



**Customer
Engagement Group**

Report to Ofgem on NGN RIIO-2 Business Plan

22nd December 2019

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Customer Engagement Group (CEG) Remit and Membership

The group was established as part of Ofgem's enhanced stakeholder engagement strategy with the specific remit of scrutinising NGN's Business Plan for RIIO-2. We aim to inform the energy regulator's decision-making process and ensure that stakeholder and customer views are reflected in NGN's proposed outcomes for 2021-26. We describe our role more detail in Chapter 1. Our members are listed here.

Ivan Jepson
Melanie Laws
Dr Alan Lowdon
Kate McNicholas
Amjad Pervez (resigned September 2019)
Carole Pitkeathley
Professor Simon Pringle
Eddie Proffitt
Jenny Saunders (Chair)
Dave Wright

Purpose and Scope of this Report

We have produced this report on behalf of Ofgem to inform their final determination of NGN's allowable revenue for RIIO-2. We hope that it is also helpful to customers and stakeholders that have been engaged through the planning process and others with an interest in NGN's business.

We have tried to ensure that our conclusions are based on evidence we have seen or heard. All financial matters are outside the scope of our remit and are therefore not considered in this report.

How to read this report

- The structure of this report mirrors Northern Gas Network's (NGN) Business Plan (BP) and chapter numbers. In line with our remit, we have not commented on Part 7 of the BP that deals with finance as this was out of scope.
- Our Challenge log with NGN responses is published on our website, and as required, we will make available to Ofgem other documents that explain or support the conclusions we have reached.
- We have followed the guidance provided by Ofgem in constructing this report and focussed on areas they specifically asked us to consider.
- We have referenced evidence we have seen that supports the BP. The chapter on stakeholder engagement is more discursive as we consider the range of views heard.
- The Chair provided monthly updates to the Consumer Challenge Group (CCG) that may be reflected in their report. Whilst the Customer Engagement Group (CEG) and CCG have been aligned in ensuring the interests of customers are foremost under RIIO-2, we have performed different roles and the reports should be complementary and may not reflect on all of the same issues.
- We are grateful to NGN for checking the factual accuracy of this report, but they have not influenced any of the conclusions reached or supporting commentary.
- The glossary of terms with NGN's BP also applies to this report.

1. Executive summary

We believe that NGN have produced an ambitious Business Plan (BP) for RIIO-2 which reflects what customers and stakeholders have asked for or expect, with 92% of customers engaged in the Acceptability testing supporting the BP overall.

NGN have embraced the enhanced stakeholder engagement process and the BP has benefited from an iterative process of engagement, testing and redrafting. We wish to thank everyone involved in the process for the open and transparent way in which they have responded to our requirements and requests. In most instances the quality of information has been high, timeliness has sometimes been challenging due to changes in the regulatory guidance and NGN planning processes. NGN helped us to digest and understand some of the complexities of their business.

We have no areas of disagreement within the CEG that we wish to record. The report findings were reached by consensus through discussion and debate.

- **Track record and performance**

Benchmarking of NGN's performance has shown it to be the most efficient of the GDNs with the highest customer service scores in RIIO-1. We have challenged the company to not only maintain that position but to go further in enhancing customer service standards and reducing costs wherever possible. We have stressed the importance of keeping costs as low as possible without compromising high standards of service, and at the same time improving their environmental performance and setting a trajectory towards a Net Zero carbon economy.

- **Stakeholder engagement**

Enhanced stakeholder and customer engagement is at the very heart of the RIIO-2 process. It is our opinion that NGN designed and delivered an exceptional engagement programme. This exercise has helped ensure that those areas of the BP that could be influenced (e.g., non-mandatory targets) were presented and explained in a way that stakeholders, including the 79% of people who had not engaged with the company before, could grasp and respond to.

- **Enhanced Outputs and Outcomes**

We welcome that there is a strong focus throughout the BP on customer outcomes and benefits aligned to stakeholders' top priorities of: maintaining a very safe and reliable network, paying no more than is necessary for enhanced services and improving environmental performance. NGN have articulated how they plan to improve their performance in a number of areas. The average domestic customer bill is projected to reduce by 8.6% (real terms) over RIIO-2 due to a combination of efficiencies, reduced returns to shareholders, and lower average consumption. The CEG support this outcome. This has been calculated using actual Ofgem returns and forecasting. The BP contains 64 Outputs of which 26 are bespoke, and 10 of those relate to vulnerable customers.

- **Sustainable Plan for the future**

NGN have a strong culture of innovation and they have aligned their proposals to the NIA incentives for RIIO-2 with a focus on vulnerable customers, decarbonisation and whole systems development. The Environmental Action Plan sets out a clear set of deliverables that will improve performance. That said, some initiatives will need further development over the coming year to ramp up for the start of RIIO-2 and to achieve the challenging targets for third party funding to support their ambition. The environmental, innovation and whole systems strategies were developed in the later stages of the development of the BP. The initial focus was on embedding innovation in business as usual (BAU) with only a limited plan for RIIO-2 but we consider that the final plan is more robust on both environment and innovation than the earlier drafts reviewed by the CEG. The proposed use of uncertainty mechanisms appears to be appropriate to reduce the risk of both under and over investment during the 5-year BP period.

- **Costs**

The costs have been set out clearly in the engineering justification plans and cost benefit analyses and are based on historic costs reviewed by the CEG. We consider that costs overall reflect Willingness to Pay research carried out with customers, however benchmarking analysis to ascertain whether these are fully justified is outside our remit and will be undertaken by Ofgem. Because the BP structure is based on Ofgem's regulatory requirements it was difficult at times to match costs to Outputs. The CEG consider that costs overall reflect Willingness to Pay research carried out with customers.

- **NGN Commitments, Consumer Value Proposition (CVP) and Board assurance**

We note that the NGN Board have received external verification of their governance and assurance processes and that they fully support the BP submission and the commitments the company has made for RIIO-2. Finance issues are not within the scope of our Group and will be taken up by the energy regulator and its national Customer Challenge Group (CCG). The CVP, which

attracts incentive payments to deliver enhanced services, contains 12 propositions which reflect what we heard from customers and these focus on customer service, vulnerable customers and the environment. We support the methodologies used in defining the values attributed to the CVP but have flagged a couple of areas which require further consideration.

- **Conclusion**

Overall, we believe this to be a good plan for customers in NGN's region, which demonstrates NGN's ambition to remain the most efficient GDN with the highest levels of customer service that meet the needs of their customers. We believe that, subject to no significant change in external dynamics, the commitments are deliverable based on the company's track record supported by proposed investments and systems changes. There are, however, 8 issues we believe should be subject to further scrutiny or Open Hearings. These are explored at the end of each chapter of our report and generally seek to establish greater clarity around costs not just for NGN but across the sector.

CEG Governance

We concluded our governance arrangements swiftly but not at the expense of being thorough. This allowed for maximum time to be available to ensure stakeholder and customer feedback could be accommodated, reflected or addressed in the new BP.

Membership

There were 10 members of the CEG appointed (one member resigned in September 2019 due to family commitments). Biographical details can be viewed on the CEG website. Following the appointment of the Chair in June 2018, the recruitment process was designed to ensure an appropriate level of skills, experience and knowledge for the group. The Chair interviewed all candidates, some of whom had served on a previous NGN stakeholder advisory Group and already had a background understanding of the industry. Others brought insights from the regulation of different utilities and engineering standards.

Professionals from the public, voluntary, academic and commercial sectors with experience of working with key stakeholders were identified. All members share a strong interest in delivering positive customer outcomes and have business planning acumen. Risks were identified, and controls put in place, to protect the independence and credibility of the Group. This included all members agreeing terms and conditions with NGN, adopting Nolan principles of behaviour, and maintaining a “conflict of interests” log.

The CEG Chair and NGN, working with KPMG, co-created governance documents for the Group which were subsequently shared with Ofgem, the CCG and the other CEGs and User Groups (UGs). These followed the original guidance from Ofgem on enhanced stakeholder engagement for RIIO-2. The documents set out our remit and scope, our operating model and several evaluation criteria we would apply to the BP. We developed a set of effectiveness criteria for the Group itself to enable us to monitor our own performance and assess where we were able to make a difference. These documents were reviewed regularly and updated in line with updated guidance from Ofgem.

Our initial focus was to establish:

- an active and regularly updated website and blog to keep people informed of our work. So far, we have had 752 unique visitors to the site.
- a Stakeholder Engagement Deep Dive Group to monitor and scrutinise NGN’s consultation plans in detail, including an assessment of NGN’s engagement research methodologies; and
- our involvement in the full range of engagement events. Members were keen to hear stakeholder views directly and witness engagement techniques. We subsequently reviewed the event feedback reports to ensure stakeholder views were accurately captured.

The Chair engaged on a regular basis with Chairs of the other CEGs and UGs, and the CCG. She shared views expressed by CEG members to help develop the new enhanced engagement approach for RIIO-2 on behalf of, and in consultation with, Ofgem. Quarterly Chairs meetings were held with Ofgem, and monthly updates were provided to the CCG.

Our remit does not include scrutiny of how NGN have applied Ofgem’s financial methodology.

Each section of this report was written and reviewed by members of the CEG, based on particular areas of interest and/or professional expertise.

CEG Work Programme and scrutiny methodologies

A work programme was developed in order to ensure that we had access to all the information and evidence we would require over the time available from becoming established in September 2018 to the submission of this report in December 2019.

The Group developed methodologies as described below to allow us to work efficiently within the scope of our remit:

- Visiting 9 operating depots across NGN's region. This enabled us to see how hubs have been developed to deliver improved outcomes including the maximisation of Totex. We spoke to operational staff responsible for frontline services and learned about their day-to-day activities. The visits helped CEG members to gain a sense of working patterns and the standard of facilities.
- Establishing a CEG site on SharePoint where all relevant documents, presentations and reports were easily accessible. Live documents were updated regularly by the Chair and secretariat.
- Maintaining a Challenge and Issues log. The Group were presented with information by key NGN personnel about each aspect of the BP for which they are responsible. Many of the initial challenges from the CEG related to the level of evidence provided. Many of the challenges were dealt with during discussions but 64 required a formal response from NGN. They responded within agreed timescales and, as requested, provided to us: external reports commissioned to support their proposals; explanations of methodologies underpinning any underlying assumptions; and contextual information for different aspects of their work streams.
- Capturing agreed actions for both NGN and CEG following meetings. A live log was maintained, and all agreed actions were reviewed each month.
- Deep dives. Topic subgroups were established to apply in-depth scrutiny, which also raised further challenges.
- Stakeholder events. All members attended at least one engagement event to hear views from the breadth of NGN's stakeholder and customer base, and ensure stakeholders were not led to conclusions they did not understand or support.
- Liaison and engagement with NGN. The CEG were provided with a full-time assistant, responsible to the Chair and whose job description was drawn up by the Chair and NGN. A wider secretariat was provided comprising the Stakeholder Engagement Manager and Corporate Regulatory and Governance Director. They assisted the Chair to develop the CEG's detailed work programme. Their input led to timely and appropriate presentations and discussions with lead managers responsible for running services under RIIO-1 and developing RIIO-2 plans. Due to time constraints, the CEG considered in most detail those aspects of the BP that have greatest impact on customer services and costs. We requested that evidence of stakeholder preferences and wider expert views were presented to justify each commitment and all decisions.
- Private sessions. CEG members met without NGN being present for a part of each monthly meeting. This allowed members to speak openly, share views and raise issues without fear of influence. The Chair was able to feedback to NGN on behalf of the Group.
- Risks and controls were identified and recorded. Different perceptions and contrasting views were addressed through open discussion and these were usually resolved at the time. A log was established to capture issues where there was disagreement within the Group. Members were ultimately able to reach consensus on all issues.

2. NGN Track record

2.1. NGN Performance in RIIO-1

The BP provides a reflective view of NGN's performance in relation to their RIIO-1 aspirations and the 51 agreed outputs for that regulatory period.

The CEG reviewed presentations and evidence of NGN's performance against their RIIO-1 targets. NGN set out a range of incremental improvements to how the business is structured and managed. Fundamental changes to their delivery model have been made over a number of years that now provide the foundation for their strategy and BP for RIIO-2.

We have reviewed the comparative performance of all of the GDNs in RIIO-1 as reported annually by Ofgem. It is clear that NGN have a clear ambition to meet or exceed their commitments and have been a top performer against Totex allowances and have consistently achieved high customer satisfaction scores. We recognise that there are a number of factors that affect the final bill that customers will pay which are not dependent on efficient work practices or deferred investment, but we also note that NGN have been the second cheapest of the GDNs for domestic customers during the RIIO-1 period.

During various presentations we heard from NGN managers as to where they would wish to improve customer services and performance in the future. Improving timescales for connections was identified as an important issue to address by the end of RIIO-1. Customer complaints had been highest in this area of

service, and improved standards are reflected in the RIIO-2 BP.

Three specific areas were singled out by NGN to demonstrate the impact of their enhanced services and performance in RIIO-1 which align with three Ofgem priorities: social obligations, environment and innovation.

With regard to social obligations, whilst there were challenges due to the change in eligibility for the Fuel Poor Network Extension Scheme (FPNES), the original targets are still likely to be exceeded. There has been strong evidence of NGN's commitment to assist customers when things go wrong – particularly those who are in vulnerable circumstances.

NGN have not secured the top place in Ofgem's annual stakeholder engagement incentive scheme (SEI) for RIIO-1, scoring less than SGN and Cadent in 2018/19. During the same period they did however produce an impressive stakeholder engagement plan as a critical part of the development and testing phases of the RIIO-2 BP.

NGN have quantified the impact of their environmental performance and described how they plan to build on the innovations they have embedded into current practice and the partnerships established to investigate the role of hydrogen and whole systems development.

2.2. Return on Regulated Equity (RORE)

NGN set out how they have achieved a higher than expected RORE. This is expected to be 2.8% by 2021 by outperforming on their Totex incentive. Other incentives that have led to this level of return are associated with high performance in achieving customer service and satisfaction; complaints handling; environmental emissions reduction; and NTS Exit Capacity.

Nationally a methodology and targets were agreed under RIIO-1 which have resulted in higher than anticipated returns to investors. We expect that the new methodology for RIIO-2 will deliver a fairer share of benefits to customers for any outperformance.

The CEG challenged the company's executive management team to demonstrate how they could achieve higher standards of performance whilst delivering a lower return to investors. They provided

timely and clear responses and demonstrated through documentation and presentations how their change in workforce strategy and payment methodology, started in RIIO-1, gave them a good foundation to maintain and improve delivery standards.

We learned that NGN outperformed their targets for mains replacement work under RIIO-1 through introducing a Direct Service Provider (DSP) model – i.e., contracting for Repex delivery directly with SME contractors rather than large national contractors. NGN have set out in their BP the impact these changes have had on costs in RIIO-1, and which have been embedded into the costs for RIIO-2. We are convinced, for example, that NGN will be able to deliver more kilometres of mains replacement at a lower cost in RIIO-2 due to these changes and having focussed work in RIIO-1 in areas of high population which are more expensive to deliver. We explore the outsourcing model for mains replacement in more detail in Chapter 6.

NGN are clearly proud of their position within the industry as a frontier company for RIIO-1 backed up by the Ofgem benchmarking table within the BP. They have produced a BP for RIIO-2 that aims to deliver on their ambition to remain the most efficient and high performing GDN. However, NGN have made it explicitly clear that they consider themselves to be in a challenging economic environment and expect to deliver a lower return to their investors over the next price control period.

We sought reassurances from NGN's Board that services can be improved despite an expected lower rate of return to their owners/investors. During a Board meeting attended by the CEG Chair in April 2019 the owners expressed their ambition for the company to remain the top performing GDN and that customer service and standards are a priority for them. Whilst this commitment is highlighted in the BP, we note that they are challenging Ofgem's finance methodology and this is a matter for the CCG and Ofgem to consider at an Open Hearing.

Chapter 2 CEG overall view

A considerable amount of time was spent during the first 6 months of the CEG scrutiny process in understanding the performance of the company and how it had delivered Outputs in RIIO-1. Full access was provided to key managers, annual performance reports and we were able to gain insights into each aspect of the company's business.

We received evidence that supports the claims made by NGN that they have met or exceeded key targets for RIIO-1. We consider this a firm basis for their RIIO-2 BP. The deliverability of many of the new standards will be based on their previous track record, and the culture of the company which aims to go 'above and beyond' on behalf of its customers. We challenged NGN to be explicit about how they would achieve their ambition to remain the most efficient of all of the GDNs and how they will retain their position as top performer for customer service. We saw that many systems that drive efficiencies are now clearly embedded and there will be a suite of new operational improvements introduced in RIIO-2 with the role out of SAP 4 Hana. We recognise the importance of the pay and reward structure that NGN has developed that underpins the company's ability to achieve or outperform its new BP.

We are convinced that this provides a strong platform for their RIIO-2 BP in terms of meeting key Outputs for 2021-2026. The company's track record is well evidenced, through customers' satisfaction levels and Ofgem benchmarking. Areas where performance can improve further have provided a focus for their future plans.

A stronger sense of urgency will be required to achieve the trajectory towards Net Zero which cannot be delivered based purely on past performance. However, NGN have provided evidence of their leadership role in relation to hydrogen and whole systems thinking which will provide a base for further research and trials in RIIO-2.

Additionally, the systems changes that are starting to be implemented in RIIO-1 must be fully tested with stakeholders to ensure they meet their needs and are not merely being put in place to drive down costs in RIIO-2 but which result in more complexity and cost for their suppliers and other stakeholders.

3. Giving consumers a stronger voice - How far have NGN delivered a plan that puts customers and communities first?

3.1. Methodology

- Stakeholder engagement is fundamental to the development of a robust business plan that benefits all stakeholders and recognises what is material to them. It is also core to the responsibility of the CEG and its ability to provide independent challenge and determine whether NGN's BP for RIIO-2 addresses the needs and preferences of consumers and stakeholders. The CEG have seen a well-reasoned, thorough and pragmatic approach taken to stakeholder engagement that has identified priorities for stakeholders and customers both for today and for the future.
- Throughout the planning process NGN communicated their aim to have meaningful and inclusive engagement that would be iterative in approach. The CEG saw evidence that this was achieved and, as adopters of the AA1000SES Standard for Stakeholder Engagement, NGN regularly demonstrated inclusivity, materiality and responsiveness. NGN demonstrated that they recognise stakeholder engagement as being essential to future sustainability and success, and developed a programme to ensure that stakeholders were able to have a say in the decisions that impact them. They acted on feedback received and have been transparent about the issues that matter most to different customers and stakeholders.
- The CEG and in particular, our Engagement Deep Dive Group, have provided a sounding board for NGN throughout the process. Members of this sub group have considerable experience in stakeholder engagement and our involvement from an early stage influenced the development of NGN's Stakeholder Engagement Strategy, the roll out of the Stakeholder Engagement Plan, and consequently their BP. CEG Members attended a wide range of events including those to aid the design of the Willingness to Pay (WTP) research. The presentation materials developed for the WTP research were clearly influenced by feedback we provided from earlier workshops observed by CEG Members.
- From the outset we were keen that NGN demonstrate not only how they had engaged, but also how they triangulated the feedback received from stakeholders and customers with other data they collect and to which they have access. Triangulation provides the opportunity to test assumptions based on a narrow methodology. It also provides richer, more robust and more well-developed findings based on different dimensions of the same issue. This in turn leads to a sharper focus on material issues. NGN responded positively to the challenge to triangulate information. Results are clearly reasoned and articulated in the Stakeholder Insights Appendix that provided a meaningful basis on which to develop the BP.
- NGN used in-house teams as well as expert consultants to design and deliver their engagement programme. They refreshed and enhanced their existing plan with a particular focus on:
 - o Stakeholder segmentation – this was considered to be a particularly thorough exercise. It led to tailored approaches to different groups depending on how, and how much, they wished to communicate with NGN. More bespoke approaches were developed, for example with some of the regional Local Enterprise Partnerships (LEPs).

- o Gap analysis of their stakeholder database –to identify previously hidden voices and ultimately reach a higher volume of stakeholders who had not engaged with NGN before.
- The CEG challenged NGN to demonstrate how they had engaged with different groups of stakeholders in their strategy (Challenges 22, 23 and 24), and how the feedback received was reflected in the BP. In particular we wanted evidence of engagement with vulnerable customers, high-energy users and those whose voices are seldom heard. Telephoning and visiting those who were unable to engage in other ways was a useful mechanism which the CEG believe has created a wider and more diverse set of feedback. We comment further in Chapter 4 on the results of engagement with customers in vulnerable situations.
- In the absence of any formal definition, NGN arrived at definitions of seldom heard and hard to reach customers. The CEG believe that often

customers are not hard to reach, but are hard to engage with, which is not the same thing. We are content, however, that NGN have sought out and listened to hidden voices however they are defined. The BP Acceptability Testing exercise also targeted a significant number of higher usage business customers and their views are reported in the Insights Report.

- We sought to understand more about NGN’s definition of future customers. NGN clarified their definition of future customers as ‘their likelihood to become bill payers in the future’. NGN carried out significant engagement both through the Infrastructure North Partnership and through an established student research panel as a part of the Acceptability Testing. In both cases, where future customers provided different views from existing customers, these were highlighted. We comment further on Biomethane customers in Chapter 4 relating to environmental Outputs.

3.2. Materiality

We challenged NGN to seek stakeholder feedback on the areas that are most material to customers and stakeholders and where they would have the most opportunity to influence changes to NGN’s BP (Challenge 26). NGN devised Mini-Public workshops which have led to an enduring Citizens’ Jury which sought to do just that. Attendees were asked for their priorities and, in turn, NGN provided clear information on its regulatory and other statutory obligations alongside areas where stakeholders could influence change.

Engagement on what NGN plan to do under RIIO-2 complemented and ran alongside the significant amount of work they have undertaken to enhance their RIIO-1 engagement plan. We believe that this approach has increased focus on both current and longer-term issues important to customers and stakeholders. Key priorities identified for stakeholders now and going forward are safety, reliability, value for money, protecting the environment, and preparing for the future. Their aspirations for the region were also articulated, identifying an important leadership role for NGN to help develop the infrastructure needed for economic growth, meet stretch targets on climate change, boost innovation across industry,

improve environmental resilience and create inclusive communities with high quality jobs. Stakeholder views on the way in which NGN do their business as well as what they do is important to people living and working in their region. This may not be fully reflected in this regulatory BP but the CEG have seen how those priorities and concerns are shared and reflected in the culture of the company and their involvement with, for example, Infrastructure North and the LEPs.

Alongside the development of the BP, NGN have had the opportunity to continue to use the wealth of information they have collected to refine and shape activities during RIIO-2. We reflect on this and how they have considered the materiality of stakeholder views in Chapter 4.

3.3. Collaboration and challenge – NGN engagement with CEG

NGN reflect in their BP on how they have engaged with our group and we acknowledge the very positive approach by NGN throughout this process. We say more on our engagement with NGN in Chapter 1 where we set out our Governance arrangements, and also in the Appendix on CEG impacts.

There has been a significant amount of contact between NGN and the CEG, all of which has been conducted on a professional basis. There have been no attempts to mislead, coerce or pressurise members to support elements of the BP where we had found a lack of justification.

The open and inclusive approach to engagement has provided assurance to the CEG that NGN are interpreting the views of stakeholders in a fair and appropriate manner. NGN gave generously of their time to ensure an evidence-based approach to resolving challenges and issues as they emerged. They also took seriously all CEG feedback on every iteration of the BP, providing clear responses and making changes in line with agreed decisions. The format of the BP, for example, changed with each iteration based, to a significant degree, on CEG feedback. There were a number of changes made to the final version which were explained at our final meeting on 16 December 2019 and we have taken those into account in this report. It would have been helpful to have had earlier analysis of the average customer bill impacts but the methodology finally applied is based on Ofgem submissions and future scenario forecasts.

NGN engaged with us on an ongoing basis from September 2018 at 14 monthly meetings and at numerous points between, including 20 deep dive meetings. We attended a total of 15 stakeholder events including workshops, market testing events and the Citizens' Jury.

A series of one to one sessions were set up for one or more CEG members and the appropriate person from NGN. These were focussed on areas where greater clarification of an issue was needed (for example elements of the EAP, presentation of information on the customer bill and engineering reports).

There was a significant amount of information to digest and comment upon; most of which was presented in a timely fashion, although some detailed analysis was only provided in October and November and in the final submission appendices. We appreciate that some delays were due to the fact that timescales to respond to challenges were quite tight and NGN needed to produce robust responses. On other occasions delays were due to NGN awaiting final guidance on issues from Ofgem.

NGN demonstrated that they understood the CEG's position on every issue we raised, and where they decided not to progress as we suggested, provided clear reasons. In the closed session at the end of each meeting we considered the robustness and completeness of information, what more could have been provided and whether we believed attempts had been made by NGN to guide us to reach conclusions we disagreed with. We confirm that no issues arose to cause us concern.

3.4. Responding to stakeholder priorities and balancing trade offs

How NGN listened to, understood and responded to stakeholders' priorities is fundamental to the BP. The BP provides clear links between the analysed feedback and the commitments NGN are making in the form of Outputs and promises. Complementing

this is information from Acceptability and Affordability research. The BP makes clear where NGN believe they stand on meeting or exceeding stakeholders' expectations, and where they go beyond the minimum standards set by Ofgem. The CEG support this

approach as it provides clarity, particularly when read in conjunction with the Stakeholder Insights Appendix.

NGN set out in helpful summary tables how the proposed customer outcomes and Outputs link to the priorities that had been expressed through the range of engagement events and research. They provide an honest reflection of the feedback received and focus appropriately on the areas that are most material to stakeholders.

We challenged NGN to demonstrate that the materiality of customer and stakeholder feedback was considered in deciding any trade-offs between different customer group priorities or preferences and their willingness to pay (Challenge 26). We are convinced that in the main this has been achieved.

Feedback from stakeholders invariably includes nuances depending upon perspective, but there were times when views differed quite significantly. In these instances, NGN demonstrated that they listened to the views of all stakeholders including staff and the CEG. Through different feedback mechanisms, for example, NGN received conflicting views on what and how much to do for those most in need and for the environment. There were, however, two underlying themes, expressed even amongst those

who supported NGN in their bid to do more for those who need more support. The first was that NGN ought not to act in place of other agencies tasked with representing and addressing specific needs of customers in vulnerable circumstances. The second was that customers questioned whether they should be required to support or subsidise other customers. Once NGN explained to the Citizens' Jury that shareholder funds were being used for enhanced General Standards of Performance (GSoP) and the Hardship Fund there was much greater support.

The Fuel Poverty Network Extension Scheme (FPNES) also elicited a range of views. Evidence from customer insight work from both customers and wider stakeholders indicated that this was a priority area. Acceptability testing demonstrated support for the Price Control Deliverable (PCD) target of 1,000 connections per annum. We and the CCG pressed for greater ambition in social outputs and NGN agreed to adopt a stretch target, managing the risk by using an uncertainty mechanism for an additional 1,000 per annum.

NGN have evidenced how they have sought to resolve different customer views. We comment further in Chapter 4.

3.5. Acceptability and Affordability

When defining commitments and promises NGN have, as described above, made clear links to its BP Acceptability testing. The BP received a high level (92%) acceptability rating which, as we heard from Accent who carried out the research, compares very favourably with other utilities carrying out this type of research. The quality of this testing was robust and the methodology in line with what has been used in the water industry. Overall 8/10 customers perceived the proposed bill level to be affordable. This was in a

context of customers being presented with an overall reduction in their bill from circa £136 average to circa £129 however customers were asked, as part of the research, to 'consider their bills in the round'. There were, perhaps unsurprisingly, differing views on affordability depending upon levels of income, highlighting the subjectivity of this issue.

The CEG recognise the difficulties in this type of research but believe that the findings are legitimate.

3.6. Engaging Stakeholders during RIIO-2

Evidence from NGN's thorough and thoughtful stakeholder engagement appears as a golden thread running through the BP – something we indicated we were very keen to see. NGN's strategic approach has built a platform for meaningful engagement during RIIO-2 which we anticipate will enable the company to continue to focus on the most important and material issues for stakeholders. The CEG challenged NGN to demonstrate understanding of stakeholders' expectations during and post RIIO-2 (Challenge 21) and how they would ensure positive and continued engagement once the BP process had been completed. NGN have devised ways to engage the CEG and the Citizens' Jury in enduring roles that monitor and scrutinize ongoing engagement and performance against commitments and outcomes. The BP details activities and approaches that will support NGN's desire to engage on a continuing basis. Below we indicate where we support those:

- Enduring CEG – we support with a revised remit;
- Annual Engagement Plan using insights gained in previous year(s) – we support an annual statement prepared by the senior team that will detail the coming year's engagement activity that is open to scrutiny and challenge;
- Ongoing engagement with a wide range of stakeholder and customer groups (including vulnerable people, workforce and local and national policy shapers) – we support further work to maintain contact with key stakeholders and to help monitor delivery;
- Use Hard to Reach Framework – we support this substantial platform to help NGN hear hidden voices and expect it to develop further as NGN better understand whose voices have been missing;
- Citizens' Jury – we support this successful element of the Stakeholder Engagement Plan and its ongoing development to ensure it remains meaningful and focused. We have heard that

members of the Jury are keen to continue;

- Key Account Managers – we were given evidence from stakeholder feedback indicating a preference for this;
- Hot Topic Workshops – we support the NGN view that this is a key mechanism for responding to stakeholder priorities;
- NGN Annual Stakeholder Conference – we support as a mechanism to present and discuss NGN's annual engagement report and identify priorities for the coming year;
- CEG Chairs' Best Practice Summit – we are not convinced and believe this could be achieved through industry mechanisms. Further discussion would be needed with Ofgem and the other groups before pursuing.

We believe that continuing enhanced engagement is essential if NGN are to be held to account by current and future customers and stakeholders, and we expect NGN to utilise the range of activities described above to allow stakeholders to hold them to account.

We challenged NGN to measure the inherent benefit and social value of engaging with stakeholders, and of creating more informed stakeholders (Challenge 25). NGN could find no appropriate measure, but we are convinced they recognise the wider value of this work

Chapter 3 CEG Overall View

NGN engaged throughout and provided early sight of the vast majority of information – and were keen to ensure their plans were supported by stakeholders throughout the process. The quality of information received was timely, very robust (particularly the detailed Insights and Methodology Appendices) and by the final iteration, is complete with an additional report which benchmarks stakeholder engagement with other regulated utilities.

4. Outputs that meet the needs of consumers and network users

Will NGN deliver better outcomes for customers and stakeholders?

Introduction

As discussed in the previous chapter, there was a significant amount of stakeholder engagement to develop the Outputs and outcomes described in the BP through an iterative process of surveys, workshops and meetings of the Citizens' Jury, combined with triangulation of information from other sources and the views of the CEG. NGN provided a helpful link between the Stakeholder Insights document and their proposed Outputs. NGN have kept the CEG informed of their progress, developing services following our challenge to aim for the highest standards for customers, and there is clear evidence they have striven to go "over and above" through enhanced Guaranteed Standards of Service (GSoPs). There are many examples where NGN are seeking to exceed Ofgem targets or create new, bespoke Outputs and where there is a stretch involved.

NGN's BP includes a total of 64 individual Outputs. Of these, 48 (74%) relate to meeting the needs of consumers and network users with 26 bespoke Outputs offering enhancements to the common regulatory Outputs.

The CEG challenged NGN (Challenge 10) to demonstrate that proposals within the BP for any investment over and above licence obligations have the support of stakeholders and to be transparent

on any additional costs. The WTP research identified that customers, on average, were willing to pay an additional £18.13 (domestic) and £113.72 (commercial) for the most improved levels of service on an annual basis. This research was tested against 13 outputs over 5 separate themes that stakeholders had previously prioritised as material for them. It is also supported by triangulated stakeholder feedback (Insights 7-9, 12, 14-15, 18-19 and 35-36 apply) and wider industry comparison (Yorkshire Water methodology for PR19).

NGN have embedded systems to deliver on regulatory requirements associated with the Outputs for RIIO-2 and have demonstrated to the CEG how improved ways of working and better use of technology means they can deliver an enhanced service at no extra cost. We were assured that the enhancements to the required regulatory Outputs and the bespoke Outputs can be delivered within the framework that has been developed. NGN's strategy has been to create incremental improvements that exceed regulatory requirements. It has done this based on feedback received. Because the systems are embedded there is little to no opportunity to provide other options. That said, NGN have demonstrated that they have tested possible alternatives through their WTP research, where different levels of service quality were tested against corresponding levels of bill increases or reduction.

4.1. Customer Services

Customer satisfaction survey (regulated and non-regulated)

Alongside adopting the revised regulatory customer satisfaction questionnaire, NGN will enhance their performance with a bespoke Output that increases the number of channels for customers to provide feedback recognising their preferred method of contact. NGN will also broaden the range of customers who will receive surveys to include “paid for” disconnections. We welcomed this approach but challenged NGN to demonstrate how changes to the survey process at a national and local level would allow for ongoing analysis across a baseline that includes RIIO-1 (Challenge 2). We are aware that national trials led by Ofgem are ongoing, so NGN were unable to provide evidence.

Complaints Metric

During RIIO-1 NGN developed a process for measuring its performance in complaint handling in calendar days rather than working days; the latter being the regulatory standard. Whilst this is a bespoke Output it is now embedded in BAU so will continue during RIIO-2 and beyond. This approach is welcome and demonstrates recognition that consumers expect the same service every day of the week. Whilst feedback from stakeholders underpins this (Insight 18) the support for it was less strong than in other areas. Stakeholders felt that if the areas of safety, interruptions and environment are managed well then good customer service will be a given (Citizens’ Jury meeting 1). The general message at that event was that NGN should at least maintain the very good level of service they already provide, which is clearly NGN’s intention.

For some time, NGN have been seeking to agree a resolution to complaints within 60 minutes of receipt and, through a bespoke Output, they intend to work to achieve this in RIIO-2. Whilst the new regulatory metric for complaint handling has not yet been established it is generally assumed that it will be significantly lower than NGN’s current metric. The CEG recognise that achieving the balance on a reduced target will be a challenge and represents

a reputational risk. NGN have been testing this approach for some time as part of BAU, so a level of confidence exists that the target is deliverable. We were concerned however that the focus is on managing complaints rather than reducing them. We challenged NGN to target reductions in overall numbers or complaint types without encouraging inappropriate behaviours. NGN’s response was to commit to annual reporting of complaints per 100,000 customers with a target of year on year reductions. If the CEG have an enduring role we would monitor this activity closely and continue to challenge NGN on their performance. Some work has already been carried out in relation to improving service areas where there have been high numbers of complaints. The CEG expect NGN to demonstrate root cause analysis of categories of complaints where high volumes are received and, given the new systems and improved ways of working they have developed, to demonstrate real reductions in complaint numbers.

Market Service Standards

Because NGN operate in an integrated gas system, their relationship and interaction with Shippers, Suppliers and Transporters is a fundamental aspect of the business. This interaction will become more important as NGN develop their ‘Whole System’ approach. Those who interact with NGN often bring complex queries and require a tailored and individual response. In relation to market service standards, the CEG challenged NGN to demonstrate they adequately engaged with Shippers (Challenge 6). Stakeholder feedback from commercial stakeholders, including Shippers and Suppliers, provided evidence (Insight 21) that they are content with the work done by NGN but that they often feel “out of the loop”. This is particularly the case when new or different processes are involved. In response, NGN have developed 3 bespoke Outputs which provide a key account service for Shippers, Suppliers and Transporters. The CEG are supportive of these, as they require no additional funding, and since they reflect customer priorities and provide assurance to commercial customers of a smoother service.

4.2. Gas when Customers need it

Connections Services

Connections services cover a range of intake and exit connections as well as alteration to supply and disconnection for a range of customer groups. For some, these connections form a regular activity whilst, for others, they are a one-off. A series of GSoPs underpin performance in this area and NGN provided evidence to the CEG demonstrating they have consistently and significantly exceeded the minimum GSoP requirements during RIIO-1. Stakeholder engagement (Insight 22) based upon triangulated data from complaints, responses from the Citizens' Jury, regulatory reports and other feedback provided a clear indication that communication is a key factor in the customer journey. Customers do not want to have to chase progress or drive the process. They have indicated they want to see NGN improve communication and continue to deliver at the same level of performance as RIIO-1 or pay enhanced compensation if they fail.

We challenged NGN on its plans for increased online services for new connections and the impact that may have on some vulnerable customers. We sought evidence that NGN had considered the impact of digital communications and the barriers for improving the customer journey for those without access to digital technologies (Challenges 15 and 12 respectively).

The CEG also challenged NGN to demonstrate that the organisational change activity required to deliver the improved customer journey for connections is in place or planned (Challenge 13). In response NGN provided evidence that shift patterns had been altered, new technology had been developed and tested through trials and new (non-digital) processes would be in place for those who are not able to take advantage of the online services. The CEG also considered the overarching risk of the introduction of new technology in relation to connections (Challenge 41) and NGN provided some assurance through the results of trials of the new system.

We investigated the cost implications of introducing a range of new processes and customers' willingness to

pay for these (Challenge 18). Improved performance in connections did not feature in customers' priorities in the WTP research but NGN assured the CEG that the improvements will form part of BAU due to investments in RIIO-1 and so attract no additional costs.

To deliver the improved communication and continued over-performance sought by customers (Insight 22), NGN have developed a range of enhancements to the GSoPs and 4 bespoke Outputs as well as a commitment to achieving at least the minimum requirement in all GSoPs. The CEG are supportive of the overall approach and believe the enhanced performance targets and increased (or new) payments for failure represent a clear ambition to improve the customer journey and the outcome. We are convinced that the bespoke Outputs will address the issues raised during stakeholder engagement and by those customers who have made complaints. Whilst there is only a financial penalty attached to one of the 4 bespoke Outputs (disconnection and diversion quotations) we consider that all four demonstrate a continued commitment to an improved service for customers.

Emergency and Repair

Stakeholders made it clear across all areas of engagement that safety was their first priority. This included attending gas escapes quickly and repairing them as soon as possible afterwards. The CEG heard this first-hand at a range of engagement events and from the Citizens' Jury. We questioned NGN on what had driven its performance during RIIO-1 and heard that mild weather had played a part in the achievements. Stakeholders were keen to point out that they felt it even more important to get to escapes quickly in colder weather (Insight 35). They want NGN to improve their performance and have indicated a willingness to pay for this if necessary. Stakeholders support NGN's ambition to exceed the regulatory targets based on both safety and environmental impacts. Whilst Ofgem targets are already set at 97% to attend controlled and uncontrolled escapes with 1 and 2 hours respectively,

we support NGN's greater ambition to go beyond that to reduce safety risks and reduce leakage.

Attending a gas escape, however, is only half the story. Effecting a repair of uncontrolled gas escapes is viewed by the CEG and stakeholders as equally important from both a safety and environmental perspective (Insight 36). The CEG challenged NGN to demonstrate that their targets for repair are stretching (against RIIO-1 performance) and sensitive to the impact of differing kinds of escapes (Challenge 42). In response NGN have developed 3 bespoke Outputs aimed at exceeding current performance. The first relates to completing more than 64% of repairs within 12 hours of a gas escape. We heard differing views in terms of acceptance of this Output. In the BP Acceptability testing research there was strong support for this new target. In an earlier Safety Pioneer Survey, however, fewer than half of respondents believed current performance to be acceptable. Respondents believed response times and repair times ought to be much quicker. The CEG recognise that this Output is no longer a regulatory imperative but support NGN's intention to improve on existing performance. There is both a reputational risk and an environmental risk of not achieving better performance and NGN have responded to the concerns of their stakeholders.

NGN have also introduced 2 further bespoke Outputs in relation to completing outstanding repairs within 7 and 28 days. We comment further on the environmental benefit of these in a following section, but we also support these on the grounds of improved customer service in line with customer preferences.

Supply Interruptions

Interruptions to supply are a relatively rare occurrence for customers on gas networks but when they do occur they are at best inconvenient and at worst, particularly during cold weather, significantly impactful on customers, their families and communities.

Stakeholders provided a substantial amount of feedback in relation to supply interruptions; both planned and unplanned. CEG Members heard, first-hand, stakeholder views on what they expect when NGN fail to meet minimum standards of service, and

how important clear communications are to them and for NGN to "get things back to normal quickly". CEG Members attended Pioneer Workshops and the Citizens' Jury listening to stakeholders then critically comparing this to the insights NGN derived from their engagement and the Outputs they developed as a result. Insights 8-16 clearly reflect what the CEG heard and the data NGN used to triangulate its findings. Stakeholders were supportive of the range of Outputs with 87% of domestic and 88% of non-domestic customers finding this area of customer service acceptable in the BP Acceptability research. In that same research stakeholders demonstrated support for NGN's desire to exceed regulatory targets where possible. There was also strong support for restoring supply to appliances within 2 hours and offering 2-hour time slots for purge and relight activities for customers who were not at home. This support was also reflected in the WTP research where both domestic and commercial customers demonstrated they are most willing to pay more to reduce the duration of unplanned interruptions. They also expressed a willingness to pay more to reduce the duration of planned interruptions and, when things go wrong, they want to receive higher levels of compensation. The WTP research highlighted significant incremental value attached to the best level of service when compared to current performance.

To address this, NGN have developed 3 bespoke Outputs (the third of which includes 8 individual targets) and enhancements to 2 of the 4 common regulatory Outputs. In terms of the bespoke Outputs (which relate to Insights 8 and 15), NGN listened to what customers said during early stakeholder engagement in RIIO-1 and tested this during its more recent stakeholder engagement. In response we believe that NGN have developed appropriate levels of service and compensation improvements. In relation to major incidents, the 8 targets demonstrate a customer-centric approach, are representative of stakeholder views, and are supported by the CEG. We believe that the significantly higher than required compensation levels and timescales will focus minds to deliver the service that stakeholders have clearly asked for. In addition to the level of Compensation Payments, the method of payment is an issue for customers.

Compensation payment methods

Early RIIO-1 stakeholder engagement revealed a desire for NGN to make compensation payments without customers having to get involved. This resonated with the Citizens' Advice (CA) research "Standard Issue" and with later findings tested through national GSoP research where stakeholders, especially those representing vulnerable groups, believed compensation payments ought to be automatic. The CEG met with CA and heard, first-hand, why they too believed this to be the case. Whilst there are currently only 2 GSoP that require customers to make a claim (GSoP3 and GSoP13), both can have an impact on customers in vulnerable situations. We support NGN's commitment to a practical approach to make payments automatically under these GSoPs where it is aware it has failed. We were impressed by the way NGN have adapted manual processes in RIIO-1 to make payments without waiting for either an automated solution or for the next price control period. Customers now do not need to make a claim for any failed GSoP and this approach has been supported by the Citizens' Jury (meeting 3). We accept that there may be a cost associated, albeit not passed on to customers, with a manual solution like this but applaud NGN for acting on feedback to improve this service now, rather than waiting for RIIO-2.

Reinstatement

When supply is interrupted, excavations generally have to be made which subsequently require timely and effective reinstatement of highways, footpaths and customer properties. The CEG challenged NGN (Challenge 31) on the need for an additional or enhanced GSoP on reinstatement. Stakeholders felt that faster reinstatement of excavations after engineering works is important, but not at the expense of quality (Insight 14). We considered their views alongside NGN's explanations of what they are putting in place to both speed up reinstatement and deliver appropriate quality. We are satisfied that the Outputs developed will meet the needs of stakeholders.

4.3. Help for those who need it most

Ensuring that customers in vulnerable circumstances are treated not only fairly but with empathy and sensitivity to their circumstances is a fundamental aspect of any business's corporate social responsibility. In the utility sector it is also a regulatory imperative. No two customers are the same, so we believe it is essential that there is a suite of services and help available to them. Help can range from advice and support through to discreet services and tailored assistance in difficult or unexpected circumstances to financial support in times of hardship. Vulnerability changes depending upon the circumstances and timescale involved so we were keen to ensure that NGN were not only considering all types of vulnerability, but also providing practical and proportionate solutions.

Recognising the wider social context

We wanted to establish that NGN had properly considered the wider social context of its work. Challenge 43, for example, asked NGN to demonstrate that they had considered their role in Corporate Social Responsibility beyond the specific BP Outputs. NGN's response is described in their 'Community Promises' document which received significant support from the Citizens' Jury and stakeholders during the BP Acceptability Testing research. The Outputs of the Community Promises document are now embedded in the BP. We further challenged NGN to demonstrate that the suggested activities delivered under the umbrella of social outputs do not duplicate the work of other agencies and how any advice provided will be designed to meet recognised standards (Challenge

44, also raised at the Social Workshop February 2019 and at the first Citizens' Jury meeting). NGN provided details of what they carry out themselves and of the referral pathway to other organisations who are better suited to deal with issues such as the Fire Service, STEP, and NEA. Where NGN will deliver services themselves, for example carbon monoxide and energy efficiency advice, there was clear evidence provided of how they plan to work to nationally recognised or accredited training and development standards.

Hardship and Community Partnership Funds

During the stakeholder engagement programme there were differing views about who should be considered vulnerable and how to help those in vulnerable circumstances, particularly those facing hardship. This was considered a compromise area for the BP. NGN proposed to further develop an existing Hardship Fund with an annual pot of £30,000. This received significant support from customers during the BP Acceptability testing research. Once it was understood that the Fund was not derived from customers' bills but resourced by shareholders members of the Citizens' Jury said they would like to see the Fund increased and offered their support for the way in which it would provide assistance to people in need. NGN also committed to continuing £50,000 annual support to the Community Partnership Fund which they support in conjunction with Northern Powergrid and, going forward, two regional water companies.

The CEG felt that the value of NGN's support to vulnerable customers was not sufficiently ambitious, and we challenged NGN to improve on this. In response NGN made a further £120,000 per year available and decided that it should form part of the Hardship Fund only rather than being spread across the two funds.

The Community Partnership Fund is not designed to support individual customers and we agree with NGN's decision to allocate the additional shareholder funding to the Hardship Fund and their aim of adopting a "worst first" approach to target those most in need on an individual basis. Using the additional funds through the Hardship Fund will meet the concerns of many stakeholders who felt NGN

were not going far enough to support those most in need, whilst adopting a "worst first" approach. Using shareholder funds addresses the concerns of those stakeholders (Insight 31) who believe NGN ought not to be subsidising customers through their bills as a matter of routine.

Fuel Poor Network Extension Connections

Stakeholder feedback (Insight 27) was strong in relation to NGN being "community focused" and provided a clear steer on Fuel Poor Network Extensions (FPNES) with 43% of respondents believing NGN should provide low cost or free connections to those who need them most. Stakeholders were also clear that NGN should seek to meet or exceed the number of fuel poor connections they achieved during RIIO-1. Stakeholder support was strong for NGN to ensure that those who get a free connection can derive and maximize the benefit of it (Insight 28). In response NGN proposed to achieve 1,000 fuel poor connections per year. We were not convinced that this target was sufficiently ambitious and challenged NGN to deliver more.

In response NGN have committed to a stretch target of 10,000 fuel poor connections over the five years of RIIO-2, which is pro rata more than their target in RIIO-1 but in line with actual performance (14,500/16,000 over 8 years). Where undertaking community scale connections an energy efficiency improvement (set at SAP rating 3 or more) cannot be achieved, NGN have also now agreed to make a payment to the customer or into the hardship fund to reflect the difference in their energy bill. We recognize that there is both a reputational and financial risk associated with this revised target as NGN will seek funding for the additional connections through an uncertainty mechanism rather all connections paid for via a PCD. The CEG is supportive of the approach to this Output. We sought assurance of how NGN would achieve the stretch target and they advised that they intend to work with partners to deliver the pipeline of work to meet the stretch target. We understand that further guidance is awaited from Ofgem in relation to certain types of infill projects that may aid achievement of this stretch target.

Priority Services Register

The Priority Services Register (PSR) is a free service provided by suppliers and network operators to customers in need. It provides access to specialised and tailored services for the most vulnerable. Stakeholders gave significant support for supporting individuals in vulnerable situations (Insight 23). Across all of the relevant areas of stakeholder engagement, respondents supported the development of the PSR and NGN's work with partners to ensure those in need get a seamless service.

We believed that NGN's initial target number of referrals to the PSR (which is managed by the regional electricity Distribution Network Operators) risked sacrificing quality to achieve volumes of referrals. We challenged NGN to focus on identifying the most appropriate customers for referral, and to ensure processes were robust in assessing eligibility. In response NGN set an annual target of 5,000 and undertook to do more work to ensure that these referrals were appropriate. They are also developing a 24/7 "hotline" for customers on the PSR. This is an Output Delivery Incentive (ODI) which will attract reputational risk but also financial reward if it is successful. The CEG is supportive because again it responds to stakeholder feedback and we have been told that as the company already operates a 24/7 service any material costs have been embedded.

Providing advice and guidance

Stakeholders said they wanted NGN to "make every contact count" (Insights 17, 25 and 29) by providing energy efficiency advice and Carbon Monoxide (CO) awareness at every opportunity. The CEG heard that stakeholders not only support NGN to maintain a continued focus on CO awareness but that they are willing to pay for this (WTP research). At the Social Workshop and the Citizens' Jury we heard first-hand that both safety and improved energy efficiency are high priorities for customers. NGN have developed 3 bespoke Outputs in relation to these areas. They have committed to:

- directly delivering 1,000 successful energy efficiency advice referrals per year of vulnerable customers to partners who can provide further support on improving energy efficiency in homes;
- deliver 10,000 completed carbon monoxide awareness surveys per year and

- train 100 Community Partners to deliver carbon monoxide awareness sessions, make PSR referrals, and provide energy efficiency advice to customers that NGN might otherwise not have direct contact with.

We are supportive of all 3 bespoke Outputs because they chime with stakeholder feedback, are relevant to regulatory imperatives, and demonstrate a more holistic approach to social action.

Providing training to staff and external partners is essential but it is only half of the picture. Being able to demonstrate the effectiveness of such training in the form of improved customer outcomes is critical and effective evaluation is key to this.

In terms of energy efficiency training it was unclear where the expertise would come from to develop and deliver quality training (Challenge 59) and how impactful it would therefore be. NGN provided assurance that, working with NEA and other recognised bodies, all training will be fully accredited and that all trainees will be trained to national standards. This also meets the needs of stakeholders who told NGN (Insight 26) that they want to see vulnerability training being given equal importance to safety and technical training.

In response to the CEG's challenge, NGN developed a Customer and Social Competency Framework. This framework will bring together all training events and programmes and will focus on outcome assessment. NGN have committed to monitor the number of positive outcomes for customers using a range of mechanisms. These include the CIC App to track referrals to their vulnerability services and use of the BSI 18477 to ensure inclusive services are available and accessible to all. This is a bespoke Output which the CEG support because it is ambitious and will ensure outcomes are captured.

Vulnerability Funding Support and Network Innovation Allowance (Vulnerability)

NGN have a well-developed process for piloting innovation and then scaling up work or rolling out projects more widely as a result. The processes shared with the CEG were well thought out and

included appropriate monitoring and relevant measures of success. During RIIO-1 a number of innovations have been tested at a meaningful level focussed on those most in need. NGN propose to utilise the 'Use It or Lose It' allowance to continue projects which demonstrated positive results in RIIO-2, using the allowance for innovative work that has already been tested but not for BAU activities. By way of an example, two of the pilots from RIIO-1 (Connecting Homes for Health and Making Every Contact Count) were earmarked for roll out following successful trials. At the Citizens' Jury (November 2019) NGN tested options for a wider roll out.

The CEG is supportive of NGN's partnership approach and their proposal to split the allowances proportionately between vulnerability issues and CO safety initiatives.

The Network Innovation Allowance (NIA) vulnerability innovation research projects have not yet been fully developed so the associated costs could not

be easily understood, nor could we establish the need for reduced, or greater, investment. If there is an enduring role for the CEG we would propose to scrutinise any NIA proposals and ensure they are tested with stakeholders before submission to Ofgem for approval.

CEG view

In terms of support for customers in vulnerable situations the CEG welcome the strategic approach taken by NGN and the way they have considered differing stakeholder views on how best to support customers in vulnerable situations. The BP Acceptability testing showed 85% of domestic customers and 80% of non-domestic customers support NGN's plans to assist vulnerable customers.

Overall, we believe NGN have developed ambitious stretch targets and bespoke Outputs, taking a practical and pragmatic approach to its Vulnerability Strategy based on stakeholder feedback, CEG challenge and regulatory imperatives.

4.4. Outputs to Maintain a safe and resilient network

NGN have developed 5 key Outputs for RIIO-2 that are designed to ensure their network is safe and resilient. These were carefully considered by the CEG and are addressed individually below:

Network Asset Risk Metrics (NARMs)

NARMs is a statistically derived measure of network risk from a monetary point of view. For each type of asset to which it is applied, the monetized risk is a product of probability of failure, the consequence of failure, and the financial cost of failure. Once calculated, these 'asset level' risks are aggregated to provide a total risk factor for the overall asset base.

The NARMs methodology is key in linking asset health and performance. It is a methodology which is accepted by Ofgem and applied industry wide. Based on a solid scientific, engineering and mathematical rationale, it is the tool which underpins capital expenditure decision making within NGN. As such, communicating and providing clear explanations around NARMs is key to a coherent business plan.

As it informs investment decision-making, our focus was not to justify the NARMs methodology, but to assess whether the value to customers was clearly illustrated in its application by NGN.

RIIO-2 NARMs Outputs:

It is claimed within the BP that £25m-worth of value will be created within RIIO-2 as a result of the application of the NARMs methodology. This has been hard-wired into the BP. In the absence of a full, detailed breakdown of the modelling undertaken to arrive at this figure, the CEG have accepted this figure on face value. The Ofgem reporting criteria around the components of the 'value' figure produced by NARMs are yet to be agreed with NGN. Once in place, NGN can orientate its business processes accordingly. Until a decision is reached, a degree of planning uncertainty exists.

CEG View

During the CEG-NGN engagement process, NGN provided us with desk-top demonstrations of the NARMs model at work (December 2018 and August 2019 meetings). Deep dives assisted greatly in its de-mystification; by demonstrating the software tool in action, a greater understanding of it was achieved. This has been supported by discussions around the quality and variability of input data to the model. As exemplified in the BP, NGN is making strides to use new technology to ensure that accurate, state of asset health data is available for use by the NARMs package. This reduces the error band in its application and is anticipated to provide NGN with a better-targeted programme of capital works. In turn, this is more cost-efficient for the customer. The NARMs model has as its underpinning rationale to target those areas of the network that are of highest priority. By doing so, network safety is improved. This links directly to the findings of NGN's engagement programme and WTP research where there is a clear mandate from customers for NGN to operate a safe, reliable network where uninterrupted supplies are assured.

The NARMs methodology (and associated software platform) was not challenged in any significant way by the CEG except for requesting further clarification around its functionality. We challenged NGN to explain more clearly the impact on the risk levels of the network following the implementation of the proposed interventions and an assessment of the level of risk reduction/increase was provided along with other evidence to support investment decisions.

NGN's NARMs methodology is well-developed and forms the kernel of its investment decision-making. The system is based on solid scientific, engineering and mathematical rationale. The CEG witnessed and scrutinised the system working operationally. However, the £25m of risk-based value that NARMs is forecast to generate by the end of the RIIO-2 period has not been subject to a deep assessment. As NGN couples advanced (asset inspection) technology with NARMs, the ever-improving quality of the input data to model will generate significant benefits through more timely and better targeted capital expenditure.

HSE mandated Iron Mains Replacement

The replacement of iron mains is a Health and Safety Executive (HSE)-mandated programme of activity initiated in 2002 and which was subject to extensive amendment in 2013. The overall aim is to rid gas supply networks of iron pipes in order to make them safer. The HSE programme falls out-with the activities generated by the NARMs process detailed above. It is targeted on the complete removal of pipes of diameter less than 8 inches where such assets lie within 30m of a property (Tier 1 mains). In addition, it also targets pipes of diameters greater than 8 inches but less than 10 inches (Tier 2a) where a 'Risk Action Threshold' is exceeded. Under certain operational scenarios, when NGN come across a metallic service pipe, it must also remove that pipe. Given the probabilistic nature of this, it is very difficult to ascertain the level of cost associated with such remediation.

An assumption is made that, on average, there is a growth in Tier 1 mains of 0.2% per year. The stated aim in the BP is for NGN to complete all Tier 1 mains by 2032. This is stated to be a trade-off between cost and safety risk. The accelerated iron mains replacement programme during RIIO-1 has left a very manageable situation going into RIIO-2. The BP provides insights into the impact of NGN's strategy of over-replacing Tier 1 asset stock during the RIIO-1 period. We are satisfied that customer benefits have arisen as a result of this and that there will be no hidden cost burden for customers during RIIO-2.

RIIO-2 Repex Non- Mandatory Outputs:

During the RIIO-2 period, the BP shows: 2144km of Tier 1 replacements; 10km of Tier 2a replacements; and 209km of steel service replacements. These are NGN-generated targets, justified using cost benefit analyses.

Stakeholder Evidence and CEG Challenge: A strong body of stakeholder evidence was assembled in support of the iron mains replacement activities. These include evidence from the Citizens' Jury, Environment Pioneer Workshop, Futures and Environment Pioneer Survey 2019 and WTP Research. In addition, CEG 'deep dive' conversations at NGN's operational hub in Carlisle in April 2019 and at the InTEGReL site at Low Thornley, Gateshead in August 2019 provided further justification and insights into

NGN's thinking. In all cases, the company's rationale was very solid, demonstrating the HSE's mandate and application of NARMS. Of note was the company's total focus on safety as its primary operational driver in line with customer and stakeholder expectations.

Two principal challenges were raised by the CEG regarding these Outputs: (Challenge 33) 'NGN to provide evidence on analysis forecasts for repair volumes – emergency and repair Opex'. This was raised at our meeting in January 2019 and we requested the necessary detail to be provided for review at our July meeting.

'Evidence on rationale for increase in steel replacements in RIIO-2' (Challenge 34) was also requested at the January meeting including a review of the AESL/Newcastle University report into the performance of steel pipes commissioned by the GDNs. Ahead of receipt of the report, a deep dive session was held at our meeting in April 2019, with further scrutiny and discussion at the August meeting in relation to BP Output Costs. NGN provided adequate responses to all questions and an explanation was provided of the wider context to the AESL/Newcastle University report. This enabled us to see that a degree of benchmarking had taken place across broadly similar regions. A full explanation of the historical context around the use of steel pipes in the NGN network was provided at the CEG meeting on November 2019. The failure mode of the steel (barrel corrosion) and its impact on gas-in-building events provided the necessary evidence to justify the replacement of this material as soon as is practicable. We are satisfied that the steel replacement activity is in customers' best interests and the necessary insights justify the level of activity on steel service pipe replacement.

CEG View

The iron mains replacement programme is driven by HSE requirements (not Ofgem) and sits alongside the NARMS methodology described above. NGN have responded well to the mandate imposed by HSE and have developed parameters by which to measure their own performance. These are principally around Tier 1 and Tier 2a category pipe replacements. A strong stakeholder evidence pool has been used in arriving at the performance parameters chosen. The customer base's overarching focus on safety

and network resilience has been used as the principal driver of the activity. NGN have fully cooperated in providing additional insights, answering questions and responding to the two challenges raised. We are convinced that these Outputs reflect what customers want given that they align with clear statements from the customer base on its willingness to pay for safety and network resilience improvements which is the purpose of this activity.

NTS Offtake Capacity

NGN must 'book' sufficient gas from the National Transmission System (NTS) operator, National Grid, in order to meet its forecast 1 day in 20 years (1 in 20) peak day demand. To over-book would see unnecessary costs transferred to customers for over-capacity whereas to under-shoot requirements could see customers going off supply should a 1 in 20 event occur (example during a prolonged very cold period).

RIIO-2 Target Volumes:

Over the RIIO-1 period, the company has systematically reduced its booking exposure, with a convergence from 2018/19 onwards of c. 514 GWh/day. This figure will be carried in to RIIO-2. The company is also engaged in a Capacity Access Review exercise with National Grid (NTS) and the wider gas sector. Baseline volumes for the RIIO-2 period remain unknown and are subject to review. As such, the form of the regulatory outputs is yet to be determined.

CEG View

The 'safe, reliable and resilient' and 'uninterrupted supply' network expectations were voiced in customer surveys. Booking sufficient gas to ensure these happen is the key objective. As such, customers' expectations are represented in the booking process. In the deep-dive session held in Leeds in July 2019, the NTS Offtake Capacity process was discussed at length. Within the commercial constraints within which it operates, NGN were willing and able to provide sufficient information around the process in which they engage with NTS and the role of shippers in the value chain.

No specific challenges were logged by the CEG against the NTS Offtake Capacity activities. However, we requested a more complete explanation of the methodology for arriving at the base volumes which has been included

in the final version of the BP. This provides the required insights for us to support NGN's targets. Booking capacity is clearly a complicated activity and one which lies at the heart of being able to deliver on customer expectations.

NGN have provided adequate level of detail around the mechanics of securing an offtake agreement with the National Transmission Systems (NTS) operator, as well as insights into the challenges of doing so at an acceptable level of risk. As far as is practicable, the BP captures the key sentiments around the offtake position as it currently stands. The CEG note that NGN remain in active discussions with all relevant parties but has converged on 514 GWh/day as its booking figure for each year of RIIO-2. However, as far as NTS offtake capacity is concerned, we are convinced that these outputs reflect what customers want and are willing to pay for given that they align with clear statements from the customer base on safety and its willingness to pay for an uninterrupted gas service, which this activity is clearly focused on achieving.

Gas Holder Decommissioning and RIIO-2 Outputs

Gas holders were designed for use in the days of town gas. They are local storage devices designed to assist with the management of the 'diurnal swing' that customer usage profiles place on the gas distribution network. Over the years, their performance has become sub-optimal (wet gas, high maintenance costs, land remediation, oil leakages, etc.). Coupled with the ability to store gas under pressure in the new gas pipes that have been laid in the last 20 years ('line-packing'), gas holders are now obsolete. This necessitates a full decommissioning programme be put in place.

In NGN's case, 46 holder gas holders are to be dealt with, 23 of which were addressed in the RIIO-1 period. The remaining demolitions are due to take place in the RIIO-2 period, with two frames being maintained (due to listed building status). At the end of the RIIO-2 period, NGN will have no gas holders across its estate other than the two above ground frames which are listed structures which will need to be maintained by NGN.

CEG View

A strong body of stakeholder evidence has been assembled in support of the gas holder demolition activities. This includes evidence from the Citizens' Jury, Environment Pioneer Workshop, Futures and Environment Pioneer Survey 2019 and WTP Research. The subject was covered in a CEG deep dive session in July 2019, as well as cropping up for discussion at other CEG meetings.

No specific formal challenges were logged against the gas holder demolition activities. The rationale for undertaking the programme is compelling. However, numerous questions and comments were recorded at the meetings where these Outputs and Costs were first presented to fully understand the rationale and cost benefit of completing the work in RIIO-2 rather than over a longer period.

The gasholder demolition activities are a continuation of a programme that started in RIIO-1. The programme is based on clear operational, environmental and safety needs. Through its outreach, NGN have achieved strong stakeholder engagement around this activity. There are no reasons to doubt that NGN will complete this activity within the RIIO-2 period. We are convinced that this Output reflects what customers want given that it aligns with clear statements of support for safety, which is the clear purpose of this (finite) activity. The EJP confirms the cost effectiveness of completing this activity as soon as is practicable.

Cyber Resilience and IT Business Security and RIIO-2 Outputs

There is an increasing threat to the operation of NGN's network as a result of cyber-attack. The company is also compelled to conform to GDPR and NIS regulations, the latter applying to Operators of Essential Services (OES). Ensuring cyber resilience is fundamental to uninterrupted, safe, resilient, reliable operations.

Both the Ofgem and NGN targets are fully aligned as, 'publish and deliver business IT security plan' and, 'publish and deliver cyber resilience plan'. The appended Cyber and IT strategy set out clearly how NGN will seek to protect their data and the network.

CEG View

During a CEG meeting in July 2019, detailed discussions were held around Cyber Security and its impact on NGN operations. A clear outline of the key components of the Cyber and IT plans was provided plus additional resourcing around it. This has subsequently been supplemented by a detailed cost-benefit analysis in an appendix to the BP from which strong justification of the benefits can be drawn. The BP articulates the cyber security and IT risks to which NGN are exposed. There is a clear plan to reduce the risk and increase the company's resilience to cyber threats. Discussions with NGN staff revealed an increased cost base for equipment, training and staff resources to address the cyber security threat. No formal challenges were logged against the cyber resilience and IT activities. However, had more time been available, we might have sought further insights into NGN's contingency plan to deal with a breach of cyber security to gain a fuller picture of the operational resilience of the company to such an event.

We are convinced that these Outputs reflect stakeholders' expectations given clear statements from the customer base on willingness to pay for safety and network resilience and from the BP Acceptability Category 2 Responders Survey 2019.

Other Factors Necessary to the delivery of a safe and reliable network and Outputs

Workforce Resilience: NGN have a strong appreciation of the importance of succession planning and bringing the next generation of employees into, and through, the organization. This is clearly articulated in the BP. CEG meetings in July and August 2019 delved into the risk to the workforce of a reducing return on investment to the owners. The balance between direct and contract labour appears to be well managed with an ongoing assessment of the benefits of outsourcing and insourcing.

We heard reassurances from the Board (Board meeting April 2019 and at CEG meetings where the nominated Board CEG liaison member attended in May and November 2019) that they are taking a long-term view and wish to maintain the highest standards. The company has been proactive in reducing the average age of the workforce and adjusting terms and conditions of employment to rid itself of certain burdened costs, thus positively

impacting its fixed cost base. Technology is clearly impacting the working practices and allowing costs to be removed from the business. Overall, the BP projects a resilient workforce and one able to deliver on the company's 'safety', 'resilience' and 'zero-interruptions' agenda and provides insights around staff development to retain a 'fit-for-purpose' workforce. NGN also recognise and are planning for the need to upskill their workforce to ensure it can follow its decarbonisation pathways (training in the introduction of hydrogen for example). As such, we are convinced that customers are willing to pay for workforce levels which ensure that the gas infrastructure is managed in a safe, resilient and sustainable way.

We were impressed by the commitments to improving the network and customer services by all of the staff we met during our meetings and site visits, and during our visit to the new development space for staff training at Head Office where we learned of a proactive development programme linked to delivering Output targets.

Record Keeping – Multi Occupancy Buildings: NGN are very aware of the need to reduce risk exposure in multi-occupancy buildings (MOBs). A lot of work has been completed in RIIO-1 on the design of the internal system to manage such arrangements. The RIIO-2 period should see the fruits of this labour realised. The CEG meeting in July 2019 drilled into this in depth and some CEG members heard first-hand the views of stakeholders at the Pioneer workshop on safety and reliability. It was apparent that the company believes that customers would support a more proactive approach to the MOB challenge. This is considered further in Chapter 6 on costs, and we are supportive of NGN's approach to monitoring safety in MOBs.

CEG View

The Outputs were principally supported by statistical rigour derived from the use of stochastic modelling techniques. This allows investment to be prioritised based on historical and field-derived data. Whereas it is very difficult to achieve a 100% optimal investment plan using such an approach, the accuracy achieved is viewed as totally acceptable and significantly better than piecemeal interventions. The Outputs are supported by the CEG and reflect stakeholder priorities.

4.5. Delivering an environmentally sustainable network

Environmental Action Plan (EAP)- Protecting the environment and supporting a move to a net zero carbon future and Outputs

This section relates to NGN's environmental commitments and Outputs. These commitments are articulated in both the BP Output areas and via the Environmental Action Plan (EAP), as prescribed by Ofgem as a new common Output for RIIO-2 in updated guidance issued in July 2019. Our views on NGN's proposals for Whole Systems in Chapter 5 should also be referenced in this respect and is strongly linked to NGN's environmental commitments and approach to Innovation – also set out and commented on in Chapter 5.

We invested considerable time into scrutinising NGN's strategy for an environmentally sustainable network. This included a sequence of one to one or small group sessions and participation in deep dives and external stakeholder events. Multiple constructive challenges (six of which were formal) were made throughout the process with the majority being addressed in the EAP as set out below. A number of challenge themes (most notably the commitment to proactive carbon reduction (Challenge 20), the extent to which resource efficiency would be prioritised (Challenge 41) and the approach to air quality and low emissions vehicles (Challenge 55) have been the subject of detailed discussion and challenge.

The stakeholder engagement undertaken by NGN has reinforced the commitment to deliver an environmentally sustainable network as a key priority. The CEG built upon that feedback and challenged the areas in which the BP can best address stakeholder feedback and their willingness to pay.

The CEG consider that the EAP has been built upon a robust assessment of the environmental impacts associated with NGN operations. Whilst the RIIO-1 period was defined by the 'direct impacts' of the network, RIIO-2 will consider the supply chain impacts of NGN operations and the 'enablement' of 12.5m tonnes of CO₂e. That is to say, the customer

energy use of the gas transported to them by NGN will ultimately result in the release of 12.5m tonnes of CO₂e which is recognized within the EAP and BP as an NGN environmental impact. The CEG welcome this response to the challenges we raised to fully recognise the full environmental impact of gas used in their region.

The EAP is linked to the UK Government's 2050 net zero carbon ambition, although the CEG have provided challenge in respect of the potential to use a nearer term frame of reference. This would link to the targets set by several of the Local Authorities and City Regions that make up the NGN geography and we are pleased that this has been reflected in the updated version of the EAP submitted with the BP.

The Stakeholder Insight Report communicated some clear messages from customers and stakeholders on their concerns about the environmental impact of NGN's plans. The CEG recognize that the BP has evolved to take account of this feedback and changes were made in the scope and scale of activities to improve environmental performance in RIIO-2. The delivery of an environmentally sustainable network was placed as a significant priority. Stakeholders indicated that they wanted NGN to take a leading role in delivering on the Government's decarbonisation targets.

All of the ambitions set by NGN were supported, with 'reducing our carbon footprint' receiving the strongest affirmation. On this topic 73% of stakeholders indicated that the NGN ambition was either just right or not ambitious enough.

There was some degree of variation in the support attributed by stakeholders to the other themes that NGN proposed as the focus of their BP. The lowest level of support was attached to 'making a positive impact on air quality'. On this topic 61% of stakeholders indicated that the NGN ambition was either just right or not ambitious enough. For several of the themes (for example the use of resources and improving habitats for wildlife), NGN customers were

more supportive of an ambitious commitment than other stakeholders. This is reflected in the report findings on their reported willingness to pay.

NGN's ambition to reducing their carbon footprint through low carbon vehicles was broadly supported, although SMEs were found to be significantly more willing to pay for that investment than other stakeholder segments. There was some apparent confusion with respect to the replacement of metallic pipes with plastic. Some stakeholders appeared to believe that this was an environmental initiative. Others conflated the use of plastic pipes with the wider concerns associated with Single Use Plastic and the 'toxicity' of this agenda.

Feedback also included stakeholder groups that placed the environmental agenda into the context of the regional economy(ies) and sought NGN's contribution to those regional goals.

Decarbonising the network

Within the EAP and BP there are specific references (in line with common Outputs) to the reduction of shrinkage and leakage which account for 95% of the emissions reductions NGN will achieve in RIIO-2. NGN's contribution to decarbonising the network for a net zero carbon future is also integrated into their Whole System strategy. We comment further on this in sections 5 and 6.

That said, we recognize that response times to leaks (be they reported or otherwise identified) have been excellent during the RIIO-1 period. The ongoing commitment to rapidly address gas leakages, even where they do not represent an immediate threat to safety, is welcome given the environmental implications of methane emissions of leaving such leakages unattended. The stakeholder feedback was clear in the expectation that NGN should be a leader in delivering on the UK Government's commitments to deliver a net-zero economy by 2050. This means that the relatively modest cost associated with the ability to respond to leakage beyond the statutory requirement is in line with the commitments to lead on the decarbonisation agenda. It is also supported by customer and stakeholder feedback as assembled in the Insights Report.

During the RIIO-1 period, it is recognized that NGN have adopted a leadership position in respect of the potential to convert gas networks to 100% hydrogen. This represents a strong cross-reference to their Innovation plans (Challenge 59). Stakeholder feedback indicates a preference for gas to remain part of the future energy mix and some degree of (potentially collaborative) investment in a future hydrogen economy. NGN and stakeholders recognise that the availability of low or zero carbon gas is of customer benefit although it is also considered to be contingent on Government energy policy. We have been provided with extensive evidence supporting the work being undertaken by NGN and other gas networks in respect of this agenda. As elsewhere in our report, we would suggest that a more ambitious agenda will be needed outside of the restrictions of RIIO-2 by both Government and industry if the decarbonisation of the energy networks is to evolve in line with the 2050 decarbonisation pathways with the reopener mechanism being considered appropriate in this regard.

The BP commitment to support the enablement of biogas relates broadly to the speed and efficiency by which biogas connections can be made. It is informed by Customer Insight (59). The CEG recognize that NGN have limited influence on the market dynamics that drive the number of connections that may be required. Stakeholder feedback was relatively limited with regard to biogas and customer benefit. Even in the context of the ambition to decarbonize the network, it is considered to be modest. However, the potential does exist for NGN (and other GDNs) to more publicly and proactively encourage the development and connection of appropriate biogas projects in response to stakeholder demand for rapid decarbonisation. We challenged NGN to strengthen their focus on this area. The final version of the BP included a strengthened Output that included more proactive market engagement including an annual stakeholder workshop and a shortening of the time to produce detailed capacity studies. These enhancements were welcomed. The CEG would encourage industry wide engagement with Government to explore the potential for market incentive mechanisms. A standard approach across all GDN regions is also to be encouraged.

Reducing NGN's other environmental impacts

The CEG challenged NGN on the wider range of environmental impacts associated with their operations. These challenges were both formally defined (Challenge Numbers 32, 41 and 43) and articulated via the one-to-one and deep-dive sessions. Stakeholder feedback supported CEG challenges and we are pleased to note that NGN provided a constructive response. The four Ofgem common Outputs are supported by specific targets and, in the most part, are to be delivered at no additional costs.

The cross-reference NGN has made within the EAP between network resilience and climate change recognises wider network security and resilience concerns. This is a positive response to a CEG challenge and is indicative of the way in which environmentally focussed programmes have been woven into the BP as a whole.

The CEG are convinced that the EAP has been evolved through a pragmatic approach to reducing the operational carbon footprint – for example the upgrading of Operational Carbon Footprint (non-fleet). NGN have shown that many of their initiatives will be cost neutral from a customer perspective, although they will deliver an indirect benefit in terms of environmental improvement (such as air quality) and enhancement (from tree planting and on-site biodiversity plans).

The investment into more energy efficient buildings and the development of some renewable energy capacity is welcome, as is a switch onto a green tariff for other consumed power. NGN confirmed that renewable generating plant is being fitted at all operating sites where it is possible to do so and the NARMS EJP indicates a 12-year payback for this investment.

The stated intention to invest £16m into upgrading the gas preheating systems at more than 50 sites is recognized by the CEG as a BAU operation investment. The carbon benefits associated with this investment will be welcome, although these are not the primary motivation for the investment. This will not represent a customer cost or benefit and the CEG consider it appropriate to treat them as such.

Operational Carbon Footprint (fleet) –the CEG and other stakeholders provided robust feedback to NGN as to the level of aspiration relating to reducing the operational carbon footprint of its fleet of vehicles and switch to zero/low emissions vehicles. This focus was echoed by wider stakeholder feedback, particularly in the context of carbon footprint and local air quality. It is recognized that NGN took onboard this feedback and evolved their position as a result. The focus is on those vehicles for which viable short-term alternatives exist (100% of cars used for non-engineering purposes). We welcomed the transparency shown by NGN in the modelling of average miles and duty cycles to address the contradiction to initial assumptions (concerns regarding range and impact upon operational performance of EVs).

Whilst there is a cost associated with the planned changes, this is supported by customers' willingness to pay reflected in the Insights Report. The ambition to transition 50% of other vehicles is an improvement on earlier versions and despite NGN's position that the market provision is not fully in place. This reflects stakeholder feedback, most notably from future customers and the CEG propose that NGN should consider increasing their ambition given the pace at which the market provision of low/zero emission vehicles is evolving.

Heavier vehicles are largely omitted from the current commitments and the CEG repeatedly challenged the perceived lack of ambition associated with this fact. The NGN response was consistently based on a lack of market provision and an absence of supporting infrastructure for refuelling. The CEG challenged this aspect of the BP and set an expectation that heavier 'engineering' vehicles will see a shift from diesel to low/zero emission technologies when market provision is available.

A further challenge was raised in relation to contractor vehicles. Given the reliance of NGN on outsourced engineering support for Repex and stakeholder expectations on carbon and air quality, there is the potential to extend NGN's commitment into the supply chain. It is recognized that most of the engineering contractors are SMEs (considered a positive in terms of social impact and leaving value in

communities). SMEs companies may require some degree of support and encouragement to move away from diesel vehicles with which they are familiar, and this is not currently accommodated by the BP although should be cross referenced with the commitments to sustainable procurement. We comment further on this in Chapter 6 on Costs.

Using Resources Responsibly

As noted in both the BP and EAP, NGN's existing focus on the reduction of virgin aggregate to no more than 2.5% reflects broad stakeholder preference and is welcomed by the CEG. Similarly, the elimination of single use plastic from the workplace and the more impactful commitment to reduce the amount of wastage from PE pipe used in replacement works reflects a current stakeholder sensitivity to plastic pollution. The EAP also identifies the potential to reduce paper consumption which will be delivered at no extra cost to the customer. Whilst any cost savings would most likely be modest, the CEG challenged NGN to demonstrate how resource efficiency could translate into direct customer benefits and this area was strengthened in later versions of the BP.

We challenged NGN on the potential to creatively improve the biodiversity impacts of some or all of its sites. This was considered likely to be a low/no cost issue and one that would provide some degree of indirect customer benefit (air quality, wellbeing and quality of local environment). Stakeholder feedback indicated support for this agenda from customers, although less so from SMEs and other stakeholders.

We support NGN's commitment to invest in the biodiversity of sites at no extra cost to the customer. Similarly, the use of shareholder funds and the corporate volunteering policy to support the delivery of a commitment to plant 40,000 trees within the Northern Forest areas is also welcomed by the CEG and wider stakeholders. This is considered to be an indirect customer benefit in terms of enhancement of the regional environment.

With regard to contaminated land and remediation, stakeholder feedback indicated an expectation that NGN will retain responsibility for their legacy land assets and the commitment to invest £3.4m over the RIIO-2 period and we consider this to be in line

with stakeholder preference. The CEG challenged to ensure that customers would not be funding unnecessary works that may simply serve to enhance the value of an NGN asset. The prioritization for spend set out in the EAP is considered to be an appropriate and pragmatic response to that challenge.

The removal and remediation of gasholder sites is considered elsewhere in this report. CEG challenge in relation to the customer benefit identified a cost driver that allowed for short-term expenditure to derive longer term cost savings. As well as environmental benefits there was also a clear safety imperative associated with the removal of the need to perform ongoing maintenance at height.

Outputs

For the Outputs relating to an environmentally sustainable network, and notwithstanding some areas of challenge as set out above, we are convinced that these reflect what customers want or are willing to pay given the clarity of stakeholder engagement and the strength of feedback. With specific regard to Outputs:

Protecting the Environment: these 4 Ofgem common Outputs relate to: the provision of an annual report and EAP initiatives to improve air quality, use resources responsibly and enhance life on land. Each of the Outputs is supported by one or more Insights, clearly referenced in the BP. We are convinced that Outputs are in line with customer and stakeholder preference and willingness to pay. Each of the Outputs is supported by a detailed assessment and options analysis, primarily articulated by the EAP. The BP Acceptability survey results were strongly supportive of Outputs across this area of focus.

Supporting a move to a net zero future: these 6 Ofgem common Outputs relate to: the provision of an Annual Environmental Report and the development of an Environmental Action Plan. They also cover measures to address leakage, shrinkage, business carbon footprint and biomethane process improvements. Each of the Outputs is supported by one or more Insights, clearly referenced in the BP. We are convinced that Outputs are in line with customer and stakeholder preference and willingness to pay. Each

of the Outputs is supported by a detailed assessment and options analysis, primarily articulated by the EAP. The BP Acceptability survey results were also strongly supportive of Outputs across this area of focus.

CEG View

The requirement to produce an Environmental Action Plan was only confirmed in updated guidance by Ofgem in May 2019. NGN shared draft versions during presentations and deep dives from August. The quality of the initial EAP improved through the iterative

process of challenge, customer feedback and further modelling of data. The final version clearly sets out the decisions and, to a reasonable extent, how they relate to customer benefits.

We comment on the costs associated with the delivery of an environmentally sustainable network in Chapter 6, but we are convinced that all Outputs are appropriate and in line with stakeholder preference. It is also our view that they and the EAP are underpinned by a detailed options assessment and science-based targets.

4.6. Modernising data

NGN's approach to digitisation was discussed at a deep dive session in November, but the final strategy was not available until December. Consequently, it has not been subject to detailed discussion by the full Group. We are however satisfied that NGN have considered the importance of data security and have embarked on work to establish the potential for future use of data in relation to whole systems development and network management.

We note that NGN provide an example of how their strategy will simplify their contracting process. We have not seen evidence of stakeholder feedback on any proposed changes and it is important that NGN consult to ensure systems changes do not create extra work for customers/suppliers in their attempt to reduce costs to the company.

Chapter 4 CEG Overall View

NGN provided information to us that was timely, robust and complete by the end of the process. We had to clarify many issues through the course of our engagement with NGN as they developed the scope and scale of the Outputs now reflected in their BP. The number and content of the Outputs changed in different iterations, but as more detailed analysis was done NGN shared their thinking and were open and transparent as Outputs were tested with us and other stakeholders. The vast majority of the information provided stood up well to our scrutiny. Whilst the AESL/Newcastle University Steel report evidence was delayed by some weeks, we were able to take it into consideration in advance of Version 2 of the BP). The explanation of NARMs methodology was provided in a clear way and the rationale for engineering works that were unfamiliar to most of the CEG members was helped by visual aids, site visits and clear presentations.

The engineering Outputs were principally supported by statistical rigour derived from the use of stochastic modelling techniques. This allows investment to be prioritised based upon historical and field-derived data. Whereas it is very difficult to achieve a 100% optimal investment plan using such an approach, the accuracy achieved is viewed as totally acceptable and significantly better than piecemeal interventions.

Customer Service Outputs were harder to assess in terms of costs as most of the enhanced services were embedded into BAU. Testing of preferences were however built into the customer and stakeholder engagement plan activities

Further Scrutiny or Open Hearing topics

- Given there is outstanding guidance on the administrative requirements for FPNES we suggest this may be explored at a joint GDN/Ofgem workshop or possibly at an Open Hearing as deliverability will depend on a number of external factors outside NGN's control.
- The commitments made by NGN to improve the 'Biomethane Process Improvements' Output are noted and welcomed. The agenda is, however, only partially influenceable by the GDNs and it

- is suggested that an exploration at Open Hearing stage would be appropriate given the potential contribution to the 2050 net zero trajectory.
- We also consider that there is value in exploring with all the GDNs whether there is an opportunity to drive the supply chain to deliver non-diesel heavy vehicles that would not impact the delivery or response times and costs. This is because we do not believe one company alone has the ability to drive changes within the manufacturing industry.

4.7. Consumer Value Proposition (CVP) – How far are NGN delivering more for customers?

OFGEM have proposed a Business Plan Incentive (BPI) to drive benefits for consumers by rewarding companies for plans that offer consumers additional benefits and value for money. The CEG received a presentation on the company's proposed approach in September 2019, following OFGEM guidance on CVP (stage 2 of a 4-stage process in assessing the BPI). The CEG discussed this further in November following the production of a draft Appendix on the detailed methodology that NGN had applied. The final Business Plan (seen by the CEG on 29 November) contains the complete proposition.

In assessing NGN's CVP, sources of evidence we have drawn upon include WTP research and outcomes, Mini-Public sessions and BP acceptability testing, as well as a number of stakeholder workshops on matters such as the environment, and inclusivity/vulnerability – many of which we attended. We reviewed all the evidence available to us including, latterly, the Customer Insights report. We matched this against our own knowledge and experience, formal challenges, actions and BP Effectiveness criteria.

There are numerous CEG challenges that are relevant including 'NGN should demonstrate that customer satisfaction Output targets are directly relevant to customers' expectations' (Challenge 3). To go through them all in this section would risk repetition. Importantly however, we made an early challenge in November 2018 that NGN should demonstrate that any proposed investment over and above license obligations should have the support of stakeholders

(Challenge 10). We kept this challenge open right to the end of the process so that we could take an overarching view including the findings from customer insights and BP acceptability work.

NGN's responses to our challenges and debates have, of course, helped shape our opinion. For example, we asked them to demonstrate whether they were confident that they had identified customers' priorities and had tested that customers understood the decision making/priority identifying process (i.e, if money was not spent on one proposal, what else could it be spent on?). NGN responded that this had been done in a number of ways including through their WTP analysis, and in the approach, they had taken to 'trade offs'. Having reviewed the Customer Insights report and having been present at many stakeholder and consumer events, we can see the logic of NGN's conclusions. Our view on all Outputs is captured in the earlier sections of this chapter.

NGN have valued 13 areas of their plan but are not proposing to include CVP 13 (Hydrogen transition) as the full benefits will not be realised by customers in RIIO-2. Instead, they have valued the benefits that the enabling work will deliver in the future.

We acknowledge the complexity of appropriately quantifying added value and we welcome the transparent approach that NGN have taken and the external assurance they commissioned. In the event that NGN are successful in receiving reward for any of their CVP proposals and are not able to deliver, any

reward will be returned to customers, however they have committed to continue to endeavour 'to make up the ground to deliver on our ambitious targets'.

CVP Proposals

We consider each of the CVP proposals below and highlight how far they are supported by customers, stakeholders and the CEG, using the evidence available to us:

Vulnerability:

1. **Fuel Poor Network Extension Connections (FPNES) – stretch target of 2000 connections per year.** Customer Insight work demonstrates that the FPNES is a very important priority for customers. In 2018 research for example, 37% identified this as the top priority for social initiatives as it is 'most related to core business' and 'offered a long-term solution'. This is entirely consistent with what we heard. The CEG pressed NGN to ensure that they connect as many fuel poor households as possible and challenged how the stretch target had been set. NGN advised that it had been determined by the level of fuel poor connections they had achieved through RIIO-1 and through analysis with their delivery partners and stakeholders. Whilst NGN feel this stretch target will be very hard to achieve, they recognise it reflects social need within the region, and their ambition to look for creative solutions to help people living in fuel poverty. We also challenged the company to retain its commitment to ensuring that all fuel poor connections deliver tangible benefits to customers. There is both financial and reputational risk associated with the revised target of 2000 connections as we have identified earlier in our report. We note that where the SAP standard of a home connected as part of a community FPNES project cannot be improved by at least 3 SAP points, NGN will make a payment to the householder or into the Hardship Fund to compensate for the lack of energy efficiency / cheaper energy bills.
2. **Hardship Fund. NGN will establish a Hardship fund to support those who cannot afford repairs/replacement to gas appliances post disconnection in RIIO-2.** On the issue of helping

customers in need, we saw differing views about who is considered vulnerable and how to help those in vulnerable circumstances. This represents a compromise area for NGN who arrived at a solution of further developing and boosting an existing shareholder funded Hardship Fund. This Output received significant support from customers. Following a challenge from the CEG, the fund has been increased to £150k pa. We set out more detail on this earlier in our report, and we believe NGN have reached an elegant compromise.

3. **Community Partnering Fund.** In the BP acceptability study, 88% of household and non-household customers and 94% of future customers and stakeholders supported the proposition.
4. **Customer and Social Competency Framework.** NGN invited participants of its BP Acceptability study to comment on their proposals for training engineers to identify and help customers in vulnerable situations. It was strongly supported with 95% of household, 100% of non-household, 90% of future customers and 94% of wider stakeholders supporting the proposition.

Environmental:

5. **Company Car Policy to include only full electric or hybrid vehicles.** There was strong stakeholder appetite for NGN to reduce their vehicle carbon footprint and go above and beyond by phasing out diesel vehicles sooner than committed in early BP drafts. This is something we heard consistently, and we encouraged NGN to support consumers' aspirations, to tackle air quality and reduce fleet emissions. NGN have significantly improved their fleet replacement target in the final version of their BP and we support this proposition. However, we believe a national and industry-wide approach should be taken to help stimulate and drive the supply chain for non-diesel larger vehicles and have suggested this is subject to an open hearing with all of the companies.
6. **Voluntary planting of 40,000 trees.** There is clear customer support for this and other related actions, demonstrated through for example the Pioneer Survey.

7. **Enhanced repair times for gas escapes - 7- and 28-day targets.** 93% of all household, 83% of non-household, 79% of future customers and 73% of wider stakeholders supported this in the BP Acceptability Study.

Customer Service

8. **Appointments for restoration of gas to appliance** - NGN undertook testing among consumers and the compelling findings demonstrated support for this – particularly among women, ethnic minorities and customers aged 65+ who were willing to pay more for a 2-hour appointment service. There were some nuances such as among the digitally disengaged who, whilst still supportive, were less willing to pay relative to the average, possibly owing to concerns about accessibility of information. The findings and enhanced service offer are consistent with what we heard customers say they wanted. In addition, NGN propose to create a cross-flex team of colleagues who can both lay services and carry out purge and relight jobs at the same time making these targets more deliverable.
9. **Complaint resolution** – 60-minute standard. Whilst there were some nuances in customer responses, 95% of all household, 90% of non-household, 87% of future customers and 100% of wider stakeholders accepted the proposal to at least maintain the current level of performance with an aim to further increase the number of complaints resolved within 60 minutes – both on weekdays and weekends. NGN confirmed this can be achieved at no extra cost to customers, and we believe it provides added value.
10. **Restoration of gas to appliances within 2 hours of restoring Emergency Control Valve (ECV)** – The Customer Insight report confirms that improved performance on time taken to reconnect gas to appliances received widespread support across the stakeholder base with no statistically significant variation in results or divergent views.
11. **Reinstatement within 3 calendar days for planned and unplanned interruptions excluding bank holidays** – Restoration of land once gas works have been completed was one of the most

highly valued Outputs in the Willingness to Pay study. The average household is willing to pay an extra £0.47p for reinstatement within 3 days, £0.98p for within 2 days and £1.92 to secure within one day. However, some stakeholders believe the minimum standards are acceptable. NGN are proposing to exceed their expectations to minimise disruption which they point out will lead to better customer outcomes.

12. **Citizens' Jury** – NGN are making a commitment to an enduring customer engagement mechanism with their Citizens' Jury meeting 3 times a year. There is support from the current members of the jury and we believe this allows NGN to maintain wider public engagement established during the planning process. We don't believe the social outcomes of members are a valid measurement but we agree there is an inherent value of the engagement process.
13. **Hydrogen transition** – not included in RIIO-2 CVP.

The monetisation of the CVP has been validated as £89.37m for RIIO-2 period with longer term benefits estimated. We support the methodologies used to calculate the value and the way in which these have been applied is transparent. The CEG also support the package of measures proposed in the CVP, (with reservations as highlighted relating to points 5 and 12) as there is evidence above that these are in line with what customers want and will benefit from. We believe that, subject to no significant change in external dynamics, the commitments are deliverable based on the Company's track record and supported by proposed investment and systems changes.

5. A sustainable plan for the future

5.1. Enabling whole system energy solutions

We learned that “Whole System” has different meanings to different players within and outside the energy industry and challenged NGN to come up with a clear definition, which they have done with reference to results from discussions with stakeholders: whole systems “facilitate strong collaboration and integration across energy infrastructure, operations, markets and supporting processes.”

NGN recognise that their role needs to go beyond that of purely transporting gas to consumers. They will increasingly need to better understand how customers want and need to use the gas they receive now, and in the future, and develop partnerships with other parts of the energy sector. They have committed to leading regulatory change via the uniform network code to facilitate the introduction of hydrogen onto the network.

They also commit to improving support for biomethane producers to help develop schemes and connect to their network. This section should be read alongside our comments on NGN’s Environmental Action Plan (EAP).

The UK has put in place statutory duties to reach zero carbon emissions by 2050. Changes in the way that electricity is generated are well under way to contribute to that target with the transport sector beginning to respond with electric vehicles. There is no clear pathway yet for how to decarbonise heat at this stage. The co-operation of a wide range of stakeholders including NGN is required to meet that challenge.

NGN Plans for RIIO-2

The main theme that NGN are concerned with is the safety of transporting and introducing hydrogen for cooking and heating in domestic properties. They are working with the HSE to prove the suitability of their existing network assets and any changes needed to allow for greater use of hydrogen.

NGN will need to address many wider issues that have yet to be identified. In partnership with Northern Powergrid and Newcastle University, NGN established a testing site at their depot at Low Thornley, Gateshead, to try to identify these. InTEGReL provides facilities for whole systems innovations that NGN will seek to develop under RIIO-2 and beyond. The CEG visited the site and met one of the strategic partners from the university who explained the scope and ambition for the site. NGN are expanding whole systems thinking and testing by working with the wider utility sector including water and transport as well as academics to answer the needs of consumers in the North East for energy, heat and transport through this facility. It is our view that NGN should seek additional resources to allow InTEGReL to meet its full potential.

NGN have been very active during RIIO-1 searching for a long-term solution to the decarbonisation of heat and the future of gas through their H21 project and again this work will continue and expand during RIIO-2.

CEG View

Stakeholder challenges were wider than decarbonisation. Some more practical issues around the need for utilities to co-operate/co-ordinate over street works planning and sharing of information on vulnerable customers were also identified as matters important in whole systems thinking. NGN have considered those matters elsewhere in their plan.

In our opinion more will need to be done on a national basis to communicate the potential changes and impacts of whole systems development. A better understanding of stakeholder preferences and needs will be necessary for industry and government to develop decarbonisation pathways. The CEG would expect this to be part of NGN’s future stakeholder engagement plans.

The CEG raised a number of issues that required clarification during the deep dive process to better understand the company’s approach in their draft

Whole Systems Strategy. Our first challenge related to the definition of whole systems used by NGN which was clarified, explained and can, in future, be better communicated to engage their wide range of stakeholders contributing to this agenda.

There is considerable information within their final Whole System strategy and their BP about which stakeholders they need to work with during RIIO-2. There is, however, less evidence of how they will engage the majority of customers in their activities. We would urge NGN to ensure customers are involved and are kept informed of initiatives that will impact them. This is an area to which an enduring CEG could add significant value.

The CEG share NGN's concern that the current lack of Government direction regarding the future of heat

and the role of gas makes it difficult to develop a clear pathway. As yet the full potential benefits and impacts for customers are not understood apart from at the macro level of tackling climate change. We support, therefore, their approach to the uncertainty mechanisms to allow NGN to respond if any major policy changes emerge during RIIO-2. The CEG support NGN's concerns that the scale of what is needed to meet the 2050 decarbonisation target will require much more coordination and leadership at the national level and this should not be driven solely by this 5-year price control period.

5.2. Managing uncertainty

Ofgem allow 5 mechanisms by which the GDNs can manage uncertainty. The CEG sought to seek reassurance on the processes, assumptions and justifications for managing uncertainties within the BP period. NGN have chosen to use these mechanisms and the CEG believe their proposals are justified.

Reopeners

NGN have identified areas of expenditure where a reopener process should be used to protect customers and networks from potential forecasting errors. These are: the costs of street works, large load connections, HS2 & Trans-Pennine rail electrification, physical security, and smart metering. Each has been based on historic expenditure.

Engineering justification papers and cost benefit analyses have been produced for these material areas of expenditure. NGN and the CEG recognise that there are several unknowns that are outside the control of the company. No specific mention is made of Brexit and we have raised this as a possible concern in Chapter 6 where we discuss costs.

Volume Drivers

NGN have declared an aspiration to deliver 10,000 fuel poor connections in RIIO-2. However, they have only given a commitment to connect 1000 per year as

a PCD with the remaining 5,000 linked to a volume driver.

This will impact on total revenue and the level of service NGN will be able to provide. However, we support this proposal given the changes to the eligibility criteria and uncertainty around support for first-time central heating systems beyond 2022, and the limited funds available until then. The CEG also recognise the narrower eligibility criteria which have impacted community connections. We have commented on this Output in earlier chapters.

Real Price Effects (RPEs)

The industry report on RPEs was only made available at the start of December and has not been subject to detailed CEG scrutiny, however we understand this mechanism will be used in annual assessment of costs by Ofgem and NGN. The most impactful RPE is deemed to be the cost of contractor labour, although during our scrutiny of NGN's delivery model we heard that NGN are able to attract competitive rates by paying contractors within 7 days, and regularly retendering.

CEG View

There was no customer feedback specifically pertaining to uncertainty mechanisms nor were there any formal CEG challenges.

It is difficult for NGN (and consequently the CEG) to determine the potential cost and implications of the risks they wish to address through these mechanisms,

apart from the two areas where £4.6m costs have been built into Totex. This is where Network Rail decisions will dictate the time and amount of costs needed but these look more certain than other areas. NGN's approach was fully explained, and we believe it is well considered and reasonable conclusions have been arrived at for areas of material expenditure.

5.3. A consistent view of the future

NGN have reflected the economic outlook and its likely impact on their BP in relation to gas demand, the changing energy mix, future energy scenarios and demand (overall and peak day). This analysis is important as it underpins a number of key assumptions and strongly impacts upon investment decisions.

The CEG recognise that NGN's view of the economic outlook for gas within the RIIO-2 period informs their risk appetite and the willingness to take longer term investment decisions. There is evidence that NGN have liaised with Energy UK, National Grid and other network operators in developing a view of the future. They have made a link with their digitalisation strategy and in the final iteration of the plan have reflected on how heat pumps may impact on gas demand beyond RIIO-2. However, their shaping of future strategy seems to rely heavily on a report produced for them by TPA Solutions. The report

centres on 4 areas being: Gross value added, Gas Prices, Sector growth, and Cost Price Index (CPI)

TPA assume a downward trend in gas consumption due to economic growth slowing and NGN's region ranking low in terms of GVA metrics. We believe that, whilst they have properly considered and factored the most likely scenarios for gas demand into their BP, NGN have not articulated the potential impact of Brexit on the sourcing of equipment and supplies and the long-term effect on the supply chain. A reduction in the expansion of the network will also result from regulatory restrictions for new connections beyond 2025. This is likely to result in a reduced capacity to increase access to new and sustainable revenue streams. It is unlikely to significantly impact the delivery of the BP over the RIIO-2 period unless there are Government policy changes which will be subject to reopeners.

5.4. Is NGN driving efficiency through innovation and competition?

Overview

NGN's approach to innovation and competition in their BP is supported by their Innovation Strategy which places the BP proposals into a wider context. There is substantial duplication in terms of emphasis and content between the BP and the supporting strategy. Given the subject matter both are relatively high level but, as versions of the BP evolved, increasing levels of detail were provided as to the deliverability of RIIO-2 Outputs.

NGN references to innovation are not limited to this section of the BP and the CEG were encouraged

to see references made in other sections. NGN's approach to innovation was the subject of 9 formal challenges and several information requests. Among other things, we sought to establish what the outcomes of innovation had been during RIIO-1, how these had been embedded for RIIO-2 and what new areas of innovation would be brought forward.

Included amongst the challenges were: "Evidence required to demonstrate value of innovation to customers and wider benefits to stakeholders" (Challenge 28) and "NGN to demonstrate they have looked at what's out there in larger market if this

brings value to customers” (Challenge 50). Further challenges related to demonstrating efficiency gains through innovation and for NGN to look at the overarching customer benefit of innovation, not just as simple function of return on investment. Through the evolution of the BP, written responses and evidence were provided to the key challenges – notably including the demonstration of market provision, process and impact.

Both the BP and the supporting Strategy Document place emphasis upon the impacts and outcomes delivered during the RIIO-1 period but a more detailed exposition of what is planned for RIIO-2 was included in the final BP following our request to demonstrate the value delivered to customers. We also considered it appropriate to rehearse the achievements of RIIO-1 where the approach is intended to be extended into RIIO-2. The BP has evolved significantly and provides specific evidence as to ways in which value has been created for customers through embedding innovations from RIIO-1.

The Insight Report we received in October highlighted three direct Insights (Insights 60-63) from stakeholders in relation to innovation and competition. This is considered relatively limited in comparison to other areas of the BP. The feedback appears to primarily have placed focus on areas of operational efficiencies and pragmatic ‘engineering’ improvements rather than taking a whole systems approach, with a preference to widen industry collaboration and adopt an engineering led approach. These perspectives are likely to be a result of the mix of stakeholders who participated in the Pioneer Workshop on Innovation. The CEG witnessed that members of the wider gas industry were extensively represented at that workshop where a practitioner led perspective was shared. We are pleased to see in the BP a stronger emphasis on a deeper collaboration across a wider group of stakeholders following later stakeholder testing of the strategy.

The Insight Report also evidences that customers and stakeholders connect effective innovation to preferences such as: safety, value for money, environmental sustainability and customer vulnerability. This means that the NGN’s competition and innovation strategy reflects the wider willingness

to pay and acceptability criteria. The CEG are of the view that NGN’s approach to competition and innovation is aligned to stakeholder opinion and is intended to deliver improved outcomes and cost efficiencies.

NGN have also responded to feedback from the CCG and the BP separates out BAU innovation from that in support of the whole system/transition agenda.

Competition

It is understood from both the BP and the Innovation Strategy that the process of competition and procurement is key to delivering stakeholder value and have been a strong element of NGN’s approach to innovation. Where the market is unable to provide an effective solution, direct innovation by NGN or the wider industry may be required to address the shortfall or market failure. NGN’s definition of a £10,000 limit for competitive procurement has not been directly audited by the CEG, but we recognize their approach is to create a clear competitive landscape.

NGN claim that their approach to Native Competition is innovative. We are satisfied that the move during RIIO-1 to use direct service providers (typically SME companies within the NGN region) has delivered stakeholder value. This has been achieved through the reduction of cost by better scheduling and improved safety. Their use of case studies to evidence past performance is helpful.

NGN place significant focus on the cycling of insourcing and outsourcing. The CEG have challenged this approach and understand that the agility and flexibility of this approach can offer customer benefit. The innovative approach to procurement is connected to the need for effective contract management. The BP provides specific details of the financial savings made via the procurement team and contract managers during each of the years in question. It is recognized that potential savings for the RIIO-2 period are covered by a simple commitment to drive efficiencies. There are no specific figures associated with that aspiration, however NGN explained this is contained within the overall 0.5% pa productivity target.

Innovation Outcomes during RIIO-1

The BP clearly articulates the outcomes delivered during RIIO-1 and separates out the funding between the NIA (£12.2m), shareholder funds (£30m) and National Innovation Competition (NIC) funding (£34.5m). NGN recognize in the BP that the value delivered from the innovation spend was partly reflected in cost savings but was mainly delivered via wider operational efficiency or whole systems benefits. The CEG understand the non-financial benefits delivered, particularly in respect of decarbonisation and operation efficiency, but also note the relatively modest year on year cost savings from the perspective of customer benefit. In respect of the NIA funded work during RIIO-1, there was an emphasis on early stage trials and technologies. It also provided a balance between long term decarbonisation and future gas and network improvement. The BP contains some helpful costed case studies within the Totex and other Funding Sources Section to illustrate the types of innovation that have been carried out.

CEG View

NGN set out their philosophy and approach to innovation which we recognise as having been progressive and impactful during RIIO-1, and that NGN have adopted a culture of innovation that extends beyond the core team.

Interactions with the company have demonstrated that senior leadership and the operational business alike exhibit the traits and behaviours aligned to the culture NGN describe. It is also clear to us that NGN consider innovation in processes, systems and customer experience alongside technical innovation. This is reflected in changes to working practices and response times to deliver a better customer experience.

The CEG welcome the strong focus on innovation culture and view this as a genuine reflection of the approach adopted by NGN. It is foundational in terms of the ability to create new ways to deliver improved customer and stakeholder value. The introduction of a more systemized approach to embedding culture and streamlining the roll out to implementation is also welcomed.

The introduction of a Professional Development Programme for NGN's workforce is considered an

appropriate recognition that effective innovation is a process that requires governance. This programme is set alongside proposals to broaden the existing Think Tank and include a wider range of external stakeholders. This approach seems well thought through and likely to develop skills and access new sources of insight, expertise and potentially funding. There is no indication of the costs associated with this initiative and, whilst they are likely to be modest, it is not possible for the CEG to comment on value for money.

The commitment to learn from experience and share knowledge is also considered to be a positive reflection of the innovation culture in practice. Similarly, the ambition to scale-up, roll-out and introduce new approaches to the initiation of projects, is considered to evidence NGN's ambition for continual improvement.

Planned Outcomes in RIIO-2

The planned outcomes for RIIO-2 have been substantially evolved from earlier versions of the BP. The areas of focus are well defined, and descriptions of the focus areas are more substantive than in previous versions. The planned spend is justified at a high level although given the nature of the innovation programme, an enduring CEG could have oversight to ensure value for money. We are content that the key points of focus are in line with stakeholder feedback and customer preferences. Whilst the focus is aligned, there is some lack of definition as to how the Innovation Strategy will translate into day-to-day value, for customers, future customers or for vulnerable individuals.

The BP seeks to articulate the outcomes planned for the RIIO-2 innovation programme. The headline figure of £24m savings is noted but is not set in context in terms of return on investment, customer bill savings or wider non-financial impacts.

It is noted that NIA and match funding will only be utilized if it meets "our criteria of delivering demonstrable value. Any funding not utilised will be automatically returned to customers". It is not clear, however, what those criteria are and how judgment will be exercised.

Greater detail is provided with regard to the vulnerability and energy systems transition priorities.

The £4.02m of NIA and match/collaborative funding committed to addressing customer vulnerability seems to be strongly research led. The CEG support the aspiration to find new and effective routes to addressing vulnerability but it is not obvious from the Business Plan how the initiatives will translate into practical benefits for customers. It is recognized that early stage innovation programmes cannot, by design, predetermine outcomes. Whilst the budget for this priority is not considered unreasonable, the early stage/higher risk nature of the approach does make it challenging for the CEG to take a view on value for money.

Similarly, the focus on decarbonizing the gas grid within the energy systems transition also focuses on early stage and potentially disruptive/transformational innovation. This is in line with stakeholder feedback and considered appropriate for NIA led funding. The budget is not seen as unreasonable given the scale of the agenda and the extent to which Government and wider society have defined it as a priority. Again, the priorities are reasonably well defined, but the high-level narrative means it is challenging to connect the budgets to practical work programmes or the likelihood of beneficial customer impact based on the information provided. When challenged for more detail NGN said that there was only a requirement from Ofgem to provide high-level project proposal as part of the BP for RIIO-2.

With respect to BAU innovation, there seems little communicated that is not set out elsewhere in the BP. The ambition to insulate customers from the financial risks associated with innovation by using a more 'balanced' set of funding sources is noted and broadly welcomed by the CEG. The spending profile is front end loaded which is considered appropriate for innovation programmes in general, although the lack of detail means that it is not possible to make specific comment.

Chapter 5 overall CEG View

NGN provided all information requested by the CEG although due to late guidance by Ofgem the strategies on whole systems and the Environmental Action Plan were only developed over the past 6 months. Despite that, we held several meaningful deep dive sessions and at the end of the process believe NGN have significantly improved their plans and have provided robust analysis to justify their approach. We are convinced of the need for a well-funded innovation programme and consider the points of focus to be in line with customer preference. NGN recognise that effective innovation requires governance and the introduction of the Professional Development Programme to the workforce is welcomed. The uncertainty mechanisms chosen by NGN and their proposals feel justified and reassurance has been sought.

Commitments to transparency and impact reporting are considered appropriate and welcomed by the CEG. Throughout the BP there is a strong emphasis on deep collaborations across a wide group of stakeholders following stakeholder testing of the Innovation strategy. NGN have shown ambition for continual improvement throughout their initiation of innovation projects.

A better understanding of stakeholder preferences and needs will be necessary for industry and government to develop decarbonisation pathways. The CEG would expect this to be part of NGN's future stakeholder engagement plans.

There is considerable information within their final Whole System strategy and their BP about which stakeholders they need to work with during RIIO-2. There is, however, less evidence of how they will engage the majority of customers in their activities. We would urge NGN to ensure customers are involved and are kept informed of initiatives that will impact them. This is an area to which an enduring CEG could add significant value.

The CEG support NGN's concerns that the scale of what is needed to meet the 2050 decarbonisation target will require much more coordination and leadership at the national level and this should not be driven solely by this 5-year price control period

Ofgem allow 5 mechanisms by which the GDNs can manage uncertainty. The CEG sought to seek reassurance on the processes, assumptions and justifications for

managing uncertainties within the BP period. NGN have chosen to use these mechanisms and the CEG believe their proposals are justified.

It is difficult for NGN (and consequently the CEG) to determine the potential cost and implications of the risks they wish to address through these mechanisms, apart from the two areas where £4.6m costs have been built into Totex. This is where Network Rail decisions will dictate the time and amount of costs needed but these look more certain than other areas. NGN's approach is well considered and reasonable conclusions have been arrived at for areas of material expenditure.

It is also clear to us that NGN consider innovation in processes, systems and customer experience alongside technical innovation. This is reflected in changes to working practices and response times to deliver a better customer experience.

We welcome the strong focus on innovation culture within NGN. It is foundational in terms of the ability to create new ways to deliver improved customer and stakeholder value. We support the introduction of a more systemized approach to embedding this culture and streamlining the roll out to implementation.

The introduction of a Professional Development Programme for NGN's workforce is considered an appropriate recognition that effective innovation is a process that requires governance. This programme is set alongside proposals to broaden the existing Think Tank and include a wider range of external stakeholders. This approach seems well thought through and likely to develop skills and access new sources of insight, expertise and potentially funding. There is no indication of the costs associated with this initiative and, whilst they are likely to be modest, it is not possible for the CEG to comment on value for money.

The commitment to learn from experience and share knowledge is also considered to be a positive reflection of the innovation culture in practice. Similarly, the ambition to scale-up, roll-out and introduce new approaches to the initiation of projects, is considered to evidence NGN's ambition for continual improvement.

We are pleased to see in the BP a stronger emphasis on a deeper collaboration across a wider group of stakeholders following later stakeholder testing of the strategy.

Further Scrutiny or Open Hearings

We propose the new innovation proposals for RIIO-2 NIA funding are subject to further scrutiny. NGN were not required to produce detailed plans. Nonetheless, greater clarity should be established around the key themes identified and the way in which budgets have been calculated and justified. Additionally, confidence levels in securing third party match funding should be established. Our concerns are articulated in the section immediately prior to this Chapter 5 summary section.

6. How does NGN propose to deliver value for money?

6.1. Background and key assumptions to costs

Background

NGN have set out the background and key assumptions that provide the foundation for their plan and those issues that will drive costs. The CEG spent considerable time trying to understand the significance of those different drivers. NGN's choice of investments and delivery mechanisms will have an enduring impact on what customers will pay and the services they will receive for those costs. There are a number of factors, some explored earlier in our report, that drive future cost increases or reductions (for example, new major engineering works by third parties or embedded efficiencies and productivity improvements).

It was difficult at times to understand some of the trade-offs on costs; for example, between increasing maintenance costs to avoid new capital investment. These became more transparent once the engineering justification reports and CBAs had been produced and started to be shared with the CEG in October.

How costs are identified and reflected in the final customer bill is dependent on the financial methodology applied by Ofgem and, as such, outside the scope of the work by the CEG. The cost of assets may be amortized for a period of up to 45 years with long-term impacts on future customers bills, although many investments will pay for themselves over a shorter period of time. We recognize the difficulty in engaging with customers in a meaningful way about the cost of specific activities or to have meaningful dialogue on unit costs. The cost of pipes is, for example, best dealt with by industry benchmarking and the Real Price Index (RPE) mechanism. This is because those costs closely track the cost of oil which correlates to the price of plastic.

Key assumptions

NGN have assumed that the 3 main areas of expenditure that underlie all cost areas are pensions; productivity and efficiency. They also recognise the significance of regional factors. Considering each of these below:

Pensions – The final pensions plan, and costs, will be based on updated assumptions and the actuarial valuation as at 31 March 2016. We agree that costs will continue to diminish due to the reduction from 190 to c 100 individuals across the workforce eligible for final salary at the end of RIIO-2 due to the further roll out of new terms and conditions. However, NGN are required to increase payments from 49% to 60% of salary into the pension scheme for remaining members to meet existing pension liabilities. This is a legacy issue understood to be common across the industry and a non-controllable Opex cost. It is passed through directly to all customers, but the continuing trend should lead to less burden on future customers.

Productivity and efficiency – NGN claimed that they have built £125m of cost savings into their BP for RIIO-2 due to improved operational efficiencies during RIIO-1. The new business model with a cycling of outsourcing and insourcing was highlighted as driving these savings and this is evidenced in their BP.

Of the total, embedded efficiency savings due to new IT systems have been calculated by NGN as £2.5m of the annual savings in Totex for RIIO-2. We have seen evidence of how NGN are developing new systems that will lead to improved customer service offers such as online connections bookings. NGN's business model assumes that this, and a number of other efficiencies, will be made through their investment in SAP4 Hana. The CEG is aware that the full potential of this investment cannot yet be quantified as many of the anticipated applications have not been fully tested

or developed. We expressed concern about the reliance on the new IT system and new applications that will be designed in house. NGN have told us, however, that they are confident in delivering their commitments, and that no further costs would be passed through to customers if there are delays to new ways of working or systems failures.

The outsourcing of REPEX works to Direct Service Providers has brought significant cost reductions by stripping out around 10% Tier-1 management costs, and this approach will roll on into RIIO-2. Ofgem benchmarking indicates that NGN have been the most efficient of the GDNs under RIIO-1 and it is clear that the changes to their delivery model and outsourcing of pipe replacement work have been key to that. With the development of 9 operational hubs across the region, NGN are managing Totex to

deliver cost savings and to outperform on targets. This model is now in place for RIIO-2 and, along with incentives as part of the new T and Cs, we expect this to drive their proposed higher delivery standards and further productivity gains. An example is in workload management, where engineers have been trained to deliver a wider range of services, reducing travel time and duplicate visits to customers. NGN are assuming 0.5% additional annual productivity gains for GD2. We have not been able to undertake any analysis to establish whether NGN could outperform that overall figure.

Regional Factors –The basic geographic and demographic factors have been evidenced and any ‘normalising’ adjustment of costs is a matter for Ofgem after benchmarking with the other regions.

6.2. Total expenditure (Totex)

NGN plan to increase Totex by an average of £11.6m per year from RIIO-1 to RIIO-2. This increase reflects NGN’s proposals to:

- increase maintenance costs in order to reduce the monetized asset risk and maintain the very high level of network resilience and safety, which has been expressed as a priority for customers;
- increase Repex to respond to stakeholder calls for reduced environmental impacts from shrinkage;
- reduce Capex by £2.2m average a year for both network and non-network expenditure due largely to exceeding their pipe replacement programme, and upfront IT investment in RIIO-1.

We are satisfied that NGN have heard and responded to stakeholder and customer views on keeping costs down whilst improving services. We are also satisfied that NGN have reflected customer views in setting the scale of activities making up Totex in RIIO-2. In Chapter 3 we explore more fully BP Acceptability and Affordability issues but, in relation to costs, the high-level customer feedback has been addressed i.e. value for money and keeping costs as low as possible for the same or improved service standards.

WTP evidence shows different customer groups are willing to/expect to pay different amounts for the services they receive. Unsurprisingly, this varies by

income levels, knowledge and engagement with NGN. Low-income customers are less able to absorb any increased costs and will benefit from the downward pressure on costs.

NGN engaged with regional stakeholders but already had a good understanding of the regional factors, such as rurality. relating to the operational resources needed to meet Outputs such as emergency response times and cost to serve.

CEG raised several challenges relating to each cost area. Our approach was to focus on areas of high costs, or where customer impact would be material. For example, under Opex we sought to understand the rationale for investing more in gas pressure maintenance. We were also concerned that NGN might increase costs associated with land remediation to benefit shareholders by exceeding statutory standards and raising land values. NGN confirmed they will not exceed statutory standards.

Under Repex we sought additional evidence for steel pipe replacement (and reviewed the specialist report on steel corrosion) and queried the justification for the amount of steel replacement. We challenged the significance of reducing shrinkage in terms of

environmental impacts as well as cost savings to the business.

During the CEG visits to NGN's operational hubs we learned how the operational teams work to deliver a more holistic service within their patch and Capex/ Repex and Opex costs are managed to deliver efficiencies under Totex. The teams we met and heard from felt they were better resourced, due to investments in RIIO-1, to carry out their work more effectively and efficiently. This meant that they felt able to respond more quickly to emergencies and delivering Output targets in a joined-up way to avoid wasted time for the business and customers. We expect the innovative management of Totex at local operational hubs will lead to efficient cost control. However, as we have indicated above, we have been unable to establish whether it will drive even more efficiency than has already been assumed.

CEG View

NGN and CEG agreed a timetable for receiving information and NGN met the deadlines. We required further explanation of costs in November and December 2019 when some of our more detailed analysis of costs was carried out, including the EJPs and Output costs.

NGN devoted a significant amount of time with both the full CEG and our subgroup that analysed costs. In January 2019 we had an introduction to how costs are made up and calculated. In May we had a full walk through of how costs had been calculated for RIIO-2, and a full day in August analysing NARMs and areas of materiality for customer standards and costs. Further deep dives were held in October and November. Responses to all challenges were provided and explanations given where needed- either during discussions or as part of formal written responses. In the final version of the BP each area of work was described so that associated costs could be more easily understood and related to customer insights, willingness to pay and the acceptability testing research. We received presentations by operational managers to understand how they were embedding innovation and making systems improvements. For example, a full explanation of how NGN are using technologies trialled in

RIIO-1 to reduce work time in replacing stubs and avoid expensive remedial work at a later date was provided.

The CEG decided to focus on issues that would have most material impact on both costs and the creation of value for customers. In response NGN provided analysis on areas where costs were material and where there were significant increases or reductions. Completed EJPs and CBAs were provided for each area of costs contributing to Totex from October 2019. There was a very strong focus by NGN on presenting efficiency savings made in RIIO-1, and we comment on their track record in Chapters 2 and 5.

We believe the information we have received is complete, but we have not scrutinised all of the data tables NGN submit alongside their BP and trust that is the proper role of Ofgem.

We comment on whether the costs for Totex reflect customer wants and needs under each of the cost areas – Capex, Opex and Repex and the Outputs section. However, NGN's Acceptability Testing showed that customers were presented with average energy bill cost reduction scenarios of 5%, 7% and 9%. There was strong support from current, future and business customers for this range of reductions (78%) and we comment further on that in Chapter 3 on enhanced engagement. At the same time customers indicated a willingness to pay up to £18.13 a year more for the improved services they would like to see. Overall NGN has responded with a proposed 8.6% real terms reduction in the average £139 average domestic customer bill with a range of enhanced customer service improvements. The BP also assumes £11.2m a year more in total expenditure and that the savings are being achieved through lower returns.

In terms of whether NGN have justified the amount of money they need to carry out the activities, guaranteeing value for money depends on the NARMs model being applied effectively to demonstrate the reduction in monetised risks. All CBAs and EJPs apply NARMs methodology which is set by Ofgem and agreed across the GDNs. The base unit costs were benchmarked against historic costs and actual expenditure in RIIO-1 with efficiency savings built in for RIIO-2. These have not been scrutinized on a zero-budgeting basis by the CEG.

There are three options proposed in each of the EJPs where capital investment in the network is proposed.

Whilst these are all legitimate, they are narrowly defined to: doing nothing; deferring costs to the next price control; or incurring costs in RIIO-2 for a specific set of activities. We mostly assumed that costs for enhanced

customer service are embedded into the common GSOP costs. We queried this, and it is discussed further in Chapter 4.

6.3. Investment expenditure

NGN have set out a coherent approach to investment, based on their risk and asset strategy and network maintenance programme. There are very significant investment commitments needed to deliver the Business Plan in RIIO-2 – including £500m to replace old metal pipes with PE pipes to improve safety and reduce environmental impact through reduced shrinkage. This will increase NGN's asset value base.

Customers have indicated through WTP research and other engagement routes that they are content for greater investment if this leads to better outcomes – i.e. a safe, reliable and less environmentally impactful network. More nuanced views and customer/stakeholder segments are considered in Chapter 3 of this report but CEG consider NGN have responded with a balanced approach to increasing investment and ensuring costs are no more

than they need be to maintain a safe and reliable network with reducing environmental impact into the future. The reduction in Capex reflects the decision to avoid stranded assets with the future of gas still to be agreed beyond 2050.

We believe the proposed investment mix will allow NGN to meet its Output targets efficiently and avoid unnecessary major investments through the application of NARMs methodology.

NGN responded to the CEG challenge to more clearly explain the reason investment is needed and how any expenditure would lead to better outcomes for customers. A 'golden thread' demonstrating the customer benefits expected from each area of expenditure started to emerge in an earlier draft of the BP. This has been strengthened in the final plan.

6.4. Capex

NGN's Capex expenditure will reduce by an average of £2.2m a year over the RIIO-2 period.

Again, we welcome the customer and stakeholder priorities of safety and reliability and their concerns on the environment and affordability reflected in NGN's approach to Capex.

NGN have identified 4 priority areas for capital expenditure needed to:

- protect against cyber-attacks;
- improve gas pressure management and reduce leakage;
- contribute 10% power generation from renewables on all sites where installations can be made and
- reduce the environmental impact of the fleet of vehicles used by the business. (Through NGN's procurement processes we have challenged NGN to ensure their contractor base is also required to meet the same standards for their fleet used to deliver NGN Outputs).

NGN plan to reduce overall Capex from an average of £57m per year under RIIO-1 to £54.8m per year. This includes £4.6m which it is assumed will be delivered under an uncertainty mechanism. We agree that it is appropriate to recognize this funding as potential Capex but as final timings and decisions for that work rest with Network Rail, it remains 'uncertain' expenditure.

NGN highlight 5 areas of expenditure, which, apart from special reinforcement costs driven by third parties, are set to reduce under RIIO-2. EJPs set out the rationale for each area of expenditure and the NARMs/CBA methodology, discussed earlier, has been applied to decide which of three options are considered most cost effective and reflect customers and stakeholder preferences where these have been sought. Again, we note that these options are for: no expenditure, deferral of expenditure to RIIO-3, or the proposed way forward in RIIO-2, which demonstrates a cheaper option over the longer term for customers.

Looking at each in turn:

Local Transmission System– Costs are reducing from £15.3m to £12.7 m a year. These could have been set lower, but we are convinced of the need to divert 2 high pressure mains due to riverbank erosions to maintain network reliability and avoid damage due to more extreme weather patterns.

In terms of offtakes and Pressure Reduction Stations (PRS), NGN are proposing to reduce by £1.7m expenditure compared to RIIO-1. In addition, NGN plan to step up the maintenance and repair of these assets as reflected in the earlier section on Opex costs. The decision to do this is based on NARMs which shows the reduction in risk is more cost effective than replacement. The CEG are convinced that the rationale for this level of expenditure is appropriate to maintain a low risk of network failure.

There are 5,600 governors on NGN’s system which control the pressure of gas.

The CEG are satisfied that the costs are based on the agreed methodology to ascertain monetized risk and the payback periods for District Governors is just 3 years. We understand that the replacement and maintenance programmes will reduce leakage and consequent environmental damage as well as ensuring reliability for a 1 in 20 scenario. The CEG queried whether 1 in 20 was still an appropriate measure given an emerging pattern of more extreme weather and were informed this is an agreed industry calculation applied by Ofgem. It is our view that the validity of these models and the associated assumptions should be tested on an industry wide basis given changing weather patterns and other external dynamics.

Reinforcement costs are expected to increase significantly from an average of £2.6m to £5.7m a year. General reinforcement costs are not expected to rise, however, and the increase is due to the historic growth trend of special reinforcement which has been driven by third party connection requests. NGN expect an increase in electricity peaking plant, as identified under future energy scenarios, to drive these costs (some of which will be paid for by third parties although it is not clear how much at this stage).

We are convinced that NGN’s engagement with stakeholders and national and regional forecasts reviewed by our group support their assumptions.

We have explored the assumptions behind the proposed reduction in costs for connections, although if NGN meet their stretch target for fuel poor connections (a further 5,000 over RIIO-2) this will increase these costs.

NGN are anticipating further demand for new connections during RIIO-2. Government legislation which prohibits gas connections to new developments from 2025 may drive some developers to push through more connections in 2023/24. In response to challenges by CEG NGN reprofiled work across the period. These costs are perhaps less certain, and we agree that any major change in Government policy that will impact gas connections should be addressed through the reopener mechanism.

Other Network Capex

Other network costs will increase by an average of £1.4m a year. Overcrossings account for a significant amount of other Capex costs. We are convinced that the rationale for that expenditure is reasonable and is based on addressing those pipes in the worst condition and as a precautionary measure against unexpected floods or storm damage.

NGN make a strong case for improving the control of the pressure system and have demonstrated short payback periods and reduced Opex costs earlier in the plan.

Other non-network Capex

NGN state that technology costs will reduce by around 20% due to major IT investment during RIIO-1 but now include additional cyber security costs. Their forecast for RIIO-2 seems reasonable and unit costs appear to have been provided based on historic purchasing figures.

We asked NGN whether their initial proposed £16m expenditure on vehicles could be used differently. The ambition to reduce emissions from their commercial vehicles was good, but we were not convinced that the target for replacing the other fleet was sufficiently ambitious. NGN told us that there is

no supply chain for large load electric/hybrid vehicles, but we suggested they could work with other utility companies to develop that supply chain. We discuss this further in Chapter 5.

CEG View

We challenged NGN to ensure that customer needs and wants were clearly highlighted when setting out their

costs and that tangible benefits should be explained alongside any area of expenditure. NGN have responded and highlighted how their approach is leading to outcomes that customers identified as important. These include an easier online connection booking system and minimisation of virgin aggregate to reduce environmental impact.

6.5. Repex

Introduction

This section should be read in conjunction with Chapter 4 of our report on ‘Maintaining a safe and resilient network’. However, our comments here do not map across exactly as we also provide commentary on the supporting models, the assumptions used and the accuracy of use in compiling costs for pipe replacement.

NGN’s 3 main priorities in its Repex programme are:

- Safety of the network;
- Reliability of the network;
- Lessening the impact that the gas distribution network has on the environment.

These 3 priorities are supported by the company’s customer and stakeholder consultation exercises which are consistently referenced in the BP.

NGN’s Repex is split into 2 categories being:

- Mandatory activities as stipulated by Ofgem and the Health & Safety Executive (HSE) and
- Non-mandatory activities as deemed necessary by NGN (for reasons of safety, performance, customer service, etc.) and for which NGN has its own prioritisation processes in place and a degree of discretion to address.

In terms of value for money for the customer, any discretionary expenditure needs to be both fully justified and targeted on achieving the best customer outcomes. Likewise, operational processes need to be continually reviewed such that they are fit-for-purpose and continue to support the downward pressures on costs.

NGN’s Engineering Justification Papers for Repex are set out in a very clear and easy-to-read manner and aid the understanding of the company’s rationale around Repex decision-making. Repex costs comprise labour, materials and transportation. Labour rates and unit costs have not been supplied to CEG on an activity basis, although we have seen the changes to the salaries of gas engineers through T&C changes. However, going into RIIO-2, it would appear unrealistic to expect material changes to what we understand are already low-margin, contractor rates. With Brexit uncertainties, the costs of PE pipe, fittings and ancillaries could be subject to price increases. This may introduce price inflation and no evidence of this having been modelled has been received by CEG. Although the RPE mechanism are designed to protect NGN if prices begin to rise, and customers if they fall, we are uncertain what the implication would be for customers over the longer term (given 45 years depreciation).

A mean Repex budget of £106m per annum over the 5-year period is proposed, up £9.5m from the RIIO-1 average of £96.5m, with the need to address the stubs backlog contributing £7.8m of marginal costs. A full explanation of this is provided by NGN and we consider the logic for this proposed approach to be robust.

Another factor which will drive Repex costs is the estimate of the materials mix of the remaining stock of pipes in the ground. In response to requests from both the CEG and CCG we received a clear explanation for the cost increases. With the RIIO-2 replacement programme focussing on larger diameter pipes, there is a commensurate cost increase as the purchase price of new pipes is proportional to the

square of the diameter. However NGN have said that their basic unit costs have reduced. In addition, larger trenches are required which contribute to increased earthwork costs.

Analysis

Mandatory Works: Tier 1 pipes: Given the RIIO-1 rate of Repex and the network's adequate performance as a result, it is reasonable to assume that a linear approach to abandoning the remaining Tier 1 asset stock is appropriate for RIIO-2. This seems to be the dominant logic of NGN.

Moreover, with a replacement rate over-achievement in RIIO-1, there is less of a customer cost burden in RIIO-2. Given the time value of money, this is a positive benefit to the customer. As such, we have queried whether the 0.5% cost efficiency (via the DSP delivery model) which is hard-wired into the BP is reflective of that which could be achieved. This is especially the case given that the same term contractors as RIIO-1 are likely to be used. NGN have not indicated whether such discussions with their contractors have been held but we are aware that through competitive tendering there is ongoing pressure on the contractors to work efficiently.

At £7.8m, The Tier 1 stubs cost is significant. A similar linear approach to works delivery to RIIO-1 is proposed for the RIIO-2 period thus smearing out any cost shocks. This is logical. So, as far as the Tier 1 and Tier 2a lengths of pipe replacement are concerned, whereas data transparency was not as good as we would have liked, we are convinced that these costs reflect what customers want or are willing to pay for given that they align with clear statements on willingness to pay for safety and network resilience improvements which drive these targets.

Non-Mandatory Works: NGN's discretion is applied to the prioritisation of non-mandatory works. The 3 overriding principles (which reflect customers' views) as set out above frame the decision making. This is supported by stochastic modelling techniques that the company has developed to underpin its Repex appraisals. NARMs and Cost-Benefit Analysis (CBA) are the 2-dominant decision-support tools employed.

The BP sheds light on the input parameters to the CBA model. Worked examples of the CBA were supplied to CEG. A deep dive session was also held on the CBA methodology and NARMs at the CEG meeting in August 2019 at NGN's operational hub in Carlisle. The CBA tool is a key element of the investment appraisal infrastructure. The costs which result from the decisions taken are, therefore, a function of the model's design and the inputs to it. Attention should be paid to the fitness-for-purpose of both the input data and the model's architecture. However, the CBA is fit-for-purpose as it combines pragmatism and risk-based decision-making.

We were very clear that the £2.8m costs associated with steel mains replacement needed to be fully justified. Increasing > 2" steel replacement from c. 14.2km to 30.6km per annum on the basis of a 4-GDN study showing a steel deterioration rate greater than a replacement rate, required further dissection. We challenged why the replacement rate needed to more than double and the ratio of deterioration rate to replacement rate also unearthed in the study. We were concerned that there would be an unnecessary burden on customers with an overly ambitious >2" steel replacement rate. NGN provided a detailed explanation of the methodology they had applied at our meeting in November 2019 which is now set out in the BP and we are satisfied with the proposed approach.

The other key cost parameter at play is the lay-to-abandonment rate whereby NGN are either forced to, or choose to, lay more pipe than is abandoned. This is an unknown in many cases as developments spring up and mains need to be diverted or pipes previously in one tier suddenly find themselves in another, with all the associated costs. We did not receive any detailed thoughts from NGN on this parameter. However, notwithstanding the need for additional rationale, as far as non-mandatory pipeline replacements are concerned, we are convinced that these costs reflect what customers expect and align with clear statements on their willingness to pay for safety and network resilience improvements which is the purpose of this activity. We would expect NGN to amend any such costs should more information come to light which justifies either an increase or decrease in replacement rates prior or during RIIO-2.

NGN plan to increase expenditure on Multi-occupancy buildings (MOBs) by a factor of 5. Although these costs reflect a small percentage of overall Repex (0.5%), it is an area which could have significant customer impact. The CEG support increasing the replacement of risers at properties where there is a higher risk of failure and alternative actions where replacement or refurbishment is not appropriate and note those costs are captured in Opex and Capex.

At the Pioneer Workshop on safety and reliability, stakeholders' views were sought on what more NGN

should do to address safety in MOBs. Whilst NGN have a relatively low number of high-rise buildings compared with some other networks, some of the problems are the same in terms of access and liaison with landlords. We heard that in terms of risk analysis, the risk in MOBs is no greater than in other buildings in NGN area. However the potential impact of any failure may be greater. Increasing the surveys to better understand the risks is an important part of the RIIO-2 plan for customers living in MOBs.

6.6. Operating expenditure (Opex)

NGN have described in the BP and appendices the key factors impacting all operating costs of the business. These include both the mandatory and NGN's enhanced or bespoke Outputs and activities. At a high level, NGN are responding to customer and stakeholders' headline priorities i.e. ensuring the safety and reliability of the network and reducing impact on the environment.

Controllable Opex

NGN are proposing 19 areas of activity under Controllable Opex.

The comparison of average annual costs under RIIO-1 to those proposed for RIIO-2 clearly shows that overall Controllable Opex costs will increase from £84.4m to £89m. In response to CEG requests for greater transparency on costs, waterfall diagrams have been included to illustrate which areas of work will cost more to deliver than in RIIO-1. We welcome this transparency.

We note that whilst the majority of activities will cost the same or less to deliver, 3 areas of work where costs are increasing significantly are: Gas holder demolition, maintenance and the training/apprenticeships budget. The CEG scrutinized the justification for these increases during deep dive sessions and we comment on these below and in Chapter 4. We also highlight below where we have seen efficiency measures reduce operational costs.

Work Management (6 activities)

CEG scrutinized both elements of costs in relation to work management i.e. the day-to-day asset management and system control (which is driven largely by the age and condition of the assets), and the supervision of emergency, repair and maintenance work that includes both operations and customer management.

During our visits to all of NGN's operational hubs we heard that work management is predominantly driven by the mix of the workload and the response time commitments. These costs are understood to have reduced due to more efficient working practices. At the System Control site in Washington, we met with the small team that manage the system on a day-to-day basis. Cost savings introduced in RIIO-1 have resulted in smarter working patterns leading to the reduced costs for RIIO-2. Upgraded software is enabling more accurate monitoring of weather conditions and the remote management of governors. This allows NGN to control the pressure of gas in the network without requiring engineers to physically attend the sites.

At the Carlisle hub we learned how integrating teams is delivering both cost savings and increasing response times in more rural areas. These changes are enabling the Output targets to improve for RIIO-2. Whilst rental costs have increased for the new operating hubs, those costs will be offset by the cheaper operating costs (for example fewer miles travelled to reach emergencies).

Gas holder demolition is included within Work Management costs and this area of expenditure is set to increase by £1.3m a year. Failure to address gas holder decommissioning now runs the risk of reduced levels of staff and public safety on the gas supply network which is at odds with what customers want. In addition, by reducing the rate of decommissioning, maintenance and site security costs would continue to be borne by customers.

Customers have indicated they would prefer to see a speeding up of work to address environmental impacts. The EJP has demonstrated that it will be cheaper for customers for NGN to complete the demolition within RIIO-2 rather than spread into RIIO-3 and beyond. Where possible, once decommissioning has occurred and sites have been remediated, NGN have the possibility of disposal of the asset for redevelopment. Under these proposals, the land remediation would happen more quickly but at negligible extra cost (£100k a year). The NARM's model shows that whilst the likelihood of any major safety event is low, it would have a very significant consequence. These risks would be removed during RIIO-2.

The CBA shows cost savings of completing the demolition of NGN's remaining 23 gas holders within RIIO-2 mostly due to reduced safety risks.

The CEG have seen first-hand evidence of how work management efficiencies are being embedded in the operational hubs. Overall costs for work management will fall by on average £600k a year based on average costs for the first 6 years of RIIO-1 (although we have not seen forecasts for expenditure in 18/19 or 20/21).

Work Execution (5 activity areas)

Overall costs are set to increase from an annual average of £41.1m a year (based on 6 years of RIIO-1) to £45.8m a year average under RIIO-2. Again, whilst the CEG note and have seen evidence of how efficiencies of £1.6m are being embedded in the emergency and repair budgets, we wanted to see strong justification for the £6.1m average increase in maintenance costs (Note NGN state this as £5.4m).

Maintenance Costs.

Around 25% of the increase in Maintenance costs relate to increased pressure management. Reasons given for this are the need to maintain aging pressure valves and improve security at local transmission sites.

Reducing Capex through increased maintenance of the existing aging assets does seem a cost-effective approach in the longer term to avoid unnecessary investment. It avoids costs for future customers and potentially stranded assets whilst ensuring safety and reliability. It is not yet clear how much of the maintenance work will be brought back in house (around 40% was outsourced) although NGN claim they will reduce labour costs by £0.8m through this rebalancing.

We are content that forecast costs for publicly reported escapes is correct based on historic evidence and the continued likelihood that domestic customers rely on old gas appliances that are poorly maintained. This problem may become worse if there is a sharp economic downturn and customers find that they are unable to maintain their gas appliances and replace old and unsafe appliances.

Indirect Activities (8 areas of activity)

The costs associated with some indirect activities are reducing under RIIO-2 but the overall proposed costs of indirect activities are identical to RIIO-1.

We consider workforce resilience elsewhere but when we scrutinised costs we also queried why the training and apprenticeship budget was increasing for RIIO-2. We also questioned whether all these costs should be passed through to customers, rather than making better use of the Apprenticeship Levy or shareholder investment. NGN do plan to recruit more apprentices – on average 33 a year to address future skills needs.

Whilst property management costs will increase in RIIO-2, the standard of premises is understood to have improved during RIIO-1. The location of the hubs visited by the CEG will assist in NGN meeting the improved response times.

Also, whilst recognizing reduced expenditure requirements on IT due to significant investment in RIIO-1, NGN will be increasing costs to address cyber

security. The CEG is not in a position to assess what specific resources are needed for additional security measures. We consider this a matter for Ofgem and NGN and have, therefore, not considered this area of proposed expenditure. We have however reviewed their IT and Cyber Security strategy and support the general approach to enhance security.

Non-Controllable Opex

We have considered the make-up of the non-controllable Operational costs that are passed straight through to customers. The most important reduction for RIIO-2 is the cost of **shrinkage**. NGN have to pay the market cost for gas lost through leakage (representing 95% of shrinkage), theft and use of gas to run the network. Continuing the RIIO-1 trend, at least 20% reduction in these costs could be expected with further investment in PE pipes under Repex, plus further pressure controls fitted on governors under Capex. However, this is dependent on NGN increasing the rate of pipe replacement beyond the Health and Safety Executive requirement that will lead to £9.5m additional costs under Repex.

Innovation - Ofgem have indicated that they wish to see increased investment in innovation and whilst being in alignment with this expectation, NGN anticipate attracting significant additional funds leveraged from third parties. This matter is considered in the Innovation Section. At this stage the amounts are speculative, although potential sources have been identified. It will require significant time for NGN to work with partners to secure those funds.

The key driver for increased non-controllable costs identified by NGN is the increase in NTS exit charges by National Grid. We see this is a matter for Ofgem and National Grid who are reviewing the methodology for charging GDNs to take gas from their high-pressure transmission system into local networks. The CEG are unable to take a view on this.

CEG View

The BP costs estimates for RIIO-2 were first presented to the CEG in January 19, with deep dives in May and August. The EJPs/CBAs were not available until October onwards, but this had been explained and the reasons understood so CEG planned for this late information.

An explanation of NARMs and headline costs was given, and NGN responded to all requests for clarifications. All information we requested was complete at the end of November.

Customer views were not sought on specific Operating costs. These are reflected in the Chapters on Outputs and Stakeholder Engagement. More generally WTP research showed that customers want to pay as little as possible for any improvement in services, but they are prepared to pay more for key priorities around safety and the environment.

The unit costs were benchmarked against RIIO-1 actual expenditure and an explanation provided of where efficiencies had been built into the costs. It is a matter for Ofgem to benchmark efficiencies and costs between the GDNs as we did not have access to those detailed comparators. Whilst the majority of costs are for the physical measures (PE pipes and other assets) we recognize that a corresponding cost increase is necessary for work management and workload as a result. NGN have tested the market for maintenance (40% outsourced in RIIO-1) but considers efficiency savings can be made by bringing this back in house with engineering teams able to carry out a range of activities.

Chapter 6 CEG Summary View

The BP costs estimates for RIIO-2 were first presented to CEG in January 19, with deep dives in May and August. The EJPs/CBAs were not available until October onwards, but this had been explained and the reasons understood so CEG planned for this late information.

An explanation of NARMs and headline costs was given, and NGN responded to all requests for clarifications. All

information we requested was complete at the end of November.

The information provided on how NGN will deliver a safe and reliable network was provided in a timely manner (although the AESL Steel report evidence was delayed by some weeks we were able to take it into consideration in advance of Version 2 of the BP being produced in October). The rationale for engineering works that were unfamiliar to most of the CEG members was helped by visual aids, site visits and clear presentations. The Engineering Justification Papers were exceptionally helpful in providing the rationale for the Repex activities category-by-category. All questions were responded to in a professional manner and, where additional inputs or context was required, it was always provided as quickly as was practicable.

Customer views were not sought on specific Operating Costs. These are reflected in the Chapters on Outputs and Stakeholder Engagement. More generally WTP research showed that customers want to pay as little as possible for any improvement in services, but they are prepared to pay more for key priorities around safety and the environment.

The unit costs were benchmarked against RIIO-1 actual expenditure and an explanation provided of where efficiencies had been built in to the costs. It is a matter for Ofgem to benchmark efficiencies and costs between the GDNs as CEG did not have access to those detailed comparators. Whilst the majority of costs are for the physical measures (PE pipes and other assets) we recognize that a corresponding cost increase is necessary for work management and workload as a result. NGN have tested the market for maintenance (40% outsourced in RIIO-1) but considers efficiency savings can be made by bringing this back in house with engineering teams able to carry out a range of activities.

Given the insights provided through questioning at CEG meetings, deep dive sessions, one-to-one discussions, etc. the Repex costs are acceptable to the CEG as being fair and reflective of the market from which they are derived. Importantly, NGN demonstrate a willingness to continue to seek out cost efficiencies derived from its Innovation programme.

Further Scrutiny or Open Hearing topics

The efficiency gains proposed are small at 0.5% per annum and, although the CEG accept that NGN have already embedded many efficiencies under RIIO-1 through a mix of initiatives (innovation/ revised T and Cs/outsourcing), we are not convinced that some further efficiencies cannot be found as NGN's Future Ways of Working are rolled out, but we believe NGN have demonstrated that they have captured high levels of efficiencies within their costs.

The BP costs are significantly dependent on the effective full roll out of SAP4 Hana which at this stage is still being trialled in many areas of the business. Deliverability will depend on the success of systems changes to a large extent. Ofgem should explore deliverability dependent on SAP4 Hana, or if there are confidentiality issues in a closed session with NGN and the CCG.

We considered the Totex scenarios requested by the CCG, and modelled by NGN, for 2% and 4% reductions to Totex in RIIO-2 based on actual Totex in 2018/19. We do not believe that it would be in customers best interests in the short or longer term to reduce activities that will enhance safety, lead to environmental improvements or enhance customer service. We suggest however that NGN's Training and Apprenticeship budget should be reviewed. Cost increase is significant, but it is not clear that NGN are maximising the Apprenticeship Levy and investing shareholder funds in developing the workforce as happened under RIIO-1.

We believe that NGN have demonstrated efficiencies within the narrow boundaries set and the volumes of pipe replacement seem appropriate with lower unit costs claimed. However, since we did not have any national comparative data to benchmark the Repex programme should be explored further given the costs are most significant of the whole BP. Also, given the visibility to the public of all pipe replacement activities, holding open hearings around the NGN pipe replacement strategy would create awareness of the importance and targeting of such investment. By sharing cost data with stakeholders and the public, a better understanding of how the funds raised from their bills is invested would be achieved.

