electricity north west

Bringing energy to your door

Annex 1: Customer research findings

Willingness-to-pay and triangulation synthesis

December 2021

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1 Introduction

Electricity North West's next 5-year business plan will commence in April 2023, known in the energy industry as RIIO-ED2. For the purpose of this document it will hereafter be referred to as ED2. This report is designed to demonstrate that Electricity North West has developed a meaningful, iterative and inclusive ED2 business plan by providing insight on customers' and wider stakeholders' key priorities and preferences for the next price control period.

This report should be considered in conjunction with our stakeholder and customer research approach (Annex 30), which sets out how we approached engagement to develop our RIIO-ED2 business plan and our Customer and Stakeholder Engagement Strategy (Annex 31), which sets out how we will ensure we continue to engage with customers, consumers and stakeholders to inform our business activities throughout RIIO-ED2 (2023-28).

1.1 Purpose of this report

This report provides a synthesis of our ED2 consultation with customers and wider stakeholders which was used to create and consult on our draft business plan across six discrete phases:

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Inclusivity	Materiality	Responsiveness	Impact	Review	Finalise

Each phase of the programme aligned to the AA1000 Stakeholder Engagement Standard, a best practice framework which informed the structure for the engagement activity we delivered.

This report highlights what we heard during each phase of engagement and the action we took as a result, to prioritise and respond to feedback. As such, a 'golden thread' is evidenced between customer and stakeholder engagement and the iterative development of our business plan.

Despite the report representing a synthesis of detailed evidence resulting from customer research and stakeholder engagement, it is intended to be used as a lookup 'reference guide'. As such, it is designed to enable users to easily locate specific topics of interest and navigate around the guide without necessarily reading the entire report.

1.2 Structure of this report

The structure of this report is reflective of our programme being topic-led, with each section sharing learning relating to one of seven thematic priority propositions:

Meeting the needs of consumers and network users		Maintaining a safe and resilient network			Delivering an environmentally sustainable network	
1	2	3	4	5	6	7
Meeting our customers' needs	Supporting electricity users in vulnerable circumstances	Delivering a reliable network	Building a resilient network	Keeping our communities safe	Leading the North West to Net Zero	Improving our direct environmental impact

The range of proposals ascribed to each priority area are referred to as propositions. Each section of the report includes an overarching summary of what we heard that influenced the development of a proposition and how customers and wider stakeholders have responded to it.

Across the 7 thematic propositions there are 3 headline commitments and 10 primary benefits.

Vision	Leading the North West to Net Zero		
Theme	**Net Zero**	**Network**	**Customer**
Headline commitments	We will drive the transition towards local Net Zero targets, following a path to making our own operations Net Zero by 2038	We will remain one of the world's most reliable networks, reducing the number of power cuts and the average time people are without power by 20%	We will deliver at least a 9/10 level of customer service and provide additional support to electricity users in vulnerable circumstances and fuel poverty
Primary benefits of our plan	1. Our network will not be a barrier to connecting EV chargers or other low carbon technologies	5. We will have no 'worst-served' customers by Ofgem's broader definition, by 2028	8. Quality customer service with customer and stakeholder input into our ongoing plans
	2. Enabling climate change targets to be met efficiently through flexible distribution system operation	6. Customers will experience less time without power than ever before	9. Extra help for those who need it, when they need it

	3. A fair and inclusive energy transition with measures to ensure no one is left behind	7. The network will be resilient with particular focus on network resilience, workforce resilience and cyber resilience	10. Innovation and efficiency at the heart of our plan giving customers the lowest possible bills
	4. Joined-up whole systems benefits through customer and stakeholder partnerships		

Under this sit our 50 deliverables split between:

- 37 'Benefits' derived from engagement (B1-B37);
- 2 'Consumer Value Propositions' derived from engagement (CVP1-CVP2); and
- 10 'Outputs' derived from compliance or engineering justification (O1-O10).

For ease of reference, the labelling of benefits, CVPs and outputs is consistent across the main narrative of the business plan and its supporting annexes.

For report users that require more detail into specific investment proposals, the following information is provided:

1. **A headline level of support for the proposal**: this provides the overall level of support observed in Acceptability Testing (at a total level and split by customers and wider stakeholders) and whether, based on this feedback and as part of our draft business plan, we decided to retain the proposal in its existing format or conduct further consultation. It also indicates if this decision changed after a final phase of triangulation analysis which included analysis of constraints;
2. **A copy of the proposal presented to stakeholders**: this includes the wording, contextualisation and imagery we used to explain each proposal in Acceptability Testing;
3. **A synthesis of the evidence base**: we highlight what we heard during each phase of engagement and the action we took as a result, to prioritise and respond to feedback;
4. **Nuances in perspectives between stakeholder groups**: this reveals which, if any, customer or stakeholder groups have divergent views on the acceptability of the proposal;
5. **Benchmarking analysis**: this compares the commitments made in the proposal with similar outputs included in other Distribution Network Operators (DNOs) draft business plans; and
6. **Implications for the business plan**: this clarifies how triangulation of evidence sources has informed our decision-making on how best to proceed with the proposal. A signpost is provided to where more information can be found about the proposal in the main narrative of our business plan or additional annexes.

This report provides a high-level summary of the key inputs into our triangulation in a table format (illustrated below). The inputs included in the synthesis have had the greatest materiality in shaping our plans. Should more granular detail be required on specific learnings or the wider evidence base that was considered, but not included in this report, signposts are included to more detailed insights. Triangulation reports were drafted after each phase of engagement and published on our website. In total 85 insights were included in these reports, many of which are signposted in our synthesis.

Triangulation	Insights	How feedback shaped the proposal
[Phase name and number]	[Number]	[Synthesis of what we heard, where we heard it and from whom]
	• **Action taken** [Summary of how we used this learning to define the next steps]	

During our engagement we heard a consensus view on many of our proposals; however, in some cases we also heard divergent views and expectations. Even in cases where a majority favoured one course of action, in no cases did we observe total agreement or 100% acceptability of our proposals. In this sense all business plan proposals represent some form of compromise.

To ensure a consistent approach to making trade-offs between different stakeholders' views and the feedback received across different mechanisms we have applied a structured methodology to fairly weight the evidence base. This has enabled us to objectively make the best possible compromise and develop a plan that is accepted by 83% of our customers and wider stakeholders.

In a minority of cases we have been unable to meet or exceed the level of ambition desired by our customers' and wider stakeholders due to some form of constraint. Where a constraint exists, we have made this clear in our proposed way forward.

Proposition index

Proposition
Meeting our customers' needs **Headline commitment:** We will deliver at least a 9/10 level of customer service.      ***Primary benefits of our plan*:** • *Quality customer service with customer and stakeholder input into our ongoing plans.*
Supporting electricity users in vulnerable circumstances **Headline commitment:** We will provide additional support to electricity users in vulnerable circumstances and fuel poverty.      ***Primary benefits of our plan*:** • *Extra help for those who need it, when they need it.* • *A fair and inclusive energy transition with measures to ensure no one is left behind.* • *Innovation and efficiency at the heart of our plan giving customers the lowest possible bills.*
Delivering a reliable network **Headline commitment:** We will remain one of the world's most reliable networks, reducing the number of power cuts and the average time people are without power by 20%.      ***Primary benefits of our plan*:** • *Customers will experience less time without power than ever before.* • *We will have no 'worst-served' customers by Ofgem's broader definition, by 2028.*

Proposition
Building a resilient network ***Primary benefits of our plan*:** • *The network will be resilient with particular focus on network resilience, workforce resilience and cyber resilience.*   
Keeping our communities safe Safety of our employees and customers remains our No. 1 priority and we will continue to invest in initiatives that ensure their safety in the future.   
Leading the North West to Net Zero ***Primary benefits of our plan*:** • *Our network will not be a barrier to connecting EV chargers or other low carbon technologies.* • *Enabling climate change targets to be met efficiently through flexible distribution system operation.* • *Joined-up whole systems benefits through customer and stakeholder partnerships*.   
Improving our direct environmental impact **Headline commitment**: We will drive the transition towards local Net Zero targets, following a path to making our own operations Net Zero by 2038.   

Proposal index

#	Output	Current performance	New target
	Customer		
	Meeting our customers' needs		
B1	Making it even easier for customers to contact us	Five existing channels	Two new channels: chat bots and self-service facilities
B2	Providing additional support to businesses during power cuts	Trial of Business PSR	Fully operational Business PSR
B3	Improving the speed and quality of our responses to customers	Peak of 90.6% customer satisfaction (20-21)	At least 90% customer satisfaction despite

#	Output	Current performance	New target
			increasing demands and expectations
B4	Providing faster quotes and faster completion for new connections	Exceeding Ofgem targets	Exceeding Ofgem targets
B5	Reducing the time it takes to complete emergency roadworks	Five days	Three days
B6	Increasing community-focused approaches to engagement	Successful trials	Community engagement team improving access to information on network issues
	Supporting electricity users in vulnerable circumstances		
B7	Collaborating more closely with other utilities	Utilities Together forum with Cadent and United Utilities	Enhanced co-ordination with utility providers to support vulnerable customers
B8	Doubling investment in referral networks	£250k a year	£500k a year
B9	Expanding the reach of our Priority Services Register	50% of those eligible are registered	At least 60% of those eligible to be registered
B10	Creating an innovation fund to ensure no one is left behind	None	New £250k a year fund
B11	Supporting customers in fuel poverty	Various initiatives and trials e.g., Citizens Advice partnership	£2m a year to support 250k customers in fuel poverty
B12	Developing new customer advisory panels	Panels set up for business plan engagement	New panels including a panel for customers in vulnerable circumstances
B13	Home welfare visits for electricity users in vulnerable circumstances experiencing long-duration power cuts	Ad hoc welfare visits.	We'll proactively offer welfare visits to all customers in vulnerable circumstances who are without power for 12+ hours.
B14	Introducing all-colleague training for vulnerable circumstances and mental wellbeing	Training focused on contact center colleagues	100% of colleagues trained in vulnerability and mental health
	Network		
	Delivering a reliable network		
B15	Reducing the number of power cuts	Once every four years 28 interruptions per year per 100 customers	Reduce frequency of power cuts by 20% from 2021-2023 levels
B16	Reducing the duration of power cuts	27 minutes lost per year per 100 customers	Reduce time off supply by 20% from 2021-2023 levels
B17	No 'worst-served' customers by the end of ED2	Limited programme using Ofgem's ED1 worst served customer scheme	No 'worst-served' customers by Ofgem's new definition by 2028

#	Output	Current performance	New target
B18	Improving reliability for electricity users in vulnerable circumstances	Investments for 56 key sites only (hospitals etc.)	Improved network reliability for areas where there is a high number of electricity users in vulnerable circumstances
	Delivering a resilient network		
B19	Improving flood protection	All sites identified by EA flood data protected from risk of flooding in a 1 in 100-year storm event	Protect 21 new and 15 existing sites identified by Environment Agency data from risk of flooding in a 1 in 100-year storm event
B20	Improving our management of trees near overhead lines	Compliance	Enhanced management and 10,000 trees planted each year
B21	Increasing cyber resilience	Completed self-assessment under new Cyber Assessment Framework	Comply with requirements of Network & Information System Regulations
B22	Maintaining resilience in a changing climate	Monitoring climate change effects	Implementing Climate Change Adaptation Strategy
	Keeping our communities safe		
B23	Making electricity in high-rise buildings safer	Monitoring electrical risks in 52 highest risk high-rise buildings	Installing electrical monitoring in 234 high risk high-rise buildings
B24	Delivering safety campaigns	Taking part in national safety awareness campaigns	Leading regionally-focused, multi-utility safety campaigns
B25	Increasing safety education	Safety education focused on primary schools	Wider safety education focused on secondary schools
B26	Improving overhead line safety	Developed and trialed LineSIGHT technology to identify low-hanging lines	Roll-out LineSIGHT technology across the overhead line network
	Environment		
	Leading the North West to Net Zero		
B27	Helping customers connect low carbon technologies	Providing capacity in line with our network management plans and forecasts	Ensuring capacity is provided in the right place and at the right time as demands increase
B28	Removing constraints for renewables	Constraints in certain areas increasing the cost of renewable generation connection	Remove constraints for renewable generation connection
B29	Establishing a new annual Powering Our Communities fund	£75,000 per year fund	Fund increasing from £100k a year to £1m by end of ED2 to support sector growth
B30	Unlooping customers' power supplies	Few hundred services unlooped when requested	Unloop 32k services to properties adopting low carbon technologies

#	Output	Current performance	New target
B31	Providing a decarbonisation advice service	Online decarbonisation hub recently established (www.enwl.co.uk/GoNetZero)	Continue to provide, develop and promote advice hub
	Improving our direct environmental impact		
B32	Reducing our business carbon footprint	Two Zero carbon sites and a 26% reduction in carbon footprint (2015-2020) to 18,051 tCO_2e/yr	Five new Zero carbon sites. Reduce carbon footprint to 8,175 tCO2e/yr
B33	Reducing leakage from oil-filled cables	More than 30k litres of oil leaked per year on average	Less than 25k litres of oil leaked per year on average (17% reduction)
B34	Removing overhead lines in beauty spots	Remove 7-8km of overhead line a year	Maintain programme
B35	Reducing losses from the network	11 GWh per year through proactive programme	Reduce losses by a further 8 GWh per year
B36	Reducing emissions of potent greenhouse gases from equipment	SF_6 leakage rate at 0.32% per year	Reduce SF_6 leakage rate to below 0.3% per year
B37	Making our sites havens for wildlife	11 sites enhanced, 30 more identified	100 sites enhanced

#	Output	Current performance	New target
O1	Maintaining high levels of competition in connections in the North West	Competition enabled in 95% of connections markets, more than any other DNO	Continue enabling competition
O2	Improving network health	Maintain current level of risk	Invest to maintain current levels of risk
O3	Measuring and reporting short power cuts	Measurement	Increased accuracy and consistency across DNOs
O4	Improving telecommunications resilience	Establishing internet protocol connections to all major substations	Enhanced communications infrastructure resilience
O5	Investing in 'electricity system restoration' readiness	Compliance with existing electricity system restoration standards	Compliance with new electricity system restoration standards
O6	Keeping rural transformers safe	Maintaining aging rural transformers	Replace 110 small rural transformers
O7	Enhancing security at major sites	Expanded security to counter new threats	Maintain security programme
O8	Improving safety of underground cable pits	Developed efficient techniques during link box programme	Intervene on entire cable pit population to improve safety
O9	Carrying out proactive safety checks on cut-outs	Respond to safety issues identified by meter operators	Initiate regular cut-out safety check programme

O10	Complying with new legislation on PCBs	Compliance with previous legislation	Elimination of PCB contamination risk from our network equipment
	Consumer Value Propositions		
CVP1	Smart Street: Reducing cost and carbon for customers	64,000 customers	Extend Smart Street to 250,000 households
CVP2	CLASS: Balancing the UK grid in a cheaper, lower carbon way		

1.3 Triangulation objectives

Triangulation is a qualitative research strategy employed to test validity through the convergence of information from different sources. It is not about validating current or emerging thinking but deepening and widening understanding by capturing different dimensions of the same phenomenon so that new insights can be found to improve the overall quality of our decision making.

Triangulation is a process which has interpreted a range of different inputs to the business plan. It has involved effectively 'stopping time' and identifying what has been learned during a specific period and recognising gaps in existing knowledge. Furthermore, it reflected on how information has been processed and informed further steps required.

The overall objective of our triangulation process was to improve the quality of input into our business plan and demonstrate legitimacy of outcomes.

	Objective	How objectives have been addressed
1	**Improve the robustness of the evidence base**	Triangulation has included a wide range of inputs including business-as-usual operational data, bespoke customer and wider stakeholder engagement and third-party insights
2	**Understand and synthesise the evidence base emerging**	This report interprets key lessons learned and contrasts areas of relative consensus with nuances in viewpoints between different stakeholder groups
3	**Greater transparency in the business planning process regarding trade-offs**	In addition to highlighting where dissenting views exist triangulation has addressed how to arrive at a best-fit compromise
4	**Identify gaps in the current evidence base**	Knowledge gaps were identified thematically and reported where they are material to business plan trade-offs
5	**Inform subsequent engagement**	Recommendations were made after each phase of engagement which informed subsequent engagement plans

1.4 Engagement topics and phases

We wanted to ensure that we engaged customers, consumers and stakeholders on the topics that mattered most to them with. However, to do this we needed to carry out initial engagement to

understand their priorities. Whilst we already had a comprehensive understanding of stakeholders' priorities through our established and regularly updated materiality matrix, we recognised a need to undertake a similar exercise with customers.

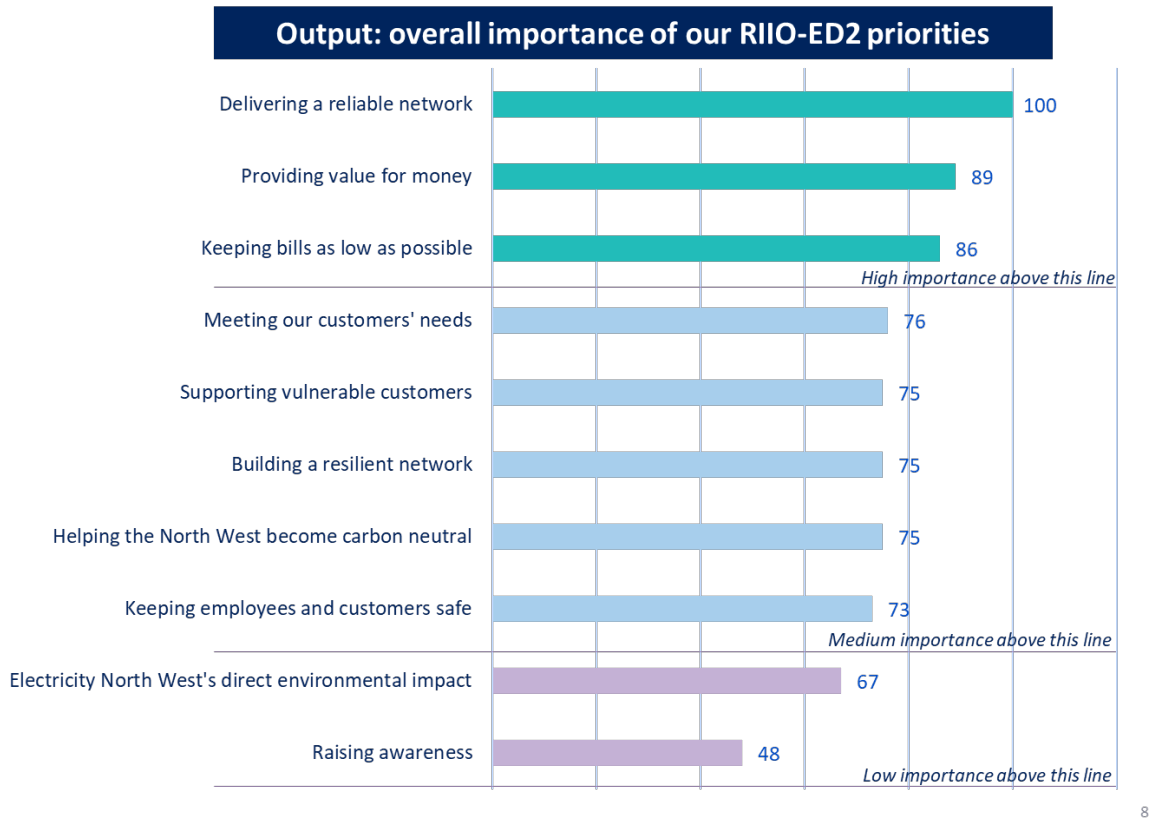
We began by canvassing broad opinions on a range of priorities in phase 1, which enabled us to identify seven key thematic priorities requiring further exploration:

A triangulation of the feedback we received in phase 1 demonstrated that not all stakeholder needs are equal. This informed the materiality approach we used to iteratively prioritise our engagement efforts in the right places, with the right groups, at the right time. Materiality (low, medium and high) was assessed through an understanding of the likely financial investment required and the importance of the investment to consumers and wider stakeholders.

To arrive at an overall importance score for each thematic priority, customer (domestic household and business segments) was assigned a combined weighting of 80%, and stakeholder data was given a weight of 20%. This combined weighting took into consideration the volume of each customer segment and their electricity consumption. This approach strengthened the voice of our consumers and network users, whilst ensuring stakeholders views are also represented. More detail is provided on the rationale for this approach in Section 5.2.

Data weighting applied to stakeholder prioritisation	Volume	Weight
Domestic consumers	64%	**51%**
Businesses	36%	**29%**
Stakeholders		**20%**
Total	100%	**100%**

Based on weighted market research data, thematic priorities were clustered into relative groups of high, medium and low importance as follows:



Although we engaged a widely on all 10 thematic priorities, the breadth and depth of this work was influenced by how important each topic area was to customers and wider stakeholders. Mapping stakeholder segments against each of our priorities enabled us to formulate a targeted engagement programme. A stakeholder prioritisation exercise was undertaken to shortlist the most important stakeholder segments to engage. The prioritised stakeholder segments were:

Prioritised stakeholder segments

Prioritised stakeholder segments	Community and local energy groups
	Consumer representatives
	Current and future customers and wider consumers
	Cyber resilience forums
	Emergency services – resilience
	Environmental groups
	Flexibility service providers
	Government departments
	Other Utilities
	Regional local authorities
	Regional Members of Parliament / elected officials
	Specialist consultants
	Transport providers

Although we undertook an initial prioritisation exercise, we understood that some engagement topics and participants could not be pre-determined. We also recognised the rapidly expanding and changing nature of some of our customer and stakeholders

In phase 2 we planned and delivered engagement which enabled us to establish preferences for improvements to existing performance and investment levels and ideas for new services within each of the seven thematic priorities. This generated a list of over 50 proposals which were prioritised by customers and wider stakeholders for further development. 24 of these proposals were tested quantitatively in a Max-Diff 1 survey while others were explored via qualitative research.

In phase 3 we narrowed the focus on 12 prioritised proposals by testing customers' willingness to pay for service improvements, baselined against ED1 service levels. These proposals, in addition to the wider selection, were also evaluated through a range of engagement mechanisms. The output of this phase enabled us to produce an early draft of our business plan.

In phase 4 we tested support for the overall 'package' of 41 proposals i.e. the plan in its entirety and the support for each of the most substantive components at a thematic and detailed proposal level.

In phase 5 we played back the results of our Acceptability Testing to customers and stakeholders. This also allowed us to delve into more detail on specific topics, refine specific proposals and re-visit trade-offs made in our July submission to Ofgem. In total, we asked for further feedback on 13 of our proposals in this phase.

In phase 6 we promoted our draft plan widely, following its publication on 1 July. We received detailed feedback from Ofgem, its Customer Challenge Group, our Customer Engagement Group (CEG) and industry stakeholders such as Citizens Advice. This feedback has allowed us to identify opportunities for further refinement of our proposals and return to customers and stakeholders with further questions before our final submission to Ofgem on 1 December.

1.5 Engagement mechanisms

A high-level summary of each distinct engagement mechanism is provided below to contextualise the feedback outlined in subsequent sections of the report. Mechanisms are categorised as follows:

1.5.1 Well-designed surveys based on random sampling that generate robust findings

The following surveys were designed and facilitated by independent market research specialists and in all cases sampled a statistically robust volume of consumers and/or customers. In each survey quotas were set to ensure that participants included were demographically representative of the north west population based on gender, age and social grade. Quotas were also set to ensure a representative sample of businesses participated in surveys, segmented by standard industrial classification and the size of the business (number of employees).

- **Priorities Research:** this comprised a mixture of qualitative research (focus groups across our three sub-regions) and quantitative research, involving online surveys and face-to-face 'on-street' surveys, to understand what consumers thought our priorities should be
- **Segmentation**: this research triangulated demographic data, consumers attitudes; behaviours and engagement preferences to identify six unique consumer segments. The segments were identified, refined and sized through a series of focus groups and online surveys which sought views on a diverse range of topics that extended beyond electricity;

- **Max-Diff 1**: MaxDiff (otherwise known as Best-Worst) quite simply involves survey takers indicating the 'Best' and the 'Worst' options out of a given set. Our first Max-Diff was an online quantitative survey which enabled customers to trade-off 24 different proposals;
- **Max-Diff 2:** This survey used the same methodology to focus in on trade-offs between six proposals specifically in relation to supporting electricity users in vulnerable circumstances;
- **Willingness-to-pay (WTP):** The core objective was to obtain robust estimates of what customers are prepared to pay for potential services (known as attributes), and how this varies relative to different levels of improvement. Online focus groups were used to test understanding of 12 prioritised attributes before they were traded-off in a quantitative survey using a stated preference methodology. The majority of survey participants were engaged online, however, hard-to-reach customers were also offered the opportunity to take part face-to-face whilst observing Government social distancing guidelines; and
- **Acceptability Testing**: Following WTP research we developed a package of 41 proposals with specific investment commitments, which for the first time were tested together as a whole. A phased approach was taken to this phase of engagement which commenced with a preliminary qualitative stage (customers only), prior to the quantitative testing of overall acceptability (customers, wider stakeholders and colleagues). These phases helped to test and refine the material to be used in the research.

1.5.2 Purposively sampled qualitative research and deliberative engagement with consumers

The following activities allowed greater space for participants to shape discussions and share what matters most to them. They provided useful insight into the reasons for customers' views, experiences or behaviours and the factors that have shaped these. Sampling was robust (reflecting population profiles), meaning findings provide insight into the range and diversity of views (and other factors) in the population. However, findings cannot be considered to be truly representative.

- **Plugged-In Public Panel:** this panel is a 40-strong group of customers, selected using our segmentation model to represent the diversity of our region. The objective of deliberative public engagement was to involve customers in decision-making. It is different from other forms of engagement in that it enabled participants time to consider and discuss issues in depth before they came to a considered view. Over the course of ten meetings and 1,800 hours of engagement the panel deliberated on the full range of proposals in our plan;
- **Youth engagement**: to reflect youth voices – our future customers' voices – in our plans we tapped into existing structures and groups. Youth Focus North West hosts a regional youth forum called Youthforia which is made up of representatives from 23 local authorities' youth councils and members of the UK's Youth Parliament. We attended seven Youthforia events where we engaged with more than 100 young people on our ED2 business plan priorities. We also organised three sub-regional focus groups with young people to gain insight into the opportunities and challenges faced in different parts of our region;
- **Interviews with large energy users**: 120 large energy users account for 10% of electricity demand on our network yet represent just 0.005% of our customer base. An independently facilitated online in-depth interview was conducted with a sample of large energy users to understand their priorities, preferences and willingness to pay for service improvement;
- **Fuel poor and digitally excluded consumers**: a 90 minute online qualitative focus group with 8 north west customers who in the cold winter months cannot normally keep comfortably warm in their living room and are struggling financially. The focus group was complemented by a series of five telephone depth interviews to include digitally disengaged participants.

The research explored expectations of Electricity North West's business plan, reactions to key promises made, proposals to be delivered and the acceptability of the proposed bill impact for 2023-2028.

1.5.3 Purposively sampled qualitative research and deliberative engagement with stakeholders

Most of the priority stakeholder groups were already represented in our Advisory Panel structure but where gaps existed, we either recruited new members, or engaged with representatives via targeted bilateral meetings.

In 2020/21 our stakeholder panels met frequently, creating additional topic-specific sub-groups as required. Panel members supported us by attending over 43 advisory panel meetings totalling over 100 hours of engagement. Members challenged us robustly to consider alternative approaches and set challenging targets in addition to their existing remit of advising on our ED1 activities:

- **Chief Executive Panel** (40 members): Six meetings were held with senior executives and advisors with specialist knowledge including, but not limited to, the Environment Agency, local authorities, Citizens Advice, Transport for Greater Manchester, Confederation of British Industry, Local Enterprise Partnerships and business representatives;
- **Consumer Vulnerability Advisory Panel** (86 members)**:** 16 meetings were held with senior representatives of organisations with strategic expertise relevant to consumer vulnerability activities including, but not limited to, United Utilities, Cadent, One Manchester, Energy Savings Trust, Scope, RNIB and Auriga;
- **Sustainability Advisory Panel** (41 members): 17 meetings were held with senior representatives of organisations with strategic expertise relevant to sustainability activities including, but not limited to, Community Energy England, Carbon Co-op, Greater Manchester Combined Authority (GMCA) and the University of Manchester; and

- **Cumbria, GMCA and Lancashire regional stakeholder workshops** (198 participants): three meetings enabling wider consultation with regional, social economic and environmental stakeholders including, but not limited to, Local Government, British Red Cross, Cumbria Police, Lancashire Chamber of Commerce, Manchester Airport, Siemens, the National Farmers Union (NFU) and Cumbria Action for Sustainability (CAfS).

We also contributed significant time and resources to engaging with industry stakeholders (covering multi-utility transmission, distribution and suppliers) on ED2 topics via Ofgem Working Groups. These topic-focused groups enabled engagement with Ofgem, other Government Departments, all DNOs, other utilities and influential stakeholders such as Sustainability First and Citizens Advice.

We asked stakeholders to provide feedback on our ED2 proposals from the perspective of the organisations they represent. Where appropriate, the views expressed by individual stakeholder organisations belonging to a priority segment have been highlighted in this report.

1.5.4 Self-selecting research and engagement activities

The main purpose of this type of activity is to establish a dialogue with consumers and encourage anyone who is interested in taking part to share their views. These activities provided insight into the types of issues that attract the most attention from consumers and provided a useful sense of some of the main issues and debates that came up. However, views cannot be considered representative of the range and diversity of views in the population, as key population segments may be missing.

- **Online Community**: 824 consumers opted to participate in an online community called 'Plugging In'. The community were demographically representative by gender, age and the proportion identifying as having some form of vulnerable circumstance. The community was exclusively devoted to a rolling programme of engagement on ED2 topics and were invited to participate in discussion threads, polls, surveys and encouraged to generate their own content. On average 13% of the community logged into the community monthly (marginally higher than industry response rates of 10% for this type of mechanism);
- **Customer Voice Feedback Panel**: this online panel of 2,478 customers and 136 employees was created in 2018 and is open to all customers and colleagues who live or work in the north west. It is used to consult on service improvements such as self-serve tools, policy changes, support services and communication channels. Participants are incentivised to take part in online surveys; and
- **Early draft business plan consultation**: In April 2021 we launched our early business plan consultation and received more than 140 responses through our Online Community (n=68), Plugged-In Public Panel (n=28), an online bespoke engagement event (n=26), an online webform data capture (n=13) in addition to responses via email (n=7).

1.5.5 Organisational performance data and service feedback

Operational data can provide useful insight into the company's interactions with customers and customers' experiences. Data reviewed as part of triangulation included the following sources:

- **Customers who have had reason to complain about a specific service experience**: the top 10 root causes for complaints and trends were identified;
- **ED1 customer service performance measures**: includes customer journey compliance rates, call volumes, call sentiment, customer satisfaction, and Guaranteed Standards of Service;
- **ED1 network performance measures**: Ofgem's interruption metric customer interruptions and minutes lost at an aggregate and more granular sub-regional level; and

- **ED1 emergency streetworks performance**: the average number of days taken to complete emergency roadworks after a fault benchmarked against other networks in our region.

While findings provided important insight into customers' experiences, they were not considered to be representative of the whole population base.

1.6 Weighting different sources of insight

In the CEG's report on ENWLs RIIO-ED2 Draft Business Plan it suggested more clarity should be provided on how a weighted balance has been made between different sources of customer insight.

Section 1.8 sets out the process by which we determined the materiality of evidence collected and achieved a weighed balance. As part of the library of proposals contained within this reference document, a taxonomy has been introduced to signify how material the source of insight was in supporting Electricity North West's decision-making process. The taxonomy is as follows:

Very high materiality	High materiality	Average materiality	Low materiality	Very low materiality
●	◕	◓	◔	○

All evidence sources have contributed to our decision-making. However, the greatest weighting has typically been given to well-designed surveys based on random sampling that generate robust findings, and a lower weighting to business-as-usual performance data. An indication of the how our materiality matrix categorises these mechanisms is provided in the table below:

Well-designed surveys based on random sampling that generate robust findings	Purposively sampled qualitative research and deliberative engagement with consumers	Purposively sampled qualitative research and deliberative engagement with stakeholders	Self-selecting research and engagement activities	Organisational performance data and service feedback
● Very high	◕ High	◕ High	◓ Average	◔ Low

An example of how this taxonomy has been applied to Proposal B1: **Making it even easier for customers to contact us,** is provided below. The table format, which is repeated for every proposal, indicates the range of engagement mechanisms used (denoted by the presence of a 'Harvey ball') and how influential the mechanism was in influencing the iterative development of the proposal.

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative panel	Online community	EDBP consultation
	◕ High	● Very high	◕ High	◕ High	◓ Average	◓ Average

In illustrative example proposal B1, the influence of the WTP survey data available has been reduced from 'very high materiality' to 'high materiality' due to the recency of the study (2019).

1.7 Volume of engagement delivered

Our business plan has been shaped by conversations with more than 18,000 different customers and wider stakeholders over a two-year period. It is the most extensive and ambitious consultation programme Electricity North West has ever undertaken.

Throughout the entire process, we have endeavoured to give participants a genuine opportunity to influence our proposals from the ground up, by allowing them to set the agenda and delve into the issues that really matter to them. We've given every contributor access to important contextual information and to overcome any barriers to participation, we helped them engage too – in some cases even providing devices and training to allow for online engagement during the COVID-19 pandemic national lockdowns and regional restrictions in 2020/21.

Many individuals, be it household customers, businesses or representatives from stakeholder organisations, have participated in our engagement programme more than once. This allowed these individuals to develop a good understanding of our business and enabled more informed views. In total we have logged over 22,000 interactions across 30 tailored engagement mechanisms:

Stakeholder segment	**Individuals**	**Interactions**
Customer count	**15,255**	**17,213**
Political count	**637**	**1,118**
Sectoral count	**930**	**1,929**
Charities count	**180**	**373**
Legal count	**64**	**78**
Media count	**12**	**24**
Regional count	**676**	**624**

74% of the individuals engaged through our programme represented household customers, 7% were businesses and 19% wider stakeholders. Across the region, we engaged directly with over 430 stakeholder organisations and all local authorities in our region with more than 10% of their population in our area.

1.8 Quality of engagement

We created a quality assurance process for all engagement activity to provide a mechanism for assessing the robustness of each engagement activity. All activities were assessed against the assurance framework as part of the triangulation process before any feedback was acted upon. This process identified a quality score, enabling us to benchmark engagement and apply an appropriate weighting to the evidence base, recognising that not all interactions are equal in quality or output.

As part of this process we determined the materiality of evidence collected using three key tools:

1. **A Quality Assessment Framework**: taking into consideration aspects such as how robust, representative and accurate our findings were and their external validity;
2. **A set of principles for trading-off divergent views**: guidelines for determining how to fairly weight evidence which highlighted differences in stakeholders' views; and
3. **A quantitative data weighting**: used to appropriately balance customers' and wider stakeholders' views in our decision making.

Our triangulation has frequently combined two or more methods to gather evidence on the same subject. We identified a rank order of methodologies (ranked from most to least important in the table below) which has attached the greatest importance to well-designed surveys based on random sampling that generate statistically robust findings. This is because the level of precision and certainty these studies offer and their ability to be truly representative of a population.

The engagement mechanisms we used to engage customers and wider stakeholders are highlighted in the summary table below, in addition to which of the six phases they were activated, their reach and the importance of the mechanism in influencing our decision-making:

			1 (Most important)	**2**	**3**	**4**	**5 (Least important)**
Mechanism	**Phase**	**Reach**	Well-designed surveys based on random sampling that generate robust findings ●	Purposively sampled qualitative research and deliberative engagement with consumers ◕	Purposively sampled qualitative research and deliberative engagement with stakeholders ◕	Self-selecting research and engagement activities ◓	Organisational performance data and service feedback ◔
Priorities Research	1	590	☑				
Segmentation	1	1,006	☑				
Max-Diff 1	2	351	☑				
Max-Diff 2	4	1,000	☑				
Willingness-to-pay	3	1,570	☑				
Acceptability Testing	4	1,534	☑				
Plugged-In Public Panel	2-6	40		☑			
Youth engagement	2-6	63		☑	☑		
Interviews with large energy users	3-4	10		☑			
Stakeholder Advisory Panels	1-6	373			☑		
Bilateral engagement	1-6	63			☑		
Ofgem Working Groups	1-6	185			☑		
Online Community	1-6	800				☑	
Customer Voice Feedback Panel	1-6	1000				☑	
Early draft business plan consultation	5	140					
Fuel poor and digitally excluded consumers	6	13		☑			
Operational data e.g. Customer complaints	1-6	42,059					☑

More detail is provided on the tools used as part of our materiality framework and their application in the appendices of this report (Section 5.2).

1.9 Determining the right level of ambition

1.9.1 Our overall approach

In Phase 1 of our engagement (Customer Connection) customers and wider stakeholders told us that in ED2 we must balance ambition with affordability of bills and develop a plan that delivers more–with outputs improving across the board. We heard little, if any, appetite for deterioration of service levels from baseline ED1 performance. For this reason, our programme explored the type and range of services consumers and network users wanted and identified the optimal level of improvement and did not investigate willingness to accept a reduction in service levels.

Every proposal summarised in this report includes an indication as to whether the level of ambition built into Business Plan Commitments either meets or exceeds customers and wider stakeholders' expectations or represents some form of compromise. This information is in the 'response' column, included at the end of each triangulation summary.

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS	We will…	**Future business plan 2023-2028**: Benefit number **Annex XX**: Title

In the response column an indication is also provided of which constraint(s), if any, best describe the barrier to increasing ambition beyond the proposed level.

At the end of each triangulation summary, a justification is provided for how the level of ambition proposed in each proposal was determined. This information can be found in a 'justification table' (see template below) and indicates which, if any, benefits measurement approaches support the investment being fully justified.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
● Very high materiality	◕ High materiality	◕ High materiality	◓ Average materiality	◓ Average materiality

The justification evidence base is derived from a range of benefits measurement sources:

1. **Cost Benefit Analysis** (CBA) – very high materiality in proposal justification

Ofgem expects us submit CBAs to justify a wide range of potential interventions. These include:

- Asset replacement decisions e.g. refurbishment versus replacement
- Deferred replacement
- Increased utilisation of the network
- Interventions to reduce faults or extend asset lives

- Planning of intervention (demonstrating where it is more efficient for example to replace old equipment with newer equipment requiring less opex costs or whether replacement can be deferred but with increased opex expenditure)
- Reinforcement schemes
- Where a small investment or contracted customer flexibility may enable deferment of a major reinforcement
- Large scheme or programme of work
- Black Start and Network Resilience
- Distribution System Operator (DSO) activities
- Data and Digitalisation
- Quality of Supply (QoS).

We undertook CBA analysis in conjunction with Ofgem's guidance (published 08/10/2021). The benefits measurement outputs obtained from CBA are considered to have a very high materiality and take precedent when triangulated with a range of other measurement approaches.

Detailed information on CBA is provided in Annex 18: *Our approach to Engineering Justification Papers (EJPs) & Cost Benefit Analysis (CBAs).*

2. **Customer £ benefit** –high materiality in proposal justification

Some of our ED2 investments will enable customers to directly benefit from financial savings on their energy bills. During our engagement programme we heard that the affordability of consumers' bills is a key strategic priority, therefore direct financial savings were of high materiality in justifying the level of ambition proposed in our plans. The financial benefit to customers is expressed as a £ per customer, per year.

3. **Social return multiplier** – high materiality in proposal justification

Social Return on Investment (SROI) is the monetary value associated with positive outcomes received, and costs avoided by society, because of a given initiative.

Economic Insight supported the measurement of SROI for 35/47 of Electricity North West's ED2 proposals, aligned to a national measurement framework adopted by all DNOs.

Each proposal that has had SROI measurement applied is presented in this document with a total net economic benefit per £ spent multiplier, which represents the total NPV (all benefits minus all costs), divided by the cost of the initiative, giving an indication of total value for money.

To provide an indication of whether the social return multipliers reported in this document are 'good', a RAG status has been assigned. As part of this process we have compared forecasted ED2 SROI to the average performance of similar activities achieved in ED1:

Propositions	Negative SROI multiplier	Low SROI multiplier vs. ED1	Average SROI multiplier vs. ED1	High SROI multiplier vs. ED1
Supporting electricity users in vulnerable circumstances	<0	≤ x4	x5 – x9	≥ x10
All other proposals	<0	≤ x2	x3 – x5	≥ x6

Proposals with a negative (below zero) net economic benefit multiplier warranted additional scrutiny and justification, before we proceeded with our proposed level of ambition. In some cases, we found that we were not able to fairly or accurately measure the full range of benefits through the SROI methodology. In other cases, investment is justified despite a poor SROI due to the investment being required to meet our statutory license obligations.

Due to SROI taking into consideration a wider range of values that enable a more holistic benefit measurement than willingness-to-pay, we attributed a high materiality to this output in our overall assessment and justification of investment.

More detailed information on the methodology and results is provided in Annex 19: Social Value Measurement.

4. **Enhanced engagement (triangulated)** – average materiality in proposal justification

Where 'enhanced engagement' is provided as part of the justification for the ambition set-out in our plan, it indicates that the customer and wider stakeholder evidence base is robust, and of the rigour required to demonstrate the legitimacy of the decision made. Although customer and stakeholder support for our proposed investments (e.g. high acceptability scores) is very important, where possible, we have looked to complement this evidence with quantification of the benefits case.

5. **Willingness-to-pay (WTP)** – average materiality in proposal justification

Electricity North West commissioned Accent and PJM Economics to conduct a programme of research exploring customers' priorities and willingness-to-pay for a range of possible service improvements/proposals ('attributes') to support the application of WTP values in cost benefit analysis and provide evidence to inform the content of the business plan.

Three lower level 'discrete choice experiments' and a package 'contingent valuation' (CV) exercise were designed to estimate WTP for a package of service improvements across all attributes as well as to derive values for individual attribute level improvements.

Rather than using an estimate of average WTP for specific proposals, a more cautious value has been modelled drawing on a cost increase that is acceptable to 80% of the customer base.

Feedback received from Ofgem in recent years has included an observation that willingness to pay is often used by networks to indicate that a financial benefit for customers had been achieved, where an activity/ service costs less than customers' WTP. Industry experts have asserted that while WTP is acceptable for establishing priorities, such calculations do not necessarily demonstrate that a genuine financial benefit has been achieved for customers. In response, where possible we have looked to enhance WTP data with a more holistic SROI benefits assessment.

1.9.2 Application of our six-step justification process

To support our justification process, wherever possible, we complemented triangulation with quantitative benefits measurement. Economic Insight supported a comprehensive assessment of the social value generated by 35 of our benefit proposals. The modelling approach adopted was aligned to a national social value framework developed by Sia Partners, government best practice and academic guidance. The Total Net Present Value of these proposals which considers all benefits (financial and social) minus all costs over a 5-year period, excluding WTP values is more than £1.1bn. Out of the 35 proposals modelled, 15 achieve significantly higher than average net economic benefit compared to our ED1 internal benchmarks, indicating excellent value for money.

In some cases, a strong net economic benefit per £ spent multiplier, justified a higher level of ambition than we had originally set-out in our draft plan. An example of this is B37: making our sites havens for wildlife, where 45% of our Plugged-In Public Panel wanted to see greater ambition from us. A high multiplier (x19) influenced our commitment to scale up this programme and a strategy to target biodiversity improvements in communities with greater concentrations of fuel poor customers, where the societal benefit will be greater.

In other cases, a lower multiplier enabled us to change course and adapt our plans. An example of this is B29: Establishing a new annual Powering our Communities fund. We used SROI forecasting to re-calibrate the design of the fund so that a greater weighting of investment will be directed towards community energy projects which return the highest societal benefit, thus increasing the value returned to bill payers.

Where alternative justification existed, we opted to proceed with investments with a lower net economic benefit per £ spent multiplier. This includes CVP1: Smart Street - reducing cost and carbon for customers. Here we applied the options set-out within the Smart Street EJP to Ofgem's CBA model, which measures the costs and benefits accruing over a longer period (45 years) than the social value framework (5-10 years). This enabled us to test specific upsizing options to determine the most ambitious proposal which could be cost-justified. In addition, positive support from customers in our willingness-to-pay research enhanced our justification.

Proposals with a negative (below zero) net economic benefit multiplier warranted additional scrutiny and justification, before we proceeded with our proposed level of ambition. We were not able to fairly or accurately measure the full range of benefits for some benefits or outputs using this method. Examples of this include B26: Improving overhead line safety and Output 5: Investing in Electricity System Restoration readiness. Where this was the case investment has been primarily justified through a requirement to meet our statutory licence obligations.

1.10 Constraints to delivering ambition beyond proposed levels

The most common reasons that some compromises have been made between our proposed service levels and the level of ambition desired by customers and wider stakeholders are:

- a lack of customer support for further ambition;
- the scale of the problem to be solved;
- efficient deliverability constraints;
- a value for money trade-off (prompting greater ambition in another area); or
- Ofgem policy.

The same rationale can be applied as to why more generally the level of ambition presented across the full suite of proposals tested, refined and accepted by customers has not been increased beyond those proposed. Ultimately, for every proposal, some form of constraint exists, and we have opted to be open and transparent about what these are to demonstrate the legitimacy of decisions made.

In ED2 discrete propositions will generally all be delivered through a common process. This means that there are some overarching practical capacity constraints which limit the ability to simply select the highest level of ambition on every proposal. In addition, significant step changes in activities need to be phased, due to the need to appropriately design, plan and deliver the associated work.

The table below categorises known constraints across each thematic priority in the business plan and represents a count of how many times each constraint can be attributed to a proposal.

Priority area vs. number of proposals with constraints	A lack of customer support for further ambition	The scale of problem to solve	Efficient deliverability constraints	A value for money trade-off	Ofgem policy
Meeting customers' needs (B1-B6)	5	0	1	0	0
Supporting electricity users in vulnerable circumstances (B7-B14)	2	2	2	2	0
Delivering a reliable network (B15-B18)	0	0	4	0	0
Building a resilient network (B19-B22	0	4	0	0	0
Keeping our communities safe (B23-B26)	1	2	1	0	0
Leading the North West to net zero (B27-B31)	0	4	0	2	0
Improving our direct environmental impact (B32-B37)	2	0	3	1	0
CVPs	0	0	1	0	1
Total	**5 (15%)**	**12 (35%)**	**11 (32%)**	**5 (15%)**	**1 (3%)**

Constraint categories are considered in more detail below.

1.10.1 A lack of customer support for further ambition (15%)

Our approach to engagement (see Annex 30) ensured choices presented to customers were not pre-determined by company thinking, whilst at the same time built on the previous research and engagement evidence base developed during ED1.

In developing a range of ED2 services and more specifically, service levels, with customers we were able to identify several proposals where there was an overt preference for the company to not deliver investment beyond ED1 levels. Undergrounding for visual amenity and improving the speed and quality of our responses to customers (specifically the speed of complaint resolution), are examples of proposals de-prioritised, in favour of incremental investment in other areas.

In these cases, an appetite for continuous improvement still exists, however, the implication is that this must be achieved through efficiencies and not through increases in customers' bills.

There are a greater proportion of proposals under the banner, 'meeting customers' needs', that face this type of constraint (5/6 proposals) relative to other thematic priorities. This is synergistic with

feedback received during Phase 4 of the programme, which cautioned the company against material increases in investment to improve customer service, which is already thought to be at a good level.

The Plugged-In Public Panel advocated the continuation of Electricity North West's continuous improvement approach with a 'modest and smart increase in investment' to ensure satisfaction levels exceed 90% across the full spectrum of touch points.

Proposals that were developed with customers and stakeholders were evaluated quantitatively in Acceptability Testing. The responses from customers were combined with stakeholders to provide an overall acceptability measure. All proposals achieved a score more than 80%, a threshold derived from a literature review that was used to define a 'good' level of acceptance.

This data was also weighted (64% domestic customers to 36% business customers) to reflect the total population and energy demand of customers. The results were used to understand differences in acceptance among household and business customers. Several of the customer related proposals achieved a lower score among businesses (e.g. complaints and enquiry resolution, communication channels and community engagement) and this insight contributes to 'a lack of customer support for further ambition.'

1.10.2 The scale of the problem to solve (35%)

We heard a call from customers and stakeholders to deliver, wherever feasible, as many of our proposals, which are aligned to their key priorities, at the most ambitious output level possible.

Ambition can be defined in many ways, but in this respect, we have taken it to mean that our service(s) reach the entire population that are eligible and want to take-up the service.

There are several examples where this scenario applies, including but not limited to:

- All 250,000 north west customers currently experiencing fuel poverty receiving support;
- 100% of colleagues being trained in consumer vulnerability and mental health;
- All tower blocks classified as high risk benefiting from remote fault monitoring;
- All PCB-contaminated equipment will be disposed of or decontaminated of PCBs; and
- All the largest and highest risk substations will be protected from flooding.

Our assessment has been based on the scale of the challenge that can be reliably quantified now. We acknowledge that a wide range of changes in the macro-economic environment may influence changes in the scale, such as national policy and standards, the economy and changes in consumers' and stakeholders' expectations. We will continue to closely monitor the operating environment we work within and frequently consult with customers and stakeholders in ED2 to understand if new information should challenge or disrupts our strategy, investments and improvement plans.

1.10.3 Efficient deliverability constraints (32%)

Through the work undertaken by the company to progress its overall deliverability strategy for ED2 'efficient deliverability constraints' naturally split into the following areas;

- **Delivery resource** – who is going to do the work?
- **Supply chain resource** – who is going to produce the kit?
- **Outage and customer management** – how many outages can the network and customers tolerate while delivering the work?

For delivery resource, this also tends to split into three;

- **Routine network activities** - laying cables, installing poles, replacing transformers etc.
- **New activities potentially with new specialist suppliers** -e.g. innovation roll-out schemes such as Smart Street, Sentinel and PRESense LV monitoring
- **New single purpose delivery vehicles** – e.g. unlooping services.

For the routine activities, constraints are correlated to the size of the labour market. Given that the size of the internal DLO is relatively fixed in the short-term, this is influenced by contracting capacity at both a regional and national level. At a time when all networks are increasing their programmes, there are constraints in the resources available in the marketplace.

With appropriate signalling and incentives, additional contractor capacity can be secured relatively easily, but in the north west, potential regional suppliers may be more limited, certainly at a level which would enable us to maintain a competitive environment. Our Commercial team is currently exploring the options available to us.

For new activities, the supply chain is typically much more limited and often involves engaging with companies who may be in the process of scaling up their capacity. The technology is often also in the process of development and the installation techniques are still being trialled, presenting significant challenges in scaling up from a trial basis to what could be described as a 'production level'.

For single purpose vehicles, the trade-off is usually about how quickly the organisation can scale up and there are limits to how fast this can happen in practice. Authorisations are handled by our Training Academy which can place constraints on the ability to significantly upscale trained resources in the short-term and itself relies on the availability of qualified trainers, materials, facilities etc.

Supply chain management relies on predictability as manufacturing slots are often booked years in advance. As there is a global market for many of our products, overall market capacity is generally not an issue, except circumstances (e.g. all DNOs might be ordering up to 10x their usual quantities of pole-mounted transformers in response to the PCB challenge over the next few years). Given risks and uncertainties inherent in the price control process, networks can be reluctant to place large firm orders before the outcome of the price control is known which leads to delays in the implementation of the early year of the programme.

Operationally, outage management is its own science which looks to balance the risk caused by 'switching off' parts of the network to enable work to be carried out safely. This introduces risk to the fundamental resilience of the network which can potentially result in significant fault events (i.e. we must turn the back-up off generation so if there's a fault, everyone experiences it). The ability of the network to tolerate these outages varies depending on the location and type of the particular bit of network being worked on so it's a careful balance with limits of what can be done when. This also requires skilled control room engineers to operate the process which are also in short supply.

In addition, all work needs designing and planning, with the lead times generally increasing at higher voltages. The contractors who will be being expected to deliver much of the increase in investment also need managing and their contracts negotiating by a commercial team to ensure we achieve the best value for money on behalf of our customers. Both of these aspects (design and procurement) also act as constraints on the overall ability to deliver in the short-term as any change to these resource bases needs time to deliver (less so for Commercial where there is a wider marketplace for

skilled procurement specialists, but particularly so for electrical design which is a very specialist skill drawing from a limited (and ageing) national labour market).

All our disparate network programmes with their different aims and goals must funnel through a common construction process to ensure that work is safely delivered by qualified staff. As such, the constraints of resource availability, procurement capability, supply chain provision, outage management etc. apply generally across the totality of the programme and set a 'carrying capacity' limit into which all the different programmes need to be fitted.

1.10.4 A value for money trade-off (15%)

There are three customer related proposals in our plan where we have made a conscious decision to compromise on the ambition we heard our customers and stakeholders hoped for:

1. **Minimum reliability standard**: Overall, customer support for reducing the threshold for paying £75 compensation to households following a power cut, (down from the GSOP obligation of 12 hours to an improved voluntary standard of 9 hours), was much weaker than stakeholders. Customer feedback carried a greater weighting in our final decision-making and this proposal was removed from our plan.
2. **Expanding the reach of our Priority Services Register**: Having established support for a minimum baseline of 60% of eligible customers registered, more ambitious targets reaching up to 90% were widely tested. Further engagement (Max-Diff) and SROI analysis informed our trade-off decision of retaining the 60% (minimum) PSR membership target in favour of committing to supporting 100% of fuel poor customers and doubling our investment in referral networks for electricity users in vulnerable circumstances. More information is provided on this trade-off in the evidence base presented for each proposal.
3. **Creating an innovation fund to ensure no one is left behind**: Whilst we heard that the £250,000 innovation fund meets most of our customers' and stakeholders' expectations, it could arguably be set at a higher level. As we engage with stakeholders to establish the purpose of the fund; grant criteria, expected outputs and outcomes it will be important to demonstrate the benefits of this investment before it is scaled. This follows our approach in ED1, having successfully demonstrated the benefits of the local and community energy fund (£75k in ED1) and consumer vulnerability partnership fund (£250k), before consulting on proposals to significantly scale-up these activities.

1.10.5 Ofgem policy (3%)

In some cases, there are ways of working and standards that Ofgem mandates DNOs to comply with, such as investing in electricity system restoration readiness. In these areas there is little scope for operating outside of the standard or justification in using customers' money to do so.

It is important to recognise that in some cases there may be scope for changes in the national policy framework that enables new services to be delivered that meet consumers' and stakeholders' expectations. Through our robust engagement we heard a strong preference in favour of socialising the costs associated with customers connecting low carbon technologies. This option has historically been constrained by Ofgem Policy; however, the evidence bases we collected (including willingness-to-pay research) and presented to Ofgem has contributed to a change in Ofgem's minded-to policy position which has been reflected in our constraint analysis.

1.11 List of acronyms

The table below includes a list of acronyms used widely throughout this report:

Acronym	Meaning
BCF	Business Carbon Footprint
BEIS	Department for Business, Energy and Industrial Strategy
BMCS	Broad Measure of Customer Satisfaction
BPSR	Business Priority Services Register
CAM	Citizens Advice Manchester
CBA	Cost Benefit Analysis
CIVC	Customers in Vulnerable Circumstances
CVP	Consumer Value Proposition
DFES	Distribution Future Electricity Scenarios
DNO	Distribution Network Operator
DSO	Distribution System Operation
DUoS	Distribution Use of System
EAP	Environmental Action Plan
ED2	Electricity Distribution 2
ELT	Executive Leadership Team
ESQCR	Electricity Safety, Quality and Continuity Regulations
EV	Electric vehicle
FPC	Fuel Poor Customers
GMCA	Greater Manchester Combined Authority
IIS	Interruptions Incentive Scheme
LCT	Low Carbon Technology
NPg	Northern Powergrid
PSR	Priority Services Register
RAG	Red/amber/green
RLM	Rising Lateral Mains
SDI	Short Duration Interruption
SLT	Senior Leadership Team
SME	Small to Medium sized Enterprise
SPEN	Scottish Power Energy Networks
SROI	Social Return on Investment
SSEN	Scottish and Southern Electricity Networks
SSMC	Sector Specific Methodology Consultation

SSMD	Sector Specific Methodology Decision
TTQ	Time to Quote
UKPN	United Kingdom Power Networks
UVA	Undergrounding for Visual Amenity
VoLL	Vale of Lost Load
WPD	Western Power Distribution
WSC	Worst Served Customers
WTP	Willingness-to-pay
YFNW	Youth Focus North West

1.12 Glossary

The table below includes an alphabetical list of terms used throughout this report and definitions for those terms.

Acronym	Meaning
Benchmarking	The process used to compare a company's performance (e.g. its costs and outputs) to that of best practice or to average levels within the sector
Business plan	The company's forward-looking expenditure plans/expectations which are submitted to Ofgem as part of the price control review process
Consumer	Electricity users, whether for domestic or business use
Customer	Bill payers
Customer Interruptions (CI)	The number of customers interrupted per year (CI). This is the number of customers whose supplies have been interrupted per 100 customers per year over all incidents, where an interruption of supply lasts for three minutes or longer, excluding re-interruptions to the supply of customers previously interrupted during the same incident
Customer Minutes Lost (CML)	The duration of interruptions to supply per year (CML). This is the average customer minutes lost per customer per year, where an interruption of supply to customer(s) lasts for three minutes or longer
Digitally inclusion	Digital inclusion covers: • Digital skills: being able to use digital devices (such as computers or smart phones and the internet • Connectivity: access to the internet through broadband, wi-fi and mobile • Accessibility: services designed to meet all users' needs, including those dependent on assistive technology to access digital services. Digitally disengaged consumers are those who face barriers (access, skills, confidence and/or motivation) to digital inclusion.
Distribution Network Operator (DNO)	A DNO is a company which operates the electricity distribution network which includes all parts of the network from 132kV down to 230V in

	England and Wales. There are 14 DNOs in GB which are currently owned by seven different groups
Distribution System Operation (DSO)	Distribution system operation is the effective execution of a set of functions and services that need to happen to run a smart electricity distribution network in the interests of energy consumers
ETR132	A risk-based vegetation management methodology by the Energy Networks Association
Financeability	Financial models are used to determine whether the regulated energy network can finance its necessary activities and earning a return on its regulated asset value under the proposed price control. This financeability is assessed using a range of different financial ratios
Fuel poverty	A fuel poor household is defined as one that needs to spend 10% or more of their household income on all fuel use to maintain a satisfactory heating regime.
Future customer	Young people (16-24) who are end users of electricity now but do not currently have bill paying responsibility
Hard-to-reach	We defined hard-to-reach customers as people who our business impacts in some way, but who rarely, if ever, engage with us. This lack of engagement could be the result of limited awareness or appetite, or a belief that their participation will not make a difference
Low Carbon Technology LCT)	Low carbon technologies emit low levels of CO2 emissions, such as electric vehicles, solar panels, wind turbines and heat pumps
License obligation	An obligation placed on the network companies to meet certain standards of performance
Max-Diff	Maximum Difference analysis, also known as best-worst scaling is an analytic approach used to gauge survey respondents' preference score for different items or services. Researchers ask the respondents to pick the most and least important factors in given answer options
Multiple interruptions	Ofgem's definition of multiple interruptions is electricity supply failing (due to the distribution system) for three hours or more, on at least four different occasions in a 12-month period (starting 1 April every year)
Priority Services Register (PSR)	PSR includes domestic consumers who are of pensionable age, have a disability, have long term ill health, and/or are blind or visually impaired. Individuals on this register qualify for a selection of free support services
Business Priority Services Register (BPSR)	A free support service to help reduce the impact of power cuts on our business customers
Social Return on Investment (SROI)	The monetary value associated with positive outcomes received, and costs avoided by society because of a given initiative.
Stakeholder	Our regulator, Ofgem, defines stakeholders as: "individuals, organisations or communities that are impacted by the activities of the network company."
Transient community	People and groups who move in and out of an area by choice (e.g. students) or factors outside of their control (e.g. seasonal workers).

Vulnerable consumer	A vulnerable consumer is defined as one who is: significantly less able than a typical consumer to protect or represent their own interests; and/or significantly more likely to experience detriment, or for that detriment to be more substantial.
Whole systems	Solutions arising from energy network companies and system operators coordinating effectively, between each other and with broader areas (not just the transmission or distribution networks), which deliver value for consumers.
Worst-served customer	In RIIO-ED1, a worst-served customer is one who experiences 12 or more higher voltage unplanned interruptions over a three-year period, with at least three higher voltage interruptions each year.

2 Meeting the needs of consumers and network users

2.1 Meeting our customers' needs

Example customer and stakeholder input to this priority area

Phase 1

- During the qualitative stage of our initial **Priorities Research** customers told us that customer service was important as they needed to be informed of power cuts and whether Electricity North West are doing any work in their area.
- In a joint 2019 DNO **WTP study**, the highest valued initiative tested (out of 18 tested) was, '*during power cuts increase proactive contact with customers so that over 60% of all customer contact is through proactive methods'*
- Our innovation project, Avatar- The Future of Customer Service, also indicated that traditional communication channels such as telephone and IVR are very likely to compete in the future with AI based solutions and other innovative platforms such as Crowd Service.

Phase 2

- Our **Plugged-In Public Panel** has emphasised to us our role as a service provider and therefore that meeting customer needs is a central function of our work.

Phase 3

- In an independently facilitated **in-depth qualitative interview**, ten large energy users agreed that they would rather keep our part of the bill as low as possible, rather than see further investment in customer service improvements. These customers were satisfied with the current service and considered extra investment to offer diminishing returns in terms of improving key measures like customer satisfaction.

Phase 4

- During a playback session in December 2020 Members of **Youth Focus North West (YFNW)** told us "Meeting our customer needs" should be a high priority given that, as a monopoly, Electricity North West is customers' only option.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing** 87% of domestic customers and 83% of business customers surveyed found our reliability proposition acceptable. Only 2% of domestic and business customers felt the proposals were unacceptable, either because of cost or because they did not believe improvements in this area were as important as others.

Nuances in stakeholders' views

- The digitally disengaged were most likely to find our proposition acceptable (96%).
- In our **Segmentation**, customers belonging to our 'Time to Care' and 'Community Minded' segments were significantly more likely to find our proposition acceptable (95% and 93% respectively). 'Busy busy busy' were least accepting of the proposition (82%).
- Our **Plugged-In Public Panel** members were happy to see a focus on improving and developing communication channels, welcoming our focus on inclusive communication specifically for vulnerable customers.
    - Members felt their views had been included in the decisions we have made, in particular regarding the speed of reinstatement following repairs. However, some felt that we could do more on the quality of repairs and speed up communications about repairs.
    - Some members felt we could do more to make customers aware of planned and unplanned work and to help customers' understanding of who to contact in an electrical emergency or power cut.
    - A few members were hesitant about engineer tracking, believing this is going too far and that the investment could be better used elsewhere.
- 92% of stakeholders participating in the survey found the proposition acceptable.
- All members of our CEO panel found our proposals in this area to be clear and acceptable.

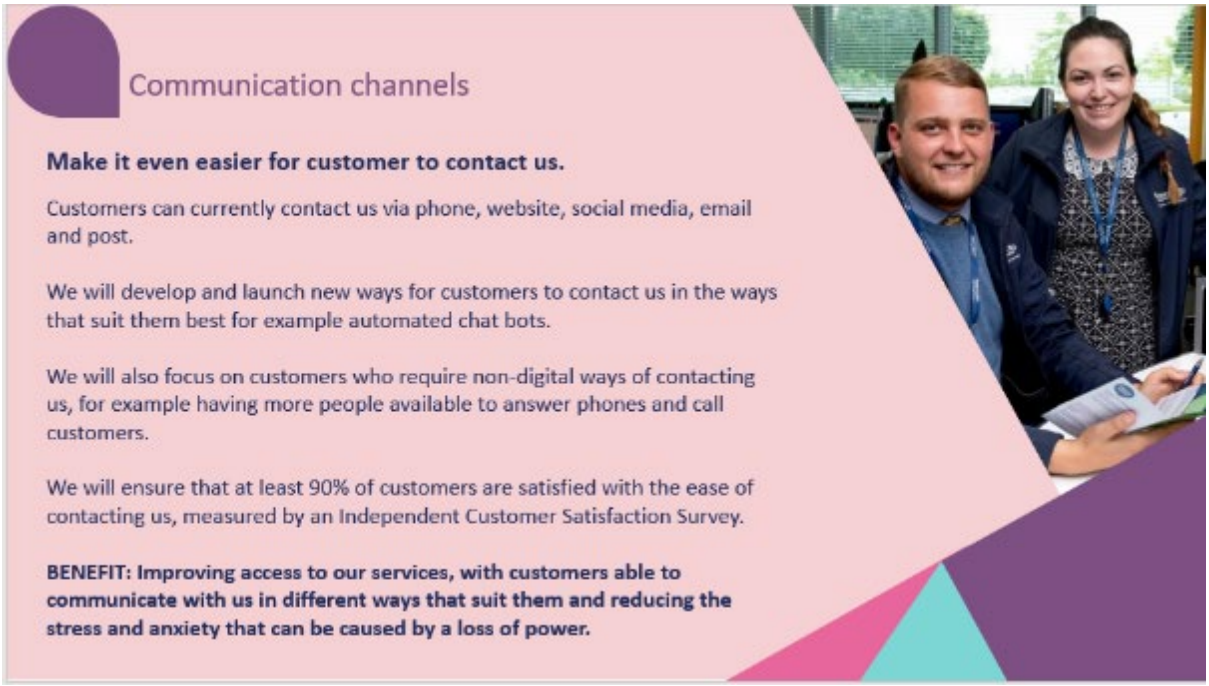
B1 Making it even easier for customers to contact us

Headline level of support

99% of customers understood the proposal and 84% found it acceptable. It ranked 18th out of 41 proposals evaluated by customers and was the second best performing customer proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
84%	88%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and the proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	5	• Our innovation project Avatar, The Future of Customer Service' indicated that traditional communication channels such as telephone and IVR are very likely to compete in the near future with AI based solutions and other innovative platforms such as Crowd Service – which allow customers to leverage a platform with Uber-like user experience to find available people to help them with customer service questions. • Our VoLL 1 research exposed significant differences in the value placed on various support and communication strategies by those aged 18-29, implying that mitigation strategies, adopted by DNOs, must evolve to reflect diversity and the changing needs/expectations of their customers.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>

Joint-DNO WTP research during 2019/20 indicated that north west consumers were willing to pay more to access information via a range of formats and new digital channels such as chatbots:

<table>
<tr><th>Accent and PJM Economics SECV Social Value Research</th><th>Year</th><th>Value</th></tr>
<tr><td>Use of chatbots and automated messages to deliver a quicker service response for customers.</td><td>2020</td><td>£0.40</td></tr>
<tr><td>Provide customers with access to information quickly and easily, in a range of formats to suit their preferences (such as webchat, text message, power cut maps, website or social media)</td><td>2019</td><td>£2.70</td></tr>
</table>

Bespoke research with vulnerable customers on their communication preferences revealed an unmet need for a chatbot type platform (an automated online chat function). This was seen as a convenient way to obtain information 24/7, resolve issues quickly and provide a more convenient and easier to use communication channel for those with a hearing impairment or a preference for written dialog.

</td></tr>
<tr><td></td><td colspan="2">Action taken: We identified a need to engage with future customers to understand their communication preferences and expectations. This included enhancing our understanding of the communication channels required both now and, in the future, by all our stakeholders, so that none get left behind by new technology or services, such as our digitally disengaged customers.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>39</td><td>

Future customers asked us not to rely on digital for 24/7/365 power cut support to customers and suggested that increased telephony support is required to maintain support to the digitally disengaged.

They shared a preference to speak to a real person in an urgent situation and felt that some enquiries are too complex to be handled by AI. There were also concerns about the accessibility of support services and the increasing dependence of modern communications on electricity, which might be unavailable during outages. Other barriers included smart phone ownership, access to broadband and different communication (e.g. language) needs.

Feedback generated from 32 in-depth interviews with members of our Consumer Vulnerability Advisory Panel were reflected in an investment proposal. The proposal tested the appeal of increased telephony against other forms of support; additional support to manage customers’ anxiety, provision of local amenities for food and warmth and a new targeted call to understand if repairs to customers’ appliances are required after a specific type of rare network fault, recognised to cause damage. Increased telephony support to reduce the reliance on digital channels going forwards was the stand-out option.

</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		 • Our **Plugged-In Public Panel** critically evaluated the same four proposals and also prioritised increased investment for telephony support. Many members felt speaking to someone over the phone rather than relying on digital communication was more reassuring, especially for older customers who might be less digitally confident. • However, households in our **Online Community** raised an expectation of us developing additional self-serve channels which improve accessibility, providing such channels run in parallel with, and do not *replace* existing channels. • A review of our **operational data** (e.g. customer contact volumes) demonstrated that new self-serve channels, introduced during ED1, have not reduced call volumes. This implies that existing digital channels have the effect of increasing our overall customer reach and serve segments that otherwise wouldn't have made contact.
	Action taken: Based on our current and future customers' needs we opted to include increased telephony support as a key commitment in our plan. Guided by feedback from our **Customer Voice Feedback Panel** of 2,478 customers and 136 employees we co-created a chatbot channel and trialled the chatbot on our website.	
Sweating the detail (phase 4)	New	• 92% of customers participating in our 'chatbot exit survey' were satisfied with their experience. Importantly, 92% of users were able to resolve their query through their first interaction with the chatbot, without needing to 'channel hop'. 63% of users claimed that without the self-serve channel they would have called us instead, suggesting that this tool is likely to reduce call volumes. As the tool is enhanced, additional efficiency savings will be generated, for example a function that allows customers to update their own PSR data. This will improve overall efficiency in our call handling capabilities and enable our advisors to focus more time on assisting vulnerable customers with more complex needs.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
Making contact easier for customers will reduce stress during power outages (health benefit) and new communication methods will allow the company to contact groups which they previously could not have done.
The value of individuals time (per hr) was taken into consideration in the modelling of consumer benefit influenced by self-serve channels.
To calculate the SROI, the total volume of contacts made by customers during ED1 was identified. A cautious estimate was then produced for ED2, based on anticipated usage of new communication channels.

<table>
<tr><td>Total contact ED1 (annual average - actual)</td><td>410,501</td></tr>
<tr><td>Total contact ED2 (annual average - forecasted)</td><td>475,581</td></tr>
<tr><td>Total increase in annual contact due to investment</td><td>65,080</td></tr>
</table>

The total net economic benefit per £ spent (SROI) by making it even easier for customers to contact us is estimated to be £25. This is a relatively strong performing investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £3m. Societal benefits account for 96% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£123,323.34</td></tr>
<tr><td>Total gross present value</td><td>£2,653,290.37</td></tr>
<tr><td>NPV</td><td>£3,016,799.19</td></tr>
<tr><td>SROI</td><td>£24.46</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

In our customer survey, 99% of domestic customers and 96% of business customers found this proposition clear and understandable. 85% of domestic customers supported our plans compared to 80% of business customers. A small number of customers did not agree with our proposals (2%). 79% of colleagues participating in the survey supported the proposal, making it one of only two proposals that failed to meet the 80% action standard set among this segment.

Benchmarking analysis – draft plans

In their draft plans WPD, SSEN and SPEN included success measures on their speed of response to enquiries (e.g. WPD: 'respond to social media enquiries within an average of five minutes') and included an abandoned call rate at ≤1%. SPEN said it will record customers' preferred language and will use this when contacting them. The benchmarking exercise conducted in Phase 6 indicated that Electricity North West's proposal would benefit from clearer success measures.

Implications for the Business Plan

Outcome description	Current performance

Two new communication channels: Chat Bots & Self-Service Facilities	Five existing channels
Incremental cost of proposal	**Target delivery date**
£0.5m	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	EDBP consultation
	◕	●	◕	◓	◕	◓

Priority stakeholder groups engaged: Current, future customers and wider consumers, consumer representatives, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x25)	✓	✓ (2019)

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	Customers have told us that they want new ways to contact us, but because of the urgent nature of some contacts, and so as not to disadvantage any customers, we must focus on taking phone calls. Our proposal includes increased telephony support in combination with introducing additional self-serve channels. An increase in the latter will free-up capacity among contact centre personnel to take phone calls. In parallel, the advantages of an improved self-serve approach are that customers can contact us via their preferred channel when it suits them, rather than waiting for specific working hours of certain teams. Evidence suggests that these new channels will broaden the range of customers who contact us. As referenced in Annex 08, investment in increased resource and training the contact centre to a higher standard of welfare support will increase the number of PSR calls answered by an agent from 76% to 86%. Benchmarking of leading practice has also highlighted the importance of referencing our translation services. In ED2 we will ensure that we can communicate in the top 10 non- English languages in the North West across all communication formats. Strong support among customers and stakeholders for the proposal included in Acceptability Testing indicates that	**Future business plan 2023-2028**: Benefit 1 **Annex 19**: Social Value Measurement

	the level of ambition proposed is right-sized. This investment will deliver the resources required to achieve (at least) 90% customer satisfaction and balances customers' preference for continuous improvement in customer service with keeping bills down.	

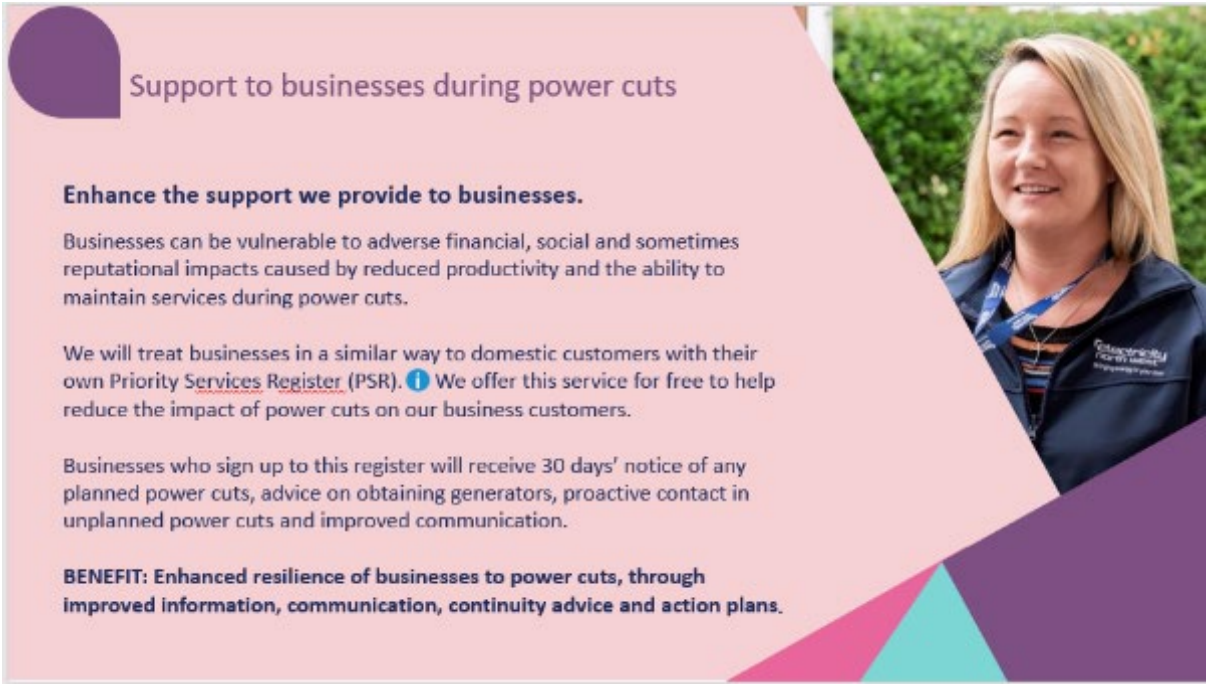
B2 Providing additional support to businesses during power cuts

Headline level of support

98% of customers understood the proposal and 82% found it acceptable. It ranked 27th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
82%	91%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1,4	A literature review of our **operational data**, customer and wider stakeholder engagement undertaken during ED1 revealed that business customers represent 7.5% of the volume of customers connected to our network but 64% of the power demand.

Triangulation	Insights	How feedback shaped the proposal
		• In our **Priorities Research** SMEs' priorities reflected those of our domestic customers, with the exception that delivering a reliable network is ranked second, behind affordability of bills • In **qualitative focus groups** SMEs said that during power cuts they consider themselves vulnerable to adverse financial, social and sometimes reputational impacts caused by reduced productivity and the ability to maintain services to end-customers. • In a **national DNO WTP survey** conducted in 2019 customers in the north west said that they were willing to pay an additional £0.35 per year towards, 'helping organisations (e.g. small businesses) to become more resilient to power cuts by offering advice and support.'
	Action taken: In 2019 Electricity North West became the first DNO to setup a dedicated Business Priority Services Register (BPSR). We identified a need to understand how, if at all, the service could be improved and to what extent it should be scaled-up.	
Electricity in my life (phase 2)	23	• The importance of 'helping businesses become more resilient to power cuts' was put to the test in a **Max-Diff 1** survey. It ranked 23rd out of 24 proposals. Businesses taking part ranked the proposal only marginally higher (21st).
	Action taken: 126 businesses participated in the survey, which although is statistically robust at an overall level, did not allow for more granular segmentation. We identified a need to expand engagement on this proposal among a wider range of directly impacted customers.	
Our plan for the future (phase 3)	38,51,55	• A **bespoke consultation** with large businesses e.g., Manchester Airport revealed that 'improved support' during power cuts, including greater telephone support and back-up generation was very important maintain at least at minimum operations during network outages. They also suggested priority services should be provided to organisations on a risk basis, such as hospitals, care homes and important infrastructure providers • During **in-depth qualitative interviews** large energy users agreed that they would rather keep the distribution element of the bill as low as possible, rather than see further investment in customer service improvements. The implication of their feedback was that we should invest more in the actual network to prevent faults, rather than in support functions to mitigate their impacts • The **Plugged-In Public Panel** identified a gap in our proposals**.** Having reviewed nine (largely domestic) customer related investment proposals, panel members identified a need to provide greater support to businesses: *"Support small businesses where people's livelihoods are directly at stake if there are significant disruptions or large organisations e.g. hospitals."*
	Action taken: From our engagement we concluded that the BPSR is the optimal mechanism to provide tailored support to vulnerable businesses. Our existing generator policy is already targeted in the way that stakeholders have said they expect; consumers and organisations in vulnerable circumstances are prioritised. We decided to include the BPSR in its existing format in our business plan and identified a need to establish a consumer valuation for the BPSR.	
Sweating the detail (phase 4)	New	• In a **bilateral meeting** with Citizens Advice we heard that the BPSR is a service differentiator for us compared to wider industry and that we should think strategically about how to develop it further in ED2. • We partnered with Economic Insight to derive a SROI for the BPSR. The benefit value calculated avoided costs (loss of productivity), informed by

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2"></td><td></td><td>the average number of employees in organisations already registered on the BPSR and gross value added per hour worked (north west) 2019.
• A market research survey among existing members of the BPSR showed that 42% of disruption during a fault could be avoided by being registered. This is linked to customers receiving proactive communications, such as 30 days' notice of any planned power cuts and advice on how they can obtain generators. The annual benefit per business on BPSR per year is £116, a multiplier of x21 for every £1 spent.</td></tr>
<tr><td colspan="2">Action taken: The SROI of this activity is very positive, compared to industry benchmarks. With the BPSR in place, we have determined a need to raise awareness of it more widely to ensure more businesses are connected to our support service.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• According to the ONS there are 578,705[1] businesses in the North West. A VoLL 1 Customer Survey reported that 18% of businesses say that power cuts have a large or very large impact on their productivity, reputation and/or finances. This was used as a proxy for BPSR eligibility (n= 104,166). A similar membership target to the household PSR (60%/ n=62,500) was assumed. With 2,937 businesses already registered, it was assumed that 31,250 businesses could be registered by 2028 and the remainder in ED3.
• The benefit of businesses registering to the BPSR is 30 days' notice of a planned power cut, a reminder 48 hours before the start time, business continuity support (e.g. how to obtain a generator), and decarbonisation advice. Our research with BPSR members shows that this support can mitigate 42% of disruption typically caused by a power cut.
• The total net economic benefit per £ spent (SROI) by providing additional support to businesses during power cuts is estimated to be £54. This is a relatively strong performing investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £9m. Societal benefits account for 98% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:
<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£168,593.99</td></tr>
<tr><td>Total gross present value</td><td>£7,684,714.10</td></tr>
<tr><td>NPV</td><td>£9,143,934.61</td></tr>
<tr><td>SROI</td><td>£54.24</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

99% of all respondents to our customer survey agreed that this proposition was clear. 80% of domestic customers and 84% of business customers supported our plans while just 2% of domestic and 3% of business customers were unsupportive. **In the 'all customers and stakeholders' weighted score the proposal was ranked first (89%) indicating very strong support among our stakeholder population**. 81% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

[1] https://www.gov.uk/government/statistics/business-population-estimates-2019

ENWL were the first (and still the only) DNO to offer a Business PSR in ED1. SPEN and SSEN have also included this service in their ED2 plans. SPEN are offering 95% of prioritised customers including commercial customers face to face appointments in advance of planned power cuts. SPEN will also undertake a 'Power Cut Risk assessment' for all Commercial Customers.

Implications for the Business Plan

Outcome description	Current performance
Operate a Priority Services Register for Business Customers	Trialed in ED1
Incremental cost of proposal	**Target delivery date**
£0.2m	1 April 2023

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	EDBP consultation
◕	●	●	◕		◕	◓

Priority stakeholder groups **engaged:** Current, future customers and wider consumers, consumer representatives, government departments, other utilitie and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x54)	✓	✓ (2019)

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	Considering strong business and stakeholder support and acceptance among household customers we will scale-up our industry-first Business Priority Services Register. Benchmarking indicates that our BPSR offering will remain leading practice in ED2, so our focus will be on ensuring that more businesses become aware of the service and have the opportunity to register and benefit. This will involve, but will not be limited to, partnership with the Federation of Small Businesses. In determining the right level of ambition for this proposal we are cognisant that businesses told us to keep bills down and that we should invest more in the network to prevent faults, rather than in support functions to mitigate their impacts. We will balance these competing needs by increasing membership of the BPSR through targeted and cost-effective awareness campaigns, which do not require a substantive increase in the cost of delivering this service.	**Future business plan 2023-2028**: Benefit 2 **Annex 19**: Social Value Measurement

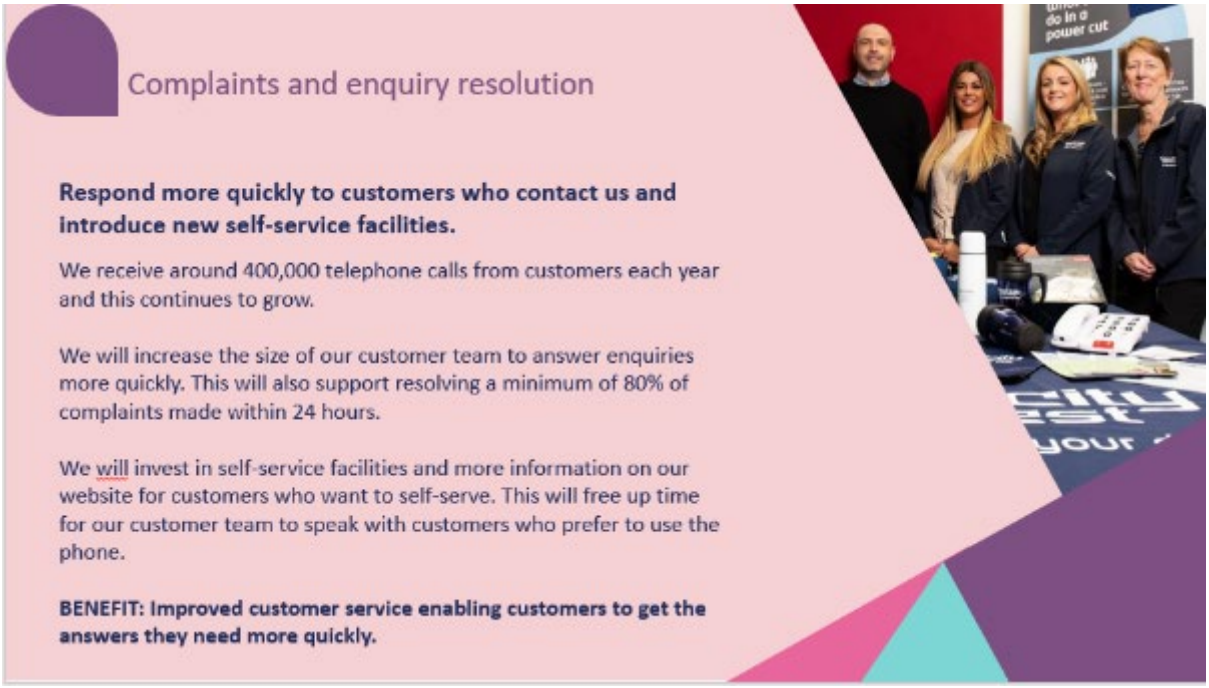
B3 Improving the speed and quality of our responses to customers

Headline level of support

98% of customers understood the proposal and 83% found it acceptable. It ranked 22nd out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
83%	81%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1	• We conducted a review of our RIIO-ED1 **operational data** including complaint volumes which showed significant year-on-year improvement on Ofgem's performance metric. The number of customers who have reason to complain on an annual basis equates to approximately 0.4% of customers connected to our network.

	FY15/16	FY16/17	FY17/18	FY18/19	FY 19/20	FY20/21
Complaint Volumes	9,429	9,886	10,888	8,832	7,879	6,848
Metric Performance	7.65	3.45	2.29	2.06	2.16	1.89
24 Hour Resolution	52.0%	76.4%	82.0%	82.1%	84.0%	79.4%

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">Action taken: Although our performance has continued to improve, and complaint volumes decrease, we identified a need to understand if customers and wider stakeholders valued further enhancements to our complaint handing processes and performance.</td></tr>
<tr><td rowspan="2">Our plan for the future (phase 3)</td><td>44</td><td>• The Plugged-In Public Panel reviewed a range of customer service proposals and having considered them in the round, voted on whether they supported further investment in them to raise performance levels above the current levels in ED2.
• The introduction of a 24/7 complaint handling service was considered a ‘wasted effort’. 77% of Panel members registered a ‘not very supportive’ or ‘do not support’ vote, with 41% of panel members actively voting against the initiative. The current service level was perceived to be satisfactory.</td></tr>
<tr><td colspan="2">Action taken: Our engagement indicates that improvement to complaints handling must be delivered at no additional cost to bill payers as it is not considered to be an investment priority. On this basis we elected to roll-over our ED1 service level, whilst committing to undertake research among complainants to ensure our processes are appropriate, robust, and lead to satisfactory complaint resolution as efficiently as possible.</td></tr>
<tr><td>Submit and refine (Phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• The proxies used to model consumer benefits associated with this proposal include, ‘reducing stress - as a result of <1-day resolution’ and ‘customers feel in better control of their own lives.’ In the absence of other data, it was assumed that an outage related complaint would be x5 times more likely to result in stress compared to a non-outage complaint.
• The total net economic benefit per £ spent (SROI) by improving the speed and quality of our responses to customers is estimated to be £0.06. This is a below average investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £15k. This is likely to be because the measurement quantifies some, but not all, of the benefits.
• Societal benefits account for 51% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:
<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£252,890.98</td></tr>
<tr><td>Total gross present value</td><td>£225,970.93</td></tr>
<tr><td>NPV</td><td>£14,541.64</td></tr>
<tr><td>SROI</td><td>£0.06</td></tr>
</table></td></tr>
<tr><td></td><td colspan="2"></td></tr>
</table>

Nuances in perspectives between stakeholder groups

The majority of customers who took part in our survey agreed that our self-service proposal was clear and understandable (99% domestic and 94% business). 87% of domestic customers were supportive of our plans (particularly customers in vulnerable circumstances), compared to 74% of business customers. A small number of customers did not agree with the proposal (2% domestic and 6% business) – with business customers more likely to suggest investment would be better spent elsewhere. 94% of colleagues participating in the survey found the proposal acceptable.

In a formal response to our early draft business plan consultation, Lancashire County Council questioned whether an improvement of 1% in customer satisfaction is challenging enough. Similarly, representatives felt that maintaining performance on resolution of complaints within 24 hours isn't sufficiently ambitious for 2023-2028.

Benchmarking analysis – draft plans

Electrcity North West's commitment (80% complaint resolution within 24 hours) is lagging the competitive set with all other DNOs pledging to resolve 90% of complaints within one day.

Implications for the Business Plan

Outcome description	Current performance
9/10 customer service	Peak of 9.06 in 20-21
Incremental cost of proposal	**Target delivery date**
£0.3m	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative panel	EDBP consultation	Operational data
		●	◓	◕	◓	◔

Priority stakeholder groups **engaged:** Current customers (household and business), consumer representatives, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	We propose continuing with our proposal in its current format which will see us ensure we are sufficiently well resourced to resolve >80% of complaints in 24 hours. This commitment lags the ambition proposed by other DNOs; however, it reflects our customers' prioritisation. Our prioritisation strengthens the voice of consumers in our decision-making (data weighted to households 59%, businesses 21% and stakeholders 20%). Businesses voiced a preference for performance improvement to be focused on other higher priority investments.	**Future business plan 2023-2028**: Benefit 3 **Annex 19**: Social Value Measurement

B4 Providing faster quotes and faster completion for new connections

Headline level of support

96% of customers understood the proposal and 82% found it acceptable. It ranked 28th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
82%	85%	**Final triangulation decision**
		Changes to the current proposal

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Sweating the detail (phase 4)	66, 67	• A CHAID[2] analysis was applied to **operational data** collected as part of Ofgem's Broad Measure of Customer Satisfaction Survey. The analysis indicates that the key driver of customer satisfaction for connection quotations is how clearly the connections process is explained to customers. The time taken to complete on-site works and energise the customer's supply are the key drivers of satisfaction for completed connections. Prompt confirmation of dates and pre-work arrangements are also influential.

[2] Chi-square Automatic Interaction Detector (CHAID) is a tool used to discover the relationship between different variables such as overall satisfaction and specific service levels

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>

In a Plugged-In Public Panel meeting, participants were provided with the company's customer satisfaction performance since 2015, indicating connections satisfaction had increased from 77.5% in 2015/16 to 89.0% in 2020/21. Members heard how an innovative online connections tool launched in 2019/20 year had made the connections process easier for customers, leading to 95.7% satisfaction using users. A continuous feedback loop has shown us that customers seeking a three-phase supply or those with wayleave requirements also want to use the tool; however, their requirements are currently outside the functionality of the system.
The panel felt that Electricity North West's continuous improvement approach should be maintained with only a modest increase in investment (linked to SROI) on ED1 levels. This modest increase would enable investment in further development of digital technology to ensure satisfaction levels exceed 90% and keep pace with industry performance (compared to other DNOs). Members felt that the absolute level of satisfaction achieved is more important than our league table position and that we should be wary of diminishing returns from investments to achieve marginal gains.

</td></tr>
<tr><td></td><td colspan="2">Action taken (final triangulation): We heard a call for continuous improvement in our performance. Therefore, we developed a proposal which commits to a minimum 90% satisfaction which will be supported through further development of our digital self-serve capability. This will enable a wider range of connection customers to take control of their journey through applying, paying, choosing dates and monitoring progress online.</td></tr>
<tr><td>Submit and refine (Phase 6)</td><td>New</td><td>
We reviewed our operational data to understand regulatory performance on Time to Quote (TTQ).
<table>
<tr><th rowspan="2">Domestic quotes (1-4 properties)</th><th colspan="2">Volume</th><th colspan="2">TTQ</th></tr>
<tr><th>Self-serve</th><th>Other</th><th>Self-serve</th><th>Other</th></tr>
<tr><td>ED2 base case</td><td>313</td><td>2,088</td><td>1.44</td><td>1.65</td></tr>
<tr><td>2020/21</td><td>313</td><td>2,088</td><td>1.94</td><td>2.15</td></tr>
<tr><td>2019/20</td><td>212</td><td>1,802</td><td>1.97</td><td>2.39</td></tr>
<tr><td>2018/19</td><td>0</td><td>2,303</td><td>NA</td><td>3.68</td></tr>
</table>

The data in the table didn't show what we were expecting (online self-serve having a considerably lower TTQ) as we have a 'planner approval' step which is currently being completed once all of the tasks have been worked through. From a planner perspective all of the same tasks are required (online vs. offline), however, we may look to change the order of these for online to close out quotes quicker.
The main benefits of the online offering are the prevention of unnecessary applications, data capture and customer service. An increase in the use / scope of online would be helpful, for these reasons, however, there is only marginally less work from a planner perspective.
A big impact on TTQ would be seen if we could digitise our application process, thus delivering a cost saving through being able to reduce

</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		headcount from the team who register applications through data entry. The numbers in the table above are a mixture of first-time applications and refreshed applications (which are much quicker). Taking this into account; the impact would be c.0.5 days on TTQ which c. is25%. * • Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs. • The consumer benefits associated with this proposal include, £70,000 per year of avoided network costs via efficiencies (digitalising processes) and the time to quote for new domestic electricity connections reducing by an average of 0.5 days for 2,401 applicants per year. The proxy used for measurement is, 'customers feel in better control of their lives' • The total net economic benefit per £ spent (SROI) by providing faster quotes and faster completion for new connections is estimated to be (£0.38). This is a below average investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa (£1.2m). This is because the measurement quantifies some, but not all, of the benefits (improvement in TTQ for domestic customers) and includes the cost base for all connections customers and services. • Societal benefits account for 46% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£1,685,939.88
	Total gross present value	£1,666,416.11
	NPV	£286,234.30
	SROI	£0.17

Nuances in perspectives between stakeholder groups

94% of all customers surveyed agreed that this proposal was clear and understandable. 82% of domestic customers and 83% of business customers supported our plans with just 1% across both groups who did not agree. 81% of colleagues participating in the survey also found the proposal acceptable.

Benchmarking analysis – draft plans

By comparison to other DNOs' plans Electrcity North West's draft plan proposal to 'provide faster quotes and faster completion for new connections' omitted clear outputs. The outcome description to 'exceed Ofgem targets' was not specific, unlike the targeted minimum satisfaction score of 9/10.

WPD propose achieving 90% or higher satisfaction for all connection types. SSEN have targeted 92% customer satisfaction. WPD also propose reducing the Time to Quote and Time to Connect for LCTs by 1% from RIIO-ED1 levels.

SPEN will improve delivery timescales by 2% and offer 100% of customers a pre-quotation consultation (face to face or virtual) and customers with ≥ 30 quotes a year an account manager.

Implications for the Business Plan

Outcome description	Current performance
Exceed Ofgem targets	Exceed Ofgem targets
Incremental cost of proposal	**Target delivery date**
£2m	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative panel	EDBP consultation	Operational data
		◕	◓	◕	◔	◓

Priority stakeholder groups engaged: Current customers (household and business), consumer representatives, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	During ED1, our ongoing customer engagement programme has enabled us to focus service improvements on the key drivers of satisfaction. We will continue to leverage this engagement programme to ensure customers will benefit from an easier connections process which is responsive to their needs, from initial application through to works being completed. We have made some changes to the proposal included in Acceptability Testing. These include exceeding Ofgem's standard for the time it takes us to quote and connect (all types) new connections customers and ensuring a minimum satisfaction level of 90% - influenced by feedback received from our Plugged-In Public Panel. Benchmarking analysis indicates increasing focus by WPD on customers connecting low carbon technologies. This is an area where we are already building resources in our team to drive improvements, in terms of timescales and customer service. We will expand digital self-serve options to support overall (speed of response) improvements such as enhancing services available via the online connections quotation tool to include three phase connections.	**Future business plan 2023-2028**: Benefit 4 **Annex 19**: Social Value Measurement

Output 1 Maintaining high levels of competition in connections in the North West

(Not included in Acceptability Testing)

Connections customers tell us that the best thing we can do to deliver value to them through efficient prices and high-quality service is to maintain a competitive environment for connections providers in our area.

We are the most successful network operator in demonstrating that there is active competition in our area. Ofgem carried out competition tests where new connections work was categorised into 11 market segments. Two of these were 'excluded' market segments which covered small connections (up to four premises) and where competition was expected to be less likely to develop; for these customers other mechanisms (e.g. customer satisfaction survey and time to connect incentive) are in place to ensure they receive good service. Of the other nine market segments, Electricity North West successfully passed seven representing more than 95% of all connections in our area. This indicates that further ambition in this area is constrained by the scale of the challenge to be solved.

In the absence of new market entrants calling for us to do anything differently we will maintain our high levels of competition in connections in ED2 as the best way of providing choice and value to customers. Through benchmarking analysis our observation is that this proposal is in line with other DNOs. This approach has been discussed directly with our CEG.

B5 Reducing the time, it takes to complete emergency roadworks

Referred to as 'Reduce duration of emergency streetworks' in WTP survey.

Subsequently, our output delivery incentive was re-named by our customers as 'Dig, fix and go.'

Headline level of support

98% of customers understood the proposal and 86% found it acceptable. It ranked 12th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
86%	89%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	7	• In **bilateral engagement** local authorities asked us to work more collaboratively with them to identify opportunities for delivering street works in a more coordinated manner that minimises congestion. The concerns of local councils' stem from the prolonged nature of disruption associated with utility repairs, and the impact on traffic flow in busy locations. • A literature review included an impact assessment conducted by the Department for Transport that analysed the impact of street works on society. It concluded street works (i.e. works by utility companies and others with apparatus in the street) are a significant cause of delay and disruption. On some estimates, congestion resulting from street works costs ~ £4.3 billion a year in delay costs. However, these costs are borne by society rather than by those carrying out the works (i.e. they are "externalities"). • Our experience during ED1, to date, indicates that this is an important issue to customers with complaints arisings because of street works activity featuring prominently in our complaints data.
	Action taken: We identified a need to conduct further engagement with consumers to understand why streetworks are a root cause of complaints and what, if anything, we could do to mitigate their impacts on society.	
Electricity in my life (phase 2)	24	• To understand why street works are a root cause of customer complaints we asked members of a specially recruited and informed **Online Community** of North West customers to reflect on how roadworks affect them personally. The range of impacts included health and wellbeing, environmental, productivity and financial. Participants were subsequently asked what they expected the company to do to reduce these impacts and a poll (in which

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>140 people participated) demonstrated that reducing the duration of roadworks is the most highly valued strategy (50% of the vote).
• In engaging with customers about incentivisation in ED2, we hoped to understand which activities, if any, the company should legitimately be incentivised to undertake in the future. In doing so it was important that customers were provided with sufficient information to understand the purpose of incentives and current examples, without the company 'leading the witness' to reflect its own perspective. 74% supported improvements in emergency streetworks performance being incentivised in this way.

"I think incentives are the only way to motivate and improve performance in an industry with no competition. Without it, the company would do the minimum possible to provide the service and substantially increase profits and dividends."

• 'Reduce the time taken to finish our roadworks after emergency repairs to underground cables' ranked 10th in a Max-Diff 1 survey, indicating broad appeal. Businesses ranked the proposal 7th, putting significantly more emphasis on the proposal than domestic customers who ranked it 13th. This is indicative of businesses' trade being adversely affected by congestion and access issues that can occur through street works.
• We conducted a review of our operational data and benchmarked against other regional utility providers. The average duration of street works associated with emergency underground fault repairs in 2019/20 was 5.4 days. This has improved from an average of over 6 days in 2015/16, with an average of 5.8 days across the ED1 period to 2020/21. This brings our operations in line with other comparable utilities, operating in our area, for comparable work. Our performance is also comparable at a national level.</td></tr>
<tr><td></td><td colspan="2">Action taken: In response to the insights generated during the triangulation process following phase 2, we drafted a business plan proposal to test with customers which included a description of the initiative, the commitment being made, how it will work in practise and the benefit to customers. A review of operational data led to two improvement levels being identified; including a stretching transformational performance target of three days.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>43</td><td>• A proposal to reduce the average duration of emergency streetworks from 5 to 3 days was supported by 90% of the Online Community.
• The findings from engagement with the Plugged-In Public Panel added weight to those observed from the Online Community. The panel was presented with nine different costed proposals intended to improve customer service. Reducing the time taken to complete road repairs after faults was ranked first with 29% of the vote. Members cited the significant disruption caused to road users, cyclists, pedestrians, residents, emergency services and businesses, resulting in negative financial impacts for local economies.
• The emergency street works proposal was shortlisted for our WTP survey, based upon its potential bill materiality and novelty as a bespoke new proposal. In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:

<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Reduce duration of</td><td>Emergency roadworks average 5.4 days to</td><td>Emergency roadworks average 4 days to</td><td>Emergency roadworks average 3 days to</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>emergency streetworks</td><td>complete emergency repairs, resurface and clear the site</td><td>complete repairs, resurface and clear the site</td><td>complete repairs, resurface and clear the site</td></tr>
</table>

The most improved level was the most valued service improvement tested in the survey among domestic and business customers. The gain in service moving from level 1 to level 2 was substantive enough for the service to increase from 5th to 1st position for businesses.

<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – 4 days</th><th>L2 – 3 days</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.72</td><td>£1.47</td></tr>
<tr><td>Businesses</td><td>0.055</td><td>0.20%</td></tr>
</table>

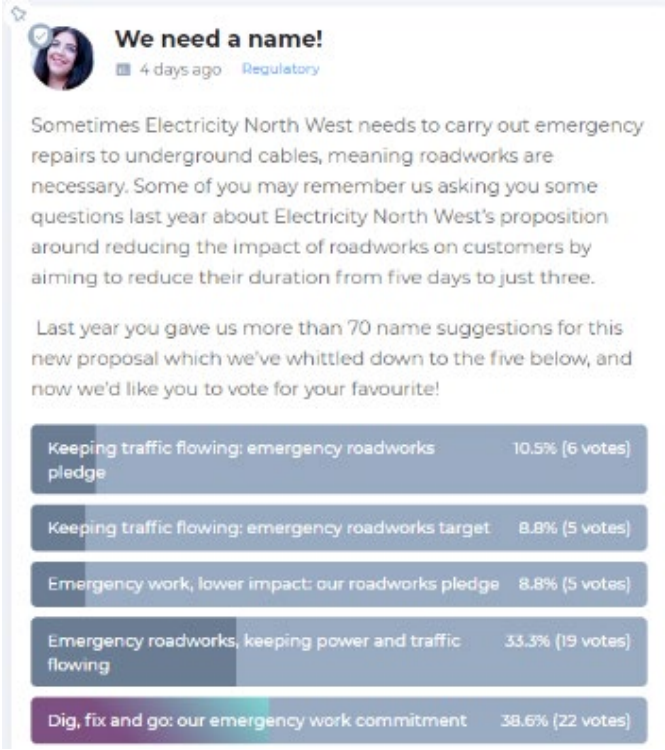
We asked the CEO Advisory Panel to undertake the same Max-Diff exercise as customers. Reducing the duration of streetworks was ranked 21st out of 24 proposals, indicating a lower priority for wider stakeholders (particularly, when compared to directly impacted stakeholders, such as local authorities).

</td></tr>
<tr><td></td><td colspan="2">Action taken: Our triangulation process (phase 3) concluded strong support for a three-day streetworks service level, underpinned by a robust evidence base. We took this forward into the suite of proposals included in Acceptability Testing.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td>New</td><td>

In bilateral engagement we asked stakeholders if we should either:
<ol type="a">
Carry out temporary reinstatements with a view to clearing the highway in a shorter timescale, before returning later to complete a permanent reinstatement; or
Complete the permanent reinstatement first time?

We heard that first time reinstatement is preferred because it avoids further congestion and minimises our environmental impact.

</td></tr>
<tr><td></td><td colspan="2">Action taken: The working group we assembled to respond to stakeholder feedback continued to develop a strategy for delivering the stretch improvements required, including first time reinstatement. As part of our Closing the Loop engagement (phase 5), we identified an opportunity to reference our proposal back to revealed preference and use externally published data e.g. SROI. This would be in addition to the stated preference WTP evidence.</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
Closing the loop (phase 5)	New	• We shortlisted five names for our emergency streetworks proposal that were inspired by consultation with our **Online Community**, as illustrated below. We then asked members to vote on their favourite. The poll is still live but interim results indicate '*Dig, fix and go: our emergency work commitment*' is the frontrunner. 

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

For our final business plan submission, we have commissioned economics consultancy, Economic Insight to support us in the assessment of the societal benefits of our plan and its commitments. Benefits values were forecasted following detailed discussions with relevant stakeholders to gain an understanding of the projects aims and the changes caused. The assessment that EI have undertaken uses the common framework that has been agreed amongst DNOs and developed by SIA and Partners for quantifying the Social Return on Investment (SROI) of business plan commitments/propositions.
As part of this wider assessment of our final business plan we included an assessment of our ‘Dig, fix and go: Our emergency work commitment’.
We reviewed our SROI measurement approach, in conjunction with KPMG who are experts in this field. This ensured that our consumer valuation is holistic and takes into consideration a wider range of benefits supported by the emergency streetworks initiative:

Reduced time spent waiting in traffic
Reduction in stress from traffic
Reduction in CO2
Health benefits of reduced Nox
Health benefits of reduced particulate matter

A stretch target has been set of reducing the average duration of emergency roadworks from 5.8 to 3.0 days across ED2. As this target will require transformative change and be very challenging to deliver the SROI of delivering a reduction to 4 and 3.5 days has been modelled for comparative purposes. An optimism bias adjustment was made to the benefits modelled in line with the guidelines provided as part of the common framework.
These benefits were then assessed against costs, which for this example, because the costs of the activity are uncertain we have used an incentive rate profile which assumes a linear reduction in duration across the 5-year period of RIIO-ED2.
Overall, the SROI assessment for ‘Dig, Fix and Go’ was assessed as having a total economic benefit per £ spent (SROI) of circa £12 for a reduction to 3.5 days, making it a relatively strong performing investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £279m.
Societal benefits account for 93% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£23,731,164.85</td></tr>
<tr><td>Total gross present value</td><td>£262,119,578.21</td></tr>
<tr><td>NPV</td><td>£279,484,502.31</td></tr>
<tr><td>SROI</td><td>£11.78</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

97% of domestic customers and 96% of business customers surveyed found this proposal understandable. 84% of domestic customers were supportive of our plans, compared to 91% of business customers. Just 1% of all customers were unsupportive and stated they were happy to wait

five days rather than three. 92% of colleagues participating in the survey also found this proposal acceptable.

Benchmarking analysis – draft plans

Other networks are not proposing any service or activity that focuses on improving their emergency street works performance. This means that Electricity North West's proposal is a differentiator.

Implications for the Business Plan

Outcome description	Current performance
Faster reinstatement after emergency streetworks	5 days
Incremental cost of proposal	**Target delivery date**
No additional allowances, but incentive rewards if improvement delivered successfully	31 March 2026

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative panel	EDBP consultation	Operational data
●	●	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, government departments, other utilities, regional local authorities, transport providers and specialist consultants (KPMG)

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x12)	✓	✓ (£1.47) Ranked 1st

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints**	Supported by a high-quality evidence base (including benefits measurement drawing on **willingness to-pay** research and SROI, which had a significant weighting in or decision-making) we will proceed with an ambitious commitment of **reducing the time it takes to complete emergency roadworks to three days**. In developing this proposal through extensive engagement with customers and stakeholders, and through working with our CEG, we have considered how we can deliver the improvements in service that are so strongly valued by consumers. We will leverage a mixture of working practice improvements, use of data, physical works improvement (reinstatement) and increased resources.	**Future business plan 2023-2028**: Benefit 5 **Appendix G.31**: Bespoke Outcome Delivery Incentive – Dig, fix and go: Our emergency work commitment

	The delivery of the service improvement will be challenging and is subject to efficient deliverability constraints. Uncertainty exists given the transformational nature of the levels being proposed but also due to the significant delivery risks which are outside of management control and will need to be actively managed. The risks and delivery considerations we have currently identified are withdrawal of RPS211 (excavated waste from utilities installation and repair), changes to the length of guarantee for reinstatement (SROH) and lane rental scheme. Please see Appendix G.31 for more information.	

B6 Increasing community-focused approaches to engagement

Headline level of support

95% of customers understood the proposal and 82% found it acceptable. It ranked 29th out of 41 proposals evaluated by customers and the lowest performing customer proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
82%	86%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)		• In a pre-engagement phase an independent expert undertook a triangulation exercise of the lessons learned, risks and opportunities presented from a wide spectrum of consumer and stakeholder engagement we had undertaken during ED1. This input into colleague ideation workshops where a list of over 50 investment ideas was formulated for testing in our ED2 programme. Workshop attendees included a broad cross-section of colleagues in leadership positions across the business, with a wide range of skills, experience and expertise.
	Action taken: A more local community-focused approach to communications and engagement was identified as a topic to explore further but did not meet our prioritisation criteria for inclusion in our early stage quantitative research.	

Our plan for the future (phase 3)	36, 40,41	• We engaged our **Online Community** in a series of discussion threads and polls regarding the impact our everyday activities have on their lives and how disruption can be minimised. We heard that we should continually engage with communities to enable greater transparency, build trust and confidence in our activities. Members said that we can enhance trust by:
		  ○ ensuring as many customers as possible have a good experience when they interact with the company (*and measuring those indirectly as well as directly impacted*);
		  ○ managing unforeseen events well, such as storms or COVID-19 and taking ownership of any issues that arise;
		  ○ having a social conscience – not leaving anyone behind during the energy transition; and
		  ○ holding Q&A events with customers to answer questions and be held to account.
		• The following was cited as an example of the communication model that customers in the Online Community have expressed appetite for, which they believe would have the benefit of building greater trust with local communities: A review of operational data highlighted a relatively high number of power cuts had occurred in Golborne, located in Greater Manchester. These resulted in the company planning, scheduling and carrying out work to overlay 900 meters of underground cable in just two weeks. Initial customer dissatisfaction resulting from the power cuts was turned around when the local MP and local media were engaged to promote our quick response and the £30,000 investment in reinforcing this network. Proactive and reactive social media responses were coordinated, letters were sent to 2,000 customers to keep them informed, and an online Q&A was arranged with customers on Facebook.
		• A **Smart Meter Consultation**, involving a survey of both customers and wider stakeholders revealed a strong correlation between customers' familiarity with Electricity North West (which engenders a better understanding of the services provided by the company) and increased levels of trust in the organisation '*to do the right thing*'. The implication is that a more local community-based approach to engagement is likely to assist building closer relationships with communities, which in turn, can influence more positive outcomes.

	Action taken: Insights from our triangulation following phase 3 – Our Plan for the Future, highlighted that consumer engagement builds awareness, understanding and trust which influences greater acceptability and support for our business activities. We identified an	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">opportunity to develop a proposal for enhanced community engagement, based around the proactive communication model adopted with the Golborne community. In addition to being able to inform and explain our processes to consumers we acknowledge that we can learn how to do things differently from community engagement and intend to make it a two-way feedback loop.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The proxies used to model consumer benefits associated with this proposal include, ‘reducing stress during an outage’ and ‘customers feel part of a community.’
Modelling assumes a team of 7 ENWL staff (5 agents +2 managers) and partner support to deliver <24 engagements (coffee mornings with smaller numbers of customers and x12 local meetings e.g. in high fault areas with up to 500 being engaged per area). The total annual reach of the investment is 10,200 customers per year.
The total net economic benefit per £ spent (SROI) through increasing community-focused approaches to engagement is estimated to be £13.20. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £9m.
Societal benefits account for 93% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£665,946.25</td></tr>
<tr><td>Total gross present value</td><td>£7,987,641.62</td></tr>
<tr><td>NPV</td><td>£8,787,287.24</td></tr>
<tr><td>SROI</td><td>£13.20</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Of the total number of customers surveyed as part of our survey, 97% of domestic customers and 94% of business customers found our proposition clear. 85% of domestic customers agreed with out plans, compared with 77% of business customers. A small number of customers did not support this proposition (3% domestic and 2% business). 86% of colleagues participating in the survey also found the proposal acceptable.

Benchmarking analysis – draft plans

Other DNOs were largely silent on community engagement in their draft plans. Although WPD are not proposing direct community engagement they are proposing to create an online viewer to provide greater insight on their planned work activity and interruptions on their network.

Core Commitment	Current ED1 performance	Positive impact for customers
Create an online viewer to provide greater insight on the planned work activity and interruptions on our network.	New	Enable customers access information online via a ‘self-service’ function, rather than needing to call us, if that is their preference

A Phase 6 triangulation exercise highlighed that Electrcity North West's proposal could be strengthened by artculating clearer outputs regarding what the newly formed community engagement team will deliver and how its performance will be measured.

Implications for the Business Plan

Outcome description	Current performance
Community engagement team improving access to information on network issues	Successful trials
Incremental cost of proposal	**Target delivery date**
This forms part of our overall customer experience proposals	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online Community	EDBP consultation	Operational data
		●	◕	◓	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, other utilities, regional local authorities and emergency services – resilience.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x13)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: a lack of customer support for further ambition**	Although comparatively this proposal didn't receive the strength of support from businesses as it did households and stakeholders, there is sufficient advocacy for this proposal to continue with it in its existing format. Whilst not material to customers' bills, additional investment will be required to expand our community engagement team to deliver this service (2 managers supported by 5 contact centre agents). The team will focus on extending the proactive communication and tailored service already provided to communities during ED1 (in relation to planned supply interruptions) to improving and widening access to information regarding the overall reliability of our network. This will include, but not limited to, town-hall meetings, online Q&A forums, leafleting and coffee drop-in sessions. This will ensure customer feedback forms an ongoing input into our prioritisation of network investment and that	**Future business plan 2023-2028**: Benefit 6

	intelligence gained, through up to 24 community listening exercises per year, provides an opportunity for us to minimise the impact of our activities on local people.	

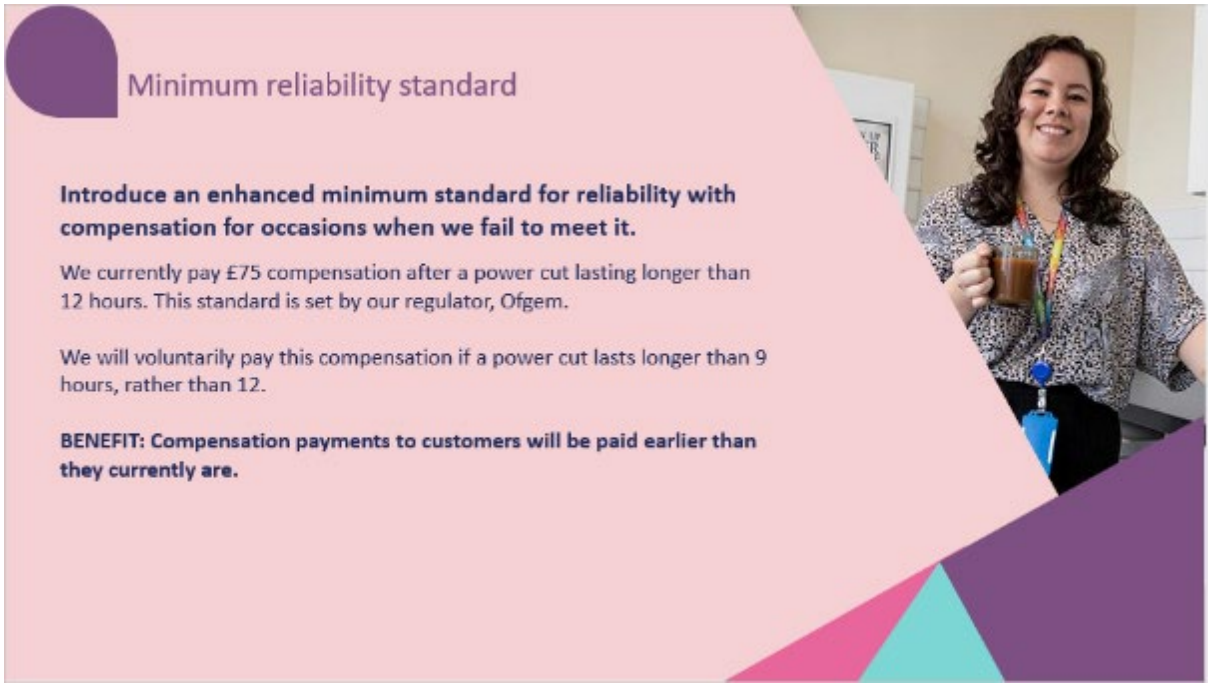
Minimum reliability standard (removed from our final business plan but retained in Annex 01 for openness and transparency)

Headline level of support

99% of customers understood the proposal and 81% found it acceptable. It ranked 31st out of 41 proposals evaluated by customers and was lowest ranked customer proposal.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
81%	87%	**Final triangulation decision**
		Remove proposal from plan

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped our proposition
Electricity in my life (phase 1)	25	• Our '**Voice of the Customer Panel'** told us that a voluntary £75 compensation payment to PSR customers for power cuts lasting ≥ 12 hours is fair. 46% said that we should reduce the threshold for payment to eight hours, 41% opted to retain the payment at twelve hours and a minority opted for increasing the payment at 12 hours to £100.

Triangulation	Insights	How feedback shaped our proposition
		• Through Ofgem's Safety, Reliability & Resilience **Working Group** we learnt that our regulator is broadly satisfied with existing Guaranteed Standards.
	Action taken: To substantiate the need for this improved service level we decided to engage with a wider range of customers and wider stakeholders.	
Our plan for the future (phase 3)	34,44	**Is a minimum standard required?** • 36% of our **Plugged-In Public Panel** said existing regional variability in power cut performance is unacceptable. • Future customers agreed, citing significantly better performance in densely populated urban areas, relative to the rest of the north west. • 95% of stakeholders attending our sub-regional **engagement events** voted in favour of a new minimum standard for reliability. • During **in-depth qualitative interviews**, large energy users said that a minimum standard of reliability should be achieved for every customer. • A proposition was developed for Acceptability Testing: ***We currently pay £75 compensation after a power cut lasting longer than 12 hours. This standard is set by our regulator, Ofgem[3]. We will voluntarily pay this compensation if a power cut lasts longer than 9 hours, rather than 12.*** **Would an improved Guaranteed Standard fulfil this requirement?** • 62% of **Plugged-In Public Panel** members indicated that they were 'not very supportive' or 'do not support' increasing compensation paid for service failures. Customers understood that the cost of additional investment to fund compensation would be socialised and preferred investment to be allocated to the network itself, to prevent service failures occurring, which would then result in compensation payments. • The **Consumer Vulnerability Advisory Panel** debated the merits of increasing compensation payments to business customers and the majority voted in favour of retaining a £150 payment and providing additional support during a power cut instead. • This sentiment was echoed in **bilateral engagement** with stakeholders and businesses via a bespoke consultation. *"Consumers don't want compensation, they want help in a power cut so that they can cope"- Scope Charity*
	Action taken: An enhanced voluntary commitment is the simplest way of us delivering the minimum reliability standard our stakeholders have asked for. We identified a need to understand the materiality of costs associated with voluntarily paying compensation sooner than required by the existing standard, with a view to this been funded by our shareholders.	
	68	• A review of our **operational data** indicated that the incremental cost of our proposal would be ~ £740,000 per year.

[3] EGS2 Supply restoration during normal weather (regulation 5): customers are compensated If they have no electricity supply for over 12 hours from the time they are made aware. Customers are also entitled to a further payment if the supply remains off for an additional 12 hours.

Triangulation	Insights	How feedback shaped our proposition
Sweating the detail (phase 4)		• In a **bilateral meeting** with Citizens Advice we heard that any additional compensation should be funded by our shareholders.
	Action taken: The proposal was included in **Acceptability Testing**. It represents an improvement on an existing standard. A voluntary extension of the worst-served customer standard was considered however, this was more complicated to explain to customers and would be much harder to measure.	
Closing the loop (phase 5)	New	• Engagement with the company's SLT highlighted a need to review the Social Return on Investment (SROI) of this proposal compared to other initiatives. Our colleagues suggested that the investment may add more value if used to deliver other forms of support to customers.

Nuances in perspectives between stakeholder groups

Almost all customers agreed that this proposal was clear (99% of domestic customers and 100% of business customers). A similar number of customers from both groups were supportive of our plans (80% domestic and 82% business). A small number of respondents were unsupportive (3% domestic and 2% business). 93% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

WPD are proposing to continue with their current ED1 12 Hour Guaranteed Standard.

UKPN says that where it owes customers compensation under the Guaranteed Standards, it will pay them directly through the method of their choice including directly to their bank account or working with suppliers to credit their energy bill. It is targeting a 90% digital payment rate by the end of ED2.

Implications for the Business Plan

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative panel	EDBP consultation	Operational data
		◕	◕	◕		◔
Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, other utilities and regional local authorities.						

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay

Response	Supporting narrative	Read more at
COMPROMISE AREA	Our triangulation methodology places greatest weighting on well-designed surveys based on random sampling that	N/A

	generate robust findings. Our Acceptability Survey falls into this category and the proposal we tested marginally exceeded the action standard set at 80%. Arguably the proposal could be advanced for inclusion in the business plan on this basis. However, our methodology also places a high weighting on purposively sampled deliberative engagement and we are concerned that informed customers did not exhibit strong support for increased expenditure on compensation. Furthermore, the Voice of the Customer Panel survey, which consisted of a self-selecting sample of consumers, were unable to provide a clear preference. For this reason, we have removed the proposal from our draft business plan in favour of retaining the existing standard. As part of this value for money trade-off we will invest more in other proposals where stakeholders have requested greater ambition from us and where our CBA and/or SROI analysis suggest an outcome which will return greater value to our customers.	

2.2 Supporting electricity users in vulnerable circumstances

Example customer and stakeholder input to this priority area

Phase 1

- Our **Online Community** told us that our Priority Services Register is an essential service to consumers in vulnerable circumstances and that we should continue to promote it.

Phases 2

- Our **Plugged-In Public Panel** told us:
  - they thought power cuts would affect customers in vulnerable circumstances more severely, as they could be reliant on electricity for their immediate health, such as in-home medical equipment and refrigerating medicines, so we need to effectively prepare for and mitigate predictable circumstances.
  - there are many difficulties faced by people in vulnerable circumstances and that tackling these should be central to all our considerations. The panel also stressed the importance of a reliable electricity supply to support the health and wellbeing of customers in vulnerable circumstances.
  - they had concerns about the expected rise in levels of fuel poverty in the current economic crisis and the need for Electricity North West to support those customers.
- Our **Max-Diff 1 survey** highlighted that in a planned power cut, customers want to see us offer high-risk vulnerable consumers the tailored support they need, including face-to-face appointments

Phase 3

- Members of our Consumer Vulnerability **Stakeholder Advisory Panel** told us that:
  - COVID-19 will almost certainly increase the volume of customers impacted by transitory vulnerability, both now and beyond 2023
  - they expect to see additional investment in recruitment of consumers in vulnerable circumstances to the PSR and a target of 70%, in areas of greatest need
  - to alleviate fuel poverty, we should improve network reliability, introduce new strategic partnerships to scale referrals and reduce accessibility barriers to support
  - we needed to plan more frequent training for 1) frontline colleagues and 2) cross-functional teams to better support consumers in vulnerable circumstances.

Phase 4

- At one of our 'Powering Up Recovery' **stakeholder events** Citizens Advice told us that they think COVID-19 is not only going to affect people's ongoing ability to live daily lives well into the future; but it will also affect their ability to invest in their homes and net zero – for things like electric vehicles and making that switch because they can be expensive.

Example customer and stakeholder input to this priority area

Phase 6

Engagement with fuel poor and digitally excluded consumers

- When pressed on which of the three areas (network, customer and environment) of the business plan held the greatest impact, **fuel poor and digitally excluded consumers** voted for customer service and helping vulnerable people (7 votes) followed by environmental impact (3 votes). Reliability of the network was taken as a given.

- Consumers perceived Electricity North West to be a '**humble hero'** quietly getting on with things in the background, "*without getting the recognition it maybe deserves*". We heard a call for more investment in targeted awareness campaigns to increase understanding of the support available to those who need it.

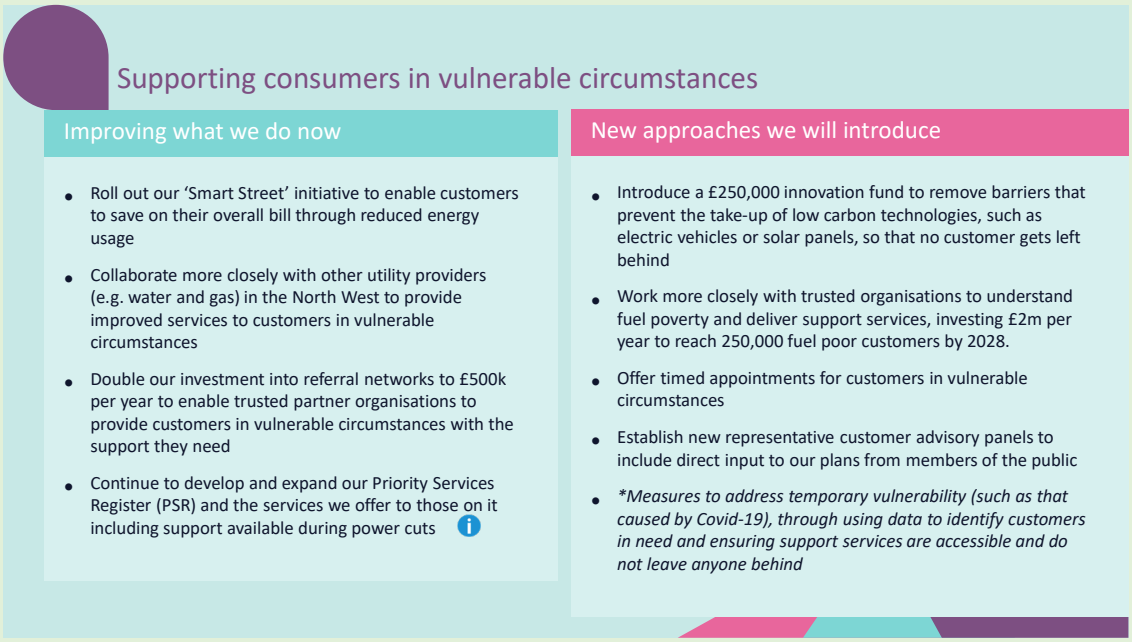
- The focus in the draft plan on supporting vulnerable consumers was not disputed. However, to fairly appraise our proposal to **expand investment in referral networks**, consumers asked for clarification on eligibility criteria for support and how this is provided in practice. This understanding, combined with a belief that Central Government were unlikely to provide the level of support required, led to strong endorsement for our investment proposal.

- Having considered the full range of proposals in our draft plan, **fuel poor consumers perceived an estimated bill increase of ~£2 to be an incidental increment and represent good value for money**. The proposed bill increase was largely discounted as an issue relative to energy cost rises due imminently (which will have a far greater impact on bills) and in relation to the scale of the perceived benefits should the investments be approved by Ofgem.

- Fuel poor consumers support the creation of an innovation fund to ensure no one is left behind. There remains a strong need to **promote the inclusive nature of climate change** response and consumers say we can be a leader in this regard.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing**, the overall acceptability of our proposition for electricity users in vulnerable circumstances was relatively high for domestic customers (85%) and business customers (82%). Only 2% of domestic and business customers felt the proposals were unacceptable. This was due to the cost implications and some respondents believing there would be no need for this kind of investment if the network delivered a reliable service.



Nuances in stakeholders' views

- The digitally disengaged were more likely to find our proposition acceptable than online customers (96% compared to 86% respectively).
- In our **Segmentation**, customers belonging to our 'Selfless Jugglers and 'Time to Care segments were significantly more likely to find our proposition acceptable (92% and 91% respectively). 'Living for Today were least accepting of the proposition (69%).
- Most of our **CEO Advisory Panel** found our proposition clear (94%) and acceptable (82%). A quarter of the panel suggested there were omissions from our proposals, stating that our plans should be more proactive in reaching a broader range of vulnerable customers, addressing fuel poverty and promoting energy efficiency.
- **Plugged-In Public Panel** members were pleased to see that customer advisory panels will become a permanent part of the way we work and that this would help ensure our accountability to customers.
    - Many liked the emphasis on the rollout of our Smart Street initiative as it will help reduce energy use and customer bills as well as building network resilience.
    - Several members strongly welcomed our focus on collaboration with energy suppliers, although there was some concern that the proposal does not go far enough.

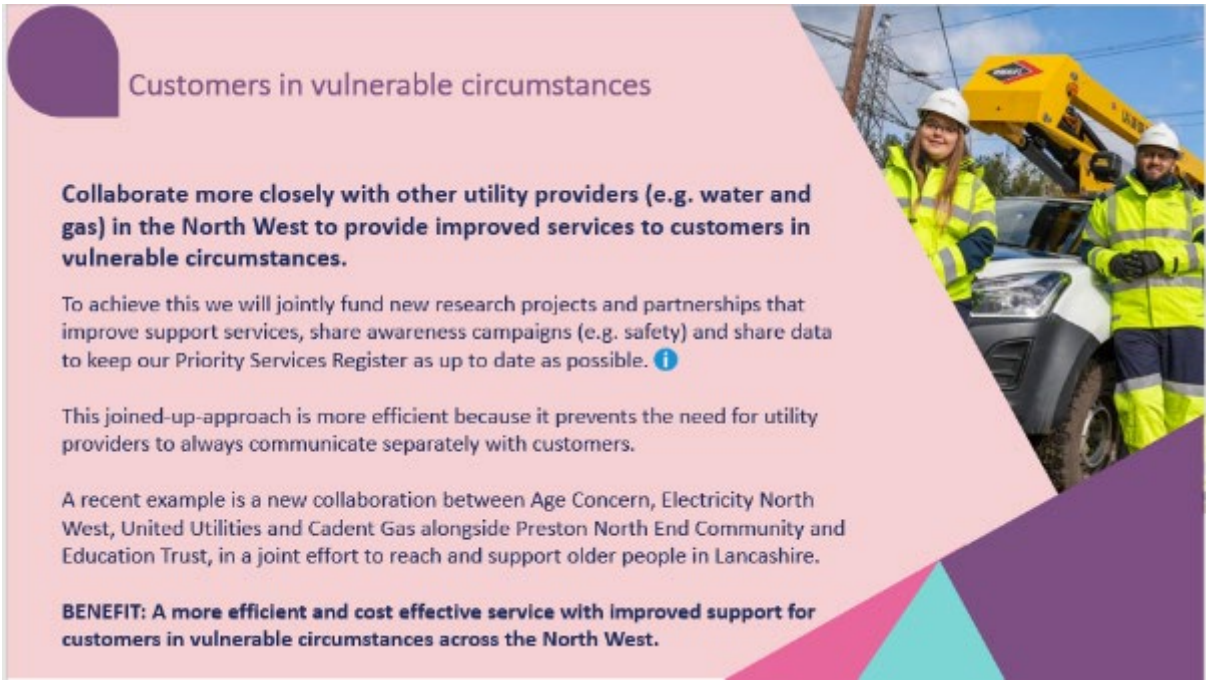
B7 Collaborate more closely with other utility providers

Headline level of support

98% of customers understood the proposal and 90% found it acceptable. It ranked 1st out of 41 proposals evaluated by customers and the best performing vulnerability proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
90%	90%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	3	• In our **Priorities Research** raising awareness was the lowest ranked priority; however, 85% agreed it was important. • In a joint-DNO **WTP survey**, conducted in 2020, awareness activities were tested under the banner of 'safety education'. The results indicated that customers are willing to pay an additional £0.41 per year towards safety awareness and media outreach campaigns, including advertising, public shows and exhibitions, leaflets and school talks.
		Action taken: We identified an opportunity to establish stakeholder interest in us expanding trusted collaboration with other regional partners, taking care to avoid duplication of effort with other utilities or social services e.g. delivering support and key messages joined-up carbon monoxide and electricity related safety advice.

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	N/A	• We provided details of our input into 'Utilities Together', a multi-utility forum to share best practice in partnership work, with our **Plugged-In Public Panel**. A project delivered in collaboration with other forum members in 2019/20 to raise awareness of PSR services delivered a relatively high SROI. We shared our plans to deepen collaboration with forum members Northern Gas Network, United Utilities and Cadent Gas in 2020/21 to: ○ Share best practice training programmes ○ Enhance social data mapping through additional data sets ○ Co-fund a mobile dementia advice and support centre ○ Collaborate on the first region-wide trial of a single PSR • The panel expressed a desire to see us expand this collaboration with other utility providers in the North West to provide joined-up, efficient and cost-effective services to consumers in vulnerable circumstances.
	Action taken: We developed a proposal to expand our collaboration with other utility providers to improve support services, share awareness campaigns and scale up data sharing arrangements.	
Sweating the detail (phase 4)		• **Bilateral engagement** with stakeholders was triangulated in the round with third party insights. This highlighted widespread recognition that the need to agree a common legal basis for a single multi-utility PSR is both important and urgent.
	Action taken: We are leading the development of a single PSR in ED1 across sectors for all vulnerable consumers and will work towards it being replicated nationally in ED2.	
Closing the loop (phase 5)	New	• We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.  ○ 71% felt it should be included in our early draft business plan in its current format, 26% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact) and 3% suggested dropping it from the plan entirely. • In our **early draft business plan consultation** 46% of Plugged-In Public Panel members suggested the proposal already represented an appropriate level of ambition. By comparison 18% called for greater investment and the remainder were unsure. 75% of Online Community

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>representatives favoured greater ambition, consistent with their response to the majority of proposals tabled. In other responses received we heard that we should focus our collaborative efforts on the pursuit of a single multi-utility PSR service.</td></tr>
<tr><td></td><td colspan="2">Action taken: Further to our consultation we are minded to retaining the proposal in its current format.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The benefits accrued in ED2 will depend upon the frequency and nature of collaboration between partners. They are likely to include avoided network costs (through sharing of funds), expanded consumer reach and improved financial and health outcomes for consumers.
Data from a trial in 2020/21 was used to estimate the likely societal benefit of collaboration – with a minimum of one jointly delivered initiative in the north west, per year. A 50% attribution was assumed, to take account of where the benefits may have accrued elsewhere.
The total net economic benefit per £ spent (SROI) through collaborating more closely with other utility providers is estimated to be £39.14. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £2.4m.
Societal benefits account for 94% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£61,465.15</td></tr>
<tr><td>Total gross present value</td><td>£2,084,901.82</td></tr>
<tr><td>NPV</td><td>£2,405,979.52</td></tr>
<tr><td>SROI</td><td>£39.14</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Most customers agreed that this proposition is clear and understandable (96% domestic and 93% business). Support was also high with 90% of domestic customers and 91% of business customers agreeing with our plans. Just 1% of domestic customers and 3% of business customers were unsupportive. 93% of colleagues participating in the survey also found the proposal acceptable.

Benchmarking analysis – draft plans

In their draft plans none of the other DNOs proposed a formal forum, such as Electricity North West's Utilities Together, for routinely bringing together cross-sector utility companies (within their respective regions) to co-fund and collaborate on whole systems consumer vulnerability outcomes.

Whilst recognising that this commitment is a differentiator, a triangulation exercise in Phase 6 suggested that clearer outcomes and performance metrics are required for the initiative.

Implications for the Business Plan

Outcome description	Current performance

Enhanced co-ordination with utility providers to support customers in vulnerable circumstances	Utilities Together forum with Cadent and United Utilities
Incremental cost of proposal	**Target delivery date**
£1m	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
		●	◕	◕	◓	◓

Priority stakeholder groups engaged: Current and future customers, consumer representatives, government departments other utilities, regional local authorities and emergency services – resilience.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x39)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints (funding)**	There is sufficient evidence to support retaining the level of ambition included in the proposal appraised as part of Acceptability Testing. Relatively high acceptability scores and a stronger weighting given to the evidence provided by the Plugged-in Public Panel (over the Online Community) influenced this decision. Our commitment will see us collaborate more closely with other utility providers to jointly fund new research projects and partnerships that improve support services, share awareness campaigns (e.g. safety) and share data to keep our Priority Services Register as up to date as possible. In calculating the SROI of this activity we have cautiously assumed the forum will co-fund a minimum of one project per year (project value £37,500), creating a direct company financial saving of £23,000 (based on projects to date) and an average multiplier of £30 societal benefit for every £1 spent on activities. Adjusting this with a 50% attribution to take account of where the benefits may have accrued elsewhere, the benefit of this activity over ED2 is estimated to reach £2.8m. We will look to collaborate with Utilities Together members on multiple projects every year, where there are shared objectives and efficiencies to be gained. Efficient delivery constraints may exist, and these will be reviewed	**Future business plan 2023-2028**: Benefit 7 **Annex 08**: Electricity users in vulnerable circumstances strategy

Response	So, we have	Read more at
	on a project-by-project basis, such as the funding available from other members.	

B8 Doubling investment in referral networks

Headline level of support

95% of customers understood the proposal and 76% found it acceptable. It ranked 40th out of 41 proposals evaluated by customers, therefore it is one of the lowest performing propositions and is below the acceptability testing threshold of 80%. Stakeholders were much stronger advocates of the proposal and when applying a 20% data weighting to their views, the combined acceptability score for this proposal is 86%.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
76%	86%	**Final triangulation decision**
		Compromise

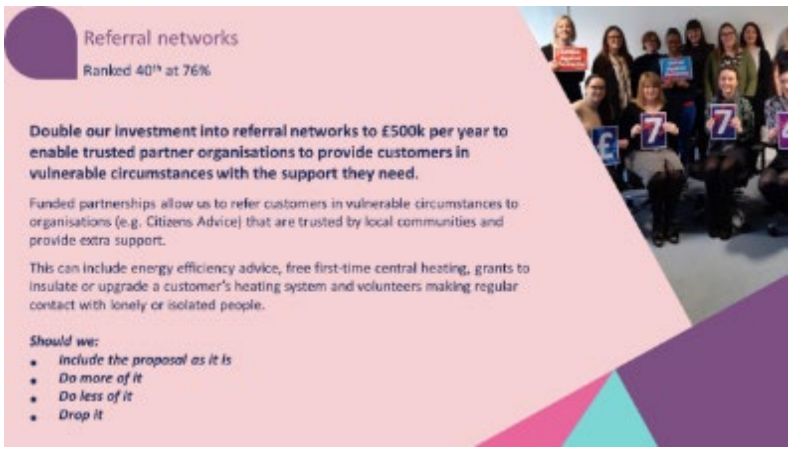
The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2">Customer connection (phase 1)</td><td>12</td><td>• We conducted a bespoke research survey with a representative sample of domestic consumers in our region and heard that consumers, particularly those in vulnerable circumstances, need information and support from a trusted advisor to overcome barriers to energy efficiency.
• The strategic sub-group of our Consumer Vulnerability Stakeholder Advisory Panel reviewed our ED1 partnerships strategy and outcomes. The panel challenged us to support a broader range of customers in vulnerable circumstances and enable longer term funding, prioritised in areas of greatest need. The delivery sub-group of our panel told us that COVID-19 was increasing concerns in communities over the affordability of energy bills, social isolation and food poverty.</td></tr>
<tr><td colspan="2">Action taken: We recognise that our partners are sometimes better placed than us to deliver the enhanced support our customers and communities require. As part of our embedded partnership strategy, we review our partnerships annually against our strategic plans and identify trusted organisations to fill any existing gaps. We identified a need to review the SROI of our existing referral network [4]partnerships before further consultation.</td></tr>
<tr><td rowspan="2">Electricity in my life (phase 2)</td><td>2020/21 SECV</td><td>• We engaged Citizens Advice Manchester (CAM), who had a proven track record of supporting vulnerable consumers in the North West through its established referral network. We measured the SROI of the following 12 health and financial outcomes CAM proposed delivering and we developed a business case for a new strategic partnership valued at £250,000 per year. This partnership would increase the total number of referral pathways available to our customers from 8 to 18.
<table>
<tr><th>Referral outcome</th><th>SROI per person</th></tr>
<tr><td>Grant funding application</td><td>£855</td></tr>
<tr><td>Tariff supplier weighted</td><td>£776</td></tr>
<tr><td>Energy Saving Measures Installed</td><td>£735</td></tr>
<tr><td>Debt/Benefit Advice</td><td>£420</td></tr>
<tr><td>Tariff supplier switched</td><td>£338</td></tr>
<tr><td>Water Tariff Savings</td><td>£191</td></tr>
<tr><td>Tariff supplier advice</td><td>£159</td></tr>
<tr><td>Warm Home Discount</td><td>£159</td></tr>
<tr><td>Energy behavioural change</td><td>£138</td></tr>
<tr><td>PSR confirmed sign ups</td><td>£80</td></tr>
<tr><td>Health and well-being</td><td>£74</td></tr>
<tr><td>Emergency fuel vouchers</td><td>£25</td></tr>
</table></td></tr>
<tr><td colspan="2">Action taken: The business case was reviewed by our Executive Leadership Team in conjunction with a triangulation of stakeholder insights and a two-year trial was approved because of the compelling evidence and good fit with our company Purpose and Principles. We identified a need to use the engagement conducted as part of this partnership to inform the development of our ED2 investment proposals.</td></tr>
</table>

[4] Referrals include, but are not limited to, provision of energy efficiency advice; grant funding support, tariff switching, benefit and income maximisation, promotion of PSR services and health and wellbeing support.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2">Our plan for the future (phase 3)</td><td>48, 49</td><td>• We commissioned in-depth research to explore the anticipated risk factors and long-term impacts of the COVID-19 pandemic on customers in vulnerable circumstances in all 34 Local Authorities. The study found that the most severe impacts will be for those with multiple risk factors or vulnerabilities. The study predicted that the most marked and extensive impacts of COVID-19 will be on customers' physical health, mental health, economic stability and difficulty in accessing services.
• In one-to-one bilateral meetings with members of our Consumer Vulnerability Stakeholder Advisory Panel, we heard that the most significant barrier to vulnerable consumers taking up support offers is the difficulty they face in accessing services. Referral networks were considered to be an important means of improving access.</td></tr>
<tr><td colspan="2">Action taken: We collaborated with stakeholders belonging to our Partnership Framework to source 12 data sets (incorporating key COVID-19 risk factors: physical health, mental health, economic stability and difficulty in accessing services) to overlay onto our social data mapping tool. The results indicated that future vulnerability will be concentrated in the same areas as our existing prioritisation, particularly in Blackpool, and in much of Greater Manchester (e.g. Rochdale) and urban East Lancashire (e.g. Burnley, Hyndburn). We then developed a proposal for inclusion in Acceptability Testing to introduce new strategic partnerships with third parties that can deliver an integrated and multi-channel support system with greater referrals that drive positive health and financial outcomes tested with stakeholders</td></tr>
<tr><td>Closing the loop (phase 5)</td><td>New</td><td>• We updated the Plugged-In Public Panel on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.
 

○ 58% felt it should be included in our early draft business plan in its current format, 21% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact), 16% suggested decreasing our ambition and 5% suggested dropping it from the plan entirely. Many of the 58% of members who wished to see this proposal included in the business plan, reasoned that they thought this was a cost-effective way to ensure that customers were receiving support they need, whilst also allowing us to focus on our core purpose of providing electricity.</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		• In our **early draft business plan consultation** 71% of Plugged-In Public Panel members voted in favour of retaining the current proposal, with just 14% saying we should go further. Online Community representatives agreed with 72% opting for no changes to our existing commitment. Stakeholders echoed the same sentiment as customers but were keen to learn more about how we would measure the success of referral networks to inform future decisions on funding.
	Action taken: Further to our consultation we are minded to retaining the proposal in its current format.	
Submit and refine (phase 6)	New	• On 20th September 2021, 10 Consumer Vulnerability Strategic Advisory Stakeholder Panel members participated in a 90-minute discussion regarding Electricity North West's proposal to double investment in referral networks. Although this represented a relatively small number of attendees relative to the size of the overall Panel, the engagement proved to be meaningful, with rich qualitative feedback received from participants. Insights were derived from the following questions: **1. What would the impact be of Electricity North West not offering this level of support, on electricity users in the North West?** The group felt that Electricity North West not offering this level of support would represent a missed opportunity to 'stack' the benefits possible from strengthening the existing network. Panel members observed that electricity users benefit from strong interconnected networks rather than stop/start funding approaches and "*having to start initiatives from scratch*." The group felt there was no question of the significant demand for support services. "*Funding fits and starts has created a backlog of people waiting for referrals - a longer-term approach is required to smooth out peaks and troughs*." The implication of this is that electricity users benefit from more consistent and quicker referral to support. **2. If Electricity North West didn't offer this level of support, who else do you believe could step in and fill the gap created?** The group advised that they and other trusted partners (charities, community groups, consumer representatives) would continue to offer relevant services, however, gaps would unlikely be filled, unless funding is provided by central and local government. **3. Do you believe that Electricity North West can collectively, with its trusted partners, deliver this level of support?** We heard that targeted performance on referral networks will be deliverable, but Electricity North West must significantly increase the range and geographical spread of framework partners, whilst acting to reduce organisational silos and create synergies to maximise reach. Age Concern stipulated the need to sustain face-to-face support interventions to lonely and isolated people and that partners would need to increase resources to achieve the intended 40% stretch increase in referrals. The implication of this is that longer term partnerships/ visibility

Triangulation	Insights	How feedback shaped the proposal

of requirements will be required (more than +12 months) to ensure deliverability.

Hope 4 u suggested the target would be achievable through significantly expanding the partnership framework (e.g. working with Fuel Bank) and by starting this process before ED2.

4. What are the key outcomes expected from this investment?

We heard that for fuel poverty and referral networks:

- Improved health and wellbeing (including physical, financial and mental health) is a key;
- Investment should aim to achieve sustained behaviour change through consumer awareness, education and empowerment. For instance, making a one-off intervention with a short-term benefit (such as installing an energy efficient appliance) is valued less than educating consumers how to manage their money, switch their tariff and use energy more efficiently.

*

- Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.
- In the six-year period from 1 April 2015 to 31 March 2021 54,520 electricity users have accessed our referral networks which have enhanced vulnerable customers' physical health, mental health, accessibility needs and financial challenges. In the five-year period 2023-2028 a minimum of 75,000 electricity users will access referrals.
- In 2020/21, the range of projects delivered from the fund achieved a weighted average benefit per referral of £136.25. This included benefits such as mental wellbeing support, preventing loneliness, heating / insulation interventions and boiler replacement / servicing. This weighted average has been used as a proxy for what could be achieved in ED2.
- The total net economic benefit per £ spent (SROI) through by doubling investment in referral networks is estimated to be £9.65. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £20m.
- Societal benefits account for 92% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£2,107,424.85
	Total gross present value	£18,622,691.71
	NPV	£20,333,538.38
	SROI	£9.65

Nuances in perspectives between stakeholder groups

94% of domestic customers and 95% of business customers agreed that this proposition is understandable. 80% of domestic customers supported our plans, compared to 71% of business customers. A small number of customers were unsupportive (4% domestic and 3% business).

Some SMEs felt that our social obligations should be limited to ensuring no customer is left vulnerable during a loss of electricity, now and in the future. The implication of this is that some SMEs preferred additional investment to be focused on delivering a more reliable electricity network and providing support during supply interruptions as opposed to expanding referral networks. This finding is aligned to SMEs feedback on our proposal to voluntarily introduce an enhanced compensation standard (see 2.2.2).

Benchmarking analysis – draft plans

WPD (n=300,000) and SPEN (n=272,000) have specified the number of customers that will be reached via referral networks in ED2. In Electrcity North West's Annex 08, it commits to 75,000 electricity users accessing referral networks (up from 54,520 in ED1). Assuming all networks have a baseline level of 33% of customers being eligible for the PSR (based upon social data mapping) and comparing the different population sizes, Electrcity North West's proposal will reach 9% of vulnerable customers, compared to 11% in WPD's footprint and 23% for SPEN.

Implications for the Business Plan

Outcome description	Current performance
£500k per annum invested in referral networks	£250k per annum
Incremental cost of proposal	**Target delivery date**
£1.3m	31 March 2024

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
		●	◕	◕		◓

Priority stakeholder groups engaged: Current and future customers, consumer representatives, community and local energy groups other utilities, regional local authorities and emergency services – resilience.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x10)	✓	

Response	Supporting narrative	Read more at
COMPROMISE **Constraint: A lack of customer**	**We will double our investment into referral networks to £500k per year to enable trusted partner organisations to provide 75,000 customers (which represents an increase of 38%) in vulnerable circumstances with the support they need. A 20%**	**Future business plan 2023-2028**: Benefit 8

support for further ambition	**increase in the volume of partners on our framework will support this increase in output.** Since 2016, our strategic goal has been to ensure no customer is left vulnerable during a loss of electricity, now and in the future. This year customers and consumers in vulnerable circumstances, stakeholders, subject matter experts and our colleagues have told us that we need to adapt our goal. We heard that to plan for the future, our goal needed to reflect the increasing importance of inclusivity during the energy transition. We also heard that it should incorporate the need to work collaboratively with trusted partners to create synergies and maximise reach through sharing data, pooling resources, innovation and best practice. We acknowledge that our referral networks proposal achieved 76% support from customers in Acceptability Testing, below our action standard of 80%. In response we conducted further engagement to understand if we had scaled the level of investment to the most appropriate level. A majority (58%) of informed customers (from the Plugged-In Public Panel) told us that we should retain our proposal in its current format. This still represents a compromise, given that 21% of customers would prefer us to scale down the level of investment (due to a perception it is not our core responsibility) and a further 21% advocate an increase in scale (based on a belief that it doesn't go far enough). For this reason, we believe our current proposal is an acceptable balance between these viewpoints and the right thing to do. Our stakeholders tell us that the impact of us not offering this level of support would be: • Electricity users would experience detriment through a withdrawal or lessening of support; • Electricity users would lose continuity in support services, which is more likely to be achieved through longer term investment and capacity building made possible by the ED2 price control; • Electricity users access to ENWL as an honest and trusted broker would be diminished; and • Opportunities would be missed to stack' benefits from strengthening the existing network.	**Annex 08**: Electricity users in vulnerable circumstances strategy

B9 Expanding the reach of our Priority Services Register

Headline level of support

96% of customers understood the proposal and 87% found it acceptable. It ranked 9th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
87%	88%	**Final triangulation decision**
		Compromise

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	4	• In our quantitative **Segmentation** survey, we heard that 13% of consumers had contacted us in the past (driven by supply interruptions) and that contact is higher (35%) among customers on the Priority Services Register (PSR). • At the start of 2020/21 our **social data mapping** showed that over 33% of the population in the North West (1.6 million) are eligible for the PSR, however only 16% were registered. This represented a gap of 45% of the eligible population unregistered.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>

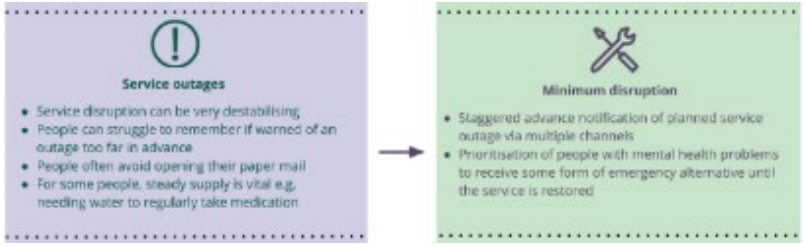

Joint-DNO bespoke Social Value Research (2019) measured the social value (willingness to pay) per customer for:

Identifying customers that are likely to be vulnerable during a power cut (but not already known to [DNO name]) and sign them up to the Priority Services Register
Contacting all existing PSR customers every couple of years to update their details and offer advice and practical steps they can take to ensure they are more resilient and better able to cope in the event of a power cut.

We worked with Economic Insight to calculate the SROI of customer acquisition onto the PSR as £80 per person. This calculation is driven largely by improved resilience to power cuts, including avoided distress, lost time and the need for primary healthcare support (emergency or social services).

<table>
<tr><th>Nature of benefit</th><th>Value of benefit</th></tr>
<tr><td>Social willingness to pay</td><td>£39</td></tr>
<tr><td>Benefit per supply interruption</td><td>£165</td></tr>
<tr><td>Likelihood of supply interruption</td><td>25.00%</td></tr>
<tr><td>Expected benefit per customer</td><td>£41</td></tr>
<tr><td>Total benefit per customer added to PSR</td><td>£80</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Action taken: We identified a need to engage further on the PSR to understand how much investment we should make to increase membership – and to what level.</td></tr>
<tr><td>Electricity in my life (phase 2)</td><td>26</td><td>

In its ‘Counting on it’ report[5] Citizens Advice say essential service markets are not working for people with mental health problems. Citizens Advice provided advice to 100,000 clients with mental health problems during 2018/19 and found clients who struggle with mental health problems are more likely to need help with essential services than those without mental health problems. Its research found that dealing with service outages is particularly problematic for customers with mental health challenges.



</td></tr>
<tr><td></td><td colspan="2">Action taken: We planned engagement with the strategic arm of our Consumer Vulnerability Stakeholder Advisory Panel on an individual and group basis to inform our business plans.</td></tr>
</table>

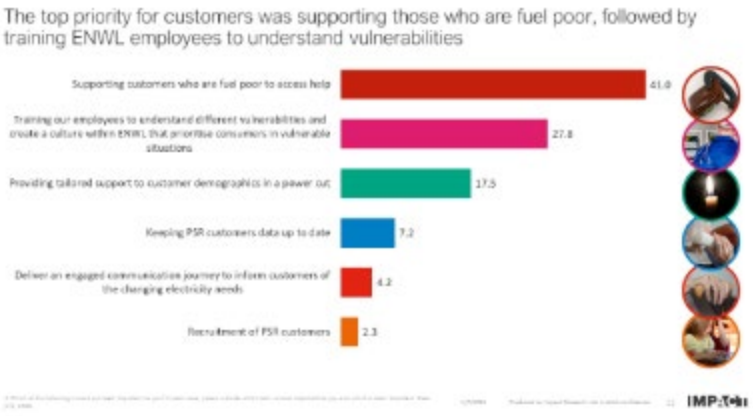
5 https://www.citizensadvice.org.uk/Global/CitizensAdvice/Consumer%20publications/Minimum%20standards%20report.pdf

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	46	• The feedback generated from 25 in-depth interviews was used to create a suite of PSR investment proposals including: 1. To increase proactive and targeted advertising of the PSR and promote services offered to vulnerable consumer groups across the region 2. Improve the customer PSR data held by Electricity North West to drive an information strategy to meet the needs of vulnerable consumers in the North West 3. To deliver tailored support about what to do in a power cut, to support PSR customers through a multi-channel approach to ensure accessibility and inclusion. Each proposal had a golden thread to the views expressed by stakeholders during one-to-one interviews. The **Consumer Vulnerability Stakeholder Advisory Panel** then met to review each proposal as a group**.** Stakeholders were provided with sufficient information on the current service level, a view on how far this level could be stretched during ED2, different options for achieving improved performance, associated costs and intended benefits for consumers. • We heard a consensus view that additional recruitment and advertisement of the PSR (option 1 above) is the single most important investment. The rationale for this was that unless vulnerable consumers are identified, we will not be able to expand the reach of our support to them during power cuts. Stakeholders' response was also influenced by COVID-19 and the anticipated increase in transitory vulnerability in future years. • Three targets (60%, 70% and +80%) and associated investment levels were put to a vote during and then again after the meeting using Mentimeter and a consensus was found in both cases for investment of £375,000 per annum to work towards a target of 70% PSR membership in areas of greatest need. • We heard that additional spend on advertising through new channels should be subject to ongoing SROI measurement to ensure we invest in only the most effective channels to drive customer acquisition to the PSR. • Furthermore, it was stipulated that recruitment campaigns should continue to be targeted in the areas of greatest need**,** as defined by social data mapping and other data sets.
	Action taken: We identified a need to review the range of data sets available to us to enhance our PSR prioritisation approach (*where we target awareness campaigns and partnerships*). We also set out to engage a wider range of stakeholders on the most appropriate target for PSR recruitment in ED2.	
Sweating the detail (phase 4)		• **Plugged-In Public Panel** members discussed and voted on what target we should set for eligible customers signing-up for the PSR in targeted areas. 61% voted in favour of a target of over 80%. Some members felt that we should be aiming for 100% recruitment to ensure no one 'is left behind.' Because of the value attributed to the service, some suggested that it should be an "opt-out" rather than "opt-in", with comparisons made between this and organ donation. However, the panel conceded that eligible customers might not want to be on the register as they do not consider themselves to be vulnerable, making a target of 100% neither realistic or desirable. • Feedback from the Consumer Vulnerability Advisory Panel and Plugged-In Public Panel was triangulated with two other sources of customer engagement; the **Online Community** and a bespoke survey with 1,000 members of the **Customer Voice Feedback Panel**. The data, summarised in the table below, indicates a consumer bias towards achieving a membership

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>level of 80%, in contrast to the 70% level preferred by a majority of stakeholders. The same proposition was tested with our colleagues and of the 106 respondents a majority supported an 80% membership target.

<table>
<tr><th>PSR Membership Target</th><th>60%</th><th>70%</th><th>80%</th><th>90%</th></tr>
<tr><td>Stakeholder Advisory Panel</td><td>10%</td><td>50%</td><td>30%</td><td>10%</td></tr>
<tr><td>Plugged in Public Panel</td><td>8%</td><td>16%</td><td>61%</td><td>16%</td></tr>
<tr><td>Online Community</td><td>0%</td><td>21%</td><td>75%</td><td>4%</td></tr>
<tr><td>Customer Voice Panel</td><td>19%</td><td>27%</td><td>50%</td><td>4%</td></tr>
<tr><td>ENWL Colleague Survey</td><td>27%</td><td>28%</td><td>45%</td><td>6%</td></tr>
<tr><td>Costs (per year)</td><td>250K</td><td>375k</td><td>500k</td><td>600k</td></tr>
<tr><td>Bill impact (per person)</td><td>+10p</td><td>+16p</td><td>+22p</td><td></td></tr>
</table>

• With a consumer bias towards achieving 80% PSR membership we looked at this initiative in the round with non-PSR proposals. To achieve this a Max-Diff 2 trade-off exercise was completed with 1,000 consumers. This revealed that when recruiting more customers to the PSR, is traded-off with other important investments, it ranks relatively poorly. The data below (indexed scores) shows that keeping PSR data up to date is perceived to be x3 as important as recruiting more PSR members and supporting customers who are fuel-poor is x20 as important.


</td></tr>
<tr><td></td><td colspan="2">Action taken: We decided to take forward an 80% membership target to Acceptability Testing on the strength (and consistency) of consumers' views which have a higher weighting than stakeholder feedback in our trade-off methodology. However, in a subsequent Max-Diff 2 survey, the recruitment of PSR customers was regarded as significantly less important than outputs such as training employees and supporting customers who are fuel poor to access help. To achieve the right balance across our outputs, we reverted to a minimum 60% membership target and a stretch target of 80%.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• Our ED1 SROI calculation of consumer value (£80pp, pa) assumes a 25% likelihood of customers experiencing a supply interruption (and thereby requiring support). One of our ED2 commitments is to reduce this likelihood, therefore, we adjusted our assumptions accordingly.
• The volume of customers eligible for the PSR is 1.7 million and our target is to register 60% = 1,020,000. Our stretch target is 80%. In our calculations we used a mid-point of 70% to estimate the SROI of the volume of PSR member acquisitions (considering current levels.)
• The total net economic benefit per £ spent (SROI) through by expanding the reach of our Priority Services Register is estimated to be £12.06. This</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		• is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of ~ £51m. • Societal benefits account for 48% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£4,299,146.70
	Total gross present value	£46,454,789.19
	NPV	£51,838,612.39
	SROI	£12.06

Nuances in perspectives between stakeholder groups

96% of all customers who responded to our survey agreed that our PSR proposal is clear and understandable. 89% of domestic customers and 85% of business customers supported our plans. Just 1% of all customers were unsupportive. 72% of colleagues participating in the survey found the proposal acceptable, making it the weakest rated commitment among this group.

Benchmarking analysis – draft plans

Electricity North West's minimum commitment of registering 60% of eligible customers to the PSR is significantly higher than WPD's (40%). ENWL's stretch target of 80% mirrors SPEN's target and NPg has committed to 70%, but only among high-risk customers (a segment of PSR members sized at ~25%.) All DNOs have stated that they will work towards a single PSR.

	ENWL	NPG	UKPN	SSE	SPEN	WPD
PSR Target	60-80%	70%		72%	80%	40-60%

Implications for the Business Plan

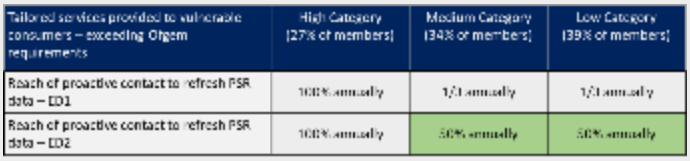
Outcome description	Current performance
Minimum 60% of eligible customers on the Priority Services Register	50% of eligible customers on the Priority Services Register
Incremental cost of proposal	**Target delivery date**
£5.1m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
●	◕	●	◕	◕	◓	◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups other utilities, regional local authorities and specialist consultants.

Justification

Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x12)	✓	✓(2019)

Response	Supporting narrative	Read more at
COMPROMISE **Constraint: A value for money trade-off**	**We will increase membership of the PSR to a minimum of 60% of those eligible for registration, targeting areas of the North West that have the greatest number of customers in vulnerable circumstances.** Not every person eligible for the PSR will want to take it up – making an ongoing 'gap' is likely. In ED1 we set a target of 60% of eligible customers being registered to the PSR, a similar take-up level to the NHS winter flu jab. In ED2 data sharing agreements with other network companies will be expanded and more PSR members will be proactively contacted. The purpose of this contact is that we can check the information we hold is still relevant and appropriate. We remove dormant individuals when we have received no response after three attempts to contact them after three years. We also cleanse our data when consumers signal that their needs have changed. By removing customers from the PSR, greater effort will be required to achieve the target set.  In a change to the proposal appraised in Acceptability Testing, we have opted to take forward a minimum 60% target (as opposed to 80%). This constitutes a trade-off between enhancing PSR services and ensuring sufficient prioritisation is given to supporting fuel-poor customers (refer to B11). The balance determined between the two competing investments was informed by stakeholder prioritisation (particularly the Max-Diff 2 survey.) With effective and targeted awareness campaigns and the support of our trusted partners we will continue to work towards achieving a stretch target of 80% in ED2 (from a baseline of 55% membership of those eligible in 2020/21). This commitment to continuous improvement recognises that, when viewed in isolation, customers told us they would like to see stretch levels of performance achieved for this activity in ED2.	**Future business plan 2023-2028**: Benefit 9 **Annex 08**: Electricity users in vulnerable circumstances strategy

B10 Creating an innovation fund to ensure no one is left behind

Headline level of support

99% of customers understood the proposal and 83% found it acceptable. It ranked 19th out of 41 proposals evaluated by customers.

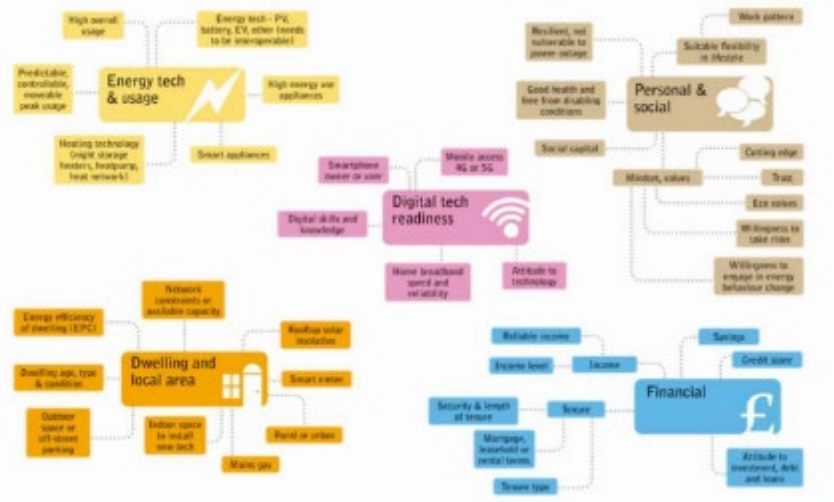
Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
83%	89%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	12	• We conducted market research with a representative sample of 250 domestic consumers in our region regarding their awareness, ownership and attitudes towards LCT, including the divers and barriers to take-up. This research consisted of a quantitative survey where LCTs included solar panels, electric vehicles, heat pumps, LED lighting, smart plugs and smart heating systems. • The survey highlighted that consumers, particularly those in vulnerable circumstances, need information and support from a trusted advisor to overcome barriers to adopting LCTs. These include concerns over ease of

Triangulation	Insights	How feedback shaped the proposal
		installation, a lack of knowledge regarding the benefits of technologies and the cost of adopting.
	Action taken: We identified a need to engage more widely on the energy transition to understand consumers' concerns and identify those at greatest risk of being left behind.	
Our plan for the future (phase 3)	40	• In October 2020 the Centre for Sustainable Energy (CSE) presented a summary of its report[6], '*How to have a future energy system that is both smart and fair*'. A key output from the study is a list of all the capabilities, characteristics and attributes of consumers which are influential in the transition to a smarter energy system. These fall into energy use and technology, digital technology readiness, dwelling and financial circumstances.  • CSE analysed how these capabilities and attributes manifest across the population – to reveal who is likely to 'keep up' and conversely likely to be 'left behind'. Without interventions, the benefits of a smarter energy market will be more accessible to affluent households, living in urban areas and most of those 'left behind' will be consumers in vulnerable circumstances. • In Plugged-in Public Panel meeting participants perceived a risk that households most likely to benefit from the energy transition are restricted to affluent households who can afford electric cars and solar panels. In response the panel were asked to rank the groups thought to be most at risk and warrant extra support. Supporting consumers in vulnerable circumstances, fuel-poor customers and worst-served customers were identified as the most important groups, by a considerable margin. • Feedback generated from 25 in-depth interviews with informed **Consumer Vulnerability Stakeholder Advisory Panel** members was reflected in three investment proposals presented to the Advisory Panel: 1. Create an engagement plan for domestic customers that helps them understand the energy transition and need for change, including face-to-face sessions and digital upskilling initiatives 2. Create customer advisory groups to participate in the development of ideas to ensure services are designed with inclusion in mind

[6] https://www.cse.org.uk/news/view/2505

Triangulation	Insights	How feedback shaped the proposal
		3. Create an innovation fund to work with partners on reducing the barriers that exist to engagement and adoption of LCTs • Feedback from the Advisory Panel meeting indicated that an innovation fund (option 3) is the most preferred support option by stakeholders. However, the creation of new customer advisory groups (option 2) were also perceived as important to counterbalance financial grants with ongoing consumer engagement.
	Action taken: In response to stakeholder feedback we developed a proposal for a new innovation fund and included it in **Acceptability Testing**.	
Sweating the detail (phase 4)	New	• Electricity North West's SLT highlighted a concern that the value of the innovation fund proposed is insufficient, given the ambition and the size of the population at risk of being left behind. • In a bilateral meeting with Citizens Advice we were challenged on why our proposal was considered to be innovative. Whilst Citizens Advice agreed with the idea of providing funding, it questioned whether 'innovation fund' is the correct terminology in this context and felt the funding allocation needs to be significantly larger.
Submit and refine (phase 6)	New	• On 20th September 2021, 10 Consumer Vulnerability Strategic Advisory Stakeholder Panel members participated in a 90-minute discussion regarding Electricity North West's proposal to create an innovation fund to ensure no one is left behind. Although this represented a relatively small number of attendees relative to the size of the overall Panel, the engagement proved to be meaningful, with rich qualitative feedback received from participants. Insights were derived from the following questions: **1. What would the impact be of Electricity North West not offering this level of support, on electricity users in the North West?** Due to the outputs and outcomes of the innovation fund (as it is currently positioned) being unclear, stakeholders told us that more work is required to explain the purpose and intended benefits of the investment. At a conceptual level we heard that there would be a negative impact on electricity users if Electricity North West did not make the proposed investment because it is, "*so well placed to leverage existing relationships across the region to make the fund a success*". It was suggested that the Utilities Together forum could be used to intelligently expand the reach of services so that different people are supported (rather than the easier-to-find). **2. If Electricity North West didn't offer this level of support, who else do you believe could step in and fill the gap created?**

Triangulation	Insights	How feedback shaped the proposal
		In the absence of energy suppliers being mandated to broaden their roles, the group expressed concern that no other suitable funding stream would be available to support this activity. Oldham Council explained that local councils bid for funding to provide services such as emergency fuel vouchers and other grants on an annual basis. The implication of this is that councils face risk and uncertainty regarding the funding that will be in place for support services from one year to the next. The group reflected that Electricity North West's five-year business plan provided greater certainty and that this strengthened the need for its involvement. **3. Do you believe that Electricity North West can collectively, with its trusted partners, deliver this level of support?** Based on an assumption made by the group that the innovation fund would be primarily used to improve existing services (rather than invent new technology or services), no concerns were expressed regarding the ability of Electricity North West to deliver the proposed outputs. **4. What are the key outcomes expected from this investment?** We heard that the innovation fund should seek to: • Share best practice and learning across sectors • Reduce inequalities and barriers that prevent behaviour change • Increase awareness and scale of take-up of existing support services and LCTs • Include people in the energy transition that would have otherwise been left behind. Parents in Partnership suggested that a key outcome of the fund should be "*additionality*" – explained as the ability to scale-up existing successful initiatives so that they can reach a wider range of beneficiaries. For some projects this could be as simple as "*hiring a co-ordinator*." * • In its 10th meeting, the **Plugged-In Public Panel** expressed hesitancy to offer a strong view on the creation of an innovation fund, as they felt unclear what the benefits of it would most likely be. After further break-out discussion this proposal was seen as a worthwhile investment, despite the uncertain outcomes it would achieve, as long as it fit into a much broader plan which included key actors outside of Electricity North West. 65% of the Panel suggested that more money should be spent on the activity to expand its impact and reach.

Nuances in perspectives between stakeholder groups

The majority of customers in our survey agreed that this proposition was clear (97% of domestic customers and 98% of business customers). 84% of domestic customers and 82% of business customers supported our plans. Only 2% of business customers were unsupportive. 88% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

A benchmarking exercise conducted as part of ongoing triangulation in Phase 6 found that Electricity North West's innovation offering was differentiated against other DNOs, however more explanation was required as to the intended outcomes from innovation projects funded.

SSEN matched ENWL's ambition through 'introducing a company-funded £250,000 annual LCT accessibility fund for those in vulnerable circumstances'. Meanwhile, other DNOs committed to working with partners to put in place initiatives to overcome barriers but were less candid about the funding in place for this or how success would be measured.

Implications for the Business Plan

Outcome description	Current performance
Establish Vulnerability Fund to remove barriers to LCT uptake	n/a
Incremental cost of proposal	**Target delivery date**
£1.3m	30 September 2023

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
		●	◕	◕		◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
			✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A value for money trade-off**	One of the risks of a rapid path to decarbonisation is that customers with lower incomes and fewer opportunities will get left behind, as more affluent customers take up new technologies and reap the benefits. This could widen social and economic gaps further, creating an even more unequal society. **To help prevent this imbalance, we will introduce a new £250,000 annual fund to provide support and education**	**Future business plan 2023-2028**: Benefit 10 **Annex 08**: Electricity users in vulnerable

	to help remove some of the barriers that prevent the take-up of low carbon technologies, such as electric vehicles or solar panels, so that no customer gets left behind. This fund is a new idea, initially brought by one of our consumer vulnerability expert stakeholders, as a suggestion on how we could increase engagement and communication with key groups. Because our objective is to deliver significant new learnings through engagement that lead to process developments, quantifying the likely outcomes of an innovation fund, in advance of it being operationalised, is challenging. We are looking for new developments to trial and learn from. The investment level will support our learning and if we find something that works and want to develop further, we will make a business case to roll it out more widely. Whilst some of our stakeholders have voiced a concern that the £250k fund will constrain its reach and impact, we have decided that this is an appropriate entry-level for the fund. Other funds introduced in ED1 have followed the same path of robust monitoring and impact assessment (e.g. Consumer Vulnerability Fund and Empowering Our Communities Local and Community Energy fund) before increases in scale could be fully justified. We feel that this course of action is appropriate to keep our focus on demonstrating value for money across the range of proposals in our plan which support vulnerable consumers. The strong performance of this proposal in Acceptability Testing among customers and stakeholders (89%) was material in our decision to proceed with the proposal with its current funding level. Stakeholders told us that more work is required to explain the purpose and intended benefits of the innovation fund, so we have provided greater clarity on this in Annex 08.	circumstances strategy

B11 Supporting customers in fuel poverty

Headline level of support

98% of customers understood the proposal and 76% found it acceptable. It ranked 41st out of 41 proposals evaluated by customers, therefore it was the lowest performing proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition (compromise)
76%	84%	**Final triangulation decision** Proceed with current ambition (compromise)

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	2	• The Annual Fuel Poverty Statistics report[7], which provides a comprehensive view of the latest statistical trends and analysis of fuel poverty in England, concluded that the North West has the highest prevalence of fuel poverty at 13.1% compared with an average of 10.9%.
	Action taken: We identified a need to investigate the type of support fuel-poor customers need from us, including but not limited to, improving network reliability, ensuring the affordability of energy bills and referral networks that offer holistic support.	
Our plan for the future (phase 3)	48,49	• In our **Youth Engagement**, members of YFNW raised a concern during deliberative engagement regarding how we will address the expected rise in levels of fuel poverty as a result of the COVID-19 pandemic. • We commissioned in-depth research to explore the anticipated risk factors and long-term impacts of the COVID-19 pandemic on consumers in vulnerable circumstances. The study, primarily a literature review of secondary data sources, found that fuel

[7] Annual fuel poverty statistics report: 2021 - GOV.UK (www.gov.uk)

Triangulation	Insights	How feedback shaped the proposal
		poverty is set to increase significantly - and dangerously, because those in cold homes are more vulnerable to respiratory illness. It concluded COVID-19 has also impacted disproportionately on those in poor and overcrowded housing. • The first phase of a longitudinal One Manchester research study into fuel poverty showed two dominant mindsets; a *survival segment* who cannot engage with energy until their essential physiological and safety needs are met and a *striving segment* who are better placed to engage but lack interest. Those striving for more find a bill saving of over £50 sufficiently motivating to engage, if supported with inclusive educational materials. • In a series of sub-regional open-access **Stakeholder Workshops**, 96% of attendees said that fuel poverty should be a key focus of our strategy. Stakeholders were asked if the company should only provide the support to customers impacted by fuel poverty at a level that bill payers are willing to pay for, or whether, it should do what it thinks is fair, regardless of the cost. In total 96% of stakeholders said the latter. • The strategic arm of our **Consumer Vulnerability Stakeholder Advisory Panel** debated our role on fuel poverty at a dedicated meeting. Given the complex nature of poverty, stakeholders felt that the path to resolving it is unclear, with no 'silver bullet' or short-term solution. Whilst the panel believed it is not our role to 'fix' the problem alone, members advised that we could make a meaningful difference in improving outcomes for customers, by working collaboratively with trusted partners. Panel members stressed the importance of more 'boots on the ground' i.e. person-to-person contact, provision of energy efficiency advice and tools that can lead to financial savings to improve health and wellbeing. With their input we identified a set of guiding principles to inform enhancements to our fuel poverty investment programme:  • The strategic arm of our **Consumer Vulnerability Stakeholder Advisory Panel** was engaged on an individual and group basis to inform our plans. The feedback generated from 25 in-depth interviews was used to create a new investment proposal (see below) that would support either a) 200,000 customers, b) 250,000 (current level of fuel poverty in the North West) or c) over 250,000 to allow for future growth. Proposal: Introduce strategic partnerships that deliver an integrated support system (*e.g. health services, financial benefits, improving accessibility*) to fuel-poor customers, utilising referral networks as part of a multi-channel approach. • The Advisory Panel was convened to appraise the proposal as a group. Stakeholders wanted to see the level of investment capped to address the current level (~250,000 customers) of fuel poverty in the region. This as opposed to additional anticipatory investment to mitigate the risk of increasing volumes of customers becoming fuel-poor in the future. • We proactively engaged 10 representatives of large energy users on the basis of the above stakeholder feedback to test the findings in an independently facilitated in-depth qualitative interview. Large energy users agreed that whilst there is a role for us to play in alleviating fuel poverty, it perceived it as primarily a Government

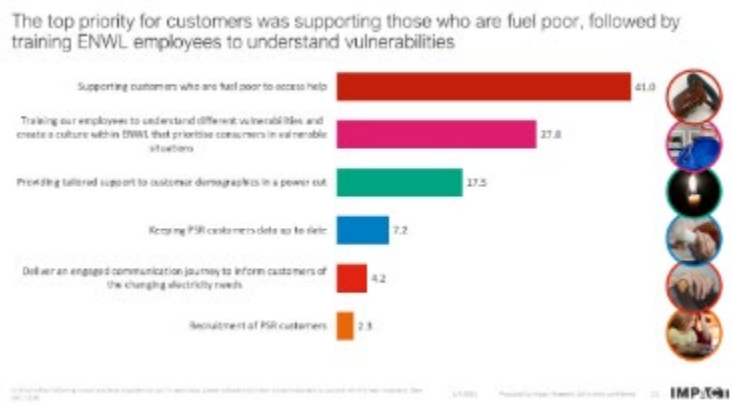
<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>responsibility. They advised caution and suggested we should only do what customers are prepared to pay for, not what it considers to be fair and just.

“This should be a backstop – used when all other support avenues have been exhausted.”</td></tr>
<tr><td></td><td colspan="2">Action taken: We identified a need to engage with a wider range of customers, including those that are fuel-poor, to inform the development of our proposal.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td></td><td>

The same proposal was tested in a range of engagement mechanisms. When the feedback from customers and wider stakeholders (including colleagues) is triangulated and reviewed in the round (see table below) a consensus opinion exists that investment must be significantly increased.

<table>
<tr><th>Fuel poor customers supported in ED2</th><th>Maintain ED1 levels</th><th>200,000</th><th>250,000</th><th>250,000 with contingency for future increase</th></tr>
<tr><td>Stakeholder Advisory Panel</td><td>10%</td><td>35%</td><td>30%</td><td>25%</td></tr>
<tr><td>Plugged In Public Panel</td><td>21%</td><td>8%</td><td>18%</td><td>53%</td></tr>
<tr><td>Online Community</td><td>0%</td><td>22%</td><td>22%</td><td>57%</td></tr>
<tr><td>Customer Voice Panel</td><td>3%</td><td>28%</td><td>42%</td><td>28%</td></tr>
<tr><td>ENWL Colleague Survey</td><td>8%</td><td>26%</td><td>37%</td><td>35%</td></tr>
<tr><td>Costs (per year)</td><td>£0.5m</td><td>£2m</td><td>£2.5m</td><td>£2.8m</td></tr>
<tr><td>Bill impact (per person)</td><td>-</td><td>66p</td><td>83p</td><td>£1.16</td></tr>
</table>

Whilst the stakeholder vote is relatively evenly spread across the three improvement levels, the Plugged-In Public Panel and Online Community have a strong bias towards the most improved level whilst the Voice of the Customer Panel advocate supporting 250,000 customers.
A Max-Diff 2 trade-off exercise undertaken with a representative sample of domestic consumers demonstrated a strong preference for supporting customers who are fuel-poor to access help – attracting a 41% preference share. This investment is regarded as twice as important as expanding tailored support to customers in a power cut. The results point to the need for a bigger incremental performance uplift in supporting fuel-poor customers than other outputs.



</td></tr>
<tr><td></td><td colspan="2">Action taken: From a triangulation perspective the Plugged-In Public Panel and Consumer Vulnerability Stakeholder Advisory Panel results have had a higher weighting in the decision-making progress. These are also both informed groups of stakeholders, who have been provided with sufficient information to perform trade-offs and come to an informed view.

From a data/source perspective the Voice of the Customer Panel was given greater weighting than the Online Community. This is because the Voice of the Customer sample</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		was topped up to 1,000 responses and weighted to be representative of the North West Region. By comparison the Online Community has approx. 25% of its 800-household membership regularly participating in engagement and this 'active' group is not truly representative of the general customer base. These principles, when combined with our data weighting, suggest a 'compromise' of supporting 100% of 250,000 customers could be the most acceptable (and this is what has been put forward to **Acceptability Testing**). This is a compromise because there are still a significant minority who are opposed to increasing investment beyond current levels, whereas there are others who feel strongly about us supporting all existing fuel-poor customers and making provision for increasing numbers during ED2.
Submit and refine (phase 6)	New	• On 20th September 2021, 10 Consumer Vulnerability Strategic Advisory Stakeholder Panel members participated in a 90-minute discussion regarding Electricity North West's proposal to support customers in fuel poverty. Although this represented a relatively small number of attendees relative to the size of the overall Panel, the engagement proved to be meaningful, with rich qualitative feedback received from participants. Insights were derived from the following questions: **1. What would the impact be of Electricity North West not offering this level of support, on electricity users in the North West?** The Bread and Butter Thing advised that the main impact would be that consumers lose access to an "honest-broker" which is in a unique position to provide support and trusted more than energy suppliers. **2. If Electricity North West didn't offer this level of support, who else do you believe could step in and fill the gap created?** The group agreed that excluding investment from private enterprises, key funding streams were central government, local authorities and clinical commissioning groups. Parents in Partnership noted that the Government funds the provision of debt advice via The Money and Pensions Service. The gap left by Electricity North West would effectively put more pressure on existing government backed health and social care services. Oldham, Council referenced a spike in referrals during COVID-19 to Warm Homes Oldham, a scheme which helps households who are having difficulty paying their energy bills and staying warm. Local council's caseloads are reportedly increasing; central government funding remains constrained in the short term and uncertain in the long term. The implication of this is an increasing need for alternative funding schemes. The Bread and Butter Thing hypothesised that in the absence of Electricity North West, housing associations would be the next best alternative to providing funding and support. However, Age Concern wasn't convinced the "wider ecosystem would find a solution to filling the shortfall left by Electricity North West."

Triangulation	Insights	How feedback shaped the proposal
		3. Do you believe that Electricity North West can collectively, with its trusted partners, deliver this level of support? The group anticipated the incidence of fuel poverty to increase in ED2 and surmised that this would make it easier to achieve the proposed performance level. The Bread and Butter Thing suggested that processes "*would need to be slick and streamlined*" to achieve the target and that collaboration with energy suppliers could aid identifying low income households. Collaboration was viewed as important to avoid duplication of effort. Groundworks said that the proposed target (increasing from 4,000 to 25,000 interventions per year) can be achieved. Greater certainty over long term funding will enable partners to resource appropriately and ensure the right skills are consistently available to meet demand. Without certainty over funding, resources would be more likely to fluctuate, creating a risk. **4. What are the key outcomes expected from this investment?** We heard that for fuel poverty and referral networks: • Improved health and wellbeing (including physical, financial and mental health) is a key; • Investment should aim to achieve sustained behaviour change through consumer awareness, education and empowerment. For instance, making a one-off intervention with a short-term benefit (such as installing an energy efficient appliance) is valued less than educating consumers how to manage their money, switch their tariff and use energy more efficiently. * • Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.

Triangulation	Insights	How feedback shaped the proposal

- SROI was modelled based upon 50,000 consumers being reached per year with 25,000 receiving advice and 25,000 benefitting from interventions.
- Customers benefit directly from financial savings such as switching energy supplier tariffs. For low income customers, a welfare weighting can be applied to this because savings have a disproportionately positive impact. Receiving advice also helps relieve some customers of their debt burden. Health benefits include customers feeling less distressed during a power cut, as well as support to help alleviate the health impacts of fuel poverty.
- Forecasting was informed based on the volume of referral pathways achieved in 2020/21 with existing partners and consultation with stakeholders about what could be delivered in the future:

	Benefit	2020/21	ED1 outputs	ED2 forecast
Energy behavioural change - advice	£ 138	3395	37%	75000
Tariff / Supplier Switch - advice	£ 159	1726	19%	37500
Debt/Benefit - advice	£ 420	603	7%	12500
Tariff / Supplier Switch	£ 338	135	1%	5000
Tariff / Supplier Switch - weighted	£ 776	199	2%	7500
Warm Home Discount	£ 159	815	9%	28750
Water Tariff Savings	£ 191	177	2%	6250
Winter Fuel Payment (DWP)	£ 187	57	1%	2500
Health & well-being	£ 74	572	6%	20000
Self-disconnection/ emergency credit	£ 25	443	5%	16250
Grant Funding Application	£ 855	776	8%	27500
PSR sign ups	£ 80	312	3%	11250
		9210		250000

- The total net economic benefit per £ spent (SROI) through by supporting customers in fuel poverty is estimated to be £5.81. This investment proposal is in line with the average social return on investment we would expect to see for this type of activity in our ED2 plan, with an overall net present value assessment of ~ £45m.
- Societal benefits account for 60% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£7,783,664.63
	Total gross present value	£55,191,823.94
	NPV	£45,251,028.39
	SROI	£5.81

Nuances in perspectives between stakeholder groups

A high number of survey respondents found this proposal clear (99% of domestic and 96% of business customers). 78% of domestic customers supported our plans, compared to 70% of business customers. 4% of domestic customers and 6% of business customers were unsupportive. 92% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

Although all DNOs propose funding fuel poverty networks, Electricity North West's commitment stands-out as the most ambitious, especially when factoring in the significant variation in population sizes across the respective regions.

	ENWL	NPG	UKPN	SSE	SPEN	WPD
No of FP Customers Supported	125,000 + 125,000 made aware	100,000	100,000 + 800,000 made aware	50,000	40,000	113,000

Implications for the Business Plan

Outcome description	Current performance
250,000 customers in fuel poverty supported	n/a
Incremental cost of proposal	**Target delivery date**
Total fund of £10m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
●		●	◕	◕	◓	◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, community and local energy groups other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x6)	✓	

Response	Supporting narrative	Read more at
COMPROMISE **Constraint: The scale of problem to solve (now set to supporting 100% of existing fuel poor customers)**	**We will work more closely with trusted organisations to understand fuel poverty and deliver support services, investing £2m per year to support 250,000 fuel-poor customers by 2028.** Based on current levels of fuel poverty in our region, this is the scale of the challenge to be solved. This level of ambition was included in Acceptability Testing and was informed by methodological triangulation – which saw greatest weighting given to feedback obtained through statistically robust and representative research (such as the Mx-Diff 2 exercise undertaken with the Voice of the Customer Panel). The proposal represents a compromise because there are still a significant minority who are opposed to increasing investment beyond current levels, whereas there are others who feel strongly about us supporting all existing fuel-poor customers and making provision for increasing numbers during ED2. This polarisation accounts for the	**Future business plan 2023-2028**: Benefit 11 **Annex 08**: Electricity users in vulnerable circumstances strategy

Response	So, we have	Read more at
	weaker than average acceptability score for this proposal, influenced particularly by lower advocacy among business customers. As we scale up support to fuel-poor customers, we are cognisant of our customers' priority of ensuring the affordability of consumers' bills. Thus, our strategy is to focus on building our capability and that of our stakeholder community to deliver interventions to fuel-poor customers that have a long-term sustainable impact, thereby delivering value for money. The customer benefit and impact from our interventions will be derived from the social return on investment mechanism which will quantify the financial benefit direct to the recipient. We estimate this will equate to a £7m benefit per annum (up from an average of £1m in ED1.) In line with our fuel poverty guiding principles we will also expand support to fuel-poor customers through initiatives that do not require them (particularly the study's survival segment) to actively engage, such as targeted investment to improve the reliability of our network and the roll-out of our innovative technology Smart Street. The Consumer Vulnerability Strategic Stakeholder Advisory Panel raised significant concerns regarding the detriment that electricity users would face in a scenario where we do not offer the level of support proposed. This is exacerbated by a belief that there are few, if any, options for alternative funding and a sense that the company is now well positioned to deliver this activity, having nurtured a strong referral network in ED1. We heard how important funding certainty provided by the five-year price control is for partners being able to build capacity and deliver stretch performance targets. This feedback is reflected in our evidence base to demonstrate the legitimacy of our role and justification for the intended performance level. Before submitting our plan in December, we engaged further with our fuel poverty partners who confirmed that, with the funding in place, that they will be able to scale-up to the required level in ED2.	

B12 Developing new customer advisory panels

Headline level of support

96% of customers understood the proposal and 79% found it acceptable. It ranked 38th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
79%	87%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

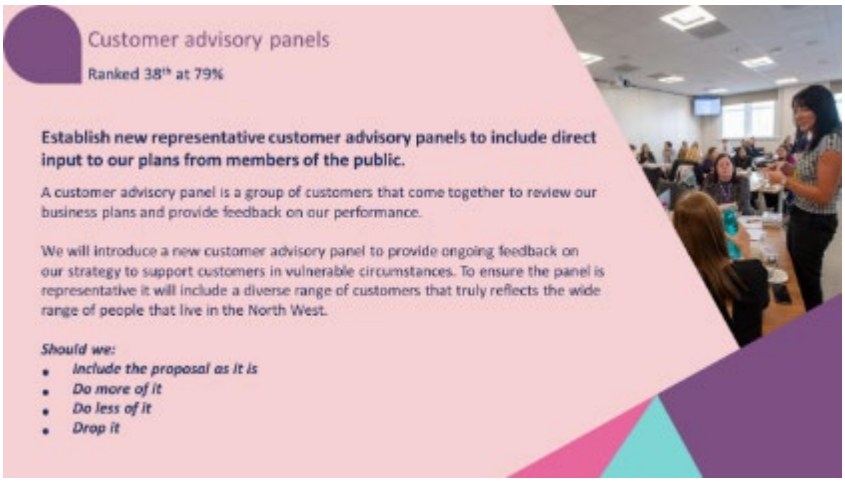
The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	36, 40, 41	• A triangulation of a range of research studies (*consumer segmentation, customer priorities, Max-Diff, Plugged-In Public Panel and WTP*) indicated that deeper education, deliberation and longitudinal engagement with customers influences nuanced and longer-term perspectives on their ED2 priorities. • **Plugged-In Public Panel** members were asked to reflect on the engagement process. 94% said that they had learnt a lot about business plan topics and 69% said that their views had changed or developed through listening to others. Members suggested that continuous engagement had enabled greater transparency and increased awareness, understanding and trust in Electricity North West. When asked if they would be interested in reconvening the panel in the future, 89% of members at the meeting voted

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>‘yes’. A suggested improvement was to create a new panel entirely represented by consumers in vulnerable circumstances.

<table>
<tr><th>About the meetings</th><th>Percentage Agree or Strongly Agree</th></tr>
<tr><td>I understand the purpose of the panel and my role</td><td>97%</td></tr>
<tr><td>The information presented was clear and easy to understand</td><td>83%</td></tr>
<tr><td>I've learnt a lot about the subject</td><td>94%</td></tr>
<tr><td>There was enough time to discuss the issues properly</td><td>83%</td></tr>
<tr><td>I was given enough information to form opinions on new subjects</td><td>86%</td></tr>
<tr><td>I felt like I could ask questions</td><td>94%</td></tr>
<tr><td>I felt comfortable taking part in the discussions</td><td>91%</td></tr>
<tr><td>I felt my opinions were listened to</td><td>97%</td></tr>
<tr><td>I felt comfortable being honest about my opinions in front of Electricity North West</td><td>97%</td></tr>
<tr><td>In my groups some members tended to dominate the discussions</td><td>34%</td></tr>
<tr><td>Group members respected what I had to say, even if they didn't agree</td><td>94%</td></tr>
<tr><td>The breakout facilitators made sure that opposing views were considered</td><td>91%</td></tr>
<tr><td>My views changed or developed through listening to others</td><td>69%</td></tr>
</table>

• A proposal to create customer advisory groups to participate in the development of ideas to ensure services are designed with inclusion in mind was supported by the Consumer Vulnerability Stakeholder Advisory Panel.</td></tr>
<tr><td></td><td colspan="2">Action taken: We included a proposal in Acceptability Testing for the creation of a new customer advisory panel, with a specific remit to develop our strategy for electricity users in vulnerable circumstances. The proposal marginally missed our action standard of 80%, therefore we decided to engage further to understand if any refinements should be made to our plans.</td></tr>
<tr><td>Closing the loop (phase5)</td><td>New</td><td>• We updated the Plugged-In Public Panel on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.



• This proposal was one of the most popular which the panel discussed. 79% felt it should be included in our early draft business</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		plan in its current format, 18% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact) and 3% suggested decreasing our ambition. *"Yes, keep it in the plan in its current format. We have already seen the benefits from this customer panel. It ensures that Electricity North West are aware of the views of a wide range of their customers and can bring a fresh approach."* • In a **bilateral meeting** with Citizens Advice we heard that enhancing end user involvement through deliberative panels is a great addition to our business plan and forward-looking engagement approach. • In our **early draft business plan consultation** 82% of Plugged-In Public Panel members voted in favour of the existing proposal. Some members suggested advisory panels should be split by region, topic, or type of customer but also recognised that there is benefit in having variety of views represented from non-topic experts and from across the region. 49% of Online Community Representatives favoured greater ambition in our proposal. A small number of stakeholder contributors also suggested having sub-regional panels, to align with the approach taken for stakeholders.
Submit and refine (phase 6)	New	• In October we wrapped up our engagement on the plan with our **Online Community** and **Plugged-in Public Panel.** At our 10th and final Plugged-in Public Panel session, 95% of members were supportive of the business plan shifting to focus more on net zero telling us the need for urgent action and for Electricity North West to be a leader in this area. As well as some further specific feedback on specific proposals, we also asked panel members for their final thoughts with hugely positive responses, below are a selection: *"Thank you to Electricity North West for this great opportunity. I think I can speak on behalf of everyone on the panel, we have all learnt so much. I know more now than I did before. I do hope there will be more opportunities in the future"* *"My message to Ofgem is listen. Take on board what customers and providers are saying then act accordingly"* *"It's not just about the cost, it's about the value for money. Consider what support and actions Ofgem should be considering to ensure that organisations like Electricity North West can meet their aims"* Members of our Online Community have been invited to sign up to our Voice of the Customer panel so that they can continue having their say. * • Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.

Triangulation	Insights	How feedback shaped the proposal
		• We will invest £250,000 a year to develop and maintain x5 customer advisory panels that meet up to three times a year. The investment will enable the recruitment and ongoing incentivisation of up to 300 customer representatives. The groups will engage with each other on multiple occasions, activating a social proxy, '*customers feel like part of a community*.' • Acknowledging that it can be challenging to sustain high engagement levels over a longer period, we have included a 10% year-on-year drop-off rate as part of data validation adjustments. • The total net economic benefit per £ spent (SROI) through by developing new customer advisory panels is estimated to be £1.82. This investment proposal is in line with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ £4m. • Societal benefits account for 74% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£2,107,424.85
	Total gross present value	£6,018,464.11
	NPV	£5,015,321.66
	SROI	£2.38

Nuances in perspectives between stakeholder groups

94% of domestic customers who took part in our survey and 100% of business customers found this proposition clear and understandable. 82% of domestic customers supported our plans, compared to 75% of business customers. A small number of business customers (3%) were unsupportive. 90% of colleagues participating in the survey regarded our proposal as acceptable.

Benchmarking analysis

Electricity North West's proposal is in line with the plans of other DNOs, all of whom have various customer advisory panels. SSEN has also committed to developing a new customer advisory panel.

Implications for the Business Plan

Outcome description	Current performance
Vulnerable customer panel established	Panels established for ED2 engagement
Incremental cost of proposal	**Target delivery date**
£2.5m	30 September 2023

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	EDBP consultation
		●	◕	◕	◓	◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups other utilities, regional local authorities and specialist consultants.				
Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x2)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	In developing our ED2 business plan, we established a new deliberative customer panel which has proved hugely insightful and beneficial. We want to capitalise on this investment and the learning generated by introducing new customer advisory panels, to provide us with ongoing feedback on our strategy, concerning the support of consumers in vulnerable circumstances. In Acceptability Testing and subsequent engagement, we didn't identify a need among customers or stakeholders for greater ambition on our commitment to introduce new customer advisory panels. In fact, business customers were less likely to support the scale of the investment, with some suggesting it was overly ambitious. We have decided to proceed with the commitment in its existing format and estimate this will enable the creation of up to five customer advisory panels that meet three times a year. The investment will fund the recruitment and ongoing inclusion of 250 customer representatives annually. Part of the panel's remit will be to provide feedback on our plans for ensuring customers understand changes in the energy sector through videos, community sessions, education in schools and referral networks. The outcome will be a strengthening of consumers' voices in business decision making, influencing investment, future policy and customer benefits.	**Future business plan 2023-2028**: Benefit 12 **Annex 08**: Electricity users in vulnerable circumstances strategy

B13 Home welfare visits for electricity users in vulnerable circumstances experiencing long-duration power cuts

Formerly, 'offering timed appointments'

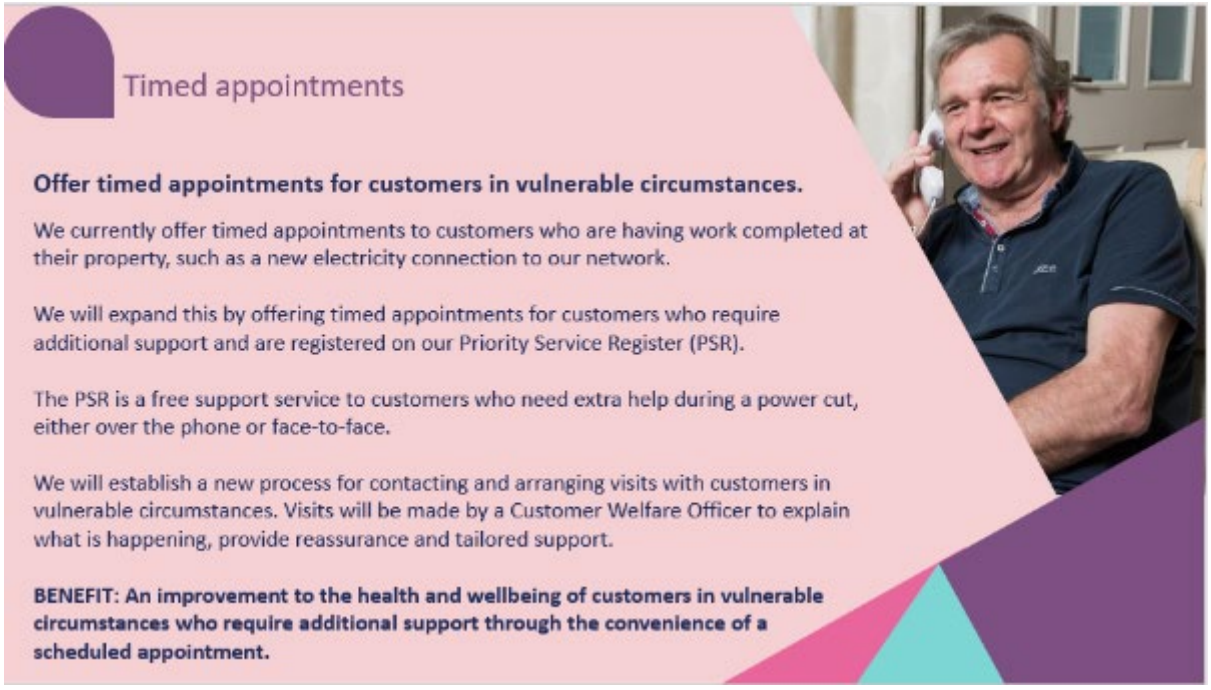
Offering times appointments was one component of the attribute, 'vulnerable customer support during planned power cuts', tested in a WTP survey.

Headline level of support

96% of customers understood the proposal and 90% found it acceptable. It ranked 2nd out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
90%	81%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	6	• Electricity North West' Network Innovation Allowance funded Avatar engaged a broad section of 40 customers and consumers representing diversity in age, socio demographic and geography. The panel asserted the importance of convenient appointment slots being offered to them in situations where a DNO needed to visit them. Expectations were compared with the service delivery now routinely provided in other sectors including parcel delivery or roadside assistance. The minimum expectation was that, except for emergencies, visits should be planned, and any changes or delay should be clearly communicated, in a timely manner via the customer's preferred communication channel. • The value of providing information through face-to-face contact was appraised in a national joint-DNO **WTP survey** (2020) and received moderate importance from consumers in the North West. Customers were willing to pay, on average, £0.35 per year towards increased face-to-face contact.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>• A literature review was undertaken of Gas Distribution Network Operator GD2 business plans. Northern Gas Networks published a triangulation paper[8] which indicated a robust evidence base of stakeholder support for improved appointment setting and engineer tracking.</td></tr>
<tr><td></td><td colspan="2">Action taken: We offer face-to-face contact to PSR customers in advance of planned supply interruptions and during site visits for new connections or service alterations. Nobody likes having to wait at home for an engineer, but when it is for a planned or routine activity, and not associated with a fault or emergency, consumers have told us that they expect an appointment service. We planned further engagement to explore this.</td></tr>
<tr><td>Electricity in my life (phase 2)</td><td>26</td><td>• In a Max-Diff 1 survey, ‘offer additional support to the consumers in the most vulnerable circumstances (e.g. medically reliant on electricity) in advance of and during a planned power cut’ ranked 1st out of 24 proposals tested. ‘Support’ was described as face-to-face appointments, appointment scheduling and engineer tracking.
○ Support for the proposal came from the full spectrum of customer segments, including, but not limited to, households, businesses, all age groups, those in (and not in) vulnerable circumstances and all socio-economic groupings.</td></tr>
<tr><td></td><td colspan="2">Action taken: The strength of opinion observed among consumers for this proposal influenced it being shortlisted for inclusion in WTP research.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>47</td><td>• We asked our CEO Stakeholder Advisory Panel to undertake the same Max-Diff trade-off exercise as consumers and they ranked an appointment service and engineer tracking for face-to-face visits 2nd.
• In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:
<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Vulnerable customer support during planned power cuts</td><td>ENW offers 10 days written advance notice, a call 6 days before, a reminder 48 hours before and proactive updates during a planned power cut

Face-to-face visits to customers in the most vulnerable circumstances, in advance of the planned power cut are not available</td><td>An appointment and staff tracking service for face-to-face visits to customers in the most vulnerable circumstances. Visits will be made by a customer welfare officer in advance of the planned power cut to explain what is happening, provide reassurance that their individual circumstances are known to us and a unique point of contact
and
A local drop-in centre for customers to receive support from</td><td>Wherever possible, we will carry out our planned maintenance works without the need to interrupt the power supply of customers in the most vulnerable circumstances</td></tr>
</table></td></tr>
</table>

[8] A4-NGN-RIIO-2-Stakeholder-Engagement-Insights.pdf (northerngasnetworks.co.uk)

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>specialist welfare officers during a planned power cut</td><td></td></tr>
</table>

The results (below) indicate that level 1 is likely to be the optimal improvement of those tested (from a CBA perspective), attracting moderate support from household customers and strong advocacy from businesses.

<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – An appointment and staff tracking service</th><th>L2 – Customers' power supply not interrupted</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.29</td><td>£0.36</td></tr>
<tr><td>Businesses</td><td>0.15%</td><td>0.13%</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Action taken: We identified a need to undertake more detailed consumer benefit modelling, drawing on the valuation provided by customers in WTP research and to include it in its current format within Acceptability Testing.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
Currently high risk PSR customers are contacted by telephone and offered advice during an outage. This new proposal will see these customers offered the opportunity of face-to-face visits, especially during major storm events and longer outages (~12 hours) which heighten the vulnerable circumstances that these customers face. The visit will enable colleagues to provide in-home tailored support and advice, activating the following benefits:

Reducing stress during an outage
Annual cost of loneliness (for the elderly)
Mental health care clusters
Increase in quality of life for customers.

A review of our operational data indicated that in 2020/21, 2,145 customers were affected by 12+ hour faults. To forecast demand for face-to-face visits we have assumed that up to 50% of impacted customers would be eligible for the PSR (n=1075) and 20% in total would request appointments.
The total net economic benefit per £ spent (SROI) through offering home welfare visits for electricity users in vulnerable circumstances experiencing long-duration power cuts is estimated to be £0.70. This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ £130k. This is likely to be because the investment costs are overstated relative to the benefits. The costs enable the allocation of resource to deliver the enhanced service during long duration faults, when staff will provide other added-value services during other times.
Societal benefits account for 63% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£189,668.24</td></tr>
<tr><td>Total gross present value</td><td>£272,519.78</td></tr>
<tr><td>NPV</td><td>£132,854.14</td></tr>
<tr><td>SROI</td><td>£0.70</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

In our customer survey 94% of all respondents found this proposition to be understandable. 88% of domestic customers and 93% of business customers supported our plans, with just 1% of domestic and 6% of business customers who did not agree. 90% of colleagues participating in the survey regarded the proposal as acceptable.

Benchmarking analysis – draft plans

NPg will also offer timed appointments but only for customers who are due to have planned services. However, NPg are proposing to extend appointment booking slots into evening/weekend and same day/ next day which goes above and beyond Electricity North West's service levels. Other DNOs remain silent on offering timed appointments.

Implications for the Business Plan

Outcome description	Current performance
We'll proactively offer welfare visits to all electricity users in vulnerable circumstances who are without power for 12+ hours.	Ad hoc visits
Incremental cost of proposal	**Target delivery date**
<£100k	30 September 2023

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
●	●	●	◕	◕		◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x1)	✓	✓ (£0.29) L1 ranked 8/12

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: Efficient deliverability constraints**	The materiality of the evidence bases we collected is high, with three well-designed surveys based on random sampling generating robust and consistent findings. On this basis we will proceed with **our commitment to offer consumers in vulnerable circumstances timed appointments to make life easier**. Face-to-face visits will	**Future business plan 2023-2028**: Benefit 13 **Annex 08**: Electricity users in vulnerable

(focused on long duration faults and PSR customers)	be made by a Customer Welfare Officer to explain what is happening, provide reassurance and tailored support. Efficient deliverability constraints prevent this level of support being offered routinely in an unplanned supply interruption scenario. This is because without prior warning of a fault, customers are less likely to signal their need for extra help and our ability to martial resources to disparate parts of the network at short notice is constrained. However, in line with preferences observed in Willingness-to-Pay research, we will continue to, wherever possible, carry out fault works without the need to interrupt the power supply of customers in the most vulnerable circumstances. Our use of back-up generation will be targeted in this way (rather than offered to all customers) to ensure the greatest SROI and appropriate use of customers' money.	circumstances strategy

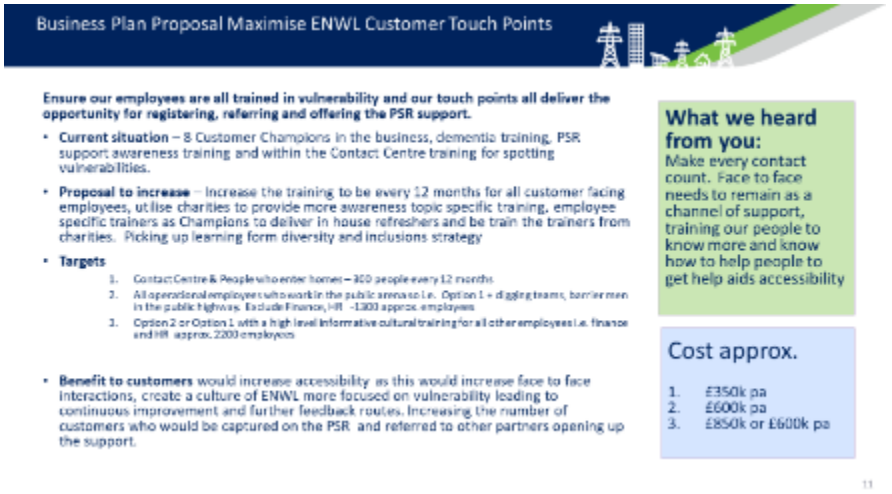
B14 Introducing all-colleague training for vulnerable circumstances and mental wellbeing

This proposal was not included in Acceptability Testing.

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	50	• Feedback generated from 25 in-depth interviews with informed stakeholders on Electricity North West's strategic approach to consumer vulnerability was reflected in an investment proposal presented to the **Consumer Vulnerability Advisory Panel** (see below)

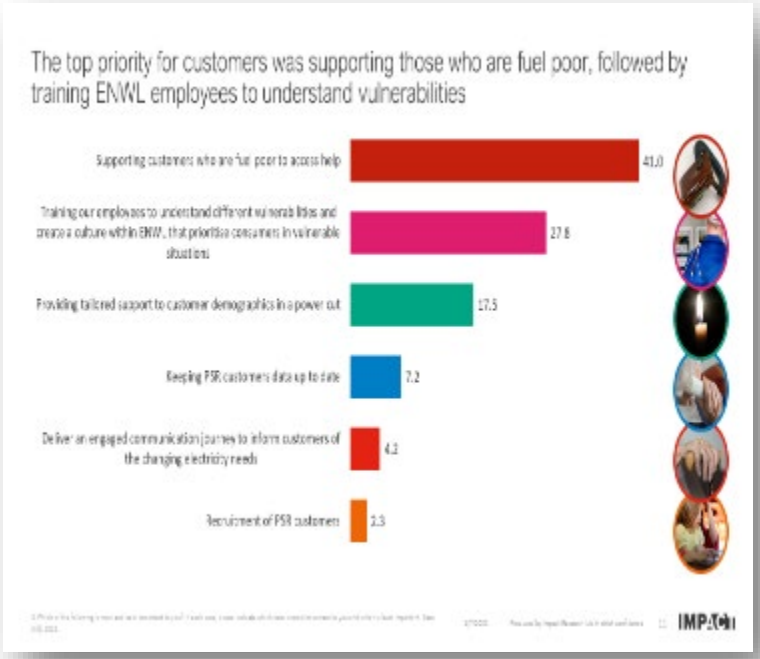
<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2"></td><td></td><td>


- There was a strong feeling that the initiative is more about corporate culture, therefore it should be executive led and all staff should be included. This includes from the moment a colleague joins the company (induction) and continuously thereafter.

"Vulnerability should be built into all training programmes. All staff have a duty of care to recognise when someone needs extra support and to be able to ask the right questions to make every contact count" Citizens Advice.

- A range of investment options were voted on by the Advisory Panel and a majority consensus was found in favour of training all employees.
</td></tr>
<tr><td colspan="2">Action taken: We identified a need to test the range of investment options developed with a wider range of stakeholder and to understand the relative importance of this activity compared to other proposals to support electricity users in vulnerable circumstances.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td>76</td><td>
- A Max-Diff 2 exercise was completed with 1,000 consumers which revealed that training our staff to understand different vulnerabilities and to create a culture within the company that prioritises electricity users in vulnerable circumstances is important – ranking 2nd with 28% of the vote– above all PSR related investments.
</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal



- The three investment options tested with the **Consumer Vulnerability Advisory Panel** were also presented to customers and colleagues through a range of mechanisms (see below). Triangulating the feedback from these mechanisms highlighted a consensus view in favour of training being extended to all employees, not just those in the contact centre or likely to enter customers' homes.

Training Programme	Contact centre and people who enter homes	All who work or interact with the public	All employees
Stakeholder Advisory Panel	25%	20%	55%
Online Community	23%	33%	33%
Customer Voice Panel	20%	14%	66%
ENWL Colleague Survey	26%	32%	46%
Costs (per year)	£350k	£600k	£850k

Triangulation	Insights	How feedback shaped the proposal

Submit and refine (phase 6)	New	• Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.
		• Training staff to recognise customers in vulnerable circumstances will mean that they have the skills to recommend appropriate interventions. This can involve either signing the customer up to the PSR, referring the customer to a partner to receive support, or referring the customer to social services. The incremental (estimated) impact of this training on the volume of referrals is:
		  ○ Number of people referred directly to the PSR: 200 per year
		  ○ Number of people referred to partners: 10, 240 per year. This represents 50% of the total increase in referrals during ED2.
		  ○ Number of people referred to social services. 20 per year.
		• The total net economic benefit per £ spent (SROI) through introducing all-colleague training for vulnerable circumstances and mental wellbeing is estimated to be £0.94. This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ £1.9m. This is likely to be because the benefits of the investment are only partially quantified through SROI. The wider benefits to colleagues receiving training and development, such as the impact on their own mental wellbeing are outside the scope of the assessment.
		• Societal benefits account for 66% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:
		
		5-year reporting figures
		Economic — **Total cost** £1,971,861.71; **Total gross present value** £3,983,053.98; **NPV** £1,856,449.14; **SROI** £0.94

Implications for the Business Plan

Outcome description	Current performance
100% of colleagues trained in vulnerability and mental health	Training focused on contact center colleagues
Incremental cost of proposal	**Target delivery date**
£1.9m	31 March 2028

Customer and stakeholder evidence sources

Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups engaged: Current and future customers, consumer representatives, other utilities and regional local authorities.

Justification

Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay

		✓ (x1)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve (now set to 100%)**	We heard a consensus view among customers and stakeholders that we should scale our investment in training to reach 100% of our workforce. This evidence was derived from multiple sources of robust and meaningful engagement – both quantitative and qualitative. In response we will implement a broad, tiered and targeted training programme to ensure education and awareness of vulnerability is aligned to all staff roles and responsibilities, to recognise and reduce the impact of vulnerabilities. We will also introduce new all-staff training on new and emerging mental wellbeing, linking the impacts of changing circumstances (i.e. power failures). Our commitment will see 100% of colleagues trained in vulnerability and mental health: • 100% of colleagues trained through a tiered level approach of education and awareness aligned to their roles and responsibilities to recognise and reduce vulnerabilities • 100% of colleagues trained with all new and emerging mental wellbeing linking the impacts of changing circumstances i.e. power failures Introduce an employee app to register new PSR customers and support offered. Reviewing the data to increase interactions.	**Future business plan 2023-2028**: Benefit 14 **Annex 08**: Electricity users in vulnerable circumstances strategy

3 Maintaining a safe and resilient network

3.1 Delivering a reliable network

Example customer and stakeholder input to this priority area

Phase 1

- As part of the qualitative stage of our **Priorities Research** 'keeping your life running' was ranked as of one of top priorities by customers as electricity is so intrinsic to day-to-day life. In a statistically robust and representative survey of 590 customers, 90% felt that delivering a reliable network should be a key focus area for investment in ED2.

Phase 2

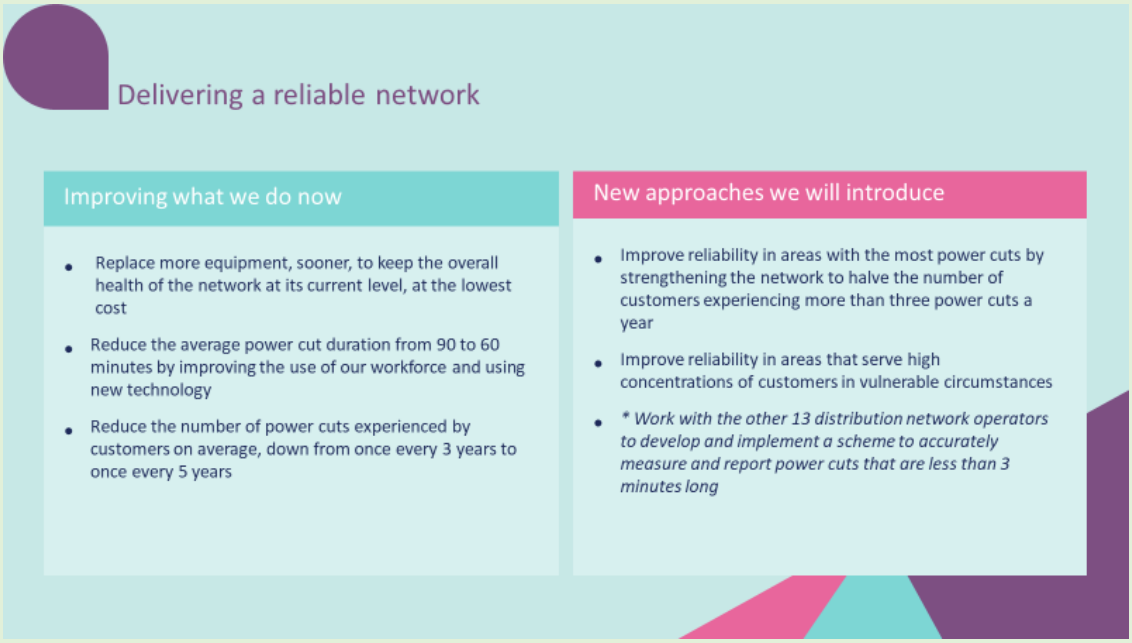
- We triangulated this feedback with what we heard during three **Regional Stakeholder Workshops**. Delivering a reliable network was ranked as the most important priority in all three major geographies: Greater Manchester, Lancashire and Cumbria.
- Our **Plugged-In Public Panel** stressed the importance of the service the we provide and how other activities we may carry out rely heavily on firstly delivering a reliable network. They also highlighted the significant negative impacts an unreliable network would have on customers' lives, particularly those in the most vulnerable. circumstances.
- Our **Online Community** told us that 'delivering a reliable network' was even more important now due to COVID-19. Members told us that COVID-19 had made them think more about how much they rely on electricity, for example working from home.

Phase 3

- Our **Plugged-In Public Panel** told us that replacing old equipment before it fails should be an investment priority as it will prevent problems occurring in the future.
- Our **Plugged-In Public Panel** also acknowledged the need to improve performance for customers receiving multiple power cuts and those experiencing fuel poverty as the panel had desire for fairness and 'not leaving people behind'.
- Our ongoing engagement with our **Stakeholder Advisory Panels** helps us develop our plans and set challenging targets to deliver stakeholders' strategic priorities. "Keep our customers lives running" is one of them. This priority continues to remain important with 88% of stakeholders who attended our summer 2020 regional advisory workshops. saying it was important to invest in improving network reliability further. Our Chief Executive Advisory Panel also recognised reliability as an important issue and noted the inconvenience of short duration interruptions, particularly to businesses.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In Acceptability Testing 86% of domestic customers and 84% of business customers surveyed found our reliability proposition (see below) acceptable. A very small proportion considered it unacceptable (2% domestic and 3% business), either because of cost, the proposals not being ambitious enough or because they did not believe we will deliver what we promise.



Nuances in stakeholders' views

- Customers who can pay their energy bill without difficulty were significantly more likely to find our proposition acceptable (90%) than those who struggle from time to time (81%). Acceptability levels reduced further in customers who constantly struggle to pay their energy bill (75%).
- In our **Segmentation** Customers belonging to our 'Time to Care' and 'Community Minded' segments were significantly more likely to find our proposition acceptable (95% and 92% respectively).
- Most members of the **Plugged-In Public Panel** felt we had listened to their views on delivering a reliable network and represented them in the draft business plan, specifically taking on board their focus on targeting work to improve services for our worst-served customers (WSC)/consumers in vulnerable circumstances.
- However, some members of the panel felt that our proposals do not do enough to proactively identify power cuts, but instead rely on customers to report them to us. These contributors believed that more focus on a proactive approach would help to improve the reliability of the network.
- 91% of stakeholders participating in **Acceptability Testing** found the proposition acceptable.
- All members of our **CEO Advisory Panel** felt that our proposals for delivering a reliable network are understandable. They also found the proposals to be acceptable and comprehensive.

Output 2 Improving network health

Headline level of support

96% of customers understood the proposal and 83% found it acceptable. It ranked 20th out of 41 proposals evaluated; however, it was the lowest performing reliability proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
83%	87%	**Final triangulation decision** Proceed with current ambition (compromise)

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1,9	• Analysis of 2020/21 customer complaints indicated that the root causes are largely associated with the disruption caused by either single or repeat power cuts. These account for 68% of **complaints**. • **Third party evidence** showed that consumers are typically myopic; advocating short term benefits relative to investment that mitigates lower probability, high impact events.
	Action taken: further engagement was planned and undertaken to understand how we can best minimise disruption to our customers' daily activities.	

Triangulation	Insights	How feedback shaped the proposal
Electricity in my life (phase 2)	15	• A large scale quantitative **VoLL2 Customer Survey** showed that minimising disruption to customers requires prioritisation of 1) reducing the duration of unplanned power cuts 2) avoiding multiple unplanned interruptions in any given year.
	Action taken: further engagement was undertaken to understand the importance of reducing the number of network faults, relative to our ability to mitigate the impact of faults, such as detecting and fixing them quickly.	
Our plan for the future (phase 3)	51	• Analysis of Electricity North West's expenditure since 2015 indicated a greater proportion of expenditure was allocated to restoring faults (17%), than preventing them (9%). **Operational data** showed overall risk had reduced by 11% since 2015. • Our **Plugged-In Public Panel** said that prevention is better than cure and asked us to reduce the overall risk of network faults in the long term by replacing old equipment. Out of 12 network related proposals reducing the overall risk of network failure was most appealing. This was despite it being among the more expensive options (more than £1 pp per year), attracting 22% of the vote. ○ A post-workshop survey revealed that 0% of members wanted to keep the risk profile at current levels. 49% opted for investment in preventative maintenance before there is a failure (moderate spend) while 31% asked us to invest as much as possible now in improving the network (high spend). This represented a clear evolution among increasingly informed customers for greater investment than in ED1.
	Action taken: the proposal we put forward to **Acceptability Testing** represented a compromise because greater weighting was given to headline commitments to reduce the number of power cuts and the average time people are without power by 20%.	
Closing the loop (phase 5)	New	• In **Acceptability Testing** businesses expressed an appetite for risk to be minimised further than the proposed level. The rationale for this is that 'prevention is better than cure' i.e. if network faults can be reduced then fewer customers will be impacted, reducing the need to invest more in supporting customers in vulnerable circumstances. • 2/3 of our **CEO Advisory Panel** told us that we should reduce risk even if it will increase prices to customers. The panel voted unanimously in favour of new risk sub targets for major equipment types and a commitment to deliver a minimum of 80% of these alongside the overall risk target. • In our **early draft business plan consultation** 89% of Plugged-In Public Panel members submitting responses felt a proposal to increase investment by £30m (60pp bill impact) to reduce the risk of failures by 10% offered good value for money. However, some members shared concerns regarding increasing investment for those in fuel poverty, who would also foot the bill. 81% of Online Community contributors favoured a more ambitious proposal.

Nuances in perspectives between stakeholder groups

85% of domestic customers found our plans acceptable compared to 78% of business customers. 5% of business customers did not support the proposition because they expected us to go above and beyond maintaining the current level of risk. 87% of colleagues supported the proposal.

Benchmarking analysis – draft plans

WPD will improve the overall health of its network in ED2 by 22%. Other DNOs do not appear to quantify improvements expected from their investments. Overall, Electricity North West does not appear to be an outlier – SPEN outlined its plans to maintain the overall risk (health and criticality) of its network and NPg's prioritisation approach is also equitable.

Implications for the Business Plan

Outcome description	Current performance
Ensuring the overall health of the network and the risk of failure is maintained at current levels	Maintaining current level of network risk
Incremental cost of proposal	**Target delivery date**
£75m over current levels and a total cost of £239m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓			✓	

Response	Supporting narrative	Read more at
COMPROMISE AREA **Constraint: Efficient deliverability constraints**	**We will maintain the overall network health and risk of failure at current levels, by investing £240m.** This proposal scored reasonably strongly in Acceptability Testing among customers (83%), however, our business customers and stakeholders signalled their preference to see greater ambition to reduce fault volumes. Internal analysis indicated that by increasing investment by £30m we could reduce the risk of failures by 10%.	**Future business plan 2023-2028**: Output 02 **Annex 3 A B C**: Load Related Investment Programme

	However, this would add approximately 60p a year to the average domestic customer bill. In addition to being mindful of the impact of further investment on customers bills' (particularly fuel poor customers) we have also reached an efficient deliverability threshold (at a macro level across the plan) that would be compromised by significant additional capital expenditure of this type.	

B15 Reducing the number of power cuts

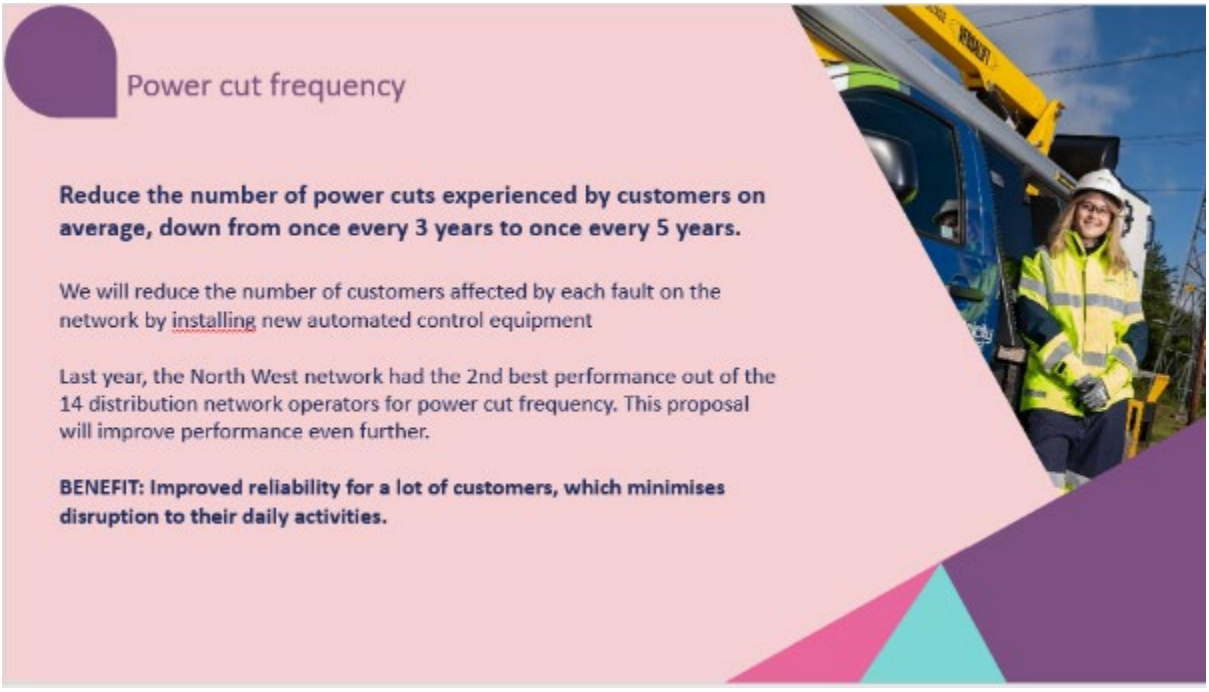
Service attribute tested in WTP was referred to as, 'reduce power cut frequency'

Headline level of support

99% of customers understood the proposal and 84% found it acceptable. It ranked 16th out of 41 proposals evaluated by customers. However, compared to other propositions under the reliability priority area it was the second lowest ranked proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
84%	86%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2">Customer connection (phase 1)</td><td>1</td><td>• Electricity North West's innovation project the Value of Lost Load (VoLL 1) identified a significant increase in VoLL when the frequency of outages reaches more than one interruption, on average, every three years.</td></tr>
<tr><td colspan="2">Action taken: Further engagement undertaken to understand the level of improvement desired by customers and wider stakeholders.</td></tr>
<tr><td rowspan="2">Electricity in my life (phase 2)</td><td>15</td><td>• The appeal of improving the average frequency of unplanned power cuts from 1 power cut per customer every 3 years to 1 power cut per customer every 4 years was tested against 23 other proposals in a 'Max-Diff 1' survey. The attribute ranked 13th, lower than three other reliability attributes, indicating a moderate level of importance. This was also correlated with the acceptability of the current level of performance.
○ In the same survey reducing the frequency of Short Duration Interruptions (SDI) that last up to 3 minutes, from 1 power cut per customer every 4 years, to 1 power cut per customer every 5 years, was also traded-off. The attribute ranked 18th, indicating a relatively low overall importance.
• In a Safety, Reliability & Resilience Working Group, Ofgem stated that the quality of SDI data is still considered to be poor, so it is unclear how DNO performance has changed over time and how any associated incentive would be set. The implication of this is that evidence for an incentive still needs to be developed and it looks increasingly likely that improvement in this area will be a focus for RIIO-ED3.</td></tr>
<tr><td colspan="2">Action taken: Improving the average frequency of unplanned power cuts was shortlisted for inclusion in WTP research because of its bill materiality.

We added a commitment to our reliability proposition to work with the other 13 DNOs to develop and implement a scheme to accurately measure and report power cuts that are less than 3 minutes long.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>35</td><td>• In a quantitative WTP survey two improved service levels were tested alongside the current level of service provided in ED1.

<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Reduce power cut frequency</td><td>1 power cut per customer every 3 years</td><td>1 power cut per customer every 4 years</td><td>1 power cut per customer every 5 years</td></tr>
</table>
• WTP monetary values at the 80th percentile is included in the table below. This is purely a measure of consumer value and not the cost of delivering the service. The results for level 2 and both customer groups achieved statistical significance.</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2"></td><td></td><td>
<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – 4 years</th><th>L2 – 5 years</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.43</td><td>£1.26</td></tr>
<tr><td>Businesses</td><td>0.03%</td><td>0.16%</td></tr>
</table>

Level 1 was ranked 5th (out of 12) by households and 6th by businesses. Level 2 was ranked 3rd by households and 4th by businesses.
Household customers especially attribute a higher value to stretching our ambition beyond level 1, indicating that reducing the average frequency by an additional year is more appealing than reducing the average duration by a further 15 minutes.

</td></tr>
<tr><td colspan="2">Action taken: Based on the evidence collected in previous phases, we were surprised that the most improved service level for the power cut frequency attribute performed more strongly than the equivalent level for average duration of power cut. In response we increased our ambition on this attribute and took forward L2 into the next phase.</td></tr>
<tr><td>Closing the loop (phase 5)</td><td>New</td><td>Engagement with the company's SLT highlighted that delivering this improved service level in combination with a reduction in the average duration of power cuts will be very challenging. However, in order to respond positively to stakeholder feedback, SLT agreed that this was the right area to focus a headline commitment.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
This proposal influences financial benefits (cost savings) from reduced Interruptions Incentive Scheme (IIS) costs, which are shared with customers in the form of lowers bills.
In line with our 20% reduction headline performance commitment, we have modelled the benefit of 24,000 avoided interruptions per year.
To achieve this performance level, we estimate an incentive funded investment of around £14.5m.
The total net economic benefit per £ spent (SROI) through reducing the number of power cuts is estimated to be (£0.88). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£11m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 11% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£12,273,642.34</td></tr>
<tr><td>Total gross present value</td><td>£1,291,660.64</td></tr>
<tr><td>NPV</td><td>-£10,744,984.67</td></tr>
<tr><td>SROI</td><td>-£0.88</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

98% of all customers surveyed clearly understood this proposal, 84% of whom were supportive. A small number did not support our plans (3% domestic and 2% business). 94% of colleagues participating in the survey supported this proposal.

Benchmarking analysis – draft plans

Electricity North West's 20% reduction in the frequency of power cuts* appears to be a relatively strng offering. It is equitable to SSEN's target but greater than SPEN's (15%) and NPG's (12%).

ENWL's targeted performance of '1 power cut every 5 years' far exceeds WPD's one interruption every two years.

**N.B. needs to be interpreted within the context of baseline performance*

Implications for the Business Plan

Outcome description	Current performance
Reduce frequency of power cuts by 20% from 2021-2023 levels	Once every four years 28 interruptions per year per 100 customers
Incremental cost of proposal	**Target delivery date**
No upfront allowances – payment on results only via Ofgem's IIS incentive mechanism	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
●	●	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x-1)	✓	✓ (£1.26) L2 ranked 3/10

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints**	The level of ambition we set out in the proposal assessed in Acceptability Testing was informed by our Willingness-to-Pay research. In this survey we heard a call from customers for a stretching performance level of *1 power cut per customer every 5 years*. This statistically robust and representative research materially influenced our thinking. We have decided to commit to reducing the number of interruptions experienced by customers on average by a further 20% from their levels in the 2021-2023 period. **This**	**Future business plan 2023-2028**: Benefit 15

	will reduce the average frequency from around one power cut every three years to one every five years. Last year, the North West's network had the second-best performance out of the 14 licenced DNOs in Great Britain, for power cut frequency. This proposal will improve performance even further by installing new automated network monitoring and control equipment. There are significant deliverability constraints that would make delivering performance beyond service levels tested with customers very challenging. New automated network monitoring and control equipment (such as PRESense and Sentinel) requires specialist suppliers and scaling up from a trials basis to a mass production level.	

B16 Reducing the duration of power cuts

Service attribute tested in WTP was referred to as, 'Reducing power cut duration'

Headline level of support

98% of customers understood the proposal and 85% found it acceptable. It ranked 13th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition (compromise)
85%	86%	**Final triangulation decision** Proceed with current ambition (compromise)

Support for proposal in existing format	Decision based on triangulation

The following proposal was tested in **Acceptability Testing (Phase 4)**:

The following insights represent the golden thread between stakeholder feedback and our proposal:

Evidence base collected

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1	• In our **Priorities Research**, consumers were asked, without prompt, the priority areas they felt we should focus on in ED2. A reduction in the frequency and duration of power cuts, maintaining the highest safety standards, and keeping bills down were considered most important. • Electricity North West's pioneering innovation project, the Value of Lost Load (VoLL 1), identified that the duration of interruption is the biggest factor in determining VoLL, more so than the frequency or geographical scale of the interruption.
	Action taken: Further engagement was undertaken in a subsequent project (VoLL 2) to understand how VoLL changes over the duration of an event. Specifically, for longer durations over 12 hours. We wanted to know if VoLL per hour increases, stays the same, or reduces. This research would indicate if a more bespoke service may be required for longer interruptions, such as during storm incidents.	
Electricity in my life (phase 2)	15	• The VoLL 2 research identified that VoLL per hour is lower beyond the 12-hour point and thereafter remains constant. The implication of this is that investment would be best prioritised in reducing the average duration of outages during normal weather (regulation 5). • The appeal of improving the average duration of unplanned power cuts from 90 to 60 minutes was tested against 23 other proposals (listed in the appendix of this report) in a '**Max-Diff 1'** survey. This attribute was ranked 6th, indicating relatively strong appeal among general customers.
	Action taken: The attribute was shortlisted for inclusion in **WTP research** on account of its bill materiality and strong customer appeal.	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Our plan for the future (phase 3)</td><td>35</td><td>

We held three sub- regional, open access, stakeholder events (Greater Manchester, Lancashire and Cumbria). In the workshops stakeholders were provided with granular information about the electricity network in their region, including details of local power cut performance. 88% of stakeholders said that it is more important that we improve supply reliability (compared to base levels) than keeping bills as low as possible.

Stakeholders were prompted to contemplate whether the company should improve reliability by a small amount, for a lot of customers or improve it a lot for just a small number of customers? The results indicated a relatively equal distribution in every region, indicating both are important.

In a quantitative WTP survey two improved service levels were tested alongside the current level of service provided in ED1.

<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Reducing power cut duration</td><td>Unplanned power cuts last on average 90 minutes</td><td>Unplanned power cuts last on average 60 minutes</td><td>Unplanned power cuts last on average 45 minutes</td></tr>
</table>

Level 1 (60 minutes) was the most highly valued +1 service attribute (out of 12) tested by households and businesses. However, the incremental gain from moving to the +2 level was relatively weak. This is correlated with the benefit to customers diminishing, with ‘just’ 15 minutes difference between level 2 and level 1, compared to 30 minutes between level 1 and the status quo. The full list of attributes tested are included in the appendix of this report.
WTP monetary values at the 80th percentile is included in the table below. This is purely a measure of consumer value and not the cost of delivering the service. The results for both levels and customer groups achieved statistical significance.

<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – 60 minutes</th><th>L2 – 45 minutes</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.85</td><td>£1.24</td></tr>
<tr><td>Businesses</td><td>0.16%</td><td>0.17%</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Action taken: This programme will be driven by the incentive rates under the Interruptions Incentive Scheme. This means that we won’t be explicitly asking for money from customers to achieve it. Following the Sector Specific Methodology Consultation (SSMC), we anticipate that the likely incentive rates that Ofgem will set in ED2 will not be sufficient to support the expenditure required to achieve 45 minutes (L2), but that 60 minutes would be achievable based on current improvement rates and the incidental benefits of other programmes. On this basis we took forward L1 into the next phase.</td></tr>
<tr><td>Closing the loop (phase 5)</td><td>New</td><td>

Engagement with the company’s Senior Leadership Team (SLT) highlighted that delivering this improved service level in combination with a reduction in the frequency of power cuts will be very challenging. However, in order to respond positively to stakeholder feedback, SLT agreed that this was the right area to focus a headline commitment.

</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
This proposal influences financial benefits (cost savings) from reduced Interruptions Incentive Scheme (IIS) costs, which are shared with customers in the form of lowers bills. In addition, customers experience health benefits from the time they spend without power being reduced:

Reducing stress during an outage (per hour)
Reduction in outage time during power cut
Cost of a GP visit - General Medical Services activity
Reduction in negative impact of cold weather on customers' health
Customers feel in better control of their lives

In line with our 20% reduction headline performance commitment, we have modelled the benefit of 40,000 avoided hours lost per year.
To achieve this performance level, we estimate an incentive funded investment of around £14.5m.
The total net economic benefit per £ spent (SROI) through reducing the duration of power cuts is estimated to be (£0.47). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£6m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 59% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£12,273,642.34</td></tr>
<tr><td>Total gross present value</td><td>£15,296,079.19</td></tr>
<tr><td>NPV</td><td>£5,828,998.58</td></tr>
<tr><td>SROI</td><td>£0.47</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Almost all domestic customers (99%) and 95% of business customers understood this proposal. 85% of domestic customers and 87% of business customers were supportive with just 1% of all customers surveyed stating they did not support our plans. 96% of colleagues supported the proposal.

Benchmarking analysis

Electrcity North West's headline commitment to reduce Customer Minutes Lost (CMLs) by 20% in ED2 is the equivalent of 20 minutes (on average) off supply per year (down from 25 minutes.) This is superior to WPD's commitment of 24 minutes and NPg's target of 28 minutes. SSEN has set a 20% reduction target on baseline ED1 performance and SPEN a 10% reduction.

Implications for the Business Plan

Outcome description	Current performance
Reduce time off supply by 20% from 2021-2023 levels	27 minutes lost per year per 100 customers

Incremental cost of proposal	Target delivery date
No upfront allowances – payment on results only via Ofgem's IIS incentive mechanism	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
●	●	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	✓ (£0.85) L1 Ranked 1/12

Response	Supporting narrative	Read more at
COMPROMISE AREA **Constraint: efficient deliverability constraints**	**The overall time that customers are without electricity is expressed in Customer Minutes Lost. We commit to reducing this by a further 20% from 2021-2023 levels during the RIIO-ED2 period. The average time off supply will drop from 25 to 20 minutes a year (the equivalent of 60 minutes over a three-year period.)** This level of performance was strongly supported by customers in our Max-Diff 1 survey. It was also the most highly valued 'level 1' service attribute (out of 12) tested by households and businesses in a WTP survey. Although we observed support in our WTP survey for a stretch CML target of 15 minutes ('level 2'), the incremental value to customers of delivering this further ambition is smaller than that gained at level 1 vs. the status quo. This proposal interacts with investment to reduce the average number of power cuts (see B15). Deliverability constraints would make improving performance beyond the service levels proposed in these two proposals very challenging to achieve by 2028. During ED1, CMLs have been reduced significantly through the roll-out of network automation, in its different forms. Our focus is now on replicating successful initiatives across the network at scale, as cost-effectively as possible. Further collaboration and innovation will be required with specialist technology partners to trial different solutions	**Future business plan 2023-2028**: Benefit 16

	which deliver the required outcomes as efficiently as possible. This activity is likely to continue into ED3. Our proposal achieved very strong support from customers and stakeholders in Acceptability Testing. However, it still represents a compromise because some of our customers would prefer to see a more stretching level of performance.	

B17 No worst-served customers by the end of ED2

Formerly 'improving reliability for those with a poor service'

Service attribute tested in WTP was referred to as, 'Reducing multiple power cuts'

Headline level of support

98% of customers understood the proposal and 84% found it acceptable. It ranked 17th out of 41 proposals evaluated by customers and was the 3rd best performing reliability proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Re-frame proposal
84%	85%	**Final triangulation decision**
		Re-test with Plugged-In Panel

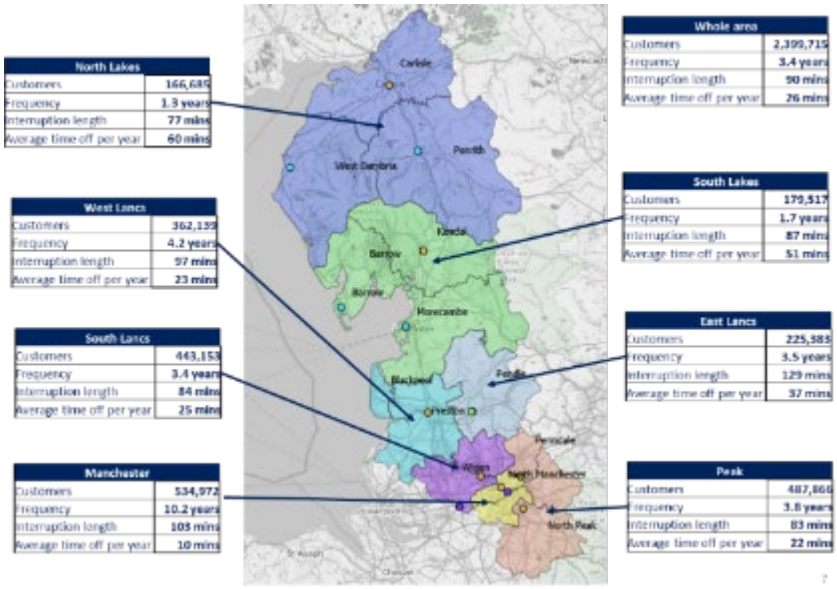
The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1	• We reviewed our 2019/20 **operational data** to understand the incidence of multiple interruptions. 133,063 customers experienced more than one high voltage interruption during this time, equating to 6% of properties and 33,502 customers experienced more than one low voltage interruption – the equivalent of 1% of all properties served. • Among the customers experiencing more than one interruption, approximately 50,000 meet Ofgem's definition of multiple interruptions (2% of all properties served in the north west) • Analysis of **customer complaints** received during ED1 indicates that the root causes are largely associated with the disruption caused by either single or repeat power cuts. Our 2020/21 data revealed that 13% of customer complaints were in relation to multiple interruptions.
	Action taken: Further engagement was undertaken to understand the relative importance of improving reliability for those with a poor service.	
Electricity in my life (phase 2)	15, 16	• In Electricity North West's large scale quantitative VoLL2 Customer Survey, funded under the Network Innovation Allowance, customers told us that the *fairest* approach to network investment is delivering an equitable average level of reliability across the north west (87% agreement). Focusing investment in worst-served areas (81%) was also considered to be important. • The importance of an equitable service provision across the region was tested in a quantitative '**Max-Diff 1' survey**. Although agreeable at a conceptual level, *'equalising power cut performance*' was ranked 17th out of 24 proposals tested. This ranking was consistent across most stakeholder segments analysed. ○ The same exercise was repeated with our **CEO Advisory Panel** and the initiative ranked 22nd, indicating a shared view that it is not a priority. • The appeal of reducing instances of customers having multiple power cuts was also tested in the Max-Diff 1 survey**.** The proposed service level was 25,000 customers experiencing 3 or more power cuts per year (down from 50,000). The attribute ranked 4th, receiving a similar level of support to reducing the average duration of power cuts. The implication of this is that the most important kind of 'levelling up' is improving reliability for poorly served customers.
	Action taken: Further engagement was undertaken understand the optimal balance between improving reliability by a small amount, for a large number of customers, compared to larger improvements for a smaller number of customers.	
Our plan for the future (phase 3)	33	• At our three sub-regional, open access **stakeholder events** (Greater Manchester, Lancashire and Cumbria), participants were provided with granular information on the electricity network in their region, including local power cut performance. • 53% of stakeholders said we should improve reliability by a small amount, for a lot of customers with the remaining 47% preferring to improve reliability a lot, for a small number – *the implication is that we should do both*.

Triangulation	Insights	How feedback shaped the proposal



- We asked our CEO Advisory Panel to take part in the same Max-Diff 1 exercise as customers and members ranked, 'reducing instances of customers having multiple power cuts' first.
- In a quantitative **WTP survey** two improved service levels were tested alongside the current level of service provided in ED1:

Attribute	Current	L1	L2
Reducing multiple power cuts	**50,000 customers** (*out of a population of 2.4 million*) have 3 or more power cuts per year	**35,000 customers** have 3 or more power cuts per year	**25,000 customers** have 3 or more power cuts per year

- Level 1 was ranked 10th (out of 12) by households and 11th by businesses. Level 2 was ranked 9th by households and 9th by businesses.
- WTP monetary values at the 80th percentile is included in the table below. The results only achieved statistical significance for household customers.

80th percentile	L1 – 35,000	L2 – 25,000
	Per bill payer, per year	
Household	£0.09	£0.49
Businesses	-0.02%	0.04%

- WTP results indicate that households prioritise this proposal below improvements in the frequency and duration of faults (which benefit a larger population), but above targeted improvements for customers in vulnerable circumstances and/or fuel-poor customers.

Action taken: Despite not achieving statistical significance among business customers, our proposal to reduce multiple power cuts was taken forward based on the strength of the domestic WTP results

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
This proposal influences financial benefits (cost savings) from reduced Interruptions Incentive Scheme (IIS) costs, which are shared with customers in the form of lowers bills. In addition, customers experience health benefits from the time they spend without power being reduced:

Reducing stress during an outage (per hour)
Reduction in outage time during power cut
Cost of a GP visit - General Medical Services activity
Reduction in negative impact of cold weather on customers' health
Customers feel in better control of their lives

We have modelled the benefit of 22,359 avoided hours lost per year.
The total net economic benefit per £ spent (SROI) having no worst-served customers by the end of ED2 is estimated to be (£0.21). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£4m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 34% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£16,859,398.82</td></tr>
<tr><td>Total gross present value</td><td>£11,191,680.64</td></tr>
<tr><td>NPV</td><td>-£3,613,912.67</td></tr>
<tr><td>SROI</td><td>-£0.21</td></tr>
</table>
*
</td></tr>
<tr><td></td><td colspan="2">Action taken: Up until this point in our programme the ‘poorly served’ proposal had focused on customers experiencing multiple interruptions – the basis of Ofgem’s GSOP Regulation 10 – multiple interruptions.

Given that this is an existing standard and doesn’t act as a trigger to address the cause of the underlying issue, our thinking moved on to other measures to address ‘poorly-served’ customers. This itself was then superseded by Ofgem revising (broadening) the Worst Served Customer definition, at which point it made sense to adopt the Ofgem definition.

Looking back to the start of ED1 and assessing all those customers who would have qualified had the new Ofgem definition been in place at that time and had not been subsequently addressed by other schemes led to our revised outcome description.

This could effectively mean that we have addressed all the customers who would’ve qualified under the new definition in ED1, i.e. we would have zero qualifying customers.</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Nearly all customers surveyed found this proposition clear and understandable (98% domestic and 97% business). Support for our plans in this area was consistent across both customer groups (84% domestic and 83% business), with just 1% of domestic customers and 2% of business customers disagreeing with the proposal. 98% of colleagues participating in the survey supported this proposal.

Benchmarking analysis – draft plans

Electrcity North West's proposal to support 3,770 Worst-Served Customers and a further 27,785 customers on the same circuits is a relatively strong proposition compared to SPEN (n=2,400) and NPg (n=2,400) on number of WSC supported. WPD (n=8,620) and SSEN (n=12,000) quote bigger volumes but serve comparatively larger networks.

Implications for the Business Plan

Outcome description	Current performance
No worst-served customers by Ofgem's broader more stretching target, by the end of ED2	Only DNO to achieve no worst-served customers under previous definition
Incremental cost of proposal	**Target delivery date**
£20m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
●	●	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	✓

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints**	There is still a significant minority of customers, predominantly in rural areas, served by networks with a performance that is worse than the average. Our customers and stakeholders want us to improve the levels of service we provide to those in more exposed parts of our network. This is evidenced in our Max-Diff 1 survey, household WTP results and engagement with our Stakeholder Advisory Panel members. **In response, we will deliver a targeted programme of enhancements to improve the reliability of the poorest performing parts of the network**. During our engagement programme our thinking has evolved on how best to deliver improvements to those 'poorly served' and which definition should be applied.	**Future business plan 2023-2028**: Benefit 17

	Our refined investment proposal will benefit 3,770 Worst-Served Customers (adopting Ofgem's definition[9]) and a further 27,785 customers on the same circuits for a cost of £20m over RIIO-ED2. We were the only DNO to achieve no worst-served customers in ED1 and we will continue to achieve this in line with the new broader stretching definition by the end of ED2. As part of this programme, we are committing to delivering a minimum 50% performance improvement across the 26 specific circuits. The map below indicates the rurality of the site selection.  The changes made to this proposal effectively sacrifice a direct read-across to the proposition tested in WTP.	

B18 Improving reliability for those in vulnerable circumstances

Service attribute tested in WTP was referred to as, 'Improved reliability in areas of vulnerable customers'

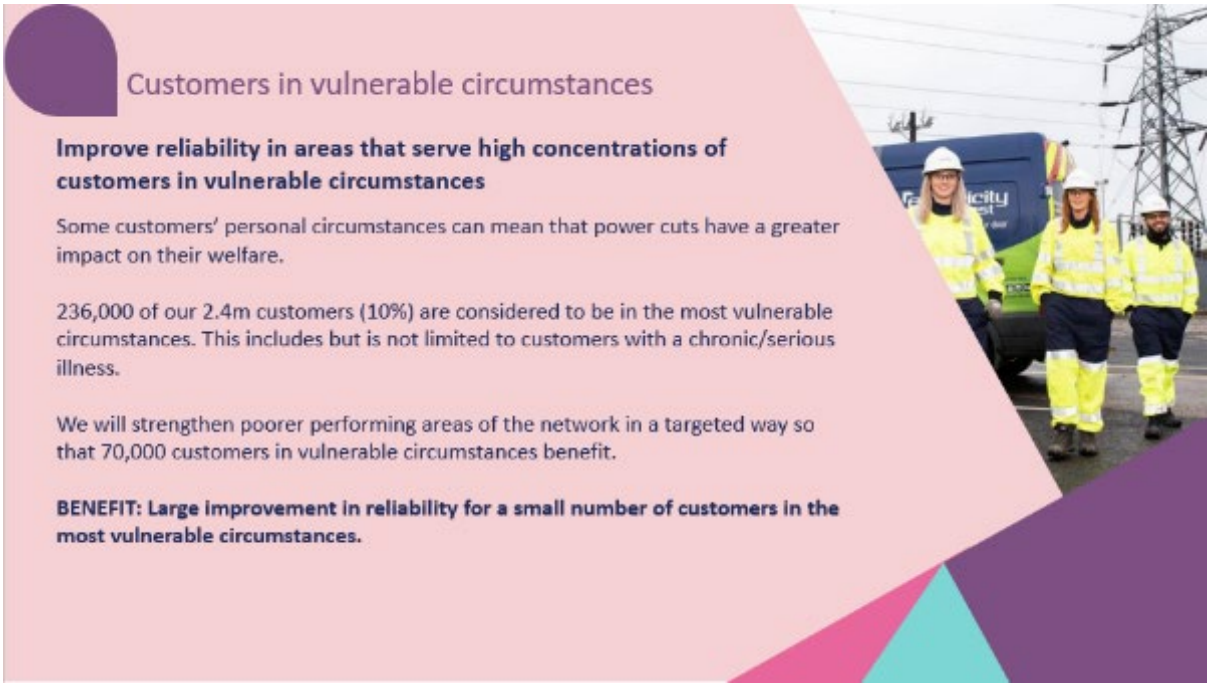
[9] In RIIO-ED1, a worst-served customer is one who experiences 12 or more higher voltage unplanned interruptions over a three-year period, with at least three higher voltage interruptions each year

Headline level of support

99% of customers understood the proposal and 88% found it acceptable. It ranked 5th out of the 41 proposals evaluated by customers, representing the highest performing reliability proposal.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
88%	90%	**Final triangulation decision**
		Compromise

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and the proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	1	• A literature review of ED1 customer research, including qualitative in-depth interviews and quantitative market research highlighted that power cuts have a disproportionate impact on customers in vulnerable circumstances who have a heightened need for support services. • Electricity North West's original the Value of Lost Load research (VoLL 1) concluded that a uniform VoLL significantly undervalues the needs of specific customers (notably the fuel-poor, vulnerable, and early adopters of low carbon technologies) whilst others are over represented, driving potentially inefficient investments. VoLL is substantially higher (+85%) for fuel-poor customers.
	Action taken: Further engagement was undertaken to understand the appeal of a proposal to improve network reliability for specific customer segments.	

Triangulation	Insights	How feedback shaped the proposal
Electricity in my life (phase 2)	17	• A VoLL WTP survey and subsequent VoLL 2 research into fair charging indicate that customers support approaches that prioritise investment to improve the reliability of the service provided to vulnerable customers. The needs of those who are vulnerable take precedence over the needs of low carbon technology LCT users (both current and future users). This WTP pay for additional investment to benefit specific groups is conditional on *adequate* supply reliability being maintained for all other groups.
	Action taken: We identified a need to engage further on the tension between bill payers prioritising investment towards customers in vulnerable circumstances and the VoLL 1 survey highlighting that fuel-poor customers arguably have the greatest need (high VoLL).	

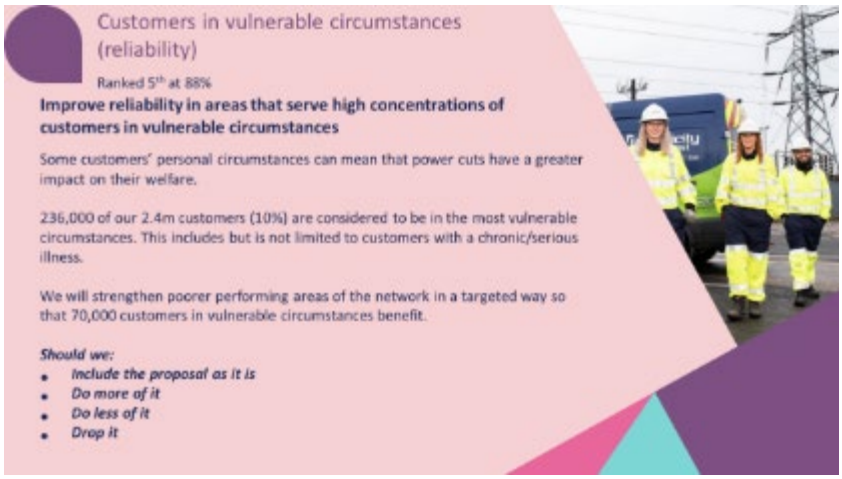
Our plan for the future (phase 3)	33	• In three sub-regional **engagement events**, stakeholders were asked which two groups are most deserving of targeted network investment
		  • Poorly served customers
		  • Those in vulnerable circumstances
		  • Those in fuel poverty
		  • Those using low carbon technology
		  • Those without access to a mains gas supply
		  • Those with below average reliability.
		• Fuel-poor customers was the stand-out preference (56% preference share) with the rest of the vote being relatively evenly distributed, with the exception of those with below average reliability, which was attracted less support.
		• **This feedback conflicted with what we heard in other forums**. Our Plugged-In Public Panel supported finite resources being used to prioritise 1) customers in vulnerable circumstances, then 2) poorly served customers. Our CEO Advisory Panel prioritised poorly served customers. **We decided to trade-off these important investment options in WTP research.**
		• In a quantitative **WTP survey** two attributes and improved service levels were tested alongside the current level of service provided in ED1:

Attribute	Current	L1	L2
1. **Improved reliability in areas of fuel poverty**	All customers are **treated equally** in terms of reliability of the network, with no targeting of investment to those most in need.	Improve reliability of the network, targeting communities so that **35,000 customers** in fuel poverty benefit	Improve reliability of the network, targeting communities so that **70,000 customers** in fuel poverty benefit
2. **Improved reliability in areas of vulnerable customers**	All customers are **treated equally** in terms of reliability of the network. Improvements are prioritised in areas where the greatest overall benefit will be achieved	Improve reliability of the network, targeting communities so that **35,000 customers** in the most vulnerable circumstances benefit	Improve reliability of the network, targeting communities so that **70,000 customers** in the most vulnerable circumstances benefit

- **Attribute 1**: Level 1 was ranked 12th (out of 12) by households and 11th by businesses. **Level 2 was ranked 11th by households and 8th by businesses**.
- **Attribute 2**: Level 1 was ranked 11th (out of 12) by households and 8th by businesses. **Level 2 was ranked 12th by households and 9th by businesses**.
- This means that improving reliability in areas of fuel poverty is marginally preferred to the alternative proposal.
- WTP monetary values at the 80th percentile is included in the table below. The results were statistically significant with the exception of L1 in both attributes for business customers.

1. Fuel poverty 80th percentile	L1 – 35,000	L2 – 70,000
	Per bill payer, per year	
Household	-£0.28	£0.35
Businesses	0.01%	0.10%
2. Vulnerable customers 80th percentile	**L1 – 35,000**	**L2 – 70,000**
	Per bill payer, per year	
Household	-£0.26	£0.15
Businesses	-0.02%	0.07%

- In the quantitative research the first level of improvement produced a negative WTP value among customers, indicating they valued it less than the current level of service, signifying an expectation that all customers should be 'treated equally' – this was found to be a socially desirable outcome in our qualitative customer research.
- This means that improving reliability in a targeted way for 35,000 customers would be perceived, on average, as a detriment in service. However, a more substantive proposal of supporting 70,000 customers was valued more positively. The difference between level 1 and level 2

Triangulation	Insights	How feedback shaped the proposal
		indicated to us that the quantum of customers supported was likely to be an important driver of acceptability.
	Action taken: Cognisant of an overlap between consumers in vulnerable circumstances, fuel-poor households and those poorly served, we decided to keep the focus of this proposal on consumers in vulnerable circumstances (in the broadest sense). Further engagement was undertaken to look at the package of support services in the round, for instance more direct methods of helping customers who are struggling financially.	
Sweating the detail (phase 4)		• The proposal included in **Acceptability Testing** was aligned to the most improved level of service tested as part of WTP (benefitting 70,000 customers). In the survey some businesses told us that targeting 70,000 customers didn't go far enough and that we should consider increasing our ambition.
	Action taken: Further to positive feedback in **Acceptability Testing**, our **WTP survey** and SROI analysis we added more detail to this popular proposal and included it in our **Business Plan Consultation** to understand appeal for expanding ambition even further.	
Closing the loop (phase 5)	New	• We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.  o 74% felt it should be included in our early draft business plan in its current format, 18% voted in favour of increasing our ambition (accepting this would have a higher bill impact) and 8% suggested dropping it from the plan entirely (fearing it is impractical to target improvement in this manner and that it might be too much at the expense of other customers). • In our **early draft business plan consultation** 82% of Plugged-In Public Panel members submitting responses felt that the existing proposal is sufficiently ambitious in its current format. By comparison 44% of Online Community representatives called for even greater ambition.
	Action taken: We decided to retain the same level of ambition and undertook analysis internally to determine the optimal methodology for selecting localised networks with relatively high concentrations of vulnerable consumers.	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

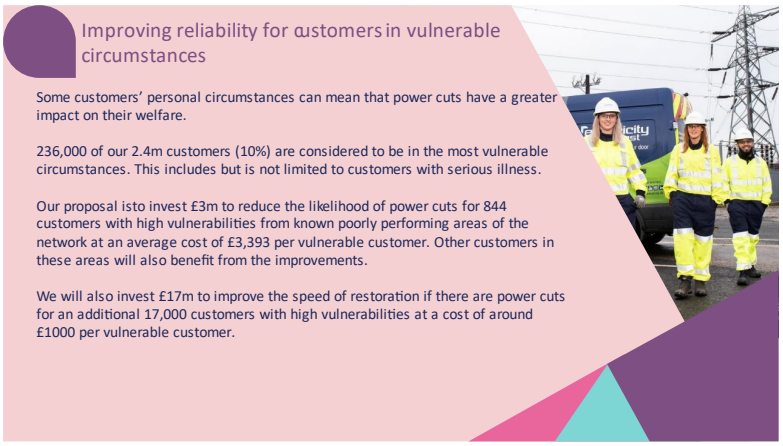
Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
This proposal influences financial benefits (cost savings) from reduced Interruptions Incentive Scheme (IIS) costs, which are shared with customers in the form of lowers bills. In addition, customers experience health benefits from the time they spend without power being reduced:

Reducing stress during an outage (per hour)
Reduction in outage time during power cut
Cost of a GP visit - General Medical Services activity
Reduction in negative impact of cold weather on customers' health
Customers feel in better control of their lives

We have modelled the benefit of 9,343 avoided hours lost per year.
The total net economic benefit per £ spent (SROI) through improving reliability for those in vulnerable circumstances is estimated to be (£0.52). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£9m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 17% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£16,522,210.84</td></tr>
<tr><td>Total gross present value</td><td>£6,631,834.48</td></tr>
<tr><td>NPV</td><td>-£8,673,551.28</td></tr>
<tr><td>SROI</td><td>-£0.52</td></tr>
</table>
*

In its 10th meeting the Plugged-In Public Panel discussed in their breakout groups the merits of this investment.



Initially, members were broadly in favour of the idea of supporting customers in vulnerable circumstances. However, as they were able to dig further into the detail, by asking members of staff from Electricity North West follow up questions, greater reservations came out about whether this would be an effective use of money. Some members also voiced concerns

</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		about both fairness and efficacy of this investment, citing, difficulties in targeting the right people, low returns on investment and potential blind spots of the records Electricity North West is able to keep. *"As explained as individual customers cannot be targeted for this work many of the people benefitting will not be vulnerable so with the need to reduce spending I feel this is an area which is not essential for the relatively high cost."* • However, some were less concerned about potential shortcomings of the proposal and emphasised the importance of the outcome it was trying to achieve over the potential cost. • Whilst members took different views about which aspects of the proposed spending might be most important, there was a consistent theme of doubt about the need to spend everything that was proposed, particularly given the context of looking to reduce costs. *"I agree with the investment of £3m in poorly performing areas, as it is only fair that all customers receive the same high level of service and those with high vulnerabilities should not be at increased risk because of a poor network. Additionally, all people in those areas will benefit from the investment. However, from discussions around the £17m investment, it was apparent that network performance was generally very high in most regions across the North West and vulnerable customers were currently supported very well during a power cut. In addition, those using vital medical equipment were likely to have a contingency plan in place if the electricity failed. As such, I do not think the £17m spend is justified."* • Overall, only 22% felt that the amount proposed to be spent on this was correct, with 9% thinking it should be more, whereas a combined 55% felt less money should be spent on this proposal.

Nuances in perspectives between stakeholder groups

98% of all customers surveyed found this proposal clear and understandable. A high number of domestic customers (91%) supported our plans, compared to 83% of business customers, while just 1% of all customers disagreed with the proposal. 94% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

Electrcity North West's proposal to improve reliability in areas that serve high concentrations of vulnerable customers is a differentiator as other DNOs have not included a comparable offering.

It was picked out by Maxine Frerk, director at Grid Edge Policy and a former Ofgem partner, in a Utility Week article: *The ED2 business plans: What's not to like?*

Implications for the Business Plan

Outcome description	Current performance

Improved network reliability for customers where there is a high incidence of customers in vulnerable circumstances	Investments for 56 key sites only (hospitals etc.)
Incremental cost of proposal	**Target delivery date**
£20m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
	●	●	◕	◕	◓	◔

Priority stakeholder groups engaged: Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓(x-1)	✓	✓ (£0.15) L2 ranked 12/12

Response	Supporting narrative	Read more at
COMPROMISE **Constraint: efficient deliverability constraints**	Our social data mapping suggests that 236,000 of our 2.4m customers (10%) are in the most vulnerable circumstances. This includes but is not limited to customers with a chronic/serious illness. These customers can be impacted disproportionately by a loss of power. In ED2 we will complete a targeted programme of network investments intended to reduce the duration of a future unplanned supply interruptions for groups of customers with known high vulnerabilities, fed from known poorly performing parts of the network. This investment will total £16.6m and benefit 16,617 highly vulnerable customers and an additional 30,954 PSR customers, giving a combined reach of **47,572 vulnerable customers**. Our proposal will also reduce the likelihood of a future unplanned supply interruptions for groups of customers with known high vulnerabilities, fed from known poorly performing parts of the network. This investment will total £3m and benefit 844 highly vulnerable customers and an additional 1,690 PSR customers, giving a combined reach of **2,534 vulnerable customers**. **In total 162,673 connected customers will benefit from these investments, of which 50,106 are vulnerable (31%).** Our investment forms part of a more holistic vulnerability	**Future business plan 2023-2028**: Benefit 18

	strategy, where interventions tackle the causes of vulnerable circumstances, as well as the symptoms. Improvements will be achieved through network automation, introducing remote control to distribution substations and the availability of alternative sources of supply, by which to restore power, if there is a fault. The total reach of this proposal represents a mid-point between the two levels of ambition appraised by customers in WTP. As such, it signifies a compromise. Deliverability constraints exist in efficiently being able to target electricity circuits that have high concentrations of vulnerable customers (as a proportion of all connected customers) that also have a positive cost-benefit ratio. In our decision-making we have consciously opted to target improvements at primarily highly vulnerable customers. This segment of customers has the greatest dependency on a reliable electricity supply and therefore experience the greatest detriment during a loss of supply. However, we estimate that between 12% to 16% of customers on selected circuits are fuel poor and will also benefit. We have developed alternative support mechanisms more tailored to the needs of fuel poor customers. These include, but are not limited to: • B11 Supporting customers in fuel poverty • CVP1: Smart Street: Reducing cost and carbon for customers.	

Output 3 Measuring and reporting short power cuts

This proposal was not included in Acceptability Testing.

DNOs are currently required to report to Ofgem the number of momentary outages (known as Short Duration Interruptions (SDIs)) to customers' properties per year and more specifically; the number of customers affected by power cuts lasting less than three minutes per 100 customers per year.

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	18	• During internal workshops colleagues were encouraged to identify proposals that could be researched, costed and potentially included in the ED2 business plan. An incentive on short duration interruptions was identified by colleagues, some of whom suspected that this was the industry's direction of travel and would be the right thing to do.

Triangulation	Insights	How feedback shaped the proposal
		• As part of the strategy work on Ofgem's ED1 price control, the appropriateness of including new incentives to reduce SDIs as part of the price control was considered. However, Ofgem's justification was that "*stakeholder feedback indicated a preference for reducing the duration of interruptions over reducing the number of interruptions*," and the decision was taken not to introduce an incentive. • Ofgem's Safety, Reliability & Resilience Working Group met in May 2020 and discussed current thinking on SDIs. Ofgem stated that the quality of data in this area is still considered to be poor so it is unclear how performance has changed over time and hence how any associated incentive would be set. Ofgem expressed a view that customer expectations in this area are unclear and need to be explored further. Ofgem's proposal was to improve the quality and consistency of short interruptions reporting in ED2 and focus on service improvement in ED3.
	Action taken: We identified a need to understand consumers' preferences regarding SDIs.	
Electricity in my life (phase 2)	18	• A report released by Engerati suggested that the problem of SDIs – or 'blinks' as they are commonly known by consumers – has become so commonplace that they have become accepted as "normal." Chris McCarthy, Managing Director of S&C Electric Company in the United States said: "*The problem is that outage reduction in Britain has been driven by regulation, but there is no regulation on momentary outages. Also, because consumers often consider momentary outages acceptable, utilities are not motivated to invest money to improve this service*". • In a **Max-Diff 1** survey, 'Reduce the frequency of short duration power cuts that last up to 3 minutes' was appraised against 23 other proposals. It ranked 18th, indicating a relatively low overall importance. This supports Ofgem's original findings that customer preference is for reducing the duration of longer interruptions than the frequency of SDIs.
	Action taken: In recognition of this output being relatively less important to customers than other proposals designed to deliver a reliable network, we developed a proposal which will improve national reporting (and benchmarking) of SDIs and in doing so lay the foundations for performance improvement in ED3 (to be reviewed again in future engagement).	

Nuances in perspectives between stakeholder groups

In the Max-Diff 1 survey the majority of customer segments closely followed the average ranking of SDIs with two notable outliers: 18-29-year olds and those that said their electricity supply is vital ranked it 10th. 18-29-year olds ranked improving short duration interruptions above investment in reducing multiple interruptions (15th), the average duration of unplanned interruptions (19th) and the frequency of power cuts (20th).

Benchmarking analysis – draft plans

Electrcity North West's proposal to develop a reporting framework is in line with the majority of DNOs draft plans. Here, UKPN is an outlier, committing to achieving a 10% reduction in the number of short interruptions experienced per customer in ED2.

Implications for the Business Plan

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●			◕			

Priority stakeholder groups engaged: Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
			✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	As the country becomes more reliant on electricity, we recognise the increasing impact of any power cut, regardless of the length. **We will work with other network operators to develop a reporting framework for short interruptions to help us establish new ways of monitoring and ultimately addressing them.** The benefit will be accurate and consistent measurement across the country to determine whether any new standards should be introduced. • Although currently we have observed a lack of customer support for further ambition in this area, we will continue to engage with customers and stakeholders throughout ED2 regarding their priorities, our performance and consider whether new intelligence we gather should disrupt our strategy.	**Future business plan 2023-2028**: Benefit 18

3.2 Building a resilient network

Example customer and stakeholder input to this priority area

Phase 1

- We continuously engage with our **Stakeholder Advisory Panels** to develop our plans and set challenging targets to deliver our stakeholders' strategic priorities, "Keep our customers lives running" is one of them. This priority remains important with 88% of stakeholders who attended our summer 2020 sub-regional advisory workshops telling us that it was important to invest in improving network reliability further. Our Chief Executive Advisory Panel also recognised reliability as an important issue and noted the inconvenience of short duration interruptions, particularly to businesses.

Phase 2

- Our **Plugged-In Public Panel** told us that with the increase in extreme weather and flooding that building resilience into the network must become a bigger priority moving into the future. They felt it would improve Electricity North West's long-term efficiency and would have a positive impact on other priorities, particularly the reliability of the network and environmental concerns.

Phase 3

- There was a strong emphasis on building up resilience against cyber-attacks which were viewed by our **Plugged-In Public Panel** as a serious threat due to the potential impact if they were to happen. Improving the resilience of the network to new and more frequent forms of cyber-attacks was seen as a worthy investment.

Phase 4

- Through our **Acceptability Testing** qualitative focus groups, customers told us they approved of a proactive approach to safeguard the network against external threats.

- Our **Local Resilience Forums** (comprised of an expert panel of emergency responders, including local authorities, emergency services, utilities and NHS providers) allowed us to conduct specific, focussed engagement on our resilience plans, with those best placed to provide constructive feedback. The members emphasised the need for us to target investment in protecting the network against foreseeable threats such as bad weather.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing** our resilience proposition received consistently strong support among customers (86% of domestic customers and 85% of business customers). A very small proportion found the proposals unacceptable (2% domestic and 3% business), either because of cost, believing the proposals should already have been implemented or because they felt the targets do not justify the increase in cost.

Nuances in stakeholders' views

- Support for our resilience proposition was higher among the digitally disengaged (96%) than online customers (86%). In our **Segmentation**, customers belonging to our 'Time to Care' segment were significantly more likely to find our proposition acceptable (96%). By comparison 'Busy Busy Busy' and 'Living for Today were least accepting of the proposition (scoring 76% and 73% respectively).

- All members of our **CEO Stakeholder Advisory panel** found our proposals on this theme to be clear and understandable although some stated they required more information on the exact details. Most (87%) found the proposals to be acceptable although nearly a third (31%) indicated that some aspects were missing from the propositions such as better communication, cyber security and investment in areas of reliant economies.

- **Plugged-In Public Panel** members were supportive of our focus on climate change, noting the importance of investing in measures to account for the impact of environmental changes such as the anticipated increased prevalence and severity of storms. They were also particularly supportive of our proactive approach to vegetation management and flood defences, although some felt these initiatives could be linked to environmental objectives, such as planting trees to help balance carbon emissions.

- **The Local Resilience Forum** reviewed the specific propositions under this theme. All attendees at the forum agreed that overall, our proposals for resilience are acceptable, comprehensive and well-constructed.

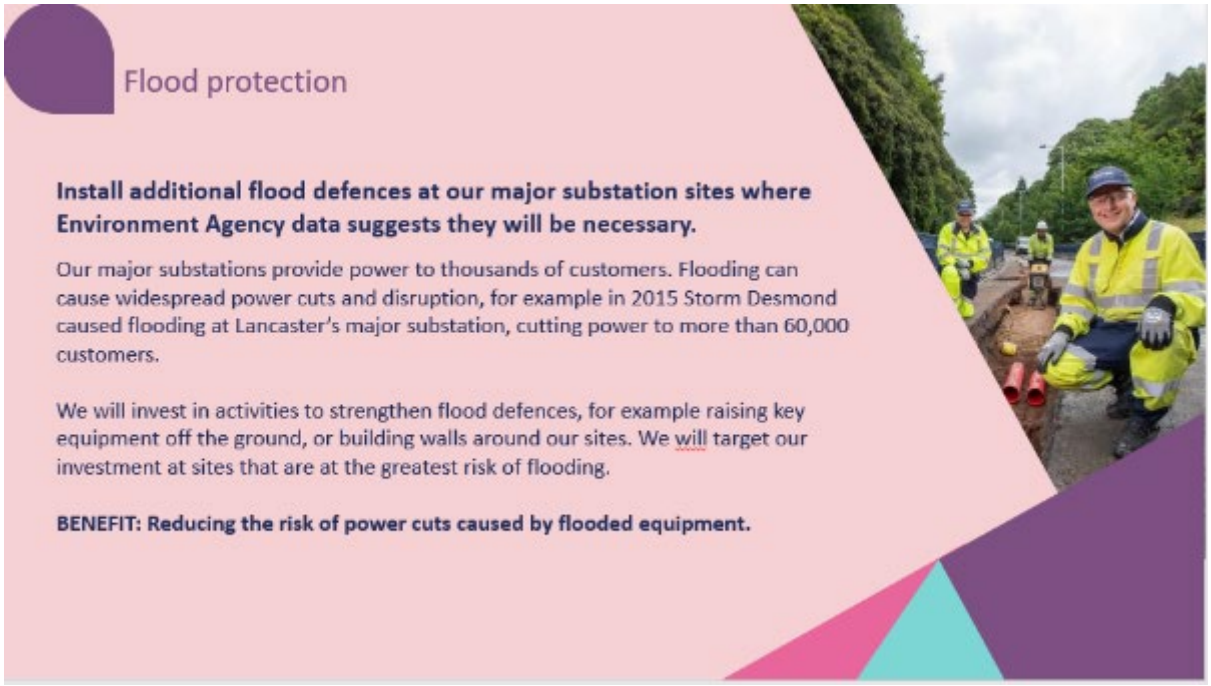
B19 Improving flood protection

Headline level of support

99% of customers understood the proposal and 86% found it acceptable. It ranked 10th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
86%	88%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	9	• A representative sample of consumers taking part in quantitative **Segmentation** research ranked resilience as their lowest priority, with a third putting it in last position. A similar outcome was observed in our **Priorities Research** where it ranked 7th out of a list of ten priorities. In the research resilience was strongly associated with responding to extreme events such as flooding in addition to tree-cutting programmes to ensure falling trees in high winds don't impact overhead power lines.
	Action taken: We identified a need to delve deeper into customers' preferences to understand which components of resilience, if any, are most in need of investment.	

Triangulation	Insights	How feedback shaped the proposal
Electricity in my life (phase 2)	28	• Reducing the vulnerability of networks to storms, particularly in rural areas – was ranked 2nd overall in a **Max-Diff 1 survey** (out of 24 proposals) indicating strong appeal. • In March 2020 as part of a BEIS Public Attitudes Tracker[10], the most common impact of climate change people said they had noticed in the last few years was rising sea levels or more flooding (51%). This figure has increased markedly since March 2019 when 31% cited this as an impact. The most common expected impacts over the next 15 to 20 years were consistent with perceived current impacts: 61% mentioned rising sea levels or more flooding (up from 56% in March 2019).
	Action taken: In response to demand for reducing the vulnerability of rural networks to storms we planned further engagement to understand why this is important to customers and how it could be achieved.	
Our plan for the future (phase 3)	52	• In its first meeting, the **Plugged-In Public Panel** concluded building a resilient network would improve our long-term efficiency and would have a positive impact on intersecting priorities, particularly the reliability of the network and environmental concerns. *"Building a stronger network saves time, money and emotional distress in the long run."* ○ In a subsequent meeting convened with the Plugged-In Public Panel, members were presented with a range of potential investments, including an indication of the likely impact on bills. Out of the 12-network related investments, "*improving flood defences at major sites to minimise the risk of disruption during storms*" ranked 4th, attracting 12% of the vote. Discussion here focussed on the wider issue of climate change bringing an increased risk of flooding and severe weather events. Many felt that this growing risk had been previously ignored or treated as a 'once in a lifetime' event, but that this could not remain the case and that the network needed to be future-proofed. *"In Lancaster, we were really affected by Storm Desmond in 2015 and people don't register how reliant on electricity we are until flooding cuts that off. You can't get cash from ATMs when there is no electricity and other things we're so reliant on."* • Our **Youth Engagement**, future customers expressed a desire during deliberative engagement to see a moderate increase on existing investment levels, to factor in uncertainty surrounding the impact of climate change in the short term. *"We should invest as much as economically possible. When we look at the big picture it will cost more in the future when climate change hits and we have more storms etc. If we invest now, we can save lives."* • In **bilateral meetings** with Lancashire stakeholders, they reported being satisfied with the investment the company had made during ED1 in in an

[10] BEIS Public Attitudes Tracker - GOV.UK (www.gov.uk)

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>innovative solution to raise a primary substation, located next to a river. This was badly damaged by flooring during Storm Desmond in 2015 and caused significant disruption to supplies over several days. Stakeholders told us our approach had re-build trust and confidence but suggested there was a need to replicate this strategy and install additional flood defences at our major substation sites where emerging data suggests flood resilience measures will be necessary.</td></tr>
<tr><td></td><td colspan="2">Action taken: We developed a proposal for installing additional flood defences at our major substations at greatest risk and included this in Acceptability Testing.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td>New</td><td>• In a bilateral meeting with United Utilities (UU) we heard a need for cross-utility collaboration to be expanded. UU suggested a review of ongoing resilience challenges, a joined-up approach to influencing relevant bodies (i.e. infrastructure boards), proactively building resilience into spatial planning and planning policy and sharing lessons learned from innovation projects. Flooding was one of the key topics shortlisted for ongoing monitoring.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• The societal benefit modelled is the avoided cost of a major flooding incident, leading to prolonged power cuts (up to 24 hours). The probability of this happening is assumed to be 1 in 100 years.
• The total net economic benefit per £ spent (SROI) through improving flood protection is estimated to be £115. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £350m.
• Societal benefits account for 99% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£3,034,691.79</td></tr>
<tr><td>Total gross present value</td><td>£298,431,251.13</td></tr>
<tr><td>NPV</td><td>£350,153,667.09</td></tr>
<tr><td>SROI</td><td>£115.38</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Action taken: The proposal we included in Acceptability Testing referenced targeting investment at sites with the greatest risk of flooding. However, it didn’t quantify the scale of the problem.

In ED2, we will build on the work completed to date, by improving flood defences to our highest voltage substations serving more than 10,000 customers, in line with the recommendations of the National Flood Resilience Review and also addressing sites newly identified as at risk based on the latest Environment Agency flooding data.

In our draft business plan, we included the following quantification:

This programme will increase flood protection to 15 existing substations and install defences at 21 newly identified as at risk serving 345,000 customers at a forecast cost of £3.6m

A review of our operational data subsequently led to the following amendment:</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
	This programme will increase flood protection to 3 existing substations serving approximately 39,800 customers and install defences at 32 substations newly identified as at risk, serving an additional 863,000 customers.	

Nuances in perspectives between stakeholder groups

The majority of attendees at a bespoke Local Resilience Forum found the proposals clear (88%) and all found the detail of the proposition acceptable. Although some asked for more clarity on how we will prioritise sites, the timescales involved and how we propose to ensure close liaison with local resilience forums. Transport for Greater Manchester asked specifically about bus and rail interchange sites which are at risk of flooding.

Almost all customers surveyed as part of our research found this proposition clear (97% domestic and 98% business). Support from both groups was similarly high at 86% for domestic customers and 85% for business customers. A small number of all customers (2%) did not agree with our plans. 93% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Electricity North West's draft business plan proposal lags the level of ambition observed in other DNOs plans, however this reflects differences in the scale of the problem to be solved.

The programme for flood protection at major sites (n=32) will be considerably smaller in ED2 because the largest and highest risk sites have already been protected. It exceeds NPg's (n=13) but lags SSEN (n=73) and WPD (n=72).

Implications for the Business Plan

Outcome description	Current performance
Protect 36 sites from risk of flooding in a 1 in 100-year storm event	All sites protected to current standards based on previous data
Incremental cost of proposal	**Target delivery date**
Total cost of £3.6m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, government departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay

		✓ (x115)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve (the largest and highest risk sites have already been protected)**	In ED2, we will build on the work completed to date, by improving flood defences to our highest voltage substations serving more than 10,000 customers, in line with the recommendations of the National Flood Resilience Review. This means implementing defences at sites identified as vulnerable through new data and by continuing our programme to improve flood defences to high voltage transformers. **This programme will increase flood protection to 3 existing substations serving approximately 39,800 customers and install defences at 32 substations newly identified as at risk, serving an additional 863,000 customers.** Its completion means that all our major substations will be protected to at least 1/100-year flood risk, including assumptions on future climate change impacts. Our ED2 programme for flood protection is smaller than our existing programme (and the investment proposed by some of our regional DNO counterparts) because the largest and highest risk sites have already been protected.	**Future business plan 2023-2028**: Benefit 19

No. of Primary substations	Customers	Costs (£m)	Comment
3	39,812	0.3	Substations flood protected in prior or current periods and need improvement
32	862,791	2.9	Newly identified substations requiring new flood mitigation works
35	902,603	3.2	

B20 Improving our management of trees near overhead lines

Headline level of support

98% of customers understood the proposal and 85% found it acceptable. It ranked 14th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
85%	88%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	56	• The **Plugged-In Public Panel** were presented with 11 environmental themed investment options. A proposal to '*proactively cut dead or dying trees that may impact overhead lines, instead of waiting for the landowner to do so'* was ranked 3rd, attracting 13% of preference share. In break-out discussion groups customers said that it is a necessary and important activity and should be proactively pursued. ○ When discussing our vegetation management proposal, customers us customers how many trees we cut down. This resulted in a challenge that if we continue to cut down trees, without replanting new ones, were we having a negative effect on the environment and carbon reduction. ○ When members were asked, '*How important is it to you that Electricity North West does more to reduce the environmental impact when they cut down trees* (recognising that doing more would likely have an impact on increasing bills a little)?' 78% indicated they thought it was important (33%) or very important (45%). Only 6% thought it unimportant or very unimportant. *"Trees play an important role in the wildlife in this country, so whilst it is essential for the network not to be damaged from trees, there needs to be a balance that protects biodiversity."* *"When a tree is cut back, another should be planted as swiftly as possible."*
	Action taken: Understanding the importance of biodiversity to our customers, we updated our vegetation management proposal to include a commitment to plant a new tree every day of	

Triangulation	Insights	How feedback shaped the proposal
	the year throughout ED2. This commitment was included whilst further analysis was undertaken internally to forecast the number of trees impacted in an annual cycle.	

Closing the loop (phase 5)	New	• Further research with our arborist teams showed that we did not have a reporting framework to measure the number of trees cut; we have traditionally measured our work by spans of overhead line cleared (the distance between two wooden poles constituting one span).
		• Our **operational data** indicated that the number of trees felled per area differs greatly, therefore, we decided to align our tree planting pledge with the number of spans requiring a physical intervention, per year. This will be easy to track using existing processes and will allow for the target to be adjusted each year, dependant on the number of spans cleared in the previous year. There will be some spans where trees have not been felled – they will simply be pruned or coppiced so will grow back. These spans compensate for those spans where multiple trees have been felled.
		• We aim to clear 16000 spans per year between now and the end of ED2. Of these 16000 spans, we will physically intervene on approximately 60% (the remainder are reclassified by an experienced arborist who decides that intervention is neither necessary or appropriate).
		• There are also a further 8,400 spans (1680 p.a.) where we anticipate intervention due to ash dieback. Ash dieback felling is only just starting to be required and is expected to significantly increase over the course of ED2.
		• In summary:
		  ○ BAU 16000 x 0.6 = 9600 p.a.
		  ○ Ash dieback = 1680 p.a.
		  ○ Total: 11,280 spans p.a.
		• We have since updated our reporting practices and our proposals commit us to planting or funding the planting of 10,000 trees in our region a year, enough to replace every tree we fell.
		
		*
		
		• We heard that GMCA announced plans for 3 million new trees to be planted in the city area over the next 25 years, one for every city inhabitant. We looked at how we could support this activity using our own land and entered into a new partnership with City of Trees, which has led us to donate two sites for tree planting, leveraging the newly granted Defra fund[11] (Trees for Climate). Up to 800 trees will be planted at these two sites and we are now reviewing the feasibility of donating other sites and offering volunteering opportunities to our staff for next year's planting.
		• We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings. 55% felt it should be included in our early draft business plan in its updated format (see below), 37% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact) and 8% suggested decreasing our ambition.

[11] 500 hectare planting boost for England's Community Forests - GOV.UK (www.gov.uk)

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td> 

In our early draft business plan consultation 86% of Plugged-In Public Panel members voted in favour of adopting the improved proposal to plant 10,000 trees for year. Online Community representatives agreed with 91% opting for no changes to our revised commitment.</td></tr>
<tr><td></td><td colspan="2">Action taken: We updated the proposal that achieved 89% in Acceptability Testing to include a more ambitious commitment on tree planting.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures the benefits arising from the economic value of air pollution filtration, storm water attenuation, and carbon sequestration. This has been measured from the existing trees in greater Manchester. We assume this applies to new trees planted.
The total net economic benefit per £ spent (SROI) through tree planting is estimated to be (£0.07). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£30k). This is likely to be influenced by the short time period benefits are modelled over and a cautious cost estimate.
Societal benefits account for 49% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£431,474.31</td></tr>
<tr><td>Total gross present value</td><td>£340,000.15</td></tr>
<tr><td>NPV</td><td>-£30,093.69</td></tr>
<tr><td>SROI</td><td>-£0.07</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

The clear majority of Local Resilience Forum attendees (96%) found this proposal easy to understand and found the detail acceptable. One attendee questioned if planting one tree a day is enough to

offset the number of trees that we cut back. Others suggested we need to improve communications with customers about our plans and make it easy for them to notify us of any issues. It was also suggested we should engage with local authorities to co-ordinate tree-planting and feed into their climate emergency strategies.

97% of all customers surveyed clearly understood this proposal. While 89% of domestic customers support our plans, fewer business customers (79%) agreed. 1% of all customers were unsupportive. Anecdotal feedback collected from businesses who were ambivalent about the scheme suggested the tree planting commitment lacked ambition. 100% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Electricity North West and SSEN are the only DNOs to make formal tree planting commitments in their draft business plans.

Implications for the Business Plan

Outcome description	Current performance
Enhanced tree management dealing with Ash Dieback and ensuring fewer tree-related faults due to storms	Compliance with current standards
Incremental cost of proposal	**Target delivery date**
£1.5m per year plus £3m per year for Ash Dieback (proposed to be managed under Uncertainty Mechanism)	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, government departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint:**	Our teams of trained tree cutters and surveyors will increase inspections of vegetation near overhead lines in ED2, and work collaboratively with landowners to prune, fell and dismantle more trees at risk of damaging our network. Our ambition has been aided by a change to our processes where the same inspectors will check the	**Future business plan 2023-2028**: Benefit 20

The scale of problem to solve	condition of the cable, pole and conductor in parallel with assessing whether trees are close to overhead lines or climbable. Combining the two work programmes means that they will be delivered more quickly, and risks proactively mitigated. In response to feedback from the Plugged-In Public Panel we have also reviewed the number of trees that we cut down during our proactive vegetation management activities. While most trees are pruned or coppiced by our skilled arborists, some trees do need to be fully cut down. Due to the need to fell diseased trees affected by Ash Dieback, during ED2 we may have to cut down up to 10,000 trees a year. We are planning to replace the same number of trees that we cut down in ED2.	

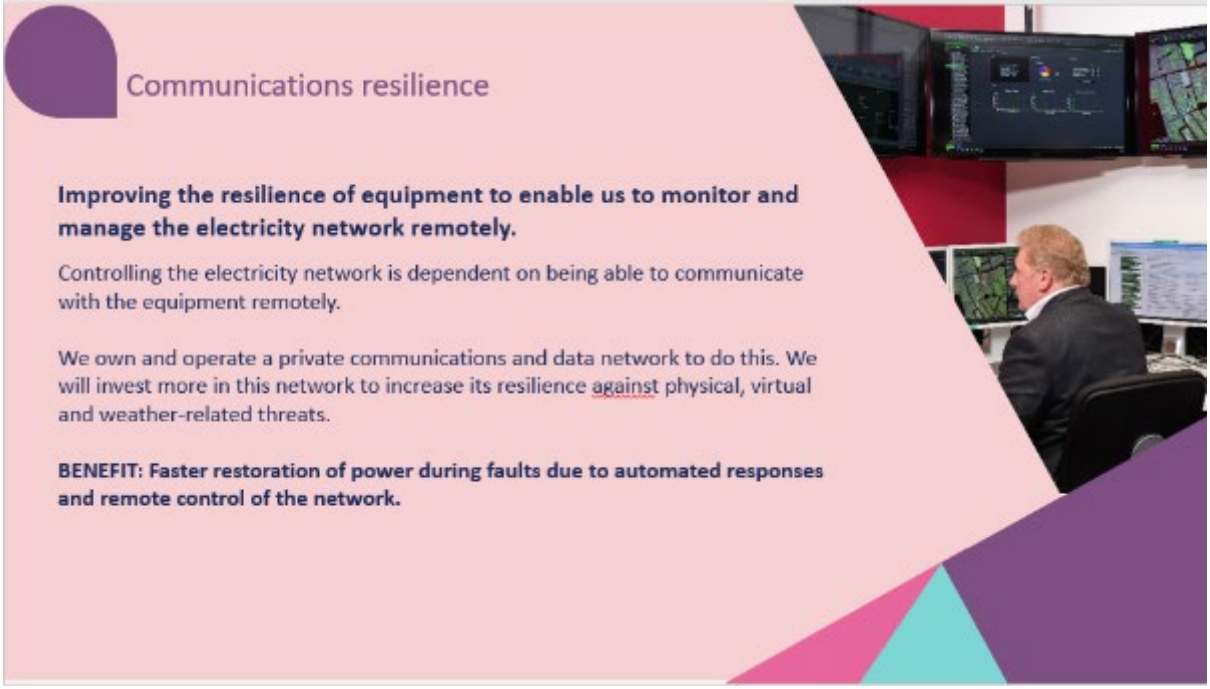
Output 4 Improving telecommunications resilience

Headline level of support

96% of customers understood the proposal and 89% found it acceptable. It ranked 3rd out of 41 proposals evaluated by customers and is the highest performing resilience proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
89%	91%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	8	• In a qualitative phase of **Priorities Research** undertaken prior to a quantitative survey customers told us that we must mitigate the increased safety risk from both cyber and other forms of attack on our network and systems.
	Action taken: We engaged with industry stakeholders via the Open Networks Project and the Gas Futures Group and participated in a sub-group focused on the digitalisation of the networks and particularly network data, across both electricity and gas.	
Electricity in my life (phase 2)	27	• Through our involvement in the Open Networks Project we heard that to maintain a safe service and manage changing patterns of electricity generation and demand, network operators will be increasing dependent on data. New technologies (5G, more use of Cloud services for data and analytics), will create opportunities as the Big Data environment evolves. • Network operators will need to make a step change transformation in both their data management capabilities and in their data management competencies, such as recruitment of data scientists and development of talent and expertise to provide data and determine quality. The transition to DSO will generate a requirement for more data, technology and skills.
	Action taken: We developed a proposal to increase investment in our private communications and data network to enhance its resilience to threats.	

Nuances in perspectives between stakeholder groups

The majority of Local Resilience Forum attendees (92%) agreed that this proposal was easy to understand, and all found the detailed propositions acceptable. Manchester City Council

commented that the detail was too vague as to warrant a security risk. Sellafield suggested that the benefits should be communicated to customers.

95% of domestic customers and 97% of business customers found this proposition clear. Support among domestic customers was very high at 90% compared to 87% of business customers. 2% of all customers disagreed with our proposals. 94% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis

WPD offers the most clarity in comparable proposals by stating it will invest £45 million in RIIO-ED2 to replace its existing telecoms system with a Private Long-Term Evolution network. By comparison it is not clear in Electricity North West's proposal what 'investing more in this network' means and how success will be measured.

Implications for the Business Plan

Outcome description	Current performance
Enhanced communications infrastructure resilience	Establishing internet protocol connections to all major substations
Incremental cost of proposal	**Target delivery date**
£1.5m	31 March 2028

£1m per year plus £3m per year for Ash Dieback

Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕		◓	◔

Priority stakeholder groups **engaged:** Current and future customers, government departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve**	**We will improve the resilience of equipment that enables us to monitor and manage the electricity network remotely from our central control room.** Although our engagement on this topic was not as extensive as other resilience proposals, it was sufficient to develop a proposal which received strong levels of support from customers and wider stakeholders in our Acceptability Survey. In addition, a comprehensive evidence base already exists in favour of customers valuing faster supply restoration during faults due remote control of the network and automatic restoration systems – key benefits of this proposal.	**Future business plan 2023-2028**: Output 4

	Our ambition in this area has only been constrained by the scale of the challenge to be solved.	

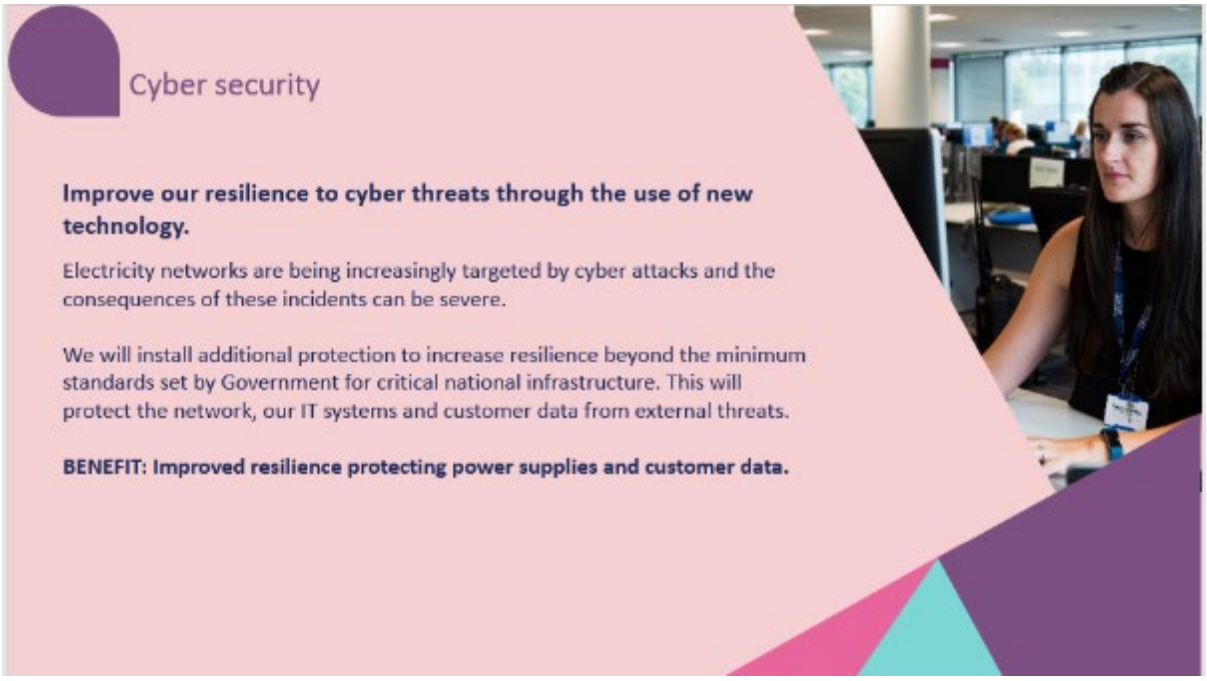
B21 Increasing cyber resilience

Headline level of support

98% of customers understood the proposal and 82% found it acceptable. It ranked 23rd out of 41 proposals evaluated by customers and was the lowest performing resilience proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
89%	91%	**Final triangulation decision**
		Proceed with current ambition

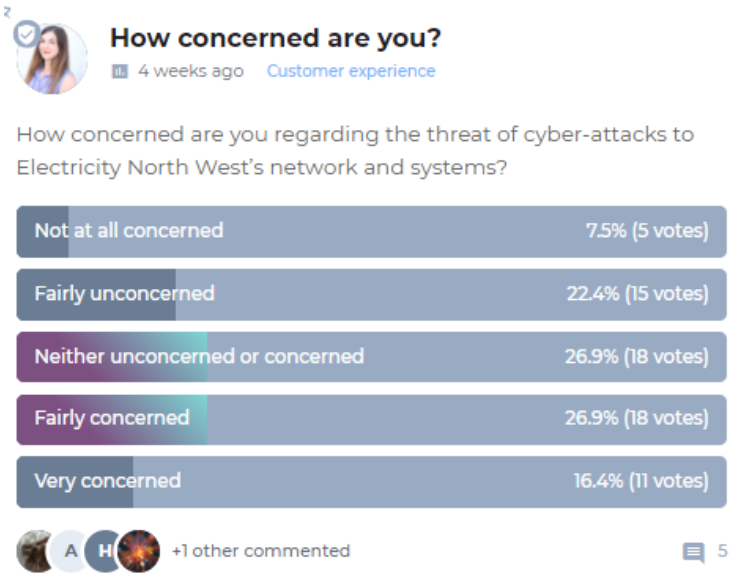
The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	8	• In the qualitative phase of our **Priorities Research** 'security' was considered to be an important investment priority, with reference to protecting the network from terrorist attacks.

Triangulation	Insights	How feedback shaped the proposal
		"I think security and counter terrorism because if they take that system out then we are in trouble" (Kendal, ABC1, 55+)". *"Cyber security is not simply personal data being at risk, losing overall control of the ability to balance supply and demand of power to businesses and communities, is also not beyond the realms of possibility here"*
	Action taken: We planned further engagement with customers and wider stakeholders to understand the relative importance of investment in enhanced cyber security.	
Electricity in my life (phase 2)	New	• In a **Max-Diff 1 survey**, '*mitigating the safety risk to the electricity network from cyber-attacks'*, was traded-off against 23 competing proposals and ranked 12th, indicating moderate importance. • **Online Community** members took part in a discussion thread and a series of polls regarding cyber resilience. Overall, the majority of members had not experienced a cyber or data breach of any kind in the last year (88%). ○ Members were asked how concerned they were regarding the threat of cyber-attacks to Electricity North West's network and systems. Overall, 43% voted that they were concerned, with 27% voting that they were neither unconcerned or concerned. Comments in response to this poll suggested the panel though it was likely that cyber-attacks will happen in the future, but they trusted us to have robust plans in place to deal with such events, should they happen.  ○ Members were guided through the key components of our cyber security management approach and were asked whether they trust us to mitigate the risk posed by cyber-attacks both now and in the future. Overall, the majority (89%) voted that they did trust Electricity North West and felt that we would be prepared to deal with such an event if it were to happen. ○ Members were asked whether they would be willing to pay more to enable additional investment in cyber protection that exceeds industry standards. Overall, 33% voted that they would be willing, with 36% voting that they would not be willing to pay more, and the

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>remainder were indifferent. Some members commented that they felt cyber protection is something that we have a duty of care to provide without passing the cost on to customers.</td></tr>
<tr><td></td><td colspan="2">Action taken: We planned further engagement with our Plugged-In Public Panel to understand how informed customers trade-off the importance of cyber security against other priorities.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>40</td><td>• The Plugged-In Public Panel debated the various changes that may be required in consumer behaviour as part of the energy transition. The idea of automating processes (via third party apps or smart hubs like the Amazon ‘Alexa’) so that household devices e.g. washing machine automatically operate at times of low network demand created a significant degree of nervousness among some participants because of the risk of cyber-attacks.

“[I’d] worry about who the controlling 3rd party was, risk of cyber-crime, what details would they hold on my household’s activities?”

○ In a separate meeting the panel were presented with contextual information for 12 network themed investment proposals, one of which was, ‘further improve our protection against cyber-attacks.’ The initiative was ranked 6th, attracting 9% of the preference share for investment prioritisation.</td></tr>
<tr><td></td><td colspan="2">Action taken: We completed a self-assessment using the Cyber Assessment Framework[12] (CAF) to inform our medium-term cyber security improvement plan. The proposal we developed for inclusion in Acceptability Testing reflected our customers and wider stakeholder’s preference that we enhance resilience beyond the minimum standards set by government.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• The societal benefit modelled measures the average cost of a cyber-attack in the energy sector in 2021 (average cost of a data breach per record is £116). The estimated success of our investment is based upon the likelihood of a cyber-attack occurring and the length of time it would cause disruption for. It also assesses the health benefits to customers derived from reducing the likelihood that a cyber-attack would cause a power cut. The average cost of a data breach per record was informed by an IBM data breach report 2021. These benefits were then assessed against the incremental costs across the 5-year period of RIIO-ED2.
• Overall the SROI assessment for ‘Increasing cyber resilience’ was assessed as having a total economic benefit per £ spent (SROI) of circa £10, making it a relatively strong performing investment proposals for social return on investment in our ED2 plan, with an overall net present value assessment of circa £118m.
• The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="2">Economic</td><td>Total cost</td><td>£12,138,767.15</td></tr>
<tr><td>Total gross present value</td><td>£110,264,701.29</td></tr>
</table>
</td></tr>
</table>

[12] https://www.ncsc.gov.uk/collection/caf/cyber-assessment-framework

Triangulation	Insights	How feedback shaped the proposal
		[redacted]

NPV	£118,357,569.21
SROI	£9.75

Nuances in perspectives between stakeholder groups

Most Local Resilience Forum attendees found our cyber security proposals to be clear (96%). All attendees found them acceptable and recognised the increasing importance of these measures. Manchester Fire Service asked if we consider internal threats as well as external as these could potentially cause as much damage. The value of continuous colleague training to raise awareness of threats and best practice sharing, and benchmarking was pointed out.

The vast majority of customers understood the details of our cyber security plans (96% domestic and 99% business). At 82% this proposition received the lowest overall score under the resilience theme (83% domestic and 81% business). 1% of domestic customers and 3% of business customers did not support this proposition. 85% of colleagues participating in the survey perceived the proposal to be acceptable.

Benchmarking analysis – draft plans

WPD are proposing to reduce the risk of data loss or network interruptions by assessing emerging threats and enhancing their cyber security systems. WPD is also proposing to enhance the resilience of their IT network by threat monitoring, prevention, detection and alerting systems.

NPg provides the most detail on intended outputs:

- Invest in technology that helps to identify weaknesses in IT systems and quickly detects attacks
- Cyber specialist training for all their workforce
- Invest in automated event response technology to quickly respond to cyber attacks
- Achieve recertification for ISO27001 and ISO27019
- Design and implement core OT systems and major substation network sensors
- Implement an OT cyber specialist training programme
- Implement EDR on core systems

Success measures include loss of information and loss of supply.

Implications for the Business Plan

Outcome description	Current performance
Comply with requirements of Network and Information System Regulations	Completed self-assessment under new Cyber Assessment Framework
Incremental cost of proposal	**Target delivery date**
£14.4m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data

●		●	◕	◕	◓	◔

Priority stakeholder groups engaged: Current and future customers, government departments, cyber resilience forums, emergency services – resilience, other utilities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x10)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve**	Our Cyber Assessment Framework has informed our medium-term cyber security improvement plan. This sets out the steps we plan to take in ED2 and beyond to comply with the regulations and exceed them. The incremental cost of our proposal is £20m and this will ensure that we comply with requirements of Network and Information System Regulations. Our ambition is only constrained by the requirements set out in current standards and as these evolve we will adapt our plans. The performance of our proposal in Acceptability Testing is a testament to the high level of support that exists among customers and wider stakeholders for enhanced cyber security resilience. We will take appropriate and proportionate technical and organisational cyber security measures to manage risks and minimise the impact of incidents affecting these systems. The benefit of this investment includes avoided costs (e.g. of business recovery) and the societal impact of power supply interruptions	**Future business plan 2023-2028**: Benefit 21 Annex 10: Cyber Resilience Plan

Improving storm resilience (removed from our final business plan because this outcome is achieved from a range of other investment proposals such as tree management, flood protection and LineSIGHT. It has been retained in Annex 01 for openness and transparency)

Service attribute tested in WTP was referred to as, 'Enhanced storm resilience'

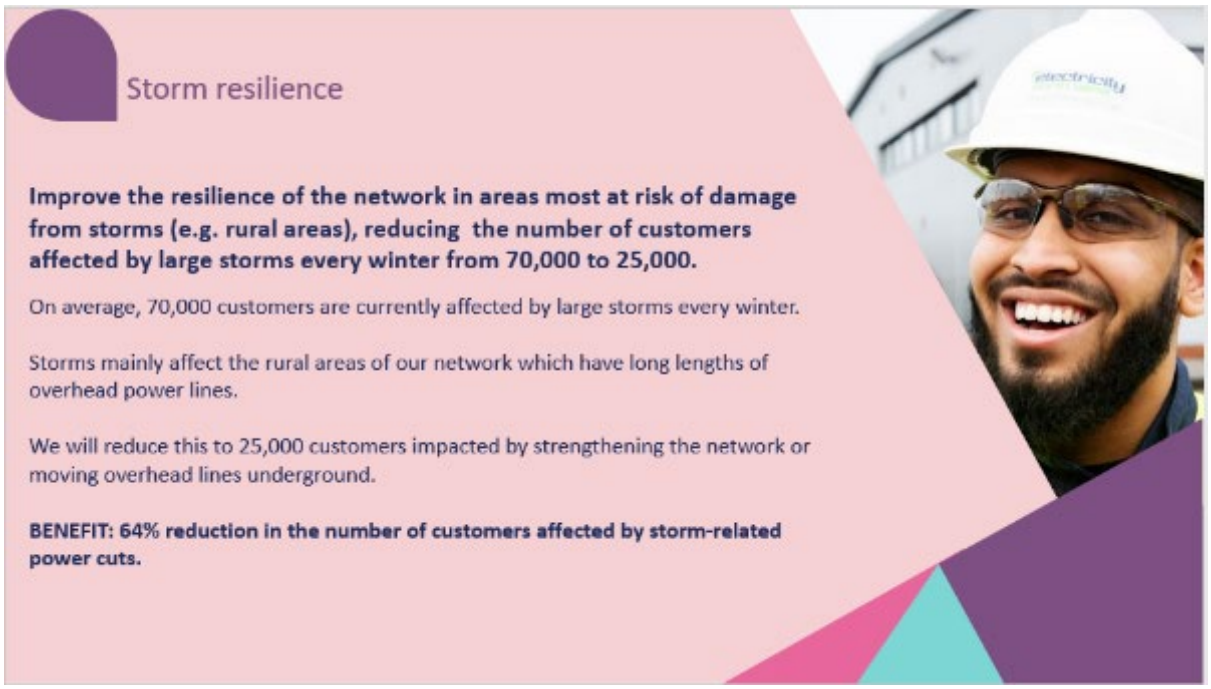
This proposal was superseded by the climate resilience strategy as it covers similar ground in terms of preparedness for more frequent extreme events but fits in in with the wider adaptation theme rather than as an isolated proposition.

Headline level of support

97% of customers understood the proposal and 88% found it acceptable. It ranked 6th out of 41 proposals evaluated by customers.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
88%	87%	**Final triangulation decision**
		Compromise

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	9	• A representative sample of consumers participated in quantitative **Segmentation** research. On average resilience was ranked as their lowest priority, with a third of respondents putting it in last position. • A similar outcome was observed in our **Priorities Research** where it ranked 7th out of a list of ten priorities. In the research resilience was strongly associated with responding to extreme events such as storms.
	Action taken: We identified a need to delve deeper into customers' preferences to understand which components of resilience, if any, are most in need of investment.	
Electricity in my life (phase 2)	28	• Reducing the vulnerability of networks to storms, particularly in rural areas – (by proactively strengthening or moving powerlines underground that are at risk to storms) was ranked 2nd overall in a **Max-Diff 1 survey** (out of 24 proposals) indicating strong appeal. • In March 2020 as part of a BEIS Public Attitudes Tracker 32% said they had noticed more extreme events such as storms in the last few years. We

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>triangulated this perception with our operational data which showed that in the last year storms such as Ciara, Dennis and Jorge had caused power cuts over the winter on a significant scale.</td></tr>
<tr><td></td><td colspan="2">Action taken: We planned further engagement to identify a monetary consumer valuation for reducing the vulnerability of rural networks to storms.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>52</td><td>

Plugged-In Public Panel members were presented with a range of potential investments, including an indication of the likely impact on bills. Out of the 12-network related investments, “Improve resilience of rural areas to storms by putting power lines underground” ranked 5th, attracting 10% of the vote. The increased frequency of severe weather events was referenced in relation to this option. Additional points raised included:

it is investing to prevent problems occurring in the future;
it helps ensure that everyone gets a similar network reliability performance across the whole of the North West;
it also has environmental and visual amenity benefits.

Reducing the vulnerability of networks to storms was tested in WTP research. In an initial qualitative phase of research, customers were sensitive to the implication that trees may be widely cut down as part of a maintenance programme. Therefore, it was clarified that trees are predominantly cut back to protect overhead lines and that in the future the company expected to increase proactive vegetation management due to expected higher tree growth rates and the impact of Ash Dieback disease. Customers also wanted to know how many people would likely be affected by power cuts because of storms, rather than how many storms could occur.
In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:

<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Enhanced storm resilience</td><td>Rolling programme to maintain powerlines and cut back trees in their immediate vicinity which means that, on average, large storms will cause 70,000 customers to be impacted by power cuts over a winter period, per year</td><td>On average, large storms will cause 50,000 customers to be impacted by power cuts over a winter period, per year</td><td>On average, large storms will cause 25,000 customers to be impacted by power cuts over a winter period, per year</td></tr>
</table>

The results indicate that level 2 is likely to be the optimal investment tested. It attracted moderate support from household customers ranking 7th, above other targeted network investments such as areas of high fuel poverty, or where there are greater concentrations of vulnerable consumers. However, the same is not true for businesses; with both levels of improvement ranking 12th. Unlike the domestic WTP survey results, those reported for businesses did not reach statistical significance indicating weaker/ inconsistent support.

<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – 50,000</th><th>L2 – 25,000</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
</table>
</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		Household £0.30 £0.49 Businesses 0.00% 0.03%
	Action taken: Despite not achieving statistical significance among business customers, our storm resilience proposal was taken forward based on the strength of the domestic WTP results, which have a higher weighting in our overall prioritisation.	
Submit and refine (phase 6)	**Action taken**: Further to Acceptability Testing, we investigated potential specific network resilience programmes for areas persistently impacted by storms, but analysis showed that the impacts are relatively widespread and sufficiently rare in any location to make a targeted programme uneconomic. A package of measures was included in our draft business plan to improve resilience of the network to storms including flood protection, additional tree-cutting and Sentinel roll-out. No performance targets were included.	

Most members of the Local Resilience Forum (92%) agreed that our proposals in this area are clear and will improve resilience of the network. However, some members questioned if the proposals are achievable and if there was sufficient detail in our plans on how we will achieve our goals. Cumbria Police questioned how we will prioritise more vulnerable customers and premises. The question of the wider impacts of implementing the plan was raised such as road closures and the impact on landowners, and how this would be communicated to stakeholders.

In our customer survey, 98% of respondents understood this proposition. 90% of domestic customers were supportive of our plans compared to 85% of business customers. A small number were unsupportive (1% of domestic customers and 2% of business customers). One domestic customer stated that 25,000 customers is still too many. 97% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

A triangulation and benchmarking exercise of DNO draft business plans revealed that Electricity North Wests' proposal is an outlier in that it gives no indication as to how it will measure the outcome 'improved resilience' and doesn't provide a performance target.

SPEN commits to achieving the highest national storm resilience standard and customers not being affected for more than 36 hours. NPg details several outputs including 75% of its high voltage network being resilient to high winds (ETR132).

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
●	●	●	◕	◕		◔

Priority stakeholder groups **engaged:** Current and future customers, government departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Response	Supporting narrative	Read more at
COMPROMISE	We will improve the resilience of the network reducing the number of customers affected by faults associated with	

Constraint: Efficient deliverability constraints	large storms by: increasing our tree-management programme (B20), rolling out overhead line monitoring (B26) and delivering other reliability programmes (e.g. worst-served customers B17) to improve overall performance. This work will see fewer customers affected by power cuts caused by storms by 2028. We will report annually, to customers and wider stakeholders, on the number of customers affected by storms. Our current performance level is 70,000 people affected by large storms every winter, however, this figure is highly variable depending on the nature of the storm events. In our WTP research we heard that reducing the impact to 25,000 people affected by large storms every winter was a valued service improvement, but more so among household customers than businesses. We have investigated the potential for specific resilience programmes, targeted at networks persistently impacted by storms; however, analysis shows that the impacts are relatively widespread and sufficiently rare in any location to make a targeted programme uneconomic. In this respect our refined proposal reflects this efficient deliverability constraint and represents a compromise in our plan.	Annex 11: Climate Resilience Strategy

Output 5 Investing in Electricity System Restoration readiness

This proposal was not included in Acceptability Testing.

Electricity System Restoration refers to the process of restarting the network following a national shutdown. Our network is currently compliant to the standards for restoration set by government, but these have recently been reviewed to enable faster and more widespread restoration in these circumstances.

Investing in electricity system restoration readiness is driven by compliance with our licence obligations, which are mandated by Ofgem. Therefore, we didn't seek customer or stakeholder input to develop this proposal because we already knew it would need be delivered to a certain standard.

In the interests of openness and transparency we informed customers and stakeholders of the requirements we will need to fulfil in this area but did not actively pursue views.

Implications for the Business Plan

Outcome description	Current performance

Ensure compliance with new electricity system restoration resilience standards	Ensuring compliance with current electricity system restoration standards
Incremental cost of proposal	**Target delivery date**
Full cost of £6.2m	31 March 2028

Customer and stakeholder evidence sources £						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

Priority stakeholder groups **engaged:** Ggovernment departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Response	Supporting narrative	Read more at
COMPLIANCE **Constraint: Ofgem policy**	Electricity System Restoration refers to the process of restarting the network following a national shutdown. Our network is currently compliant to the standards for restoration set by government, but these have recently been reviewed to enable faster and more widespread restoration in these circumstances. We commit to delivering against these new standards. This will lead to increased costs for managing our control room operation but improving standards will give reassurance to customers that there is a robust emergency recovery process in place.	**Future business plan 2023-2028**: Output 5

B22 Maintaining resilience in a changing climate

This proposal was not included in Acceptability Testing.

We face many challenges in ensuring that we continue to deliver leading reliability standards in the face of changing climate patterns. These actions are typically described as 'adaptation' to climate change, as distinct from the measures being taken to mitigate or restrict the level of climate change.

Maintaining resilience in a changing climate is driven by an overall risk matrix for climate change impacts which forms a critical component of a Climate Change Adaptation report to Defra. We didn't seek customer or stakeholder input to develop this proposal because we already knew it would need be delivered in line with our 2021 Climate Change Adaptation report to Defra, setting out what we consider are the key medium and long-term impacts of climate change on the network.

In the interests of openness and transparency we informed customers and stakeholders of the requirements we will need to fulfil in this area but did not actively pursue views.

Implications for the Business Plan

Outcome description	Current performance

Implementing Climate Change Adaptation Strategy	Monitoring climate change effects
Incremental cost of proposal	**Target delivery date**
Included under other proposals	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

Priority stakeholder groups engaged: Ggovernment departments, environmental groups, emergency services – resilience, other utilities and regional local authorities.

Response	Supporting narrative	Read more at
COMPLIANCE **Constraint: The scale of problem to solve (overall risk matrix for climate change impacts)**	The 2015 Climate Change Adaptation assessment set out that the key risks related to the forecast increased frequency and severity of extreme events and so our plan is focused on continuing to improve the resilience of the network in this regard. Our measures described on flooding and tree-cutting show the increased work we will undertake to improve resilience in a changing climate.	**Future business plan 2023-2028**: Benefit 22 The actions we are taking to ensure our network is resilient to the future challenges of a changing climate are set out in further detail in our accompanying **Climate Resilience Strategy at Annex 11**.

3.3 Keeping our communities safe

Example customer and stakeholder input to this priority area

Pre-engagement phase

- During our 2019 sub-regional **stakeholder advisory workshops**, we were told that 'keeping our employees and customers safe' wasn't something that could be easily traded off.

- In a joint-DNO **WTP survey** we heard that we should run safety awareness and media outreach campaigns at relevant times, targeted to specific groups such as large landowners, like farmers, that have pylons or substations on their land.

Phase 1

- During our initial **Priorities Research**, customers told us that it should be Electricity North West's foremost priority to ensure the network is safe. During the initial qualitative phase of engagement (customer connection) they ranked 'delivering a safe network' as their top priority citing that safety should 'always come first' and that all other areas are reliant on an initial safe network.

Phase 2

- Members of our **Plugged-In Public Panel** emphasised that keeping employees and customers safe must be a priority in every aspect of our work, especially considering the potential dangers posed by electricity. Given the significance of the Grenfell disaster members also urged us to be proactive in de-risking high-rise buildings by deploying innovative 24/7 monitoring and circuit breaker technology.

Phase 3

- Stakeholder feedback obtained through one-to-one **bilateral meetings** complemented third party insights indicating our educational work should include a broader range of topics such as decarbonisation and sustainability, STEM skills and careers, targeting schools, college and university students to promote inclusivity.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing** our safety proposition achieved high acceptance among domestic customers (85%) and business customers (86%). A very small proportion felt the proposals were unacceptable (2% domestic and 3% business). The reasons given by this small minority ranged from cost, a perception that the proposals should already be implemented, poor value for money or that the proposals should not be our responsibility.

Nuances in stakeholders' views

- Domestic customers with a low social grade of DE (23%) were less likely to find our proposition very acceptable than those with a higher social grade.

- In our **Segmentation**, customers belonging to our 'Time to Care' and 'Time to Myself' segments were significantly more likely to find our proposition acceptable (93% and 89% respectively). 'Living for Today were least accepting of the proposition (70%).

- All members of our **CEO Stakeholder Advisory Panel** found our high-level proposals clear and understandable and all, but one found them acceptable. A small number of omissions were noted by three panel members including: understanding the role of social media, the impact of safety campaigns and educating customers on electrical safety in the home.

- **Plugged-In Public Panel** members were positive about our emphasis on safety, particularly the proactive cut-out inspection regime and the focus on safety in rural areas. They also expressed an appetite for our focus on safety education in schools, noting that educating children helps shape an informed population. Some questions were raised about costs associated with the establishment of a security operations centre and the cut-out inspection regime.

B23 Making electricity in high-rise buildings safer

Headline level of support

95% of customers understood the proposal and 89% found it acceptable. It ranked 4th out of 41 proposals evaluated and was the highest scoring safety proposition.

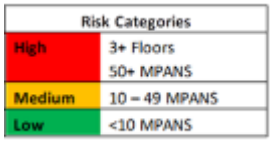
Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
89%	90%	**Final triangulation decision**
		Increase ambition further

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Relevant Insights	How feedback shaped the proposal
Customer connection (phase 1)	New	• A review of our **operational data** established that in 2019/20 our risk-based approach saw us invest £675,000 in the deployment of innovative WEEZAP circuit breakers to de-risk the electricity system in 2,259 dwellings within 31 high rise multi-occupancy buildings. This technology enables communal electrical cables at these properties to be monitored remotely, in real time 24/7 and for our control centre to received immediate notification of a current that could affect the buildings main fuse. • The societal benefit of this technology was demonstrated in January 2020, when it's operation helped to avert a major fault at a tower block in Trafford, Greater Manchester, when a water leak caused a fire in the

<table>
<tr><th>Triangulation</th><th>Relevant Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>electrical riser. We collaborated with Economic Insight to calculate the SROI of our investment in WEEZAPS. Based on this isolated incident alone our intervention delivered a SROI of £1,201,024.</td></tr>
<tr><td></td><td colspan="2">Action taken: We planned engagement with consumers on high-rise building safety.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td></td><td>• The Plugged-In Public Panel were presented with 12 potential network related activities that we could invest in to improve performance, including an indication of the likely impact on customer bills. ‘Replacing internal cables in high-rise buildings to prevent fire risk’ was ranked 3rd. Many members acknowledged that the Grenfell disaster had influenced their choice to prioritise this option as it highlighted the potential dangers for people living in high-rise accommodation, in the event of a fire.</td></tr>
<tr><td></td><td colspan="2">Action taken: We identified a need to review our operational data in order to determine the number of properties we could potentially de-risk in ED2.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td></td><td>• Our data indicated that we have 563 high-rise buildings in the region considered to be high-risk. Building surveys have been conducted to identify high risk buildings, taking into consideration the number of customers residing in the property, access and egress restrictions and the location of equipment.
 
<table>
<tr><th colspan="2">Risk Categories</th></tr>
<tr><td>High</td><td>3+ Floors
50+ MPANS</td></tr>
<tr><td>Medium</td><td>10 – 49 MPANS</td></tr>
<tr><td>Low</td><td><10 MPANS</td></tr>
</table>
• High risk buildings are further segmented into low/medium/high based upon the number of floors. Currently only high/high buildings have had WEEZAP technology deployed (52/563).
<table>
<tr><th>Building classification</th><th>Number</th></tr>
<tr><td>High/high (16+ floors)</td><td>52</td></tr>
<tr><td>Medium/high (11-15 floors)</td><td>111</td></tr>
<tr><td>Low/high (≤10 floors)</td><td>124</td></tr>
<tr><td>Third party (not our responsibility)</td><td>277</td></tr>
<tr><td>High Total</td><td>564</td></tr>
</table></td></tr>
<tr><td></td><td colspan="2">Action taken: We developed a proposal to expand monitoring communal electricity cables to medium/ high graded buildings (n=111).</td></tr>
<tr><td>Closing the loop (phase 5)</td><td>New</td><td>• We updated the Plugged-In Public Panel on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.</td></tr>
</table>

Triangulation	Relevant Insights	How feedback shaped the proposal
		 • 45% felt this proposal should be included in our early draft business plan in its current format, **47% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact)** and 8% suggested decreasing our ambition. • In common with the earlier engagement with the Plugged-In Public Panel, multiple members mentioned the Grenfell Tower fire in 2017. It was often referred to as an example of why high rise building safety was of particular importance. *"[It is] very important for Electricity North West to assume a leadership role - lots of publicity e.g. Grenfell … can't put a price on people's safety."* • In our **early draft business plan consultation** 57% of Plugged-In Public Panel members voted in favour of retaining the current proposal, with just 32% saying we should go further. By comparison 42% of Online Community representatives suggested keeping the proposal at its current level, however, 49% called for greater ambition. Stakeholder contributors recognised the additional social benefit that could be leveraged by expanding the programme, however, suggested this should not be progressed if it risks upsetting the overall balance achieved in investment across the plan, traded off against affordability to customers.
	Action taken: In response to the positive feedback and SROI of this activity we are reviewing the possibility of expanding the deployment of WEEZAP technology to low/high buildings (*n=124*) in addition to our existing proposal. This is an efficient way of leveraging our existing Rising Lateral Mains programme to add greater value for consumers and improve public safety.	

<table>
<tr><th>Triangulation</th><th>Relevant Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures the avoided societal cost of a fire occurring if there is a fault. The benefit calculation can be split into various components:

the cost of a fire in general
the weighted average cost of a fire depending on whether it occurs in commercial and residential building
the cost of having to call the fire brigade
the cost of injury or death caused by the fire
the value of property destroyed by the fire.

We started deploying innovative WEEZAP technology in high rise buildings in 2019. The technology has since detected two major faults prior to them developing (2019/20 and 2020/21). This is the equivalent to 1 fault avoided per year, so we can assume 5 in ED2. This is a cautious estimate as the likelihood of detection increases as the roll out of monitoring equipment is expanded.
The total net economic benefit per £ spent (SROI) through making electricity in high-rise buildings safer is estimated to be (£0.33). This investment proposal is below the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£2.8m). This is likely to be because of the short time period benefits are modelled over. Societal benefits account for 57% of the non-discounted costs and benefits modelled. The 5-year and 10-year reporting figures are:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£8,429,699.41</td></tr>
<tr><td>Total gross present value</td><td>£4,794,236.03</td></tr>
<tr><td>NPV</td><td>-£2,755,805.32</td></tr>
<tr><td>SROI</td><td>-£0.33</td></tr>
<tr><th colspan="3">10-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£8,429,699.41</td></tr>
<tr><td>Total gross present value</td><td>£8,192,960.14</td></tr>
<tr><td>NPV</td><td>£2,021,461.26</td></tr>
<tr><td>SROI</td><td>£0.24</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Understanding of this proposition was high among all customers (97% for domestic customers and 94% for business customers). Support for our plans was similar across both groups (90% domestic and 89% business). 4% of domestic customers and 3% of business customers did not support our plans. 94% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Electricity North West is the only DNO to be committing to the deployment of WEEZAPs in high-rise buildings, making it a relative strong component of the overall safety proposition.

A triangulation of other DNO draft plans suggested that to make the commitment on monitoring 'smarter', Electricity North West should consider including the number of residents who will be supported by this initiative (not just buildings).

NPg and WPD were silent on rising lateral mains. SPEN intends to support 70,000* residents and SSEN will spend £6m on its programme.

**N.B. needs to be interpreted within the context of number of MOBs within the region/ risk profile*

Implications for the Business Plan

Outcome description	Current performance
Installing electrical monitoring in 234 high risk high-rise buildings	Monitoring electrical risks in 52 highest risk high-rise buildings
Incremental cost of proposal	**Target delivery date**
Additional £10m on current levels	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, Members of Parliament, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x0)	✓	

Response	Supporting narrative	Read more at
EXCEEDS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve (now set to all buildings that we are responsible for)**	**This proposal ranked fourth out of all our proposals with 90% of customers saying it was acceptable. In response to the positive feedback and SROI of this activity we will expand deployment of WEEZAP technology to buildings which are considered:** • **medium/high risk (n=111)** • **low/high risk (n=123).** **This will mean that by 2028, 100% of consumers living in high-risk tower block buildings will have been reached.**	**Future business plan 2023-2028**: Benefit 23

Units	2019/20	2020/21	End of ED2
Cumulative buildings surveyed and protected with Weezap technology	31	50	287
Cumulative dwellings surveyed and protected with Weezap technology	2,259	5,928	23,773
Cumulative consumers living in (surveyed) high-risk dwellings protected with Weezap technology	4,292	11,263	45,169
Total number of (surveyed) high-risk buildings	287	287	287
% monitored	*11%*	*17%*	*100%*
Total number of (surveyed) high-risk dwellings	16,481	16,481	23,773
% monitored	*14%*	*36%*	*100%*
Total number of consumers living in (surveyed) high-risk dwellings	31,314	31,314	45,169
% monitored	*14%*	*36%*	*100%*

We will also continue our programme of rewiring buildings where inspections and monitoring indicate a potential safety risk. This proposal will maintain our embedded, successful model of stakeholder engagement.

Our Rising Lateral Mains programme is mature and was developed in consultation with relevant stakeholders including the Health and Safety Executive, Ofgem, Business, Energy and Industrial Strategy (BEIS), local authorities, private and social landlords and emergency services. We have refined a best practise model of stakeholder engagement that builds trust with residents in high-rise buildings by getting to know the community prior to, during and after works by:

- Attending residents' meetings, maintaining a visible presence during works and returning to address feedback head-on;
- Setting up an installation in a vacant property on-site, prior to commencing works, so residents can drop in to have a look at the work involved and ask questions;
- Sourcing tailored trunking that is in keeping with customers' homes; and
- Making every contact count by promoting registration to our PSR and provision of energy efficiency advice to reduce energy bills and tackle fuel poverty.

B24 Delivering safety campaigns

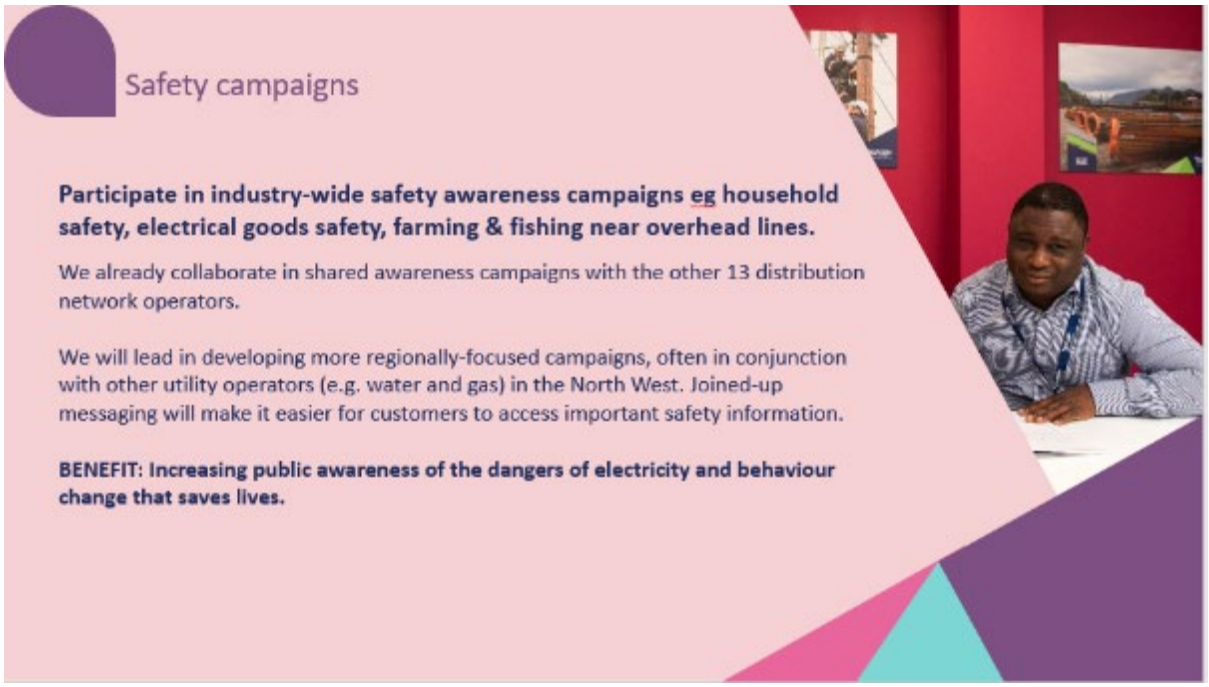
Headline level of support

94% of customers understood the proposal and 82% found it acceptable. It ranked 24th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation

Support for proposal in Acceptability Testing		Decision after Acceptability Test
		Final triangulation decision
82%	83%	Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	3	• In our **Priorities Research** raising awareness was the lowest ranked priority; however, 85% agreed it was important. • In a joint-DNO industry **WTP survey** (2020) customers in the North West said that they are willing to pay an additional £0.17 per year towards, *'targeted safety campaigns to specific groups such as large landowners, like farmers, that have pylons or substations on their land'* ○ In the same survey customers said that they are willing to pay an additional £0.41 per year towards, '*running safety awareness and media outreach campaigns at relevant times. This may include advertising, public shows and exhibitions, leaflets and school talks.'* ○ There were no statistically significant differences in the importance placed upon investment in safety awareness campaigns by consumers' social class, gender, age, geography or the existence of vulnerability.
	Action taken: We already collaborate in shared awareness campaigns with the other DNOs, coordinated through the Energy Networks Association, our representative national body. We developed a proposal for inclusion in **Acceptability Testing** to enhance these national campaigns by taking the lead in developing more regionally-focused campaigns, in	

Triangulation	Insights	How feedback shaped the proposal
	conjunction with other utility operators (e.g. water and gas) in the North West. Joined-up messaging will make it easier for customers to access important safety information. 	

Closing the loop (phase 5)	New	• We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.
		 
		  - 55% felt it should be included in our early draft business plan in its current format, 26% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact) and 18% suggested decreasing our ambition.
		  - Many members explained their support for this proposal by highlighting that a price could not be put on safety and that they thought this proposal was not likely to be particularly expensive to implement.
		• In our **early draft business plan consultation,** we asked, 'do you agree with us running these types of campaigns with partners, and do you have thoughts on the extent of such campaigns and how we could measure their success?' 86% of Plugged-In Public Panel members participating agreed with the current proposal, a similar level to that observed among Online Community representatives (84%). Other stakeholder contributors suggested targeting campaigns at young people and those most at risk including specific activities, e.g. farming. We heard that we should measure

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2"></td><td></td><td>our success based on the reduction in incidents achieved and/or number of schools visited /children educated about dangers that exist.</td></tr>
<tr><td colspan="2">Action taken: We identified a need to undertake more detailed planning ahead of our business plan submission in July to set out who we will target, how many people we will try to reach and how we will measure our success.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures the avoided societal cost of avoided fatality and/or avoided injury.
To support measurement the Electricity Safety, Quality and Continuity Regulations (ESQCR) data was analysed which includes a brief description of location and type of incident. ESQCR duty holders have duties to report certain incidents that may involve the safety of those not employed by the duty holder (enforcement by HSE), major supply interruptions (enforced by Department of Energy and Climate Change) and domestic fatalities (enforced by Department for Business, Innovation and Skills). The data indicated 4 fatalities and 37 injuries over a 5-year period.
The total net economic benefit per £ spent (SROI) through delivering safety campaigns is estimated to be £36.67. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £3.4m.
Societal benefits account for 97% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£93,461.58</td></tr>
<tr><td>Total gross present value</td><td>£3,298,503.77</td></tr>
<tr><td>NPV</td><td>£3,427,471.32</td></tr>
<tr><td>SROI</td><td>£36.67</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

95% of all customers found this proposition clear and understandable. While 86% of domestic customers were supportive, just 74% of business customers agreed with our plans. 1% of domestic customers and 4% of business customers were unsupportive. 94% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

All DNOs reported plans to actively participate in national safety campaigns. Electricity North West was the only DNO to emphasise a multi-utility regional focus.

Although not a core commitment, WPD is proposing to provide safety leaflets and information to members of the public and landowners, including distributing safety literature to over a million customers and making greater use of social media. As such, it is the only DNO to publish a target.

Implications for the Business Plan

Outcome description	Current performance

Regionally focused, multi-utility safety campaigns	National safety awareness campaigns
Incremental cost of proposal	**Target delivery date**
This forms part of our overall Customer experience proposals	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
	◕	●	◕	◕	◓	◔

Priority stakeholder groups engaged: Current and future customers, consumer representatives, government departments, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x37)	✓	✓ (2020)

Response	**Supporting narrative**	**Read more at**
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	Our ED2 business plan outlines several major investment programmes to safeguard public safety and we will promote and communicate those initiatives throughout ED2 to ensure that customers and communities are aware of the steps that are being taken to protect communities and ensure safety. We will enhance our involvement in collaborative national campaigns* by taking the lead in **developing more regionally-focused campaigns, in conjunction with other utility operators (e.g. water and gas) in the North West**. **illustrative national safety campaigns*  Joined-up messaging will make it easier for customers to access important safety information. We will increase public awareness of the dangers of electricity and behaviour-change that saves lives. We also have a well-established communication and media approach to power cut incidents and by working closely with operational and customer contact centre colleagues ensure that information is shared in a timely and efficient manner. Over the past year (2020-21) our media coverage	**Future business plan 2023-2028**: Benefit 24

	generated a reach of more than 57 million, showing the work we do each year to keep our communities informed on our role and work. Our success measures will include: • Develop and promote at least one new and updated safety video (or similar) to schools across the region; • Raise awareness of decarbonisation and the transition to Net Zero. Undertake regular participant feedback and measure outputs; and • Collaborate with the ENA and other partners to share national and regional community safety messages. Measure reach of messages via a range of communications channels.	

B25 Increasing safety education

Headline level of support

100% of customers understood the proposal and 87% found it acceptable. It ranked 12th out of 41 proposals evaluated. It was the only proposition that 100% of customers fully understood.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
87%	88%	**Final triangulation decision**
		Include new success criteria

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and the proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	3	• In a joint-DNO industry **WTP Survey** (2020) customers in the North West said that they are willing to pay an additional £0.54 per year towards, *Delivering safety education and information initiatives in schools.*' • Our **Chief Executive Advisory Panel** said there was a clear link between workforce diversity, performance and our broader social role and that we should be ambassadors of science, technology, engineering, and mathematics (STEM) in schools to inspire the next generation of engineers and employees.
	Action taken: In 2019/20 we used our innovative social data mapping tool to select six secondary schools across Blackburn, Oldham, Wigan, Salford and Bolton (based on diversity criteria). Our engineering apprentices visited these to raise awareness about the electricity industry and work experience and career opportunities. Our 'Bright Sparks' programme delivered vital key stage 2 (KS2) electricity and safety curriculum lessons, to over 3,500 Key Stage 2 primary school pupils (ages 7-11 / year groups 3-6). The Bright Sparks programme was halted during 2020/21 as a direct result of the COVID-19 pandemic. In response we identified an opportunity to support teachers, parents and young people with STEM subjects.	
Electricity in my life (phase 2)	New	• In 2018-19 we built on our relationship with UCLAN to deliver STEM educational workshops in secondary schools, however when the Covid-19 pandemic hit we had to postpone all our secondary and Bright Sparks workshops as they are delivered face-to-face. This presented a gap in our programme and an opportunity to make resources more digitally available so that we could continue to inspire future generations. • As part of that development, in partnership with SIM we held two workshops with eight teachers and discussions with other distribution network operators (DNOs) to review our current material and share best practice.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>• We then rolled-out safety education; however, feedback from teacher panels suggested it is difficult to incorporate into lessons and deliver on its own because safety currently doesn't appear in the national curriculum. Teachers recommended that we broadened the scope of the safety education materials to STEM and broader skills.</td></tr>
<tr><td></td><td colspan="2">Action taken: In response we partnered with Hopscotch who migrated our face-to-face programme online, adapting it into four lesson plans for KS2 teachers, incorporating engaging, energy themed resources that are free to download from our website. These link to the national curriculum the online resources also support home schooling. The four lesson plans cover a broader range of safety messages:

Lesson 1: Electricity safety and sustainability
Lesson 2: Building electrical circuits
Lesson 3: Conductors and insulators
Lesson 4: Switches and building electrical circuits

We also asked Hopscotch to assist us in developing an education strategy that looks at what we can do now, and in the future for both primary and secondary schools.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td></td><td>A literature review was undertaken of a range of third party data sources to explore the link between educating young people, who represent our future customers and sector attractiveness, recruitment and workforce diversity.

• The Institute for Public Policy Research reports[13] there are skills gaps throughout the energy and low carbon sectors (e.g. digital and data skills)
• Workforce challenges including loss of existing talent, competition in the recruitment and retention of talent, limited pipeline of young people choosing STEM subjects, skills gaps and shortages and lack of diversity in the workforce:
  • Engineering Brand Monitor 2019[14]: adults are the most common sources of careers information for young people, yet the majority reported a lack of confidence in giving careers advice in engineering careers (parents, carers and teachers)
  • Energy and Utilities Skills Partnership[15]: Important to reshape the perception of the sector by communicating what engineering is, what roles the sector offers and information on the next steps to become an engineer. It acknowledges there is an under representation of women in the sector. Education is required to instil confidence in girls and young women that they can become an engineer and work with them to improve their knowledge, perceptions and desirability to work in the sector.
• YouGov's research on behalf of National Grid[16] has found that being part of the solution to tackling climate change is a big, untapped motivator for men and women of all ages and backgrounds. More than half (57%) want to work for an organisation that helps the transition to Net Zero.</td></tr>
<tr><td></td><td colspan="2">Action taken: We have identified a need from stakeholder feedback and third-party data sources to complement our existing safety education programme targeted at schools with</td></tr>
</table>

[13] https://www.ippr.org/research/publications/a-just-transition
[14] https://www.engineeringuk.com/research/engineering-brand-monitor/
[15] https://www.euskills.co.uk/about/energy-utilities-skills-partnership/skills-strategy-2020/
[16] https://www.nationalgrid.com/document/126256/download

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">broader educational and careers content. The objective of this will be to build a pipeline of young people choosing STEM subjects, reduce skills gaps and improve workforce diversity. In response the proposal we included in Acceptability Testing included a range of topics, including careers information.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures the avoided societal cost of avoided fatality and/or avoided injury.
The total net economic benefit per £ spent (SROI) through increasing safety education is estimated to be £45.75. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £13m.
Societal benefits account for 98% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£285,202.02</td></tr>
<tr><td>Total gross present value</td><td>£11,265,060.73</td></tr>
<tr><td>NPV</td><td>£13,046,799.40</td></tr>
<tr><td>SROI</td><td>£45.75</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

Support levels for our plans were similar in both groups with 86% for domestic customers and 85% for business customers. A small number of respondents did not agree (1% domestic and 2% business), with one business customer seeing our schools programme as a waste of money. 98% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

A triangulation analysis of DNO draft business plans indicated that Electricity North West's proposal lacked success criteria.

WPD are proposing to send electrical safety education packs to every primary school in their region and to educate at least 80,000 children per year via direct learning. This is an increase from their original proposal of 60,000 children. It is also higher than SPEN's equivalent proposal (n=55,000.)

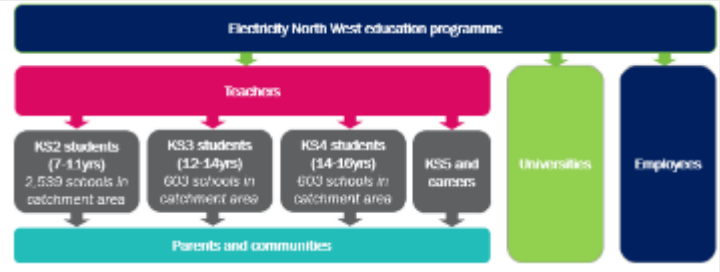
Implications for the Business Plan

Outcome description	Current performance
Wider safety education focused on secondary schools	Safety education focused on primary schools
Incremental cost of proposal	**Target delivery date**
This forms part of our overall Customer experience proposals	31 March 2028
Customer and stakeholder evidence sources	

Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
	◕	●	◕		◓	

Priority stakeholder groups engaged: Current and future customers, consumer representatives, government departments, other utilities and regional local authorities.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x46)	✓	✓ (2020)

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve**	Building on our existing education programme for ED1 and research findings, we will build on the KS2 Bright Sparks electricity and safety programme to develop an approach that will increase our secondary education support aligned to our ED2 Workforce resilience strategy, including our diversity and inclusion strategy, including opportunities around the developing green skills agenda and maintain and develop our links with universities in line with our innovation strategy. Working collaboratively with the industry and education specialists we will reinforce the link between each of the education stages to ensure that consistent and relevant messages are delivered across the curriculum.  We will work with schools to expand our safety and STEM education programme. This will include delivering curriculum linked educational material and awareness campaigns in person and online, to promote skills and opportunities in the electricity industry and ensure customers take precautions when working with or near to electrical equipment to significantly reduce the risk of injury in our community. In response to our stakeholders' feedback our educational work will include other key topics such as decarbonisation and sustainability, STEM skills and careers, targeting schools, college and university students to promote inclusivity.	**Future business plan 2023-2028**: Benefit 25 **Annex 09**: ED2 Education and awareness strategy

	We will continue to grow and evolve our primary KS2 offering and significantly scale up what we offer to secondary schools and colleges in KS3 and KS4 linking to our recruitment and inclusion in our people strategy. Our success measures will include: • We will continue to deliver over 100 f2f Bright Sparks workshops to 3,500 KS2 primary school pupils per year; • We will promote our online Bright Sparks resources every year to schools across the region and aim achieve 500 downloads / views over the ED2 period. Potentially reaching over 15,000 pupils (20% of the approx. 2,500 primary schools in the North West); • We will release new material by 2024 and promote it annually to c600 secondary schools in the region and aim to achieve over 120 downloads. Potentially reaching over 3,600 pupils; • Create a network of 25 STEM volunteers across the company; and • Support two annual science festivals across the region each year.	

B26 Improving overhead line safety

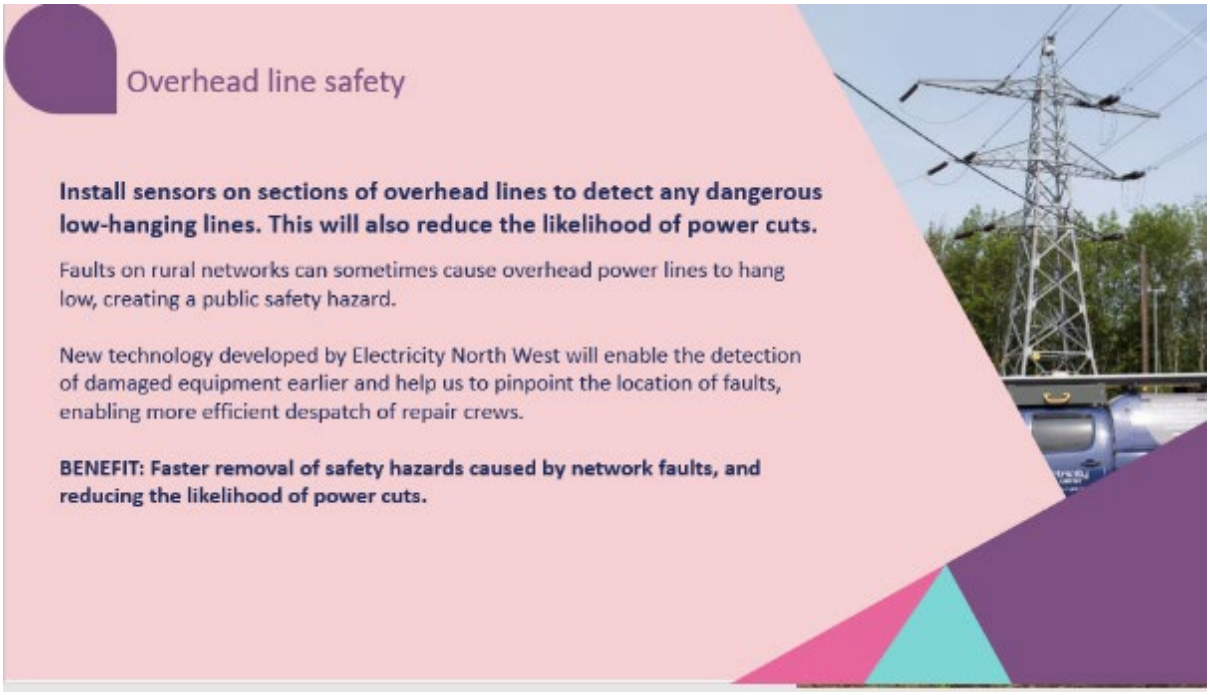
In our draft business plan the technology involved in improving overhead line safety was referred to as 'sentinel'. This has been superseded by the name 'LineSIGHT'.

Headline level of support

98% of customers understood the proposal and 90% found it acceptable. It ranked 5th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
90%	89%	**Final triangulation decision** Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	9	• A literature review of behavioural economics studies indicated that consumers are typically myopic; advocating short term benefits relative to investment that mitigates lower probability, high impact events. • The 'present bias heuristic suggests that consumers are not always economically rational and tend to prefer shorter payback periods to longer term rewards. This is an explanation as to why investments to mitigate low probability, yet high impact events (e.g. prolonged outages associated with storms and flooding) have less value to consumers than reducing the frequency of power cuts and reducing their bills in the short term.
	Action taken: We identified a need to engage more widely on safety and resilience and to explore how these topics intersect with other priorities such as delivering a reliable network.	
Electricity in my life (phase 2)	28	• In qualitative focus groups customers strongly associated resilience with mitigating extreme events such as flooding in addition to tree-cutting programmes to ensure falling trees in high winds do not impact overhead power lines. These insights were used to inform the inclusion of a safety attribute in a **Max-Diff 1 survey**: *Reduce the vulnerability of networks to storms, particularly in rural areas.* ○ The attribute was ranked 2nd overall in the Max-Diff, indicating strong appeal. A correlation was found between this proposal and others designed to reduce the frequency and duration of power cuts. This indicates it is a secondary driver in customers top priority, delivering a reliable network.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">Action taken: We identified an opportunity to leverage our innovation portfolio and utilise pioneering technology to address our customers' expectations of an improvement in the safety and resilience of our rural overhead network.</td></tr>
<tr><td rowspan="2">Our plan for the future (phase 3)</td><td>New</td><td>• A literature review of third-party insights revealed that in recent years DNOs have come under mounting scrutiny in respect of their customer service provision, particularly concerning fault response during storms. Storms related network damage predominantly affects more rural areas, typically served by long sections of overhead lines, which are more exposed to damage by high winds and falling or overgrown trees etc. Faults on rural networks can be difficult to locate, which increases the time to restore supplies. As well as affecting our customers' electricity supply, these faults can become a safety hazard if not detected and repaired.
• The £4 million NIA funded Sentinel project will trial two new fault location techniques on overhead networks. By developing novel fault location sensors which enable earlier detection and response to broken or damaged conductors, this project will improve the quality of supply for customers who experience weather-related outages and improve the safety of the electricity distribution system.</td></tr>
<tr><td colspan="2">Action taken: This technology is currently being trialled (September 2015 – December 2022) and as such, we are still working on our proposals for ED2, which we will include in our final submission in December 2021. On the strength of the most recent project progress report (July 2020), we have elected to include the use of Sentinel in the proposal included in Acceptability Testing.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>• Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
• The societal benefit modelled measures the avoided societal cost of avoided fatality and/or avoided injury.
• To support measurement the Electricity Safety, Quality and Continuity Regulations (ESQCR) data was analysed. The data indicated 2 fatalities related to overhead power lines during a 5-year reporting period.
• The total net economic benefit per £ spent (SROI) through improving overhead line safety is estimated to be (£0.95). This investment proposal is below the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£30m). This is likely to be because of the short time period benefits are modelled over and the limited range of benefits quantified.
• Societal benefits account for 5% of the non-discounted costs and benefits modelled. The 5-year reporting figures are:
<table><tr><th colspan="3">5-year reporting figures</th></tr><tr><td rowspan="4">Economic</td><td>Total cost</td><td>£32,244,246.54</td></tr><tr><td>Total gross present value</td><td>£1,657,497.17</td></tr><tr><td>NPV</td><td>-£30,474,978.80</td></tr><tr><td>SROI</td><td>-£0.95</td></tr></table>• The above calculation excludes additional benefits that are known but not yet quantified, including:
o More efficient dispatch of repair crews – LineSIGHT can identify a fault location with greater precision (within ~30m) than existing technology;
o Reduced likelihood of power cuts; and</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		○ Smarter measurement of asset condition across the network – which improves investment targeting. * • In November 2021 a bilateral meeting was held with the HSE to outline our investment plans for LineSIGHT. The proposal was well received by the HSE principal electrical engineer who undertook to discuss LineSIGHT with both the head of engineering at Ofgem and other DNOs. The customer and public safety benefits of the system were discussed in detail. We have since shared our Engineering Justification Paper and will discuss the system in detail with Ofgem as part of the evaluation of our business plan.

Nuances in perspectives between stakeholder groups

96% of domestic customers and 100% of business customers clearly understood this proposition. Support for our plans was consistently high in both groups (87% domestic and 86% business). None of those surveyed disagreed with this proposition. 91% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

LineSIGHT is an industry-first technology and therefore a differentiator for Electricity North West.

Implications for the Business Plan

Outcome description	Current performance
Roll-out LineSIGHT technology across the overhead line network	Developed and trialed Sentinel technology
Incremental cost of proposal	**Target delivery date**
Indicative £34.5 but will be confirmed in our final submission	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●		●	◕		◓	

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x-1)	✓	

Response	Supporting narrative	Read more at

MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: Efficient deliverability constraints**	We will deploy our new 'LineSIGHT' technology developed in ED1 to install sensors on sections of overhead lines to detect any dangerous low-hanging lines. Our overhead line safety proposal is supported by the HSE and performed very strongly in two statistically robust and representative customer surveys (Max-Diff 1 and Acceptability Testing), providing a material evidence base in favour of its inclusion in our business plan, in its current format. Our current projections indicate that this investment will reach 63% of customers served by overhead line circuits by 2028.	**Future business plan 2023-2028**: Benefit 26

Units	2021/22	End of ED1	End of ED2
Cumulative number of LineSIGHT circuits	-	1,040	2,200
Total km of HV OHL network monitored by LineSIGHT (indicative)	-	1,653	5,723
Cumulative number of customers reached by LineSIGHT on HV circuits (indicative)	-	143,722	487,722
Total km of network on HV OHL network	7,569	7,569	7,569
% of HV OHL network monitored by LineSIGHT	-	*22%*	*76%*
Total number of customers served by a HV OHL circuit	770,237	770,237	770,237
% customers reached		*19%*	*63%*

Our plan has allocated significant investment to improve the overhead distribution network in areas such as tree management, worst-served customer programme and the rollout of our LineSIGHT technology. These programmes will directly support rural customers where other initiatives such as Smart Street cannot currently be deployed.

The total net economic benefit per £ spent (SROI) through improving overhead line safety is below the average return we would expect to see for this type of investment in our ED2 plan. This is likely to be because of the short time period costs and benefits are modelled over (whereas the benefits will continue to accrue over a longer period). It is also a reflection of the measurement excluding additional benefits that are known but not yet quantified.

Output 6 Keeping rural transformers safe

Headline level of support

96% of customers understood the proposal and 83% found it acceptable. It ranked 26th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
83%	84%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	51, 52	• Stakeholders attending **sub-regional workshops** were provided with an insight into different approaches to building resilience in the workforce and assets: removal, resistance, redundancy and response. These were related to the decisions stakeholders may make with their own assets such as property and then to substations:

Triangulation	Insights	How feedback shaped the proposal
		 ○ Stakeholders were asked to think about the reasonable limits Electricity North West should design to – how much is enough? They voted overwhelmingly (97%) in favour of investing more now, to reduce risk and increase resilience in the future. • Our **Plugged-In Public Panel** said that prevention is better than cure and asked us to reduce the overall risk of the network in the long term by replacing old equipment. Out of 12 network related proposals reducing the overall risk of the network was most appealing. This was despite it being among the more expensive options (more than £1 pp per year), attracting 22% of the vote.
		Action taken: In addition to greater investment in overhead line safety in rural areas (see 3.1.4) we identified an opportunity to enhance protection at 220 small ground mounted substations in rural settings that are exposed and present a safety risk to the public as they reach the end of their useful life. In response to stakeholder feedback we included a proposal in **Acceptability Testing** to de-risk these sites through a replacement programme.

Nuances in perspectives between stakeholder groups

Most customers surveyed understood the details of this proposition (95% domestic and 96% business). Support levels were similar with 81% of domestic customers and 79% of business customers finding our plans acceptable. Relatively high numbers of respondents did not support this proposition (7% domestic and 6% business), linked to its exclusive focus on rural areas. 91% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Other DNOs didn't include any explicit reference in their draft business plans to improving the safety of substations in rural areas.

Implications for the Business Plan

Outcome description	Current performance
Replace 110 small rural transformers	Maintaining ageing rural transformers

Incremental cost of proposal				Target delivery date		
£4m				31 March 2028		
Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	

Priority stakeholder groups engaged: Current and future customers, consumer representatives, other utilities, regional local authorities and specialist consultants.

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints**	**We will progressively replace all 220-small ground mounted substations in rural settings which were installed in the 1950s and do not have modern standards of protection with safer equipment, with 50% replaced by 2028 and the remainder by 2033.** This represents a change in our approach from maintaining aging rural transformers to replacing them. The prioritisation of the replacement will be based on the condition of the equipment.	**Future business plan 2023-2028**: Output 6

Output 7 Enhancing security at major sites

This proposal was not included in Acceptability Testing

We have an obligation to maintain the security of our sites and prevent trespassing which might cause major power cuts and safety risks.

Enhancing security at major sites is driven by compliance with our licence obligations, which are mandated by Ofgem. We install additional measures at our most critical sites in response to their level of risk. Therefore, we didn't seek customer or stakeholder input to develop this proposal because we already knew it would need be delivered to a specific standard.

In the interests of openness and transparency we informed customers and stakeholders of the requirements we will need to fulfil in this area but did not actively pursue views.

Implications for the Business Plan

Outcome description				Current performance		
Maintain security programme				Expanded security programme to counter new threats		
Incremental cost of proposal				**Target delivery date**		
[Redacted]				31 March 2028		
Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data

			◕		◓	◔

Priority stakeholder groups engaged: Other utilities, regional local authorities, environmental groups and specialist consultants.

Response	Supporting narrative	Read more at
COMPLIANCE	We will continue this programme in ED2, maintaining existing preventative measures and installing new ones where the risk level changes. We will also continue to meet requirements set out by the Centre for the Protection of National Infrastructure[17].	**Future business plan 2023-2028**: Output 7

Output 8 Improving safety of underground cable pits

This proposal was not included in Acceptability Testing

Many underground cabinets are located under pavements and are where low voltage cables come together and can be connected or disconnected. They pose a risk to the public, because if ground gases build up in the chamber, a fault on the network can ignite them. We have an obligation to minimise safety risks and any threat posed to the public across our network.

Our ED1 programme will have either maintained, replaced or fitted a 'blast bag' to these link boxes, depending on their location and risk. We didn't seek customer or stakeholder input to justify scaling this activity in underground cable pits (containing higher voltage cables, often located in roadways) due to the investment being required to meet our statutory duties. However, in the interests of openness and transparency we informed customers and stakeholders of the requirements we will need to fulfil in this area.

Implications for the Business Plan

Outcome description			Current performance			
Intervene on cable pit population to improve safety			Developed efficient techniques during link box programme			
Incremental cost of proposal			**Target delivery date**			
£1m programme over ED2			31 March 2028			
Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

[17] https://www.cpni.gov.uk/

Priority stakeholder groups engaged: Other utilities, regional local authorities, emergency services – resilience, environmental groups and specialist consultants.		
Response	**Supporting narrative**	**Read more at**
COMPLIANCE	In ED2, we will intervene to replace cable pits in poor condition and install blast bags in the rest to mitigate any impact if a fault does occur.	**Future business plan 2023-2028**: Output 8

Output 9 Carrying out proactive safety checks on cut-outs

This proposal was not included in Acceptability Testing.

A cut-out is a piece of electrical equipment that forms the link between our electricity cable and the internal wiring in customers' properties.

In order to be compliant with Ofgem policy we have an obligation to periodically inspect cut-outs. The frequency is determined by the relevant legislation (currently every 2 years).

In the interests of openness and transparency we informed customers and stakeholders of the requirements we will need to fulfil in this area but did not actively pursue views.

Implications for the Business Plan

Outcome description	Current performance
Initiate regular cut-out safety check programme	n/a
Incremental cost of proposal	**Target delivery date**
£6m programme over ED2	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

Priority stakeholder groups engaged: Other utilities, regional local authorities, emergency services – resilience, environmental groups and specialist consultants.		
Response	**Supporting narrative**	**Read more at**
COMPLIANCE	In ED2, most customers will have smart meters and meter readers will no longer be physically inspecting meters and cut-outs. To ensure the cut-outs remain safe, we will start our own periodic inspection. The inspection regime will cost approximately £1 million per year and will ensure customers continue to have peace of mind.	**Future business plan 2023-2028**: Output 9

4 Delivering an environmentally sustainable network

4.1 Leading the North West to Net Zero

Example customer and stakeholder input to this priority area

Phase 1

- In qualitative focus groups as part of our initial **Priorities Research** most consumers felt that this is an important area to focus on as part of Electricity North West's role in being a good corporate citizen.

- We have recognised the priorities of our national stakeholders in the transition to net zero particularly taking into consideration Ofgem's Decarbonisation Plan and the Climate Change Committee's Sixth Carbon Budget. Our own research mirrored that of the BEIS showing that more than 60% of customers did not understand the term 'net zero'. This has informed how we position questions and the background material that we prepare to enable engagement.

Phase 2

- In our **Youth Engagement** we heard that decarbonisation and net zero have always been a top priority for the members of Youth Focus North West and they consistently ranked it as one of their top priorities in our engagement with them. During these discussions they told us that they will always prioritise net zero and low carbon technologies as the climate change agenda is intrinsically linked to their future, with members expecting that their first cars would be electric and that there was no alternative.

- We conducted primary research with a representative sample of domestic consumers in our region regarding their awareness, ownership and attitudes towards LCT, including the drivers and barriers to take-up. Consumers told us that they were interested in LCTs; however, claimed that lack of knowledge was as a key barrier to them adopting these technologies in the future. Targeted engagement with our business community revealed awareness of the need to take greater action to support decarbonisation, but this was often constrained by time, resources, competing priorities, and not knowing what to do first.

- Our targeted **bilateral engagement** with the three county councils in our region revealed that they all have different net zero ambitions. However, they have recognised the key role that Electricity North West has as an anchor institution in the region and our important role in supporting local action. We are working closely with Cumbria and Lancashire County Councils as well as Greater Manchester Combined Authority at all levels, including CEO-level.

Phase 3

- Our **Plugged-In Public Panel** emphasised the urgency needed to tackle climate change and the responsibility of Electricity North West to play a key role in modelling the best approach and acting as a sector lead in energy distribution.

Phase 4

- At our **Powering Up Recovery stakeholder events** the majority of our local and regional political and business stakeholders told us that we should take a proactive approach to bring forward future investment to increase network capacity and enable faster pathways to net zero.

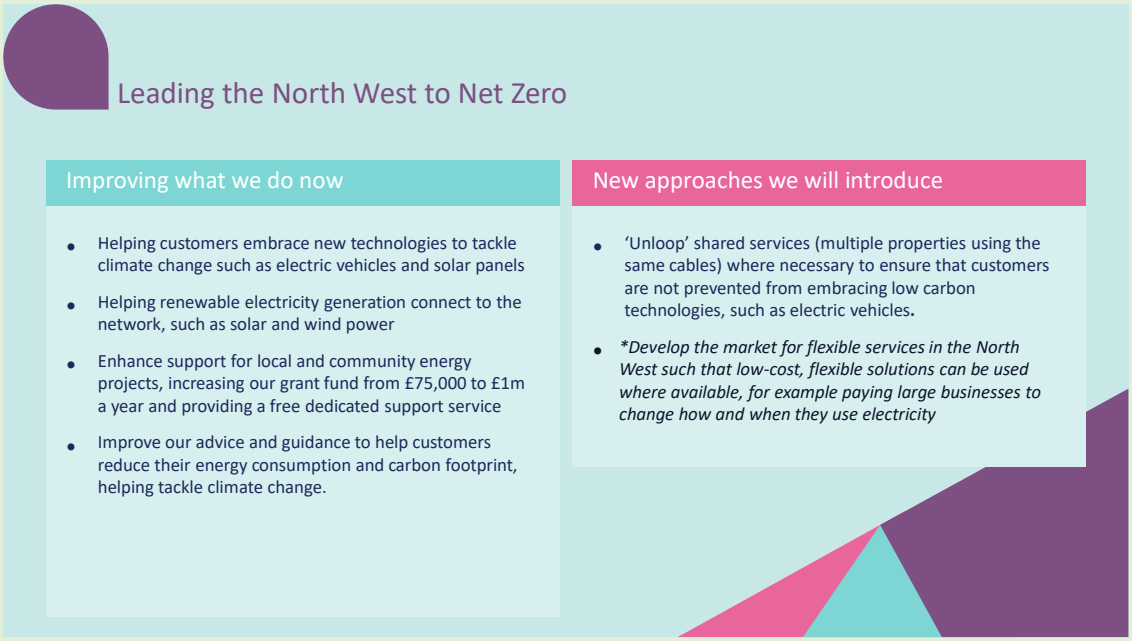
- During the qualitative stage of our **Acceptability Testing**, domestic customers told us that as their dependency on electricity increases we need to make sure we are able to meet demand. Also, business customers welcomed the idea that we would work with other organisations to improve their behaviours.

Phase 6

- During focus groups and depth interviews with **fuel poor and digitally excluded consumers** we heard that Climate Change is a growing concern but removed from the reality of the daily lives of these consumers. They see little opportunity of making a direct impact themselves beyond current behaviour due to cost of entry barriers to initiatives like EVs and heat pumps and home improvements.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing** overall support for our net zero proposition was high for domestic customers (82%) and business customers (81%). 3% of all customers felt the proposals were unacceptable, either because of cost, the proposals are impractical or unsustainable or because respondents did not believe the promises would be delivered.



Nuances in stakeholders' views

- Domestic customers with a social grade of DE (22%) were less likely to find these proposals very acceptable than those with a higher social grade. In our **Segmentation**, customers belonging to our 'Selfless Jugglers' and 'Time to Care' segments were significantly more likely to find our proposition acceptable (90% and 92% respectively). By comparison 'Busy Busy Busy' (76%) and' Living for Today' (65%) were significantly less likely to find the proposition acceptable.

Customer and stakeholder acceptance of our draft business plan proposition

- At a **Sustainability Stakeholder Advisory Panel** meeting, GMCA raised a few challenges with our proposals, asking if our net zero plans are sufficiently ambitious to reflect the leading role that we should be taking. The panel suggested we should be working across conurbations and looking at wider-scale programmes. The Environment Agency agreed that a larger, area-based approach is needed if we are to stand a chance of meeting net zero targets, particularly in parts of Cumbria where there are many isolated areas still using oil-based heating. GMCA also pointed out the importance of working with key strategic partners to understand and plan for a fully decarbonised system.

- Procure Plus raised the issue of futureproofing within the strategy document. We are doing things on the network now that we will have to go back and re-do later.

- The majority of our **CEO Stakeholder Advisory Panel** (88%) found our high-level proposals on this theme to be clear and understandable though a small number pointed out the complex nature of this subject and the possible need to simplify the language used to communicate to stakeholders. One member believed we need to be more ambitious to keep up with other DNOs in this area. Most members (82%) found the proposals acceptable but 47% thought that we could do more to accommodate additional capacity, encourage low carbon connections and promote behaviour change.

- Many **Plugged-In Public Panel** members felt our approach in this area is excellent. In particular, they were supportive of our focus on low carbon technologies and our work to connect them to our network. While generally supportive, some members would like to see more detail on the development of flexible services and that the language around net zero needs to be simplified for the general public.

B27 Helping customers embrace low carbon technologies

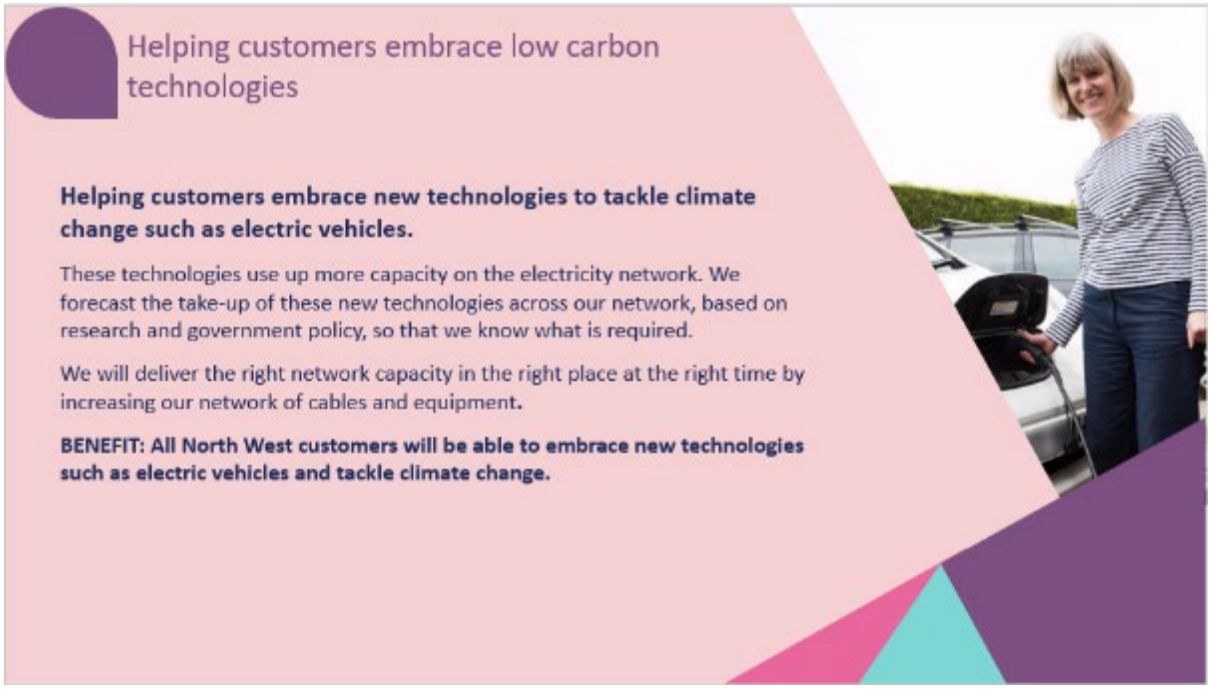
Service attribute tested in WTP was referred to as, 'Helping customers embrace low carbon technologies'

Headline level of support

95% of customers understood the proposal and 78% found it acceptable. It ranked 35th out of 41 proposals evaluated and the lowest performing Net Zero proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
79%	82%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	11	• In qualitative focus groups that formed part of our **Priorities Research** consumers agreed that 'green thinking' and reducing environmental impact was a key area for prioritisation to reach the government's 2050 carbon neutral targets. However, in the quantitative research phase 'helping the North West become carbon neutral' and 'reducing Electricity North West's direct environmental impact' were ranked much lower down in eighth and ninth position (from a list of ten priorities). ○ In our research we found that customers typically attach greater importance to the affordability of energy bills than stakeholders, who forgo bill reductions in favour of accelerating the transition to Net Zero. • Our proactive strategic engagement with County Councils highlighted a collective desire to decarbonise faster than the national 2050 target but also uncovered variation in their ambition, knowledge and resources.
	Action taken: In the absence of a roadmap to achieve accelerated sub-regional Net Zero targets we worked with Cadent and County Councils to co-create a whole systems action plan to achieve Net Zero.	
Electricity in my life (phase 2)		• In May 2020, the latest quarterly edition of the BEIS's **Public Attitudes Tracker**, showed most people were unaware of the concept of Net Zero, with 64% saying they had not heard of it. The proportion of people who had any awareness of the concept of Net Zero was 35%. This compromised 3% who knew a lot about it, 9% who knew a fair amount, 13% who knew a little, and 10% who had only heard about it. The same finding was observed in our Online Community, where 64% said they were not aware of the meaning of Net Zero.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>• In a bilateral meeting BEIS expressed a view that local authorities are key to integrating Net Zero into housing strategies and planning. BEIS expect local authorities to work in partnership with DNOs to integrate network data, local plans, energy demand and transport data which in turn will inform the strategic investments
• In ongoing engagement with the Sustainability Stakeholder Advisory Panel, a gap in knowledge was identified for policy makers, including the Chairs of Housing and Planning in local authorities, who reportedly need more guidance to coordinate infrastructure investment planning, aligned to Net Zero ambition.
• The Plugged-In Public Panel were presented with contextual information and bill impacts for 11 environmental themed investment options. ‘proactively increase the capacity of the network to enable new technologies such as electric vehicles to connect’ was ranked 1st and received 30% of the vote in favour of investment prioritisation. Members felt the onus was on us to be proactive and futureproof the network.</td></tr>
<tr><td></td><td colspan="2">Action taken: We expanded our bilateral engagement to disseminate decarbonisation pathways to interested parties and developed better, more detailed and clearer engagement materials to communicate the meaning of Net Zero in a simple and effective manner.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>57,58,59,61</td><td>• Speaking at our virtual ‘Powering Up the North’ forum Ofgem CEO Jonathan Brearley said that the regulator recognised the “incredibly important” need for regions to move at different speeds as the UK transitioned to a lower carbon economy. He said: “We absolutely accept there are different needs and ambitions in different parts of the country.”
• In a series of sub-regional open-access stakeholder workshops participants were asked which investment priority is more important between:
○ Keep our part of the bill as low as possible by delaying investment in the network until capacity short falls are expected (reactive)
○ Bring forward future investment to increase network capacity and enable faster pathways to Net Zero (proactive)
• 100% of regional stakeholders favoured a proactive approach where investment is brought forward.
• Feedback from stakeholders provided in bilateral engagement aligned to that observed in the regional workshops. For instance, the North West Local Energy Hub said that a proactive investment strategy was needed because the electricity grid is a key determinant to Net Zero.
• In a qualitative phase of our WTP survey consumers asked us to clarify the meaning of the term ‘network capacity’ and to provide context when we talk about the anticipated rate of low carbon technologies being adopted in the North West. This information helped them better understand the need for additional capacity. Some customers welcomed the drive to accelerate Net Zero targets beyond the national target; however, others disagreed that earlier was better, particularly given the level of uncertainty about the pathways.
• In the quantitative WTP survey two improved service levels were tested alongside the current level of service provided in ED1:
<table><tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr><tr><td>Facilitating the take-up</td><td>ENW responds in areas where there is a</td><td>Targeted, proactive upgrading of the</td><td>Local Authorities in Greater Manchester</td></tr></table></td></tr>
</table>

		of technologies to achieve Net Zero such as electric vehicles and solar panels.	risk that it will not be able to meet electricity demand in the near future This approach may not be the most efficient delivery method and may not support the achievement of Net Zero by 2050	electricity network to enable these technologies and achieve **Net Zero by 2050**	and Cumbria aim to achieve **Net Zero by 2038.** Consequently, ENW undertake faster proactive upgrading of the electricity network

- The results (below) indicate that level 2 is likely to be the optimal improvement tested (supporting regional ambition) attracting moderate support from household customers and businesses and significantly more value than level 1. Level 2 results achieved statistical significance for both customer segments.

80th percentile	**L1 – 2050**	**L2 – 2038**
	Per bill payer, per year	
Household	£0.15	£0.51
Businesses	0.00%	0.06%

- In **bilateral engagement** stakeholders supported capping investment to support sub-regional ambition at 2038 as greater ambition was perceived to extend beyond the democratic mandate that consumers have given to elected Mayors such as Andy Burnham in Greater Manchester.
- In an environment themed **Plugged-In Public Panel**, members were briefed on the intergenerational aspects of proactive vs. reactive investment. Participants understood that all investments are ultimately funded by electricity bill payers and recouped over a long period of time and were able to equate this to a mortgage. Two options were presented: start investing now (bigger bill impact on current customers) or delay investment (bigger bill impact on future customers).
    - 91% of members voted in favour of a proactive approach of investing in the network now, spreading the cost evenly over the next 45 years, as opposed to delaying investment. Members were presented with the same service levels tested in the WTP survey and the majority (58%) voted in favour of level 2 (2038), with 27% opting for level 1 and the remainder abstaining.
    - Panel members felt investment in the network will contribute positively to the mass adoption of EVs and that we have an important enabling role to fulfil in ED2.
    - When asked how additional investment should be distributed across the customer base, including those who would be unlikely to see immediate benefits, the Panel showed a clear preference (91%) for everybody contributing the same amount as part of their bills.
- In independently facilitated **in-depth qualitative interviews**, ten large energy users agreed that it is important for us to bring forward future investment to increase network capacity and enable faster pathways to

Triangulation	Insights	How feedback shaped the proposal
		Net Zero. Respondents said that this was more important than keeping bills low. • In **bilateral meetings** regional stakeholders such as the NHS and Cumbria Local Enterprise Partnership highlighted an urgent need to enable electric vehicle (EV) infrastructure and charging and wanted to see this reflected in our plans. We heard that Cumbria County Council's Transport Infrastructure plan will invest £24m in destination EV charging e.g. at railway stations, targeted in visitor hotspots to encourage tourism in areas of market failure. • We heard that our decarbonisation pathways and strategic engagement are providing greater certainty to stakeholders, acting as a catalyst for investment planning. This can be seen in Lancashire County Council's commitment to achieving carbon neutrality by 2030, expanded originally from its own operations to the whole region and Cumbria County Council who have since coordinated an approach to achieving a 2037 pathway. Stakeholders asked us to commit to regularly updating the pathways.
	Action taken: Our stakeholder prioritisation audit indicated that there were some groups that our engagement had not reached. Some of the stakeholder segments identified, such as political and business leaders, were time-poor and seldom heard. To ensure inclusivity, we engaged via a range of bespoke mechanisms such as MP drop-ins, bilateral meetings and a series of sub-regional 'Powering up the North' and 'Powering up Recovery' online events.	
Sweating the detail (phase 4)	84	• At a series of '**Powering up** [Cumbria/Lancashire/Greater Manchester]' sub-regional events, stakeholders discussed the key environmental and economic challenges faced on the road to Net Zero. During the Greater Manchester event participants were asked if they thought Greater Manchester is on track to meet its Net Zero target of 2038. The majority were either unsure (44%) or felt it wasn't (41%), with only 16% responding favourably. The implication of this is that stakeholders feel more urgency is required to overcome the key environmental and economic challenges faced on the road to Net Zero. • YouGov's bi-monthly perception tracker of public opinion monitors consumers' belief in climate change. The results indicate that 3% of consumers (from ~1,600) do not believe climate change exists and 11% are not sure.
	Action taken: Further to our **Acceptability Testing** results we identified an opportunity to disseminate the findings with our Plugged-In Public Panel to understand if further refinement was required to this proposal, as it marginally failed to meet our action standard of 80% acceptability. The results, when compared to YouGov's ongoing perception polling, indicate that our proposal has scored relatively well on the basis that up to 14% of the population either do not believe in climate change or are 'not sure'. The implication of this research finding is that our proposal to support enabling Net Zero ambition is less likely to achieve a very high level of support.	
Closing the loop (phase 5)	New	• We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings. ○ 47% felt it should be included in our early draft business plan in its current format, 29% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact),

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>21% suggested decreasing our ambition and 3% suggested dropping it from the plan entirely.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

We reviewed the volume of LCTs forecasted in our DFES 2020 Central Outlook scenario, which will be connected to our network during ED2 that trigger, or do not trigger, reinforcements (summarised below).

<table>
<tr><th>LCT type</th><th>triggering reinforcement</th><th>not triggering reinforcement</th></tr>
<tr><td>EVs (volumes)</td><td>211,567</td><td>332,733</td></tr>
<tr><td>heat pumps (volumes)</td><td>14,068</td><td>28,974</td></tr>
<tr><td>PV (volumes of rooftop domestic)</td><td>8,739</td><td>17,997</td></tr>
<tr><td>Renewables (MW for only wind and PV – all sizes/voltages)</td><td>36</td><td>290</td></tr>
<tr><td>DG and battery storage (MW, all types and sizes)</td><td>41</td><td>436</td></tr>
</table>

Our ED2 assessment identified that around 7% of HV feeders require reinforcement, which corresponds to ~ 23% of customers and an equivalent amount of domestic LCTs. The associated percentages for LV feeders and distribution substations are lower and corresponded to lower volumes of customers.
This data was a key input into SROI benefits measurement.

*

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures:

Financial savings for customers (38% of overall benefit): customers will make bill savings by switching from carbon emitting technology to LCTs e.g. electric vehicles and solar panels
Societal (environmental) benefits (62% of overall benefit): customers installing LCTs that emit less greenhouse gases will reduce pollution. This will include wider use of EVs, solar panels, heat pumps, battery storage and DG.

The total net economic benefit per £ spent (SROI) through helping customers embrace low carbon technologies is estimated to be £7.90. This is a relatively strong investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £279m.
Societal benefits account for 56% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£35,404,737.52</td></tr>
<tr><td>Total gross present value</td><td>£266,185,451.63</td></tr>
<tr><td>NPV</td><td>£279,621,066.95</td></tr>
<tr><td>SROI</td><td>£7.90</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

At the **Sustainability Stakeholder Advisory Panel** meeting, Procure Plus asked why heat pumps are not mentioned, since the Committee on Climate Change suggest heat pumps are likely to be the mainstay of heat decarbonisation in the future and these are now being deployed at scale in social

housing. The University of Manchester added that the sixth carbon budget highlights the need to have a heat pump scenario in our plans.

In our customer survey, 93% of all respondents understood this proposal. 79% of domestic customers were supportive of our plans, compared to 80% of business customers. A small number of customers did not agree with our plans (2% domestic and 3% business). Quotes from some customers suggest that they still see the adoption of electric vehicles and other low carbon technologies as unrealistic. 92% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Generally, DNOs report that they will ensure capacity is available to enable net zero to be achieved across regions sooner than 2050, in line with the ambitions of stakeholders in each region – WPD say this will be as early as 2030 in some sub-regions.

EVs to be connected: WPD (n=1.5m), SSEN (n=1.3m), ENWL (n=1m), NPg (n=0.94m), SPEN (n=0.67m)

Implications for the Business Plan

Outcome description	Current performance
Ensuring capacity is provided in the right place and at the right time as electricity demands increase	Providing capacity in line with our network management plans and forecasts
Incremental cost of proposal	**Target delivery date**
£25m increase on current levels of reinforcement expenditure	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●	●	●	◕	◕	◓	◕

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, flexibility service providers, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓		✓ (x8)	✓	✓ (£0.51) L2 ranked 8/12

Response	Supporting narrative	Read more at
COMPROMISE **Constraint:**	We engaged broadly and deeply on this proposal; triangulating well-designed surveys based on random sampling that generate robust findings and purposively sampled qualitative research and deliberative engagement. Our engagement provided strong principles to underpin our approach, and our	**Future business plan 2023-2028**: Benefit 27

The scale of problem to solve	network management plans and forecasts (e.g. DFES) were influential in guiding our assessment of the capacity which will be needed during ED2. Meeting increasing demand for electricity by simply expanding the network is not financially sustainable. We know from our research that bill payers would not accept the large price hikes that this would entail. Instead, we need to take a more strategic approach – by providing the right capacity in the right place at the right time, and by making the existing network 'work harder'. We will take an evidence-based approach and align strategic investments to funding and action being taken by our local stakeholders. In doing so we will provide the support our stakeholders need to make informed decisions, such as regularly updating local decarbonisation pathways energy plans and conducting ongoing strategic engagement to coordinate infrastructure investment planning. This enabling role reflects our stakeholders' expectations of our role in leading the North West to Net Zero. We are aware that some of our customers and wider stakeholders would like us to be even more ambitious. However, our proposal also reflects the need to ensure the desired outcome is not achieved 'at any cost', thereby keeping consumers' bills as affordable as possible.	

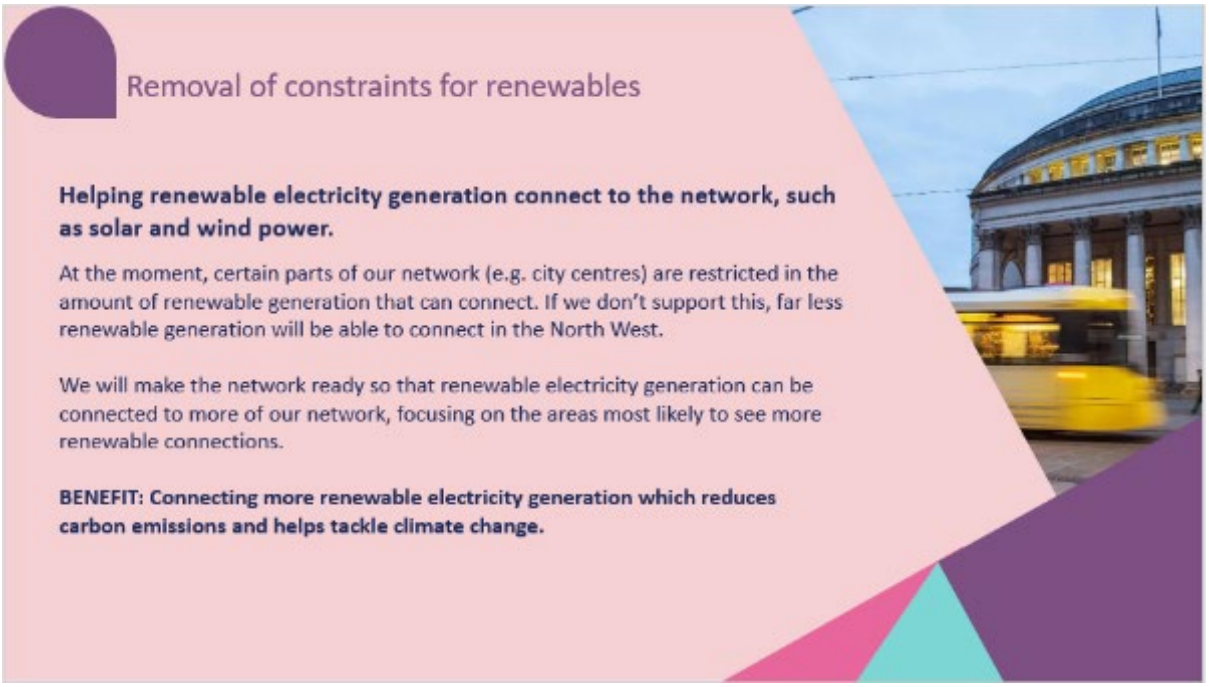
B28 Removal of constraints for renewables

Headline level of support

96% of customers understood the proposal and 82% found it acceptable. It ranked 26th out of 41 proposals evaluated and was the second highest performing Net Zero proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
82%	84%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

Triangulation	Insights	How feedback shaped the proposal
Electricity in my life (phase 2)	31	• In a **Max-Diff 1** survey, '*Reduce the cost for businesses to connect renewable energy, such as solar installations, to the network)*', was tested alongside 23 other proposals. Customers ranked it 16th in the Max-Diff, indicating moderate to low importance. There were no significant differences in the results by customer segment.
	Action taken: We planned further engagement with our Plugged-In Public Panel to discuss the risk of renewable generation being constrained in more depth and obtain informed views.	
Our plan for the future (phase 3)	New	• The **Plugged-In Public Panel** were presented with contextual information and bill impacts for 11 environmental themed investment options. • '*Share more of the cost of connecting renewable generation across all customers* was ranked 6th and received 8% of the vote.
	Action taken: We looked at the feedback received in the round and developed a proposal to increase investment vs. ED1 levels to ensure we fulfil customers' and wider stakeholders' expectations of enabling the transition to Net Zero. We will do this by ensuring our network is ready for greater connection of local renewable generation.	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

We reviewed the volume of renewables forecasted in our DFES 2020 Central Outlook scenario, which will be connected to our network during ED2 that trigger, or do not trigger, reinforcements (summarised below).

<table>
<tr><th>LCT type</th><th>triggering reinforcement</th><th>not triggering reinforcement</th></tr>
<tr><td>EVs (volumes)</td><td>211,567</td><td>332,733</td></tr>
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</table>

The main reinforcement trigger for renewables is fault levels. Our analysis used forecasts of fault levels to inform ED2 LRE EHV costs. This data was a key input into SROI benefits measurement.

*

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures:

Societal (environmental) benefits (100% of overall benefit): customers installing renewables has a carbon benefit. The proxy used for this is from Ofgem’s CBA template – the ‘average traded price of carbon.’

The total net economic benefit per £ spent (SROI) through removal of constraints for renewables is estimated to be (£1). This investment proposal is below the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£19.4m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 0% of the non-discounted costs and benefits modelled. The 5-year reporting figures are:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£19,388,308.64</td></tr>
<tr><td>Total gross present value</td><td>£2,409.30</td></tr>
<tr><td>NPV</td><td>-£19,385,423.26</td></tr>
<tr><td>SROI</td><td>-£1.00</td></tr>
</table>

The amount of reinforcement triggered in ED2 by renewables appears to be very small in the table above (36MW). Consequently, the SROI is relatively low because it is measured based on the benefit of the reinforcement component only (not what will happen anyway).
Justification for this investment, therefore, relates to the uplift in fault level reinforcement costs in the ED2 plan over the ED1 average levels. It is this investment that keeps the numbers requiring reinforcement so low.

</td></tr>
</table>

Nuances in perspectives between stakeholder groups

The vast majority of customers surveyed understood the detail of this proposal (97% domestic and 95% business). Support for our plans was consistent across both groups with 82% of domestic

customers and 84% of business customers finding them acceptable. 2% of domestic customers and 3% of business customers were unsupportive. 84% of colleagues participating in the survey perceived our proposal to be acceptable.

Implications for the Business Plan

Outcome description	Current performance
Remove constraints for renewable generation connection	Constraints exist in certain areas of network increasing the cost of renewable generation connection
Incremental cost of proposal	**Target delivery date**
£23m above current levels.	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●		●	◕	◕	◓	◕

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, flexibility service providers, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x-1)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: The scale of problem to solve**	We recognise our critical role as the north west's network operator and will demonstrate how businesses and consumers can mitigate their impact on the climate. We will lead this transformation and encourage the growth of local renewable generation and storage across the region. Our quantitative and qualitative feedback from customers and wider stakeholders demonstrates support to remove constraints for renewable generation connection. Investing in the network will ensure that the potential that this technology offers to the north west can be maximised. Therefore, we will proceed with our proposal to make the network ready (by replacing our equipment in advance) so that renewable electricity generation can be connected to more of our network.	**Future business plan 2023-2028**: Benefit 28

	The total net economic benefit per £ spent (SROI) through removal of constraints for renewables is below the average return we would expect to see for this type of investment in our ED2 plan. This is likely to be because of the short time period costs and benefits are modelled over (whereas the benefits will continue to accrue over a longer period). A co-benefit of our investment is an uplift in Fault Level investment. Currently the rating of the switchgear can act as a constraint in the capacity of renewable generation that can connect. This is a safety issue, albeit one triggered by generation connections, that must be delivered to ensure continued safe operation of the network.	

B29 Establishing a new annual Powering our Communities fund

Formerly 'establishing a new £1m annual community energy fund'

Service attribute tested in WTP was referred to as, 'Enhanced support for community energy projects'

Subsequently renamed 'Powering our Communities fund'

Headline level of support

95% of customers understood the proposal and 83% found it acceptable. It ranked 21st out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
83%	87%	**Final triangulation decision**
		Compromise – reduce funding level

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Electricity in my life (phase 2)	63	• We used feedback surveys, interviews with industry experts and our State of the Sector survey to understand the changing needs of community energy organisations in our region. Stakeholders validated our three strategy focus areas (improving access, finance and regulation). • In **bilateral meetings** with representatives from community energy organisations stakeholders were asked: *when it comes to energy what are the 3 biggest challenges you expect your organisation / the people you represent to face over the coming decade*? The key themes included funding constraints, the need for a supportive policy framework, increasing fuel poverty and finding a pathway to deliver Net Zero commitments. • In a **Max-Diff 1 survey**, '*Enhanced support for community energy projects which allow the local community to reduce, purchase, manage and generate energy and collectively benefit from the outcomes)'*, was tested alongside 23 other proposals. Customers ranked it 14th in the Max-Diff, indicating moderate importance. Customers with a social grade classification of 'DE' and/or identifying with the statement, 'I sometimes struggle to pay my energy bills' were significantly more likely to place greater importance on it.
	Action taken: We developed three key proposals to address stakeholders' needs: free dedicated connections support, subsidised connection costs for community energy schemes and a grant fund to enable growth in the sector.	
Our plan for the future (phase 3)	63	• The **CEO Stakeholder Advisory Panel** were engaged on ED2 priorities and preferences. The 24 Max-Diff proposals tested with customers were shared with the panel before the meeting and participants were asked to take part in a voting exercise during the meeting which enabled the initiatives to be rank ordered using a similar methodology. The panel ranked '*enhance Local and Community Energy*

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>
support' 6th, significantly higher than customers (14th) and above all other Net Zero and environmental themed proposals.
• In a qualitative phase of WTP research customers responded to proposals which included not charging local and community energy projects to connect to the network and a significant increase in an 'Empowering our Communities' fund (subsequently renamed 'Powering our Communities') from £75k to £500,000 per year, the costs of which would be socialised across the customer base. Customers reflected that they found the fund particularly appealing; however, wanted to see a more radical increase to ensure maximum benefit is realised. Consequently, the ambition tested in WTP was increased to a maximum of £1m and extra information was provided regarding the benefits that a Greater London Assembly fund of £500,000 had achieved for benchmarking purposes. Participants also reflected that they were not familiar with the connections process and requested clarification on what reinforcement of the network entailed.
• In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:
<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Enhanced support for community energy projects</td><td>Community energy projects are required by Ofgem to pay to connect to the electricity network in the same way as households and businesses and we provide all of them with the same level of service</td><td>Free dedicated support through the connections process for community energy projects, that helps them understand their requirements, network considerations and how best to complete a connection application
and
Where ENW need to upgrade the network to accommodate this connection, the additional work is not charged to the project (unlike current arrangements)</td><td>Free dedicated support through the connections process for community energy projects, that helps them understand their requirements, network considerations and how best to complete a connection application
and
Where ENW need to make the network bigger to enable this connection this additional work is not charged to the project, unlike business connections
and
An annual £1m 'Empowering our Communities' fund[2] to help communities become more resilient, through generating their own energy, supporting energy efficiency or other ways to use and manage energy locally.</td></tr>
</table>
• The results indicate that level 2 is the optimal investment tested. It attracted strong support from household customers (ranking 2nd) and businesses (also ranking 2nd), with a significant increase in value moving from level 1, to level 2, which included the addition of a £1m annual grant fund. The WTP results were statistically significant for both levels tested and all customer segments.
</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>80th percentile</th><th>L1</th><th>L2</th></tr>
<tr><th></th><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.59</td><td>£1.32</td></tr>
<tr><td>Businesses</td><td>0.08%</td><td>0.20%</td></tr>
</table>

We asked a range of informed stakeholders their views on the attributes and services levels included in WTP during bilateral meetings. The inclusion of socialised connection costs was a key talking point.

The North West Local Energy Hub suggested that in the absence of fully socialised costs a cap on connection costs for community energy groups could be introduced so that they can bring forward developments in their local areas without the connection cost going over a certain amount. Retaining a threshold for socialisation of costs would also mean price signals about where to connect are not entirely lost. Regen and the Carbon Coop agreed that a cap on socialised costs would be appropriate as this could be a very expensive option without limits.
Together Energy suggested that part of the £1m Empowering our Communities fund be offered as a loan (and potentially operated by a third party) so that it creates a revolving fund.
Community Energy England said that the challenges facing the community energy sector include developing new business models and capacity and skills development and therefore the fund is a good idea but how it will be delivered will be important. A company representative emphasised their view that the focus of the fund should be on risk, capacity and skills. It warned that the Rural Community Fund for Community Energy (RCEF) falls down because it develops projects and not the sector

The proposals tested in WTP were also considered in the round by the Plugged-In Public Panel who reviewed a range of possible environment themed proposals. Members voted via Mentimeter and 91% supported investment beyond ED1 levels, 39% at level 1 and 52% at level 2.
The acceptability of each individual component of the proposal (free dedicated support, subsidised connection costs and £1m fund) was tested within our Online Community. Ratings for all three components achieved above the action standard of 80% acceptability. However, some contributors were concerned that the £1m fund was a “drop in the ocean” and that the funding would need to be 1) sustained and 2) spent wisely to ensure enduring benefit.

“I feel that this would require a massive investment to make any significant impact ... so funding would have to be implemented and maintained consistently.”
</td></tr>
<tr><td></td><td colspan="2">Action taken: The socialisation of connection charges was removed from our proposal included in Acceptability Testing, pending Ofgem’s Significant Code Review. In addition to planning engagement with Ofgem on this issue we suggested investigating the option to defer connection costs for community energy groups.</td></tr>
<tr><td>Closing the loop (phase 5)</td><td>New</td><td>

We discussed the suggestion to defer connection costs for community energy groups in ED2 with the Sustainability Stakeholder Advisory Panel.

The proposal is to introduce alternative payment terms for community energy groups for the cost of a new connection. Community energy groups would be eligible to request to defer the payment of their connections cost until after energisation. The repayment would start after the project has been energised and be made in monthly amounts over an agreed period.

</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		As this proposal would be a change to our Connections Charging methodology it would need explicit Ofgem approval to be enabled. ○ We heard that there are pros and cons to charging interest on an upfront loan and community share offer compared to our deferred payment proposal. Stakeholders felt it might be hard to see the benefit to the scheme and suggested cost benefit modelling to work through different scenarios. ○ The panel asked if lessons had been learnt from the ED1 Empowering Our Communities grant-funded projects and whether these would be formally disseminated.
	Action taken: We appointed CAG consultants to undertake an evaluation of the Empowering Our Communities to help inform the delivery for the remainder of the price control and the proposed new funding for ED2.	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

CAG consultants modelled expected outcomes from the proposed £1m fund. For the illustrative purposes, CAG assumed that £200,000 per annum will be allocated to seed fund grants while £800,000 per year is allocated to ‘accelerator’ grants. The actual allocation and targeting of the grants will clearly depend on the final objectives of the fund and the level of priority given to different types of potential outputs and outcomes.
Funding was allocated equally across energy efficiency, training and capacity building, renewable energy, heat and transport categories as follows:

<table>
<tr><th>Fund</th><th>Category</th><th>Corresponding examples</th></tr>
<tr><td rowspan="5">Seed fund Illustrative examples @£10,000 per example</td><td>Energy Efficiency (20%)</td><td>• Installation of energy efficiency measures (10%)
• Energy efficiency advice (10%)</td></tr>
<tr><td>Training and capacity building (20%)</td><td>• Feasibility into new business model (5%)
• Capacity building (5%)
• Training (5%)
• Buyers club (5%)</td></tr>
<tr><td>Renewable Energy (20%)</td><td>• PV installations (10%)
• Feasibility study (10%)</td></tr>
<tr><td>Heat (20%)</td><td>• Installation of ASHP (20%)</td></tr>
<tr><td>Transport (20%)</td><td>• EV charge points (20%)</td></tr>
<tr><td rowspan="5">Accelerator Fund @ £100K per example</td><td>Energy Efficiency (20%)</td><td>• Installation of EE measures (7%)
• Energy advice and information (7%)
• targeted energy efficiency advice (6%)</td></tr>
<tr><td>Training and capacity building (20%)</td><td>• Developing and trialling an innovative approach (7%)
• Developing a regional partnership organisation… (7%)
• Creating a regional training centre (6%)</td></tr>
<tr><td>Renewable Energy (20%)</td><td>• large scale solar installation (10%)
• Feasibility study (10%)</td></tr>
<tr><td>Heat (20%)</td><td>• installation of heat pumps (20%)</td></tr>
<tr><td>Transport (20%)</td><td>• Installation of EV charge points (20%)</td></tr>
</table>

These assumptions formed the basis of benefits modelling.

*

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefits modelled include:

<u>Societal (environmental) benefits:</u> customers installing renewables enables a carbon reduction benefit. The proxy used for this is from Ofgem’s CBA template – the ‘average traded price of carbon.’
<u>Societal (employment) benefits</u>: Capacity building and support for project development will be enabled through funding enabling new jobs and volunteering hours (the proxy for this is: the value of a full day's volunteering to society)
<u>Financial savings for customers</u>: financial savings will be derived from EV adoption (measured over the lifetime of the vehicle), PV usage, and improved energy efficiency

The societal benefit delivered by establishing a new £1m annual community energy fund was modelled over a 5-year and 10-year period, given that the benefits of projects are likely to accrue over a longer period:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£4,214,849.71</td></tr>
<tr><td>Total gross present value</td><td>£5,681,805.93</td></tr>
<tr><td>NPV</td><td>£2,509,467.77</td></tr>
<tr><td>SROI</td><td>£0.60</td></tr>
<tr><th colspan="3">10-year reporting figures</th></tr>
</table>
</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal

Economic	**Total cost**	£4,214,849.71
	Total gross present value	£9,709,745.04
	NPV	£8,171,162.64
	SROI	£1.94

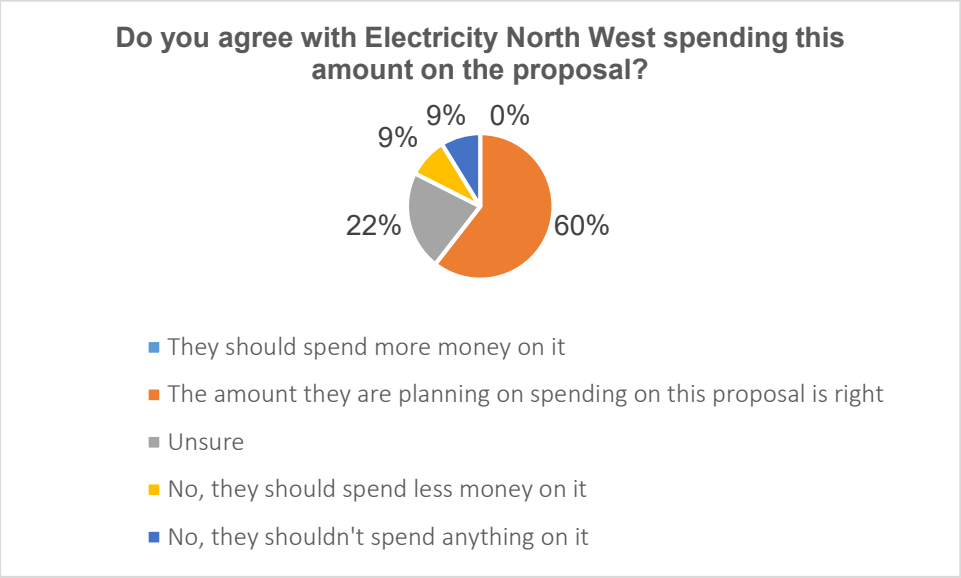
- The total net economic benefit per £ spent (SROI) is positive over a 10-year period, however, relatively poor compared to ED1 SROI benchmarks. This is, in part, due to uncertainty regarding the projects that will be funded and bnefits delivered. This, combined with uncertainity regarding the level of demand there is likely to be from the community and local energy sector for project funding at this scale, means that a £1m annual fund cannot currently be fully justified as a good use of our customers money.

Action taken – further consultation and in-depth SROI analysis

- In its 10th meeting, it was explained to the **Plugged-in Public Panel** that whilst initially the proposal had been to increase the Powering our Communities fund from £75,000 a year to £1,000,000 a year, after feedback from stakeholders, the company were considering reducing that to £500,000 and that the Panel's views on the merits of this were wanted to inform decision-making. It was also explained that this proposal was being considered for savings because the SROI calculator the company used scored this proposal lower than average.

- Initially when discussing reducing the funding in this proposal from £1,000,000 to £500,000 the Panel were eager to question how the calculations of the SROI worked to ensure they could trust the conclusion it pointed to. There were particular concerns to be answered such as whether this figure referred to a return on investment which Electricity North West or it's shareholders would receive and also how the fund would be managed. After this was clarified, members were generally supportive of this proposal and the broad aims. The majority of members were supportive of £500,000 being spent on this proposal instead of £1,000,000, reasoning that this was still a major increase from current levels and could be reasonably expected to have a positive impact, whilst managing to reduce costs.
- The majority of the Panel were supportive of the proposal spending £500,000, although notably no members wanted to see more spent on it.

Triangulation	Insights	How feedback shaped the proposal



*

- We reduced the fund to £1.95m over ED2 and re-profiled the funding. In ED2, we will increase this fund to ramp up each year to meet demand. We will increase the fund from £75,000 to £150k in 2023, double to £300k in 2024, double again to £600k in 2026. This will enable more projects to go ahead, while allowing for growth in the sector in our region. It will also enable ongoing benefits measurement based on projects delivered, which could support justification for increasing the funding level further in ED3.

Table: ED2 community energy fund spend profile

Year	23/24	24/25	25/26	26/27	27/28
Funding	150,000	300000	300000	600000	600000

- In addition to re-profiling funding, SROI analysis was used to re-calibrate CAG's illustrative scenarios, so that a greater weighting of funding is directed more towards projects which have a relatively high societal benefit. 20% of annual funding was retained for seed funding and 80% for acceleration.
- The societal benefit delivered by establishing a new annual community energy fund (£1.95m over 5-years) was re-modelled on this basis:

5-year reporting figures		
Economic	**Total cost**	£1,609,010.99
	Total gross present value	£3,587,877.18
	NPV	£2,730,681.74
	SROI	£1.70
10-year reporting figures		
Economic	**Total cost**	£1,609,010.99
	Total gross present value	£7,673,591.56
	NPV	£8,473,585.86
	SROI	£5.27

Triangulation	Insights	How feedback shaped the proposal
		• Through the action taken, the total net economic benefit per £ spent (SROI) improved significantly.

Nuances in perspectives between stakeholder groups

At the **Sustainability Advisory Panel**, GMCA suggested that £1m is still too low for this fund.

The **Online Community** largely endorsed Electricity North West's local and community energy proposals; however, some participants were concerned that investment shouldn't be at the expense of providing enhanced support to fuel-poor customers in other parts of the plan:

"I feel the people who are suffering fuel poverty could do with a little help as well."

In a **bilateral meeting** the North West Local Energy Hub suggested that Electricity North West is not being ambitious because everything it is proposing stops short of helping customers on their side of the meter.

Community Energy England conceded that it is hard to assess if the company is being ambitious enough without having oversight of ongoing consultations e.g. charging review and other changes that will take place when the Energy White Paper is published and therefore what the future barriers and issues will be for the sector. Therefore, any support will need to be flexible enough to adapt.

A high percentage of our customer survey respondents found our community energy proposition understandable (96% domestic and 93% business). 82% of domestic customers were supportive of our plans, compared to 81% of business customers. A small number of customers were unsupportive (3% domestic and 1% business). 88% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Like Electricity North West, SPEN (who serve 3.5m customers, across two license areas) will offer 'extra hand-holding support' to customers. It will also allocate 25% of its £30m Distribution Net Zero Fund (7.5m or £1.m per year) to community energy projects, which is significantly more than the revised funding pot of £1.95m committed by Electricity North West.

Other DNO draft plans focused more on enhancing engagement with community energy groups, rather than funding levels.

Implications for the Business Plan

Outcome description	Current performance
Fund increasing from £150k a year to £600k by end of ED2 to support sector growth	£75,000 per year fund
Incremental cost of proposal	**Target delivery date**
£2.12m over 5 years	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Early draft business plan consultation
●	●	●	◕	◕	◓	◓

Priority stakeholder groups engaged: Current and future customers, consumer representatives, community and local energy groups, environmental groups, flexibility service providers, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x5)	✓	✓ (£1.32) L2 ranked 2/12

Response	Supporting narrative	Read more at
COMPROMISE **Constraint:** **The scale of problem to solve (sector demand untested)** **Value for money trade-off**	Throughout our engagement programme we have consistently seen very strong support for our proposals to offer free dedicated connections support, socialised connection costs for community energy schemes and a grant fund to enable growth in the sector. In the absence of a conclusion to Ofgem's Significant Code Review we removed the reference to providing socialised connection costs from the proposal included in Acceptability Testing. Evidence suggests that this is likely to have suppressed support for the proposal. In the 'closing the loop' engagement phase we continued to engage with Ofgem regarding the Significant Code Review to understand what will be feasible to implement by way of socialised connection charges. We provided Ofgem with the outputs of our engagement and triangulation, such as WTP research. In addition, we consulted on other financial support packages, such as alternative payment terms to community groups. In September 2021 Ofgem's Access and Forward-looking Charges Significant Code Review (Consultation on Minded to Positions – DNO Positions and Implementation Update) set out its minded to position on connection boundary: • remove the contribution to reinforcement within the connection charge completely for demand connections; • reduce the contribution to reinforcement within the connection charge for generation connections. This will impact DUoS bills as the costs of reinforcement are socialised across all demand customers. There is broad support for the proposed changes to the connection charging boundary. In support of these, it is noted that DNO funding of reinforcement is likely to result in a more strategic approach to investment. Further, the requirements of Net Zero are unlikely to result in inefficient investment and/or stranded assets. Whilst our enhanced engagement (triangulated) clearly evidences strong support for a £1m annual community energy fund, our benefits measurement assessment indicates that this cannot be fully justified. First and	**Future business plan 2023-2028**: Benefit 29 **Annex 05**: Community and Local Energy strategy

	foremost, the fund needs to more closely track our predicted demand. As demand grows we will be able to justify an increase in funding. Consequently, we have reduced the fund to £1.95m over ED2 and re-profiled the funding. In ED2, we will increase this fund to ramp up each year to meet demand. We will increase the fund from £75,000 to £150k in 2023, double to £300k in 2024, double again to £600k in 2026. This will enable more projects to go ahead, while allowing for growth in the sector in our region. It will also enable ongoing benefits measurement based on projects delivered, which could support justification for increasing the funding level even further in ED3. To further support the growth of the community and local energy sector we have worked with our Stakeholder Sustainability Advisory Panel to **introduce a new £1m delayed payment scheme for connections of community owned low carbon technology.** Specifically, for community energy projects, we intend to develop a scheme whereby these projects can apply to pay for the connection, after it has been made. Whilst the connection is still paid for, from our discussions with stakeholders we believe the delay in payment will make the raising of finance easier. This means that invoices will typically be received *after* the community share offer has been finalised instead of *before*, as is currently the case; the invoice would then be issued on our normal terms. We will limit our exposure to the bad debt risk of the payments not being made for the work we have undertaken to make the connection through this scheme by having a cap of £1m at a time allocated to the delayed payment scheme and a maximum of £100,000 per customer. Whilst a sensible precaution, we do not think the cap will impede the effectiveness of the scheme as it could still allow us to support up to 600 projects in ED2.	

B30 Unlooping customers' power supplies

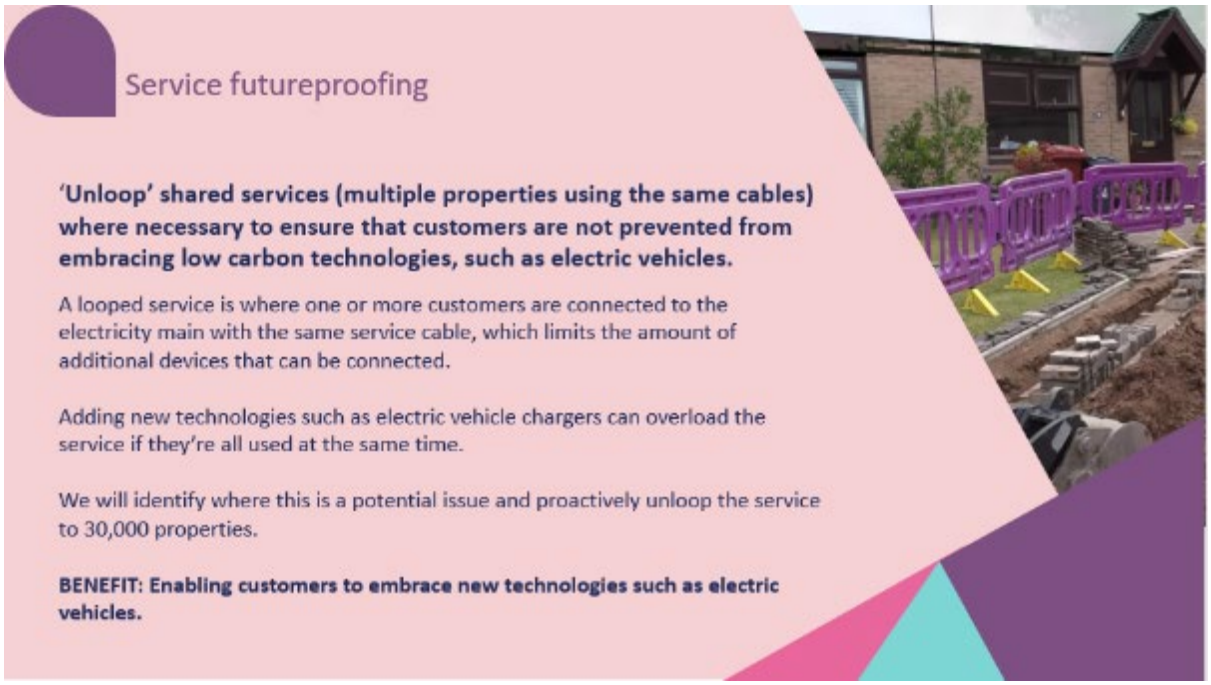
Headline level of support

94% of customers understood the proposal and 79% found it acceptable. It ranked 37th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
		Final triangulation decision

Support for proposal in Acceptability Testing		Decision after Acceptability Test
79%	86%	Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	New	• As part of our strategic executive-led **bilateral meetings** County Councils told us they want to provide on-street charging to encourage uptake EVs. • A review of our **operational data** showed that in 2019/20 we completed a trial of de-looping 196 services. We learnt that the delivery of each scheme is complex and requires significant planning and customer liaison.
	Action taken: In unlooping services we are continuously learning and improving on how we complete this work. We identified a need to measure the SROI of this activity.	
Electricity in my life (phase 2)	New	• We collaborated with Economic Insight to identify independent benefit values based on social proxies for unlooping services. These drew on the avoided cots of a service alteration and social benefit of an EV conservatively scaled to reflect the average EV lifetime benefit, usage and charger utilisation. • SROI forecasted our unlooping programme will deliver a social benefit of up to £539,000 per year, a multiplier of x1 for every £1 spent. Although this represents a comparatively low SROI our stakeholders told us in bilateral meetings that this activity is critical to ensure a fair energy transition.
	Action taken: This year we identified 9,000 looped properties that require intervention This year we have invested £0.45m to proactively upgrade 190 properties to 'LCT ready', at no extra cost to customers.	

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2">Closing the loop (phase 5)</td><td></td><td>

We updated the Plugged-In Public Panel on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.

58% of panel members felt it should be included in our early draft business plan in its updated format (see above), 26% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact) 13% suggested decreasing our ambition and 3% elected to drop it altogether. Many of the 58% who voted to include this proposal in the plan as it is saw the proposal as achieving the right balance between meeting demand without wasting investment.
When discussing this proposal in breakout groups, the majority of members saw the aim of this proposal as important due to the shift to electric cars in the near to medium term future. For some this meant that this was a very important action to take to help move towards Net Zero carbon emissions, which was a high priority for them. This was seen as a necessary infrastructure development to keep up with modern technology.

In our early draft business plan consultation, we added more information and context to this proposal and increased the ambition following stakeholder feedback. 79% of Plugged-In Panel members participating in the consultation said that our improved proposal should be retained in its updated format. This level of support was commensurate with that observed from Online Community representatives (79%).

</td></tr>
<tr><td colspan="2">Action taken: This proposal ranked relatively low in our Acceptability Testing, but 79% of customers still found it acceptable. We added more information and context to this proposal showing we'll target investment based on requests for this work to be done. We also upped our ambition with the aim of eventually removing all looped services in our region.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

A review of our operational data indicated that approx. 500k customers are supplied by looped services, corresponding to approximately 20% of our customers. This means that there are approximately 250k looped service connections to our LV Mains, corresponding to 11% of service connections to LV Mains being looped:

</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal

	customers		Services	
looped	480	20.2%	240	11%
direct service	1900	79.8%	1900	89%
total	2380		2140	

- One unlooping intervention unloops two customers, but during ED2 we cannot be certain that all interventions will correspond to two customers adopting EVs. Although with our reactive approach, one customer will definitely be adopting an EV and driving the unlooping during ED2, the other customer may not adopt an EV until after ED2.

*

- Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.
- The societal benefits modelled include:
  - Financial savings for customers: financial savings will be derived from customers adopting EVs. Ownership of an EV confers an annual cost saving to the user through both fuel and tax. This service also saves the customer the cost of paying for a one-off alteration service which costs £1500.
  - Societal (environmental) benefits: The use of electric vehicles reduces the quantity of carbon emitted into the atmosphere, as well as pollutants such as Nox and PM2.5. The benefits modelling assumes that once consumers switch to EVs, they continue to use EVs indefinitely into the future and do not revert to combustion engines, such that benefits accruing from EVs continue indefinitely beyond the vehicle lifespan.
- The societal benefit delivered by unlooping customers' power supplies was modelled over a 5-year period, however it should be noted that the benefits are likely to accrue over a longer period:

5-year reporting figures		
Economic	**Total cost**	£88,883,708.36
	Total gross present value	£125,751,034.15
	NPV	£58,660,581.62
	SROI	£0.66

- The total net economic benefit per £ spent (SROI) is positive over a 5-year period, however, relatively poor compared to ED1 SROI benchmarks. This is, in part, due to the high cost of delivering this activity.

Nuances in perspectives between stakeholder groups

Most customers who took part in our survey agreed that our futureproofing proposition is understandable (93% domestic and 95% business). 83% of domestic customers were supportive of our plans, compared to 74% of business customers. 2% of domestic customers and 4% of business customers did not agree with our plans. 90% of colleagues participating in the survey perceived it to be acceptable.

Benchmarking analysis – draft plans

All DNOs referenced LCT uptake leading to a need to intervene on looped services in their respective areas. Electricity North West will unloop 32,000, which is higher than the intended activity reported by SPEN (n=43,000), NPG (n=21,000) and SSEN (n=13,000). Many networks referenced the need for an uncertainty mechanism for this output.

Implications for the Business Plan

Outcome description	Current performance
Unloop 32,000 services to properties adopting low carbon technologies	Few hundred services unlooped when requested
Incremental cost of proposal	**Target delivery date**
Increased programme of £103m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, flexibility service providers, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓		✓ (x1)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: the scale of problem to solve**	**In ED2, we will unloop 32,000 shared electricity services, to ensure households are not prevented from adopting LCTs when they are ready to do so.** Although suitable for present levels of domestic demand, it is necessary to unloop looped services to remove the potential barrier to LCT adoption by avoiding the prospect of overloading that could occur if customers on looped services connect EVs or heat pumps. This is scaled to the size of the challenge we will face and our expectation of the requirements of customers. We have made a forecast for how many services we will need to unloop to be consistent with our forecast for EV take-up and the overlap of these customers who will take-up EVs	**Future business plan 2023-2028**: Benefit 30

	with areas where there are looped services at properties with off street parking specifically. With approximately 500,000 customers (~20% of customers) being supplied via looped services, our current programme of unlooping is expected to ramp up significantly during the RIIO-ED2 period as more of our customers predicted to adopt EVs. Based on our Central Outlook forecast, analysis of the population of looped services, types of housing and a reactive approach, we estimate that 32,035 customers will require unlooping during the RIIO-ED2 period, costing £70.1m. Although we are confident in the robust forecasting methodology informing the expected number of EVs in our region, there are significant uncertainties around the number of interventions that we will be required to undertake due to the dependence on our customers' behaviour. The number of services we shall unloop will be affected by whether customers accept the potential physical disruption of unlooping and whether they will need to charge their vehicle at home or can do that at work or a charging hub. With consideration of these uncertainties and to keep customer bills low, we have included £20.1m in our baseline (ex-ante) load related investment plan for the unlooping. This baseline value is only approximately 30% of the estimated RIIO-ED2 requirement with the remaining £50m expected to be covered by an Uncertainty Mechanism.	

B31 Providing a decarbonisation advice service

Service attribute tested in WTP was referred to as, 'Leading the North West to Net Zero carbon emissions

Headline level of support

95% of customers understood the proposal and 79% found it acceptable. It ranked 36th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
79%	81%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and the proposal:

Triangulation	Insight	How feedback shaped the proposal
Customer connection (phase 1)	12	• Consumers, particularly those in vulnerable circumstances, need information and support from a trusted advisor to overcome barriers to adopting LCTs. In a bespoke survey only 7% of customers surveyed said they have ever received information about LCTs such as electric vehicles, solar panels and heat pumps. 20% of customers claimed that lack of knowledge was a key barrier to them considering adopting LCTs in the future.
	Action taken: Further engagement was planned to support the development of a trusted advisor proposal.	
Electricity in my life (phase 2)	29-30	• Industrial and Commercial (I&C) customers said that there is a clear role and gap to be filled for Electricity North West to be a provider of impartial advice and information to businesses about installing both solar PV and chargers for Electric Vehicles. Although it is not a license obligation, I&C customers felt this was the right thing to do, because it would stimulate demand for LCTs and accelerate the transition to Net Zero. • Providing '*a free regional advice for all customers'* was ranked 24th in a **Max-Diff 1 survey** completed by household and business customers, indicating a relatively low importance. Anecdotal evidence from the survey suggested that some customers were confused by Net Zero terminology or what the 'free service' would entail. • Our **Plugged-In Public Panel** warned that to mitigate the risk of leaving consumers behind, we should expand our role beyond providing impartial advice. They identified the affordability of adopting LCTs as a key barrier and considered connection costs to be a contributory factor. Members said that they would trust us to provide this type of service more than suppliers:

<table>
<tr><th>Triangulation</th><th>Insight</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>“I don’t trust energy efficiency advice from electricity and gas suppliers: it is counterintuitive for them to promote consumption reduction, it is not in their interest for us to consume less.”</td></tr>
<tr><td></td><td colspan="2">Action taken: We refined our proposal to include socialisation of LCT connection charges.</td></tr>
<tr><td>Our plan for the future (phase 3)</td><td>60</td><td>
• Third-party evidence recognised widespread confusion among customers on decarbonisation and terms such as Net Zero, with many not knowing what to act on.
• In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:
<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Leading the North West to Net Zero carbon emissions</td><td>ENW offers energy efficiency advice and guidance on technologies such as electric vehicles and solar panels only on its website</td><td>Free telephone advice to household and business customers from ENW specialist advisors on energy efficiency and technologies</td><td>Free advice to household and business customers from ENW specialist advisors on energy efficiency and technology options and Free connection of technologies (1). ENW does not charge customers for any costs incurred to allow technology to be connected such as electric vehicles and solar panels</td></tr>
</table>
○ WTP results showed that bill payers value us providing decarbonation advice facilitated through an online hub (existing service level) and encouraging the adoption of LCTs through socialisation of connections charges (level 2). This equates to roughly £47m additional expenditure over the ED2 period.
○ Level 2 ranked 5th out of 12 investment priorities by households and 7th by business customers. The research also indicated a preference for us not to duplicate the efforts of other service providers by offering energy efficiency advice from specially trained call advisors.
<table>
<tr><th rowspan="2">80th percentile</th><th>L1</th><th>L2</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.54</td><td>£0.94</td></tr>
<tr><td>Businesses</td><td>0.02%</td><td>0.13%</td></tr>
</table>
○ Households who ranked 'keeping customers’ bills as low as possible' highest in the WTP survey were statistically and significantly more likely to attach greater weighting on us delivering the most improved level of service. This appeared to be counter intuitive; however, it was surmised that the proposal would reduce the risk of leaving customers on lower
</td></tr>
</table>

Triangulation	Insight	How feedback shaped the proposal
		incomes behind, by making it more affordable for them to connect LCTs in the future. • Members of the **Plugged-In Public Panel** who attended an environment themed panel meeting via Mentimeter were presented with the same options appraised by the wider customer base in WTP research. The results indicate that 73% of members value investment beyond the current level at either level 1 (9%) or level 2 (64%). 15% of the Plugged-In Public Panel voted in favour of retaining the current service level (online only advice offering). Parallels can be drawn with the WTP results where the current level of service is preferred to level 1; however, free connection of technologies is sufficiently appealing to incentivise investment from customers through bill increases. • A **consultation with businesses** demonstrated a favourable response towards the socialisation of connections costs, on the proviso that this facilitates the adoption of LCTs. Cumbria Local Enterprise Partnership thought this is likely to deliver results at scale and at pace. Businesses also supported the provision of advice to customers on how they can make zero cost behavioural changes to how they use energy at home, in order to help reduce their bills.
	Action taken: The socialisation of LCT connection charges was removed from our proposal, pending Ofgem's Significant Code Review.	
Sweating the detail (phase 4)	82	• At a series of sub-regional Powering up the North **stakeholder events** we heard that one of the key challenges local stakeholders face in achieving Net Zero ambition is engaging with local communities. Stakeholders have asked us to have an enabling role which extends beyond infrastructure to community engagement.
	Action taken: We developed plans to engage with the **Plugged-In Public Panel** regarding the fairness of socialisation of charges as part of 'Closing the Loop'.	
Closing the loop (phase 5)	New	• Before discussing their preferred option for this proposal, **Plugged-In Public Panel** members discussed whether they thought individuals should pay for connections to low carbon technologies or whether those costs should be funded by customers' bills. The key arguments made for why individuals should pay for these connections centred around the expectation that this would only benefit some customers. *"The cost should be borne by the individual, as not everyone will be able to benefit from localised replacement/work."* *"There is not equal access at the moment to some of the technologies for all, until this is rectified it would be unfair for everyone to pay for this in their bill."* • Some members also highlighted that they expected the customers who benefitted most from this to be more affluent customers who did not need financial support from less affluent customers. *"The customer should be paying for this. On a social scale most users will be more affluent and should be paying."*

Triangulation	Insight	How feedback shaped the proposal
		• Some of those who felt that the costs of these connections should be funded by customers' bills argued that the costs for individuals to take up low carbon technologies would be prohibitive and therefore need to be collectively funded to achieve the desired outcome of widespread use of them. *"Take up of new technology benefits everybody. This cost should be shared to encourage take up and to ensure that the infrastructure can support new technologies before it becomes critical."* • When voting on what they would like to see done with the proposal, 47% of members stated they would like to see it included in the business plan in its current format. Much of the reasoning for that was focussed on ensuring everyone has access to new technologies and thinking the proposal was a good way to do that. *"Everybody needs to know that they can access new technology."* • 29% of members preferred to see us make this proposal more ambitious. The reasons given for this focussed around how important some members thought these sorts of technologies were going to be in a low carbon future. • 21% of members wanted to see us make this proposal less ambitious and cheaper. The reasons given for taking this view varied from concerns about practical issues of take up, charging capacity, public understanding of the technologies and low confidence that Government will reach the Net Zero target by 2050. • In our **early draft business plan consultation,** we asked whether we should continue with our proposal to cover the costs of connecting low carbon technologies (like solar panels, electric vehicle chargers, or heat pumps) to the network through bills, rather than charging individual customers. We observed a mixed response, with 50% of Plugged-In Public Panel members agreeing in principle with socialised charges, 18% opposed and 32% unsure. By comparison, 63% of Online Community representatives supported this charging mechanism. In a small number of responses submitted by stakeholders, subsidised, rather than socialised charges, was put forward as a compromise solution.
	Action taken: We planned engagement with Ofgem to present the findings from our triangulation and influence the development of the Significant Code Review.	

Nuances in perspectives between stakeholder groups

At a Sustainability Stakeholder Advisory Panel meeting, GMCA pointed out the importance of timescales in helping customers adopt low carbon technologies. Funding such as the Green Homes Grant will not be available indefinitely, so we should prioritise our messages to customers.

In a bilateral meeting Citizens Advice called for greater openness about how investment in provision of energy efficiency advice in its various forms (including innovation projects such as Power Saver

Challenge and SSEN's 'SAVE') interacts with traditional reinforcement and/or flexibility services in CBA.

In our customer survey, 95% of domestic customers and 94% of business customers agreed that our decarbonisation advice proposition is clear. 79% of domestic customers and 76% of business customers were supportive of our plans, but 3% of all customers were not. Customers that reported being able to pay their energy bills without any difficulty were significantly more likely to support the proposal. 95% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis -draft plans

All DNOs say they will deliver education to customers on LCTs.

WPD will create a LCT energy advisory service (using its contact centre team) for customers and is the only DNO to reference providing a telephone service (this was also tested in our WTP survey).

Implications for the Business Plan

Outcome description	Current performance
Continue to provide, develop and promote decarbonisation advice hub	Online decarbonisation hub recently established
Incremental cost of proposal	**Target delivery date**
Continue at current rates	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●	●	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, flexibility service providers, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
			✓	✓ (£0.94) L2 ranked 5/12

Response	Supporting narrative	Read more at
COMPROMISE **Constraint: value for money trade-off (specialist advisors)**	This proposal scored much more strongly in our WTP survey when it was enhanced with the inclusion of socialised LCT connection charges. Households who ranked 'keeping customers' bills as low as possible' highest in the WTP survey were statistically and significantly more likely to attach greater weighting on us delivering the most improved level of service.	**Future business plan 2023-2028**: Benefit 31 **Annex 12**: Electric vehicle strategy

	Customers have told us that we should fund this through everyone's bills, rather than charging individuals to connect new LCTs to the network. In our business plan consultation, many stakeholders said that this is the right thing to do. Furthermore, whilst some of the early adopters of low carbon technologies are more well off, some of the largest roll-outs of LCTs, such as solar panels, that we have seen on our network are undertaken by social housing providers. In our 'closing the loop' engagement phase we excluded socialised connection charges from our business plan consultation. However, in the 'closing the loop' engagement phase we continued to engage with Ofgem regarding the Significant Code Review to understand what will be feasible to implement by way of socialised connection charges. We provided Ofgem with the outputs of our engagement and triangulation, such as WTP research. In addition, we consulted on other financial support packages, such as alternative payment terms to community groups. In September 2021 Ofgem's Access and Forward-looking Charges Significant Code Review (Consultation on Minded to Positions – DNO Positions and Implementation Update) set out its minded to position on connection boundary: • remove the contribution to reinforcement within the connection charge completely for demand connections; • reduce the contribution to reinforcement within the connection charge for generation connections. This will impact DUoS bills as the costs of reinforcement are socialised across all demand customers. Ofgem's policy for domestic connections is a continuation of ED1 arrangements. However, for businesses Ofgem's minded to position changes the status quo, to reduce the cost of reinforcement. This supports the delivery of a significant component of L2 tested in our WTP survey ('Free connection of technologies'.) 'Free advice to household and business customers from specialist advisors on energy efficiency and technology options' was another component tested in WTP. However, our wider engagement programme has emphasised the importance of avoiding duplication of effort by pooling resources, technology to remove organisational silos and create synergies. To this end, rather than recruiting specialist advisors we will continue to provide expert advice and tools via our online hub and fund partners such as Citizens Advice to provide energy efficiency support directly to consumers.	

4.2 Improving our direct environmental impact

Example customer and stakeholder input to this priority area

Phase 1

- In qualitative focus groups forming part of our initial **Priorities Research** most consumers felt that this is an important area to focus on as part of Electricity North West being a good corporate citizen. Customers also said that if we were leading a charge on net zero that it was important to get our own business in order first.

- Through our ED1 2020 social value research customers told us that we had a duty to maintain our network in an economical and efficient way, to preserve amenity, and to conserve and enhance the natural beauty, wildlife and the cultural heritage of designated landscapes.

Phase 2

- In our stakeholder priorities research, we heard that to support the transition to a Net Zero carbon economy we should lead by example and improve environmental performance in our day-to-day operations through greener work-sites, offices and vehicles.

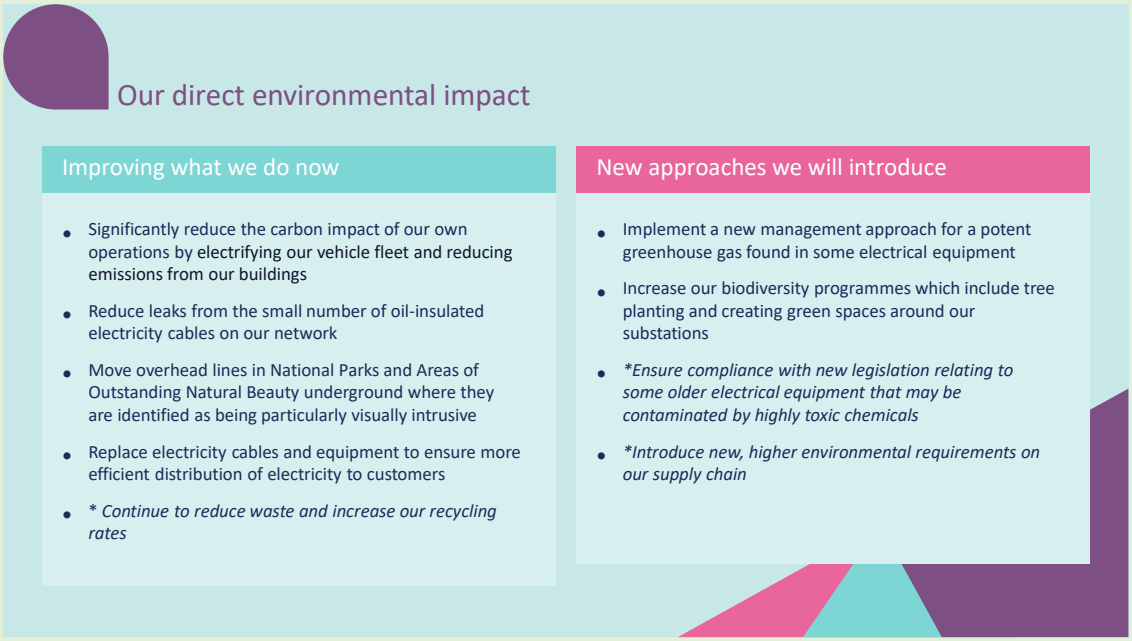
- At our April 2020 Sustainability Stakeholder Advisory Panel, the majority of stakeholders told us that we should be reaching net zero carbon emissions in our operations by 2038. This was regarded as the most ambitious option and is aligned to Greater Manchester's commitment to decarbonise by 2038.

Phase 3

- Our **Plugged-In Public Panel** stressed the importance of Electricity North West to lead by example in reducing its own carbon footprint. 58% of Our Plugged In Public Panel told us that we should reach net zero carbon emissions in our operations by 2038 to align with the end of RIIO-ED4 and the UK's seventh carbon budget.

Customer and stakeholder acceptance of our draft business plan proposition (phase 4)

In **Acceptability Testing** our proposition of nine environmental proposals was rated highly by both domestic customers (85%) and business customers (81%). A very small proportion felt the proposals were unacceptable (2% of domestic customers and 4% of business customers). This was either due to cost, a belief that these proposals should already be implemented, respondents felt the proposals are not cost-effective or that they are a waste of money.



Nuances in stakeholders' views

- Support for these proposals was higher among the digitally disengaged (98%) than online customers (84%). In our **Segmentation**, customers belonging to our 'Selfless Jugglers' and 'Time to Care' segments were significantly more likely to find our proposition acceptable (90%). By comparison 'Managing Day to Day' were most likely to find the proposition unacceptable (6%).

- The majority of our **CEO Stakeholder Advisory Panel** found our proposals to be clear (94%) and acceptable (88%), but 41% of the panel felt that we could do more, such as decarbonise our supply chain, provide more clarity on scope 3 emissions and encourage customers to be more energy efficient.

- Members of the **Plugged In Public Panel** were divided over our plans to replace overhead lines in areas of outstanding natural beauty. While this provides the benefit of visual improvement and network resilience, moving cables underground is very expensive and some felt the money could be better spent elsewhere.

- Members of our **Sustainability Stakeholder Advisory Panel** were supportive of our plans but raised a number of questions about the specific propositions. The panel chair pointed out they needed to know more detail on the costs of the proposals and whether our customers would be willing to pay. Arup, an advisory, design, planning and engineering company, raised a similar point that it is difficult to support the propositions without more information on the associated costs and an understanding of how propositions would be prioritised.

B32 Reducing our business carbon footprint

Headline level of support

96% of customers understood the proposal and 82 % found it acceptable. It ranked 25th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
82%	87%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	10	• Throughout ED1, we have observed consumers showing increasing support for measures to protect the environment, and urgency in these actions. In our **Segmentation**, we heard from a diverse range of customer types during 12 qualitative focus groups which enabled us to deepen our understanding of their attitudes and expectations. Consumers typically perceived minimising our direct environmental impact to be something that should be happening anyway as it is within our direct control and is encapsulated within being a good corporate citizen. • Stakeholders share this view and have told us that as the provider of an essential service to nearly 2.4 million homes and businesses across Cumbria, Lancashire and Greater Manchester we should take a leading role in developing and implementing the policies, technologies, systems

Triangulation	Insights	How feedback shaped the proposal
		and workforce required to achieve the Government's decarbonisation targets by 2050. In our stakeholder **Priorities Research**, we heard that to support the transition to a low carbon economy, we should lead by example and improve environmental performance in our day-to-day operations through greener work-sites, offices and vehicles. • In a joint-DNO industry **WTP survey** (2020) customers in the North West said that they are willing to pay an additional £0.62 per year towards, *'Reducing company carbon footprint by 20% e.g. improving energy efficiency of buildings and reducing harmful leaks from equipment.'*
	Action taken: We developed four different investment options to test with stakeholders.	
Electricity in my life (phase 2)	10 (updated)	• In a **Max-Diff 1 survey**, '*accelerate the reduction of carbon emissions from Electricity North West's operations (e.g. depots, offices, equipment, and vehicles) so that Net Zero carbon emissions are achieved by 2038)*, was tested alongside 23 other proposals. Customers ranked 9th in the Max-Diff, indicating broad appeal. • Four options for our business carbon footprint (BCF) target for ED2 were presented to our **Sustainability Stakeholder Advisory Panel** with a view to making a recommendation on which target to adopt. The options discussed were: ○ **Option 1:** Net Zero carbon emissions from our operations by 2050, to align with the UK's legal target ○ **Option 2:** Net Zero carbon emissions from our operations by the midpoint between 2038 and 2050 to enable the realisation of local area ambitions on the timing of carbon neutrality ○ **Option 3:** Overall carbon emissions from our operations reach Net Zero by 2050 and 2038 for operations within Greater Manchester ○ **Option 4:** Net Zero carbon emissions from our operations by 2038, to align with the end of the RIIO-ED4 price control and the start of the UK's seventh carbon budget. • Our Sustainability Stakeholder Advisory Panel were unanimous in their assertion that we should adopt a science-based target for our operations by 2038 to align with the end of the RIIO-ED4 price control and start of the UK's seventh carbon budget. It also recommended more progressive action towards reducing scope 3 emissions. • In independently facilitated **in-depth qualitative interviews**, ten large energy users agreed that Electricity North West should be reducing emissions in the supply chain, employees' commuting and business travel. Respondents strongly advocated the company leading by example in this area; however, suggested that we should be making sure that this activity doesn't lead to an increase in consumers' bills. • The **Plugged-In Public Panel** were presented with a series of 11 potential activities to improve environmental performance, including an indication of the likely impact on customer bills.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td rowspan="2"></td><td></td><td>
<table>
<tr><th>More than £1 on average annual bill</th><th>Tens of pence on average annual bill</th><th>A few pence on average annual bill</th></tr>
<tr>
<td>• Proactively increase the capacity of the network to enable new technologies such as electric vehicles to connect</td>
<td>• Only buy electric vehicles from now on
• Reduce the risk of oil leakage from some of our cables by replacing them early
• Invest to reduce electricity lost during transmission
• Move overhead lines underground in areas where they spoil the view
• Install electric vehicle charging points in areas that don't have them
• Reduce our own carbon footprint quickly by refurbishing our buildings and depots
• Proactively cut dead or dying trees that may affect overhead lines instead of waiting for the landowner to do so
• Share more of the cost of connecting renewable energy generation across all customers</td>
<td>• Improve biodiversity at our substations through planting schemes etc
• Extend the community energy fund to help community groups to develop local generation schemes</td>
</tr>
</table>

Those members who placed value on reducing our business carbon footprint tended to emphasise the urgency needed to tackle climate change and the responsibility of energy companies to play a leading role in this.
Panel members acknowledged that while we are taking some positive action to reduce our environmental impacts, there is more that could be done. There was also concern from some participants that the cost of reducing our environmental impacts should not fall on our customers.

</td></tr>
<tr><td colspan="3">Action taken: We planned further engagement on the four BCF options with customers.</td></tr>
<tr><td rowspan="2">Our plan for the future (phase 3)</td><td>56</td><td>The Plugged-In Public Panel were presented with the same four options (as stated in phase 2 above) for our business carbon footprint target.

In group discussions three of the four break-out groups preferred option four, moving fastest and in line with the target of 2038. Members noted that Net Zero was important to the future of the country and should be achieved as soon as practical. The view was also expressed that industry, particularly energy companies, need to lead by example if others are going to be expected to make significant changes.
However, for one group the preferred option was remaining in line with UK government targets. This tended to be influenced by a perception that customers in the North West should not be asked to pay more when national targets have been agreed and these presumably have been agreed because they are practical and achievable.
Members participated in a survey poll after deliberating on the options available. 58% opted for the most ambitious target (2038) and 27% preferred the mid-point between 2038-2050.
</td></tr>
<tr><td colspan="3">Action taken: We adopted a challenging 2038 timeline to become Net Zero and worked collaboratively with the Tyndall Centre to create a ‘carbon budget’, whilst also undertaking more detailed investigation into reducing scope 3 emissions.</td></tr>
<tr><td>Sweating the detail (phase 4)</td><td>New</td><td>• In a bilateral meeting with United Utilities, (UU) we shared best practise learning from completing our first two carbon neutral depots. We heard that UU have committed to achieving a low carbon vehicle fleet by 2028.</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefits modelled include:

Societal (environmental) benefits: The use of electric vehicles reduces the quantity of carbon emitted into the atmosphere, as well as pollutants such as Nox and PM2.5. Making our buildings more efficient will also reduce carbon emissions.
For the purpose of benefits measurement, a linear reduction in BCF was assumed across the ED2 period:

<table>
<tr><th>Component</th><th>Value</th></tr>
<tr><td>Target level to reduce carbon footprint to (tCO2e/per year)</td><td>8,175</td></tr>
<tr><td>2021 level to reduce carbon footprint from (tCO2e/per year)</td><td>14,621</td></tr>
<tr><td>Difference</td><td>6,446</td></tr>
<tr><td>Yearly reduction to meet target</td><td>921</td></tr>
</table>

The total net economic benefit per £ spent (SROI) by reducing our business carbon footprint is estimated to be (£0.72). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£3.9m). This is likely to be because of the short time period benefits are modelled over.
Societal benefits account for 22% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£5,479,304.62</td></tr>
<tr><td>Total gross present value</td><td>£1,259,664.56</td></tr>
<tr><td>NPV</td><td>-£3,970,728.22</td></tr>
<tr><td>SROI</td><td>-£0.72</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

96% of domestic customers and 93% of business customers found our proposal easy to understand. 83% of domestic customers and 81% of business customers were supportive of our plans, while 3% of domestic customers and 5% of business customers were not. 93% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Electricity North West's carbon neutrality commitment of 2038 is in line with SPEN and NPg (2040) but is lagging WPD's target of 2028, however WPD excludes network losses.

WPD is proposing four core commitments to significantly reduce its operational carbon footprint.

1. It will achieve Net Zero by 2028 following a verified science-based target.
2. 89% of its commercial van fleet will be non-carbon vehicles by 2028.
3. It will install renewable local generation at all suitable offices and depots.
4. It will achieve zero waste to landfill by 2028 (excluding hazardous waste) and deliver an overall 30% reduction in tonnage waste produced.

WPD had originally proposed achieving Net Zero by 2043; however, it is now proposing a target date of 2028. This is because 80% of stakeholders wanted to see further ambition with 52% supporting the maximum level of ambition (Net Zero by 2028). 61% of end user customers also agreed with this ambition level.

On replacing existing operational fleets with electric vehicles by 2028, WPD leads on a minimum target of 89%, SSEN 80%, NPg 40% and ENWL lags at 29%.

Implications for the Business Plan

Outcome description	Current performance
Five new zero carbon sites and over 25% of vehicle fleet electrified. Reduce carbon footprint to 8,175 tCO_2e/yr on average (subject to agreement of a science-based target)	Two zero carbon sites and a 26% reduction in carbon footprint (2015-2020) to 18,051 tCO_2e/yr
Incremental cost of proposal	**Target delivery date**
£6.5m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●	◕	●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓		✓ (x-1)	✓	✓ (2020)

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: efficient deliverability constraints**	**Our ambitious goals will enable us to become Net Zero within our own operations by 2038**, to minimise the amount of embodied carbon within new infrastructure, and to remove assets containing potentially harmful greenhouse gases. We have set out our responsibilities and the goals we will take during RIIO-ED2 to continue our decarbonisation journey, including the use of science-based targets (SBTs). Without adopting SBTs, there is a high likelihood that carbon emissions will reduce in a reactive manner rather than proactively. This in turn will reduce the speed at which emissions are reduced, resulting in a larger contribution to climate change during RIIO-ED2. It would likely require	**Future business plan 2023-2028**: Benefit 32 **Environmental Action Plan** (Annex 13)

	carbon offsetting, rather than a reduction of emissions at source and lead to an inability to lead others by example. We have engaged extensively with our customers and stakeholders to understand their priorities around decarbonisation. They have clearly indicated that we should drive our emissions down and achieve Net Zero carbon in our own operations by 2038. The overall direction given is that we need to lead by example, accelerate actions to achieve Net Zero and that we are trusted to work out the best path the reach Net Zero by 2038. In line with our established carbon budgets, we need to reduce our internal business carbon footprint excluding losses to an average of 8,175 tCO2e by the end of RIIO-ED2. This will be key to hitting our Net Zero target by 2038. Our decision making has been informed by: - **Feedback** – what have our customers and stakeholders told us during engagement? - **Cost** – how much will each initiative cost, would the initiative offer value for money compared with alternative options, and should the goal be financed in a single regulatory period or spread out across multiple price controls? - **Deliverability** – what can be delivered by 2028? - **Impact** – how will the goal reduce our carbon emissions and lead us towards Net Zero by 2038? - **Carbon budgets** – what impact will the goal have on our RIIO-ED2 carbon budget be? - **Leadership** – will the goal enable us to become an exemplar organisation and show others in our region what can be done? There is a lot of work to do on making our buildings more efficient, particularly our older buildings and there is an acknowledgment that the quicker we do this, the sooner we will see the carbon benefits. We plan to make one of our depots zero carbon for each year of ED2. This will reduce our BCF by ~582 tCO_2e per year. Carbon emissions associated with our buildings' energy usage and operational transportation are the largest contributors to our business carbon footprint (over two-thirds of emissions excluding losses). Without our planned interventions, it's unlikely we would be able to meet our Net Zero carbon target and would further contribute to climate change.	

	We will replace our current vehicles with electric equivalents when they become cost neutral or cost beneficial over their lifecycle. We anticipate this will lead to our vehicle fleet being 29% electric by 2028. This will reduce our BCF by ~988 tCO_2e per year. Converting our company lease cars to EVs will also save ~535 tCO_2e per year.	

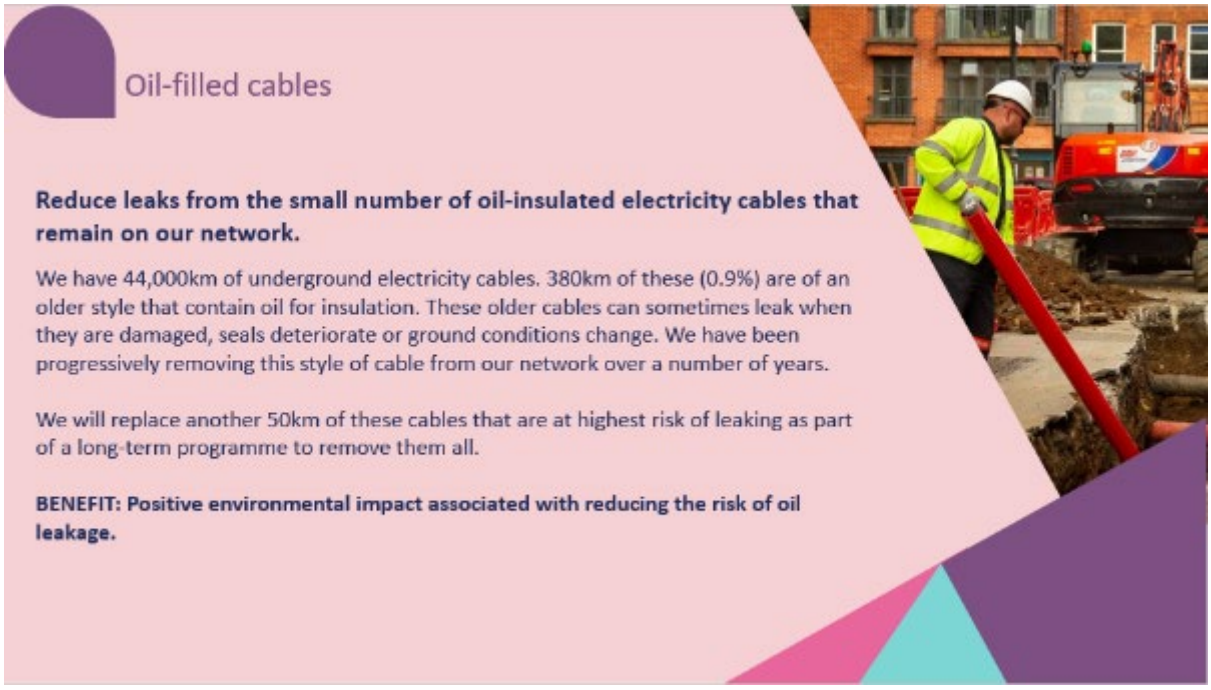
B33 Reducing leakage from oil-filled cables

Headline level of support

97% of customers understood the proposal and 79% found it acceptable. It ranked 33rd out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
79%	81%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal

Our plan for the future (phase 3)	56	• The **Plugged-In Public Panel** were presented with contextual information and bill impacts for 11 environmental themed investment options.
		  • '*Reduce the risk of oil leakage from some of our old cables by replacing them early*' was ranked 8th and only received 2% of the vote. Members felt that on balance, reducing oil leakage is not (as) important because only 2% of cables are affected by oil leaking annually.
		  • Members were asked to vote again after the meeting (establish any shift in opinion following the group discussion) and the results were largely consistent. However, a significant increase in preference share had occurred for reducing the risk of oil leakage.
		  • This shift can be accounted for by discussion that occurred during the meeting which focused on the damage an oil leak can have on the environment and the opportunity members had to question the presenters.

	Action taken: In the past five years we have removed 77km of oil insulated cables at a cost of £7m per year. We identified a need to understand the level of activity expected by customers relative to this baseline in ED2.	

Sweating the detail (phase 4)		• In a subsequent meeting of the **Plugged-In Public Panel** three environmental initiatives were re-presented in more detail to understand which, if any, we should invest more in:
		  1. Reducing the environmental impact of oil leakage from cables
		  2. Reduce the environmental impact of cutting down trees
		  3. Move cables underground in areas of outstanding natural beauty.
		  • 69% of the panel said that doing more to reduce the impact of oil leakage from cables is important (rating it 4 and 5 on a 5-point agreement scale – with 5 being considered most important) and only 9% indicated it was unimportant. Out of the three proposals reducing the impact of cutting down trees was considered to be the most important by customers (78%).

	Action taken: We developed a proposal for inclusion in **Acceptability Testing** which included a commitment to replace another 50km of cables at the highest risk of leaking.	
Closing the loop (phase 5)	New	• The **Plugged-In Public Panel** were provided an update on Acceptability Testing results and were asked, after hearing further contextual information, to deliberate further on this proposal.

Triangulation	Insights	How feedback shaped the proposal
		 ○ 63% felt it should be included in our early draft business plan in its current format, 24% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact), 13% suggested decreasing our ambition and no one suggested dropping it from the plan entirely. ○ Of those who were happy for the proposal to be included in its current form in the business plan, many cited the importance of looking after the environment as their reason for supporting this proposal. Some also highlighted the cost effectiveness of being proactive about this, favouring 'prevention rather than a cure' approach. Some members suggested it would be easier to understand the proposal if it targeted the volume of oil leakage reduced rather than cable replaced. ○ On balance a majority of members advocated retaining the current level of ambition and were cognisant that additional investment may increase the overall package price of service improvements beyond £9.80, which 20% of consumers said they could not accept. *"Protect the environment making it most cost effective rather than an expensive clean up."* • In our **early draft business plan consultation,** we changed our measurement target from the length of cable replaced, to reducing the amount of oil that leaks from them. We asked if this additional information helped stakeholders to decide if our level of ambition is sufficient. 93% of Plugged-In Panel members participating in the consultation said that we should retain the proposal in its updated format. 81% of Online Community representatives agreed.
	Action taken: We looked to refine our proposal to measure the amount of oil leakage specifically, rather than just measuring lengths of cable replaced.	

Nuances in perspectives between stakeholder groups

97% of domestic customers and 96% of business customers understood our plans for oil-filled cables. 83% of domestic customers supported the proposition, compared to 73% of business

customers. 3% of domestic customers and 5% of business customers were unsupportive. 92% of colleagues participating in the survey perceived our proposal to be acceptable.

Our stakeholders told us that whilst reducing leakage rates is important, it was important not to replace perfectly operating cables due to the overall environmental impact of such schemes.

Benchmarking analysis – draft plans

WPD is proposing to reduce leaks from fluid filled cables by 50% by 2028 and will replace 90km of the worst leaking circuits. Its ED1 performance already exceeds ENWL (20,213 litres lost per year).

NPg's current performance is similar to ENWL's and so is its commitment to reduce oil lost to ground by 15%. SSEN has pitched their improvement at 20%

Implications for the Business Plan

Outcome description	Current performance
Reduce oil leakage from underground cables to less than 25,000 litres per year on average	More than 30,000 litres per year on average
Incremental cost of proposal	**Target delivery date**
Included as part of our proposal on improving network health	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
			✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	In the RIIO-ED2 period we plan to spend £27.6m to replace oil filled cable with solid cable. We plan to continue with our programme of prioritising the highest risk cables and also carefully manage those lengths that do remain using new tracing technologies to ensure that we can identify and fix leaks as soon as they occur. These measures will enable us to minimise the leakage from these cables and **we have set an annual leakage target of less than 25,000 litres, representing a 17%**	**Future business plan 2023-2028**: Benefit 33 **Environmental Action Plan** (Annex 13)

	reduction on the targets we set for the end of ED1. The cables in scope of this target were laid in the 1950s/1960s and as they age become more prone to leakage. Without investment, there will be an increased risk of pollution to ground and water if these cables deteriorate or are damaged, particularly as the system works on positive pressure where lost fluid is replaced with more oil, i.e. the cable will continue to leak. This proposal achieved support from 79% of customers in our acceptability testing but originally focused on a target of replacing a certain length of cable (10km per year). Following stakeholder feedback, we have changed our target to reducing the amount of oil leakage specifically, rather than just measuring lengths of cable replaced (although the work to reduce leakage will still include replacing the highest risk cables). We asked stakeholders if this additional information helped them to decide if our proposed level of ambition is sufficient. 93% of Plugged-In Panel members participating in the consultation said that we should retain the proposal in its updated format. Annual leakage rate is low at just over 3% but as part of our commitment to reducing our leakage rate our investment in ED2 will support our long-term ambition to remove all fluid-filled cables from the network by 2047.	

B34 Removing overhead lines in beauty spots

Headline level of support

98% of customers understood the proposal and 79% found it acceptable. It ranked 34th out of 41 proposals evaluated and it was the lowest scoring environment proposition.

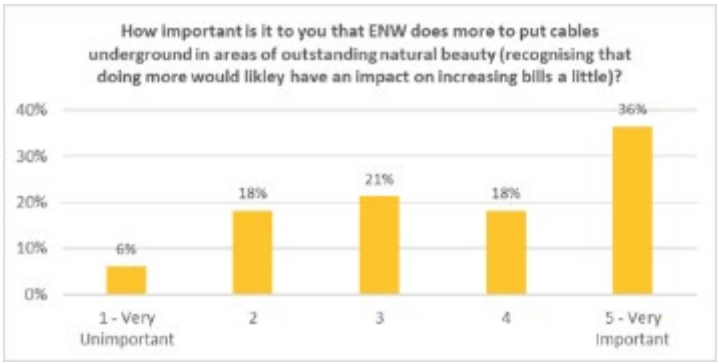
Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
79%	87%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

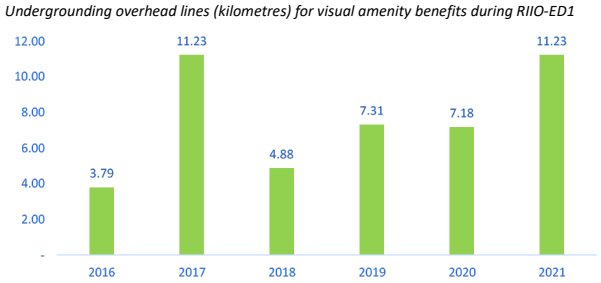
The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	10	• In a qualitative phase of our Customer **Priorities Research** we heard that we have a duty to maintain our network in an economical and efficient way, to preserve amenity, and to conserve and enhance the natural beauty, wildlife and the cultural heritage of designated landscapes. Customers told us that electricity pylons cause an impact on the natural beauty of designated areas. This is particularly important in the North West where we are proud to have three National Parks and four Areas of Outstanding Natural Beauty (AONBs) either wholly or partially within our region. *"Environmentally wise, it would be a lot nicer and a lot prettier to underground wires. I mean you come down the M6 and you look to your right going past Shap and there is just pylon, pylon, pylon. I thought they were meant to be getting rid of these. I just think they should keep this area pretty."*
	Action taken: Undergrounding cables for visual amenity was raised (unprompted) as a preference in our early research with customers. We identified a need to explore this further with a wider range of customers to understand its relative importance.	
Our plan for the future (phase 3)	56	• The **Plugged-In Public Panel** were presented with contextual information and bill impacts for 11 environmental themed investment options. '*Move overhead lines underground in areas where they spoil the view*' was ranked 11th and received 0% of the vote. • In discussing what, if anything, members needed to understand in more detail, while the visual implications of this was important to some members, others were more interested in focusing on the efficiency improvements that such action could deliver.

Triangulation	Insights	How feedback shaped the proposal
		"I'd be interested in knowing how long this would take and how much it would cost." *"I think this one is interesting, since wherever these cables are will be in more rural areas. I think them being underground would not only make the view better again but also really improve service reliability."*
	Action taken: We identified a need to provide customers with more contextual information about our Undergrounding for Visual Amenity (UVA) programme in ED1 and the approach that would be taken in ED2 to selecting projects and the likely costs and benefits.	
Sweating the detail (phase 4)		• We provided further information on our UVA proposal in an environment themed meeting of the **Plugged-In Public Panel**. In response 54% of the panel said that doing more to put cables underground in areas of outstanding natural beauty is important (ratings of 4 and 5 on a 5-point agreement scale) and a greater proportion (24%) indicated it was unimportant compared to other propositions. Reducing the environmental impact of oil leakage from cables (69%) and impact of cutting down trees (78%) were both considered to be more important. ○ Commenting on this, those who felt this was unimportant noted that it appeared to be a very expensive action for what appeared to be a largely aesthetic outcome, while others suggested that customers needed to accept overhead cabling across the countryside as part of the human landscape. Others noted the scale of investment required and speed of implementation being a barrier: *"It would be nice, but at the current rate it would take ~500 years. 34kms per 5 years with 3,500km+ cables to bury. It is not a practical objective."*  • Undergrounding overhead power lines for visual amenity was also appraised in a **Max-Diff 1 survey** completed by customers and members of our **CEO Stakeholder Advisory Panel**. The proposal was ranked 22nd by customers and 24th by stakeholders, indicating a consensus view of its lower (relative) importance to other investments that cut across the business plan. • In an **industry working group**, Sustainability First, expressed a view that DNOs have dramatically underspent their UVA ED1 allowances (with the exception of Electricity North West) and raised questions about why this is. DNOs shared deliverability challenges and asserted the complexity of schemes that take a long time to develop and implement.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">Action taken: There is only very limited support to expand the scale of the existing undergrounding for visual amenity programme from ED1 levels. In response we will roll-over our business-as-usual activity into ED2. This equates to ~7-8km of undergrounding per annum, in areas identified and prioritised by our stakeholders.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

We reviewed our ED1 programme of undergrounding overhead lines for visual amenity benefits. By the end of the sixth year of RIIO-ED1, we have removed a total of 45.62km, as shown below. It is likely that the total length of cable undergrounded will be around 65km by the end of RIIO-ED1.



*

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures:

Other, customer utility benefits, to be measured through Bespoke Social Value (WTP) Research: customers will benefit from improved visual amenity.
Societal benefits: customers benefit from improved network reliability as power cables are more resilient to the weather.

The total net economic benefit per £ spent (SROI) through removing overhead lines in beauty spots is estimated to be £2.60. This investment proposal is in line with the average social return on investment we would expect to see for this type of activity in our ED2 plan, with an overall net present value assessment of ~ £13m.
Customer benefits account for 78% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£4,847,077.16</td></tr>
<tr><td>Total gross present value</td><td>£14,744,948.14</td></tr>
<tr><td>NPV</td><td>£12,603,309.86</td></tr>
<tr><td>SROI</td><td>£2.60</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

At a **Sustainability Stakeholder Advisory Panel** meeting, Lancashire County Council pointed out that it would be useful to understand how changing to underground cables will be prioritised and in which areas. Procure Plus raised the question of how much benefit there was from a resilience point of view, rather than just visual amenity.

97% of domestic customers and 93% of business customers who responded to our survey found this proposition clear and understandable. 78% of domestic customers and 82% of business customers were supportive of our plans while a small number were unsupportive (4% domestic, 2% business). One business customer stated that moving equipment to improve the view is not a good use of resources. 85% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

Electricity North West has committed to removing up to 40km of overhead lines in Areas of Outstanding Natural Beauty. Comparatively, only SPEN has set a lower target (35km) with WPD at 50km, NPG 61km and SSEN 83km.

Implications for the Business Plan

Outcome description	Current performance
Maintain our successful programme of improving visual amenity	Replace 7-8km of overhead line with underground cables each year
Incremental cost of proposal	**Target delivery date**
Maintained at current levels	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
●		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x3)	✓	✓ (2019)

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: A lack of customer support for further ambition**	In ED2 we will continue our programme working closely with National Parks, AONBs and other key stakeholders to remove 7-8km of the most visually intrusive overhead lines and underground the cables in national parks and areas of outstanding natural beauty where it is supported by stakeholder engagement. This is particularly important in the North West where we have three national parks and four Areas of Outstanding Natural Beauty (AONBs) wholly or partially within our region. The undergrounding of overhead lines initiative draws support from some customers, as shown above,	**Future business plan 2023-2028**: Benefit 34 **Environmental Action Plan** (Annex 13)

	though this scheme is an example of activities that do not draw universal support. Due to undergrounding overhead lines being a lower priority for customers and stakeholders, we will not expand our scheme and only spend up to the entitlement provided by Ofgem for this activity. The length of cable to be undergrounded is based on the expected entitlement from Ofgem (which is to replicate the RIIO-ED1 calculation methods) and our experience of the cost of this activity. We will be open to applications from National Parks and AONBs, but each one will be subject to reviews based on cost, environmental benefits and viability of scheme. Any undergrounding activities will potentially require disruption to sensitive ground and will result in carbon emissions associated with the construction and demolition activities, so careful consideration needs to be given to the whole environment. Other factors to consider include network resilience, visual impact, impact on migratory birds, cost, environmental impact, age of equipment, engineering difficulties and land rights and consent issues. We will work with experts where appropriate, including archaeologists, the Environment Agency and local councils to minimise other environmental impacts and ensure the work is handled sensitively. Without this investment there will be visual intrusion in otherwise picturesque landscapes, impact on migratory birds and reduced network resilience where the overhead lines are damaged by storms.	

B35 Reducing losses from the network

Headline level of support

98% of customers understood the proposal and 87% found it acceptable. It ranked 8th out of 41 proposals evaluated and the highest scoring environment proposition.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
87%	86%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	51	• The **Plugged-In Public Panel** were presented with contextual information and bill impacts for 11 environmental themed investment options. '*Invest to reduce electricity lost during transmission'* was ranked 2nd and received 25% of the vote in favour of investment prioritisation, indicating relatively strong customer support. Members hypothesised that this option would enable us to be more environmentally friendly and would future-proof the network.
	Action taken: Customers want to see a concerted effort to reduce losses. In response we developed a proposal for inclusion in Acceptability Testing that enhanced our ED1 activity.	
Sweating the detail (phase 4)	10 (updated)	• In developing our Environmental Action Plan (EAP) we sought to learn from best practice in other sectors and engaged with stakeholders via Ofgem's Decarbonisation and Environment ED2 **Working Group** (DEWG). ○ Divergent views existed among stakeholders (Ofgem, all DNOs, BEAMA, Sustainability First, Campaign for National Parks) around losses; specifically, where it sits (in/out of Science Based Targets) and if in scope, whether it is scope 2 or scope 3. Sustainability First perceived a risk that a tough settlement will drive networks to go for least cost solutions which detract from reducing losses.
	Action taken: We continued our consultation with stakeholders via bilateral meetings and developed a proposal for targeted investment in areas of the network with the greatest losses.	
Closing the loop (phase 5)	New	• In a **bilateral meeting** with Citizens Advice we heard that our losses proposal fails to disclose a starting position or our historical performance, making it difficult for stakeholders to appraise it.

Triangulation	Insights	How feedback shaped the proposal
	Action taken: In our business plan consultation we shared our current performance level of 1,150 GWh losses per year. This provides additional context for our proposed reduction.	
Submit and refine (phase 6)	New	• Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs. • The societal benefit modelled measures: ○ Societal benefits: customers benefit from the carbon emissions avoided through reducing network losses. The proxy used for this is from Ofgem's CBA template – the '*average traded price of carbon*.' • The total net economic benefit per £ spent (SROI) by reducing losses from the network is estimated to be (£0.95). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£8m). This is likely to be because of the short time period benefits are modelled over and high upfront costs. • Societal benefits account for 5% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

5-year reporting figures		
Economic	**Total cost**	£8,429,699.41
	Total gross present value	£379,417.68
	NPV	-£7,975,308.16
	SROI	-£0.95

Nuances in perspectives between stakeholder groups

At a **Sustainability Stakeholder Advisory Panel** meeting, Anthesis Group stated that our proposal looks sensible and reasonable and that it's important to take a risk-based approach and to use cost benefit analysis, factoring in carbon costs, to evaluate which lengths of cable to prioritise.

Most customers who took part in our survey found this proposition clear and understandable (97% customers and 95% business). 90% of domestic customers supported our plans, compared to 82% of business customers. A small number of business customers disagreed with our plans (3%). 98% of colleagues participating in the survey perceived our proposal to be acceptable.

Implications for the Business Plan

Outcome description	Current performance
Reduce losses by 8GWh per year	Proactively reduced by 11GWh per year
Incremental cost of proposal	**Target delivery date**
£10m, equivalent to similar programme in ED1	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data

		●	◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓		✓ (x-1)	✓	

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: Value for money trade-off (CBA)**	**To reduce losses in ED2, we will upgrade cables and equipment to lower loss equivalents when we are undertaking work and also replace the highest loss equipment on our network, even if the equipment does not require replacement for any other reason.** Customers and wider stakeholders demonstrated strong support for our investment in losses and futureproofing in Acceptability Testing. The proposal outperformed all other environmental investments; therefore, we will proceed with the commitment with its current ambition level. We will take a risk-based approach and use cost benefit analysis, factoring in carbon costs, to evaluate which lengths of cable to replace. Our targeted programme will be influenced by the lifetime benefits of a potential investment compared to its costs in a manner consistent with Ofgem's CBA. Our replacement programme is focused on assets with a positive Net present value (NPV) - a method used to determine the current value of all future cash flows generated by a project, including the initial capital investment. The potential impact on RIIO-ED2 without intervention will be the loss of enough electricity to power around 2,760 homes per year, with emissions of 2,264 tCO2e per year as well as potential network capacity constraints.	**Future business plan 2023-2028**: Benefit 35 **Environmental Action Plan** (Annex 13) **Annex 14**: Losses Strategy

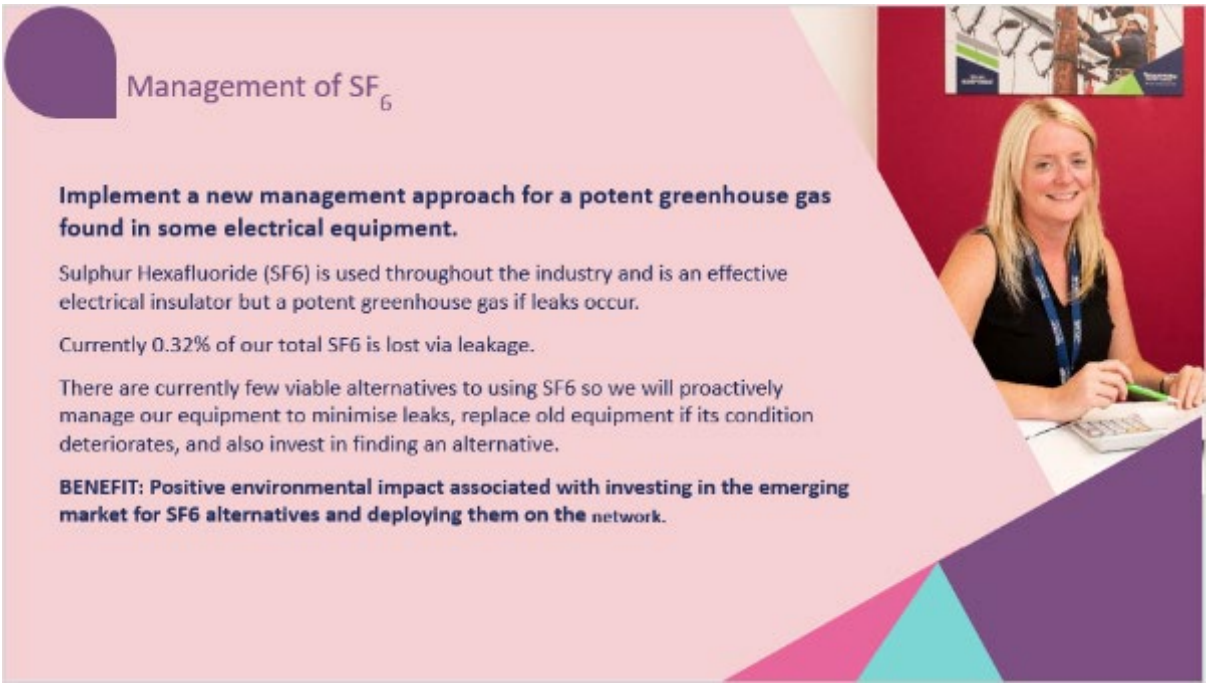
B36 Reducing emissions of potent greenhouse gases from equipment

Headline level of support

93% of customers understood the proposal and 81% found it acceptable. It ranked 30th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Proceed with current ambition
81%	88%	**Final triangulation decision**
		Proceed with current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:



Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	New	• We engaged with Ofgem, DNOs and a range of stakeholders (BEAMA, Enertechnos, Sustainability First, Campaign for National Parks) on SF6 via Ofgem's Decarbonisation and Environment ED2 **Working Group**. ○ SSEN had investigated alternative SF6 technology and reported findings which showed that leakage occurs most at the 132-voltage level and found there are viable alternatives available. The findings showed that for lower voltage levels there are less readily available alternatives and also more costly comparators, therefore there is more work needed with manufacturers to progress (which is underway). ○ Sustainability First said it advocated a holistic strategy across the entire electricity sector on SF6 and that this should include transmission.
	Action taken: We planned further bilateral engagement with stakeholders on SF6 and developed a proposal for maintaining an SF6 leakage rate below 0.3% per year.	
	New	• Following a **Sustainability Stakeholder Advisory Panel** on 12 November a sub-group was created to inform the development of our Environmental

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Sweating the detail (phase 4)</td><td></td><td>Action Plan. In the sub-group meeting we provided some overarching strategy options in response to Ofgem's minimum standard regarding commitment to efficient and economic actions to reduce leakage rates and improve management of SF6 assets.
Our independent chair advised us to factor in the global warming potential into our plans whilst the Anthesis Group asked us to clarify the current impact of SF6 on our Business Carbon Footprint. The group recognised that a sector wide approach is the optimal way forward to reduce these emissions down as fast and as cheap as possible.</td></tr>
<tr><td></td><td colspan="2">Action taken: We continued to engage with industry stakeholders via an ENA SF6 working group to discuss how DNOs can influence suppliers to develop alternatives. Some suppliers have advised that their target is to have at least one SF6 free alternative equipment by 2023.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

We reviewed our ED1 programme, where the goal was to reduce our leakage rate by over 20% from a rate of 0.38% (as a proportion of the mass in service) in 2013 to 0.30% by 2023. On average, our fugitive emissions of SF6 have been 0.33% of our total bank during the first six years of RIIO-ED1 (an average of 48 kilograms per year, though this is increased if the first year of RIIO-ED1 is excluded).

*

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures:
<u>Societal benefits</u>: customers benefit from the carbon emissions avoided through reducing leakage. The proxy used for this is from Ofgem's CBA template – the 'average traded price of carbon.'
The total net economic benefit per £ spent (SROI) by reducing emissions of potent greenhouse gases from equipment is estimated to be (£0.93). This investment proposal is below with the average social return on investment we would expect to see for this type of investment in our ED2 plan, with an overall net present value assessment of ~ (£6.2m). This is likely to be because of the short time period benefits are modelled over and high upfront costs.
The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="3">Economic</td><td>Total cost</td><td>£6,743,759.53</td></tr>
<tr><td>Total gross present value</td><td>£379,417.68</td></tr>
<tr><td>NPV</td><td>-£6,289,368.27</td></tr>
</table>
</td></tr>
</table>

Triangulation	Insights	How feedback shaped the proposal
		SROI -£0.93

Nuances in perspectives between stakeholder groups

A representative from Lancaster University at a Sustainability Stakeholder Advisory Panel meeting questioned this proposal and the lack of alternatives, suggesting that maybe the alternatives are more expensive. It was also suggested that collaboration with other DNOs will speed up the process of finding an alternative to SF_6 technology.

Understanding of this proposal was slightly lower than most with 89% for domestic customers and 90% for business customers. Support from both customer groups was 80%, with just 1% of all customers disagreeing with our plans. 96% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

WPD is proposing to deliver a 20% reduction in SF6 losses (on its ED1 leakage rate of 0.2% of the total SF6 on its system) and to work with industry partners to develop technological alternatives.

At a current performance of 0.32% and commitment of ≤0.3% ENWL's commitment lags WPD's but outranks SPEN's who have achieved its target of 0.75% in ED1 and committed to a 10% reduction in ED2. Meanhile, NPg is targeting a 15% reduction (42.7kg) and SSEN is behind on its ED1 target and will reduce by 35%.

Implications for the Business Plan

Outcome description	Current performance
Reduce SF_6 leakage rate to below 0.3% per year	SF_6 leakage rate at 0.32% per year
Incremental cost of proposal	**Target delivery date**
£8m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
		●	◕	◕		◔

Priority stakeholder groups engaged: Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x-1)	✓	

Response	Supporting narrative	Read more at
MET/EXCEEDED STAKEHOLDER EXPECTATIONS **Constraint: efficient deliverability constraints (technology/ supply chain)**	We heard that we should implement a new management approach for a sulphur hexafluoride (SF6) that is found in some of our equipment. Our stakeholders noted that a sector-wide approach may be the best way forward and that a strategy may need to account for the different viability of alternatives at different voltage levels. Setting a target around leakage rates is an Ofgem minimum requirement. As assets age they become more prone to leakage; based on our ED1 performance and stakeholder comments that setting a new target is complex and requires the full development of a strategy, we will replicate our ED1 target to maintain a leakage rate of 0.3%. **In response to stakeholder feedback and a relatively good level of acceptance of our proposals we are committing to maintaining our SF_6 leakage rate to less than 0.3% of our total inventory over RIIO-ED2.** We will collaborate with other DNOs and transmission organisations through the Energy Networks Association (ENA) to produce a strategy to accelerate the viability of alternatives to switchgear containing SF6. Once the full strategy is embedded, we will review our target at the end of the second year of ED2 and also impose a target on a kilograms basis. Reviewing our leakage rate at the midpoint of RIIO-ED2 provides an opportunity to assess technological advances and take account of current performance. Although only a relatively small amount of SF_6 leaks, fugitive emissions make up almost a tenth of our current business carbon footprint (see B32). The proposed investment level is justified because assets that develop leaks and are beyond repair would result in high carbon equivalent emissions, contributing to climate change. The total net economic benefit per £ spent (SROI) through reducing emissions of potent greenhouse gases from equipment is below the average return we would expect to see for this type of investment in our ED2 plan. This is likely to be because of the short time period costs and benefits are modelled over (whereas the benefits will continue to accrue over a longer period). In practice, a significant proportion of our plans in this area either relate to activity in South Manchester where it will be a requirement of a collaborative project with National Grid or will form part of an Uncertainty Mechanism. This means work will be appropriately considered at the time but we're not asking for any money upfront now.	**Future business plan 2023-2028**: Benefit 36 **Environmental Action Plan** (Annex 13)

B37 Making our sites havens for wildlife

Headline level of support

95% of customers understood the proposal and 86% found it acceptable. It ranked 11th out of 41 proposals evaluated.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation
86%	86%	**Final triangulation decision**
		Increase current ambition

The following proposal was tested in **Acceptability Testing (Phase 4)**:

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	10	• In **bilateral engagement** with stakeholders we heard that we should think beyond the asset, by doing more to address complaints from residents near our substations, by increasing biodiversity and attracting pollinators in urban areas, thereby reducing vandalism and ultimately giving communities spaces that they can take pride in. Stakeholders challenged us to investigate the feasibility of targeting biodiversity in areas where there are greater concentrations of fuel poor customers, and therefore an elevated need to strengthen community support and cohesion.

Triangulation	Insights	How feedback shaped the proposal
	Action taken: We planned engagement with customers to understand broader viewpoints in conjunction with analysing our social data mapping to identify substations that serve areas with greater concentrations of fuel poor customers.	
Our plan for the future (phase 3)	56	• The **Plugged-In Public Panel** were presented with contextual information and bill impacts for 11 environmental themed investment options. '*improve biodiversity at our sites through planting schemes'* was ranked 9th and received 0% of the vote in favour of investment prioritisation.
	Action taken: We identified a need to review our existing biodiversity and green spaces investments and understand the importance of enhancing our land through tree planting.	
Sweating the detail (phase 4)	New	• Working closely with councils, residents and local community groups, we scaled our highly successful 2019/20 'Transforming our Spaces' programme to a total of 12 substation sites. Although spring ground clearance and planting was impeded by COVID-19 lockdown restrictions, our grounds maintenance team worked flexibly to turn sites into colourful wildflower meadows; creating a home for wildlife, helping vital pollinating insects, and reducing the amount of ongoing maintenance needed. Transforming our Spaces with plants and wildflowers is supporting efforts to reverse the national decline in pollinating insects while also delivering high visual impact to a total of 9,274 customers living within 1km of the 12 substations. • This year GMCA announced plans for 3 million new trees to be planted in the city area over the next 25 years, one for every city inhabitant. We looked at how we could support this activity using our own land and entered into a new partnership with City of Trees, which has led us to donate two sites for tree planting, leveraging the newly granted Defra fund (Trees for Climate). Up to 800 trees will be planted. • We collaborated with Economic Insight to identify the **SROI** of our biodiversity and greenspaces programme. The social benefit per person impacted is £28 and the SROI expressed as a multiplier is £17 benefit for every £1 spent (significantly higher than our normative data). The benefit is derived from consumers' willingness-to-pay for local park or green space (most commonly visited within 1km).
	Action taken: We developed a proposal to expand our Transforming Our Spaces programme in ED2 from 11 to 25 sites and enhance it with tree planting. A feasibility study was commenced to understand the extent to which the activity could be scaled up.	
Closing the loop (phase 5)	New	• In a **bilateral meeting** with Citizens Advice we heard that the community engagement aspect of our proposal was positive. • We updated the **Plugged-In Public Panel** on Acceptability Testing results from phase 4 and asked the members to deliberate this proposal further, in the context of the findings.

Triangulation	Insights	How feedback shaped the proposal

- 47% felt it should be included in our early draft business plan in its current format, 45% voted in favour of increasing our ambition (accepting this would necessitate a higher bill impact), 5% suggested decreasing our ambition and 3% suggested dropping it from the plan entirely.
- Of the 58% of members who wished to see this proposal included in the business plan, many thought this was a cost-effective way to ensure that customers were receiving support they need, whilst also allowing us to focus on our core purpose of providing electricity. Members indicated that they liked the idea of seeing more green spaces in the North West, with some speaking positively about seeing similar actions taken in their local areas to promote biodiversity.

"It's good to have these greener spaces and empowering communities to maintain their area and make it their own is the right thing to do, for environment and local people."

"I love this idea as I have a site near me and it's really beautiful. A big improvement on how it was before."

- A key theme highlighted by members when explaining why they would like to see greater ambition was a belief that engagement on biodiversity would have a positive impact on local communities, providing opportunities for education and making areas more attractive.

- Our **Online Community** were presented with environmentally focused questions. They told us we should aim to enhance biodiversity by 10% when enhancing green spaces and not because we are required to do so by legislation.
- In our **early draft business plan consultation,** we asked for feedback on how we can make the most of investment to make our sites a haven for wildlife. Plugged-In Public Panel members suggested involving local groups, charities and schools in the selection and development of sites. Stakeholders recommended collaborating with Wildlife Trusts and local experts.

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">Action taken: 45% of our Plugged-In Public Panel asked to see greater ambition from us. We took this and the relatively high SROI of the activity into consideration and have committed to using our own workforce to scale up this successful programme to 51 sites by 2023 and 151 by 2028.</td></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefit modelled measures:

<u>Other customer utility benefits, to be measured through Bespoke (WTP) Social Value Research</u>: Our benefit value draws on willingness to pay values for local park or green space (most commonly visited within 1km) and park or green space satisfaction. The proxy used is based on land improvement for green spaces.
We scale the success of our initiative based on a knowledge of the number of customers served by an enhanced substation, who live within 1km of the site.

Overall, the SROI assessment forecasts a total economic benefit per £ spent (SROI) of circa £19, making it a relatively strong performing investment proposal for social return on investment in our ED2 plan, with an overall net present value assessment of circa £5.2m. Societal benefits account for 95% of the non-discounted costs and benefits modelled. The 5-year reporting figures are as follows:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£273,095.70</td></tr>
<tr><td>Total gross present value</td><td>£4,555,881.38</td></tr>
<tr><td>NPV</td><td>£5,247,835.21</td></tr>
<tr><td>SROI</td><td>£19.22</td></tr>
</table>

Further analysis was undertaken to understand the scalability of the initiative and customer reach. By the end of ED2, 151 sites will have been transformed into havens for wildlife (inclusive of ED1 activity). This will mean that 20% of all consumers, served by substations in areas with above average incidence of fuel poverty, will have benefitted from our programme.

<table>
<tr><th>Description</th><th>SROI</th><th>Units</th><th>2019/20</th><th>2020/21</th><th>2021/22</th><th>2021/22</th><th>End of ED2</th></tr>
<tr><td>Enhancing biodiversity and eco</td><td>x19</td><td>Cumulative number of spaces benefitting from enhanced biodiversity</td><td>9</td><td>21</td><td>31</td><td>51</td><td>151</td></tr>
<tr><td></td><td></td><td>Cumulative consumers benefitting from enhanced biodiversity spaces</td><td>6,886</td><td>16,067</td><td>23,717</td><td>39,019</td><td>115,526</td></tr>
<tr><td>Normalisation</td><td></td><td>Total number of spaces in fuel poor areas suitable for enhanced biodiversity</td><td>2,532</td><td>2,532</td><td>2,532</td><td>2,532</td><td>2,532</td></tr>
<tr><td></td><td></td><td>% complete</td><td>0%</td><td>1%</td><td>1%</td><td>2%</td><td>6%</td></tr>
<tr><td>Normalisation</td><td></td><td>Total number of consumers in fuel poor areas that could benefit from enhanced biodiversity</td><td>590,485</td><td>590,485</td><td>590,485</td><td>590,485</td><td>590,485</td></tr>
<tr><td></td><td></td><td>% complete</td><td>1%</td><td>3%</td><td>4%</td><td>7%</td><td>20%</td></tr>
</table>
</td></tr>
</table>

Nuances in perspectives between stakeholder groups

The chair of our Sustainability Stakeholder Advisory Panel was supportive of this proposition. Lancaster University requested a SROI value for biodiversity. The vast majority of customers who responded to our survey understood our biodiversity proposition (96% domestic and 98% business). 85% of domestic customers agreed with our proposals compared to 88% of business customers. Just 2% of all respondents disagreed with our plans. 90% of colleagues participating in the survey perceived our proposal to be acceptable.

Benchmarking analysis – draft plans

NPg is the only other DNO with a firm commitment to improve biodiversity using its existing land. It will deliver biodiversity initiatives at 200 sites – higher than Electricity North West's revised target of 100 sites during ED2.

Implications for the Business Plan

Outcome description	Current performance
Create an additional 100 bio-diversity and community green space sites	11 new sites in RIIO-ED1
Incremental cost of proposal	**Target delivery date**
£1.9m	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Online Community
		●	◕	◕	◓	◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
		✓ (x19)	✓	

Response	Supporting narrative	Read more at
EXCEEDED STAKEHOLDER EXPECTATIONS **Constraint: efficient deliverability constraints**	**We will expand this programme in ED2 to create and support other green spaces and biodiversity schemes, including tree planting schemes where appropriate**. • In our business plan consultation, we committed to expand the programme from 11 to 25 sites and asked stakeholders whether we should be more ambitious. As part of our consultation we re-engaged our Plugged-In Public Panel and a significant proportion preferred greater ambition. • Influenced by stakeholder feedback and this activity having a relatively high societal benefit **we will use our own workforce to scale up this successful programme to 51 sites by 2023 and 151 by 2028.** We will continue to identify a number of sites each year for a net gain in biodiversity; this will be 100 sites over RIIO-ED2. This is based upon the maximum deliverability of 20	**Future business plan 2023-2028**: Benefit 37 **Environmental Action Plan** (Annex 13)

	sites per year, though as are learnings in this area increase, we will look for opportunities to increase this number without adding to the cost. We will conduct a baseline biodiversity assessment with a suitable tool to measure the baseline biodiversity and natural capital, and record biodiversity following the intervention. We will set a target for the measurable net gain from 2025 once we have sufficient learnings from the schemes to date. This combined programme is forecast to cost £200k per year, or £1m over the RIIO-ED2 period. The potential impact in ED2 without intervention will be the continued loss of natural habitats and biodiversity impacting on, as an example, pollinators and all plants and species that rely on them.	

Reducing operational waste and increasing recycling rates (this was removed from the main business plan narrative but still included in the Environmental Action Plan. It has been retained in Annex 01 for openness and transparency)

This proposal was not included in Acceptability Testing.

The consequence of not setting reuse and recycling targets alongside landfill diversion targets is a risk that waste will be diverted to energy from waste facilities. Although this does recover energy, it results in the need for the material to be replaced outright. In addition, fully embedding circular economy principles are vital if the earth is to be sustainable.

Whilst robust and meaningful engagement was carried out with a broad range of customers and stakeholders regarding many aspects of the Environmental Action Plan, we decided not to focus our engagement specifically on recycling targets. This is because our commitment will be based on typical commercial waste compositions, an understanding of our operations, and the estimated recyclability and potential capture rates of our waste streams for recycling.

Response	Supporting narrative	Read more at
N/A	We will: • Produce annual targets for reductions in waste • Send no more than 5% of waste to landfill by 2025 • Reuse or recycle 70% of our total waste by the end of RIIO-ED2 • Reuse or recycle 85% of our excavated waste by the end of RIIO-ED2 • Eliminate unnecessary single-use plastics from our waste stream by the end of RIIO-ED2 • Target reductions in water use throughout RIIO-ED2. The potential impact in ED2 without the intervention we have set-out would lead to permanent loss of resources, either through landfill or recovery as energy to waste, resulting in	**Annex 13**: Environmental Action Plan

	the continued extraction and use of virgin materials. Without setting reuse and recycling targets alongside landfill diversion targets, there is a risk that waste will be diverted to energy from waste facilities; although this does recover energy, it results in the need for the material to be replaced outright.	

Output 10 Complying with new legislation on polychlorinated biphenyls (PCBs)

This proposal was not included in Acceptability Testing.

New legislation requires all PCB-contaminated equipment to be disposed of or decontaminated of PCBs by 31 December 2025.

In the interests of openness and transparency we informed customers of the requirements we will need to fulfil in this area but did not actively pursue views. Informed stakeholders told us that we should comply with legislation relating to equipment identified as contaminated or likely to be contaminated with PCBs.

Implications for the Business Plan

Outcome description	**Current performance**
Elimination of PCB contamination risk from our network equipment	n/a
Incremental cost of proposal	**Target delivery date**
Currently estimated at £21m	31 December 2025

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

Priority stakeholder groups engaged: Other utilities, regional local authorities, environmental groups and specialist consultants.

Response	**Supporting narrative**	**Read more at**
COMPLIANCE	We will move all PCB-contamination from our network by 31st December 2025 and collaborate with other DNOs and TOs to identify cohorts of transformers that can be left on the network due to an Environment Agency approved statistical model. The potential impact in ED2 without the intervention we have set-out is pollution of the environment with persistent organic pollutants should any leaks occur, increasing risk of PCB-poisoning to apex predators as the toxins	**Environmental Action Plan** (Annex 13)

	bioaccumulate in the food chain. There would also be a risk of violation of the regulations requiring their removal.	

Improving environmental management within our supply chain (this was removed from the main business plan narrative but still included in the Environmental Action Plan. It has been retained in Annex 01 for openness and transparency)

This proposal was not included in Acceptability Testing.

We recognise that as the electrical distribution network operator in the North West, we have a responsibility to lead and influence others to improve their environmental performance. Without intervention there is a risk of contributing to climate change; ground and water pollution, air quality and resource use could go unchecked and would be solely dependent on the supply chain to initiate.

Our stakeholders suggested that we should consider introducing a requirement for suppliers to declare the amount of recycled material within products they supply to us.

In considering introducing a mandatory requirement for our suppliers to report on the embodied carbon for the materials and equipment that they provide to us we sought guidance from a range of informed and expert stakeholders. We heard that our supply chain requirements must not become too much of a burden on small and medium-sized enterprises. Therefore, we will introduce requirements in a phased approach starting with the top 80% of our supplier base (by value). We are currently working with third parties with relevant experience and expertise to develop our approach.

Implications for the Business Plan

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕		◓	◔

Priority stakeholder groups engaged: Other utilities, regional local authorities, environmental groups and specialist consultants.

Response	Supporting narrative	Read more at
COMPLIANCE	We will create a resources strategy prior to the start of RIIO-ED2 and embed the requirements of this within our organisation. Once we have established a robust baseline, we will liaise with the supply chain and other DNOs to identify potential reductions in the embodied carbon of materials provided, while also optimising the design of new infrastructure projects.	**Environmental Action Plan** (Annex 13)

	We will target a reduction in the carbon intensity of products, such as transformers and materials such as concrete. We will set these targets once we have an established baseline and work with our suppliers to reduce the carbon intensity of their offerings. We will consider introducing a mandatory requirement for the top 80% of our suppliers (by value) to report on the embodied carbon for the materials and equipment that they provide to us by the mid-point of ED2, where they are considered material to our operations. If material embodied carbon values cannot be provided, we will apply industry-recognised emission values. There is also a high likelihood that by considering resource consumption within our business and procurement processes, it will lead to cost savings and reduced business carbon footprint.	

4.3 Consumer Value Proposition

Ofgem define CVPs as:

> *Consumer Value Proposition is Stage 2 of the Business Plan Incentive, where a DNO could bid for reward by demonstrating the additional value its business plan will generate for existing and future consumers and consumers in vulnerable situations*[18].

We have reviewed our Draft Business Plan in this context, considering both the CVP criteria and also where our Proposals go beyond Ofgem's baseline expectations.

We have reviewed potential candidates for CVPs in our final submission and identified Smart Street and Customer Load Active System Services (CLASS) as proposed CVPs.

CVP1: Smart Street: Reducing cost and carbon for customers

Formerly, 'Rolling out our Smart Street project to reduce cost and carbon for customers'
Service attribute tested in WTP was referred to as, 'Expansion of Smart Street'

Headline level of support

93% of customers understood the proposal and 78% found it acceptable. It ranked 39th out of 41 proposals evaluated. This proposition was the least understood of all propositions and is at our acceptability testing target threshold.

Support for proposal in Acceptability Testing		Decision after Acceptability Test
All customer measure	All customers and stakeholders	Further consultation

[18] P.93, https://www.ofgem.gov.uk/sites/default/files/docs/2020/12/ed2_ssmd_overview.pdf

Support for proposal in Acceptability Testing		Decision after Acceptability Test
78%	83%	Final triangulation decision
		Proceed with increased ambition

The following proposal was tested in **Acceptability Testing (Phase 4):**

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our proposal:

Triangulation	Insights	How feedback shaped the proposal
Customer connection (phase 1)	2,14	• A literature review of Government data sources revealed the latest statistics on the number of households living in fuel poverty in England. The greatest prevalence of fuel poverty is in the North West (12%). • Our **Segmentation**, revealed that 45% of a representative sample of consumers in our region sometimes struggle to pay their energy bills and among these 13% are finding paying their bills a constant struggle. The same question was asked in a **WTP survey** in 2019 and 40% had reported sometimes struggling to pay, indicating that the proportion of customers struggling has increased over time. • In our quantitative **Priorities Research**, affordability, defined as *'keeping Electricity North West's part of your energy bill as low as possible'*, was ranked the second most important priority, behind delivering a reliable network. • Our **Consumer Vulnerability Stakeholder Advisory Panel** asked to hear more about an initiative Electricity North West had developed under innovation funding, called Smart Street, which uses voltage optimisation techniques, proven to increase the efficiency of our networks and customers' appliances and reduce energy consumption by 8%. Smart Street saves customers approximately £60 per year, *without them having to take any action*. Stakeholders felt there was substantive evidence that the scheme has a very positive social benefit, in addition to network benefits such as reduced losses and deferment of traditional reinforcement. The panel asked us to focus on

Triangulation	Insights	How feedback shaped the proposal
		how we can use social data mapping to target deployment of the technology as part of the limited roll-out in ED1 and at scale during ED2, in areas where there is a *greater concentration of fuel-poor customers*. This would potentially increase the SROI of the initiative. • In its 'Future Energy Models' report[19], Citizens Advice concluded that DNOs have an enduring relationship with a customer and, therefore, through avoiding network constraints, an incentive to aid reduction in usage.
	Action needed: We identified early on in our programme that Smart Street would be an important enabler of ensuring the affordability of consumers' energy bills, whilst also supporting the North West's transition to Net Zero. Representatives of vulnerable consumers urged us to prioritise deployment of the technology in areas of fuel poverty. Therefore, we identified a need to consult more widely on this proposal, which would be a departure from our ED1 strategy of deployment in localities forecasted to have a significant take-up of LCTs.	
Electricity in my life (phase 2)	32	• '*Expand the 'Smart Street' initiative to improve energy efficiency, targeted in areas of fuel poverty (when a household cannot afford to keep adequately warm at a reasonable cost, given their income*)' ranked 7th in a **Max-Diff 1 survey**, indicating strong appeal. • Businesses ranked Smart Street 3rd, higher than households who ranked it 8th. Females were significantly more likely to find the proposal appealing than males (4th vs. 14th) and a similar pattern was observed for expanding support for fuel-poor customers. Notably Smart Street was very well supported by 18-29-year olds (2nd) and those who sometimes struggle to pay their bills (3rd).
	Action needed: We identified a need to include Smart Street in **WTP research** to understand the most appropriate level of ambition for scaling its roll-out. The attribute met prioritisation criteria for inclusion in WTP based upon its bill materiality – including a stretch target of 250,000 customers which would require £70m investment.	
Our plan for the future (phase 3)	62	• We asked our **CEO Stakeholder Advisory Panel** to undertake the same Max-Diff exercise as customers and they ranked expanding Smart Street 4th. • In a meeting convened with the **Plugged-In Public Panel,** members were presented with a range of potential investments, including an indication of the likely impact on bills. Out of the 12-network related investment proposals, the expansion of Smart Street was regarded as the 2nd most important, receiving 19% of the vote. Its popularity stemmed from the positive SROI outcomes achieved spanning environmental and financial impacts and the opportunity to target the deployment in areas with greater concentrations of fuel-poor customers. *"It's a no brainer - it'll help customers to save a lot of money: £1 cost per person = £60 saving for impacted customers"* • However, some members of the Plugged-In Public Panel expressed concern that the benefits of Smart Street might end up being directed or made available to customers in more affluent areas and/or those more likely to already be using LCT, and several members felt that increased investment in Smart Street should be directed mainly towards, and thus benefit those in most need (fuel-poor).

[19] 915 Citizens Advice Future Energy Models Report Final v2.pdf

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td></td><td>

WTP testing of the attribute and levels led to refinements in the wording of the proposal, to address queries and clarify these concerns. In the attribute description it was explained that Smart street can only be deployed on the underground network, in urban areas, but all customers served by the selected networks will directly benefit. The reference material acknowledged that fuel-poor customers are geographically dispersed; however, a targeted roll-out would ensure Smart Street reaches a disproportionate volume of these customers.
In the WTP survey two improved service levels were tested alongside the current level of service provided in ED1:

<table>
<tr><th>Attribute</th><th>Current</th><th>L1</th><th>L2</th></tr>
<tr><td>Expansion of Smart Street</td><td>Smart Street to be rolled out to 64,000 customers in areas of high fuel poverty by 2023 so that all these customers can save money on their bills</td><td>Smart Street to be delivered to 125,000 customers in areas of high fuel poverty so that all these customers can save money on their bills</td><td>Smart Street to be delivered to 250,000 customers in areas of high fuel poverty so that all these customers can save money on their bills</td></tr>
</table>

The results reveal that Smart Street is valued highly, with both levels of improvement ranked similarly by both domestic and business customers relative to the other 11 network proposals tested. The incremental gain is highest moving from level 1 to level 2 – with domestic customers willing to pay on average an additional £0.62 to ensure a further 125,000 customers benefit.

<table>
<tr><th rowspan="2">80th percentile</th><th>L1 – 125,000 customers</th><th>L2 – 250,000 customers</th></tr>
<tr><th colspan="2">Per bill payer, per year</th></tr>
<tr><td>Household</td><td>£0.32</td><td>£0.94</td></tr>
<tr><td>Businesses</td><td>0.06%</td><td>0.16%</td></tr>
</table>

The same levels of improvement were presented to the Plugged-In Public Panel in an environment themed meeting. The panel were familiar with Smart Street as it has been presented previously in a network themed meeting, where they had requested to discuss it in more detail. Members voted via Mentimeter and almost three quarters (72%) voted to increase investment to level 1 (30%) or level 2 (42%), with only 15% voting to keep investment at current levels.
In an ongoing Youth Engagement deliberative forum future customer expressed appetite for a significant rollout of Smart Street to maximise benefits for customers. However, they were concerned that everyone’s bills, particularly fuel-poor customers, would increase to fund the roll-out.
In a bilateral meeting, Community Energy England challenged us to develop complementary proposal(s) that will support positive outcomes for rural customers, served by overhead networks, who are unable to access the benefits of Smart Street. Citizens Advice raised the same challenge in a separate bilateral meeting.

</td></tr>
<tr><td></td><td colspan="2">Action needed: We identified a need to conduct a more in-depth feasibility study to determine the optimal mix of Smart Street functionality alongside network coverage that</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td></td><td colspan="2">provided the appropriate balance of 'being affordable and deliverable'. Whilst this work was underway we capped the investment for Acceptability Testing at 170,000 customers; half way between improvement levels 1 & 2. We also planned an industry dissemination event with other DNOs to promote industry replication of Smart Street.</td></tr>
<tr><td rowspan="2">Sweating the detail (phase 4)</td><td>New</td><td>• The Innovation team hosted a Smart Street learning dissemination event attended by other DNOs including Scottish and Sothern Electricity Networks (SSEN), UK Power Networks and SP Energy Networks. SSEN indicated it is likely to include a 'light' version of Smart Street in its plan. As all other DNOs use General Electric's network control software (Power On), they may struggle to include the optimisation element of Smart Street, instead limiting its use to enhanced transformers and LV automation.
• Although achieving 78% support, Smart Street performed relatively poorly in the Acceptability Testing survey compared to Max-Diff and WTP mechanisms. Businesses customers reported feeling uncertain regarding whether the proposal would directly benefit them, and it is likely that the overall ranking was impeded by a lower level of ambition being tested (170,000 customers).</td></tr>
<tr><td colspan="2">Action needed: Our initial view was that deployment of Smart Street at 600 sites benefitting 150,000 customers, offered good value for money (customer and network) and balanced affordability: £51m with deliverability: 120 sites a year, across ED2. Stakeholder feedback led us to conduct further CBA analysis to understand if a stretch target of 250,000 coverage could meet the same criteria.</td></tr>
<tr><td rowspan="2">Closing the loop (phase 5)</td><td>New</td><td>• Our internal Regulatory Steering Group reviewed the stakeholder preference evidence gathered on Smart Street in our triangulation, and the materiality of the data sources. A robust evidence base suggested £78m expenditure to achieve coverage of 250,000 customers is acceptable to 80% of our customers. A CBA which drew on wider SROI benefit values (incorporating financial and environmental savings, along with health benefits associated with alleviating fuel poverty) further demonstrated a consumer value proposition.
<table>
<tr><th>Additional cost</th><th>Coverage</th><th>Medium
£43k / site</th><th>Med – Heavy
£78k / site</th><th>Heavy
£95k / site</th></tr>
<tr><td>£9k / site</td><td>250,000
(1,000 sites)</td><td>£50m</td><td>£78m</td><td>£104m</td></tr>
<tr><td>£7k /site</td><td>150,000
(600 sites)</td><td>£29m</td><td>£51m</td><td>£61m</td></tr>
<tr><td>£5k / site</td><td>100,000
(400 sites)</td><td>£19m</td><td>£33m</td><td>£40m</td></tr>
</table>
• In our early draft business plan consultation 89% of Plugged-In Public Panel members submitting responses supported a proposal to increase investment to £78m so that 250,000 customers benefit. Participants called it a "no-brainer", a "win-win" and "a must". 95% of Online Community contributors favoured a more ambitious proposal.</td></tr>
<tr><td colspan="2">Action needed: We re-instated a stretch target to achieve coverage of 250,000 customers and developed a plan for delivering this level of stakeholder ambition.</td></tr>
</table>

<table>
<tr><th>Triangulation</th><th>Insights</th><th>How feedback shaped the proposal</th></tr>
<tr><td>Submit and refine (phase 6)</td><td>New</td><td>

Economic Insight supported the measurement of SROI, aligned to a national framework adopted by all DNOs.
The societal benefits modelled include:

Financial savings for general customers: We calculated that Smart Street would save customers £53.82 a year by taking an average of the range of possible bill savings it could generate over the period. £53.82 is the average bill saving expected from Smart Street for low, medium and high customers who reduce their usage by between 5% and 8%. By taking account of all possible scenarios, from low savings to high savings, this method should calculate a representative bill saving for an average customer.
Financial savings for fuel poor customers: We calculated this value by applying a Green Book approved welfare weighting multiplier to the £53.82 financial benefit. The theory behind applying this multiplier is that lower income customers place a higher value on each additional pound they receive than a customer who earns an average income. The Government approved welfare weight for fuel poor customers (who are defined as those in the bottom income quintile) is 2.5x relative to the average taxpayer. As a financial benefit has been applied to all Smart Street customers, we apply a 1.5x (2.5-1) mark-up to this benefit for fuel poor customers. This generates an additional £80.73 benefit for individuals who are fuel poor.
Societal (environmental) benefits: Reducing customer energy usage will also reduce carbon emissions. The proxy used for this is from Ofgem's CBA template – the 'average traded price of carbon.'

The societal benefit delivered by expanding the roll-out of Smart Street was modelled over a 5-year and 10-year period, given that the benefits of projects are likely to accrue over a longer period:

<table>
<tr><th colspan="3">5-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£78,000,000.00</td></tr>
<tr><td>Total gross present value</td><td>£41,561,295.43</td></tr>
<tr><td>NPV</td><td>-£19,390,364.61</td></tr>
<tr><td>SROI</td><td>-£0.28</td></tr>
<tr><th colspan="3">10-year reporting figures</th></tr>
<tr><td rowspan="4">Economic</td><td>Total cost</td><td>£78,000,000.00</td></tr>
<tr><td>Total gross present value</td><td>£93,085,540.69</td></tr>
<tr><td>NPV</td><td>£50,584,761.86</td></tr>
<tr><td>SROI</td><td>£0.74</td></tr>
</table>

*
A bilateral discussion was held with Ofgem's Engineering Team regarding rollling out Smart Street at scale. Ofgem requested that we undertake a final customer acceptability survey to revalidate our original Smart Street trial research and also reverify the energy savings benefits. Both of these will be implemented and included in the business plan Q&A process for Smart Street. The Ofgem team expressed the view that they were

</td></tr>
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Triangulation	Insights	How feedback shaped the proposal
		convinced of the benefits, but as the analysis was now 4 years old requested re-validation of these elements.

Nuances in perspectives between stakeholder groups

Most of the customers who responded to our survey found our Smart Street proposal understandable. 81% of domestic customers and 75% of business customers supported our plans compared to just 5% of all customers who were unsupportive. Anecdotal feedback from business customers suggested that our proposal failed to make it clear if Smart Street will benefit businesses served by the substations where the technology is deployed, or just domestic customers. 91% of colleagues participating in the survey found the proposal acceptable.

Benchmarking analysis – draft plans

Smart Steet is a unique proposition, developed and rolled-out at scale by Electrcity North West. Whilst enagagement has been undertaken nationally and regionally with other DNOs, it remains to be seen whether Smart Street is adopted more widely.

Implications for the Business Plan

Outcome description	Current performance
Extend Smart Street to 250,000 households	64,000 customers
Incremental cost of proposal	**Target delivery date**
£78m	31st March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Online Community
●	●	●	◕	◕	◓	◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, community and local energy groups, environmental groups, transport providers, government departments, regional Members of Parliament / elected officials, other utilities, regional local authorities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
✓	✓ £39pp	✓ (x0)	✓	✓ (£0.94) L2 ranked 6/12

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint:** **Efficient deliverability constraints**	**As a direct result of customer and stakeholder feedback, we will expand Smart Street to a further 250,000 households in our region, through a £78 million investment programme**. This investment has now been scaled up to a maximum efficient delivery level where further ambition is constrained by deployment being limited to underground networks, in urban areas. We will target the deployment of this technology in areas where there are higher populations of customers in fuel poverty. Our justification process enabled the benefits case for Smart Street to be viewed through multiple vectors. In accordance with the national social value framework financial and societal benefits were modelled over a 5-year period. However, Smart Street will deliver benefits to customers for a much longer time than just the ED2. Estimates suggest that customers could continue to benefit from the project for 45 years. Therefore, restricting the benefits assessment to just the regulatory period would not come close to capturing the total value generated by the project, so we have expanded the period over which benefits can accrue to 10 years. This is the maximum amount available via the Sia Framework, otherwise we would have set it at the lifecycle of the project. At this level, Smart Steet breaks-even over a 10-year period. We applied the options set-out within the Smart Street EJP to Ofgem's CBA model, which measures the costs and benefits accruing over a longer period (45 years) than the social value framework. This enabled us to test specific upsizing options to determine the most ambitious proposal which could be cost-justified. In addition, positive support from customers in our willingness-to-pay research enhanced our justification. We also quantified direct customer benefits. The bill impact of the costs of deploying Smart Street will be approximately £0.16 for an individual customer. Customers will take 45 years to pay for the upfront costs of installing Smart Street through their Distribution Use of System charges, whilst receiving reduced bills every year once it is fully operational. Therefore, the direct customer benefit for the 250,000 customers who will have Smart Street rolled out on their network is estimated to be £39.11 per year on average once the technology is installed. Given that robust alternative justification existed, we opted to proceed with our Smart Street investment, despite it having a low net economic benefit per £ spent multiplier.	**Future business plan 2023-2028**: CVP1 **Environmental Action Plan** (Annex 13) **CVPs** (Annex 15C)

CVP2: CLASS: Balancing the UK grid in a cheaper, lower carbon way

This proposal was not included in Acceptability Testing.

CLASS aims to increase the capacity of the electricity network. It provides a low-cost solution which uses voltage control to manage electricity consumption at peak times and provide the Electricity System Operator (ESO) with an alternative source for a number of ancillary services predominately Fast Reserve, while still providing customers with the same standard of service.

The ability to manage peak demand and offer alternative sources for ancillary services provides a useful tool to help meet the increasing demand for electricity and brings several other advantages

- Facilitates the connections of low carbon technologies onto the electricity network such as heat pumps, electric vehicles and wind and solar power generation
- Avoids or defers the cost and disruption of expanding our network of overhead lines, underground cables and substations
- Reduces costs for all electricity customers and could be rolled out on a national level

Following its introduction in 2019, CLASS has been successfully delivering significant value to Electricity North West and its customers. Operating at 257 primary substations, it routinely provides between 40MW and 50MW of demand response to the National Grid ESO, several times a day.

The forerunner CLASS LCNF project showed that we could elicit a demand response without connected customers discerning its use, proving the hypothesis:

"CLASS will be indiscernible to customers (customers will not see/observe/notice an impact on the supply quality when these innovative techniques are applied)."

This finding was supported by an extensive programme of customer engagement, with key learnings disseminated to industry and available via our website. Our widescale rollout of CLASS and its continued use since 2019 provides further evidence in support of this finding.

With substantive evidence already existing in favour of customer and stakeholder support for the roll-out of CLASS and the efficacy of the approach, our ED2 engagement focused on exploring the regulatory treatment and wider deployment of CLASS nationally.

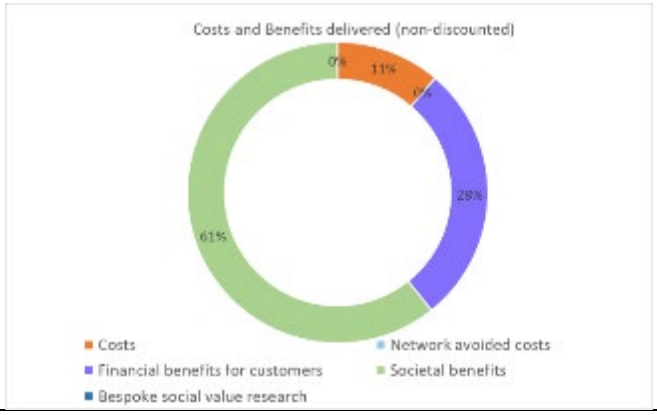
Submit and refine (phase 6)	New	• A CLASS revenue forecast was produced based on August 2020 to August 2021 actual MWh delivered and multiplied by a factor of 5 (years) to create the ED2 forecast:

	Delivered MWh	Revenue
Aug-20	2412.1	£68,895
Sep-20	1707.9	£65,984
Oct-20	2520.7	£128,815
Nov-20	2813.1	£203,408
Dec-20	3185.3	£264,371
Jan-21	2343.6	£243,658
Feb-21	1820.1	£173,874
Mar-21	2699.3	£340,059
Apr-21	2675.9	£282,742
May-21	2704.5	£290,001
Jun-21	1917.2	£208,592
Jul-21	2352.4	£338,547
Aug-21	1483.4	£225,817
Total	30635.5	£2,834,763
Five-year forecast	153177.5	£14,173,817

*

- Economic Insight supported the **measurement of SROI,** aligned to a national framework adopted by all DNOs.
- A variety of robust data sources were used to derive the societal benefits of CLASS, including an objective, independent analysis of the potential impact of CLASS on the costs of operating a low carbon electricity system. The assessment, undertaken by Baringa, considered both first and second order effects. Alongside the first order CBA, quantitative and qualitative analysis of potential second order effects was undertaken to ensure the full impacts of a wider deployment of CLASS were considered. The primary first order benefits which have been modelled include:
    - Financial benefits for customers: Financial savings are generated through the provision of capacity to frequency response and fast reserve markets and this revenue is shared (50%) with customers through the Directly Remunerated Service mechanism as approved by Ofgem.
    - Societal benefits: The provision of CLASS into the Balancing Services markets results in other technologies being displaced leading to reductions in carbon emissions. The proxy used for this is from Ofgem's CBA template – the '*average traded price of carbon*.'
- Caution has been exercised in our benefits modelling by constraining the use of CLASS to the north west i.e. the area covered by ENWL, however, it could easily be replicated and deployed at a national scale. This has been made possible through leadership shown by Electricity North West and the IPR developed and shared freely with all DNOs.
- To work out the total net economic benefit per £ spent, commonly referred to as the Social Return on Investment (SROI), CLASS operating costs were identified. Staff, maintenance and telemetry expenditure was sourced in 2020/21 prices.
- Societal benefit delivered by reducing emissions of potent greenhouse gases from equipment is estimated to be:

5-year reporting figures		
Economic	**Total cost**	£1,327,677.66
	Total gross present value	£17,688,785.66
	NPV	£19,621,815.18
	SROI	£14.78

		• The total net economic benefit per £ spent is £14.78, making CLASS one of the strongest performing investment proposals for social return on investment in our ED2 plan. The breakdown of costs and benefits are illustrated in the infographic below: 

Implications for the Business Plan

Outcome description	Current performance
Use of CLASS to reduce voltage on demand to provide balancing services to the ESO	Reducing voltage on demand to provide balancing services to the ESO
Incremental cost of proposal	**Target delivery date**
Reduces costs to customers	31 March 2028

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Early draft business plan consultation	Operational data
			◕	◕		◓

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, other utilities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
	£0.59 per customer per year	✓ (x15)		

Response	Supporting narrative	Read more at
MEETS STAKEHOLDERS' EXPECTATIONS **Constraint: Ofgem policy**	CVPs are a new introduction for RIIO-ED2. We have reviewed potential candidates for CVPs in our Draft Business pan and identified CLASS as a proposed CVP. CLASS provides a fast response service to NGESO and is used multiple times a day along with or instead of other providers. This is carried out in a low carbon way as demonstrated by the figures illustrated above.	**Future business plan 2023-2028**: CVP2 **Annex 15B:** Consumer Value

	The CLASS project will provide the following benefits to our customers: 1. A reduction in energy consumption, which potentially translates to a reduction in the customer's electricity bill; 2. An overall reduction in carbon emissions due to a reduction in energy consumption, reinforcement and technical losses. The CLASS project is a significant value proposition for customers with the 50% share of any potential revenue earnt. We will measure how successful we have been by the value and share of revenue returned to customers. In an Ofgem Working Group in November 2021 Ofgem advised that it not be issuing a decision on regulatory treatment of CLASS before final submission. It intends to add a requirement to the Business Plan Guidance which requests DNO's provide clarity on their plans CLASS.	Propositions (CVPs)

4.4 Diversity and Inclusion

A Diversity and Inclusion (D&I) proposal was not included in Acceptability Testing due to the timing of the research and extra time required to develop a comprehensive Workforce Resilience Strategy.

We will introduce a diversity and inclusion strategy in 2021 which supports our purpose to 'create a sense of belonging for our colleagues and truly reflect the communities we serve'.

Evidence base collected

The following insights represent the golden thread between stakeholder feedback and our Workforce Resilience strategy:

Triangulation	Insights	How feedback shaped the proposal
Our plan for the future (phase 3)	54	• In our **Youth Engagement**, members of YFNW said they didn't associate Electricity North West as a 'green jobs provider', however, thought it could be positioned as such. Participants agreed that apprenticeship schemes are important to get young people into the industry and that the company's purpose-built training academy and apprentice programme should be promoted more widely • 1-1 engagement with large employers in the region, was facilitated through a **bespoke consultation exercise**. We heard a need for Electricity North West to work closely with its employees and wider workforce during ED2 to ensure a smooth energy transition ○ SP Training, a training company, emphasised the importance of investment in staff skills and personal development to encourage employees to invest their future in the company, thereby contributing to a long term resilient workforce ○ Cumbria LEP called for Electricity North West to set out how it will offer opportunities to local people at every level of the organisations: apprenticeships, graduate placements and

Triangulation	Insights	How feedback shaped the proposal
		higher-level qualifications. It said that the company's workforce resilience plans should be aligned with the business plan priorities such as net zero, customer service, supporting vulnerable customers etc. • A review of through third party evidence revealed that The Inclusion Commitment had developed an inclusion measurement framework to support employers collecting and monitoring their workforce diversity data. The sector framework measures inclusion across the themes of Leadership, Attraction & Recruitment, Retention and Progression.
Sweating the detail (phase 4)		• A report by National Grid, 'Building the net zero energy workforce' set out the energy sector's role in the transition to Net Zero and how the energy sector can build a net zero energy workforce. The report advises: o The energy sector is facing several workforce challenges including loss of existing talent, competition in the recruitment and retention of talent, limited pipeline of young people choosing STEM subjects, skills gaps and shortages and lack of diversity in the workforce. When raising the profile of STEM subjects and engineering with young people it concludes it is important to reshape the perception of the sector by communicating what engineering is, what roles the sector offers and information on the next steps to become an engineer. o STEM outreach activities are important and effective way to cultivating a talent pipeline for the sector. It is important to work with young people's key influencers on education and career decisions including STEM teachers, career advisers and parents to develop their knowledge so they can advise young people on potential careers in the sector. • Attitudinal research undertaken by You Gov Grid showed that 78% of UK adults (83% of women and 73% of men) think it is important to play a role in reaching the UK's net zero goal and more than half (57%) want to work for an organisation that helps get us there. For young people (aged 18-24) a career tackling climate change was the second most popular cause that they wanted as part of their jobs after helping to provide education for young people. YouGov's research found that being part of the solution to tackling climate change is a big, untapped motivator for men and women of all ages and backgrounds. • An Engineering Brand Monitor 2019 report on behalf of Engineering UK reported that as well as inspiring young people to take up engineering pathways, accurate and detailed careers information must be provided to parents, carers and teachers. These adults are the most common sources of careers information for young people, yet the majority reported a lack of confidence in giving careers advice in engineering careers. • The CEO **Stakeholder Advisory Panel** were provided with an update on D&I in a meeting convened in October 2021. Members suggested: o It would be helpful to have performance benchmarks for the north west footprint rather than UK national level o It is no longer appropriate to use the term BAME; the Government now adopts 'ethnic minorities' o That the company's website "has a lot of white faces" and should be refined to reflect the diversity of communities served o The 30% female leadership target should be higher

Triangulation	Insights	How feedback shaped the proposal
		○ Scaling up the level of conscious inclusion training for colleagues across the business.
	Action taken: The feedback we received referenced the importance of improving workforce diversity, female representation in STEM and leadership roles and doing more to attract a wider pool of candidates to reflect the diversity of the communities we serve. We identified a need to engage further with national and local trade unions and wider industry stakeholders to share our emerging strategy and plans. We also responded to a request from Energy Utility Skills to provide workforce data to enable the production of 'The workforce requirements of the UK power sector for ED2 and beyond' on behalf of the National Skills Academy for Power. This has provided invaluable insight into colleague demographics of the sector and helped to shape metrics for diversity.	

Customer and stakeholder evidence sources						
Max-Diff	Willingness-to-pay	Acceptability	Stakeholder Meetings	Deliberative Panel	Online Community	Operational data
			◕	◕	◓	◔

Priority stakeholder groups **engaged:** Current and future customers, consumer representatives, government departments, other utilities and specialist consultants.

Justification				
Cost Benefit Analysis	Customer £ benefit	Social return multiplier	Enhanced engagement (triangulated)	Willingness to pay
			✓	

Response	Supporting narrative	Read more at
N/A	We have developed our learning on diversity and inclusion and are confident that we will lead change not only within Electricity North West but across the utilities sector. Our ED2 focus is to put diversity and inclusion at the centre of everything we do. Our D&I vision is: '**We are committed to creating a sense of belonging for our colleagues and truly reflecting the communities we serve'**. Our newly-created diversity and inclusion strategy is centred around four key pillars developed with our key stakeholder groups. Our business plan will demonstrate how each activity is supported by this strategy.	**Annex 27**: Workforce Resilience (incl. diversity and inclusion strategy)

Our strategic commitments will drive the following positive changes in diversity and inclusion:

- Increase the overall diversity of our workforce
- Increase female representation in STEM roles
- Increase female representation in leadership roles
- Attract diverse candidates from underrepresented groups to truly reflect the communities we serve.

The table below provides greater clarity on our diversity and inclusion metrics and commitments. Details of our full diversity and inclusion strategy can be found in Annex 27.

ED2 Diversity & Inclusion Goals			
Measure	Current	Goal	Stretch
Gender (female / male)	25 / 75%	30 / 70%	32%
Females in engineering roles	7%	12%	15%
Ethnic colleagues	4%	10%	12%
Ethnic minority attraction	10.5%	5%	5%
Disabled colleagues	0.6%	5%	5%
Inclusivity data		80%	90%

5 Appendix

5.1 Quality assessment

Our quality assessment approach is used to determine the materiality of the evidence included in our triangulation, in recognition that not all engagement is equal. This approach aligns with our overarching quality assurance process, which provides a mechanism to assess how robust each piece of engagement is. This allows us to place a different weight on customers' and stakeholders' views. Ultimately our customers will pay for any improvements, therefore, it is appropriate that they need the biggest say. We then consider the customer groups themselves, which can and should be divided into domestic and business customers. We use a proxy which combines the volume of these customers connected to our network and their electricity consumption to fairly represent them.

When carrying out quantitative work, we have given the following standard weighting to these three groups:

Segment	Weight
Household	51%
Business	29%
Stakeholder	20%

However, for some areas that require more detailed background information, or where we want to make sure we incorporate enough stakeholder expertise, we have created a bespoke weighting. On this basis, the following weighting is applied for the topics of safety, resilience and Net Zero:

Segment	Weight
Household	45%
Business	25%
Stakeholder	30%

The tools we have used to determine the materiality of the evidence base included in our triangulation are as follows:

1. **Quality Assessment framework** – this provides an overall score and a traffic light – red/amber/green (RAG) status for each study
2. **A set of principles for trading-off divergent views -** this provides guidelines for determining which evidence, if any, to place more importance on when stakeholders' views are different
3. **A quantitative data weighting** – this was used to appropriately reflect customers' and wider stakeholders' views in the measurement of overall acceptability.

Quality Assessment framework

The following five factors form our key success criteria for measuring the quality of customer engagement inputs commissioned by Electricity North West and reviewed as part of the triangulation:

Criteria	Description
Robust and representative	Collects a range of opinions from a representative cross-section of stakeholders
Data accuracy	Provides an accurate assessment of stakeholder opinions on key topics
New learning	Substantially improves existing knowledge and informs future engagement
External validity	Assesses whether the findings correlate with other measures and expectations
Innovative	Engagement techniques which are considered: new, bespoke, or best-practice

The success criteria are equally transferable for qualitative and quantitative evidence pieces. The score and RAG status derived from our criteria determines whether evidence is included in triangulation papers and (as determined by our principles-based approach) how much importance should be placed upon it in informing what course of action to take in our business plan.

For each key topic in our business plan, multiple stakeholder segments have been engaged; however, in many of these areas we see consensus in views across these various groups and methodologies. Where there is no tension in the feedback provided between groups, it will be clearer to see how Electricity North West has arrived at a final decision, particularly in areas where the evidence presented is of a good quality. The evidence in favour of the expansion of Smart Street (Section 2.3.1) and reducing the average duration of streetworks (Section 2.2.6) are examples of where this applies.

A set of principles for trading-off divergent views

Complexity is introduced into triangulation where evidence is produced of divergent stakeholder views on the same topic, possibly even within the same group i.e. two surveys of household customers which report different findings. In these cases, it is not as simple as taking forward the evidence with the highest score and discounting the other. The evidence included in triangulation is often richly textured and it is important to understand why the findings are different before proceeding. There are a large number of reasons why results may vary – for instance consumer's responses may be influenced by the way in which a question is asked or how much contextual information is provided.

The principles we have used to guide the materiality assessment of contrasting findings is provided below and differentiated by the type of triangulation:

1. **Methodological triangulation**

Methodological triangulation combines two or more methods to gather evidence on the same subject. We have identified a rank order of methodologies (see below) which illustrates that we will generally attach the greatest importance in triangulation to well-designed surveys, based on random sampling that generate statistically robust findings. This is because these studies offer a high level of precision and certainty in their ability to be truly representative of a population. The rank order is as follows:

Importance	Type of study	Description
1 (Most important)	Well-designed surveys based on random sampling that generate robust findings	These provide insight into the prevalence and distribution of views (or other factors) in the population e.g. segmentation, WTP and acceptability survey.
2	Purposively sampled qualitative research and deliberative engagement with consumers	This activity allows greater space for participants to shape discussions and share what matters most to them. They can provide useful insight into the reasons for customers' views, experiences or behaviours and the factors that have shaped these. If sampling is robust (reflecting population profiles), findings can reveal insight into the range and diversity of views (and other factors) in the population. However, findings cannot be considered to be truly representative e.g. Plugged-In Public Panel, WTP qualitative focus groups

Importance	Type of study	Description
3	Purposively sampled qualitative research and deliberative engagement with stakeholders	This activity provides an opportunity to gather informed views from stakeholder representatives that cut across 50 different segments in our stakeholder population. Expert and in-depth views can be heard from stakeholders with a material interest or power to influence specialist topics e.g. Stakeholder Advisory Panels.
4	Self-selecting research and engagement activities	The main purpose of this type of activity is to establish a dialogue with customers and encourage anyone who is interested in taking part to share their views. These activities provide insight into the types of issues that attract the most attention from customers and can provide a useful sense of some of the main issues and debates that come up. However, views cannot be considered representative of the range and diversity of views in the population, as key population segments may be missing e.g. Online Community, Voice of the Customer Panel
5 (Least important)	Organisational performance data and service feedback	This data can provide useful insight into the company's interactions with customers and customers' experience. Data may relate to small numbers of customers who have contacted the company for particular reasons (e.g. to complain about a specific service experience). While findings provide important insight into such experiences, they cannot be considered representative of the whole population base e.g. Broad Measure of Customer Satisfaction, customer complaints.

2. **Data/source triangulation**

Data/source triangulation is way of collecting data, using the same method but from different sources. An example of this is the Online Community (ED2 focused) and the Voice of the Customer Panel (ED1 focused) – both are educated online panels of consumers who are engaged in much the same way.

The main method of establishing the materiality of these sources is the quality assurance process, which identifies a score and RAG status. However, extra scrutiny has been applied to the 'robust and representative' criteria and if key stakeholder representatives were missing from the evidence base it has been given a lower weighting reflecting the absence of feedback from those best placed to inform the evidence.

In addition, informed stakeholders' views carry a higher weighting than uninformed views**.** This means where a good level of education has been provided to enable participants to make informed choices about trade-offs, for example, then greater credence has been given to these findings. Further details of this assessment are provided in triangulation papers produced after each phase of engagement.

3. **Time-based triangulation**

This type of triangulation collects data over time to identify how external influences shape findings. If the evidence presented demonstrated the validity of responses across different time periods relevant to the business plan, its importance was elevated. This includes for instance, customers priorities, and their willingness to pay for services or improvements in services. Time-based triangulation will be more important for ED2 due to the anticipated long-term impacts of the COVID-19 pandemic.

4. **Geographical triangulation**

This is where we have collected evidence in different locations to compare findings across groups e.g. Stakeholder Regional Workshops. Evidence directly relevant to the North West (as opposed to GB or other territories) was given the highest weighting. Within the North West, weighting was applied to ensure urban and rural views were fairly represented, in line with population density.

A quantitative data weighting

We also applied a data weighting to our Acceptability Survey results which provided a mechanism for trading-off the views of high level aggregate stakeholder groups:

1. **Customers' views carry a higher weighting than stakeholders:** As summarised earlier in this appendix, a standard weighting is 80% customer vs. 20% stakeholder has been applied. However, where the subject matter is more complex / requires greater knowledge this is adjusted to 70% vs. 30%
2. **Domestic customers' views carry a higher weighting than businesses:** The customer component is sub-weighted: 64% households/ vs. 36% businesses to reflect the volume of customers and electricity consumption profile of each segment.

We have provided an example of how the application of our process worked in practice below.

We have now engaged a wide range of customers and wider stakeholders about how many fuel-poor customers should be supported by Electricity North West in ED2 (see table below). The results indicate a consensus opinion exists that investment must be significantly increased. Whilst the stakeholder vote is relatively evenly spread across the three improvement levels, the Plugged-In Public Panel and Online Community had a strong bias towards the most improved level whilst the Voice of the Customer Panel advocated supporting 100% of 250,000 fuel-poor customers.

So, what should we do when we are presented with divergent view?

In addition to reviewing the quality assurance scores for each piece of evidence we also referred to our principles.

From a methodological perspective we could see that (based on the evidence collected so far) the Plugged-In Public Panel and Stakeholder Advisory Panel results have a higher weighting in the decision-making progress. These are also both informed groups of stakeholders, who have been provided with sufficient information and therefore, have an informed view when asked to consider trade-offs.

From a data/source perspective the Voice of the Customer Panel was given greater weighting than the Online Community. This is because the Voice of the Customer sample was topped up to 1,000 responses and weighted to be representative of the North West region. By comparison the Online

Community only has approximately 25% of its 800-household membership regularly participating in engagement and this 'active' group is not truly representative of the general customer base.

Fuel-poor customers supported in ED2	Maintain ED1 levels	200,000	250,000	250,000 with contingency for future increase
1. Stakeholder Advisory Panel	10%	35%	30%	25%
2. Plugged-In Public Panel	21%	8%	18%	53%
3. Online Community	0%	22%	22%	57%
4. Customer Voice Panel	3%	28%	42%	28%
Costs (per year)	£0.5m	£2m	£2.5m	£2.8m
Bill impact (per person)	-	66p	83p	£1.16

These principles, when combined with our data weighting, suggested a 'compromise' of supporting 100% of 250,000 customers *could* be the most acceptable (and therefore, this is what was included in Acceptability Testing). This is a compromise because there are still a significant minority who are opposed to increasing investment beyond current levels, whereas there are others who feel so strongly about this that they would prefer Electricity North West to support all existing fuel-poor customers and make provision for increasing numbers of fuel-poor customers during ED2.

In addition to following these guiding principles, we use our triangulation to highlight any other interrelated factors that may have informed trade-off decisions, such as investment levels being calibrated up/down. This example demonstrates the critical nature of reviewing all evidence, in the round, rather than simply considering individual outputs – such as the need to deliver an affordable plan, not just an ambitious one.

5.2 Priorities tested in phase 1

As part of our Priorities Research we tested the importance of our stakeholder-led ED1 priorities and included three others that had been identified by consumers in a qualitative phase: providing value for money, keeping Electricity North West's component of the bill as low as possible and raising awareness. The 10 priorities evaluated in quantitative research were as follows:

Network	Customer	Environment	Other
• Delivering a reliable network • Building a resilient network • Keeping employees and customers safe	• Meeting our customers' needs • Supporting customers in vulnerable circumstances	• Helping the North West become carbon neutral • Electricity North West's direct environmental impact	• Providing value for money • Keeping bills as low as possible • Raising awareness

5.3 Max-Diff 1 attributes tested

24 service attributes were shortlisted for testing in the quantitative survey from a longer list of over 50 ideas based on a range of criteria:

- Customer support/priority area;
- Stakeholder support/priority area;
- Potential incentive/reward area; and
- Ability to value/calibrate using data.

The attributes and information provided to customers in a trade-off exercise included the following:

Label	Info button
VulnerableSupport	Current: ENW offers 10 days advance notice, a reminder 48 hours before and proactive updates during a planned power cut Future: In addition to current support ENW offers an appointment service for face-to-face visits to customers in the most vulnerable circumstances
PCutsSupport	Current: Extra support can include proactive communication updates, hot food and drinks, blankets and flasks Future: An enhanced support package that includes Wi-Fi, mobile charging, community wash facilities, small generators or alternative accommodation
StormResilience	Current: Rolling maintenance programme to maintain powerlines and cut trees in their immediate vicinity which means that on average there will be two storms that cause more than 60 power cuts over winter Future: Proactively strengthen or move powerlines underground that are at risk to storms so that most future storms cause less than 60 power cuts over winter
MultiplePCuts	Current: 50,000 customers (out of a population of 2.4 million) have 3 or more power cuts per year Future: 25,000 customers have 3 or more power cuts per year
WorstServed	Current: 268 customers (out of a population of 2.4 million) experience 12 or more power cuts over a three year period Future: No customers experience 9 or more power cuts over a three year period
PowerCutsDur	Current: Unplanned power cuts last on average 90 minutes Future: Unplanned power cuts last on average 60 minutes
SmartStreet	Smart Street technology manages network voltage so that appliances perform more efficiently reducing customers' energy consumption by up to 8% and leading to a reduction of up to £60 in annual energy bills per year. Current: Smart Street to be rolled out to 64,000 customers in areas of high fuel poverty by 2023 Future: Smart Street to be delivered to a further 250,000 customers in areas of high fuel poverty
FuelPoor	Current: ENW works with expert partners to support over 4,000 fuel poor customers per year with affordable warmth and energy efficiency Future: Over 8,000 fuel poor customers supported

Label	Info button
NetZero	Current: Net zero carbon emissions will be achieved by 2050 Future: Net zero carbon emissions will be achieved by 2038
Streetworks	Current: In 2018/19 roadworks averaged 5.1 days Future: Roadworks average 3 days
LowerBills	Current: £80.10 (at average household bill) Future: £75 (at average household bill)
CyberResilience	Current: ENW complies with the current interim government minimum cyber standards Future: Additional protective measures are installed to achieve all government cyber recommendations (beyond minimum standards) by 2028
PowerCutsFreq	Current: 1 power cut per customer every 3 years Future: 1 power cut per customer every 4 years
CommunitySupport	Current: ENW treats connection applications from community energy projects the same as households and businesses Future: ENW provides enhanced support to community energy projects including a dedicated connections management service and increased community energy funding
PlannedPCuts	Current: 1 planned power cut per customer every 30 years, averaging 4 hours Future: 1 planned power cut per customer every 50 years (as opposed to 30 years) averaging 3 hours (as opposed to 4 hours)
EnableDisGen	Current: Customers wanting to connect commercial renewable generation on the network where our equipment needs to be upgraded have to pay for the network upgrade costs Future: ENW identifies and proactively replaces equipment that may restrict the connection of commercial renewable generation in advance so that those connecting do not need to pay for network upgrades
EqualisePCuts	Current: The frequency of unplanned power cuts can vary from more than 3 per year to 1 every 30 years, depending on where customers live Future: Power cut performance is equalised to a relatively good level across all areas of the North West

Label	Info button
ShortPCuts	Current: 1 short power cut per customer every 4 years Future: 1 short power cut per customer every 5 years
EnableEVs	The speed that electric vehicles can charge at is determined by how much electrical power the charge point delivers. The most common types of domestic electric vehicle charger are slow and fast. A fast charger will charge a vehicle in up to four hours and may incur additional costs from Electricity North West to reinforce the local electricity network. Current: 40% of households in the North West are unable to install a fast charger at their household due to network constraints Future: Anyone with an electric vehicle can install a fast charger (no network constraints)
EVCharging	Current: This service is outside the scope of a Distribution Network Operator and therefore not offered Future: Chargers installed in areas where there is no commercial provision (e.g. rural areas)
AdoptEVs	Current: ENW's vehicles replaced at the end of their life with the current equivalent Future: ENW's vehicles replaced at the end of their life with zero carbon vehicles, where available, even if the upfront costs are more expensive
Underground	Electricity North West has over 3,000km power lines in national parks and areas of outstanding natural beauty. Current: Undergrounding 8km of electricity powerlines per year in national parks and areas of outstanding natural beauty. Future: Undergrounding 30km of electricity powerlines per year in national parks and areas of outstanding natural beauty.
BusResilience	Current: Businesses can sign up to a Business Priority Service Register to access benefits including 30 days' notice of a planned power cut. This service helps businesses minimise disruption to employees and the customers they serve. Future: Additional support to help businesses registered on our Business Priority Service Register including continuity advice and access to generators
EfficiencyAdvice	Current: Offering advice on energy efficiency and low carbon technologies is outside the scope of a Distribution Network Operator, however, ENW provides information on its website Future: ENW provides a free regional advice service for all customers to support them with energy efficiency and saving money on their bills

5.4 WTP survey attributes and levels

The attributes for the survey were selected following an approach which included a prior Max-Diff survey to explore customer priorities amongst a long list of potential service areas. A final set of 12 service attributes was thereby selected, and grouped into the following three areas:

- Network
- Customer support
- Environment

The following three tables contain the attributes within each group and the wording used in the survey to describe them. The survey included hover buttons which provided more information when the participant hovered over them with the cursor. For each attribute, three levels were included: one representing current level of service, one representing a realistic stretch improvement level and one intermediate improvement between these two levels. The levels used for each attribute, by group, are shown in the following three tables.

Attribute levels (Network group)

Attribute	Current	L1	L2
Enhanced storm resilience	Rolling programme to maintain powerlines and cut back trees in their immediate vicinity which means that, on average, **large storms** will cause **70,000** customers to be impacted by power cuts over a winter period, **per year**	On average, large storms will cause **50,000** customers to be impacted by power cuts over a winter period, per year	On average, large storms will cause **25,000** customers to be impacted by power cuts over a winter period, per year
Reducing multiple power cuts	**50,000 customers** (*out of a population of 2.4 million*) have 3 or more power cuts per year	**35,000 customers** have 3 or more power cuts per year	**25,000 customers** have 3 or more power cuts per year

Reducing power cut duration	Unplanned power cuts last on average **90 minutes**	Unplanned power cuts last on average **60 minutes**	Unplanned power cuts last on average **45 minutes**
Reduce power cut frequency	1 power cut per customer every **3 years**	1 power cut per customer every **4 years**	1 power cut per customer every **5 years**

Attribute levels (Customer support group)

Attribute	Current	L1	L2
Improved reliability in areas of fuel poverty	All customers are **treated equally** in terms of reliability of the network, with no targeting of investment to those most in need. Improvements are prioritised in areas where the greatest overall benefit will be achieved	Improve reliability of the network, targeting communities so that **35,000 customers** in fuel poverty benefit	Improve reliability of the network, targeting communities so that **70,000 customers** in fuel poverty benefit
Improved reliability in areas of vulnerable customers	All customers are **treated equally** in terms of reliability of the network. Improvements are prioritised in areas where the greatest overall benefit will be achieved	Improve reliability of the network, targeting communities so that **35,000 customers** in the most vulnerable circumstances benefit	Improve reliability of the network, targeting communities so that **70,000 customers** in the most vulnerable circumstances benefit
Vulnerable customer support during planned power cuts	ENW offers 10 days written advance notice, a call 6 days before, a reminder 48 hours before and proactive updates during a planned power cut **Face-to-face visits** to customers in the most vulnerable circumstances, in advance of the planned power cut are **not available**	An appointment and staff tracking service for face-to-face visits to customers in the most vulnerable circumstances. Visits will be made by a customer welfare officer in advance of the planned power cut to explain what is happening, provide reassurance that their individual circumstances are known to us and a unique point of contact and A **local drop-in centre** for customers to receive support from specialist welfare officers during a planned power cut	Wherever possible, we will carry out our planned maintenance works **without the need to interrupt the power supply** of customers in the most vulnerable circumstances
Reduce duration of emergency streetworks	Emergency roadworks average **5.1 days** to complete emergency repairs, resurface and clear the site	Emergency roadworks average **4 days** to complete repairs, resurface and clear the site	Emergency roadworks average **3 days** to complete repairs, resurface and clear the site

(1) hover button text: In the North West 13.1% of households (approx. 3000,000 customers) are currently in fuel poverty, which is when its members cannot afford to keep adequately warm at a reasonable cost, given their income. These households are more vulnerable than most, when power cuts occur, because don't have surplus income to cope during the power cut (i.e. eating out) and they struggle to manage the consequence (i.e. replacing lost fridge/freezer contents). We could invest more to reduce the risk of power cuts on electricity networks in areas of high fuel poverty.
(2) hover button text: 25% of customers on the Priority Services Register (approx. 236,000) are considered to be in the most vulnerable circumstances, such as those with a chronic/ serious illness.

Attribute levels (Environment group)

Attribute	Current	L1	L2
Expansion of Smart Street	Smart Street to be rolled out to **64,000 customers** in areas of high fuel poverty by 2023 so that all of these customers can save money on their bills	Smart Street to be delivered to **125,000 customers** in areas of high fuel poverty so that all of these customers can save money on their bills	Smart Street to be delivered to **250,000 customers** in areas of high fuel poverty so that all of these customers can save money on their bills
Facilitating the take-up of technologies to achieve Net Zero such as electric vehicles and solar panels.	ENW responds in areas where there is a risk that it will not be able to meet electricity demand in the near future This approach may not be the most efficient delivery method and may not support the achievement of Net Zero by 2050	Targeted, proactive upgrading of the electricity network to enable these technologies and achieve **Net Zero by 2050**	Local Authorities in Greater Manchester and Cumbria aim to achieve **Net Zero by 2038.** Consequently, ENW undertake faster proactive upgrading of the electricity network
Leading the North West to Net Zero carbon emissions	ENW offers energy efficiency advice and guidance on technologies such as electric vehicles and solar panels **only on its website**	**Free telephone advice** to household and business customers from ENW specialist advisors on energy efficiency and technologies	Free advice to household and business customers from ENW specialist advisors on energy efficiency and technology options *and* **Free connection of technologies** [(1)]. ENW does not charge customers for any costs incurred to allow technology to be connected such as electric vehicles and solar panels
Enhanced support for community energy projects	Community energy projects are required by Ofgem to pay to connect to the electricity network in the same way as households and businesses and we provide all of them with the same level of service	Free dedicated support through the connections process for community energy projects, that helps them understand their requirements, network considerations and how best to complete a connection application *and* Where ENW need to upgrade the network to accommodate this connection, the additional work is **not charged to the project** (unlike current arrangements)	Free dedicated support through the connections process for community energy projects, that helps them understand their requirements, network considerations and how best to complete a connection application and Where ENW need to make the network bigger to enable this connection this additional work is not charged to the project, unlike business connections ***and*** **An annual £1m 'Empowering our Communities' fund**[(2)] to help communities become more resilient, through generating their own energy, supporting energy efficiency or other ways to use and manage energy locally.

(1) hover button text: Free connection of technologies to the network does not include free ongoing charging of these technologies.
(2) hover button text: The 'Empowering our Communities fund' is currently £75,000 per year and offers up to £15,000 as a seed fund for projects. To give an indication of how funding can benefit community energy projects, the Greater London Assembly has run a Community Energy Fund since 2017 and awarded £500,000 with the following benefits achieved: • Saving up to 1,500 tonnes of carbon per year; • Enabling 48 community energy projects; • Supporting community energy projects on 82 buildings (such as schools, community centres, churches, GP practice)