/additional-information/>

3 Context for the ED2 business plans

ED2 comes at a time of fundamental change in society, the economy and the environment and it is subject to uncertainty from many sources. This section gives a brief review of the most relevant changes as context for our assessment of UK Power Networks' Final Business Plan.

Government policy on climate change

The Government's policies to achieve Net Zero by 2050 are evolving, with numerous announcements and initiatives. These are well rehearsed elsewhere, as are the consequences for ED2. While the Government's objectives are clear, it is less clear how the public and businesses will respond and the extent to which their responses may not align with the Government's plans as they now stand. Ofgem has made it clear that the distribution networks should facilitate the adoption of low carbon technologies by customers and that they "will sit at the heart of the process to decarbonise."⁸ The speed of the transition to Net Zero and the demands of the DNOs' customers will differ from region to region and also within regions as will the potential of the existing network to facilitate the transition.

Covid-19 and Brexit

The effects of Covid-19 on workforce availability, in the DNOs and their suppliers, and the availability of equipment and resources to install it are well documented, as are the effects on the vulnerability of parts of the population. Less obvious are the consequences for customer research and stakeholder engagement. Covid-related restrictions limited the forms of research and engagement that were possible during a crucial period for the ED2 research programme. More fundamentally, the pandemic may result in changes in customers' needs and preferences about their power supply, affecting the reliability of the research that has been conducted and as a result making it more important to have good ongoing engagement. Covid and Brexit happened during ED1 but the uncertainties about their consequences on our daily lives, businesses and society and government will continue throughout ED2 and beyond.

Energy market

Soaring wholesale prices, rising general inflation and interest rates, and post-Covid and supply chain issues mean that the prospects for energy customers, particularly those in vulnerable circumstances, are more challenging than ever. They may remain so or deteriorate further in the ED2 period as costs already baked into the system come through. Global markets are experiencing high fuel prices which have led to rising energy bills and, in Britain, insolvency among energy suppliers. Over three million customers have had to switch supplier. Under the Supplier of Last Resort (SoLR) arrangements⁹, energy network customers pick up the cost of Last Resort Supply Payments, which means their bills will rise by a large, but unknown, amount.

Ofgem's ED2 methodology

Net Zero. Ofgem says that the ED2 Business Plans must allow for a wide range of futures, "... identify an investment strategy that is robust across credible and Net Zero compliant scenarios, i.e., which performs well (close to optimal) no matter which pathway/scenario occurs¹⁰" and make sure "...networks do not become blockers to an uptake in low carbon technologies¹¹".

⁸ <https://www.ofgem.gov.uk/news-blog/our-blog/networks-fit-net-zero>

⁹ Bulb is not in SoLR but Special Administration, the cost of which will fall on taxpayers.

¹⁰ <https://www.ofgem.gov.uk/sites/default/files/2021-09/ED2%20Business%20Plan%20Guidance%20-%20September%202021> para 5.16

¹¹ <https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision> page 29

Dealing with uncertainty. The methodology provides for the DNOs to respond to uncertainty by setting revenue allowances with two parts. The ex-ante allowance, set to provide firm expenditure allocations in ED2 for the DNO to provide for demands that are known or expected with high probability. Reopeners and uncertainty mechanisms (UMs), which can flex the outputs the DNOs provide and the revenue they need to deliver them. These mechanisms will come into play as pre-agreed thresholds are reached.

Customer research and stakeholder engagement. Ofgem wants customers and stakeholders to have a stronger voice in RIIO-2 and wants the DNOs to validate their plans against the results of customer research and stakeholder engagement. New developments to support this include the introduction of the CEGs and a mechanism known as consumer value propositions, which provide a way for the networks to add additional value to customers and stakeholders.

Customer vulnerability. Ofgem wants consideration in ED2 of customer vulnerability including transient vulnerability¹² and the risk that some may be left behind in the transition to Net Zero.

Network access review. A review has been underway since before ED2 began. Implementation of Ofgem's minded to decision on access and charging, to reduce connection costs for new connections and customers wanting increased capacity, will increase distribution charges for many customers from April 2023 and stimulate the number of connections. UK Power Networks estimates the additional cost it will have to recover from its customers in ED2 at between £160 million and £380 million.

Implications of the context for the business plan

These are “known unknowns” but there will be “unknown unknowns” to cope with, including changes in government policy. One of Ofgem's terms of reference for the CEGs was for them to test the readiness of the DNOs to cope with change and uncertainty. In these and other areas Ofgem said it would require a high standard of justification and evidence in the plans.

The uncertainties are relevant to many aspects of the Final Business Plan. They include

- shifts in customers' needs and preferences
- the difficulty of forecasting the timing and location of changes in demand on which investment planning is based and against which the resilience of the networks will be tested
- the way in which UK Power Networks intends to monitor whether its strategy is working and make changes to its plans if it is not.

Similarly, they are important considerations for many sections of this report, including our conclusions about UK Power Networks' ability to cope with change and deliver the Plan.

DNO objectives in ED2

In order to assess the quality of the Final Business Plan, the CEG needs a succinct view of the high-level objectives for a DNO in ED2.

Ofgem has made clear that the overriding objective of the DNOs in ED2 is to support the transition to low carbon at the lowest cost to customers. It has said that if the distribution network blocks or is seen to block the adoption of low carbon technologies, ED2 will be seen as

¹² Changing circumstances mean customers move in and out of vulnerability and have difficulty identifying as vulnerable.

a failure. This is within the wider context of significant change and uncertainty that we have referred to above.

Given Ofgem's statements, the CEG has taken the principal demands on a DNO to be as follows.

- To keep the lights on and operate a safe network.
- To support the transition to Net Zero by providing capacity so distributed generation and low carbon devices can be connected.
- To give customers a stronger voice.
- To ensure vulnerable customers do not lose out in the transition.

Other key parts of the Plan are necessary to enable and support the above.

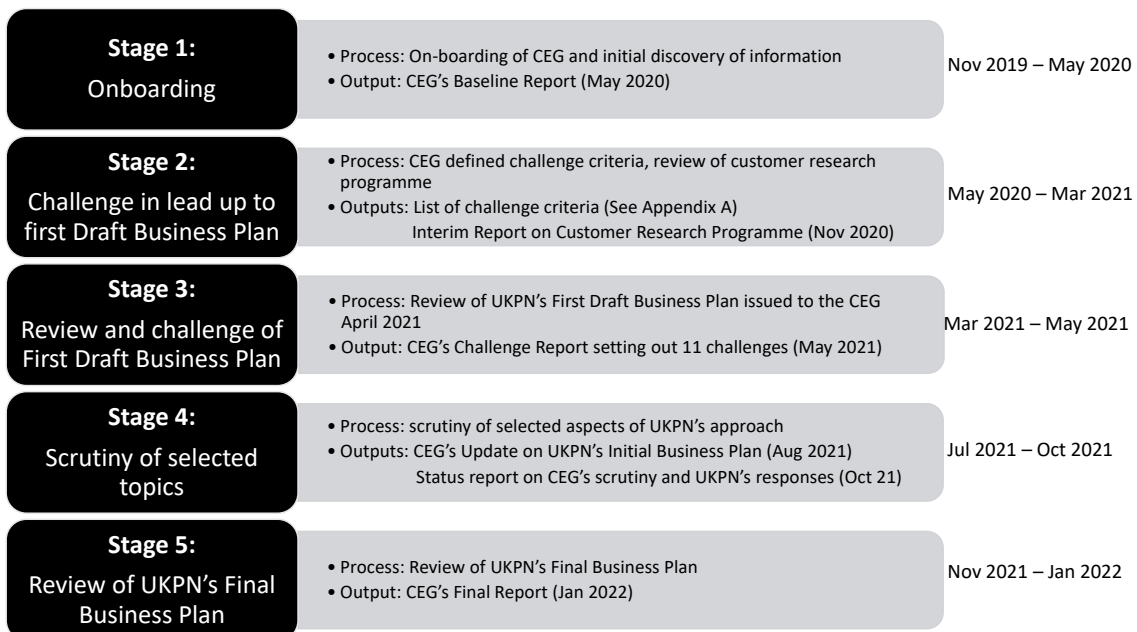
- Combining whole system thinking with local network planning and the DSO.
- Unlocking the benefits of digitalisation and an open approach to data.
- Facilitating flexibility markets and energy efficiency to limit the cost of the transition to Net Zero.
- Dealing with uncertainty including that related to the transition.
- Arrangements to ensure the Plan is delivered.

4 Engagement with UK Power Networks and approach to challenging and assessing the Final Business Plan ¹³

4.1 Our engagement with UK Power Networks

At the start of the process the CEG chair and the CEO of UK Power Networks agreed a common objective of ensuring that UK Power Networks' Final Business Plan for ED2 would be better and different, building on what we observed and understood to be the company's culture of performance and innovation. The CEG undertook to contribute to this by challenging the development of the Plan and asking all the questions that well-informed customers and stakeholders might ask.

The scope of the CEG's work – as described in Appendix A – has been extensive and is summarised in the diagram.



During our engagement, UK Power Networks did not seek to restrict the scope or depth of our challenge, or the time and resource needed to deal with our requests for information. It has responded constructively to the challenges we have raised and acknowledged the legitimacy and contribution of the CEG in the Final Business Plan.

This approach and the diversity of the CEG members has resulted in a robust and constructive challenge process. UK Power Networks has told us that it has a better business plan as a result

¹³ Appendix A of this report gives a fuller account of the CEG's engagement and challenge process.

of our work. The summary in Section 1 of this report includes a list of the areas where we think the CEG has had the most significant impact for customers and stakeholders.

4.2 Our approach to challenging and assessing the Plan

The process Ofgem requires the DNOs to adopt when developing their ED2 plans is complex and technical. Our objective was to challenge the Plan from the perspective of customers and stakeholders. We applied criteria derived from

- Ofgem’s Business Plan Guidance to the DNOs¹⁴
- Ofgem’s Enhanced Engagement Guidance to the DNOs¹⁵, which includes guidance on the terms of reference for the CEGs
- additional guidance in meetings between Ofgem and the chairs of the ED2 CEGs
- additional matters that CEG members identified as important.

Based on these sources, we had over 100 assessment criteria. These are listed in Appendix B to this report and our assessments of the chapters of the Final Business Plan relative to the criteria are summarised in Section 5.

To make our conclusions more accessible, we have answered the following questions, which cover the main terms of reference of the CEGs.

- Does the Plan show that UK Power Networks has understood and responded to the changes in the energy system?
- Does the Plan meet Ofgem’s baselines and guidance?
- Does the Plan give customers and stakeholders a stronger voice in ED2?
 - Does it address the needs and preferences of customers and stakeholders?
 - Address the needs of customers in vulnerable circumstances?
 - Address the needs and preferences of customers and stakeholders in UK Power Networks’ three regions?
- Is the Final Business Plan innovative, ambitious and stretching?
- Does the Plan give us confidence in the delivery of the commitments and outcomes?

We have used these questions to structure the summaries of our findings in Section 5.

¹⁴ Op cit

¹⁵ Op cit paras 3.2 to 3.13

5 Reviews of the chapters of the Final Business Plan

5.1 Coverage of this section

This section sets out findings from our review of the chapters in the Final Business Plan. In each sub-section, we start with a summary of how the Final Business Plan answers the main questions we have considered, as listed on the previous page in Section 4.2.

The topic of regional planning spans several chapters of the Final Business Plan. The CEG's assessment is brought together in the final part of this section.

5.2 Business plan assurance – Chapter 4

Ofgem's Business Plan Guidance says¹⁶

“... the Business Plan must contain assurance from sufficiently independent directors that the plan and associated costs have been tested for accuracy, ambition and efficiency.”

UK Power Networks covers assurance in Chapter 4 of the Final Business Plan. Ofgem did not make assurance a topic for CEG scrutiny and the CEG did not ask for information about it.

The quality of UK Power Networks' customer research is a key issue for the CEG. Our role was to challenge, not to assure. We challenged UK Power Networks on the design execution and use of the results of its customer research up to and after the submission of its Final Business Plan. Section 5.5 of this report describes this and the substantial improvements in the research and the use of the results as the Plan evolved.

5.3 Social contract – Chapter 5

5.3.1 CEG's assessment of the Plan

Responds to changes in energy system?	The contract recognises the need for customers to trust the DNO to support them in making changes.
Meets Ofgem's baselines and guidance?	Goes beyond Ofgem's guidance.
Gives stronger voice to customers and stakeholders?	Responds to stakeholder feedback by adopting a demanding standard of performance reporting.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Elements of the contract are based on engagement.
<ul style="list-style-type: none"> • Responds to needs of vulnerable customers? 	UK Power Networks Foundation to be established.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	Tiered approach to local authorities does this.
Is innovative and stretching?	The contract is an innovation.
Gives confidence in delivery?	Clear commitments.

¹⁶ Op cit, para 2.6

5.3.2 Findings

The social contract is a new development for UK Power Networks, and it extends the company's commitment to its social purpose, which is one of the four elements of the company's vision. The vision provides "clarity of purpose for our 6,200 employees and our supply chain partners."¹⁷

UK Power Networks has understood the need for customers and stakeholders to regard it as worthy of their trust, if it is to enable and support changes they will need to make in the transition to Net Zero.

We asked how customer research and stakeholder engagement had influenced the design of UK Power Networks' social contract. Chapter 5 and Appendix 4 of the Final Business Plan describe the customer research and stakeholder engagement including the CEO Panel; interviews with 750 customers across the three networks; a focus group in each region; and a quantitative online survey. The narrative says that the seven principles underlying the social contract came from feedback from these interactions.

The menu of possibilities was based on a review of social contracts in other organisations and a published review of best practice in social contracts¹⁸ and that the purpose of the customer and stakeholder engagement was to select items for the contract and how performance against them should be measured.

The Final Business Plan acknowledges the CEG's observation that contract was one-sided. UK Power Networks' stated intentions for the evolution of the social contract during ED2 point in the right direction. The table on page 4 of Appendix 4 shows how each of the 82 commitments in the Final Business Plan maps onto the social contract principles. The contract will be of particular value in the context of the whole system developments that are critical to delivering UK Power Networks' commitments and outcomes.

The commitments in Chapter 5 (Commitment SC1, a social fund of £4 million a year provided by shareholders and Commitment SC2, the publication of an annual review showing performance against all UK Power Networks' environmental, social and governance commitments) are clear and positive. The latter is a welcome contribution to transparency and was a response to customer and stakeholder feedback about the importance of UK Power Networks demonstrating it was delivering against its social contract.

5.4 Track record and business plan commitment¹⁹ – Chapter 6

The description of ED1 performance meets Ofgem's requirement under Stage 1 of the Business Plan Incentive.

¹⁷ Page 1 of UK Power Networks' Final Business Plan.

¹⁸ [Five steps to stakeholder capitalism | McKinsey](#)

¹⁹ Ofgem did not ask the CEG to consider ED1 performance. This will be for the CG and Ofgem to judge using their ability to compare across the DNOs.

A company's past performance is a factor in judging whether it is likely to deliver its plans. It is clear from Chapter 6 that UK Power Networks outperformed the commitments in its ED1 plan, in many cases substantially²⁰.

Para 2.1 of Ofgem's Business Plan Guidance refers to "... the level of commitment provided for delivering the activities and outcomes set out in the plan." UK Power Networks' ED2 plan anticipates significant improvements compared with ED1 in most material areas.

Our experience of working with UK Power Networks, our understanding of management policies and our observation of meetings suggests a strong performance management and delivery culture.

5.5 Giving consumers a stronger voice – Chapter 7

We distinguish between customer research and stakeholder engagement as separate albeit related activities. We distinguish also between the research and engagement undertaken for the ED2 business plan and the ongoing research and engagement that UK Power Networks plans to undertake in the ED2 period. Chapter 7 of the Final Business Plan describes all of these.

5.5.1 CEG's assessment of the Plan

Responds to changes in energy system?	Recognises change in scope and content of customer research. Acknowledges need for improvements in the design and execution of customer research and the interpretation and use of the results.
Meets Ofgem's baselines and guidance?	Goes beyond Ofgem's guidance.
Gives stronger voice to customers and stakeholders?	Commitments demonstrate intention to deliver in customers' interests.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Some areas would have benefitted from more soundly based research.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	Representative regional samples in customer research. Extensive LA engagement for ED2 plan and ongoing.
Is innovative and stretching?	Innovative co-creation and local authority engagement. Ambitious and stretching plan for ongoing engagement in ED2.
Gives confidence in delivery?	SMART commitments for ED2 ongoing engagement plan. Recruitment of the necessary skills.

We conclude that, compared with ED1, UK Power Networks has broadened and deepened the use of customer research and stakeholder engagement in its preparation of the ED2 Business Plan. The plan for ongoing engagement in ED2 moves this up a gear and Chapter 7.3 is a particular strength of the plan.

²⁰ The one exception is the ED1 commitment on undergrounding, which will not be met.

In making commitments, UK Power Networks has had regard to findings from the research and engagement, triangulating the resulting insights with other factors including past performance, leading practice, the regulatory framework and engineering considerations. The commitments in the Final Business Plan demonstrate UK Power Networks' intention to deliver in customers' interests. In some cases, while the commitments are consistent with the customer research results cited, they would have benefitted from a more thorough and soundly based exploration of customers' views. Reliability is an example, in particular the impact on different customer groups of interruptions of various lengths and frequency.

5.5.2 Challenge process

Our terms of reference required us to scrutinise all aspects of UK Power Networks' extensive programme of customer research. We did this in Stage 2 of the CEG's work and it resulted in *The CEG's Interim report on the customer research programme* in November 2020 and in May 2021 *The CEG's challenge report*. The latter included eleven challenges to the first full draft of UK Power Networks' RIIO-ED2 Business Plan, including challenges relating to customer research and stakeholder engagement.

UK Power Networks' response marked a significant, positive change in the direction of the research programme and the use of the results in the Plan.

5.5.3 Customer research and stakeholder engagement for the ED2 Plan

Customer research

The Final Business Plan describes the extensive programme of research and engagement that UK Power Networks undertook and how the results were used in the Final Business Plan.

It includes a realistic description of the problems associated with customer research of this kind, in this sector, at the present time²¹. It demonstrates where UK Power Networks has learnt during the process, for example about where engagement with customers makes sense and how to make such engagement meaningful²² and demonstrates its commitment to future improvement.

The use of research in the Final Business Plan was a step up from ED1. The use of research results in Final Business Plan is an improvement on the earlier drafts.

- The research findings were more accurately presented.
- It was more realistic in its presentation of the shortcomings of some of the research and additional sources were adduced to make up for shortcomings in the research.
- The earlier tendency to overclaim the extent to which research findings had driven UK Power Networks' decisions was less evident.
- It contained impressive plans for soundly based research and engagement in ED2.

The ten Line of Sight documents and ten Engagement Summaries are important supporting documents. They are intended to show how the proposals and commitments in the chapters of

²¹ See Pp 38 and 40 and in Appendix 5, Tables 2 and 3.

²² See Table 1 in Appendix 5.

the Plan are linked to the findings of the customer research and stakeholder engagement via the “seven keys to success”²³.

The CEG found the Line of Sight and Engagement Summary documents fell into two groups, described below.

Those relating to reliability and resilience, major connections and customer service are of good quality. While not all of the reliability research was good, the Plan is clear about what worked and has proposals to fill the gaps and to do better research going forward. On customer service and connections, UK Power Networks had the benefit of a good base of prior research on what customers did and did not want. UK Power Networks then researched “customer journeys” to discover what customers would want going forward as digital and data possibilities open up the options. These documents acknowledge limitations of the research so far and set out plans to address them in the programme of ongoing engagement leading up to and during ED2.

The customer research findings in the Engagement Summaries relating to other areas are less valuable. Some cite findings from research acknowledged to be inadequate, some refer to results of qualitative research as if they were quantitative, and some research findings are cited that have little relevance to the topic under discussion. We find examples of overclaim about the scale and robustness of research evidence in many of these Engagement Summaries. This relates to the research undertaken as part of the core programme and not to the specific topic research or stakeholder engagement. Examples are the vulnerability, facilitating Net Zero and Environmental Action Plan Engagement Summaries. It will be difficult for UK Power Networks to use these confidently in their present form as the baseline in its ED2 knowledge management process for these topics.

We continued to discuss our findings with UK Power Networks after submission of the Final Business Plan. As UK Power Networks pointed out, in the areas affected by these issues, the commitments were supported by other sources of information²⁴ and the results of other research or stakeholder engagement. It is also the case that the justification from customer needs and preferences would have been stronger if the research had been better designed, executed and used.

UK Power Networks told us that they would be reviewing the Engagement Summaries in question to eliminate the unsuitable research citations and identify the gaps with the intention of addressing them in the ongoing engagement programme. This gave the CEG confidence that the learning on these matters would come forward into UK Power Networks’ design and use of research in future.

Stakeholder engagement

The Final Business Plan gives an accurate representation of the stakeholder engagement and the triangulation of the results with those of customer research and other data. Co-creation processes were a considerable strength of UK Power Networks’ engagement process.

The plan’s Appendix 5 shows that the views of a broad range of stakeholders were considered in developing the Plan, there was good collaboration with stakeholders to understand, share and develop ideas, co-creation and expert panels were used in an iterative approach to build

²³ UK Power Networks adopted seven ‘Keys to Success’ to focus the proposals it made in the plan. It refers to the seven keys in Figure 3 and in more detail in Chapter 7.1.

²⁴ Including aspects of the regulatory framework, engineering and cost considerations.

evidence and the stakeholder engagement inputs were well integrated into the shaping of the Final Business Plan.

5.5.4 UK Power Networks' plan for ongoing engagement in ED2

Given Ofgem's guidance, this is a key part of the Final Business Plan and we gave the ongoing engagement plan thorough scrutiny.

The engagement plan for ED2 is one of the best sections of the Final Business Plan. It shows that customers and stakeholders will have a strong voice in ED2, and this will enable UK Power Networks to identify areas where it will need to be agile in adapting to changes as they arise. Given its flexibility first totex strategy, this is an important feature of the Plan. UK Power Networks' ability to forecast and anticipate shifts in the pattern of demand, driven by low carbon technology take up are critical to the success of its Net Zero strategy for ED2.

The commitments made in Chapter 7.3 respond to matters that we had challenged. These include

- having appropriate systems for managing the knowledge UK Power Networks will have on customers' and stakeholders' views, needs and preferences
- having expertise in place to deliver the engagement programme
- arrangements for measuring and reporting the impact of engagement on the keys to success
- commitment to engagement – via involvement of stakeholder councils and enduring external challenge arrangements
- a tailored approach to regional and local stakeholder engagement.

5.6 Customer Engagement Group

Responds to changes in energy system?	The CEG was itself a new requirement. The Final Business Plan has benefitted from the engagement and UK Power Networks' responsiveness to challenge.
Meets Ofgem's baselines and guidance?	Exceeded the CEG's original expectations – level of engagement, responsiveness, unconstrained access.
Gives stronger voice to customers and stakeholders?	CEG process strengthened customer and stakeholder input to the plan. As does the plan for ongoing engagement.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Plans to improve design and execution of research.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	CEG's regional challenge influenced the LA engagement plan.
Is innovative and stretching?	Stretching challenges – positive responses.
Gives confidence in delivery?	SMART commitments for ED2 ongoing engagement plan.

UK Power Networks' presentation of the role and approach of the CEG in Chapter 7.2 and Appendix 6 of the Final Business Plan accurately reflects the process and the constructive responses of UK Power Networks to our challenges.

While interactions have been robust at times, the members of the CEG and the UK Power Networks team have engaged positively throughout. On the one hand, we believe the CEG has been keen to understand UK Power Networks' approaches and rationale and on the other hand, the members of UK Power Networks team have been willing to acknowledge issues and their responsiveness to challenge has been impressive.

5.7 Decarbonising our communities – Chapter 8

5.7.1 CEG's assessment of the Plan

Responds to changes in energy system?	Distinctive strategy for UK Power Networks to contribute to facilitating Net Zero at lowest cost to customers.
Meets Ofgem's baselines and guidance?	Meets Ofgem guidance.
Gives stronger voice to customers and stakeholders?	Customers' interests (in lower bills, keeping the lights on) balanced with those of society (Net Zero).
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Strategy responds to stakeholder feedback
<ul style="list-style-type: none"> • Responds to regional circumstances? 	CEG's regional challenge influenced the LA engagement plan – the tired approach recognises regional differences.
Is innovative and stretching?	Innovative strategy.
Gives confidence in delivery?	Clear commitments and monitoring for ED2.

The CEG finds the strategy to be coherent and to strike a balance between the interests of customers (keeping the lights on and current and future bills) and society (achieving the Government's Net Zero target). In the absence of a clear policy on what the role of the DNOs should be in the latter²⁵, the CEG does not offer a view on whether it is the right balance.

The strategy is distinctive in its emphasis on monitoring utilisation and its proposed flexibility to developments as well as its proposals for engaging and supporting local stakeholders. It is likely to be an efficient and effective approach.

The CEG found the commitments to be new, specific and ambitious.

5.7.2 Findings

Chapter 8 sets out UK Power Networks' strategy for facilitating and not blocking the achievement of Net Zero at the same time as protecting the interests of its customers. It responds to stakeholder feedback on its July Plan and additional guidance from Ofgem²⁶ saying that business plans should be clear about how elements would combine to deliver key outcomes, including Net Zero.

Ofgem said

"... networks must have sufficient capability to ensure that low carbon technologies do not face installation or operational delays, while also keeping the costs of doing so as low as possible ... and

²⁵ Ofgem's guidance gives no direction on the role of the DNO in the transition or how the DNOs should strike this balance.

²⁶ Letter from Ofgem to the DNOs, dated October 8, shortly after it had issued its revised Business Plan Guidance.

... Final Business Plan should give more insight into what you consider to be the critical measures that you will use to track progress, and the consequence to your business if you prove to be unsuccessful.”

The strategy has the following elements.

- Commitment to specific measures of performance to monitor the effectiveness the Plan.
- Invest in transformers, cables, overhead lines, and associated works where there is high certainty of need.
- Monitor and model network utilisation using local intelligence (Local Area Energy planning methods) and enhanced monitoring of the low voltage network to identify emerging demands.
- Efficiency and flexibility first approach to avoid unnecessary investment.
- Monitor supply and demand in the labour and equipment (DNO equipment and low carbon technology) markets to be able to adapt.
- Make focused reinforcement when triggered by utilisation exceeding defined thresholds to be funded by a capacity volume driver.
- Invest strategically to minimise cost, for example by touching the network once only.
- Provide support and resources so local authorities and other regional stakeholders can play their parts, including providing a new self-service energy planning tool.

It integrates with other aspects of the Plan, including flexibility in procuring labour and materials to support its reactive approach, opening up connection activities to competition and its commitment to tender £100 million of investment that is currently not contestable. The Plan contains undertakings for monitoring progress.

5.8 Meeting needs of consumers and network users – Chapter 9

Ofgem’s guidance requires the ED2 plans to contain a vulnerability strategy and a major connections strategy. In addition to these, UK Power Networks’ Final Business Plan includes a chapter on customer service. We consider these three topics in this section. Findings on the proposed consumer value propositions are in section 5.9.

5.8.1 CEG’s assessment of the Plan

Responds to changes in energy system?	The customer service proposals are responsive to evolving customer needs and preferences.
Meets Ofgem’s baselines and guidance?	Exceeds Ofgem’s baselines.
Gives stronger voice to customers and stakeholders?	Clear lines of sight from customer insights to commitments.
• Reflects needs and preferences?	Customer services tailored to needs and preferences.
• Responds to needs of vulnerable customers?	Includes proposals to deal with the low penetration of the Priority Services Register in London. Vulnerability is a clear theme of the customer service plan.
• Responds to regional circumstances?	Responds to differences and proposes regional collaborations.
Is innovative and stretching?	Innovative work on intersectionality and customer vulnerability. Extensive and ambitious commitments on all three areas.

Gives confidence in delivery?	Arrangements proposed for monitoring delivery include extensive engagement with customers and stakeholders.
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5.8.2 Challenge process

Our challenge criteria relative to these topics are in Appendix B parts B.1 and B2.

Customer vulnerability was not selected for full scrutiny at Stage 4, though the CEG did challenge the omission of appropriate references to intersectionality in this context, as well as the limited references to vulnerable SMEs and charities and to the need to help potentially vulnerable customers to make a just transition to Net Zero.

The CEG's Resilience and Reliability Group (R&RWG) had information gathering and challenge sessions with UK Power Networks' connections team during Stages 2 and 3; attended two Major Connections Forums; and observed the Major Connections Strategy co-creation process.

At Stage 2 the CEG's Customer Working Group (CWG) had information gathering sessions with UK Power Networks' Head of Customer Services and his team and reviewed the results of the research on customer journeys that UK Power Networks had commissioned to inform the ED2 customer service commitments.

Customer service was not specifically selected for Stage 4 scrutiny and the CWG's work on this was on the Draft Business Plan in March 2021.

5.8.3 Customer service

This is an ambitious part of the Final Business Plan that builds on ED1 learning and engagement and other insights to build a plan for improving the quality of customer service and complaints handling and remaining at the top of the customer satisfaction league table.

The Plan proposes tailored services for customers in vulnerable situations, people wanting to adopt low carbon technology, and small and medium sized businesses. The proposals use partnerships to maximise impact, for example guiding people to trusted intermediaries for Net Zero advice and opening up this platform to other DNOs. The CWG found that the March Plan had met the review criteria, the July Plan improved on this and the Final Business Plan was a significant improvement on the earlier drafts.

We had raised issues to do with the evidence chain and the multi-channel feedback strategy.

- Evidence. There is a clear line of sight from engagement to proposals and commitments. The range of data deployed is wide with good triangulation and the chapter links the conclusions to the research on which they are based. Learning from external sources and other sectors are strong threads.
- Omnichannel feedback strategy. We had noted that while this demonstrated high ambition it would pose challenges in the analysis of feedback and complaints data. We asked for more information on how this would be done and aligned with the approach to digitalisation. The Final Business Plan provides this and describes investment in customer relationship management processes and other solutions to aggregate data sources and enable joined-up learning.

5.8.4 Customer vulnerability

Chapter 9.2 and the vulnerability strategy in Appendix 8 present a well evidenced approach to customer vulnerability. UK Power Networks responded to questions and challenges from the CEG, and the Final Business Plan is much improved from earlier drafts. Intersectionality is now a central part of the strategy and the other points of scrutiny have been addressed.

It was not clear from the Final Business Plan that the metrics to which the targets relate will be kept up to date²⁷ to reflect the fast-changing nature of customers' circumstances in a post-Covid, high inflation and high energy bill world. Updates from partner organisations will be more up-to-date, but these too will take time to filter through.

Our findings were as follows.

- The Plan justifies the choice of Priority Service Register (PSR) metric with explanation and evidence.
- Challenges to PSR registration in the regions and how they will be tackled are explained.
- The vulnerability strategy and Plan have improved significantly, especially in the context of future and regional vulnerabilities following recent analysis, which uses the innovative spatial/temporal mapping tool that UK Power Networks has developed.
- UK Power Networks has understood and responded to the challenge of helping potentially vulnerable customers to have a just transition to a low carbon energy system. It has developed a more sophisticated, flexible and inclusive approach to identifying and helping them. The intersectionality aspect of the strategy is well explained. The definition of an inclusive approach (p27) to support anyone "who may feel" vulnerable and in need of help is appropriate as is an approach which "will not place people within specific descriptions" and "will provide tailored assistance" to address their unique circumstances.
- Another improvement is the work to understand vulnerable SMEs with the development of a two-tier Extra Care Register with twelve services for the SMEs that are most affected.

5.8.5 Major connections

UK Power Networks has a 'Three Pillar' strategy for major connections, which is clear and provides benefits to customers. The pillars are: make it easier for customers; monitor emerging customer needs; and promote competition in the market.

We found that

- UK Power Networks' connections performance had been transformed since 2012
- UK Power Networks understood the needs of larger connections customers well and had a high-quality engagement process with them
- commitments were stretching with a target of at least 9/10 satisfaction with the Connections Electricity Enquiry Service.

The Final Business Plan covers all relevant aspects of major connections. There are good initiatives for customers and UK Power Networks intends to promote competition²⁸. Its approach

²⁷ P8 of Appendix 8 says the fuel poverty figures are based on 2019 data published in April 2021.

²⁸ Currently, 70% of the market is served by other providers.

includes making data available and allowing customers to have access to real time information to consider their connection options. Commitment MC2 sets out a timetable to provide customers with information on the location and capacity of UK Power Networks' assets. The self-service facility is planned for the end of ED2.

The Plan covers all the issues we raised about major connections and those we heard about in discussion with developers and customer representatives. Regional differences include the growth in Electric Vehicle (EV) charging, in respect of which there are trials in London and the Eastern region.

5.9 Consumer value propositions – Chapter 9.4

5.9.1 CEG's assessment of the Plan

Responds to changes in energy system?	Proposals respond to specific issues referred to by UK Power Networks as market failures.
Meets Ofgem's baselines and guidance?	They meet Ofgem's baselines.
Gives stronger voice to customers and stakeholders?	All the proposed CVPs relate to areas of concern to customers and stakeholders.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Not yet evidenced by customer research.
<ul style="list-style-type: none"> • Responds to needs of vulnerable customers? 	Two of the three proposal relate to the needs of vulnerable customers.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	All have local dimensions.
Is innovative and stretching?	Innovative use of new tool introduced by Ofgem in RIIO-2.
Gives confidence in delivery?	Nascent arrangements for monitoring delivery – for further development.

The CEG found that UK Power Networks' three proposed CVP projects were well conceived. Each of them meets Ofgem's criteria²⁹, including the requirement that they go beyond business as usual and predict additional benefit to customers.

The proposals would be strengthened by the results of further work to evidence the benefits. The most important part of this would be well designed and executed customer research to establish customers' understanding of and support for each of the CVPs and the nature and amount of the incentives.

It is for Ofgem to decide whether the projects and the scale of the rewards to UK Power Networks in the proposals as set out in the Final Business Plan are in line with its intentions for CVPs.

5.9.2 Challenge process

The CVPs are new in ED2 and form a significant element of UK Power Networks' Business Plan (Chapter 9.4 and Appendix 7). The proposed CVPs involve substantial expenditure and there is

²⁹ An exception was Ofgem's requirement that the proposal should "take account of any distributional impacts on different types of consumers." The plan does not address this. We observe that distributional effects are inherent in the nature of UK Power Networks' CVPs and it is not clear what useful information the company could provide about their distributional consequences.

potential for UK Power Networks to earn significant incentive payments if it delivers on the commitments.

Early in the development of its Business Plan, UK Power Networks indicated it did not intend to propose any CVPs. The July Plan proposed five CVP candidates for review by the CEG. In the Final Business Plan, it has reduced this number to three, on the basis that two of the original proposals did not meet Ofgem's criterion of being over and above business as usual activities. Originally, it had not proposed an incentive related to its CVP on fuel poverty, but it has now reversed this.

The CEG is positive about the idea and purpose of CVPs. We had raised issues about the original proposals, including the rationale for selecting the candidates, whether they met Ofgem's criteria and issues of risk transfer to customers. We also queried whether UK Power Networks should evaluate the CVPs and the proposed incentives in formal market research³⁰.

UK Power Networks responded with a novel approach which emulates the form of the Interruptions Incentive Scheme (IIS) as used in ED1. This entails excluding relevant totex from the ex-ante allowance and incentivising delivery of the commitment at lowest cost.

The CEG found the revised approach potentially beneficial for customers. Some members had concerns about the proxies used in the benefit valuations and the scale and transparency of the rewards in UK Power Networks' proposals. Because of these and given the significance of the proposed CVPs, we selected them for Stage 4 scrutiny.

5.9.3 Summary of findings

Customer support. While UK Power Networks has not evaluated the CVPs or the proposed incentive rates in formal market research, it has shown that each CVP is in an area where customers and stakeholders support action. The Plan refers to letters of support from local authority leaders and positive responses to UK Power Networks' leadership in these areas at regional engagement events.

UK Power Networks points out that CVPs are a new mechanism and that before commissioning specific research on its proposals and how they would fit with customers' values and priorities, it wanted to understand more about Ofgem's response to the proposals and to CVPs generally. We understand this position. If there is regulatory support, there is time for UK Power Networks to undertake focused research on all three propositions and the associated incentives.

Benefit valuations. The Social Return on Investment (SROI) approach is evolving as its application becomes more widespread given the growing policy agenda for the utility sectors. The CEG was not convinced by some valuation approaches³¹. We noted the lack of customer engagement (see UK Power Networks' rationale in previous paragraph) and the fact that UK Power Networks proposes the valuations would be the basis for substantial financial incentives. Ofgem had encouraged the DNOs to adopt a common methodology for valuing the benefits and

³⁰ Appendix 7 adduces evidence of customer and stakeholder awareness of the issues the CVPs are to address. In discussion UK Power Networks said, "The ideas underpinning the CVPs will form part of further customer research to inform the final version of the Business Plan for 1 December." We do not believe this has happened.

³¹ The CEG's issues related to the validity of some proxies and the likelihood that proxies would remain valid for the evaluation period. Members remained concerned but given the common methodology and Ofgem's clear guidance that benefits were to be monetised, the CEG decided not to challenge the approach.

a strong steer that the benefits should be monetised. The DNOs adopted the SROI approach. The consultancy firm that created the approach for the DNOs (SIA Partners) said

“UKPN has embraced the use of SROI for its RIIO-ED2 business plan using the industry-agreed common methodology. The business has continued to improve the adoption and sophistication of this approach, building upon the SROI measurements undertaken as part of its annual engagement programme. Our review of UKPN’s RIIO-ED2 initiatives and CVPs confirms that the values and approach are robust and aligned to best practice in the sector.”

True-ups. The proposed true-ups are to give comfort that customers will not pay rewards to UK Power Networks for outcomes not delivered. For the Off Gas Grid proposal where customers will pay the incentive well before the benefits are delivered, UK Power Networks has proposed a claw back mechanism, but it is not clear how this would work given the timescales of the anticipated benefits. Under the SROI approach, not all of the commitments are outcomes. Some of the true-up processes are not well specified in the Plan and some remain to be developed.

The Plan proposes the following.

“We will undertake an annual assessment, by appointing an independent company to assess the value of the support actually delivered for customers as part of our work to provide transparency and confidence to Ofgem, customers and wider stakeholders.”

Best placed to deliver. The CEG noted there could be alternative providers for work under the CVPs and believes that UK Power Networks should consider this.

Scale and timing of incentive payments. The text below Figure 30 shows the total costs payable by customers towards each CVP, along with the gross and net benefits to customers and UK Power Networks’ expenditure. For the three CVPs together the numbers are as follows.

Customers		
Benefit (£m)		187
Cost (£m)		136
Net benefit (£m)		51
Net benefit as % of cost		33
UK Power Networks		
Revenue (£m)		94
Spend (£m)		42
Margin (£m)		52
Margin as % of spend		124

We asked UK Power Networks how the proposed CVP incentives compared with other reward mechanisms. UK Power Networks produced a table showing that if all the CVPs were to trigger the full incentive, the reward to UK Power Networks would be £52million (of which £44million is for the off gas-grid CVP). This puts the value of the CVPs in total between that of the Broad Measure of Customer Satisfaction and the vulnerability incentives.

Some CEG members had concerns about the fairness of the rewards that might accrue.

- Why a reward is necessary for the delivery of the benefits in question³².
- The size of the potential reward to UK Power Networks³³ in absolute terms, relative to the expenditure it would incur and relative to the benefit to customers and society.
- The fact that customers will pay cash for benefits that represent a social return on investment methodology based on valuations and verification processes that are yet to be determined. While benefits can be monetised, as Ofgem requires, they are not cash.
- UK Power Networks' reversal of its plan not to seek an incentive in its Vulnerability CVP.

UK Power Networks responded by noting that these are proposals relating to a new mechanism and that Ofgem will judge the appropriateness of the proposals and set the incentive rates.

5.10 Maintaining a safe and resilient network – Chapter 10

Ofgem's guidance on resilience in the Business Plan Guidance led us to review network reliability and asset resilience, climate resilience, workforce resilience and supply chain resilience. Our challenge criteria for these topics are in Appendix B, parts B.7, B.8, B.9 and B.10. UK Power Networks' Chapter 10 - Maintaining a safe and resilient network, places the individual aspects of resilience in an overall framework of organisational resilience.

5.10.1 CEG's assessment of the Plan

Responds to changes in energy system?	The resilience framework can respond to changes. The Plan shows that resilience challenges are anticipated.
Meets Ofgem's baselines and guidance?	The resilience framework exceeds Ofgem's baselines.
Gives stronger voice to customers and stakeholders?	Commitments respond to issues of concern to customers. The planned engagement in ED2 should give a stronger voice to customers.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Proposals reflect needs and preferences where these were established. There are plans to fill the gaps in ED2.
<ul style="list-style-type: none"> • Responds to needs of vulnerable customers? 	In network reliability – the position of worst served customers is significantly improved.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	The CEG has questions about the regional effects of the IIS. UK Power Networks intends to explore these with Ofgem.
Is innovative and stretching?	The plans contain many innovative features and benefit from previous innovation.
Gives confidence in delivery?	The organisational resilience framework, strong management systems and mature approach to supply chain resilience provide the basis for confidence, as does performance in ED1.

³² The question of additionality is not addressed in the plan. The CG asked UK Power Networks why the CVPs could not be in business as usual in which case they would be part of ex ante totex together with appropriate business plan commitments. UK Power Networks should evaluate the pros and cons of this as a counterfactual to its proposals. In doing this it would be right to have regard to the different incentive properties of the two approaches.

³³ On the scale of the incentive, para 8.22 of the Business Plan Guidance says that Ofgem expects to determine the size of the reward by multiplying the net consumer value by the company's totex efficiency incentive rate to ensure that companies do not spend more in delivering the benefit than the value of that benefit to customers. UK Power Networks' calculations assume a 50% sharing factor. This is subject to review by Ofgem.

5.10.2 Resilience framework and organisational resilience

UK Power Networks has adopted a broad view of organisational resilience and we report our findings with respect to the organisational resilience framework, succession planning and the management culture of the organisation. Ofgem excluded another important aspect – financial resilience – from the CEG’s terms of reference.

Organisational resilience framework. UK Power Networks’ view of organisational resilience was wide ranging. It had adopted the BSI’s definition of resilience “the ability of an organisation to anticipate, prepare for, and respond and adapt to incremental change and sudden disruptions in order to survive and prosper.” UK Power Networks had taken this to include strategy, governance, organisational structure, processes, resources, capabilities and systems to ensure that the company was resilient to a wide range of changes.

Chapter 10 referred to many sources of uncertainty and change including: climate change, policy changes, integration of an increasing number of intermittent generation sources, take up of low carbon technologies, cyber threats and the uncertainties that will arise from the transformed relationship with customers as the UK transitions to Net Zero.

The resilience framework meets the stipulations of the Cabinet Office Emergency Planning College and British Standard, BS 65 000 - Guidance for Organisational resilience. In an external assessment in September 2021, UK Power Networks scored four or five (out of five) in the five areas of assessment. UK Power Networks believes it is the only DNO to have completed a maturity review of resilience involving external assessment.

The CEG found the organisation resilience framework described in the Plan to be a mature and appropriate response to the circumstances the sector is facing and will face in ED2.

Succession planning. The CEG wanted to understand the role of the people who had developed and owned the ED2 plan in directing and managing its delivery during the ED2 period. This raised sensitive and confidential issues. The chair of the CEG and UK Power Networks’ CEO discussed succession planning at the level of the CEO and two levels below. Without straying into confidential detail, the CEG chair found that the plans were robust and appropriate, subject to the nature of such plans.

Management culture. Ofgem’s Business Plan Guidance refers to culture in two contexts

“... embedding commitment to protecting the interests of vulnerable customers within the company’s culture” and “... embedding a culture of innovation throughout their business.”

Specific findings on these areas are in Sections 5.8 and 5.14 of this report.

With the senior team, we explored the extent to which the culture and management style would need to be different in ED2 and beyond for the organisation to ensure it achieves the outcomes in the Plan given the uncertainty it faces.

UK Power Networks acknowledges resilience challenges which are principally to do with the introduction of the DSO, digitalisation and data more generally and an increased need for customer facing activities. The management culture seems well able to cope with these challenges although the capacity of the labour and supplier markets to respond may present

problems. UK Power Networks' record of being the employer and client of choice will mean it is well placed.

5.10.3 Network reliability and asset resilience

Summary

Overall, this is a strong plan that will improve service and delivery for customers in ED2 through the new targets and commitments and beyond ED2 through the measures and plans for better engagement and research.

UK Power Networks is clear that network reliability is of great and increasing importance to customers. "Investing to maintain a safe, reliable and resilient network" is one of its seven keys to success. Its expenditure on network reliability and resilience accounts for a substantial³⁴ proportion of its totex.

During ED1, UK Power Networks has responded to Ofgem's package of incentives, including the IIS, and delivered an 18% reduction in customer interruptions (CIs) and a 23% reduction in customer minutes lost (CMLs), and its customer satisfaction score has risen to 93%. The CEG assessed UK Power Networks' claims to be the industry leader in reliability³⁵ in ED1 and concluded that it was correct, based on the Ofgem metrics of CIs and CMLs.

The wording of the commitments in the Final Business Plan is improved. Some are worded in a way that will mean it is difficult to monitor delivery, and in other cases, the use of exclusions will not be transparent to all customers. Despite these reservations, UK Power Networks' Plan is justified by evidence in the Line-of-Sight document. It is ambitious in seeking to improve delivery for customers in ED2 and beyond. Among several novel commitments in the Final Business Plan is monitoring total time off supply, which will drive improved performance and lead to greater customer insight. The CEG notes UK Power Networks' ambitious data and information objectives and expects further insights to flow from them.

Findings

The Interruptions Incentive Scheme (IIS). We had detailed discussions with UK Power Networks about the working of Ofgem's incentive for network reliability – the IIS – and the influence of the needs and preferences of customers on the proposals in the Plan concerning reliability and resilience.

Notwithstanding the acknowledged importance of reliability to its customers, UK Power Networks does not base decisions on reliability expenditure on any assessment of its customers' needs and preferences. Ofgem decides the calibration of the IIS and UK Power Networks' research did not cover the full range of customer needs and preferences about reliability for the ED2 Plan. There will be no input from UK Power Networks' customers to calibrating the IIS incentive³⁶. This was the basis of UK Power Networks' view³⁷ that some

³⁴ We estimate that approx two thirds of UK Power Networks' totex directly supports the resilience and reliability of the network.

³⁵ We observed that UK Power Networks was not the only DNO to make such a claim and that the reliability of the individual DNOs within UK Power Networks was, unsurprisingly, not uniform.

³⁶ In ED2 Ofgem will use a national average estimate of the value of lost load in calibrating the IIS.

³⁷ Reliability and Resilience Engagement Summary p4.

aspects of reliability and resilience “... *do not naturally lend themselves to being tested or influenced by additional customer research due to the regulatory framework in place.*”

The position is that UK Power Networks’ decisions, and we presume those of the other network owners, about spending on network reliability are to maximise rewards under the IIS.

An aspect of UK Power Networks’ leading performance under the IIS is that it achieves the highest proportion of the available incentive (£42m out of the maximum available £45m) of any DNO. The IIS incentivises DNO owners to plan separately for each of their networks. London Power Networks (LPN) and Eastern Power Networks (EPN) have achieved 100% of the available incentive and South Eastern Power Networks (SPN) 70%. UK Power Networks explained that:

- the position in SPN was a consequence of legacy engineering decisions and that investing to get closer to 100% for SPN would not be economical under the IIS
- in LPN and EPN it continued to seek improved performance beyond the level needed to achieve the 100% incentive, saying that it would not be good to “turn the high-performance culture on and off”, but that it had to be continuous to be effective.

The CEG is not questioning UK Power Networks’ response to the incentive. But we question whether the incentive operates in customers’ best interests in all of UK Power Networks’ licence areas. Under the IIS as it stands, there is insufficient incentive for UK Power Networks to tackle the legacy issues in SPN. Accordingly, the CEG is not convinced that UK Power Networks’ customers get the best value from UK Power Networks’ expenditure on reliability. UK Power Networks is considering how best to address this issue and has included this in the ongoing engagement programme.

Commitments and customer research. UK Power Networks has marshalled extensive customer research and stakeholder engagement (set out in the engagement summaries) and used the results to justify the commitments it has made. As we have noted in section 5.5 some of the research has been hampered by a lack of clear objectives and poor execution, which has meant that some results are not necessarily reliable. UK Power Networks has acknowledged these issues and improved its presentation of findings from its ED2 research programme and in the way it expresses commitments. While commitments NR3,4,5 and 6 are not fully specified, UK Power Networks has responded to the research findings and gone beyond what the regulatory regime requires.

The statements that UK Power Networks has made in the Plan about the reliability of its networks are now soundly based and substantiated by evidence.

The ED2 engagement plan contains a well-conceived plan to improve understanding of the impact of power cuts and short interruptions on customers and a commitment to improving the specification and execution of customer research.

Resilience. Decisions about investment in resilience are based on a national framework (NARMS) overseen by Ofgem with little customer input. Given the amount of expenditure involved, it would be desirable to see plans to obtain more customer input to these decisions.

Regions. The three customer-friendly regional plans reflect differences in reliability across the regions and the different improvement targets. They contain a genuine invitation to engage. The plans and invitation are well signposted.

5.10.4 Climate resilience

UK Power Networks' Climate Change plans as described in Chapter 10.5 of the Plan and Appendix 14 are robust. We found that

- the July draft plan met the CEG's assessment criteria.
- UK Power Networks had a good grasp of the consequences of climate change and had identified the risks to the networks and assets
- it had strategies to manage and mitigate the risks
- plans were in place to keep the assessment current
- UK Power Networks had appropriate management and oversight arrangements in the form of the Climate Change Steering Committee which reports to the executive.

After challenge from the CEG, the plans for flood defence were modified in the Final Business Plan to bring them in line with the views expressed by customers in soundly based research.

5.10.5 Workforce resilience

UK Power Networks prides itself as being an employer of choice and it has the awards to support this. We attended meetings with the trade unions, engaged with the executive team and the HR team and had discussions with staff including at events promoting diversity.

Our findings included the following.

- **Introduction of the DSO.** This will be a radical change for UK Power Networks and its people. The CEG found the plan to deliver the DSO was soundly based.
- **Research and account management skills for ED2.** UK Power Networks has plans which recognise the work that it will have to do to attract people who can communicate and translate technical issues into effective relationships with all the local authorities and other stakeholders. For example, Commitment WR3 is to establish a Digital Skills Academy to provide DSO and digital future skills, deliver 510 accredited apprenticeship NVQs in Leadership and Management and 200 IET accredited technical or digital apprenticeships during ED2.
- **Plans for resourcing in the event of UMs and re-openers.** The CEG is satisfied that UK Power Networks and its supply chain appreciate the challenges and we are reassured by the evidence and the statements made by the executive team about the delivery of Net Zero.
- **Plans for delivering best practice in diversity.** The CEG had expressed concern at the speed at which the relative lack of diversity in the workforce would be addressed, given the low level of staff turnover in the business. The plans are sound with target dates for achieving bench-marked best practice.
- **Input from customers and stakeholders.** This is in the workforce resilience Engagement Summary, Line of Sight and Strategy documents, which explain the input from stakeholder engagement. The CEG is satisfied that UK Power Networks has understood and interpreted stakeholder feedback appropriately.

5.10.6 Supply chain resilience

The CEG scrutinised the resilience of UK Power Networks' procurement and supply chain. We made a strong challenge on the ability to flex operations including labour and supply chain to deliver for customers in the UK Power Networks scenarios and other uncertain futures. UK Power Networks provided us with information on its approaches and systems and on its ability to respond to changed circumstances and demands. It referred to its handling of current resilience issues arising from the pandemic and supply and labour force challenges.

We found that UK Power Networks

- adopts a strategic sourcing approach with supporting management systems and a stage-gated governance process. Its achievement of the Chartered Institute of Procurement and Supply Platinum award supports this finding
- obtains intelligence on and analyses its exposure to a wide range of issues that might affect its supply chain, such as modern slavery and child labour and uses an agency to identify accounting anomalies in members of its supply chain
- seeks flexibility in its supply chain and believes that it could cope with growth up to more than double that planned: it would expect to work through such a situation at an early stage with its suppliers.

We concluded that UK Power Networks' procurement strategy and approach to dealing with its alliances and other supply communities were mature. They compared well with approaches in related sectors with which CEG members were familiar. The approach is proactive in extending lead times in the supply chain, adopting a distinctive pain and gain sharing approach and adhering to the prompt payment code. UK Power Networks adopted this approach to be resilient to uncertain events and able to cope with demand under the range of scenarios envisaged in the plan.

We would expect this to result in a supply community that would be loyal to UK Power Networks and that in turn this would be likely to mean that UK Power Networks would be well able to deal with the consequences of supply chain disruption.

We saw evidence that UK Power Networks was involving its suppliers in its commitment to its Net Zero objective, which entails an ambitious path for supply chain emissions.

5.11 Delivering an environmentally sustainable network – Chapter 11

5.11.1 CEG’s assessment of the Plan

Responds to changes in energy system?	Plans to deliver on expectation of improved environmental performance.
Meets Ofgem’s baselines and guidance?	Exceeds the baselines.
Gives stronger voice to customers and stakeholders?	Aligned with the preferences expressed by customers and stakeholders. Good use of co-creation approach.
<ul style="list-style-type: none"> Reflects needs and preferences? 	Specific improvement made in response to feedback from stakeholders and the CEG, which better reflects needs and preferences.
Is innovative and stretching?	Co-creation was innovative as was the Science Based Target including Scope 3 emissions. Commitments were SMART and stretching with clear reporting arrangements.
Gives confidence in delivery?	SMART commitments and a well-considered delivery strategy.

The Environmental Action Plan (EAP) was ambitious and closely aligned with the preferences expressed by customers and stakeholders.

Key areas of increased ambition were: more challenging embodied carbon targets (including scope 3), faster fleet electrification, a bigger reduction in leakage from oil filled cables and measures to develop a circular economy tool to address high impact materials.

5.11.2 Findings

The Final Business Plan gave full responses to all the issues raised by the CEG on earlier drafts.

The Sustainability Working Group (SWG) had sessions with the UK Power Networks team on the EAP, observed UK Power Networks’ co-creation process, and assessed the March and July draft Plans. Our challenge criteria are in Appendix B.11. The SWG was satisfied that UK Power Networks had addressed its challenges in the July Plan and we had limited subsequent engagement on the EAP.

Other than Commitment EAP 7 (undergrounding), we found the draft EAP did not require further scrutiny. In discussion with UK Power Networks we learned it was intending to revisit its vehicle electrification, to consider the use of local carbon insets as well as offsets and to refresh its engagement with stakeholders.

Our remaining questions about the EAP related to areas that UK Power Networks found more difficult to present clearly to customers in their research. These included undergrounding and oil filled cables. We cannot see whether the selected options represented what customers wanted

or that ambition was set accordingly. We note that as well as customer preferences there are important legal and engineering considerations that will affect decisions on these matters.

We found that the Final Business Plan met our criteria.

- The targets in the Plan were stretching and there will be improved reporting. UK Power Networks will embed an embodied carbon tool. It committed to the Business Ambition for 1.5°C for its full carbon footprint, including losses and scope 3 emissions.
- UK Power Networks had revised its targets for EV fleets and leaks from oil filled cables to make them more ambitious.
- It articulated the resources and mechanisms for evaluating and monitoring emissions in the supply chain, including embodied emissions and circular economy, and had adopted an ambitious circular economy framework.
- The Plan highlighted the differences between its three network areas and how it would manage delivery.
- Following additional customer and stakeholder engagement UK Power Networks undertook to underground overhead lines in Areas of Outstanding Natural Beauty and national parks, with 10% of the budget 'ring fenced' to take advantage of opportunities that arise from routine activities.

5.12 Enabling whole system solutions, including DSO – Chapter 12

5.12.1 CEG's assessment of the Plan

Responds to changes in energy system?	Central part of strategy for Net Zero at lowest cost – by underpinning flexibility markets and energy efficiency.
Meets Ofgem's baselines and guidance?	Whole system and DSO exceeded Ofgem's expectations.
Gives stronger voice to customers and stakeholders?	UK Power Networks' concept of whole system includes customers in their expanded role. The DSO plan includes substantial stakeholder engagement.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Commitment to make fuller assessment of benefits to customers.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	Local authority engagement. Local flexibility markets.
Is innovative and stretching?	Independent DSO for ED2 is a distinctive proposal. Extensive envisaged cooperation, including with all Local Authorities, is stretching. Innovation and transformation in data and digitalisation are central to the DSO proposal.
Gives confidence in delivery?	Achievement of the substantial benefits depends on work at policy level on who pays.

UK Power Networks' Plan, which included the DSO as a radical ambitious initiative went beyond Ofgem's guidance, for example by including the whole energy value chain, customers' extended role and societal benefits.

The Plan provides for establishing effective long-term cooperation with organisations having different objectives and funding arrangements. UK Power Networks had already initiated key relationships, for example with electricity transmission and distribution networks, contiguous gas networks and local authorities.

The DSO is central to UK Power Networks' plans for flexibility first to deliver savings in load-related expenditure and energy system costs. It plans to orchestrate a whole systems approach to planning and partnerships, including with local authorities and create a market for distribution flexibility services, which will be interoperable with other markets. The DSO will open substantial activities to competition that are not contestable at present³⁸.

5.12.2 Findings – whole systems

UK Power Networks thinking on whole systems has evolved over the course of our work. The Final Business Plan represents an ambitious set of proposals. It places whole systems approaches at the heart of the Plan and sees the ED2 period as crucial for demonstrating the viability and effectiveness of whole system solutions.

The CEG adopted a two-phase scrutiny of UK Power Networks' whole systems strategy. The initial phase focused on the questions in Appendix B.12. Following the July draft Plan, we identified whole systems as an area for further scrutiny. Our questions and UK Power Networks' responses are summarised in Appendix 6 of the Final Business Plan. We focused on the implementation of whole systems approaches, including cross sector and cross region working. We welcome the company's intention to make a fuller assessment of the costs and benefits, including co-benefits.

UK Power Networks' strategy acknowledges that the Net Zero target will require decarbonisation of the whole energy system and it covers three pillars: whole electricity, heat and transport. The vision recognised the developing multiple roles of customers and stakeholders. Whole system considerations lay behind UK Power Networks' plan to support all 127 local authorities plus community energy organisations by deploying a new local area planning team. Working with a diversity of customers and intermediaries to unlock demand side flexibility is central to the strategy and to how the DSO could unlock local demand side flexibility.

The whole systems thinking combined with DSO, digitalisation, data and the Local Area Energy planning framework are the engine of UK Power Networks' ED2 Plan. Progress will depend on turning the plans into tangible multi-party projects and benefits, with ED2 being the crucial period for embedding the approach.

UK Power Networks concluded that the majority of the benefits of the DSO (see next) would accrue across the whole energy system. It had identified the need for more work to develop the arrangements for who benefits and who pays. While this was beyond the remit of the CEG, it is a critical issue for the whole sector to resolve if it is to achieve whole systems benefits.

UK Power Networks has already engaged with a wide range of customers and stakeholders in different sectors and the Plan proposes to do more with key stakeholders, including local authorities and other energy and non-energy network businesses. The commitments made are supported by customer and stakeholder feedback. The process for delivering them will have to

³⁸ We consider the competition aspects in Section 5.15.

mature and network users will need help to understand whole systems issues and their role in developing propositions to put to UK Power Networks.

5.12.3 Findings – establishing a DSO

The Final Business Plan sets out the case for a commitment to establishing an independent and legally separate DSO by the end of 2023. This is ambitious with far-reaching implications for collaboration and efficiency improvements resulting from new markets and more competition. The business case was informed by and evaluated with stakeholders and connections customers. The CEG found that the insights, in combination with other factors, supported the DSO commitments.

Our further scrutiny focused on dependencies between the DSO and wider energy system developments, such as energy network digitalisation and smart meter rollout and between the DSO proposals and third parties. These included independent flexibility market platform providers and intermediaries such as aggregators and energy suppliers.

In response to challenge from the CEG and feedback from Ofgem, UK Power Networks' Plan gives evidence (Appendix 18b), that dependencies have been mapped and management and mitigation strategies are in place. One example is the increased use of low voltage network monitoring and modelling to mitigate the risk that smart meter uptake is lower than expected.

The Plan explains that UK Power Networks is already collaborating with relevant third parties, including flexibility market platform providers, aggregators and energy suppliers, and investing in the necessary products and services. The extent to which small customers, including households, will provide flexibility and other DSO services will depend, among other things, on the effectiveness of the intermediaries.

5.13 Unlocking the potential of digital and data – Chapter 13

5.13.1 CEG's assessment of the Plan

Responds to changes in energy system?	Good assessment of digital trends. Digitalisation and open data underpin all the key strategies in the Final Business Plan as reflected in the integration with the seven keys to success.
Meets Ofgem's baselines and guidance?	Adopted the Energy Data Taskforce recommendations.
Gives stronger voice to customers and stakeholders?	Responds to user and stakeholder feedback.
<ul style="list-style-type: none"> Reflects needs and preferences? 	Outcomes for customers not included in this section – will arise in other parts of the Plan. Valuations to customers to come under commitment DBP1.
<ul style="list-style-type: none"> Responds to regional circumstances? 	Local authority access to tailored data and tools to support Net Zero plans.
Is innovative and stretching?	Challenging investment programme.
Gives confidence in delivery?	Early projects delivered successfully.

UK Power Networks' strategies for data and digital are central pillars to delivery of the ED2 strategy. Chapter 13 is well integrated with other parts of the Plan and demonstrates how UK Power Networks intends to enhance its digitalisation and data strategy by learning from best-in-class benchmarks.

5.13.2 Findings

The Plan makes clear the importance of digital and data in unlocking value and benefits to customers and stakeholders in ED2. It explains how investment in IT infrastructure will enable the delivery of digital solutions and capabilities, including those underpinning the independent DSO. The Plan (page 153) refers to positive feedback from the sector on a flexible solution that UK Power Networks has already deployed.

The chapter has a section, in response to feedback from the CEG and the CG, entitled 'What this means for our customers' (page 154). This explains the central role of digital and data in delivering each of the seven keys to success – both by UK Power Networks and by third party users. It describes and quantifies benefits within the business but does not specify other than at a general level what the value and outcomes for customers will be. These will be manifested in other parts of the business. Commitment DBP1 undertakes to prioritise work in this area based on "stakeholder engagement and an understanding of value to consumers". It is not clear from the Plan how this will have regard to regional considerations.

We identified digitalisation and data for further scrutiny in Stage 4, and as a consequence the Final Business Plan includes improvements, including better integration of data and digitalisation with the rest of the Plan and material on customer benefits. People and Process (Appendix 17a p.36) has milestones for delivering a customer first approach with clear outcomes and the Plan includes milestones for UK Power Networks' overall digital transformation. The Plan shows the line of sight between major deliverables and stakeholder and customer insights, which enables the clear articulation of the digital and data strategy.

The Plan and associated Investment Justifications describe the proposed investments in smart networks and the business cases for the totex, which show substantial positive net present values. Figure 40 says that customer facing solutions will deliver choice, convenience and satisfaction although it does not describe or attach values to tangible customer outcomes.

Issues of trust relating to data privacy, security and transparency are highlighted, showing that UK Power Networks understands the importance and practicalities of managing security and privacy, without unduly limiting the benefits. The Engagement Summary refers to customers' privacy in relation to smart meters. The response includes: a Smart Meter Data Privacy Plan developed after engagement and interviews with 500 domestic and business customers, business groups, local authorities and housing associations; a data triage process developed in partnership with the Open Data Institute to balance the value of openness with privacy and security mitigations.

5.14 Innovation

5.14.1 CEG's assessment of the Plan – Chapter 14

Responds to changes in energy system?	Integrated with other parts of the plan. Planned innovations are in response to the changes.
Meets Ofgem's baselines and guidance?	Goes beyond Ofgem baseline for innovation and its funding. Benefits manifested in all parts of the business.
Gives stronger voice to customers and stakeholders?	Based on extensive engagement and co-creation.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Based on insights from stakeholders and co-creation Justified in terms of benefits to customers.
<ul style="list-style-type: none"> • Responds to needs of vulnerable customers? 	Addresses vulnerability issues. Specific provision for vulnerability linked innovation in ED2.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	Addresses network performance issues and customer circumstances, for example off-gas network.
Is innovative and stretching?	Ambitious – intends to improve on good performance in ED1, including collaboration.
Gives confidence in delivery?	Dedicated team, good record in ED1, well justified plan and performance monitoring and review process give confidence.

UK Power Networks demonstrated that its innovation record in ED1 is the most impressive in the sector. Its estimate of benefits during ED1 is £284 million. At £33.93 per customer this is three times that of other DNOs.

The Plan for ED2 says “Our intention is to do more, to do it better and to do it faster”. The Innovation Strategy is of a high standard and is well justified in terms of anticipated benefits to customers.

5.14.2 Findings

Chapter 14, backed up by the Innovation Strategy in Appendix 20 explains how innovation will help UK Power Networks address the questions posed by Net Zero and customer vulnerability. It is based on a dual approach of incremental and transformational innovation with high levels of third-party engagement. The chapter is well balanced and incorporates good examples and references to the results of stakeholder engagement in developing its Innovation Strategy and the effective use of the Innovation Council. It addresses points the CEG had raised in the review and challenge process.

The Final Business Plan proposes to build on what the Business Improvement Team established in 2018 and its “MyIdeas” platform. UK Power Networks says it will increase collaboration to unlock industry challenges and target societal good. It proposes to increase annual expenditure on innovation from £15 million to £23 million in ED2. It intends to review its strategy every two years given the changing external environment.

The R&RWG held a series of meetings with UK Power Networks’ innovation team, including a deep dive into innovation funding and reporting. We observed sessions of the Innovation Council and the strategy co-creation sessions including a successful interactive webinar with 60 stakeholders, which focused on innovation themes for ED2 and options development. We encouraged UK Power Networks to develop its innovation themes and it provided full responses to the issues we raised.

Our challenge criteria are in Appendix B.15. Our findings on the Final Business Plan were as follows.

- The Plan is ambitious and its proposals well-justified.
- Innovation is embedded in BAU and not all innovation in ED2 will be funded only by customers. There is substantial BAU expenditure and shareholders will match the proposed totex allowance.
- The benefits of ED1 innovations are quantified, including “smart savings” (Fig 42).
- There is a good process to roll out innovations proven during ED2, building on the deployment strategy in ED1.
- There are credible plans to involve third parties in innovation – commitments to collaborate on the Network Innovation Allowance, with 80% of the funding ring-fenced for third parties, and providing support in securing money from the Strategic Innovation Fund.
- The Network Innovation Allowances requested were reasonable compared with those of the other DNOs at draft plan stage.
- Judgments and trade-offs made by UK Power Networks were debated at the Innovation Council and co-creation meetings and probed by CEG members during the scrutiny process.

5.15 Competition – Chapter 15

5.15.1 CEG’s assessment of the Plan

Responds to changes in energy system?	Partly driven by DSO developments.
Meets Ofgem’s baselines and guidance?	Goes well beyond Ofgem’s requirements.
Gives stronger voice to customers and stakeholders?	Strong stakeholder input to connections and supply chain competition.
• Reflects needs and preferences?	Benefits will be in connections and more widely.
• Responds to regional circumstances?	N/A
Is innovative and stretching?	Innovation in connections. Radical plans for supply chain competition.
Gives confidence in delivery?	UK Power Networks responded to challenges but the market is not entirely within their control.

We found UK Power Networks’ competition proposals went beyond Ofgem’s requirements, in terms of the scope of activity that will be subject to competition. This is linked to its proposals on the DSO, which strengthen and enable UK Power Networks’ commitment to competition.

The CEG has seen evidence of UK Power Networks’ use of customer and stakeholder input in the areas of connections and supply chain competition. We observed sessions in UK Power Networks’ connections co-creation work and found that this was a robust process. In the

Innovation chapter, UK Power Networks sets out its intentions to broaden the range of stakeholders with which it engages to avoid the risk of “the same old song.”

Based on input from customers and stakeholders, UK Power Networks’ plans for major connections, including the proposals to extend the scope of competition, are innovative and ambitious.

5.15.2 Findings

From an early stage, we explored UK Power Networks’ approach to competition in connections (see Section 5.8). Our challenge criteria are in Appendix B.16.

Subsequently, we considered early and late competition and competition in the supply chain (native competition). These were topics selected for further scrutiny after our review of the July Plan.

Early and late competition

UK Power Networks had no schemes meeting the criteria for early or late competition.

Competition in major connections

CEG members observed several co-creation sessions on connections and saw a robust standard of challenge and debate. UK Power Networks has been responsive to its interaction with stakeholders and customers. We found UK Power Networks’ plans for competition in major connections went beyond Ofgem’s requirements and were soundly based on the results of customer and stakeholder (third party connection providers and IDNOs) engagement.

UK Power Networks is proposing to extend competition into activities that are not currently contestable. Among other things we would expect this to offset to some extent the negative consequences for competition of Ofgem’s minded to decision on the Access Significant Code Review. The measures to support the independent connections sector should be beneficial for customers in terms of cost, innovation and broadening the resource pool by increasing work volumes. The plans include DSO proposals to promote greater efficiency in UK Power Networks’ own activities.

Value for money for small connections

The CEG questioned whether customers for small connections, including new connections and service relocations for domestic and small business customers, were getting good value for money, given that Ofgem had deemed small connections to be non-contestable.

UK Power Networks referred to the answers to a question about value for money in Ofgem’s Broad Measure of Customer Satisfaction survey to demonstrate that its provision offered good value for money. UK Power Networks says also that regulatory reporting ensures charges are cost reflective. These points are helpful but do not necessarily demonstrate good value for money.

UK Power Networks has gone beyond the regulatory requirement in this area and introduced a “Small Service Self-Serve” product. This directs all who ask UK Power Networks for a connection to the fact that they can get connections from independent providers. Under this scheme, independent providers have made over 500 connections in recent years.

The CEG finds this to be a positive initiative by UK Power Networks. While, anecdotally, there may be a supply side problem in that some customers have difficulty finding an independent provider to quote for their work, it is not obvious what UK Power Networks can do about this. The CEG concludes that the position might benefit, as have other areas in the Plan, from focused engagement and innovative thinking by UK Power Networks on how to stimulate this end of the connections market.

Supply chain competition

The CEG provided a strong challenge to UK Power Networks on its ability to flex its operations including labour and supply chain to deliver for customers in uncertain futures. UK Power Networks provided us with good evidence of its approach to supply chain engagement and procurement and its ability to respond to changed circumstances and demands. UK Power Networks' Chartered Institute of Procurement and Supply Platinum status supports our view.

We understand that UK Power Networks' plans for expanding competition are to ensure it has a leading market position following the implementation of Ofgem's Significant Code Review. UK Power Networks' DSO proposal will open up new possibilities for competition for work that until now has been the preserve of the DNO.

5.16 Managing uncertainty – Chapter 16

5.16.1 CEG's assessment of the Plan

Responds to changes in energy system?	Subject to the scenarios considered, this is a good strategy for responding to uncertainty, using the tools provided by Ofgem.
Meets Ofgem's baselines and guidance?	Makes good use of Ofgem tools.
Gives stronger voice to customers and stakeholders?	Use of UMs is in customers' interest by avoiding unnecessary cost in the transition to low carbon.
<ul style="list-style-type: none"> Reflects needs and preferences? 	Balances interests of customers and society.
<ul style="list-style-type: none"> Responds to regional circumstances? 	Use of forecasts based on local data is important to UK Power Networks' ability to manage uncertainty.
Is innovative and stretching?	Part of UK Power Networks' distinctive strategy.
Gives confidence in delivery?	Conditional use of UMs allows uncertainty to be managed in ED2. The CEG encourages UK Power Networks to explore plausible extreme scenarios to test the strategy.

The CEG finds that UK Power Networks' decarbonisation strategy is distinctive and represents an agile and appropriate way of proceeding in ED2 on the route towards Net Zero.

This is subject to a proviso about possible consequences in ED3 and beyond of the way the limited range of scenarios used in the plan.

5.16.2 Findings

Chapter 16 of the Final Business Plan has addressed the issues we raised. It explains the strategy for identifying and managing uncertainty and has estimated the impacts on bills. It has

explained how UK Power Networks used the DFES and the Climate Change Committee scenario in formulating its commitments and translating them into load-related expenditure. UK Power Networks commissioned an external audit of the key variable of utilisation.

The Final Business Plan (Chapter 17.5) has an explanation of the estimated potential impact on bills of Ofgem's minded to decision on Access and Forward Charging.

UK Power Networks says that the main risk for ED2 relates to the rate of low carbon device uptake and its location and how fast energy efficiency and flexibility develop. If deployment is higher than anticipated or if energy efficiency and flexibility do not materialise as anticipated, then, under the proposal in UK Power Networks' Plan, the uncertainty mechanisms will deploy and, other things being equal, bills will be higher. Under no scenario does UK Power Networks envisage being a blocker to low carbon technology uptake.

There is a cap of £0.9 billion on the amount that can come to UK Power Networks through the UMs. This corresponds to the totex under UK Power Networks' fifth and highest cost scenario. If the outcome is outside this range, any further expenditure would require separate approval from Ofgem³⁹.

5.16.3 Forecasts, scenarios and regional forecasts

Ofgem's guidance⁴⁰ envisages the ED2 plans will use the DFES that are related to the Future Energy Scenarios developed by National Grid ESO. UK Power Networks' distribution scenarios follow the same nomenclature as the ESO scenarios. Element Energy modelled the scenarios and the assumptions were tested in extensive stakeholder engagement, including with industry experts and local authorities. The main differences between the ESO scenarios and those of UK Power Networks relate to differences in predicting the numbers of electric vehicles and heat networks by region. The differences are well justified in the documentation (Appendix 21b).

Applying the four DFES in the Final Business Plan results in a narrow range of totex estimates with the highest (System Transformation) being 4% greater than the lowest (Consumer Transformation), which forms the basis of UK Power Networks' ex-ante allowance for load related expenditure. Load related expenditure in the different scenarios is based on results from UK Power Networks' Strategic Load Forecasting System, which allows for changes to utilisation of the primary and secondary networks that could, for example, trigger reinforcement and service changes required, such as fuses, service upgrades and service unlooping to accommodate low carbon device take-up.

The base case scenario Consumer Transformation has high deployment of low carbon technologies (LCTs) and the effect on the network is offset by a high uptake of energy efficiency and flexibility. Lower than expected LCT deployment and energy efficiency and flexibility are the key sensitivities and form the basis of the proposed UM. This scenario accords with UK Power Networks' energy efficiency and flexibility first strategy outlined in Chapter 8.

The CEG questioned whether the scenarios in the Final Business Plan were broad enough to include plausible extremes of outcomes including the worst case for customers' bills. This question arose in part because of the experience in ED1, when the take up in ED1 of LCTs was about 20% of that expected. Expert members of the CEG thought that that the uncertainty faced

³⁹ UK Power Networks referred to a new incentive on the accuracy of utilisation reporting. It did not discuss this with the CEG, nor does the Plan contain information on how it would operate.

⁴⁰ Para 4.24

by the sector is at an all-time high and that there is a significant prospect that the outturn in ED2 would be outside the scenarios originally developed by National Grid ESO and refined by UK Power Networks, for regional considerations.

UK Power Networks added a fifth scenario based on work by the Climate Change Committee (CCC), which explores the impact of limited exploitation of flexibility and efficiency in a future with high LCT deployment. The CCC scenario results in totex 21% higher than in the lowest expenditure scenario. UK Power Networks has undertaken sensitivity analysis on these numbers but this does not extend the extremes of LCT deployment⁴¹.

UK Power Networks agreed that there were substantial uncertainties about government policy and the role of electricity in future heating and transport, including the as yet unknown role that hydrogen might play but it did not think that this would justify a shift to more UMs in its Plan.

When challenged, UK Power Networks maintained that the ranges it had modelled included plausible extremes and made the following points.

- It had collaborated with leading experts on the development of its DFES.
- It had assessed its scenarios against those of other organisations and explained the differences.
- Variations beyond those envisaged in the Plan would be likely to play out after the end of the ED2 period, when policy on heat in existing buildings would be made.
- Its improved monitoring would quickly pick up any divergence from the predictions on which the Final Business Plan was based.
- If significant divergence were observed, the Net Zero re-opener would address this.

The CEG noted Ofgem's steer towards using the ESO scenarios and acknowledged the validity of UK Power Networks' arguments. Even so, we think it is important to consider more extreme plausible scenarios as a way of assessing the limits of the strategy and to avoid decisions in ED2 that would unduly constrain options thereafter. Subject to this proviso and given the uncertainties involved, the CEG finds that UK Power Networks' decarbonisation strategy represents an agile and appropriate way of proceeding in ED2 on the route towards Net Zero.

5.16.4 Uncertainty mechanisms

UK Power Networks Final Business Plan provides for up to £0.9 billion in UMs. The Final Business Plan proposes four mechanisms, a reduction relative to the July Plan. Three of the UMs, representing 80% of the potential totex, relate to demand uncertainty (primary and secondary reinforcement, connections within the price control and service changes) and the fourth to diversions. We find that the rationalised mechanisms are well justified.

The proposed secondary reinforcement UM is based on a capacity utilisation driver. UK Power Networks will monitor asset utilisation and take action in the first instance to procure flexibility services, and then to reinforce as utilisation crosses certain thresholds. Expenditure that is not in the ex-ante allowance would be funded through the UM.

⁴¹ One scenario examines a slightly higher heat pump deployment.

UK Power Networks has had the approach verified by an external consultancy. It refers to asking for an incentive to reward the accuracy of utilisation reporting. The Plan does not give any details and UK Power Networks has not discussed the proposal with the CEG.

Between the July plan and the Final Business Plan, there has been a shift of £112m of load related expenditure for primary (£16 million) and secondary (£16 million) reinforcement and service changes (£52 million) from uncertainty to ex ante totex. The maximum UM in the July Plan had been £1.1billion, compared with £0.9billion in the Final Business Plan.

The CEG questioned the rationale for this and asked whether the shift meant that aspects of uncertainty had become less uncertain between July and December or whether it reflected a change in UK Power Networks' strategy set out clearly in the July Plan and repeated in the Final Business Plan (Chapter 16, Figure 51) or whether there was another reason.

This discussion has taken place after UK Power Networks submitted its Final Business Plan to Ofgem on 1 December 2021. UK Power Networks identified two factors that had led to changes in the position.

- After the July Plan, the CG had asked whether some expenditure should not be in UMs as these should relate to things outside the company's control, mainly demand led. UK Power Networks accepted this was valid and it reclassified expenditure from uncertainty to Price Control Deliverables⁴².
- After the initial submission in July, Ofgem had issued additional guidance making it clear that the overriding demand on the DNOs in ED2 would be to support the transition to low carbon at the lowest cost to customers. It emphasised this by saying that if the distribution network is seen to be a barrier to the adoption of LCT, ED2 would be considered a failure.

With respect to the second of these UK Power Networks explained that it had made an explicit adjustment to the balance it struck between the risks to customers of, on the one hand, paying too much or too soon for capacity and, on the other hand, of being unable to connect or if connected to get power to their low carbon devices. As a result of this rebalancing UK Power Networks had decided to reduce the risk that it would block low carbon technology deployment and use by lowering the utilisation threshold that would trigger enhancement expenditure on the primary and secondary networks and by putting in more service changes, such as fuses, wire upgrades and unlooping into totex.

UK Power Networks said these changes represented a new balancing of the risks and not a reappraisal of uncertainty or a change in strategy. It said the changes did not represent a shift in the approach from Option 2 in Figure 51 (Go smart and flex up) towards Option 1 (Go all in ex ante) but were designed to reduce the risk that UK Power Networks might be seen as a blocker to decarbonisation. We agree that in the circumstances the changes UK Power Networks has proposed are mitigations of this risk. UK Power Networks acknowledged that the trade-off was an increase in the risk that customers pay too much or too soon. At the same time, it remains the case that the proposed UMs will pick up the consequences of unexpected changes as they occur.

⁴² To note the customer protection that the PCD provides in that if the expenditure is not needed, customers do not pay.

The CEG is reassured that the strategy we supported in the July Plan remains fundamental to the Final Business Plan.

5.16.5 Access and forward charging

UK Power Networks considered the effect of Ofgem's minded to decision on Access and Forward Charging. It forecasts additional costs of between £160 million and £380 million in ED2. The £160 million forecast relates to additional contributions from UK Power Networks to fund the socialisation of connection costs that are presently paid by the connecting parties. The additional £220 million in the worst case relates to network reinforcement, an increased number of connections because of lower charges connections defer until after the changes take effect and new contracts, for example to upgrade flexible to firm connections.

The CEG has reviewed these estimates and finds the methods used to derive them reasonable. Further investigation is beyond our remit.

5.16.6 Real price effects, ongoing efficiency and regional factors

The CEG has no locus in these matters.

5.17 Costs and financial information – Chapter 17

5.17.1 Costs

Ofgem's guidance to the CEGs is that they should challenge the DNOs' proposed outputs and associated totex and not focus on cost assessment, which is a comparative exercise to follow submission of the DNOs' business plans.

This means the CEG is not in a position to challenge UK Power Networks' costs. We have challenged the outputs proposed in the Plan from the perspective of customers and reviewed the extent of their alignment with the results of customer research and stakeholder engagement and other sources of customer information. The results of these challenges are in the relevant sections of this report.

5.17.2 Financial Information

Ofgem's guidance is that the CEGs should not challenge the DNOs' financing arrangements.

5.18 UK Power Networks’ regional planning

5.18.1 CEG’s assessment of the Plan

Responds to changes in energy system?	Recognises need for local action in getting to Net Zero and the differences in approach and progress at Local Authority level.
Meets Ofgem’s baselines and guidance?	Meets Ofgem’s guidance.
Gives stronger voice to customers and stakeholders?	This evolved positively during the planning process.
<ul style="list-style-type: none"> • Reflects needs and preferences? 	Regional customer insights will be improved in ED2.
<ul style="list-style-type: none"> • Responds to regional circumstances? 	Through innovative local authority engagement using a tiered approach.
Is innovative and stretching?	Open data and approach to local authority engagement are innovative and stretching.
Gives confidence in delivery?	Tiered engagement is based on a test and learn approach. Ongoing engagement programme gives confidence.

The CEG concludes that UK Power Networks’ Plan responds to regional and local considerations and proposes an innovative and ambitious approach to engaging with all of its local authorities in ED2.

The Final Business Plan recognises the need for local planning to support the transition to Net Zero. It highlights the importance of local authorities and stakeholders in the transition and recognises that local authorities are at different stages of maturity in their Net Zero plans. UK Power Networks proposes a differentiated process for collaboration with the local authorities that is backed by substantial dedicated resources, including an impressive data and analytics capability, which local authorities can access. We observed UK Power Networks’ engagement with the local authorities and they welcomed the proposals.

The three regional network plans are accessible, engaging summaries of UK Power Networks’ intentions for its three regions. They are examples of good customer communication.

5.18.2 Challenge process

UK Power Networks’ approach to regional planning is in the Executive Summary (pp 9, 12 and 15) and set out in Appendix 19b - Local Area Energy planning framework. It is also relevant to Chapter 8 – Decarbonising our communities and Chapter 12 – Enabling whole systems solutions.

In response to the CEG’s early challenges, UK Power Networks has made considerable efforts to improve its understanding of local needs and preferences and how to support local authorities and other regional stakeholders in developing their energy planning frameworks. It has made substantial advances in its approach to the regions and is now in a position where it is looking to support regional stakeholders and provide solid foundations for local

decarbonisation. We believe that, as the Final Business Plan claims⁴³ the tiered approach is a “DNO first.”

Taken as a whole, the work is thorough and targeted and we find UK Power Networks’ thinking to be mature and well justified.

Given the importance of the local participation in the energy transition, we have provided a fuller account of our engagement with UK Power Networks. The CEG’s Regional Working Groups, which included people with experience of engaging with UK Power Networks, undertook focussed scrutiny of the regional challenges in meetings with the management team during 2020. We observed UK Power Networks’ regional webinars on the DFES in mid-2020 and had a further round of meetings after the second round of DFES webinars which we observed in February 2021.

UK Power Networks’ customer research had good regional samples but did not reveal distinctive regional needs and preferences. The Plan responds well to the results of UK Power Networks’ extensive engagement with local authorities. The nature of regional differences in customer needs and preferences is an issue for attention in future research.

We developed challenge criteria based on Ofgem’s guidance. These are in Appendix B. While UK Power Networks gave full responses to our questions, the regional material in the March draft Plan was limited. UK Power Networks told us it was undertaking work to consider local Net Zero initiatives and evaluating new approaches to local energy planning. Its purpose was to identify what could be done given the different resource and knowledge levels in local authorities. It was considering the Energy Systems Catapult’s approach developed with regional planning agencies. The CEG flagged its intention of returning to this.

UK Power Networks’ draft Plan contained more information on regional issues and locational challenges, but this was only a snapshot of its work in progress on its regional approach.

In August, it informed us of progress on regional matters.

- It shared a draft of Appendix 19(b). This was an important document showing willingness to think “outside the box” on support to the climate action plans of regional and local authorities⁴⁴. It provided helpful amplification and support of positions in the July Plan.
- Appendix 19(b) concluded that Local Area Energy Planning as advocated by the Energy Systems Catapult is labour intensive and that most authorities do not have the skills and resources to implement it. Instead, it proposed a three-tier framework⁴⁵. It “road tested” its proposed approach with Essex County Council (ECC).⁴⁶
- UK Power Networks facilitated fourteen county-level sessions to present its framework, including how it might develop an online energy planning tool.
- The CEG’s regional groups observed further webinars in each region that discussed with local authorities the emerging thinking⁴⁷. We found them to be effective engagement events.

⁴³ P 133

⁴⁴ Local Area Planning Framework, UKPN with Baringa, July 2021.

⁴⁵ Final Business Plan p 133

⁴⁶ ECC’s feedback was that the framework was “both clear and proportionate.” UK Power Networks told us that ECC highlighted that the process helped them understand what UK Power Networks would need from them to help justify investment.

⁴⁷ An important learning from the county and regional sessions was that council plans are not yet well-developed and they see themselves at the start of the journey.

5.18.3 Findings

The Final Business Plan shows further evolution in UK Power Networks' thinking and confirms the progress noted above. While recognising the need to retain an agile approach, flexible to future change, it majors on the following.

- The pilot with Essex County Council and five other councils (p85).
- Its intention (p133) to work with 127 planning authorities on tier 1 plans, 40-50 on tier 2 and ten on tier 3, as well as community energy groups.
- The “self-service” tool it proposes to develop supported by a new digital platform.
- Commitment WS2 to deploy Local Area Energy planning at a cost of £2 million pa (p134).

A noteworthy enhancement in the Final Business Plan is the commitment to annual engagement with every local authority on its climate action plan. UK Power Networks is looking to extend its support to helping authorities with bids for funding. It intends to deploy twenty people in supporting local authorities, an increase from the seven indicated in the July Plan.

UK Power Networks' thinking is advanced and valuable to local authorities as the key regional stakeholders. They find it hard to do what is necessary to achieve Net Zero targets and UK Power Networks has acknowledged the importance of supporting them. After CEG questioning, UK Power Networks' Final Business Plan included support for community energy. It has developed a specific commitment (WS1) and intends to expand the scope of its support to include community energy groups, earmarking them as tier 1 in the first instance.

We note that there has been a substantial increase from four to fifteen in the number of county councils expressing support for UK Power Networks' intention to implement a Local Area Energy planning framework.

Regional summaries of UK Power Networks' plans

The CEG supported the intention to provide summaries of UK Power Networks' plans for each region specifically designed for non-expert stakeholders and customers.

Initially, we had reservations about the format and content of the summaries. UK Power Networks has improved them substantially to accompany the Final Business Plan.

The three network plans are accessible, engaging summaries of UK Power Networks' plans for its three regions. They are examples of good customer communication. Jargon is minimal and the language is such that customers and non-expert stakeholders will understand. They give the impression of a company having a conversation with its customers about things of mutual interest. The invitations to provide views come across as genuine and go out of their way to stress that the level of involvement can be as much or as little as wanted.

The revised versions show that UK Power Networks has responded to the CEG's challenges to produce useful summaries that can work across its customer and stakeholder bases.

6 Next steps

We would like to hear your comments on this report.

If you have any comments or questions, please submit these via our website
<https://ceg.ukpowernetworks.co.uk/>

Or you can send an email to ceg@ukpowernetworks.co.uk

Timetable

Ofgem issued a call for evidence on the ED2 business plans.

<https://www.ofgem.gov.uk/sites/default/files/2021-12/21-12-06%20RIIOED-2%20Call%20for%20Evidence%20FINAL.pdf>

There will be an open hearing for each DNO in March 2022. The open hearing for UK Power Networks will take place on 15 March 2022.

You can register to attend the open hearings using Ofgem's website.

Appendix A – The CEG’s process and interactions with UK Power Networks

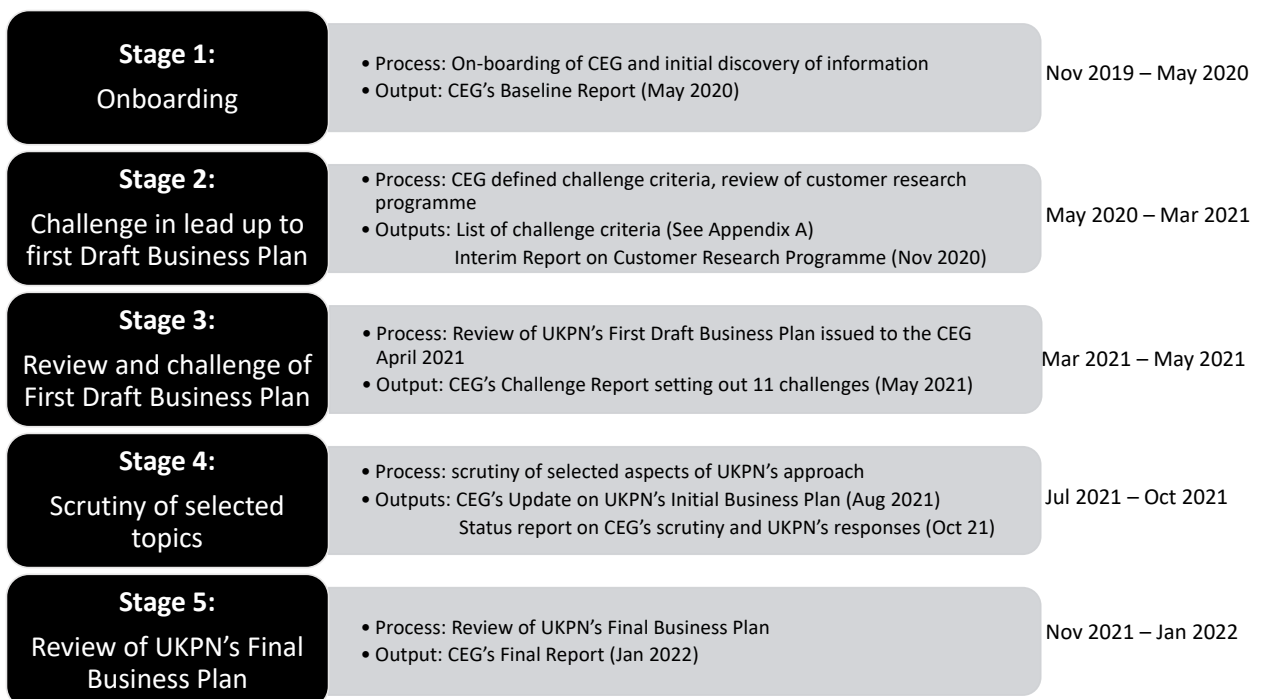
A.1 Formation of the CEG

Information on the establishment, membership and terms of reference of the CEG for UK Power Networks is on the CEG’s website <https://ceg.ukpowernetworks.co.uk/>

At the inception of the CEG in October 2019, the CEO of UK Power Networks and the CEG chair agreed a joint objective, namely that UK Power Networks would produce the best Business Plan for ED2 and that the CEG would contribute to this by challenging the development of the Plan from an independent perspective. In doing this it would seek to ask all the questions that well-informed customers and stakeholders might wish to ask.

A.2 Review and challenge process

The scope of the CEG’s work with UK Power Networks began at the end of 2019 and has been extensive. It had five main stages marked by a series of reports, which formed the milestones in our process.



CEG members did not examine every issue at every stage. We decided which issues we thought were most material given the information we had received and the evolving guidance from Ofgem.

We developed the criteria against which we reviewed UK Power Networks' planning in Stage 2. They were based on Ofgem's Business Plan Guidance and Enhanced Engagement Guidance documents and on a more detailed presentation Ofgem made to the CEG chairs in August 2020, which we referred to as the Blue Boxes. Additional criteria were on the basis of CEG member expertise. The full set of criteria is in Appendix B to this report.

Stage 3, in which we reviewed the first complete internal draft of UK Power Networks' Business Plan, was pivotal to the process. We received the Plan in tranches in March and April 2021. A subgroup of the CEG reviewed each section and we brought together the conclusions in a report to UK Power Networks, which included eleven substantive challenges. After UK Power Networks had considered our report, it acknowledged the validity of the challenges.

Stage 4 began with a constructive process in which UK Power Networks developed responses to the challenges and amended its plan. At this stage, the CEG identified topics and issues for further scrutiny. These were

- the Line of Sight and Engagement Summary documents
- ongoing engagement
- consumer value propositions
- organisational resilience
- network reliability
- Whole systems approaches
- digital and data
- competition
- regional planning.

UK Power Networks provided additional information and we had scrutiny meetings sessions on each issue with the UK Power Networks teams⁴⁸. Again this led to significant changes to the Plan.

A.3 The CEG's proceedings

The CEG has met monthly throughout the process. In addition, it formed sub-groups.

- Groups for Stages 1 to 3
 - Working groups each with relevant experts and a chair
 - Customer Working Group (CWG)
 - Resilience and Reliability Working Group (R&RWG)
 - Sustainability Working Group (SWG)
 - Three regional groups, one for each of UK Power Networks' licence areas.
 - A Core Group including the working and regional group leads and two specialist members

⁴⁸ We had a scrutiny session on the intersectional aspects of customer vulnerability.

- At the beginning of Stage 4, as the CEG's agenda became more focused, we replaced the working, regional and core groups by a single group including the heads of the regional and the working groups. It was referred to as "the Heads" and was chaired by the CEG deputy chair.
- When we had identified the areas for scrutiny in Stage 4, smaller groups were given the task of conducting the scrutiny and engaging with UK Power Networks.

Throughout the CEG's work there were regular meetings of the full CEG and of the subgroups (initially in person, subsequently online and hybrid) with UK Power Networks' teams to understand the company's emerging thinking and proposals. There were fortnightly meetings of the CEG chair and the CEO of UK Power Networks. The CEG chair attended meetings of the UK Power Networks Board and its ED2 sub-committee to report on progress. CEG members observed a sample of UK Power Networks' stakeholder engagement and co-creation events.

An analysis of the activities of the CEG throughout the process is in Appendix 6 of UK Power Networks' Final Business Plan and we have not repeated this information in our report.

The CEG continued to engage with UK Power Networks after the Final Business Plan had gone to Ofgem. This was on issues that arose in the writing of its report, mostly relating to changes between the Final Business Plan and the July plan, including customer research and stakeholder engagement, the CVPs and the use of scenarios and the uncertainty mechanisms.

A.4 Independence of the CEG

In setting the terms of reference for the CEGs, Ofgem said they should be independent of the DNO and of Ofgem. The CEG has provided challenge to UK Power Networks' evolving thinking and successive drafts of the Business Plan, asking whether and how well they reflected the needs and preferences of customers and stakeholders.

The chair of the CEG was appointed by UK Power Networks following a competitive process. The appointment of members to the CEG was at the discretion of the CEG chair, who chose people on the grounds of their independence and the particular contributions they could make. The members of the CEG have a wide range of relevant knowledge, skills and experience.

The CEG is independent of Ofgem as well as of UK Power Networks. Ofgem reviewed proposed member appointments. It retained a veto, which it did not exercise.

UK Power Networks has not sought to restrict the scope or depth of our challenge or the time and resource needed to deal with our requests for information.

It has responded constructively to the challenges we have raised and acknowledged the legitimacy and contribution of the CEG in the Final Business Plan.

Appendix B The CEG’s challenge criteria

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B.2	Ongoing engagement in ED2.....	2
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B.8	Climate resilience	5
B.9	Workforce resilience	5
B.10	Supply chain resilience	5
B.11	Delivering an environmentally sustainable network.....	5
B.12	Whole system	6
B.13	Establishing a DSO.....	6
B.14	Unlocking the potential of digital and data.....	7
B.15	Innovation.....	7
B.16	Competition	7

B.1 Research and engagement for the ED2 business plan

- ESE 1 - Quality of engagement with the CEG (positive, open and transparent engagement with the CEG; appropriate, relevant and timely information, resources and access to staff; responsiveness and receptiveness to feedback and challenge).
- ESE 2 - Quality of stakeholder engagement UK Power Networks has undertaken to inform their proposed research (looking for clear underlying strategy about purpose of research/engagement; timely and well communicated; well-structured, robust, inclusive).
- ESE 3 - Quality of customer research programme, including whether business plans demonstrate value for money by taking account of any willingness to pay (looking for well-designed research methods appropriate to the audience and executed to the highest standards; flexible programme management to gather additional information on unexpected or new stakeholder views as they emerge).
- ESE 4 - Research and engagement activities and outputs joined-up and not treated in isolation; evidence of use of multiple sources of data or multiple approaches to analysing the data to build credibility of the outcomes.
- ESE 5 - Clear links between engagement and research outputs and how they inform the Business Plan; outputs joined-up and not treated in isolation; evidence of multiple sources of data and multiple approaches to analysing the data to build credibility of the outcomes.

B.2 Ongoing engagement in ED2

- OE 1 - UK Power Networks demonstrates approach in line with Ofgem's baseline expectations (set out in Business Plan guidance) and, beyond this, takes a strong customer-first approach in its research and engagement activities.
- OE 2 - CVP proposals deliver value above Ofgem's baseline expectations.
- OE 3 - Metrics are relevant and robust and targets ambitious.
- OE 4 - Plans are justified by views derived from stakeholder engagement and research.
- OE 5 - Robust and relevant programme of ongoing customer research and engagement.

B.3 Customer service

- CS1 - Plans in place that will continue to improve the quality of customer service delivered to customers
- CS2 - Customer satisfaction survey designed to help drive improvements in the quality of services while ensuring it captures key services and customer groups (includes separate reporting of PSR and LCT customers). DNOs working collaboratively to research method changes and content of the survey.
- CS3 - Plan in place to improve the handling of customer complaints (including SLAs designed to improve the speed of complaints handling; customer-centric approaches for handling and resolving repeat complaints; complaint management process and company culture open to evaluating, learning from and acting on complaints and feedback)

B.4 Customer vulnerability

- CV 1 - The plan effectively supports consumers in vulnerable situations, particularly those most vulnerable to a loss of supply, through a sophisticated approach to the management, promotion and maintenance of a PSR register.
- CV 2 - The plan maximises opportunities to identify, and deliver support to, consumers in vulnerable situations through the smart use of data.
- CV 3 - The plan understands new forms of vulnerability, in particular by identifying blockers to participating in a smart flexible energy system.
- CV 4 - The plan embeds the approach to protecting the interests of consumers in vulnerable situations throughout a company's operations to maximise the opportunities to deliver support.
- CV 5 - Consumer value proposition proposal delivers value above Ofgem's baseline expectations.
- CV 6 - Where metrics are proposed, they should be relevant and robust, and associated targets should be ambitious.
- CV 7 - Plans should be justified by stakeholder engagement and research, and data-driven projections of how the future profile of vulnerable customers is likely to change in the regulatory period.

B.5 Connections

- C1 - Check that UK Power Networks has met Ofgem's baseline expectations
- C2 - Challenge ambition and transparency of UK Power Networks' plans
- C3 - Challenge UK Power Networks plans for continuous improvement
- C4 - Check that proposed CVPs add value above Ofgem's baseline expectations
- C5 - Challenge relevance, robustness and ambition of proposed metrics
- C6 - Challenge whether metrics and targets are justified by customer research and stakeholder engagement
- C7 - Challenge that UK Power Networks provides different options for connection where appropriate and whether customers can get the information to let them make trade-offs between the different options for connection
- C8 - Challenge whether plans will avoid waiting lists for connections particularly reliance on reopeners
- C9 - Smaller connections - Does the plan give comfort that smaller customers will reap the benefits of competition for larger connections in terms of services offered, costs and prices, scope of competition etc
- C10 - Same as C5 above but with focus on Smaller Connections
- C11 - Same as C6 above but with focus on Smaller Connections
- C12 - Make overall assessment of UK Power Networks plans

B.6 CVPs

As well as considering whether each CVP met the criteria set by Ofgem, our scrutiny asked the following questions.

- Is it clear how UK Power Networks selected the candidates for CVP?
- Has UK Power Networks demonstrated customer support for its CVPs?
- Is the full picture of costs and benefits to both sides presented clearly?
- Is the evaluation of the benefits to customers, principally via the SROI methodology, soundly based?
- Under UK Power Networks' incentive-based approach are the triggers for payment of the incentives appropriate and verifiable? How will they be verified?
- Given the incentive-based approach, do the CVPs pass the test of additionality⁴⁹?
- Is UK Power Networks best placed to deliver the benefit envisaged in the CVP, or might others be able to do so more effectively at lower cost to customers?
- Is the scale and timing of the incentive payments to UK Power Networks that are anticipated if the commitments are delivered likely to be regarded as appropriate by customers and other interested parties?
- How do the incentives compare with those under other Ofgem mechanisms?

B.7 Network reliability and asset resilience

Reliability

- R1 - Check UK Power Networks has understood customers' priorities for reliability
- R2 - As above with respect to short interruptions
- R3 - Challenge UK Power Networks' decisions re investments to improve reliability for those with poorest service
- R4 - Challenge scale and ambition of UK Power Networks' plans to improve service to Worst Served Customers
- R5 - Challenge scale and ambition of UK Power Networks' plans to improve short term interruptions
- R6 - Challenge relevance, robustness and ambition of proposed metrics
- R7 - Challenge whether metrics and targets are justified by customer research and stakeholder engagement
- R8 - Challenge basis of trade-offs and use of customer and stakeholder information
- R9 - Make overall assessment of UK Power Networks plans

Resilience

- AR1 - Challenge the extent to which the plan and ambition are supported by customer and stakeholder research
- AR2 - Challenge how the learning from managing assets approaching their end of life, including life time extensions, is feeding back into the wider management of assets
- AR3 - Challenge the plans for resilience in the face of Increasing severity of weather experienced: high temperatures, droughts, storms, flooding etc

⁴⁹ Additionality – is the scale of the incentive proposed necessary? Would UK Power Networks deliver the commitment without the incentive or with a smaller incentive?

- AR4 - Does the learning on worst served customers contain any insights that could be applied to the asset portfolio as a whole?

B.8 Climate resilience

See AR3

B.9 Workforce resilience

- WF1 - Check workforce resilience and workforce strategy informed by engagement with Customers, CEGs and industry groups
- WF2 - Confirm UK Power Networks' willingness to collaborate with others
- WF3 - Check UK Power Networks has resilience metrics, and transparent reporting format
- WF4 - Challenge ambition of objectives of UK Power Networks' workforce resilience strategy
- WF5 - Examine the extent of UK Power Networks' plans to recruit locally and to connect with regional / local communities
- WF6 - Check resilience of UK Power Networks staffing to prolonged incident such as pandemic/ flooding/ evacuation etc, will UK Power Networks have the people to bounce back well enough?
- WF7 - Check workforce plans for DNO-DSO transition and for supporting Net Zero (e.g. heat advice, local energy planning, interoperability, flexibility etc)
- WF8 - Check resilience to/ prevention plans regarding mental health and burn out
- WF9 - Make overall assessment of UK Power Networks plans

B.10 Supply chain resilience

- OR 1a - Will the Supply Chain have the capacity to deliver under all the scenarios? What are the risks and consequences of non-delivery? At what level of additional demand will problems arise? What is the contingency plan?
- OR 1b - Have UK Power Networks experienced any issues such as the Pandemic, HGV driver shortages and Brexit particularly on material supplies?
- OR 1c - What plans do UK Power Networks have to influence their supply chain to mitigate the effects of Brexit, the enduring effects of the pandemic including more home working and the shortage of HGV drivers?

B.11 Delivering an environmentally sustainable network

- EAP 1 - Has UK Power Networks demonstrated it has met Ofgem's baseline expectations under each of the areas?
- EAP 2 - Where UK Power Networks has proposed a consumer value proposition, does the proposal deliver value above Ofgem's baseline expectations?
- EAP 3 - Where it proposes metrics, are they relevant and robust?

- EAP 4 - Where it proposes metrics, are associated targets ambitious enough to drive real improvement?
- EAP 5 - Is the EAP justified by stakeholder collaboration, engagement and views?
- EAP 6 - Where there is a financial ODI for areas which are controllable and measurable has UK Power Networks demonstrated sufficient data to enable robust targets to be set?
- EAP 7 - Has UK Power Networks demonstrated it has a process to engage with local stakeholders to identify and develop undergrounding projects?

B.12 Whole system

- WS 1 - Ensures a wide range of sectors, including customers, (including non-energy sectors) are aware and engaged.
- WS 2 - Ensures that whole system thinking is embedded in corporate processes and structure, rather than in ad hoc projects.
- WS 3 - Helps to clarify any whole system CVPs and the use of the coordination adjustment mechanism (CAM).
- WS 4 - That the plan meets the minimum requirements for the Business Plan Incentive.
- WS 5 - That innovation proposals contain consideration of, and ideally joint projects with, sectors or vectors other than power distribution.
- WS 6 - Coordinated with other electricity network licensees in order to identify actions and processes that advance the efficient and economical operation of their networks.
- WS 7 - Considers actions and processes proposed by network users that advance the efficient and economical operation of their networks.

B.13 Establishing a DSO

- DSO 1 - Identify the changes and stakeholder needs that drive and are driven by the DSO Strategy and the transition to it.
- DSO 2 - Has UK Power Networks proposed a customer value proposition (CVP)? What does it cover and why? Has UK Power Networks shown evidence (including from customers) in support of it? Will its proposal deliver customer value above Ofgem's baseline expectations?
- DSO 3 - Where metrics and targets are proposed, are they relevant and robust? Will the proposed metrics and targets drive real improvement?
- DSO 4 - Has UK Power Networks set ambitious benchmarks of performance against those metrics and targets?
- DSO 5 - Has UK Power Networks identified what information should be made available to customers and stakeholders and made it user-friendly?
- DSO 6 - Has UK Power Networks met Ofgem's revised DSO baseline and Strategy expectations?
- DSO 7 - How does the DSO Strategy meet the Business Plan Incentive requirements?
- DSO 8 - How robust and relevant is UK Power Networks' Output Delivery Incentive for the DSO? Will it drive behaviour change?

B.14 Unlocking the potential of digital and data

CS 4 "Updated digitalisation strategy that takes account of feedback from Ofgem and stakeholders, and customer needs (now and into the future), and business plan guidance:

- clear plan for digitalisation of energy network to generate value for stakeholders
- plans driven by high quality insight and information from stakeholders about data-related needs (inclusive, strategic, proportionate)
- demonstrates how day-to-day working with data maximises benefits for its users, while complying to security and privacy requirements
- workforce plan for effective business transformation"

B.15 Innovation

- I1 - Level of ambition in innovation strategies
- I2 - Innovation in all areas of the plans is embedded in BAU
- I3 - Not all innovation funded only by customers
- I4 – Demonstration of the benefits of ED1 innovations
- I5 - Quality of process to roll out innovations proven during ED2
- I6 - Plans to involve third parties in innovation
- I7 - CEG input to proposals for Network Innovation Allowances
- I8 - Plans justified by customer research and stakeholder engagement
- I9 - Basis of trade-offs made by UK Power Networks

B.16 Competition

- COMP 1 - Appropriate project types and projects are considered for early and late competition.
- COMP 2 - Competition is embedded in UK Power Networks' corporate processes and structure and delivers in the consumer interest (i.e. value for money services and keeping bills low).
- COMP 3 - Clarify of any additional consumer value propositions for competition.
- COMP 4 - Projects are correctly flagged in business plans for their suitability for early and late competition
- COMP 5 – Customers' and stakeholders' views on competition reflected in the business plan.
- COMP 6 – UK Power Networks' use of competition delivers customer outcomes.
- COMP 7 – Fairness, justice and materiality of competition to consumers considered.
- COMP 8 – Active promotion and enabling of competition in connections and ensuring that independent companies can compete freely and fairly.
- COMP 9 - Network Innovation Allowance utilised to create value for consumer