

The logo for Electricity North West, featuring the word "electricity" in blue and "north west" in green, with a stylized green leaf icon to the left.

electricity
north west

Bringing energy to your door

The background of the cover features a photograph of a young girl with curly hair, wearing a striped shirt and denim overalls, working on a small electronic circuit board. A man in a blue jacket is looking on, smiling. The image is framed by a large, stylized leaf shape in shades of teal and pink. A large purple circle is overlaid on the bottom left, containing the text "Business plan 2023-2028".

Business plan

2023-2028

Welcome to our plan

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**Our plan for a greener, more prosperous
and more connected North West** 4

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Glossary

Our plan for a greener, more prosperous and more connected North West

We know from speaking with thousands of our customers and stakeholders to develop this plan, that lots of different people are interested in what it says. Having engaged through a transparent process shaped by customer and stakeholder input for the past two years, there shouldn't be any surprises.

Ultimately, it's our job to find the right balance between ambition, service delivery and ensuring it's affordable for everyone.

We've written this plan for customers and stakeholders, and it's designed to AA accessibility standards¹. So whether you've been involved in our engagement yet or not, we hope you find the right level of detail, explained clearly and simply, so you can continue to share your views with us. This is our draft plan and we will submit a final version of our plan to Ofgem on 1 December 2021.

<https://www.w3.org/WAI/WCAG2AA-Conformance>





Welcome to our draft plan

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Section 1: Welcome to our draft plan

1.1 A few words from our Chair

I am excited about this plan. This is an ambitious plan built from extensive high quality and robust engagement that as a board we have seen first-hand.

Despite the huge disruption to both home and work life caused by Covid-19, engagement to develop this plan never stopped. I am thankful to the thousands of customers and stakeholders who took part for their continued and enthusiastic involvement.

This is a critical plan at a critical time for the region and country in terms of delivering on the Net Zero promises made by government and local political leaders in the North West. The plan also contains bold commitments on customer service, reliability and environmental issues.

While we need to ensure the network is ready for the 1 million electric vehicles expected on the region's roads by 2028, we also recognise the need to support those in vulnerable circumstances who are more reliant on electricity than ever. At the same time we need to use expertise to deliver technical solutions such as distribution system operation and flexibility. All while keeping bills low.

The attention to detail in understanding the views of customers and stakeholders to develop a plan that balances the many competing needs of a whole region is no small achievement. Delivering that plan for 'less than the cost of a cup of coffee' – as one of our deliberative panel members put it – shows real determination, ambition and sound management of the process, outputs and, crucially, financing.

This ambitious plan is thoroughly evidenced by customer and stakeholder support. It is not constrained by lack of ambition or lack of outputs. If it is constrained by anything it is constrained simply by what is practical and economically viable to deliver in the five-year window of the plan.

Delivering a plan of this magnitude, meeting the needs of the region up to 2028, for such a low increase in bills is a significant achievement and I look forward to seeing it delivered on behalf of the North West's customers, consumers and stakeholders. For more information, see our [interim board assurance statement](#)¹.

Alistair Buchanan CBE

Chair

Electricity North West



1. <https://www.enwl.co.uk/globalassets/about-us/regulatory-information/rrio2/july-2021-submission/interim-board-statement/interim-board-statement-july-2021.pdf>

1.2 A few words from our CEO

Welcome to this latest draft of our business plan which is as close to final as possible at this stage.

Publishing an early draft of this plan in April was a new and important step for us and as one of only two network operators to take this early step, we have benefited from thorough scrutiny from our customers, stakeholders and our independent Customer Engagement Group.

As a result of our early draft consultation we have increased the ambition on five areas of the plan, which you can read about in [section 1.4](#).

The plan has been informed by more than 22,000 interactions with more than 18,000 customers, consumers and stakeholders to date, including 281 individual stakeholder organisations – by far the largest and most far-reaching consultation exercise we have ever carried out. Our proposals are detailed and offer an exciting and ambitious vision for our region.

Our customers and stakeholders clearly value the excellent services we currently deliver and want us to do more – a lot more. The challenge of delivering stretching environmental ambitions on Net Zero while keeping bills low and making sure we don't leave anyone behind is tough. You'll see how we have made these trade-offs based on feedback in [section 4.5](#).

Our research has shown that 80% of customers are willing to pay an additional £9.80 to achieve the ambitious proposals in this plan. However, through innovation and efficiencies we believe that we can deliver a high level of investment in the network for just a £2.03 per year addition to an average household bill – a price 97% of our customers are willing to pay. You can read more on how we're keeping customers' bills as low as possible in [section 7](#). Here we also set out how we can also ensure that our business is sustainable and set on a firm financial footing to ensure we can attract the big investment required to meet the big ambitions of our customers and stakeholders.

There is still time for you to share your thoughts with us before our final submission to Ofgem on 1 December 2021, so please see our separate consultation document and do comment on any part of the plan that you wish. We take all feedback on board and work transparently to show how we use it to improve our plans together for everyone.

Peter Emery

Chief Executive Officer
Electricity North West



1.3 How to navigate this plan

We don't expect everyone to have the time to read the entire plan in detail, but we suggest you start with our summary in [section 2](#) to give you an overview of key areas.

In addition, here are direct links to a few of the key sections:

- [5.1.1 Meeting customers' needs](#)
- [5.1.2 Supporting electricity users in vulnerable circumstances](#)
- [5.2.1 Delivering a reliable network](#)
- [5.2.2 Building a resilient network](#)
- [5.2.3 Keeping our communities safe](#)
- [5.3.1 Leading the North West to Net Zero](#)
- [5.3.2 Improving our direct environmental impact](#)
- [6.1.2 A new world of distribution system operation.](#)
- [7.1 The impact of our plan on bills.](#)

We've included links within this document to different sections and also to separate annex documents to aid navigation. Where there are external links or links to separate annex documents we recommend that you right click the link and select 'open in new window' so you can keep the window to this document open too.

1.4 Updates to this document since our early draft consultation in April

We had more than 140 responses to our consultation on our early draft plan, including detailed input from members of our deliberative panel and online community, see [section 4.3.2](#). We also had responses from Greater Manchester Combined Authority and our two county councils, Cumbria and Lancashire, as well as our Local Enterprise Partnerships and many others. Thank you to everyone who took the time to go through the plans in detail, your input has continued to shape our plan for the region.

We were one of only two electricity distribution networks to take this transparent step of publishing a near full version of our plan prior to draft submission. We also included detailed costs of all of our proposals, and asked for both general as well as specific feedback on the plans. The following sections show the changes to this version of the plan based on what we heard.

1.4.0.1 Accessibility

You told us the content was understandable and accessible, but gave us some ideas on how to improve it. We've redesigned the document to be even clearer, and added in a glossary of key terms. Even though these are explained throughout the document, you told us it would still be helpful for reference.

1.4.0.2 Engagement

The feedback showed that those who read it generally found what they expected and that they felt their feedback had been taken on board, however we also had some suggestions for clarifications that we could make on some specific elements. These included more detail on our commitment to diversity and inclusion of our workforce which we have now included in [section 6.2.2](#).

Feedback highlighted that customers and stakeholders were impressed with our breadth and depth of engagement, more of which is now available in [Annex 1](#) with the results of how we used the findings in [Annex 2](#).

1.4.0.3 Value

Almost everyone who responded thought that the plan offered value for money at a £2.14 a year increase on average annual domestic customer bills to deliver the proposals. In fact, some respondents were concerned that it wasn't high enough to deliver everything that we have included. Thanks to our innovation and efficiency we are confident of delivering this plan at a low increase, and this shows our ambition, not only in delivering more, but delivering more at a very low cost to customers. Revising our modelling techniques and refining the detail we now believe the bill rise will be even lower at just £2.03 while actually increasing investment by £50m to deliver more. See [section 7](#) for further detail.

1.4.0.4 Specific proposals we asked for more input on

Consumer value propositions are a specific part of our plans where Ofgem asked us to highlight areas outside of the traditional role of networks where we have evidence that it would provide significant consumer benefit. Our early draft plan proposed that we would roll out our Smart Street technology to 150,000 customers. Feedback was so strongly in favour of this initiative, that we are upping our proposal to 250,000 customers – the maximum number of customers we can practically deliver this to in the five-year ED2 period.

Other specific proposals we asked about:

	Proposal	Feedback from consultation	Updates to draft plan
Customer	5.1.2.1 Collaborating more closely with other utilities to support customers in vulnerable circumstances.	Strong support for us to continue with plans to collaborate.	No change from early draft plan.
	5.1.2.2 Doubling investment in referral networks.	Support for existing proposal, no strong support for extending further.	No change from early draft plan.
	5.1.2.7 Developing new customer advisory panels.	Strong support for existing output.	No change from early draft plan.
Network	5.2.1.1 Improving network health.	Mixed response while some people recognise this as a benefit, others question the value when risk is already low.	No change from early draft plan. On balance and given our commitment to reduce power cuts and the amount of time customers are without power by 20%.
	5.2.1.5 Improving reliability for those in vulnerable circumstances.	Good support for existing proposal.	No change from early draft plan.
	5.2.2.2 Improving our management of trees near overhead lines.	Very strong support to increase our tree planting from 365 trees a year to 10,000 trees a year.	Increase in this version of the plan to plant 10,000 trees a year.

	Proposal	Feedback from consultation	Updates to draft plan
Network	5.2.3.1 Making high rise buildings safer.	Support for us to do more to monitor electrical issues.	We're expanding our programme of monitoring to cover all buildings which are considered high risk (123 properties) as well as higher risk (111 properties) included in our previous plan during ED2.
	5.2.3.2 Delivering safety campaigns.	Support for us to do more locally in collaboration with other local utilities, rather than just mirror national campaigns.	Updated to reflect feedback and focus on targeted local campaigns.
Environment	5.3.1.1 Helping customers embrace low carbon technologies.	Support for continuing existing arrangements.	No change from early draft plan.
	5.3.1.4 'Unlooping' customers' power supplies.	Support for proposed level to meet need as it arises.	No change from early draft plan.
Environment	5.3.2.2 Reducing leakage from oil-filled cables.	Support for proposed level.	No change from early draft plan.
	5.3.2.6 Making our sites a haven for wildlife.	Strong support to deliver more with this popular proposal.	We're expanding the programme to cover 100 sites in ED2 rather than the 25 proposed in our early draft.
Consumer Value Proposition	5.5.1 Rolling out our Smart Street project to reduce cost and carbon for customers.	Very strong support for Smart Street and stretching ambition as far as practically possible.	Increase ambition from 150,000 properties to 250,000 properties.

1.4.0.5 Other updates

In addition to the changes above, we have also now included updates across the document to provide more information or aid clarity as well as adding the following significant updates:

- [section 6.2.2](#) on workforce resilience;
- [section 6.2.3](#) on working with our supply chain to deliver value;
- [section 7.4](#) on how the business is being financed (including covering our engagement on this key issue); and
- [section 10](#) to put the key regulatory detail from our plan into one place for ease of reference.



A summary of our plan

In section 2

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Section 2: A summary of our plan

2.1 A network that's fit for the future

It currently takes 57,000 kilometres of underground cables and overhead lines, and more than 2,000 colleagues to power the 2.4 million homes and businesses we serve in the North West of England.

Over the next decade, the demand on this vast, complicated network of cables, people and machinery is set to intensify.

The UK is now on an accelerated path to decarbonisation. By 2050, we will be a Net Zero economy. But to get there, the Government is targeting a 68% carbon reduction by 2030 – just nine years from now.

This has major implications for local electricity networks, with more and more people due to switch to electric vehicles and increase their reliance on electricity for heating, leisure and work. And our customers expect us to be ready for these changes.

In response, we are proposing to invest £2.033bn in the North West's network between 2023 and 2028. The money will ensure the network has the capacity to keep pace with the uptake of electric vehicles, economic growth and the increase in renewable electricity generation as well as reducing power cuts and supporting our customers where they need us most.

We are making three bold, ambitious headline commitments based on what our customers and stakeholders have told us they want:

Headline commitment #1: Customer: We will deliver a 9/10 level of customer service and also provide additional support to electricity users in vulnerable circumstances and fuel poverty, removing barriers to ensure that no one is left behind.

Headline commitment #2: Environment: We will invest to support all the requirements of our region to deliver a Net Zero future for everyone and we will drive the transition towards local Net Zero targets, following a path to making our own operations Net Zero by 2038.

Headline commitment #3: Network: We will reduce the number of power cuts and the average time people are without power by 20%. The average number of power cuts per customer will reduce from one every four years to one every five years and average time off supply will drop from 25 to 20 minutes a year.

We will deliver these commitments with our more than £2bn investment, a 53% increase in expenditure on ED1, while keeping bills low with just a proposed £2.03 increase to an average household electricity bill.

We recognise that these are difficult times. Even without a global pandemic and a recession, climate change is forcing so much change. Customers and stakeholders want to make sure that we support those in our society who are in the most vulnerable circumstances as well as hitting tough environmental targets and improving on what they see as our fundamental role: keeping power on and minimising power cuts.

In short, we will be ready for the future and we will provide a strong foundation to power the North West's ambitions.

2.2 Supporting community and local energy projects

The green agenda will see more community-owned, renewable energy projects take shape – and our customers and stakeholders want us to support them.

That's why, from 2023, we will provide a £1 million per year grant for community energy projects, such as neighbourhood-owned wind, solar and hydro projects.

We will also make it easier for households to adopt new, energy saving technologies, by providing a free advice service and by 'unlooping' shared services – where multiple properties share the same cables and are therefore currently restricted in what they can do.

And we will continue to reinvent ourselves as an organisation – moving from a 'top down' approach where our role is simply to look after a closed network, to a facilitator in a more democratic electricity landscape, working with lots of local organisations to get their renewable electricity flowing through the region's cables.

2.3 Making sure no one is left behind

Our stakeholders have warned us that Covid-19 will almost certainly increase the number of customers impacted by transitory vulnerability, both now and beyond 2023.

They also want us to do even more to help alleviate fuel poverty and to make sure that customers who are already economically and socially disadvantaged are not left even further behind as we change the way we live, work and travel in response to the climate agenda. We hear this call and are responding.

We will make £2 million per year available to work with trusted partner organisations, to support the 250,000 customers in our region who are in fuel poverty, by 2028.

We will launch a new £250,000 annual fund to remove barriers that prevent the take-up of low carbon technologies such as electric vehicles and solar panels, with the money targeted at struggling households.

We're proposing to roll out our pioneering Street Smart technology to 250,000 customers in disadvantaged neighbourhoods. This technology continually makes small adjustments to local network voltage to reduce electricity usage and bills, without affecting customer appliances and is our first specific customer value proposition.

We will grow our Priority Services Register even further from the 1 million people we already help, ensuring everyone eligible has the opportunity to join, and increasing membership so that a

minimum of 60% of eligible customers are registered. We will work more closely with other utility providers, with whom we share the same customers, to make sure we offer more joined-up support.

We will train all our colleagues to better recognise, understand and support those in vulnerable circumstances. Our approach will be tiered and targeted, to ensure education and awareness is aligned to roles and responsibilities to maximise our ability to recognise and reduce the effects of vulnerabilities.

And we will double the amount we spend on partner referral networks to £500,000 a year to establish partnerships with organisations with specialist skills to help our customers who need it most. We recognise the opportunity we have to help and will refer customers to these services to ensure they get the support they need.

2.4 Improving customer service

Customers have told us they want us to continue to evolve our service and to achieve 9/10 for customer satisfaction. We aim to deliver this as a minimum despite the challenges of significant increases in customer contact and expectations in RIIO-ED2.

We will make it even easier for customers to get in touch, by enhancing our online services and making it easier to get through on the phone by increasing the size of our team.

Businesses will receive dedicated support through our expanded business register for help and advice in the event of power cuts.

2.5 Balancing bills with ambition

Affordable bills have always been a priority for our customers, but they have told us they are willing to pay a bit more for an ambitious plan that meets their needs.

81% of customers have told us that they would accept a £9.80 increase to our part of their bill to get the level of service they want. With the long-term impacts of Covid-19 unknown, and with 12.1% of people in the North West in fuel poverty, we believe we must rise to the challenge and deliver the bold and ambitious commitments in this draft plan for less than that.

Through innovation, efficiencies, lower financing costs and good management of our pension deficit throughout ED1, we are able to keep costs as low as possible for customers during ED2 and offset the majority of this bill rise, so that the actual average annual domestic bill increase is expected to be just £2.03.

It's worth noting that cost has in no way limited this plan's ambition with the main constraints being deliverability due to market constraints and ensuring value for money investments. See the appendix to [Annex 2](#) on how we determined the right level of ambition for each proposal in this plan.

The increases in expenditure when compared to the ED1 levels are driven by three macro factors; the challenge of decarbonisation, the increased ambitions of our customers and stakeholders and the changing regulations and obligations that increase the costs of carrying out our core activities. Examples of each respective driver include the need to maintain and replace smart devices and extend low voltage monitoring across the network, rolling out the innovative Smart Street, Sentinel and high-rise building monitoring technologies, cyber resilience and Polychlorinated Biphenyls (PCB) removal.

This plan benefits from significant reductions in costs when compared to the allowances set for the ED1 period that total around £300m on five-year comparison. Our business plan was assessed by Ofgem as the most efficient for ED1 and we are set to deliver all of the outputs in this period for a net 6.8% less than allowances, a saving of £125m. From this efficient base we have identified around £70m of specific reductions against a roll forward of these ED1 expenditure levels.

Additionally, our draft ED2 business plan includes further significant discounting, about £100m, on this efficient starting position. The reductions include flexibility discounts on reinforcement forecasts and innovation benefits built into business as usual such as fault level solutions and oil regeneration of transformers. The reductions also include an ongoing efficiency assumption and the benefit of accelerating green recovery projects into ED1 that are funded without allowances.

Clearly financing cost are going to be a significant issue for all networks, and as such, we discussed these in detail with our engaged plugged in public deliberative panel of 40 customers to hear customers' views on this key issue for the first time. See section 7.4 for their input.

2.6 Financing

Issues about how energy networks are financed are currently being considered in the ongoing CMA appeals in respect of gas distribution and electricity transmission companies. The statutory deadline for the CMA final determinations is 30 October 2021, although crucially the exact date of publication of the full detailed decision is not known. Our final business plan submission in December 2021 will include our formal proposals for the ED2 equity return and debt allowance.

For the purposes of this draft submission, we are including an adjustment to Ofgem's working assumptions for both equity and debt allowances to demonstrate how the financeability issue could be addressed, and to understand the potential impact on the average domestic customer bill.

Our business plan reflects a significant step change in investment. Including our proposal for higher cost of capital allowances, we are able to deliver this for only a small increase of £2.03 over our average bills in ED1 which will continue to ensure the investor confidence that Electricity North West and the wider sector requires. We believe this represents excellent value for our customers, while also providing the financial security and returns needed to attract this critical investment.

2.7 A summary of all our proposed outputs from the plan

The table below shows all our outputs, grouped into our three themes of customer, network and environment then further segmented into the seven priority areas we were told to focus on through our engagement. Many of these outputs will be delivered by enhanced IT, such as a new customer relationship management tool and an innovative world-leading network management system upgrade. You can see the detail behind each of these in [section 5](#).



Output	Current performance	New target
Customer: Meeting our customers' needs		
Making it even easier for customers to contact us	Five existing channels	Two new channels: chat bots and self service facilities
Providing additional support to businesses during power cuts	Trial of Business PSR	Fully operational Business PSR
Improving the speed and quality of our responses to customers	Peak of 90.6% customer satisfaction (20-21)	At least 90% customer satisfaction despite increasing demands and expectations
Providing faster quotes and faster completion for new connections	Exceeding Ofgem targets	Exceeding Ofgem targets
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
Reducing the time it takes to complete emergency roadworks	Five days	Three days
Increasing community-focused approaches to engagement	Successful trials	Community engagement team improving access to information on network issues
Customer: Supporting electricity users in vulnerable circumstances		
Collaborating more closely with other utilities	Utilities Together forum with Cadent and United Utilities	Enhanced co-ordination with utility providers to support vulnerable customers
Doubling investment in referral networks	£250k a year	£500k a year
Expanding the reach of our Priority Services Register	50% of those eligible are registered	At least 60% of those eligible to be registered
Creating a Vulnerability Fund to ensure no one is left behind	None	New £250k a year fund
Supporting customers in fuel poverty	Various initiatives and trials e.g., Citizens Advice partnership	£2m a year to support 250k customers in fuel poverty
Offering timed appointments	Timed appointments available	Continuing timed appointments
Developing new customer advisory panels	Panels set up for business plan engagement	New panels including a panel for electricity users in vulnerable circumstances



Output	Current performance	New target
Introducing all-colleague training for vulnerable circumstances and mental wellbeing	Training focused on contact centre colleagues	100% of colleagues trained in vulnerability and mental health
Network: Delivering a reliable network		
Improving network health	Maintain current level of risk	Invest to maintain current levels of risk
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
Reducing the duration of power cuts	27 minutes lost per year per 100 customers	Reduce time off supply by 20% from 2021-2023 levels
Improving reliability for those with a poor service	Limited programme using Ofgem's ED1 worst served customer scheme	Invest to improve the service for 3,770 'worst-served' and 27,785 poorly-served customers with a 50% improvement target
Improving reliability for those in vulnerable circumstances	Investments for 56 key sites only (hospitals etc.)	Improved network reliability for customers where there is a high incidence of electricity users in vulnerable circumstances
Measuring and reporting short power cuts	Measurement	Increased accuracy and consistency across DNOs
Network: Delivering a resilient network		
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 EA data from risk of flooding in a 1 in 100 year storm event
Improving our management of trees near overhead lines	Compliance	Enhanced management and 10,000 trees planted each year
Improving telecommunications resilience	Establishing internet protocol connections to all major substations	Enhanced communications infrastructure resilience
Increasing cyber resilience	Completed self assessment under new Cyber Assessment Framework	Comply with requirements of Network & Information System Regulations
Improving storm resilience	70,000 people affected each year	Improve resilience of the network to storms



Output	Current performance	New target
Investing in 'electricity system restoration' readiness	Compliance with existing electricity system restoration standards	Compliance with new electricity system restoration standards
Maintaining resilience in a changing climate	Monitoring climate change effects	Implementing Climate Change Resilience Strategy
Network: Keeping our communities safe		
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
Delivering safety campaigns	Taking part in national safety awareness campaigns	Leading regionally-focused, multi-utility safety campaigns
Increasing safety education	Safety education focused on primary schools	Wider safety education focused on secondary schools
Improving overhead line safety	Developed and trialled Sentinel technology to identify low-hanging lines	Roll-out Sentinel technology across the overhead line network
Keeping rural transformers safe	Maintaining aging rural transformers	Replace 110 small rural transformers
Enhancing security at major sites	Expanded security to counter new threats	Maintain security programme
Improving safety of underground cable pits	Developed efficient techniques during link box programme	Intervene on entire cable pit population to improve safety
Carrying out proactive safety checks on cut-outs	Respond to safety issues identified by meter operators	Initiate regular cut-out safety check programme
Environment: Leading the North West to Net Zero		
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
Removing constraints for renewables	Constraints in certain areas increasing the cost of renewable generation connection	Remove constraints for renewable generation connection
Establishing a new £1m annual community energy fund	£75,000 per year fund	£1m per year fund

Output	Current performance	New target
Unlooping customers' power supplies	Few hundred services unlooped when requested	Unloop 32k services to properties adopting low carbon technologies
Providing a decarbonisation advice service	Online decarbonisation hub recently established www.enwl.co.uk/GoNetZero	Continue to provide, develop and promote advice hub
Environment: Improving our direct environmental impact		
Reducing our business carbon footprint	Two zero carbon sites and a 26% reduction in carbon footprint (2015-2020) to 18,051 tCO ₂ e/yr	Five new zero carbon sites. Reduce carbon footprint to 8,175 tCO ₂ e/yr
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)
Removing overhead lines in beauty spots	Remove 7-8km of overhead line a year	Maintain programme
Reducing losses from the network	11 GWh per year through proactive programme	Reduce losses by a further 8 GWh per year
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
Making our sites havens for wildlife	11 sites enhanced, 30 more identified	100 sites enhanced
Reducing operational waste and increasing recycling rates	No targets	Meet five new specific waste management targets
Complying with new legislation on PCBs	Compliance with previous legislation	Elimination of PCB contamination risk from our network equipment
Improving environmental management within supply chain	No reporting	Embodied carbon reporting for 80% of supplies and services

As well as these 50 outputs we have also included new plans to increase diversity and inclusion in our organisation (see [section 5.4](#)), and have included a consumer value proposition to extend our innovative cost and carbon-saving Smart Street programme to 250,000 properties (see [section 5.5](#)).

For the purposes of clarity we have also added a [section 10](#) to this document to highlight some key regulatory requirements within this plan. This helps keep this specific text out of the main narrative, and makes it easier for those searching for that specific content, making the document more accessible for all. [Section 10](#) covers information on our licence obligations, price control deliverables and output delivery incentives, as well as regulatory uncertainty mechanisms.



Why you
can be sure
we'll deliver

In section 3

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Section 3: Why you can be sure we'll deliver

Our current price control runs from 2015-2023, and is known as RIIO-ED1 (Revenue = Incentives + Innovation + Outputs, Electricity Distribution 1). Our next price control, which is the subject of this plan will run from 2023-2028 and is known as RIIO-ED2. We will refer to these periods as ED1 and ED2 throughout this plan.

So far in ED1 we have consistently delivered for customers. We are proud to have delivered industry-leading performance across a range of outcomes for customers and stakeholders. This has been recognised by Ofgem in successive versions of their annual report which identifies Electricity North West as the only distribution network operator (DNO) to consistently deliver high performance across all objectives:

Comparative DNO performance²

	Reliability & availability				Connections				Social obligations				Customer service				Environment				Safety			
	16-17	17-18	18-19	19-20	16-17	17-18	18-19	19-20	16-17	17-18	18-19	19-20	16-17	17-18	18-19	19-20	16-17	17-18	18-19	19-20	16-17	17-18	18-19	19-20
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NPG	✓	✓	✓		👁	👁	👁		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	👁	✓	
WPD	✓	👁	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	
UKPN	✓	✓	✓		👁	👁	👁		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	👁	✓	
SPEN	👁	✓	✓		👁	👁	👁		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	
SSE	✓	✓	👁		👁	👁	✓		✓	✓	!		✓	✓	✓		✓	✓	✓		✓	✓	✓	

- ✓ on track
- 👁 some issues, being managed and monitored
- ! significant uncertainty in scope and deliverables

3.1 Keeping our commitments

When we developed our ED1 business plan for 2015-2023, we made more than 40 specific commitments to customers. These commitments covered the broad areas of safety, reliability, customer, connections, social, and environment.

2. Data taken from Ofgem annual reports. Data not included for 19-20 as not included in 19-20 annual report.

We have reported on our progress against these commitments each year showing transparency³ enabling customers and stakeholders to hold us to account and enabling them to challenge us on progress.

Our 2020 version of this ED1 business plan commitments report⁴ shows that we continue to deliver ahead or on track against the majority of commitments and that where we have identified any tracking behind target, robust plans are in place to meet them.

3.2 Delivering social obligations and customer service

3.2.1 Stakeholder engagement

We developed our ED1 plans through robust stakeholder engagement and have had our engagement programme assured against AccountAbility best practice standards each year since 2013. This shows that our development and delivery of activities throughout ED1 was done with quality stakeholder engagement at its heart.

We launched our first ever stakeholder satisfaction survey in December 2020 showing that overall satisfaction was at 81%. The study engaged more than 200 participants and achieved excellent representation across our stakeholder community.

The survey measured overall satisfaction, attitudes towards the relationship held, future engagement preferences and improvement areas. The results indicated a strong correlation between the frequency of engagement, stakeholders' familiarity with our business and overall satisfaction.

Satisfaction levels were 10% higher on average among advisory panel representatives where relationships are mature. This research told us that our engagement is inclusive, meaningful and mutually beneficial. During Covid-19 engagement has been migrated online and become more frequent, and stakeholders have indicated they would like to continue with this model in the future with only 3% indicating they wished to engage less often.

We have also established a stakeholder engagement team, CEO panel, consumer vulnerability and sustainability panels, and were one of the first networks to establish a new independent Customer Engagement Group.

Our scores in Ofgem's Stakeholder Engagement and Consumer Vulnerability incentive are mid-table relative to the other gas and electricity networks as of 2019-20. One network was rated weak, four average, seven as fair (including Electricity North West) and one as good.

3.2.2 Customer service

Three years ago our Customer Contact Centre training achieved the ServiceMark and TrainingMark accreditation by the Institute of Customer Service (ICS). We were re-accredited in March 2021, achieving a distinction. The ICS also survey 200 of our customers annually and in 2020 we achieved a satisfaction score of 87.9 (out of 100), 10.9 points higher than the utilities sector average.

The ICS concluded, "There is a clear commitment to delivering great service to customers. Evidenced not only by the increased scores in both surveys and the reaccreditation. But most importantly in how employees talk about their customers and their work – with passion, pride and genuine care."

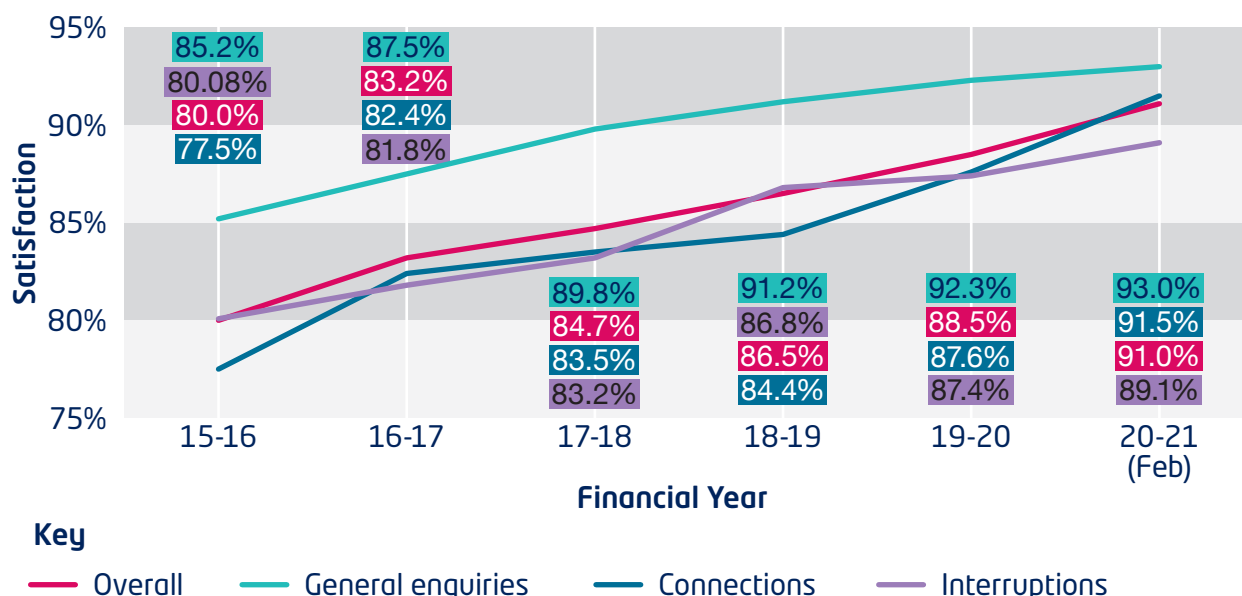
3. <https://www.enwl.co.uk/about-us/regulatory-information/business-plan-commitments-report/>

4. <https://www.enwl.co.uk/globalassets/about-us/regulatory-information/documents/business-plan-commitments-report/business-plan-commitments-report-2020.pdf>

We have consistently improved customer service across all areas to levels as high, if not higher, than the best retailers and other service providers. Since 2015 we have achieved an average customer satisfaction (CSAT) rating of 84.58%, reaching 88.5% in 2019-20. CSAT is measured based on the scores given by samples of customers who have contacted us either during a power cut, to apply for a new connection, or for any other purpose.

The graph below shows our CSAT performance throughout ED1 showing continued improvement in all areas:

Customer satisfaction through ED1



In ED1, Ofgem defined a 'worst-served customer' as one who experiences 12 or more higher voltage unplanned interruptions over a three year period, with at least three higher voltage interruptions each year. We were the only network operator to make a commitment at the start of ED1 to have no 'worst-served customers' by this definition by the end of the period in 2023 and we are on track to deliver on that commitment.

Since the beginning of ED1 we have delivered consistent improvements in customer satisfaction, alongside focussed actions such as the sector-leading priority services data share with water company United Utilities to support customers who find themselves experiencing a period of vulnerability.

Our Priority Services Register of customer details has recently exceeded a reach of over a million people, increasing from around 600,000 at the start of ED1.

We have also put in place measures throughout ED1 to support those in our region in fuel poverty. The North West has one of the highest rates of fuel poverty in the UK at 12.1%. We have introduced efficient and specialist referral partnerships during ED1, including a two-year £500k partnership with Citizens Advice that started in 2020⁵.

5. <https://www.enwl.co.uk/about-us/news/latest-news-and-views/2020/new-500000-partnership-offers-help-ahead-of-tough-winter/>

Our funding has enabled the recruitment of a team of seven specialist advisors including five energy champions who proactively contact customers to offer support. The team also responds to referrals from us where we become aware of particular customers who may require assistance.

3.3 Delivering reliability

We deliver the lowest level of power cut frequency in the UK, outside of the London network area. The length of power cuts in the North West is also within the top quarter in the sector meaning that, when they do happen, the impact is less severe than in most other parts of the country.

From the start of ED1 to 2019-20, we have reduced the number of power cuts by 24% and the average length of time customers are without power by 26%.

3.4 Delivering on the environment

We recognise that customers and stakeholders are increasing in their awareness and knowledge of network activities and in some cases becoming producers of electricity as well as users. With the challenge of reaching Net Zero being committed to by the UK Government in 2020⁶ we have been working throughout ED1 to lead the way in this important area, based on customer and stakeholder input and requirements.

Our *Leading the North West to Net Zero* document⁷ makes our commitments clear. We have focused on decarbonising our own operations and helping colleagues, businesses and customers do the same.

One of our flagship achievements in ED1 has been to produce decarbonisation pathways reports for our three main regions, Greater Manchester, Lancashire and Cumbria. We have worked with other utilities in our region to develop the plans and have worked closely with Greater Manchester Combined Authority, Lancashire County Council and Cumbria County Council to ensure the plans are both realistic and incorporate whole-systems thinking.

We regularly report on our environmental measures⁸ for transparency and to provide an opportunity for stakeholders to review and challenge our progress.

In ED1 we have been delivering a dedicated service to support community and local energy customers⁹ and stakeholders. Our approach has been called best practice by Regen who are a not-for-profit energy experts with specialisms in community energy and electricity networks.

Our Powering Our Communities fund has seen us support a number of organisations throughout the region, providing 19 projects with seed funding and expertise since 2018. We intend to build on this success in ED2 and expand our support to further address the issues our customers and stakeholders have told us they are facing.

Our community energy manager is on the board of Community Energy England which helps to give us insights into the issues affecting the sector nationally.

6. <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-Net-Zero-emissions-law>

7. <https://www.enwl.co.uk/go-Net-Zero/our-plans-to-go-Net-Zero/leading-the-north-west-to-Net-Zero/>

8. <https://www.enwl.co.uk/about-us/regulatory-information/environment-report/>

9. <https://www.enwl.co.uk/go-Net-Zero/community-and-local-energy/supporting-community-energy/>

3.5 Delivering new connections

Our performance on the time to quote for new connections, and the time to connect them to our network has continued to improve in 2019-20 and beyond. This has been supported through the new self-service online quotations service, with all time to connect measures exceeding Ofgem's targets (despite the tightening of the targets for 2019-20).

We have improved performance in every category and only narrowly missed achieving the maximum incentive reward as judged by Ofgem for best performance. As well as the online system we have delivered strong service by focusing on our processes and making sure we have the right resources available to respond to customers' needs.

3.6 Innovation and continuous improvement

Innovation is key to our success. We seek to innovate every day across all our business activities to ensure that we can respond to the evolving needs and expectations of our customers with an increasingly uncertain energy future ahead of us. All of our innovation projects are aligned with our innovation strategy¹⁰ – to maximise the use of our existing network and combine new technology and creative thinking to provide real solutions to real problems.

We have led the industry in developing innovative solutions to current and future challenges for energy networks and many of our industry-leading initiatives will deliver significant benefits for customers in RIIO-ED2.

Projects like CLASS¹¹ and Smart Street¹² have seen us go from winning funding to developing and delivering effective solutions to reduce both costs and carbon emissions. Other projects like our Sentinel¹³ and Pre-sense innovations help identify faults before they happen.

Our £20m Network Management System¹⁴ investment is enabling us to build a bespoke solution from the ground up to help us manage energy flows and give us an industry-leading complete network management tool fit for the 21st century.

3.7 Being efficient and investing in the future

We have worked hard in the first five years of ED1 to deliver cost efficiencies and share that benefit with our customers.

By identifying opportunities for efficiency, and delivering them, we've saved money that we have been able to reinvest to deliver other improvements. These improvements have been in reliability, resilience and customer service, as well as our next generation network management system.

This investment alongside other activities has helped us manage the network more efficiently remotely. This means that we have been able to reduce the impact of power cuts by identifying issues and restoring power more quickly when there is a problem on the network.

10. <https://www.enwl.co.uk/go-Net-Zero/innovation/our-innovation-strategy/>

11. <http://www.enwl.co.uk/class>

12. <http://www.enwl.co.uk/smartstreet>

13. <https://www.enwl.co.uk/go-Net-Zero/innovation/smaller-projects/network-innovation-allowance/enwl006---sentinel/>

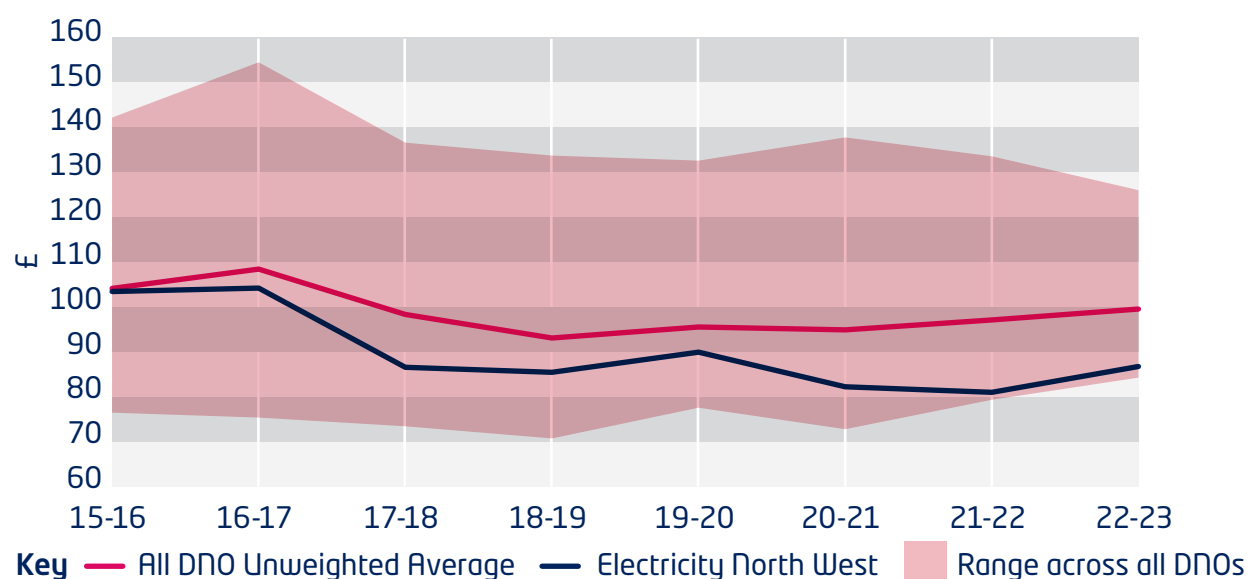
14. https://www.youtube.com/watch?v=mVnhlWp_2-o

Upgrading our telecoms network, cleansing data and investing in active network management in ED1 makes us well placed to lead the transition to a different way of managing our network more actively, known as distribution system operation (DSO)¹⁵.

Through innovation and efficiency, we have outperformed our total expenditure (totex) by £64.5m¹⁶, or 5%, in ED1 to date. This means we have delivered everything we said we would £64.5m under budget, saving customers money.

We expect to continue this trend of efficiency throughout ED1 saving £127m by March 2023. Our performance to date reflects efficiencies of £146m, not including £73m that we reinvested including CLASS (£12m), Quality of Supply (£29m), operational IT spend above allowances to support our new network management tool (£13m) and non-operational IT to improve business systems and processes (£17m).

Electricity North West Typical Customer Bill vs other DNOs (range)



Typical charges are calculated by reference to published charges and standard Ofgem consumption volumes (Typical Domestic Consumption Values).

Charges and time bands for each year and DNO area are obtained from the published "Schedule of Charges and Other Tables" on their websites.

The Ofgem TDCV decided on in 2017 for Profile Class 1 Medium of 3,100kWh is used, consistent with the RIGs. This is profiled according to the Profile Class 1 Domestic Consumption Profile published by Ofgem in January 2020, which applied to the published time band information gives a split of Red, Amber and Green units for the last two years of the RIIO ED1 price control. The numbers of days in the year is assumed at 365.

3.8 Our people

Our people are our most important asset, a view echoed by our key internal and external stakeholders.

Creating a great place to work where every colleague can be themselves and reach their full potential, enables us to produce great results and deliver a reliable, sustainable network that meets the future needs of our customers.

15. <https://www.enwl.co.uk/dso>

16. 2012-13 prices



We achieve this by investing in our people and deploying a clear management philosophy underpinned by strong accountability and high ethical standards.

3.8.1 Our people strategy

Our people strategy is simple: to Attract, Develop and Retain a workforce that is reflective of the communities we serve.

The strategy provides a platform for driving change and innovation across our business and supports the delivery of our ED1 strategic objectives and longer-term ED2 workforce resilience strategy.

Attract: Attracting great people who bring cognitive diversity, experience and skills which drives continuous improvement is essential to driving performance.

Working in partnership with schools and the local community to attract candidates from diverse backgrounds, we offer opportunities at all levels for apprentices, graduates or experienced hires into a variety of roles in operations or business support. We are working hard to make sure our workforce is representative of the communities we serve. In the past two years we have increased our ethnicity mix from 2 to 4%. In September 2020 we recruited 19 apprentices, 26% of which are from an ethnic minority.

We have also implemented a number of initiatives during ED1 to improve our gender mix. By ensuring an equal mix of males and females in our talent programmes we have increased the percentage of females in our leadership team to 32%, compared to 25% for the rest of the business. 21% of our recent apprentice intake are female. We are continuing to work with the local community and delivering our education programme to attract more females into engineering. More detail is provided in [section 5.4](#).

Develop: We have invested in our own state-of-the-art Training Academy in Blackburn to deliver technical and professional training to apprentices, trainees, graduates, existing colleagues and contractors who work on or adjacent to our network. Continued and sustained investment in colleague development supports our company-wide succession planning work and mitigates the risks of an ageing demographic.

In ED1 we have invested in leadership talent management programmes, a learning and development portfolio accessible to all regardless of role or status, further education sponsorship for academic qualifications and continuous technical authorisation training to support upskilling and multi-skilling in our operations directorate. In 2021 we have trialled an operational apprenticeship which is open solely to existing colleagues. This offers an opportunity to fully retrain and follow a new operational career path for colleagues from other functions in the business.

We also invest in our colleagues to provide learning and development opportunities which go beyond practical skills. For example, as part of our journey to lead the North West to Net Zero carbon we have begun a programme of training in carbon literacy to ensure our colleagues understand the role they can play and we have achieved the Carbon Literacy Organisation Bronze standard.

Retain: Our success in retaining colleagues is reflected in our low attrition rate of 8% per annum. Our ability to retain our people is testament to our commitment to build careers and make Electricity North West a great place to work through opportunities for development, great benefits packages and good colleague engagement.

Alongside our pension scheme we offer an annual bonus linked to company and personal performance, holiday trading, a wide range of cashback and discount offers via our reward portal and a cycle to work scheme. In March 2021 we introduced a low carbon transport policy which offers enhanced allowances for electric and hybrid cars, discounts on chargers at home and e-bike options to encourage colleagues to make the transition to low carbon alternatives.

Within three months of its launch, 60 colleagues have applied under the vehicles scheme and 21 have applied for a home charger. In addition, since the extension of our Cycle to Work scheme to include electric bikes, 134 colleagues have now enrolled.

We provide an Employee Assistance Programme for colleagues who may require support whether it be financial, legal or mental health guidance and much more. Fit-for-purpose support is provided on a diverse range of topics depending on the needs of our people.

We work hard to make sure that our benefits package remains relevant and attractive to our people and provides benefits that they value. In 2020 we introduced Willis Towers Watson salary benchmarking to provide market data which helps promote fairness and transparency in salary reviews.

3.8.2 Apprenticeships

Attracting new talent into our business helps us achieve a sustainable, competent workforce for the future. Inspiring the next generation of engineers is key to our success and the apprenticeship programme is an important channel to attract talent into the business.

Since 2017, we have been developing our award-winning apprenticeship programmes to include all relevant training, behavioural skills and assessments to comply with the Institute of Apprenticeship standards. The technical skills training is delivered by our in-house technical trainers in our state-of-the-art Training Academy and includes wider personal development training to meet the requirements of the apprenticeship standards.

We are proud of the success we have achieved in delivering successful apprenticeships. Our record speaks for itself:

- 46 colleagues have successfully completed the apprenticeship programme and have been appointed to permanent positions in the business;
- we are the first DNO to put apprentices through the Electrical Power Networks Engineer end assessment gateway, all of whom passed; and
- the number of apprentices who have successfully completed their apprenticeships to the required standard is almost double the national average.

3.8.3 Engagement

We recognise the importance of colleague engagement and opportunities for feedback to the success of the business. Engagement influences the development and implementation of change and can motivate colleagues and enhance performance when done well.

Our direct engagement with colleagues takes many forms. A monthly team brief and CEO blog helps share information on business performance, change initiatives or benefits. A series of roadshows allows members of our executive team to meet with colleagues at group events to talk through business plans and hear their thoughts and feedback.

We also invite feedback through focus groups which provides colleagues with an opportunity to engage with us and influence decision-making. Recent examples of topics for colleague focus groups include communication channels, inclusion and post-COVID-19 working.

Engaging with our Trade Union partners remains a key enabler in managing change. During ED1 we have worked to enhance the stability of our working relationship which has made it possible to have positive discussions about areas critical to future business performance on a local and national level. This success is reflected in the September 2020 pay deal when we secured a three-year extension to the existing three-year retail price index (RPI) agreement which has provided stability and assurance for colleagues and the business.

During ED1 we implemented a robust approach to measuring colleague engagement with the introduction of a six-monthly climate survey. In our most recent survey carried out in February 2021, the response rate was 76.2% and our overall engagement was 75.46%, which helps us remain in the top quartile for engagement when benchmarked against companies of a similar size.

3.8.4 Diversity and inclusion

We recognise the importance of diversity and inclusion in supporting our aim to have a workforce that reflects our communities, including people from diverse ethnic groups, those with disabilities or are LGBTQ+. Diversity and inclusion at Electricity North West is not driven by media publicity or pressure from competitors in the industry, but because it is ethically and morally the right thing to do for our colleagues and customers. We also know that companies who proactively promote diversity and inclusion at work will benefit from up to a 30% increase in company performance, improved workplace satisfaction and higher customer satisfaction scores.

We started our formal diversity and inclusion journey in 2019, trialling various initiatives to attract diverse candidates into the business and engaged with hard to reach communities. Our journey is one of significant cultural change and adaptation of behaviours and beliefs. We have learned a lot since 2019. We have developed our thinking and raised awareness about the importance of diversity and inclusion across our business. We have undertaken several activities to become a more diverse employer including but not limited to:

- set up a diversity and inclusion steering group with ELT sponsorship
- established partnerships with two local mosques
- received accreditation from the following recognised external bodies:
 - GMCA Good Employment Charter
 - Disability Confident
 - Forces Friendly Covenant
 - Real Living Wage Employer
 - Social Mobility Pledge
 - Business in the Community
- launched a new recruitment system which allows for:
 - greater accessibility to diverse candidates with audio, visual and language translation
 - improved management information to identify diversity of candidate pools
 - ability to recruit via blind CVs, reducing conscious bias in the recruitment process
- conscious inclusion training delivered to all managers in operations
- facilities have incorporated:
 - multi faith rooms
 - breastfeeding facilities.

The positive impact diversity and inclusion has on our colleagues, customers and partners makes this a focal point for us. We are proposing to launch our 'diversity and inclusion strategy' by quarter two of 2021 to make a conscious effort to talk to colleagues about diversity and inclusivity. This is a journey of continuous improvement and education for existing colleagues and future colleagues entering the industry. We are confident that placing significance importance on diversity and inclusion will drive a change in culture, behaviours and performance. This will positively impact our people and the wider industry agenda on diversity and inclusion.

3.8.5 Mental wellbeing

The health, safety and wellbeing of our colleagues is of paramount importance to us. In 2018 we set out to encourage our colleagues to talk about mental health and seek support where needed. We understood the vital role we and other organisations can play in helping to raise awareness and remove the stigma previously associated with mental health.

We have made significant progress in this area and are proud to have signed up to the Time to Change Pledge which demonstrates our commitment to making a real difference on mental health. It was also important to us to secure independent specialist support on mental health which resulted in us becoming members of the charity Mates in Mind in March 2020, from whom we have received recognition for our proactive approach to tackling the stigma that has historically surrounded mental health.

In addition, we have successfully implemented the following positive actions:

- carried out colleague engagement surveys;
- trained dedicated mental health champions across the business to support colleagues and raise awareness of mental health;
- introduced Wellness Action Plans to support individual colleagues;
- successfully delivered mental health awareness training for all leaders;
- introduced mental health awareness training for all colleagues in 2021;
- provided an online colleague portal offering advice and guidance on financial, physical, mental and social health;
- free counselling and cognitive behavioural therapy; and
- wellbeing awareness incorporated into key people policies and procedures.

We also wanted to give something back to the communities we serve and have developed a tool accessible for customers to access mental health support and guidance via our corporate website. This initiative has been promoted on our social media platforms and received positive feedback from our customers.



Giving customers and stakeholders a stronger voice

In section 4

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Section 4: Giving customers and stakeholders a stronger voice

Our regulator, Ofgem, defines stakeholders as: “individuals, organisations or communities that are impacted by the activities of the network company. Stakeholder engagement should consider the needs of existing and future consumers.”

While we accept that customers are also stakeholders, they are materially different groups in that customers pay for our service. Other stakeholders, including consumers, may benefit from our service without paying for it. Separating bill payers and non-bill payers is important, particularly in relation to business planning where willingness to pay is a factor.

For clarity we will use the following definitions throughout this plan:

- **stakeholders:** individuals, organisations or businesses that are affected by us, that influence our performance or who we have a legal, financial or operational responsibility to
- **customers:** individuals, organisations or businesses who pay electricity bills
- **consumers:** anyone in our area who uses electricity from our network, including young people and future customers

This draft business plan has been shaped by conversations with more than 18,000 customers and stakeholders so far over a two-year period. It is the most extensive and detailed consultation programme we have ever undertaken.

Throughout the whole process, we have worked hard to give participants a genuine opportunity to build, inform and 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 them access to information and helped them engage too – in some cases even providing devices and training to allow for online engagement during lockdowns due to Covid-19.

The process began in 2018 and will continue throughout 2021. As the consultation progresses, we are able to gradually consolidate ideas and proposals – ultimately arriving at a plan that is rooted in the aspirations and priorities of the communities we serve.

Annex 1 gives further details on our engagement strategy and the customer research approach that has resulted in the proposals within our plan. Annex 2 shows our triangulation, and Annex 4 shows our ongoing engagement strategy for ED2.

As of April 2021 we have engaged with the following numbers of customers and stakeholders, including 281 unique stakeholder organisations and all 35 of our local authorities, as well as our one combined authority (Greater Manchester Combined Authority) and our two county councils (Cumbria and Lancashire County Councils). We have focused our engagement with those councils with at least 10% of their population in our area to ensure efficient and best value engagement.

	Individuals	Interactions
Total count	18,604	22,249
Customer count	16,626	18,696
Political count	530	829
Sectoral count	860	1,718

	Individuals	Interactions
Charities count	168	281
Legal count	65	66
Media count	13	13
Regional count	342	646

4.1 Setting up for success

4.1.1 Shaping our approach to engagement

4.1.1.1 Our outside-in approach

To get the most out of our engagement we needed people to get on board. We heard from expert partners that a common failing of public consultation campaigns, especially when dealing with complex, multi-faceted issues, is to start with a pre-defined agenda, and start with the point of view of the organisation.

We were keen to avoid this. Before we even started talking about who we are and what we do, we wanted to ask customers and stakeholders “what matters most to you?”

Rather than starting by deciding what questions we want to ask and diving into discussions about us, we started our process asking customers and stakeholders to talk about themselves and their priorities.

In that way we were then able to connect with customers, and shape our questions to fit their perspective, increasing engagement and delivering richer insight.

To ensure we approached the consultation programme with this spirit of openness and inquisitiveness, we carried out some valuable groundwork in 2018 and 2019. All our activity is based on adherence to the AccountAbility stakeholder engagement framework that you can read more about in [Annex 1](#).

4.1.1.2 Triangulation of ED1 engagement

As well as our outside-in approach we’ve also made sure we’ve made the most of all the information we have gathered from previous engagement during ED1.

In 2019, we commissioned an external review and triangulation report of all our engagement work during ED1 up to July 2019, to assess what had worked and what hadn’t. A good example of one of the valuable outcomes of this work was a finding that showed our regional workshops had inconsistent representation of stakeholders. In Greater Manchester we had more environmentally-minded stakeholders, whereas Lancashire had more business representatives and Cumbria more utility representatives.

We have worked hard to ensure that our panels are representative as part of our business plan engagement process, and we have also created a quality assurance process for all engagement activity against which all engagement is assessed before the results are acted upon. The assurance ranks engagement giving a score that can be used in triangulation enabling us to compare the quality of engagement that we have heard, allowing us to apply appropriate weight to different engagements.

4.1.1.3 Early research and insights

In 2018, we spoke to 110 stakeholders to understand their high-level priorities for the ED2 period through our established stakeholder engagement groups and our three advisory panels (CEO panel and our independently chaired sustainability panel and consumer vulnerability panel). This was a development of our regular work with these panels to help us establish a materiality matrix – put simply, a plan showing the things that were most material to our stakeholders.

In summer 2019, we carried out early focus groups with 200 customers across our region, including hard-to-reach customers and customers in vulnerable circumstances.

These sessions were designed to understand what really matters to our customers and how we could make our subsequent engagement more relevant and meaningful to people's everyday lives.

4.2 Our six-stage process

Armed with our early insights into what matters to customers and how they wanted to be engaged, we were able to shape our ED2 consultation programme.

The consultation is being delivered in six phases. We began by canvassing broad opinions on a range of issues related to our customers and stakeholders in phase one, before narrowing the focus and increasing the level of detail with each successive phase.

By the fourth phase, participants could be given or had developed a high level of knowledge, and were participating in sophisticated and nuanced discussions about the fine detail of the proposals.

At the end of each phase, we used a triangulation process to analyse customers' feedback and to navigate sensible compromises when there were conflicting opinions or competing priorities. More detail on how we managed our triangulation process is included as [Annex 2](#).

The six stages are as follows:

4.2.1 Phase 1: Customer connection (November 2019 – February 2020)

Aim: Find out who our customers and stakeholders were, and what was important to them to give us high level priorities.

Approach: We took an outside-in approach starting with customers and their lives, to find their high level priorities, rather than diving straight into questions about the electricity network. To further our understanding of our customers we developed a new customer segmentation model which looked at customers' attitudes, behaviours and engagement preferences.

Who we engaged: 3,868 customers (domestic and business), 80 future customers and 476 stakeholders.

Key methods of engagement: Customer segmentation (qualitative and quantitative research), priorities exercise (qualitative and quantitative), stakeholder advisory panels, industry working groups and political perceptions survey.

What we learned: Broad priority areas of reliability, resilience, safety, keeping bills low, affordability, customer service, supporting vulnerable customers, raising awareness, environmental priorities.

4.2.2 Phase 2: Electricity in my life (March 2020 - May 2020)

Aim: To understand customers' interaction with electricity, including their expectations and changing needs of energy to get a more detailed understanding of their preferences.

Approach: We tested our understanding of customer priorities and learnt more about their experiences and how best to engage with them. We adopted a topic-led approach to engage stakeholders with purpose. A prioritisation exercise helped us decide how to engage stakeholders on the most material issues to them.

Who we engaged: 3,614 customers (domestic) and 466 stakeholders.

Key methods of engagement: Established our online community, industry working groups and stakeholder advisory panels, one-to-one engagement.

What we learned: Finessing of key priority areas to reliability, resilience, safety, customer service, supporting vulnerable customers, helping the North West to Net Zero, reducing our own environmental impact.

4.2.3 Phase 3: Our plan for the future (June 2020 - September 2020)

Aim: To develop specific proposals and to explore real trade-offs to find out what service levels customers were willing to pay for.

Approach: We explored the key issues that made each priority area important and tested a series of ideas in each area to explore which proposals had greatest resonance with customers and stakeholders and the relative priorities between them.

Who we engaged: 3,462 customers (domestic and business), 54 future customers and 737 stakeholders.

Key methods of engagement: Two phases of willingness to pay research (a 'maximum difference' phase using trade-offs to identify customers' most and least supported priorities, and a full willingness to pay study), a deliberative customer panel, online community, 'Powering Up the North' stakeholder event, one-to-one stakeholder meetings, stakeholder surveys, industry working groups, stakeholder advisory panels and regional stakeholder workshops. Increased one-to-one dialogue with key stakeholder groups.

What we learned: We developed 41 business plan proposals which reflected our customer priorities and their willingness to pay for the proposed service levels in the following three areas:

Customers: Customers want to interact with us in a variety of ways and we must be passionate about delivering excellent customer service whether delivering new connections, responding to power cuts or engaging on anything else. We should be highly focused on the needs of all of our customers, but particularly those in vulnerable situations to ensure that nobody is left behind by the carbon transition.

Network: We should continue to deliver industry-leading levels of reliability and strive to improve it further, particularly for those who receive a significantly worse service than average or are highly dependent on electricity. We will ensure that our network is designed and operated to cope with extreme events such as storms which are more likely in the future. We should continue to focus on the safety of the public and our staff.

Environment: We should work hard to reduce the effect we have on the environment, both in terms of our carbon emissions and the other impacts we have. We have a central role in facilitating the national drive to a Net Zero economy and enabling our regional stakeholders to meet their aspirations of earlier decarbonisation.

4.2.4 Phase 4: Sweating the detail (October 2020 - January 2021)

Aim: Testing support for the overall 'package' i.e. the plan in its entirety and the support for each of the most substantive components at a thematic and detailed performance level.

Approach: We analysed what was driving overall support for the plan, which promises resonated with customers and stakeholders, whether our propositions were perceived as relevant and if performance targets were perceived as credible and ambitious. We devised an approach to understand how customers perceived us in terms of trust and value for money having seen the plan and the bill impact.

Who we engaged: 5,917 customers (domestic and business) 54 future customers and 1,204 stakeholders. Youth Focus North West members.

Key methods of engagement: Acceptability testing, plugged in public panel (deliberative customer panel), Online community, 'Powering Up the North' regional events, one to one stakeholder meetings, industry working groups and stakeholder advisory panels.

What we learned: The acceptability of the total business plan as a package gained a very high score, giving us confidence that we could move forward with the majority of the propositions tested. Furthermore, the package of measures in each of the seven areas was scored above 80% by domestic customers, business customers and stakeholders, increasing our confidence with the balance both across the proposition areas and within each proposition area. Affordable bills have always been a priority for our customers, but they have told us they are willing to pay a bit more for an ambitious plan that meets their needs.

4.2.5 Phase 5: Closing the Loop (January 2021 - June 2021)

Aim: Closing the loop was our chance to play back the results of our acceptability testing to customers and stakeholders. This also allowed us to delve into more detail on specific topics to make sure we get the balance right for our July submission to Ofgem. It was in this phase that we also published our early draft business plan for consultation.

Approach: This phase is about assurance and checking back in with our customers and stakeholders. After our acceptability testing of our 41 propositions, we consulted on our key draft strategies, and then published an early draft plan for consultation ahead of submitting this draft plan to Ofgem in July. This allowed customers and stakeholders plenty of opportunity to engage with our transparent process before the first formal submission of our plan.

Taking our acceptability testing results we carried out another phase of triangulation of all our engagement evidence to decide which would make it into our final plan. This triangulation identified specific proposals where we wanted to gain more insight from customers and stakeholders, or test the ambition.

Some specific proposals highlighted for additional feedback in our early draft plan had scored lower than our 80% benchmark with bill-paying customers in acceptability testing, however in cases where we have had overwhelming stakeholder support we wanted to check-in and close

the loop for transparency to ensure understanding of our proposals and the reasons for them. Other proposals we wanted to retest scored well above our 80% target in acceptability testing but we wanted to review as part of our early draft plan consultation to make sure that customer and stakeholders thought we were being ambitious enough. We made a few significant changes to our plan as a result of this phase, increasing ambition on five proposals

Who we engaged: 864 customers, 15 future customers and 670 stakeholders.

Key methods of engagement: Plugged in public panel (deliberative customer panel), advisory panels, political and business events, key strategies consultation, full draft business plan consultation.

What we learned: While respondents were generally happy with our proposals and overall plan, we did learn that there was appetite for increased ambition in some key areas. These are highlighted in [section 1.4](#), and the relevant proposal details in [section 5](#).

4.2.6 Phase 6: Refine and submit (July 2021 - December 2021)

Aim: While this draft version of our plan is as close to final as possible at this stage, we remain open to feedback from customers, consumers and stakeholders. Following our submission of this draft business plan to Ofgem on 1 July we are looking forward to receiving feedback from Ofgem's Consumer Challenge Group, as well as our own Customer Engagement Group. This will allow us to address any feedback and return to customers and stakeholders with any further questions as necessary before our final submission to Ofgem on 1 December 2021.

Approach: We will continue our conversations with customers and stakeholders throughout the summer to build on our plans, while recognising that our July draft will be as near final as possible. We have already set up channels for engagement in September for the final review and feedback process prior to the December submission.

Who we will engage: 768 customers.

Key methods of engagement: Deliberative panel, advisory panels, political and business events, one-to-ones.

What we learned: To be included in our Final submission in December.

4.3 Our engagement methods

Throughout our ED2 consultation programme, we used a wide range of engagement methods to suit all customers and stakeholders – from time-poor participants juggling busy lives, to those who were able to give up more time and engage at a deeper level. The range of data gives us rich information with which to make decisions and each piece of data goes through our quality assurance process before we decide what, if any, weight it has in our decision making.

We have included more detail on our methodology for the research listed below (with more detail in [Annex 1](#)) and include full findings linked back to specific proposals in [Annex 2](#).

4.3.1 Large scale quantitative research

All of our key quantitative research started with initial qualitative work with focus groups. These groups enabled us to frame the quantitative part of the research in the most effective way so that we knew we could get the most out of it. Ensuring that we understood customers views and the right level of background information to provide to enable informed engagement was key to the success of our larger quantitative research.

4.3.1.1 Segmentation

We carried out a review of our stakeholder identification process and also invested in robust research to segment our customers and consumers in the North West. This segmentation was based on attitudes and behaviours and carried out by Accent Market Research, specialists in the field.

The research ensured that not only could we check that any feedback collected was representative, but that we could then analyse results by segments to ensure a fair representation of our region's views.

The work developed a set of 'golden questions', that we were able to ask of any customers taking part in research throughout our engagement programme, enabling us to identify groups and themes that we could then address more specifically.

The work also enabled us to tailor our communications and materials to different groups to make them more accessible encouraging all groups to engage with us to share their views. For more information on our segments, see [Annex 1](#).

Specific segment	Needs	How the plan delivers
Broad segment: Domestic consumers (including customers)		
Busy busy busy	Ease of customer service, need things to just work, including power	9/10 customer service, and reducing number of power cuts and time without power by 20%. Other actions to reduce disruption include: minimizing disruption from emergency roadworks; self-service channels; and timed appointments
Selfless jugglers	Environmentally passionate and want to see investment in communities	Support for the transition to Net Zero. Plans to improve our management of our environmental impact, including planting 10,000 trees a year. Investing in improving 100 substation sites through biodiversity schemes. Also reducing our business carbon footprint and providing advice for others to do the same
Time for myself	Little interest in engagement, but demand excellent customer service and value.	9/10 customer service and a package of improvements for just £2.03 – a price 97% of customers are willing to pay. Our collaborations with other utilities will also enable better efficiency and value for money.

Specific segment	Needs	How the plan delivers
Broad segment: Domestic consumers (including customers)		
Time to care	Strong focus on community and charity work but happy for businesses to make a profit too.	Corporate responsibility commitments and plans to carry out more local engagement and develop new customer panels. Our investment in referral networks will enable us to signpost customers in vulnerable circumstances to the right support.
Managing day to day	Finances are all important, keeping on top of bills is a constant struggle and looking for support. Safety is also this group's second priority.	Focus on keeping bills low, while also rolling out Smart Street to 250k properties to reduce bills further. Additional £2m a year support to help those in fuel poverty and a doubling of our investment in referral networks. Vulnerability Fund to help not leave anyone behind in the Net Zero transition. Safety promotion and education as well as our focus on promoting energy efficiency and referral networks and investing in safety in high-rise buildings.
Community minded	Community conscious and expect businesses to look after customers and the environment. Not so digitally engaged as other groups.	Outputs to support those in fuel poverty and also investment to reduce power cuts for those with a poorer level of service currently. Other environmental improvements such as community energy fund also available. Increased telephony support for those who cannot easily self-serve.
Living for today	Little interest in the community or the environment but self-focused.	Reliability improvements and improved self-service available for customer service. Safety campaigns also to be targeted at younger age groups. Keeping bills low.
Broad segment: Business customers		
Micro-businesses	Similar to domestic customers but reliability even more critical.	Focus on improving reliability and resilience. Reducing the disruption caused by emergency roadworks will also be key as this was the top priority for this group.
Small and medium sized enterprises	Interested in energy efficiency, but also reliability and resilience of the network to minimise disruption.	Reliability and resilience outputs as well as business PSR to support them when they need us. Decarbonisation advice available. Bill affordability very high up in original Priorities Research recognising the impact of Covid-19 on this segment in particular.

Specific segment	Needs	How the plan delivers
Large businesses	As other businesses but with more of an eye on Net Zero and environmental aspects. Looking to see how they can do their bit and also save money.	Decarbonisation advice and support, as well as clear strategies for competition in connections, and supporting electric vehicles.
Large energy users	Focus on energy efficiency and power being available at all times.	Reliability and resilience, and keeping bills low. Engagement on DSO activities to provide good opportunities. Emphasis on maintaining network health (to prevent network faults).
Broad segment: Stakeholders		
Political, regulatory and public sector	Real focus on Net Zero and community engagement. Interest in reducing disruption caused by streetworks as well as long term planning.	Leading the North West to Net Zero and outputs to support communities. Specific output on reducing time for emergency streetworks to be completed. Public sector organisations rated Enhanced support for community energy projects much more highly in willingness to pay research. Helping customers embrace low carbon technologies by making strategic investment in the right place at the right time.
Sectoral and supply chain stakeholders	Want to be updated on developments and opportunities to work with us, particularly regarding Net Zero. Interested in success of the business and innovations.	Transparent approach to engagement and working efficiently with supply chain. Strong focus on Net Zero and diversity and inclusion. DSO proposals to provide potential opportunities around flexibility in particular. Greater industry collaboration and transparency on our procurement requirements.
Charities, NGOs and lobbying organisations	Focus on supporting electricity users in vulnerable circumstances as well as environmental targets and involving communities in decision-making and service planning.	Outputs in electricity users in vulnerable circumstances strategy and environmental action plan showing lots of ambition in these key areas. Also plans to continue extensive engagement throughout ED2. Broadening our social role regarding fuel poverty support and working more closely with other utilities.
Legal and financial stakeholders	Interest in business performance and returns as well as ensuring compliance.	Focus on financeability of the plan and compliance with various standards set by multiple regulators.
Media and advisory organisations	Looking to be kept well informed of developments across a range of topics, and will hold business to account.	Transparency and engagement are key to how we will continue operating the business, providing self-service channels to access information and engaging with customers and stakeholders on a variety of topics throughout ED2.

Specific segment	Needs	How the plan delivers
Regional social, economic and environment stakeholders	Net Zero and environmental improvements are a focus for this group, but also levelling up and fairness between groups, such as those in vulnerable circumstances.	Leading the North West to Net Zero proposals and focus on improving our direct environmental impact are key to delivering for this group, but also helping the region level up in terms of improving reliability to those with a poor service, and supporting those in vulnerable circumstances. Fuel poverty commitment heavily influenced by strong stakeholder support, as was smart street and community energy fund.

4.3.1.2 Willingness to pay

To explore the customer and stakeholder-defined priority areas further and in more detail we split our willingness-to-pay research into two phases. The first took the form of a maximum difference survey where 24 different attributes, developed based on feedback so far, were tested across a sample of 354 customers (domestic and business) customers as part of our 'Electricity in my life' phase in summer 2020.

To identify which proposals we should test (out of a growing list of more than 80 possibilities aimed at meeting customers' and stakeholders' emerging needs) we applied the following criteria:

1. Would the proposal result in a material impact on bills?
2. Was the proposal a new idea that we hadn't yet tested elsewhere?
3. Did we need to test the scale of ambition?
4. Were there strong stakeholder views we needed to cross-check with customers?

The results of the maximum difference survey helped identify the initiatives of highest priority which were subject to our second more detailed willingness-to-pay survey. This concluded in September 2020 and identified the value that customers were willing to put on a range of options for 12 key attributes being tested in significantly more detail.

4.3.1.3 Acceptability testing

We triangulated the results of our willingness to pay research alongside other engagement, including our deliberative panel, online community, one-to-ones and stakeholder advisory panels, as well as third party research. This helped us identify and refine our proposals to 41 that we wanted to test as a whole package with customers at the agreed price from the willingness to pay research of +£9.80.

Rather than re-run a second version of willingness-to-pay research and in consultation with our expert partners Accent Research, we decided to run acceptability testing on the package and individual proposals.

The testing, with both domestic and business customers as well as stakeholders, showed an 83% overall acceptance of our plans.

4.3.2 Qualitative engagement

4.3.2.1 Deliberative 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 group was convened for phases 3, 4 and 5 of the consultation programme, and will reconvene again in September in phase 6. They have been taking part in detailed examinations of issues, willingness-to-pay research and acceptability testing of all areas of the business plan.

The panel has so far met online for eight Saturdays between July 2020 and March 2021. In total each panel member has now spent 32 hours engaging with us on a wide range of topics and the influence they have had on our plan has been significant.

Screenshot from one of our deliberative Plugged In Public Panel sessions



4.3.2.2 Stakeholder advisory panels

We have conducted stakeholder engagement since the business formed in 2007. We added significant rigour via a new strategy based on the AA1000 Stakeholder Engagement Standard (SES) and AA1000 AccountAbility Principles (AP) in 2012 and developed our first formal internal and external stakeholder panels.

Throughout ED1 our stakeholder engagement strategy has been continuously evolving and improving, based on our strategic goals at the heart of our business plan: reliability; affordability; sustainability; and excellent customer services ensuring that we catered for the needs of vulnerable consumers.

We developed director-led stakeholder advisory panels aligned to these business plan objectives which provided scrutiny of our performance and valuable expert guidance to our leadership team and strategic decision making. These panels initially met three times a year supplemented by an annual open stakeholder workshop where we discussed material issues, our business plan performance and any changes and enhancements to our commitments.

Following stakeholder feedback in 2018 we revised our panel approach and combined our panels, to avoid duplication, retaining the sustainability panel and consumer vulnerability panels and inviting all panel members to join the appropriate panel going forward. In May 2019 we further strengthened our approach by appointing independent stakeholder representatives to chair the stakeholder advisory panels and with them reviewed membership to ensure inclusivity.

We recognise the value that this has added to the process and the independent chair positions will be retained in ED2. As part of this review we also split our annual open stakeholder workshop into three regional workshops reflecting feedback that each region and the material issues encountered were very different across the geography of the North West. We have held these regional events, hosted by our executive team, every year since.

To enable even greater senior level buy in and direct input to our strategic business planning, in March 2019 we held our first Chief Executive Panel and invited senior regional business leaders and stakeholders to join members of our executive team twice a year.

Our advisory panels have provided a valuable framework to our stakeholder engagement for ED2 and have enthusiastically embraced the additional requirements for them to develop, review and enhance our priorities and strategies.

They have challenged us robustly to consider alternative approaches and set challenging targets in addition to their existing remit of challenging and advising on our ED1 activities. In 2020 our sustainability and consumer vulnerability panels often met monthly, creating additional sub-groups as required. Panel members supported us by attending more than 30 advisory panel meetings totalling over 80 hours of engagement.

4.3.2.3 Meetings with key stakeholders, including local authorities

Our early prioritisation exercise helped us decide how to engage stakeholders on the most material issues to them. We adopted a topic-led approach to engage stakeholders with purpose.

We have held 136 one-to-one meetings with key stakeholders across our priority groups and our regular audit of stakeholder engagement shows that we have covered a broad and representative range of stakeholder groups. We undertook a series of one to one meetings with individual stakeholders who had high levels of interest in our business plan, such as MPs and local authorities.

We have also increased our engagement with business groups, including Local Enterprise Partnerships, Chambers of Commerce and the Federation of Small Businesses through a range of methods including one to ones, stakeholder advisory panels, our CEO advisory panel and offering speaking opportunities at our events to hear their views.

We also developed relationships with the Greater Manchester All Party Parliamentary Group of MPs in our region and have presented to them and discussed with them their views on our plans.

Across our wider team, we continued our engagement with connections customers and stakeholder, community and local energy stakeholders and others across the business, providing information to allow our teams to engage with their own stakeholders on our plans too.

Our engagement included a step change in our relationship with local authorities. We have closely engaged with Greater Manchester Combined Authority for many years including our CEO sitting on the authority's infrastructure board.

We used our business planning process to engage more strategically with both Lancashire and Cumbria County Councils, attending their scrutiny committees as well as meeting their CEOs and developing long lasting and mutually beneficial strategic relationships.

Over a number of years we have developed a robust strategic engagement programme with Greater Manchester Combined Authority (GMCA) reinforced and strengthened by collaboration with their clear decarbonisation ambitions and ours to lead the North West to Net Zero. This has enhanced existing operational relationships (highways, strategic projects etc).

In 2018 we recognised that this strategic approach to engagement at a county-wide level should be replicated and coordinated in Lancashire and also Cumbria. Our approach has been topic led focusing on – decarbonisation, strategic development projects, vulnerable customers and lately the ED2 business plan.

All three regions were invited to participate in our advisory panels (see below) and representatives from Greater Manchester Combined Authority and Lancashire and Cumbria County Councils have all attended our regional advisory workshops. Where they were unable to participate around strategic topics or on strategic working groups due to resource or other issues, we arranged bespoke and targeted bilateral meetings with the relevant executive directors at the County Councils or their reports.

Regional authority engagement

	Greater Manchester	Lancashire	Cumbria
CEO Panel	Director of Environment (since March 2019)	Executive Director of growth, environment, transport and community services (since Sept 2019)	Executive Director for economy and infrastructure (since Feb 2020)
Sustainability Advisory Panel	Director of Environment (since March 2019)	Strategic development programme manager (since Sept 2019)	
Customer Panel		Debbie King, Senior public health practitioner (since Oct 2018)	
Other strategic activities	<ul style="list-style-type: none"> • Green Summit sponsorship • GM Green City Region Partnership • GM Strategic Infrastructure Board • Directors of Place meetings • GM Energy Innovation Challenge Group • Decarbonisation Pathways • Powering up GM 	<ul style="list-style-type: none"> • External Scrutiny Committee • Quarterly bilateral meetings • Samlesbury Enterprise Development • Decarbonisation Pathways • Powering up Lancashire 	<ul style="list-style-type: none"> • Bilateral meetings • Cumbria Chief Executive meeting • Cumbria Climate Change Working Group • Cumbria Clean Energy Strategy • Charge my Street – EV initiative – CAfS • Decarbonisation Pathways • Powering up Cumbria
Street works /operations meetings (2019-20)	Street works: 236 ¹⁷ Other engagements: 61	Street works: 5 Other engagements: 41	Streetworks:27 Other engagements:38

Lancashire County Council

Lancashire County Council has been an active participant on our all advisory panels since 2018 and officers and councillors have also participated at our Annual Regional Advisory Workshops and our recent Powering up the North events.

The strategic relationship with Lancashire County Council started in March 2019 with an initial presentation to the External Scrutiny Committee on regional investment and decarbonisation. Following that initial session, the Committee recommended that Lancashire County Council create a Green Summit (similar to GMCA) and investigate progress on the Environment Plan initially drafted with the LEP but on hold. This was reported by the local media¹⁸.

Further meetings took place with the Committee around working with the resilience forum in September 2019 and support for electricity users in vulnerable circumstances in October 2019.

17. Scale influenced by network size and nature of underground network

18. <https://www.lep.co.uk/news/environment/lancashire-told-its-trailing-manchester-green-energy-race-86617>

Additionally, discussions were taking place with the Economic Development Team around the strategic development site at Samlesbury and partnerships were developed to support customers in vulnerable circumstances through the Advisory Panel and Empowering our Communities Fund.

Throughout 2020, Lancashire County Council continued to play an increasingly active part in our Advisory Panels, has been involved in the Decarbonisation Pathways, and we continue to work closely together around the Samlesbury Enterprise Zone and other Economic Development opportunities. Steven Young contributed to our Powering up the North Lancashire event, speaking on behalf of the Council.

The decarbonisation pathways were also presented to the external Scrutiny Committee in November 2020 and they reiterated their support for a Green summit and put forward the following motion:

“Resolved: That relevant officers be requested to attend a future scheduled meeting of the External Scrutiny Committee to present on the Greater Lancashire Plan and progress made towards a green summit for Lancashire as previously agreed with the Cabinet Member for Economic Development, Environment and Planning to bring together all councils, public sector, the Lancashire Enterprise Partnership and the private sector into a cohesive, planned effort.”

The engagement is now coordinated through a quarterly strategic bilateral meeting with the directorate of growth, environment, transport and community services and current topics for discussion include the Lancashire County Council Infrastructure Plan, Lancashire County Council Environment Plan as well as the Electricity North West RII0-ED2 Business Plan.

Cumbria County Council

Relationships across Cumbria initially developed on a subject matter basis including with the National Park around operational activity and our undergrounding for visual amenity programme, community and local energy groups and developments on the energy coast particularly in relation to the future of nuclear generation and associated network connection.

In 2019 we started to reach out to the County Council to establish a more coordinated strategic relationship. In January 2020 we were invited to participate along with the council in the Energy Strategy development with Cumbria LEP. In February 2020 Angela Jones, Executive Director of Economy and infrastructure joined our CEO Advisory Panel and we held our first face-to-face strategic bilateral coordination meeting with her deputy Stephen Hall and the directorate of economy and environment.

With the onset of Covid-19 our meetings were paused (at the request of the County Council) however other meetings with the Council and LEP around the Cumbria Clean Energy Strategy continued around the regions ambitious plans to develop small modular nuclear reactors and network capacity. Our CEO, Peter Emery, has also attended the Cumbria Chief Executives meeting involving District Councils, Lake District National Park Authority (LDNP), NHS leaders etc and he has since held a bilateral with their Chief Executive. Angela Jones also contributed to our Powering up the North Cumbria event, speaking on behalf of the Council.

In October the coordinated strategic bilateral meetings resumed with a further three meetings taking place before the end of 2020. Topics for discussion with Cumbria County Council include the Cumbria Transport and Infrastructure Plan, including electric vehicle roll out and generation, strategic developments and network capacity and investment, carbon management strategy and ENWL Business Plan.

4.3.2.4 Local and regional summits

We have hosted seven high-level summits to date, bringing together political and business leaders, including Ofgem. We followed up our regionwide ‘Powering Up the North’ event with local events in Cumbria, Lancashire and Greater Manchester in 2020, focusing on the region’s energy needs.

We continued this engagement with our local ‘Powering Up Recovery’ series in 2021 and are planning another regionwide event in September 2021 before our final submission of this plan to Ofgem. In total we engaged with more than 300 people through these events, gaining key insight on key stakeholders’ views including the desired pace of change towards Net Zero.

Speakers included: MPs, Local Enterprise Partnership CEOs, council leaders, Ofgem, universities, the Federation of Small Businesses, Lords, Cadent Gas, airport and transport representatives, National Park Authorities and many more leading to a wide and varied debate and insight.

4.3.2.5 Online community

A mix of qualitative and quantitative engagement, our online community brought together more than 900 customers to discuss key parts of our plan. Over the course of the past year we had more than 7,000 comments and more than 41,000 reactions (likes and dislikes) from customers to those comments showing an active community genuinely helping us shape our proposals.

The format of the community was useful as it allowed us to both run polls as well as educate people through videos and information and encouraged debate among customers. One of our most popular discussions was on bills which received more than 180 comments.

We incentivised customers to join and also ran a points leader board to reward engagement. In some instances this resulted in customers trying to game the system and comment on every post with little value added, but these were quality-checked and discounted to encourage quality discussion. We also awarded spot prizes for the most thoughtful posts and comments to reward people for their time and effort.

You can see our community and register to join at <https://pluggingin.explainonline.co.uk>.

We recently created a summary of things the community had influenced as part of our ‘Closing the loop’ phase of engagement, which you can see a sample of below:

Plugging in: you said we did

Power cut customer service

You told us that a high level of customer service during an unplanned power cut included up to date information on when your electricity will come on, prioritising and creating a support for a wide range of customers in vulnerable circumstances and to offer interactive self-serve channels.

We currently offer a Priority Services Register which provides a free service to customers who need extra help during a power cut. In a poll asking you what our target membership should be for the register, 75% of members told us that we should increase the membership of our Priority Services Register to 80% of those eligible for registration.



In our business plan we are proposing:

- To make it easier for customers to contact us by developing self-serve channels whilst maintaining non-digital ways of contacting us, for example, having more people to answer phones.
- To continue to develop our Priority Service Register and the services we offer to support electricity users in vulnerable circumstances during power cuts.
- To increase the membership of our Priority Services Register to 60% of customers who are eligible for registration, with a stretching target of 80%.

Reliable network

The lockdown has meant for many of us an increase in our electricity usage and one community member posed their own question to other members “*Are you using more electricity during the lockdown?*”. 72 members responded, of which many said that they felt they were using much more electricity during lockdown. This was supported by some members commenting that delivering a reliable network is more important now than previously thought. You were asked if the current situation with Covid-19 had made you think more about how much you rely on electricity. 68% of 139 members participating responded to the poll with an affirmative ‘yes’.

In our business plan we are proposing:

- To replace and refurbish our equipment before it fails and causes more power cuts.
- To use new technology to reduce the number of power cuts and the average time customers are without power by 20%.

Net Zero

64% of you have never heard the term ‘Net Zero’. Many of you felt that we could raise awareness of Net Zero and low carbon technologies. However, the technology such as electric vehicles is perceived to be unaffordable at current prices and is likely to continue to price many customers out of the market meaning they are at significant risk of being left behind.

In our business plan we are proposing:

- To improve our advice and guidance to help our customers reduce their energy consumption and support customers in adopting low carbon technologies.
- To introduce a £250,000 Vulnerability Fund to remove the barriers that prevent the take up of low carbon technologies such as electric vehicles so that no customer gets left behind. Barriers to low carbon technologies include their cost and the need for greater education and support to understand them. We will also work with our partners on how we can overcome these barriers.

4.3.2.6 Engaging with hard-to-reach groups including future customers

For the purposes of our engagement, 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.

To reach customers with whom we have historically had little or no dialogue, we:

- used segmentation to identify hard to reach customers to ensure they were included in our research;
- provided devices and bespoke training to help some members of our deliberative customer panel so that they were able to engage effectively;
- created online surveys for our business and political stakeholders to complete who are often time poor rather than relying on formal meetings. We did also however provide tailored one-to-one sessions where these were requested;
- in depth one-to-one interviews with businesses as part of our willingness-to-pay research;
- drop-in sessions for MPs and their staff to get up to speed with our engagement and plans to make best use of their time to enable them to contribute; and
- created an online community to allow hard-to-reach and seldom-heard customers to have their say through a new channel.

One particular group that we focused on in our planning was future customers. This is because young people today will be paying for our service through their energy bills by the end of ED2 in 2028. A 15-year-old who we spoke to in 2020 will potentially start paying energy bills when the price control starts in 2023 and the investments we make will affect them for longer that it would for older customers.

Rather than create our own youth panel, our research – including discussions with national youth charity UK Youth – led us to establish a new partnership with Youth Focus North West in 2019.

We wanted to find the best way to reflect youth voices – our future customers' voices – in our plans and were advised that tapping into existing structures and groups was the best approach, giving additional support to these groups and ensuring a more rounded discussion, rather than assembling a topic-specific bespoke group.

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.

Through our partnership we attended five Youthforia events where we engaged with more than 100 young people on multiple occasions 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.

Our acceptability testing also included a number of people who were not yet customers but were consumers, giving us another way of reaching this group of future customers.

4.4 Why you can trust our robust and high-quality engagement

4.4.1 A new independent Customer Engagement Group

We were one of the first distribution network operators to appoint a chair and set up our new Customer Engagement Group (CEG), to challenge us on our engagement and plans. We fully embraced this new Ofgem requirement and worked hard to appoint a challenging group of individual experts to give robust challenge to our plan.

Our chair, Jeff Halliwell, was appointed in January 2019 following the use of an external executive search agency in recognition of the importance of appointing a strong chair. Jeff is highly experienced consumer heavyweight, having held a number of non-executive positions including chair of Heathrow Airport's Consumer Challenge Board, chair of Anglian Water's Customer Engagement Forum, and chair of Transport Focus, the statutory independent consumer watchdog for Britain's rail, bus, coach and tram passengers, and users of the major road network.

Jeff then built up the rest of the CEG membership working independently of Electricity North West to achieve the right balance of skills and experience to provide the quality challenges to make our plan as robust as possible.

We have met with the CEG for two days every month since May 2019, giving us lots of time to establish effective working practices. (From April 2020 our meetings have all been virtual due to the pandemic.) The CEG has systematically challenged us on a huge variety of elements of our plan, with particular scrutiny on our engagement process offering genuine challenge.

The CEG has been fully immersed in our business, spending time with our Board, CEO, engineers, office staff and getting out around the network on site visits (pre-Covid-19 restrictions). We have discussed our engagement programme and updates with the CEG as a standing monthly agenda item.

In total we have spent 48 days, or 288 hours with the CEG discussing our approach and plans.

In addition we invited members to attend our engagement sessions as observers so they could see how we engaged and the feedback we received as well as sharing emerging thinking.

There is significantly more information on the CEG's role and our engagement with them in [Annex 1](#).

4.4.2 Consumer Challenge Group

For ED2, Ofgem has appointed an independent Consumer Challenge Group. This group will review this draft plan submission on 1 July, along with the other distribution network operators' plans, reporting back to individual companies and Ofgem, before final submissions are made to Ofgem on 1 December 2021.

We have actively engaged with the group via senior leaders in our business including our Chief Executive Officer, Chief Financial Officer, Regulation and Communications Director, Customer Director, Engineering and Technical Director and Head of Regulation, and look forward to continued engagement to help them in any way we can with their review of this plan. More information on our engagement with our Customer Engagement Group and the Consumer Challenge Group is in [Annex 1](#).

4.4.3 Assuring the plan

As part of our annual assurance process, we have had our engagement activity assured by AccountAbility, a stakeholder engagement consultancy that has developed a detailed

internationally-recognised best-practice standard for stakeholder engagement. In 2021 we undertook a full engagement health check with AccountAbility which gave us a maturity placing on their ladder at 'accomplished' towards the top of their range which includes: Foundational; Evolving; Committed; Accomplished; and Advanced.

In March 2020 we appointed one of the 'big four' accountancy firms, Price Waterhouse Coopers, to undertake a critical friend review of our project plan and to hold one-to-one meetings and workshops with our project team. They reviewed and assessed our project against the '12 elements of project management excellence' and provided recommendations.

Areas they identified as evidence of 'good practice' included our senior and executive (particularly CEO) involvement and commitment to the project, our hybrid approach in combining elements of both traditional Project management methodologies with agile methods, our approach to stakeholder engagement, our focus on being 'engagement-led' at each stage of business plan development, and our close work with our finance colleagues at all stages of the project.

They recommended that we further developed our proposed assurance processes using a risk-based model, considering external assurance for highest risk elements. They also highlighted that we should monitor Covid-19 pandemic as a risk and liaise with stakeholder partners to develop alternative methods of communication and engagement. Finally, they made a range of practical suggestions on how we organise ourselves to complete the major data exercise that a price control submission involves. We accepted all their recommendations and adapted our planned programme and working practices accordingly to successfully develop the draft plan we are now consulting on.

We have also worked with:

- specialist technical consultants to assure the technical and engineering aspects of the plan;
- regulatory specialists to advise our Board audit sub-committee in carrying out their scrutiny role; and
- our own risk and assurance team who carried out a review of our process including how we engage customers and stakeholders, how we work with the CEG and how we incorporate feedback into our plans.

This has enabled us to ensure that our plan has been extensively reviewed and assured prior to its completion. Each element has been separately reviewed and checked internally using well-established internal processes that are compliant with Ofgem's requirements for data submissions. Further details of our overall assurance process can be found at [Annex 5](#) and the report from our technical consultants is included as [Annex 6](#).

The CEG has been reviewing and challenging the plan through its development, a process that has used an extensive Challenge Log. In addition, our Board are undertaking their own reviews, primarily through the Board Audit Committee, who have also been assisted in their task by independent external experts.

We seek to be a leading utility network operator and constantly compare ourselves to other companies both in the UK and beyond. As part of this approach, we seek to ensure we meet internationally recognised best practice by holding certifications against key recognised international standards for our environmental (ISO14001), safety (ISO45001), energy management (ISO50001) and asset management (ISO55001) standards and practices. This gives us and our customers confidence that we are managing our network and business appropriately.

4.5 How feedback shaped the plan

Our process began with broad discussions about customers' needs, the changing nature of our business, the challenges and opportunities in phase 1, through to detailed examination of proposals in phase 4. Phase 5, Closing the Loop, is allowing us to feed back to customers and stakeholders after our acceptability research to double check that we have interpreted views correctly and give another opportunity for input and challenge. Phase 6 will focus on addressing any feedback from our draft plan with stakeholders.

As the consultation progresses, participants knowledge has increased and the level of engagement has intensified. By phases 3 and 4, participants were able to provide very sophisticated and nuanced analysis and feedback.

The result is a plan that has been heavily influenced by our customers and stakeholders at every step of the way.

4.5.1 Balancing trade-offs

Our extensive engagement has brought with it difficult decisions to be made, with trade-offs between stakeholders' views on competing priorities.

The expectation that we will deliver outcomes over and above those achieved during ED1, while ensuring energy bills are affordable for all, has become a key trade-off in our plan. We have tackled this head on by testing our proposals with customers and wider stakeholders iteratively, each with varying degrees of ambition and investment implications.

On average households told us that they were willing to pay an additional £28 towards their most valued service improvements. In seeking an optimal service package, we have been very conscious that the cost of improvements will partly fall on customers in vulnerable circumstances or fuel poverty.

While we heard a call for stretching improvement, a significant minority of households reported sometimes struggling to pay their bills. Future customers also revealed a social concern about the continued impact of Covid-19 making it increasingly difficult for customers in poverty to meet their financial obligations. In response we set ourselves a higher hurdle of 80% acceptability to be passed to justify investment, rather than simply the majority of bill payers being in favour.

The higher hurdle we set created a price cap of an additional £9.80 per household. In further testing 83% of customers and wider stakeholders found our proposals priced at this level acceptable. The reasons provided included improved service levels, inclusion of innovative ideas and sufficient futureproofing. To complete our trade-off, we resolved to deliver the plan our customers and wider stakeholders wanted for less money, further enhancing the value for money it will deliver to them through innovation and efficiencies, including sound management in reducing our pensions deficit.

4.5.2 Triangulation of insight

To help us produce an overall plan that seeks to meet the needs and expectations of customers and wider stakeholders of the North West in a fair and equitable manner, we introduced a formal triangulation process.

We used this process to iteratively evaluate customer and stakeholder feedback, operational data and third-party insights, and weighted them carefully and triaged an appropriate way forwards.

To fairly weight the evidence base collected we determined its materiality using three key tools:

1. A new and robust quality assessment framework: We used this framework to consider 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: We used these principles to give us consistent guidelines for determining which evidence, if any, to place more importance on when views differed.
3. A quantitative data weighting: We used an agreed weighting to appropriately reflect customers' and wider stakeholders' views in the measurement of overall acceptability.

Each phase of our engagement has been marked with a triangulation report providing insights and the evidence base that provide a golden thread between what we have heard and the commitments in our plan.

Further details of our Triangulation approach, what our customers and stakeholders told us and how their views changed our plans are set out in [Annex 2](#). A selection of these key insights is provided below:

Stakeholders' priorities	Triangulation insights
Delivering a reliable network	<ul style="list-style-type: none"> • Our focus should be on keeping our customers' lives running by providing reliable and uninterrupted supplies and minimising disruption to their daily activities • Customers and wider stakeholders believe that it is important to improve reliability a bit, for a lot of customers, <i>and</i> a lot for a small number of priority customer groups
Keeping our part of bills low	<ul style="list-style-type: none"> • We must balance our ambition with affordability of bills to deliver a plan that delivers more for less – with outputs improving across the board • Covid-19 is increasing consumers' concerns over the affordability of energy bills but delivering a reliable network remains their top priority
Meeting our customers' needs	<ul style="list-style-type: none"> • Future customers warn us not to rely on digital for 24/7/365 power cut support to customers – increased telephony support is what is needed • A reduction in the duration of emergency street works is the most highly-valued service improvement in ED2 by domestic and business customers
Supporting customers in vulnerable circumstances (CIVC)	<ul style="list-style-type: none"> • Stakeholders warn that Covid-19 will almost certainly increase the volume of customers impacted by transitory vulnerability, both now and beyond 2023 • We can exceed expectations by looking beyond the obvious and expanding our societal role in alleviating fuel poverty and poverty more generally in ED2 • There is very strong support for deploying Smart Street to as many customers as possible, targeting areas of high fuel poverty

Stakeholders' priorities	Triangulation insights
Maintaining a safe and resilient network	<ul style="list-style-type: none"> • Customers say prevention is better than cure and ask us to reduce the overall risk of the network in the long term by replacing old equipment • We must mitigate the increased safety risk from both cyber and other attacks • Future customers want to see greater investment in green jobs such as apprenticeships so that we can build back better post-
Delivering an environmentally sustainable network	<ul style="list-style-type: none"> • Customers and wider stakeholders expect us to lead by example – accelerating action to achieve Net Zero carbon emissions from our operations by 2038
Leading the North West to Net Zero	<ul style="list-style-type: none"> • Customers support stakeholders' 2038 regional ambitions with low-regrets investment to increase network capacity and enable faster pathways to Net Zero • Bill payers say we should have a trusted advisor role on energy efficiency, facilitated through an online hub and socialisation of connections charge • Customers are willing to pay for dedicated support and specific funding to support citizen-led community energy projects • There was also appetite for the socialisation of connection charges, although acknowledgement that this was part of a wider debate as to 'who pays' for the Net Zero transition

So far, 85 key insights have shaped our plan from our robust triangulation reports. These reports have informed both the structure of this plan and fed into the options assessment that will inform subsequent versions of the plan. You can see our insights as well as more about what our stakeholders told us and how views differed and evolved in [Annex 2](#).

4.5.3 Nuances in customer and stakeholder views

Our triangulation revealed nuances in views; customers typically attaching greater importance to the affordability of energy bills than stakeholders, who forgo bill reductions in favour of accelerating the transition to Net Zero. It has also proved very challenging to find consensus on our social role in alleviating fuel poverty. This is because our stakeholders feel that we share responsibility for supporting customers in vulnerable circumstances and leading the transition to Net Zero with other third parties.

Our principles for trading-off divergent views means that we have attached greatest importance to well-designed surveys based on random sampling that generate robust findings. This is because of the level of precision and certainty these studies offer and their ability to be truly representative of our region. We have also placed high importance on evidence directly relevant to the North West and applied a weighting to ensure urban and rural views are fairly represented.

This process has informed commitments in our plan that represent the best possible compromise between divergent stakeholders' views.

4.5.4 Examples of key changes to the plan from engagement input

The six phases of our ED2 consultation programme (see [section 4.2](#)) were designed to give our customers the opportunity to engage with us at a level of detail that suited them.

All of our proposals have been shaped by our customers and stakeholders. Here are some specific examples..

Headline commitment #1: We will deliver a 9/10 level of customer service and also provide additional support to electricity users in vulnerable circumstances and fuel poverty, removing barriers to ensure that no one is left behind.

Our Plugged In Public Panel discussed our Priority Services Register membership and many members commented that we should ensure no one slips through the Net or is left behind. While discussing fuel poverty and what Electricity North West should do to support customers experiencing fuel poverty. Some of our Plugged In Public Panel commented:

“Fuel poverty may be increasing yearly and every one of those people deserve to be supported” Plugged In Public Panel Member

Our Plugged In Public Panel were asked to rank groups in order of importance for extra attention and support to make sure they are not left behind in the energy transition. Vulnerable, fuel poor and worst served customers were identified as most important.

In-depth interviews with 25 members of our Consumer Vulnerability Advisory Panel who, in their capacity as consumer representatives, were asked what the key concerns or issues that their customers face during a power cut are and a common observation was that consumers’ natural worries are amplified, so consequently anxiety levels rise and the need for timely, useful and accurate information about interruptions is required to mitigate this.

“Community response and vulnerable customer support will be key going forward, post Covid-19. Electricity North West should harness this support”
 Carlisle County Council – Consumer Vulnerability Advisory Panel Member

Headline commitment #2: We will invest support all the requirements of our region to deliver a Net Zero future for everyone and we will drive the transition towards local Net Zero targets, following a path to making our own operations Net Zero by 2038.

We have recognised the priorities of our national stakeholders in the transition to Net Zero throughout our proposed investment strategies. We have particularly taken into consideration Ofgem’s Decarbonisation Plan and the Climate Change Committee’s Sixth Carbon Budget in how we can shape our business plan and how we can support these stakeholders deliver their ambitions, as well as the views of the national Climate Change Assembly UK.

We have also engaged with our local and regional political and business stakeholders through a series of events where there is a great deal of commonality in ambition to deliver local Net Zero targets. At these regional political and business stakeholder events the majority of our stakeholders felt that we should take a proactive approach to bring forward future investment to increase network capacity and enable faster pathways to Net Zero. 100% of attendees in Cumbria and Greater Manchester and 91% in Lancashire said that Electricity North West should be proactive in its investment towards Net Zero.



We have also undertaken targeted engagement with the three county councils in our region who all have different Net Zero ambitions, but all recognised the key role that Electricity North West can play in their local environment action plans.

“My aim as Mayor is to make Greater Manchester the UK’s leading digital city region and the UK’s leading green city region. Electricity North West has been working with Steve Rotherham (Liverpool city region mayor) and I on something called Net Zero North West and they are the first electricity provider in the country to have aligned with a city region plan i.e., our plan to be Net Zero by 2038. Going faster on green gives us better homes, transport, jobs and better lives for our residents.” Andy Burnham, Mayor - Greater Manchester Combined Authority

“A motion will be developed on behalf of the Committee to take to the full Council the need for greater co-ordination and leadership in the county, including leadership on the council estate, vehicles, EV roll out, planning incentives and a county-wide coordinated approach with key partners including Electricity North West” Chair of Lancashire County Council External Scrutiny Committee

“Cumbria had had a clear region-wide recommendation for decarbonisation by 2037 but each local authority was currently working to ratify their targets. It is helpful to have these discussions with Electricity North West to understand the importance of the decision-making timetable and the impact on business planning to ensure that investment does not become a barrier to adoption of LCT technologies and regional investment.” Stephen Hall - Assistant Director of Economy and Environment Economy & Infrastructure - Cumbria County Council

84% of our Plugged In Public Panel told us it was important or very important that the North West reaches Net Zero. When presented with four timeline options for how fast Electricity North West should move to make its operations Net Zero, with 58% of members voting for the option of reaching Net Zero carbon emissions in our operations by 2038 to align with the end of RIIO-ED4 and the UK’s seventh carbon budget. 27% of panel members told us that we should align our targets by a mid-point between 2038 and 2050.

“I believe it’s worth investing more money now to save money long term. I also think we should be leading the way, hopefully encouraging other large organisations to follow suit in reaching or exceeding local and national targets” Plugged In Public Panel Member

“If they have the ability to do so, they should so it earlier. They should not align themselves with a particular area’s goals as it shows preference for a specific set of customers, who all expect the same service” Plugged In Public Panel Member

We undertook a similar exercise with our Sustainability Stakeholder Advisory Panel and based on the four proposals presented, stakeholders were unanimous that option 4 was most appealing. This was regarded as the most ambitious option and is aligned to Greater Manchester’s commitment to decarbonise by 2038.

Decarbonisation has 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 discussions with them.

“We will always prioritise Low Carbon Technologies as it’s our future”
 Youth Focus North West member

Headline commitment #3: We will reduce the number of power cuts and the average time people are without power by 20%. The average number of power cuts per customer will reduce from one every four years to one every five years and average time off supply will drop from 25 to 20 minutes a year.

Reliability has consistently come top of our customers’ priorities and is seen by many as simply a ‘hygiene factor’. Improvements in reliability are almost universally welcomed.

In our initial priorities research consumers were asked the priority areas they felt that we should be focusing on in RII0-ED2. Reductions in the frequency and duration of power cuts were stated as the most important areas to focus our investment.

“Keeping your life running, ultimately if you don’t provide a service, all of this is futile” Domestic Customer, Rochdale.

‘Delivering a reliable network’ was ranked the most important priority for investment by our Plugged In Public Panel. Members of the panel stressed the importance of the service that we provide and how other activities rely heavily on firstly delivering a reliable network. They also highlighted the significant negative impacts an unreliable network would have on many customers lives, particularly the most vulnerable customers.

“A reliable supply is paramount and impacts on vulnerable customers and will be more critical in the future as we decarbonise and switch to electric cars and other sources of supply.” Plugged In Panel member

“As a major consumer of electricity, and with a huge reliance on grid supplied power, interruptions to its power supply would be catastrophic for the operation of the business.” Manchester Airport Group, large energy users in-depth interviews

We continuously engage with our 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 continues to remain important with 88% of stakeholders who attended our summer 2020 regional advisory workshops feeling that it was important to invest in improving network reliability further.

Also, stakeholders attending our Chief Executive Advisory Panel recognised reliability as an important issue and noted the inconvenience of short duration interruptions, particularly to businesses, often caused by transient faults which can be difficult to locate.

Other examples:

Tree planting: When discussing our vegetation management we were asked by customers how many trees we cut down. Further research with our arborist teams showed that we did not

have a reporting framework to measure that, we have always measured our work by spans of overhead line cleared (the distance between two wooden poles constituting one span).

The challenge was put to us that if we were cutting down trees and not replanting them, were we having a negative effect on the environment and carbon reduction? We have since updated our reporting practices and our proposals committing us to planting or funding the planting of 10,000 trees in our region a year, enough to replace every tree we fell.

78% of our Plugged In Public Panel said that doing more to reduce the environmental impact when trees are cut down was important to them.

“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.” Plugged In Panel member

“When a tree is cut back, another should be planted as swiftly as possible.”
Plugged In Panel Member

Our £1m community energy fund: Additional investment to double a ‘Powering our Communities’ fund to £1m per annum to help communities become more resilient, through generating their own energy, supporting energy efficiency or other ways to use and manage energy locally

Many of our community energy organisations have told us that the lack of finance and support are amongst the biggest challenges they are facing.

Customers felt that this fund would stimulate activity, and that this was a good way to support local communities while also meeting Net Zero targets and lowering energy costs for customers.

“This is vital support. Many projects are community/volunteer led. Making the process as easy as possible will help projects identify early on whether it’s viable.” Online Community Member

“Initiatives like this will hopefully be a catalyst for community action.”
Online Community Member

Removing overhead lines in beauty spots: While our stakeholders in particular National Parks and Areas of Outstanding Beauty are hugely supportive of this initiative, customers give it a low priority and are not willing to pay for the expansion of the scheme. Instead of scaling up this activity based on stakeholder requests, we are proposing to keep it at a similar level to ED1 so as not to overburden bill payers.

“We have responded to several government consultations requesting that the undergrounding allowance is retained after the current programme finishes in 2023. We are delighted that the regulator has agreed that this vital and successful work - to reduce the visual impact of pre-existing lines on protected landscapes - should continue into the new programme. We look forward to continue working with staff from Electricity North West and the protected landscapes to remove wire clutter from our most stunning landscapes.” Amanda McCleery, Friends of the Lake District

Our Plugged In Public Panel felt that this wasn't as important compared to other propositions as it appeared to be a largely aesthetic outcome and that the scale of investment required and speed of implementation would be a barrier.

"It would be nice, but at the current rate it would take 500 years. 34km per five years with 3,500km+ cables to bury. It is not a practical objective." Plugged In Panel Member

Young people in Cumbria also felt that there was an element of fairness between rural and urban communities and questioned the investment needed to put cables underground versus the costs associated with power cuts.

"For those people living in Cumbria it isn't their fault for the make up of our network. The work to put cables underground can be expensive but then this is balanced with the costs associated with power cuts and overhead cable repairs." Young person from Cumbria

Expansion of Smart Street: Stakeholders were supportive of more ambitious targets for the expansion of Smart Street to customers in areas of high fuel poverty, so that all these customers can save money on their bills (CVP, see [section 5.5](#)).

"It's a no brainer - it'll help customers to save a lot of money: £1 cost = £60 saving." Plugged In Panel Member

Smart Street was endorsed by our Consumer Vulnerability Advisory Panel on the basis that this intelligent voltage optimisation technique has been proven to enable networks and customers' appliances to perform more efficiently and reduce customer energy consumption by up to 8%. Stakeholders supported the site selection criteria of areas where there is a high uptake of low carbon technologies and areas of fuel poverty.

Emergency street works: A stretching target of three days to complete repairs, resurface and clear sites after emergency roadworks compared to an average of 5.1 days in ED1.

"Roadworks can cause noise problems for residents. The visually impaired and mobility scooter users often find it difficult to negotiate reduced width pavements when the space is encroached upon by signage, barriers etc." Online Community Member

Our online community were subsequently asked what they expected us to do to reduce the impact of roadworks and a poll in which 140 people took part demonstrated that reducing the duration of roadworks was a priority.

Local authorities have asked that we work collaboratively to identify opportunities for delivering street works in a more co-ordinated manner that minimises congestion.

"Long disruption (i.e. road traffic problems) causes pollution, costs money and is frustrating." Greater Manchester Combined Authority

Stakeholders from Bolton Council told us they had concerns about the prolonged nature of disruption associated with repairs and the impact on traffic flow in busy locations.

On top of this, our willingness-to-pay research gave us a clear view of the levels of service that customers wanted and, crucially, were willing to pay for.

It showed that the average that customers were willing to pay for agreed service levels was £28. However, we set ourselves a higher benchmark in recognition of those customers who may be less able or willing to pay. We decided that we should take a figure that 80% of customers were willing to pay, for the desired outcomes. 80% of customers were willing to pay up to £9.80 for an improved package.

We then took the service levels identified for these priority areas, alongside other initiatives identified through other research, to create an overall plan that could be delivered for a £9.80 increase in the bill that customers pay.

Our acceptability testing showed an 83% overall acceptance of our plans. Further details on our customer research approaches, and the results are included in [Annex 2](#).

4.6 Building on our engagement for ED2

Our ED2 engagement programme has been the most ambitious we have ever attempted, and we are anxious to build upon what we have learned, and to retain some of the most successful elements of the programme.

Our 40-strong deliberative panel of customers was a huge success and provided great value insight helping us to arrive at a set of proposals that are rooted in the priorities of local communities.

We will retain this panel model in ED2 as well as maintaining large scale customer research and ongoing triangulation. We will also ensure that the work we have done to build up our engagement over the past two years does not go to waste. We will add to our experience, resources and capabilities to continue giving customers and stakeholders an even stronger voice in our activities.

[Annex 4](#) sets out further details on our proposals for continuing and developing the conversation with our customers and stakeholders in RIIO-ED2.



What we'll deliver based on what you've told us

This section examines our proposals in detail - offering an accessible description of the initiatives that form the backbone of our plan.

In section 5

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Section 5: What we'll deliver based on what you've told us

We have summarised the feedback that informed each proposal, including a table to show some of the key engagement methods used – to make it easy to see how our plans have been informed and shaped by conversations with our customers and stakeholders. We have also discussed each of these proposals with our CEG.

For full details of the triangulation of information that sits behind every one of our proposals, see [Annex 2](#) for in-depth breakdowns of our research and engagement input leading to the inclusion and scale of propositions made in this section.

As we outlined in [section 3.1](#) we keep our commitments and transparently report on them each year, keeping them relevant and extending them where needed. We have a strong record of delivering on our commitments. We use efficiencies and innovation to save money and reinvest it into improving outputs. There are a wide range of activities that the business undertakes that are necessary to deliver our proposals, such as running the control room; keeping our records up to date; design and planning etc. A description of each of these activities is included in [section 8](#) and the costs of each are provided in [section 9](#). A list of which of these activities are needed to deliver each individual commitment is included after each table in this section.

Where useful, we have included incremental investment figures for various projects. However, [section 9](#) contains a much more detail breakdown of how our ED2 business plan will be funded.

5.1 Meeting the needs of customers and network users

As detailed in our track record in [section 3](#), our customer satisfaction scores are already high, but customers have told us of a few areas where we can improve, such as customer services and supporting those in vulnerable circumstances.

5.1.1 Meeting customers' needs

Example customer and stakeholder input to this priority area:

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.

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 on 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.

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

5.1.1.1 Making it even easier for customers to contact us

Customers can currently contact us via phone, our website, social media, email and post. Customers have told us that they want new ways to contact us, but that because of the urgency of some contacts, and so as not to disadvantage any customers, we must focus on taking phone calls.

We will set a realistic target to improve our customer satisfaction for ease of contact to nine out of ten.

In ED1 we launched additional ways for customers to get in touch such as our automated chatbot. We also use multiple languages and work with external agencies to provide translation services. We will continue this work in ED2 to continuously improve our offer to customers.

The advantages of this approach mean that people can contact us when it suits them, rather than waiting for specific working hours of certain teams. It also frees up the phones for people who don't easily have another option.

Outcome description			Current performance level			
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓		✓	✓

5.1.1.2 Providing additional support to businesses during power cuts

Businesses can sometimes take a financial and even a reputational hit due to the impact of power cuts. It can also be more disruptive without the latest information to help make decisions on whether to continue or send people home for the day.

To give businesses additional support during power outages (either planned or unplanned) we will continue our innovative Business Priority Services Register – similar to the PSR for our domestic customers.

Businesses signing up to this free service will receive a range of support, such as 30 days' notice of any planned power cuts. We'll also offer advice on how they can obtain generators, and we'll proactively contact them during unplanned power cuts to keep them up to date and help them plan.

Outcome description				Current performance level		
Operate a Priority Services Register for Business Customers				Trialled in ED1		
Incremental cost of proposal				Target delivery date		
£0.2m				1 April 2023		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓			✓

5.1.1.3 Improving the speed and quality of our responses to customers

In 20/21 we were pleased to achieve 90.6% and we aim to maintain this level through RIIO-ED2, despite the likely significant increase in customer contacts and rising expectations.

We receive around 400,000 telephone calls from customers each year and this continues to grow. We will increase the size of our customer team to answer enquiries more quickly.

This will also support resolving a minimum of 80% of complaints made within 24 hours. Where we receive complaints we do root-cause analysis to drive how we prevent complaints or improve the process, and we will continue this during ED2.

One of our roles is to connect new domestic or commercial properties to our electricity network, or change the location or size of existing services, so that customers get the power they need.

Customers will benefit from an easier connections process which is responsive to their needs, from initial application through to works being completed.

We will achieve this by being responsive to customer feedback, including the development of digital technology and an improved website to make it easier for customers to track their project.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓			✓

5.1.1.4 Providing faster quotes and faster completion for new connections

We will beat Ofgem’s standard for the time it takes us to quote and connect new connections customers. We will also increase customer satisfaction to nine out of ten through continuous improvement looking at the processes and systems we use to streamline and develop improvements.

Outcome description				Current performance level		
Exceed Ofgem targets				Exceed Ofgem targets		
Incremental cost of proposal				Target delivery date		
£3.8m				31 March 2024		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

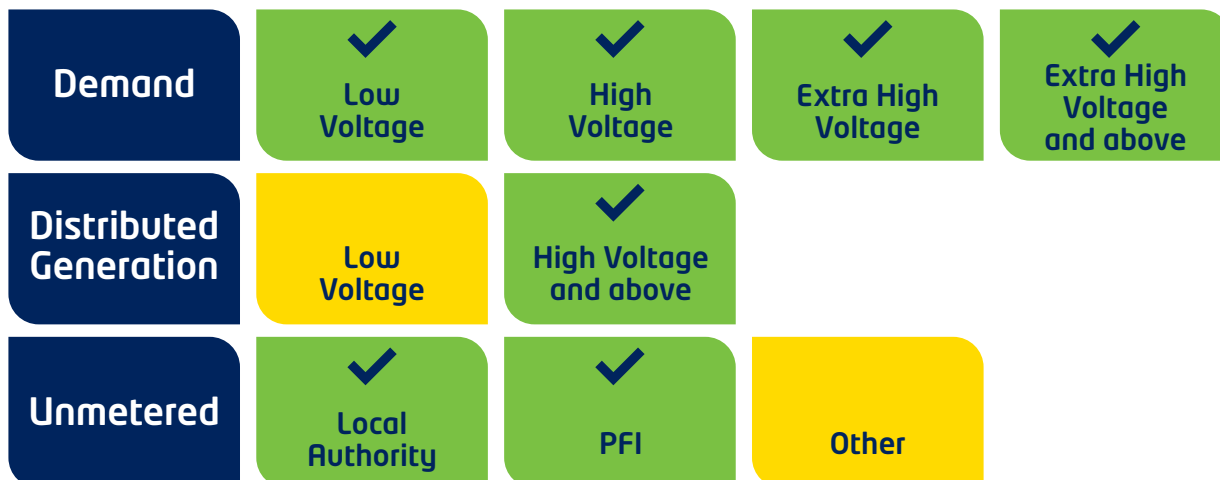
5.1.1.5 Maintaining high levels of competition in connections in the North West

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 as shown in the diagram below:



We will maintain our high levels of competition in connections in ED2 as the best way of providing choice and value to customers. This approach has been discussed directly with our CEG. For more information see our Major connections customer strategy in [Annex 7](#).

Outcome description				Current performance level		
Continue enabling competition				Competition enabled in 95% of connections markets, more than any other DNO		
Incremental cost of proposal				Target delivery date		
Nil				Ongoing		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.1.1.6 Reducing the time it takes to complete emergency roadworks

Emergency roadworks are required if our underground cables are damaged. Roadworks can cause disruption to local communities and commuters through extended travel time, loss of trade to businesses, noise and air pollution.

Local authorities have asked that utility companies work collaboratively to identify opportunities for delivering roadworks in a more coordinated manner, in order to minimise congestion. Our customers were also supportive for reducing the time to complete roadworks. In response, we will work more flexibly in ED2 to reduce the average time taken to finish emergency repairs in the highway or pavement from five days down to an average of three days.

This will be measured from the time of repairs commencing to the site being tidied up and restored to its previous condition.

We are not asking for additional allowances to deliver this improvement but have set out a proposed new incentive mechanism that would only pay out if we successfully achieve it (and penalise us if we don't). Further details of this proposed new approach can be found in [Annex 8](#).

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓		✓

5.1.1.7 Increasing community-focused approaches to engagement

We will introduce a more local community-focused approach to engagement and communications about work and services in our region. We will recruit and train a specialist team to work with local communities to engage about Electricity North West's current and future activities in local areas.

A recent example of this is engagement with a community in Golborne, Greater Manchester, which had suffered multiple power cuts in a short period of time. Community feedback resulted in us planning, scheduling and carrying out repairs in Golborne within two weeks.

We wrote to 2,000 customers to keep them informed, engaged with the local MP and arranged for an online Q&A with customers on Facebook. Customers will gain more tailored information and support over key issues that are affecting them through this approach.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.1.2 Supporting electricity users in vulnerable circumstances

There are a number of key drivers that shape our thinking on vulnerability including customers on our Priority Services Register (PSR); those who tell us they need a lot more support; circumstances that can make anyone vulnerable such as fuel poverty, bad weather, loss of electricity; and community needs affected by wider social impacts – such as those we have seen through 2020 highlighted by the COVID-19 pandemic.

Many of the wider factors that create vulnerability are addressed by a range of organisations, but our customer and stakeholders tell us that we have a role to play in helping to simplify access to support and provide support.

Input from customers and stakeholders in this area highlighted the importance of designing services with inclusion in mind.

More information is included in our dedicated Electricity Users in Vulnerable Circumstances Strategy which can be found at [Annex 9](#). The strategy has been amended several times in response to thorough challenges from our CEG.

Example customer and stakeholder input to this priority area

Our online community told us that our Priority Services Register is an essential service to certain people who may be in vulnerable circumstances and we should continue to promote it.



Our Plugged in Public Panel told us that 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 refrigerating medicines, so we need to effectively prepare for and mitigate predictable circumstances. Our Plugged in Public Panel told us that 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.

Our Plugged in Public Panel also raised 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.

At one of our Powering Up Recovery 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.

5.1.2.1 Collaborating more closely with other utilities

We will collaborate more closely with other utility providers (e.g. water and gas) in the North West to provide improved services to customers in vulnerable circumstances.

To achieve this we will 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.

This joined-up-approach is more efficient because it prevents the need for utility providers to always communicate separately with customers.

A recent example is a new collaboration between Age Concern, Electricity North West, United Utilities and Cadent Gas alongside Preston North End Community and Education Trust, in a joint effort to reach and support older people in Lancashire.

Customers will benefit from a more efficient and cost effective service with improved support for customers in vulnerable circumstances across the North West.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.1.2.2 Doubling investment in referral networks

We will double our investment into referral networks to £500k per year to enable trusted partner organisations to provide customers in vulnerable circumstances with the support they need.

Funded partnerships allow us to refer customers in vulnerable circumstances to organisations (e.g. Citizens Advice) that are trusted by local communities and provide extra support.

This can include energy efficiency advice, free first-time central heating, grants to insulate or upgrade a customer's heating system and volunteers making regular contact with lonely or isolated people.

Customers will benefit from health and wellbeing benefits associated with connecting customers to support services when they need them most.

Outcome description				Current performance level		
£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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.1.2.3 Expanding the reach of our Priority Services Register

We currently have almost 1m people registered on our free Priority Services Register (PSR) for customers in vulnerable circumstances, out of 5m people in our region. This is around 50% of all those eligible.

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.

The PSR is a free support service to customers who need extra help during a power cut, either over the phone or face-to-face. We will continue to develop and expand our PSR and the services we offer to those on it including support available during power cuts.

We will enhance the service provided to members through making contact more frequently to check everything is okay, arranging visits from Customer Welfare Officers for those who need extra help, providing tips to prepare and stay safe during power cuts and developing new support services.

Customers will benefit from increased resilience and health and wellbeing benefits associated with reducing the stress and anxiety that can be caused by a loss of power.



Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓	✓	✓	✓

5.1.2.4 Creating an Vulnerability Fund to ensure no one is left behind

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 remove 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.

Key barriers to these technologies include their cost and the need for greater education and support to understand them.

This fund is a specific new idea brought by one of our stakeholders as a suggestion on how we could increase engagement and communication with key groups. 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 would make a business case to develop it.

The annual fund will drive innovative solutions to ensure that everyone, including the most vulnerable, can benefit from a future energy system that is both smart and fair and ensures that no customer gets left behind.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓	✓	✓	✓

5.1.2.5 Supporting customers in fuel poverty

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.

In the North West 12.1% of households (approx. 250,000 customers) are in fuel poverty, which is when people cannot afford to keep adequately warm at a reasonable cost, given their income.

These households are in more vulnerable circumstances than most when power cuts occur, because they don't have surplus income to cope during the power cut (for example getting a hot meal).

Working alongside local agencies we will provide a more integrated range of support services investing £2m per year to reach all 250,000 fuel poor customers by 2028. This is a quadrupling of our investment from ED1.

Energy efficiency advice, grants and debt management support will help recipients financially, but also build their confidence and knowledge. Wellbeing and other health challenges will also be supported through a referral scheme which will make it easier for customers to get the help they need.

Outcome description				Current performance level		
250,000 customers in fuel poverty supported				n/a		
Incremental cost of proposal				Target delivery date		
£7.5m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓	✓	✓	✓

5.1.2.6 Offering timed appointments

We will continue to offer timed appointments to customers who are having work completed at their property, or to those who require a welfare visit.

Connections and cut-out work which is predominantly in someone's house are always appointment based. Planned welfare visits are arranged through discussion with customers and have either a timed appointment or, if support on the way, timed expectations.

We will maintain this important service for contacting and arranging visits with customers in vulnerable circumstances if they need them, and offer them timed appointments to make life easier. Visits will be made by a Customer Welfare Officer to explain what is happening, provide reassurance and tailored support.



Outcome description				Current performance level		
Timed appointment service for PSR customers established				n/a		
Incremental cost of proposal				Target delivery date		
£2m				30 September 2023		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓			✓

5.1.2.7 Developing new customer advisory panels

We will establish new representative customer advisory panels to include direct input to our plans from members of the public.

A customer advisory panel is a group of customers that come together to review our business plans and provide feedback on our performance.

In developing this 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 learning and introduce a new customer advisory panel to provide ongoing feedback on our strategy to support customers in vulnerable circumstances.

To ensure the panel is representative it will include a diverse range of customers that truly reflects the wide range of people that live in the North West.

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.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓	✓	✓	✓

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

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).

We embrace diversity and inclusion, enabling our colleagues to have a better understanding of these areas including where an individual's circumstances requires us to make additional considerations in our daily activities. We will amplify our current training structure to provide a regular training programme for all roles, to provide insight and awareness for colleagues to better support our customers. The training will cover circumstances such as digital exclusion, rural isolation and regional economic impact.

The outcome will be an enhanced service provided by our colleagues through better awareness and understanding of the impacts of vulnerability and ability to recognise and reduce impacts through our daily activities. The training will also continue to build our mental wellbeing strategy, empowering our colleagues to understand vulnerable circumstances that can affect everyone.

Outcome description				Current performance level		
100% of colleagues trained in vulnerability and mental health				Training focused on contact centre colleagues		
Incremental cost of proposal				Target delivery date		
£2.25m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			

5.2 Maintaining a safe and resilient network

On average, an Electricity North West customer experiences a power cut around once every four years and is without electricity for around half an hour every year. This represents a reliability level of 99.995%, a performance which is in the upper quartile of all 14 electricity distributors in Great Britain.

We were the only electricity distribution network operator to commit to ensuring none of our customers would suffer a service that Ofgem would classify as “worst served” by the end of the current business plan period in 2023. We are on track to deliver on this commitment and in 2019-20 only 268 of our customers were in this category.

We also take our safety responsibilities to our colleagues and the public extremely seriously. This chapter also includes our forward plans for continuing to ensure the safety of our equipment and sites. [Annex 10](#) covers our ED2 education and awareness strategy including our approach to public safety communications.



5.2.1 Delivering a reliable network

Example customer and stakeholder input to this priority area

As part of the qualitative stage of our initial priorities research 'keeping your life running' was ranked as one of the top priorities by customers as electricity is so key to day-to-day life. We have more consensus on this area across all stakeholder groups than any other.

Our Plugged In Public Panel stressed the importance of the service 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.

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 a 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.

5.2.1.1 Improving network health

The electricity network is a complex system comprising overhead lines, underground cables, substations, transformers and switchgear.

Much of this equipment is long-lived. In fact, some of our underground cables are over a century old. Over time, these assets can degrade and become increasingly prone to failure, causing power cuts.

The largest part of our investment programme is devoted to the replacement and refurbishment of existing equipment.

We measure the overall health and risk on the network using an industry standard approach. We will undertake a targeted and efficient programme of asset renewal which maintains the overall condition of the network.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.2.1.2 Reducing the number of power cuts

The frequency of power cuts is measured through the number of interruptions a customer experiences on average. We commit to reduce the number of interruptions experienced by customers on average by a further 20% from their levels in the 2021-2023 period. This will reduce the average from around once every four years to once every five years.

We will reduce the number of customers affected by each fault on the network by installing new automated control equipment.

Last year, the North West network had the second best performance out of the 14 distribution network operators for power cut frequency. This proposal will improve performance even further with customers benefitting from improved reliability.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓

5.2.1.3 Reducing the duration of power cuts

The overall time that customers are without electricity is expressed using the Customer Minutes Lost term. We also commit to reduce this by a further 20% from the levels in 2021-2023 in the RII0-ED2 period. This will reduce the average time without electricity in a year from around 25 minutes to 20 minutes.

We will do this by rolling out new innovative technology to identify faults and their location faster, and training more engineers to be able to respond quickly to these faults.

Last year, the North West network had the fourth best performance out of the 14 distribution network operators for power cut duration. This proposal will improve performance even further with many customers benefitting from reduced disruption.

Outcome description			Current performance level			
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓

5.2.1.4 Improving reliability for those with a poor service

We maintain high standards of reliability by investing in the network, using new technology to minimise the impact of faults when they do occur and continuing to improve our operational response and practices.

However, there is still a small minority of customers, predominantly in rural areas, who receive a performance that is significantly worse than the average.

This is often due to the presence of a large number of overhead cables, combined with greater exposure to storms, wind-borne debris and falling trees.

While the average time to locate and repair these faults is relatively short compared to those on underground networks, the overall pattern remains one of significantly better performance in urban areas.

Our customers and stakeholders want us to improve the levels of service we provide to customers in more exposed parts of our network.

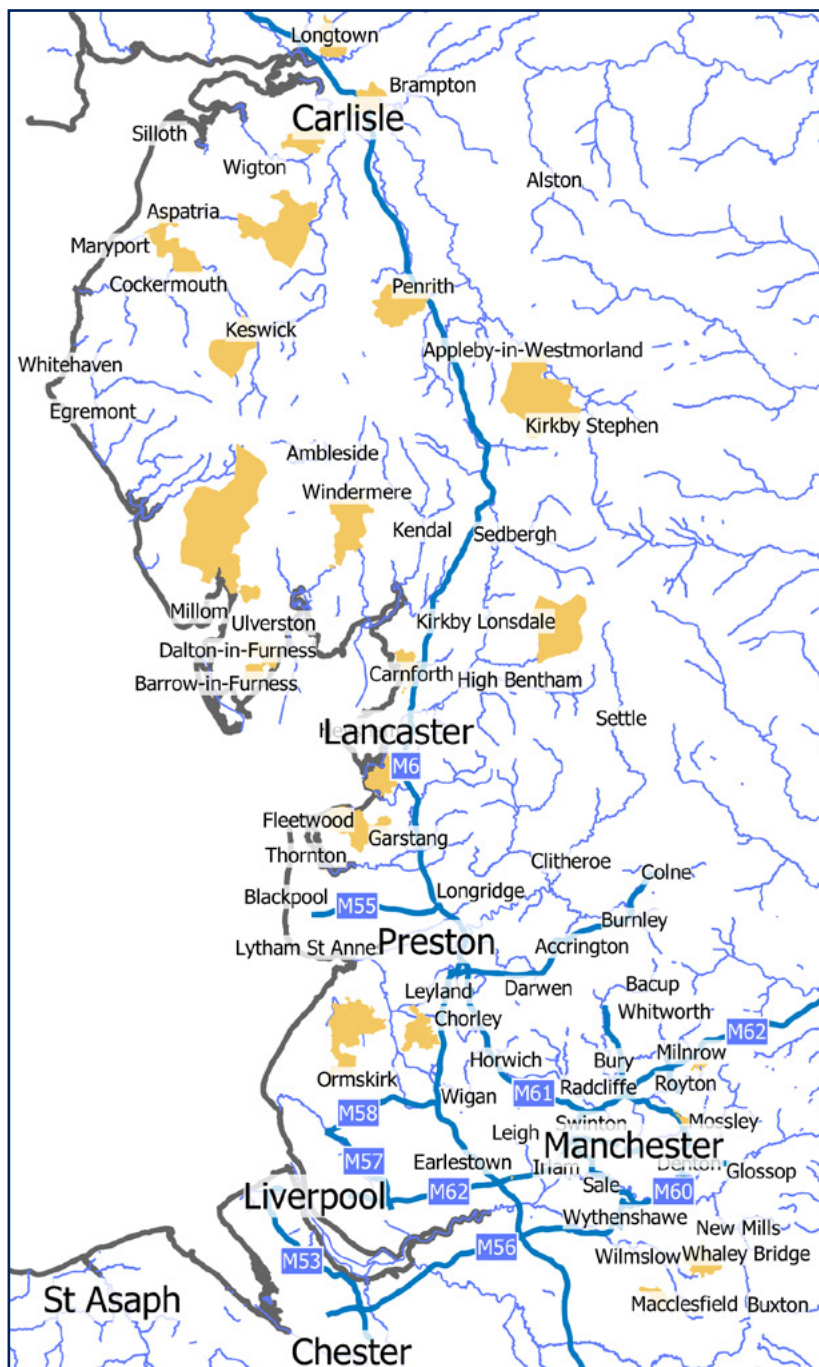
In response, we will deliver a targeted programme of enhancements to improve the reliability of the poorest performing parts of the network.

This will be based on using Ofgem's new definition of a 'worst-served customer' which are customers experiencing 12 or more faults at HV and above over three years, with a minimum of two in each year. We have assessed all the areas which would have qualified under this new measure since 2016 and have designed proposed measures for each of them.

This programme will benefit 3,770 Worst-Served Customers and a further 27,785 customers on the same circuits for a cost of £21.3m over RIIO-ED2, ensuring that all customers who would have qualified under this definition in ED1 have their performance substantially improved.



As part of this programme, we are committing to delivering a minimum 50% performance improvement across the 26 specific circuits which can be seen on the map, right:



Outcome description				Current performance level		
Invest to improve the service for 3,770 ‘worst-served’ and 27,785 poorly-served customers with a 50% improvement target				Limited programme using Ofgem’s ED1 worst served customer scheme		
Incremental cost of proposal				Target delivery date		
£20m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓		✓	✓

5.2.1.5 Improving reliability for those in vulnerable circumstances

The adverse consequences of a power cut can be considerably greater for customers in vulnerable circumstances.

One of the most impactful things we can do to support communities with a large number of vulnerable customers is therefore to improve the reliability of the local network.

We consider 236,000 of our 2.4m customers (10%) to be in the most vulnerable circumstances. This includes but is not limited to customers with a chronic/serious illness. Some of these customers live in areas (often highly urbanised) which already enjoy a very reliable electricity supply, but many will suffer the inconvenience of more frequent power cuts.

In ED2 we plan to complete a targeted programme of network investments that will:

- reduce the future likelihood of a loss of supply for groups of customers with known high vulnerabilities fed from known poorly performing parts of the network. This will total £3m and benefit 844 customers with a known vulnerability at an average cost of £3,393 per vulnerable customer. Other customers in these areas will also benefit from the improvements
- mitigate the impact of high voltage faults on customers with a known high vulnerability. This will be focused at areas which, whilst they may have reasonable current reliability, are vulnerable to extended power cuts due to the network construction. This will be achieved by means of automation, introducing remote control to distribution substations and ensuring the availability of alternative routes to provide power if there is a fault. This will total £16.6m and benefit 16,617 highly vulnerable customers at an average cost of £1,000 per vulnerable customer.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓		✓	✓

5.2.1.6 Measuring and reporting short power cuts

Very short power interruptions (e.g. lasting less than three minutes) are not currently included in our performance reporting as they have traditionally caused less disruption and their exclusion encourages the use of remote control and automation on the network to restore interruptions quickly.

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 these 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.

5.2.2 Building a resilient network

Example customer and stakeholder input to this priority area

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.

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 extent of damage which could be 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.

Through our acceptability testing qualitative focus groups customers told us it was good to be proactive and safeguard the network against external threats.

Our Local Resilience Fora engagement meetings allowed us to do specific engagement on our plans with this expert group made up of emergency responders including local authorities, emergency services, utilities and NHS providers. They emphasised the need for us to target investment in protecting the network against foreseeable threats such as bad weather.

5.2.2.1 Improving flood protection

The effects of climate change have led to some dramatic weather patterns in recent years, which have had an adverse impact on our network and our customers.

For example, in 2015, Storm Desmond caused flooding at Lancaster's major substation, cutting power to more than 60,000 customers. We invested £6m to raise key equipment at the substation 3m above the ground, to keep them safe if the site flooded again.

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.

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. Its completion means that all of our major substations will be protected to at least 1/100 year flood risk, including assumptions on future climate change impacts.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.2.2.2 Improving our management of trees near overhead lines

Trees or branches falling onto power lines can cause power cuts and damage. For example, high winds during Storm Ciara in 2020 caused tree damage to our network, resulting in power cuts to 27,000 customers.

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.

In ED2, we will also have to address the impacts of diseased trees, particularly Ash Dieback – a highly destructive disease caused by a fungus – which is rapidly spreading through the country. Ash Dieback causes ash trees to weaken and pose a greater risk of falling onto overhead lines with consequent impacts on power cuts and safety. To mitigate these impacts, we (together with the other network operators and bodies such as local authorities and highways agencies) will need to start proactively removing these trees before they pose a danger.

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 work with partners to plant 10,000 trees in our region every year of ED2.

Customers have also asked us to increase our work to promote biodiversity in other ways – see [section 5.3.2.6](#) for further details.

Outcome description				Current performance level		
Enhanced tree management dealing with Ash Dieback and also ensuring fewer tree-related faults due to storms				Compliance with current standards		
Incremental cost of proposal				Target delivery date		
£1m per year plus £3m per year for Ash Dieback				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.2.2.3 Improving telecommunications resilience

Customers will benefit from faster restoration of power during faults due to automated responses and remote control of the network.

Controlling the electricity network is dependent on being able to communicate with the equipment remotely.

We will improve the resilience of equipment that enables us to monitor and manage the electricity network remotely from our central control room.

We own and operate a private communications and data network to do this. We will invest more in this network to increase its resilience against physical, virtual and weather-related threats.

Outcome description				Current performance level		
Enhanced communications infrastructure resilience				Establishing internet protocol connections to all major substations		
Incremental cost of proposal				Target delivery date		
£1.5m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.2.2.4 Increasing cyber resilience

As electricity networks become increasingly data-enabled, it is more important than ever that the data networks that support them are resilient to external threats. In the ED2 period, we will focus on levelling up our current cyber security capability.

The government introduced the Network and Information Systems (NIS) Regulations 2018 to increase the overall cyber security and cyber resilience of Operators of Essential Services (OES) such as ourselves.

The regulations require us to take appropriate and proportionate technical and organisational cyber security measures to manage risks and minimise the impact of incidents affecting these systems.

The cyber threat landscape is constantly changing, with ‘cyber criminals’ using more complex techniques to access and compromise organisations than ever before. As these techniques evolve in complexity, and with criminals having different motivations and objections to their attacks, it makes it increasingly challenging to identify malicious activity.

Cyber threats cut across all of our business strategic goals and pose a risk to all our activities. We rely on cyber security to protect our customers’ data and provide excellent customer service, to ensure efficient working practices within our workplace, to protect the reliability of our network against unauthorised access, to protect the network now and in future as we move to more actively managed systems, to keep costs low for customers and to ensure the safety of our customers, employees and contractors.

To develop our cyber strategy, we completed a self-assessment using the Cyber Assessment Framework (CAF) which 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.

[Annex 11](#) provides a Cyber Resilience Plan which aims to address the fluidity of the cyber security landscape and provides more detail on the projects that will enable us to execute our strategy.

Outcome description				Current performance level		
Comply with requirements of Network and Information System Regulations				Completed self-assessment under new Cyber Assessment Framework		
Incremental cost of proposal				Target delivery date		
£20m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓	✓	✓	✓

5.2.2.5 Improving storm resilience

On average, 70,000 customers are currently affected by large storms every winter, however this figure is highly variable depending on the nature of the storm events. Storms mainly affect the rural areas of our network which have long lengths of overhead power lines.

We will improve the resilience of the network reducing the number of customers affected by large storms by increasing our tree-management programme, rolling out overhead line monitoring and delivering other reliability programmes (e.g. worst served customers) to improve performance.

We anticipate that this work will see fewer customers affected by power cuts caused by storms by 2028, however we are also aware of the potential increase in the frequency of storm events forecast by the latest climate change impact assessments. We will report annually on the number of customers affected by storms to customers and stakeholders.

We have investigated potential specific network resilience programmes for areas persistently impacted by storms but analysis shows that the impacts are relatively widespread and sufficiently rare in any particular location to make a targeted programme uneconomic.

Outcome description				Current performance level		
Improve resilience of the network to storms				70,000 people affected each year		
Incremental cost of proposal				Target delivery date		
Package of measures including flood protection, additional tree-cutting and Sentinel roll-out.				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓

5.2.2.6 Investing in Electricity System Restoration readiness

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.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

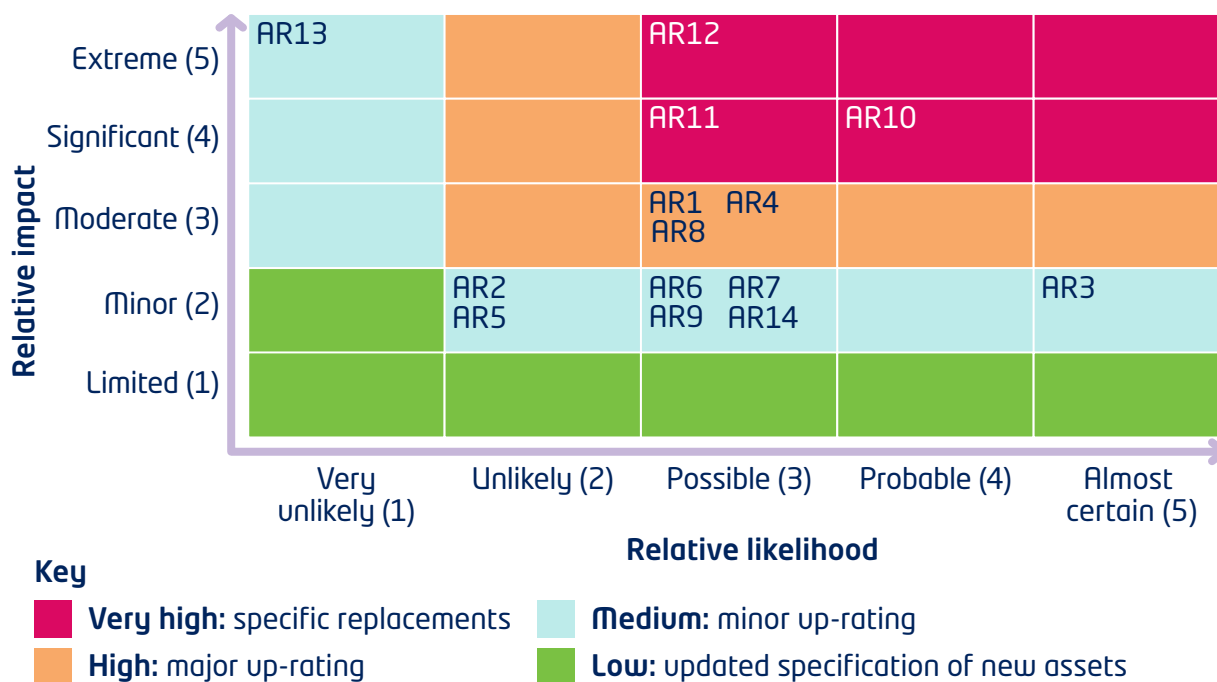
5.2.2.7 Maintaining resilience in a changing climate

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.

In 2021, we will be completing our third 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. The previous 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.

Overall risk matrix for climate change impacts from our 2015 Adaptation report



(Refers to UKCP09 projections for the end of the century assuming a High Emissions Scenario and 90% probability level and no adaptation measures taken)

AR1 overhead line conductors affected by temperature rise, reducing rating and ground clearance.

AR2 overhead line structures affected by summer drought and consequent ground movement.

AR3 overhead lines affected by interference from vegetation due to prolonged growing season.

AR4 Underground cable systems affected by increase in ground temperature reducing ratings.

AR5 Underground cable systems affected by summer drought and consequent ground movement, leading to mechanical damage.

AR6 Substation and network earthing systems adversely affected by summer drought conditions, reducing the effectiveness of the earthing systems.

AR7 Transformers affected by temperature rise, reducing rating.

AR8 Transformers affected by urban heat islands and coincidental conditioning demand leading to overloading in summer months.

AR9 Switchgear affected by temperature rise, reducing rating.

AR10 Substations affected by river flooding due to increased winter rainfall.

AR11 Substations affected by pluvial (flash) flooding due to increased rain storms in summer and winter.

AR12 Substations affected by sea flooding due to increased sea levels and/or tidal surges.

AR13 Substations affected by water flood wave from dam burst.

AR14 Overhead lines and transformers affected by increasing lightning activity.

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 12](#).

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓



5.2.3 Keeping our communities safe

Electricity is potentially very dangerous and maintaining the safety of our customers and operatives is fundamental to everything we do.

We continually inspect and maintain our equipment, replacing or upgrading assets which are deemed no longer fit-for-purpose. We ensure our engineers are well-trained and able to operate safely, supported by rigorous procedures, compliance assurance and a strong behavioural attitude to safety.

In ED2, we will deliver several major programmes to safeguard public safety, working beneath the streets and in high rise buildings. These programmes build on our work in ED1. While we already have extensive information available to the public on safety¹⁹ from reporting damage to working or spending leisure time near our equipment, we will expand our local public safety messaging, working with other local utilities to share messaging and increase its impact. For more information see [Annex 10](#) on our Education and awareness strategy.

We have an incredibly robust safety culture, led by our CEO, keeping our teams and the public safe, and we will continue to deliver on this key area throughout ED2.

Example customer and stakeholder input to this priority area

Customers during our initial priorities research told us that it should be priority for Electricity North West to always ensure the network is safe for customers. During the qualitative stage customers ranked 'delivering a safe network' as their top priority with reasons being that safety should 'always come first' and that all other areas are reliant on an initial safe network.

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.

During our 2019 regional stakeholder advisory workshops stakeholders told us that 'keeping our employees and customers safe' wasn't something that could be easily traded off.

5.2.3.1 Making electricity in high-rise buildings safer

Often building owners do not realise that they may be responsible for the network in the building, and this lack of clarity on ownership can cause issues with maintenance.

In ED1 we began a programme of proactively contacting building owners and establishing if they are or wish to formally become the building network owner, or if they want to formally agree that we should be the owner.

Until responsibilities are formalised we take responsibility and act and assess the condition of cables and fit circuit breakers and monitor communal electrical cables at high-risk properties 24/7.

Formal agreements mean that we can more easily gain access to the properties to properly inspect the electricity infrastructure and install monitoring devices and renew their internal wiring where required.

Our monitoring equipment enables us to identify where faults are developing which may indicate a risk of an electrical fire. We will expand our programme to cover 234 buildings which are considered high risk as well as highest risk during ED2. To assess risk we take into

19. <https://www.enwl.co.uk/advice-and-support/safety-advice-incident-reporting/>

consideration the number of customers residing in the property, access and exit restrictions and the location of equipment.

We will also continue our programme of rewiring buildings where inspections and monitoring indicates a potential safety risk.

Outcome description			Current performance level			
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 £2m on current levels			31 March 2028			
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓	✓	✓	✓

5.2.3.2 Delivering safety campaigns

We will continue to participate in industry-wide safety awareness campaigns e.g. household safety, electrical goods safety, farming and fishing near overhead lines.

We already collaborate in shared awareness campaigns with the other distribution network operators, co-ordinated through the Energy Networks Association, our representative national body.

We will enhance these 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. 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.

Outcome description			Current performance level			
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.2.3.3 Increasing safety education

We will work with schools to expand our safety and science technology, engineering and maths (STEM) education programmes. 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 electrical equipment to significantly reduce the risk of injury in our community.

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.

We currently undertake a programme of visits to schools in partnership with trusted third party providers. The programme is currently delivered to 3,500 primary school children each year and has recently developed a range of online resources. Based on positive feedback from those who receive this, we will continue to grow and evolve our primary key stage two (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.

We will review the ongoing effectiveness of the programme that will see increased engagement in safety issues among young people, changing behaviour and saving lives and increase awareness and interest amongst a diverse future workforce.

Further details of our forward education strategy can be found at [Annex 10](#).

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.2.3.4 Improving overhead line safety

We will deploy our new ‘Sentinel’ technology developed in ED1 to install sensors on sections of overhead lines to detect any dangerous low-hanging lines. Faults on rural networks can sometimes cause overhead power lines to hang low whilst remaining live, which also creates a public safety hazard. This can be a particular issue during storm events with multiple occurrences.

New technology developed by Electricity North West will enable the detection of damaged equipment earlier and help us to pinpoint the location of faults, enabling more efficient despatch of repair crews.

Customers will benefit from the faster removal of safety hazards caused by network faults as well as reduced likelihood of power cuts. The system will also allow us to identify issues more quickly in storm situations where we can have many faults to deal with.

As this technology is still being trialled, we are still working on our proposals for ED2 which we will include in our final submission in December 2021.



Outcome description				Current performance level		
Roll-out Sentinel technology across the overhead line network				Developed and trialled Sentinel technology		
Incremental cost of proposal				Target delivery date		
Indicative £24-30m but will be confirmed in our final submission				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.2.3.5 Keeping rural transformers safe

We will replace small rural substations in exposed parts of the network. We have 220 small ground-mounted substations in rural settings which do not have modern standards of protection, meaning that fault restoration can be a lengthy process. Many of the substations are now reaching the end of their design life and their condition is starting to deteriorate.

We will progressively replace all of these substations with safer equipment, with 50% replaced by 2028 and the remainder by 2033. The prioritisation of the replacement will be based on the condition of the equipment.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.2.3.6 Enhancing security at major sites

We have an obligation to maintain the security of our sites and prevent trespassing which might cause major power cuts and safety risks. We install additional measures at our most critical sites in response to their level of risk. 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 Infrastructure²⁰.

20. <https://www.cpni.gov.uk/>



Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.2.3.7 Improving safety of underground cable pits

In ED1, we will complete a programme to inspect all 18,000 link boxes on our network. Link boxes are underground cabinets where low voltage cables come together and can be connected or disconnected. They can pose a risk to the public because a fault on the network can very occasionally blow their cover off. There have been a number of such cases nationally during ED1.

Many of these are located in pavements causing a safety risk. Our ED1 programme will have either maintained, replaced or fitted a 'blast bag' to these link boxes, depending on their location and risk.

We have a similar programme to remove cable pits which are access points for cables, sometimes located in roadways. These pits are often in poor condition and are not used any more so, during ED2, we will complete our programme to fill in these pits with a blast absorbing material to mitigate any impact if a fault does occur.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.2.3.8 Carrying out proactive safety checks on cut-outs

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 RIIO-ED2, most customers will have smart meters and meter readers will no longer be physically inspecting meters and cut-outs. Previously we have relied on them informing us of any issues with the cut-out.

Although some of the early smart meters will be being replaced by 2028, to ensure the cut-outs remain safe, we will need to start our own periodic inspections in ED2 and ensure we act on any issues found.

The inspection regime will cost approximately £1 million per year and will ensure customers continue to have peace of mind.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.3 Delivering an environmentally sustainable network

5.3.1 Leading the North West to Net Zero

Enabling the transition to a Net Zero carbon future is the biggest challenge that energy networks currently face. The UK is on a transformative journey to decarbonise, and as the North West's electricity distributor, we have a crucial role to play.

In ED2, we will invest strategically in our network so that we have the capacity in place to support the expected increase in electricity demand from electric vehicles and the changing needs of businesses and homes.

The impact of electric vehicles on the local electricity network is set to be significant and we are continuing to work with our local authorities to develop our pioneering decarbonisation pathways reports²¹ to meet local Net Zero targets within our region. You can read more about our specific electric vehicle strategy in [Annex 13](#).

We will continue to develop our next generation network management system which will enable rapid, automated control of our network – vital to respond to a more complex, decentralised network.

We will continue to evolve our own role, by helping local, renewable energy schemes connect to our network, and by providing advice to homes and businesses on how to take advantage of low carbon technology. And we will continue to provide regional leadership, working with key stakeholders such as local authorities to help them develop and implement their low carbon development plans for the coming years.

21. <https://www.enwl.co.uk/go-Net-Zero/you-and-your-business/decarbonisation-pathways/>

Example customer and stakeholder input to this priority area

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 Department for Business, Energy and Industrial Strategy (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.

At our Powering Up Recovery 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.

Our targeted 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.

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.

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.

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.

Decarbonisation and Net Zero has 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 discussions with them. During these discussions they told us that they will always prioritise Net Zero and low carbon technologies as it's 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 low carbon technologies (LCT), including the drivers and barriers to take-up. Consumers told us that they were interested in low carbon technologies however claimed that lack of knowledge was as a key barrier to them adopting LCTs 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.

5.3.1.1 Helping customers connect low carbon technologies

Demand for electricity is likely to increase significantly from its current levels over the next decade, as the transport and heat sectors become increasingly electrified.

Although there are likely to be some offsetting reductions from energy efficiency improvements and changes in industrial demand, we nevertheless need to plan for a large overall increase in consumption.

At the same time, we expect to see an increase in the connection of renewable generation to our network – another big change which also has implications for our network investment plans.

Meeting this increasing demand 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.

Outcome description				Current performance level		
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		
£42m increase on current levels of reinforcement expenditure				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓		✓	✓

5.3.1.2 Removing constraints for renewables

We will help renewable electricity generation connect to the network, such as solar and wind power.

At the moment, certain parts of our network (e.g. city centres) are restricted in the amount of renewable generation that can connect because of the characteristics of some of the equipment installed there. If we don't support this, far less renewable generation will be able to connect in the North West.

We will make the network ready so that renewable electricity generation can be connected to more of our network, focusing on the areas most likely to see more renewable connections where we can replace our equipment in advance.

By helping connect more renewable electricity generation we will enable the reduction of carbon emissions and help tackle climate change.



Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓			✓

5.3.1.3 Establishing a new £1m annual community energy fund

Community energy projects are citizen-led schemes to reduce, generate or purchase energy. Examples include neighbourhood-led solar or hydro projects.

In ED1 we currently offer a £75,000 fund per year to support these projects and helped six such projects last year. These projects enable local, renewable electricity to be generated and connected to the network, as well as increasing awareness about energy efficiency and local action. The more power that is saved or connected locally means the lower the cost of the distribution of that power, saving money and emissions.

In ED2, we will increase this fund to £1 million per year. This will enable more projects to go ahead.

Alongside the funding, we will provide a free, dedicated support service to help guide community groups in the development of their projects, applications for funding and the connection of their projects to our network.

Outcome description				Current performance level		
£1m per year fund				£75,000 per year fund		
Incremental cost of proposal				Target delivery date		
£4.6m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓

5.3.1.4 Unlooping customers' power supplies

A looped service describes a situation where two or more households are connected to the electricity main with the same service cable. Hundreds of thousands of homes were historically connected to the power network in this way over the years to save the costs of connecting each individual property to the mains cable.

However, this historic practice of sharing a service cable restricts the number of additional devices a household can connect to. This can prevent adoption of new technologies such as electric vehicle chargers – a change unforeseen when the original connections were made.

In ED2, we will unloop the electricity services to properties installing low carbon technologies such as electric vehicle chargers, putting in new cables to connect individual properties to the mains. The costs of this vary depending on the existing arrangements but typically cost £2k per new service connection.

We will do this when we are notified about electric vehicle charger connections or where customers want to connect heat pumps. Our forecasts for the take up of these technologies gives a strong indication of how many will take place in regions where our services were traditionally connected in a looped manner. This will be the start of an ongoing programme that will be necessary to eventually remove all looped services in the North West.

Outcome description				Current performance level		
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 £70m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.3.1.5 Providing a decarbonisation advice service

We will provide free advice to households and businesses, to help them adopt low carbon technologies and make their properties more energy efficient.

Information will be delivered through the development of our online hub, awareness campaigns on social media and a range of other communication methods. We will also work with partners to ensure information is up to date and accurate regarding the power network.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓

5.3.2 Improving our direct environmental impact

Example customer and stakeholder input to this priority area

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 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.

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 RII0-ED4 and the UK's seventh carbon budget.

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.

5.3.2.1 Reducing our business carbon footprint

We will continue to work to reduce our own business carbon footprint – a move that our stakeholders and customers strongly support.

By 2020, we had reduced carbon emissions by 26%, compared to 2015 levels. We achieved this through a range of initiatives, such as better monitoring of heating in our buildings and installing LED lighting at all our sites. In ED1 we have adapted two of our key sites, our training academy in Blackburn and our depot in Oldham, to be zero carbon buildings. This valuable learning demonstrates we can do so effectively and efficiently at all of our offices and depots.

In ED2, we will continue to lead by example, by accelerating the pace of our own decarbonisation programme, in an effort to become a carbon neutral business by 2038.

We will progressively replace vehicles with electric equivalents and convert our buildings to be much more energy efficient.

There is a lot of work to do on making our buildings more efficient, particularly those built a long time ago – 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.

We will replace our current vehicles with electric equivalents when they become cost neutral or cost beneficial over their lifecycle. We anticipate that this will lead to our vehicle fleet being 29% electric by 2028.

For more detail see our Environmental Action Plan in [Annex 14](#).



Outcome description				Current performance level		
Five new zero carbon sites and over 25% of vehicle fleet electrified. Reduce carbon footprint to 8,175 tCO ₂ e/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 ₂ e/yr		
Incremental cost of proposal				Target delivery date		
£7.4m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓		✓	✓			✓

5.3.2.2 Reducing leakage from oil-filled cables

We will reduce leaks from the relatively small number of bio-oil-insulated electricity cables that remain on our network. We have 44,000km of underground electricity cables. 380km of these (0.9%) are of an older construction that contain oil for insulation.

These older cables can sometimes leak when they are damaged, seals deteriorate or ground conditions change. We have been progressively removing this type of cable from our network over a number of years.

In ED2, we plan to continue with this programme 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% reduction on the targets we set for the end of ED1.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.3.2.3 Removing overhead lines in beauty spots

Since 2005 we have been working with partners such as the Lake District and Peak District National Park Authorities to remove overhead power lines and replace them with underground cables in National Parks and Areas of Outstanding Natural Beauty (AONBs) in our region.

Overhead lines in these locations can be deemed to be visually intrusive and detract from the landscape. By 2023, we expect to have replaced 150km of overhead lines with underground cables.

In ED2 we will continue our programme working closely with National Parks, AONBs and other key stakeholders to replace 7-8km of overhead lines each year with underground cables in locations identified by our partners of being of particular visual impact.

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.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓	✓	✓	✓

5.3.2.4 Reducing losses from the network

A small amount of electricity is lost in the process of distributing it to customers, due to it being converted into other forms of energy, e.g. transformers getting warm. This is wasteful in terms of carbon emissions and the cost to bill payers for electricity they never get to use.

To reduce these losses in ED2, we will upsize cables and equipment to lower loss equivalents when we are undertaking work for other purposes and also proactively replace the highest loss equipment on our network, even if the equipment does not require replacement for any other reason.

This proactive investment will save around eight GigaWatt hours of electricity (GWh) per year by 2028 – enough electricity to power around 2,760 homes for a year.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓		✓	✓

5.3.2.5 Reducing emissions of potent greenhouse gases from equipment

Sulphur Hexafluoride (SF₆) is used throughout the industry as an effective electrical insulator and is in some of our equipment but is a potent greenhouse gas if leaks occur. Currently 0.32% of our total SF₆ is lost via leakage each year.

There are currently few viable alternatives to using SF₆ so we will proactively manage our equipment to minimise leaks, replace old equipment if its condition deteriorates, and also work with industry to stimulate the development of alternatives. As we switch over to installing SF₆-free equipment, we expect the costs to increase in the short-term, until the widespread availability of alternatives.

We are proposing to commit to maintaining our leakage rate to less than 0.3% of our total inventory over RIIO-ED2.

Outcome description				Current performance level		
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		
£9.6m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓			✓

5.3.2.6 Making our sites havens for wildlife

In 2019-20 we transformed nine of our substation sites into low-maintenance, self-pollinating spaces following a suggestion from one of our grounds workers.

Not only do they benefit the local area but they can also reduce the amount of maintenance needed by Electricity North West. Unlike a site with grass that needs regular trimming and weeding, a site filled with self-pollinating wildflowers does not need regular visits. In addition, these sites are in the heart of local communities and many have been taken on to be maintained in partnership with local groups.

We will expand this programme in ED2 to create and support other green spaces and biodiversity schemes, including tree planting schemes where appropriate. Our tree planting commitment is described in [section 5.2.2.2](#).

This combined programme is forecast to cost £200k per year, or £1m over the RIIO-ED2 period.

Outcome description				Current performance level		
Create an additional 100 bio-diversity and community green space sites				11 new sites in RIIO-ED1		
Incremental cost of proposal				Target delivery date		
£3m				31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
		✓	✓	✓	✓	✓

5.3.2.7 Reducing operational waste and increasing recycling rates

We are committed to make further improvements in our management of waste and recycling in line with our environmental commitment.

To achieve this, we are committing to a range of measures to reduce our waste and environmental impacts in RIIO-ED2. These include:

- producing annual targets for reductions in total waste;
- committing to zero waste to landfill by 2025;
- reducing or recycling 70% of our total waste by 2028;
- reducing or recycling 90% of our excavated waste by 2028; and
- eliminating unnecessary single-use plastics by 2028.

Outcome description				Current performance level		
Meet five new specific waste management targets				n/a		
Incremental cost of proposal				Target delivery date		
Minimal additional costs				Dates up to 31 March 2028		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.3.2.8 Complying with new legislation on PCBs

Polychlorinated Biphenyls (PCBs) are a group of artificially manufactured organic chemicals that have long been recognised as posing a threat to the environment due to their toxicity, persistence and tendency to be absorbed by living organisms.

PCBs were used in electrical equipment such as transformers as an alternative insulating fluid where fire resistance properties were required. Although we never knowingly used PCBs, some contamination of our equipment occurred during the manufacturing process.

The use of PCBs has been banned since the 1980s and we recognise that any PCBs still remaining in existing equipment pose an environmental threat.

New legislation requires all PCB-contaminated equipment to be disposed of or decontaminated of PCBs by 31 December 2025. All transformers (and some other network assets) manufactured before 1987 are assumed to be potentially PCB contaminated (unless proven otherwise via testing) and are registered annually with the Environment Agency.

We are working to either test or statistically determine the PCB content of all this apparatus and dispose of all those items that are confirmed as PCB contaminated by 31 December 2025.

All PCB-contaminated equipment will be sent to authorised treatment facilities where the oil will be recovered and the metal components, principally scrap steel and copper, sent for recycling.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.3.2.9 Improving environmental management within our supply chain

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.

We will introduce a mandatory requirement for our top 80% of 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.

Outcome description				Current performance level		
Embodied carbon reporting for 80% of supplies and services				n/a		
Incremental cost of proposal				Target delivery date		
Minimal additional costs				31 March 2026		
Customer and stakeholder evidence sources						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
			✓			✓

5.4 Diversity and inclusion

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' and help to drive the significant change in company culture to support this.

Our commitments in our diversity and inclusion strategy are categorised as follows:

1. **Belonging:** We will work with our colleagues to create a great place to work, where all cultures and differences are respected
2. **Attracting diverse talent:** We will be innovative in attracting talent and making our career paths accessible to diverse talent in our communities
3. **Inclusive Leadership:** Our leaders will support all colleagues driving respect and fairness in everything we do
4. **Community partnerships:** We will work with experts to continually progress our inclusion journey and embed best practice into our supply chain

We are confident our strategic commitments will drive the following positive changes in diversity and inclusion:

- Increase the overall diversity of our workforce
- Increase female representation in 0 roles
- Increase female representation in leadership roles
- Attract diverse candidates to truly reflect the communities we serve

Our full diversity and inclusion strategy is set out within our Workforce Resilience strategy in [Annex 15](#). The table below illustrates our high-level goals.

ED2 D&I Purpose; We are committed to creating a sense of belonging for our colleagues and truly reflecting the communities we serve

Measure	Commitment	Current	Goal	Stretch
Climate survey results	Belonging	n/a	75%	80%
Bi annual inclusivity survey	Belonging	n/a	75%	80%
Gender split (female/male)	Attracting diverse talent	25/75%	30/70%	32%
Females in engineering roles	Attracting diverse talent	7%	12%	15%
Ethnic colleagues	Attracting diverse talent	4%	10%	12%
Ethnic minority attraction	Attracting diverse talent	10.5%	15%	20%
Disabled colleagues	Attracting diverse talent	0.6%	5%	5%
Females in leadership	Inclusive leadership	32%	37%	40%
Ethnicity in leadership	Inclusive leadership	1.65%	5%	7%
Armed Forces Gold Award	Inclusive leadership	Bronze	Gold	
Disability Confident, Level 3 Award	Community partnerships	Level 1	Level 3	
Diversity & Inclusion Accreditation	Community partnerships	n/a	Gold	
Supply chain inclusivity metrics	Community partnerships	None	TBC	

5.5 Consumer Value Proposition

While Ofgem sets minimum requirements for energy networks' business plans, many of our proposals exceed these requirements based on input from customers and stakeholders, and what they have told us they are willing to pay for.

In RIIO-ED2, Ofgem have included an option to submit these additional proposals as Consumer Value Propositions (CVPs). [Annex 16](#) gives further details on our approach to CVPs including how we assess the wider benefits that they could deliver. The specific CVP proposal that we are including in this submission are summarised below.

5.5.1 Rolling out our Smart Street project to reduce cost and carbon for customers

Smart Street is our award-winning initiative to reduce customers' electricity usage and bills by managing the voltage on the local network.

By using technology at our substations to subtly alter the amount of electricity flowing to homes, we can reduce consumption and save customers' money, without affecting their usage behaviour in any way.

Smart Street has been proven to reduce customers' energy consumption by up to 8% – equivalent to a £60 reduction in annual energy bills.

We are currently rolling the project out to 64,000 customers in the North West, as part of a £18m project funded under the Innovation Rollout Mechanism (IRM) in ED1.

In ED2, we will extend Smart Street to a further 250,000 households in our region, through a £78 million investment programme. We will target the deployment of this technology to areas where there are higher populations of customers in fuel poverty.

This technology also increases the available capacity of the network and therefore we will also target the deployment where we expect clusters of low carbon technologies such as solar panels and heat pumps so that more costly network upgrades can be avoided.

Whilst the technology can only be applied on underground networks, we also have in our plan significant investment earmarked to improve the overhead line network such as tree management, worst-served customer programme and the rollout of our Sentinel technology.

Outcome description				Current performance level		
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						
Maximum difference	Willingness-to-pay	Acceptability	Stakeholder Meetings	Online community	Deliberative panel	Early draft consultation
✓	✓	✓	✓	✓	✓	✓



How we'll enable delivery

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business 121

Section 6: How we'll enable delivery

This section shows how we will enable the delivery of activities in our proposals, by helping our customers, consumers and stakeholders, and developing our own business, operations and programmes to deliver on what we have proposed.

6.1 Enabling our customers and stakeholders

6.1.1 Transforming our communities: Our responsible business approach

We are conscious of our wider role in the communities that we serve and society as a whole. In 2017 during ED1 we launched our organisational 'purpose and principles' in recognition of the crucial role we play in our communities and the increasing reliance our customers will have on electricity in the future. Our overarching purpose 'Together we have the energy to transform our communities' is backed up by our principles of being switched on, adaptable and taking pride.

Figure 1: Our purpose and principles

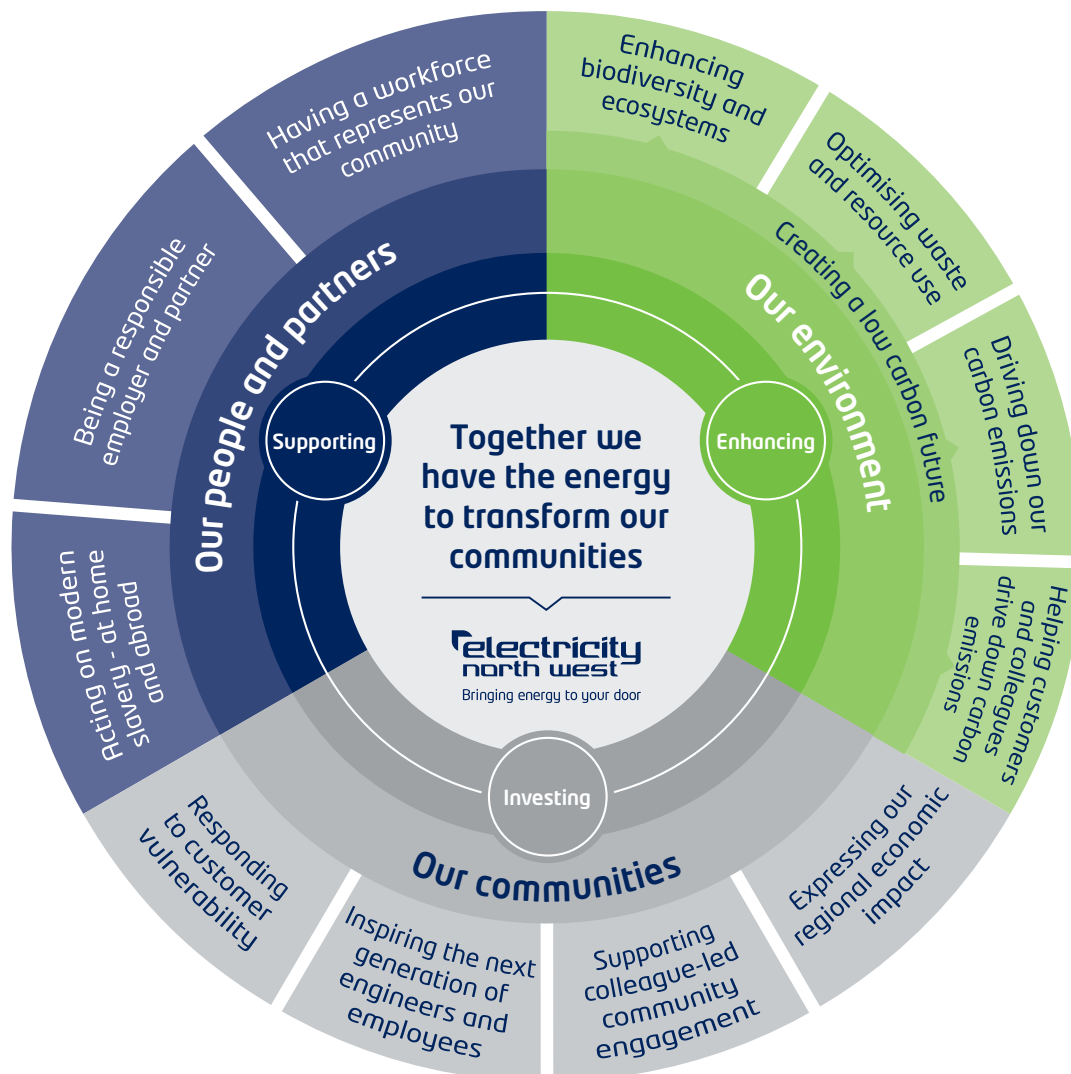


This purpose is central to our corporate responsibility strategy – 'Transforming our communities' which was launched in 2019 following an external best practice review.

The framework below (figure 2) demonstrates how we consider social, environmental and economic impacts in our decision making, including how the activity delivers a wide positive and societal impact. Using best-practice examples and the work we have already done in ED1, the framework is structured to ensure that we consider a responsible and balanced approach across our business activities now and for the future.

Under our framework each key area: our people and partners; our environment; and our communities are divided into a number of goals which are important to our business, our stakeholders and our colleagues. Below each goal are a series of commitments and measures.

Figure 2: Transforming our Communities responsibility framework



The responsibility framework does not exist in isolation. While it doesn't seek to include and measure our core business and services as a network operator, it does bring together a number of the activities and strategies already embedded in our operations and the business plan. In doing so it provides an overarching indication of our activities as a socially responsible business and how we operate within our communities.

The framework also provides an opportunity to demonstrate our impact and highlight other material and developing societal issues. For example, during its development in ED1 the framework helped us to increase our focus on biodiversity and ecosystems, elements of which are now incorporated into our Environmental Action Plan. See [Annex 14](#) for further details.

Measures are developed and monitored for all framework goal areas including those not covered by our business plan and reported in an annual Transforming our Communities Responsible Business Annual Report²².

The table below highlights some of the interconnectivity between the framework and the wider business plan.

Goal	Associated strategies within the business plan
Our people and partners	<ul style="list-style-type: none"> • Workforce resilience (section 6.2.2) • Supply chain (section 6.2.3) • Diversity and inclusion strategy (section 6.2.2) • Environment Action Plan (Annex 14)
Our environment	<ul style="list-style-type: none"> • Environment Action Plan (Annex 14) • Community and local energy strategy (Annex 28)
Our communities	<ul style="list-style-type: none"> • Diversity and inclusion strategy (section 6.2.2) • Education and awareness strategy (Annex 10) • Electricity users in vulnerable circumstances strategy (Annex 9)

In developing our ED2 business plan, customer and stakeholder engagement provided valuable insight which is reflected in the wider business plan and our commitments. It highlighted the leading role that we can play in decarbonisation and environmental issues and support for the wider societal involvement in areas such as health and safety, education and support for customers in vulnerable circumstances.

Our responsible business framework ensures that we will deliver these commitments in a responsible and transparent way working alongside our communities, stakeholders and customers.

We will continue to apply and develop our framework in ED2 to ensure that it reflects material issues and take appropriate measures to manage our impact on our people and partners, our environment and our community.

We will continue to collaborate with other organisations and measure our framework against external best practice such as the Global Goals for Sustainable Development²³ and Business in the Community²⁴ and publish our performance in an annual report.

6.1.2 A new world of distribution system operation

Decarbonisation will require electricity distribution network operators (DNOs) to reinvent themselves. The growth in local, renewable electricity generation (e.g. neighbourhood hydro or solar schemes) and new ways for households and businesses to use energy and even generate their own, has big implications for the way the electricity network is managed.

We will have to speed up our transition from being a 'closed' or 'one way' network, in which we take electricity from the National Grid, reduce its voltage and distribute it to homes and businesses, to an 'open' network, with all sorts of new projects and organisations wanting to get their green energy onto our network.

22. <https://www.enwl.co.uk/about-us/transforming-our-communities/transforming-our-communities-publication-page/>

23. <https://www.globalgoals.org/>

24. <https://www.bitc.org.uk/>

This changing role will see us carry out more activities known as distribution systems operation (DSO). This new industry terminology recognises that for companies such as ours, electricity distribution is no longer one way traffic. Rather than just operate a passive physical network, we must operate a highly technical and interactive system.

DSO is not one activity but the delivery and coordination of a range of functions designed to deliver electricity network capacity for use by customers at the most economic price.

In spring 2019 we published our decarbonisation plan, *Leading the North West to Net Zero*; we were the only DNO to publish such a plan. The plan sets out our own decarbonisation ambitions as well as how we will help our regional stakeholders decarbonise and achieve their Net Zero aspirations. The region's ability to reach Net Zero is dependent on an affordable energy transition plan, which will include us moving to DSO.

In summer 2020 we consulted with stakeholders on our DSO Strategy, and acted on feedback from stakeholders that they wanted a say on the scope and speed of our DSO transition. We published our DSO strategy again, alongside other ED2 strategies and our main Business Plan in March 2021 where customers and stakeholders provided further feedback and endorsement for our strategy and direction.

Our Customer Engagement Group has also been instrumental in the development of our DSO Strategy and Transition Plan, providing reviews and challenge on our thinking following both stakeholder consultations.

In ED2 we will continue to strengthen and deepen our work with our stakeholders and customers, including the most vulnerable, helping them adopt low carbon technologies whilst we continue to efficiently develop the systems, processes and people to deliver this transition efficiently. Our plans include the creation of a new DSO Stakeholder Panel to help shape our DSO transition, oversee our engagement with network users and other stakeholders and act as an independent body evaluating and reporting on our performance. This will compliment and build on our existing strong industry engagement via the Energy Networks Associations' (ENA) Open Networks (ON) Project and working groups.

The challenges of delivering the Net Zero transformation are shared ones, and so we are applying a 'whole systems approach', working collaboratively with regulators, DNOs and other industry partners through the Open Networks (ON) project²⁵ to develop the products and services that a future smarter and more flexible energy grid will require in order to deliver the zero carbon goals. We actively working with the regulator, our industry partners and peers to develop common DSO performance measures, to provide focus on continuous improvement, and facilitate independent challenge from our new DSO stakeholder panel. Our DSO Transition Plan provides more details on our proposals for potential performance measures, noting that these have not yet been agreed at industry level.

Our £20m network management system investment is going a long way to move these changes forward in ED1 and will be fully operational in ED2 giving us greater control of system operation activities and managing and balancing demand locally.

We have also developed and offered flexibility services and capacity trading services to customers. This means that instead of generating more power and increasing the size of the power network to deliver that power to meet peak demand, we will pay electricity users in certain locations to reduce their demand at certain times through formal agreements.

25. <https://www.energynetworks.org/creating-tomorrows-networks/open-networks>

This saves money as the peak demand on the network is lower so less expensive investment is required in the network.

We created a simple video to help customers understand this and enable them to give us their views of this new world: <https://www.youtube.com/watch?v=5BNYunSWY8Q>

Our customer video to help customers understand DSO and enable them to discuss it



In ED1 we also became the only network operator to provide services to National Grid's balancing services markets – known as the Fast Reserve Market – through our ground-breaking innovation project CLASS. This technology is meeting the need, identified by Ofgem and the Department for Business, Energy and Industrial

Strategy (BEIS), to solve peak demand problems on distribution and transmission networks, doing so in a low carbon way by reducing requirements for power generation using fossil fuels.

Key to delivering a smarter future grid to enable zero carbon is to ensure that the vast amounts of quality data and communications required to sustain a more flexible grid are provided for in a robust and efficient way.

We have consulted on our digitalisation strategy, and this, alongside our Data Strategy sets out how we will transform our capability in this area. This also included our reflections on the recommendations of the Energy Data Task Force²⁶ and how we propose to incorporate them in our future plan.

We received comprehensive feedback on our proposals and have included this in our subsequent strategy thinking. The latest version of our overall DSO strategy is available via our website²⁷.

Our DSO strategy, analysis of DSO functions and our digital and data strategies describe the progress we have already made and sets out the next steps we are taking in the transition to DSO.

The core DSO functions and processes developed through the Open Networks industry-wide initiative since 2017, centre on the efficient delivery of the additional electricity network capacity identified by our distribution future electricity scenarios (DFES)²⁸ work.

These processes incorporate whole system thinking – not just electricity but other utilities and how our network plays a role in wider society and other industries. The joint development of solutions for both local electricity distribution networks and national electricity transmission networks is a great example of collaborative working, as is the use of flexibility to provide low cost network capacity to connect low carbon technologies

Further details of our DSO transition plan are included as [Annex 17](#).

26. <https://www.gov.uk/government/groups/energy-data-taskforce>

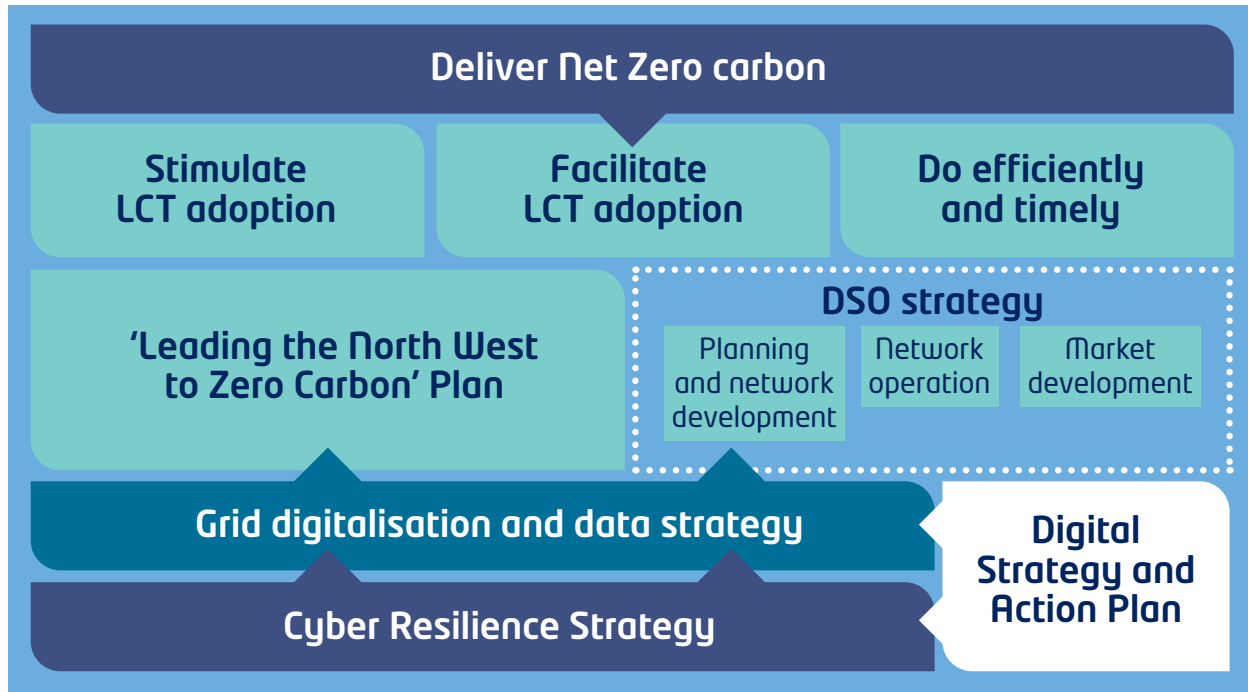
27. <https://www.enwl.co.uk/go-Net-Zero/our-plans-to-go-Net-Zero/dso/>

28. <https://www.enwl.co.uk/dfes>

6.1.2.1 Stakeholder involvement in DSO transition

Our customers and stakeholders have told us that they want to be involved in our DSO transition.

In ED1 we explained to our stakeholders how our carbon and DSO transition plans dovetailed to support our region's approach to delivering Net Zero emissions. In response we published our decarbonisation plan, *Leading the North West to Net Zero*.



The plan delivered a range of actions to support the development of local government plans for decarbonisation. This is an ongoing action and as a trusted voice we will stimulate the adoption of low carbon technologies by continuing to promote simple affordable actions that customers, businesses and stakeholders can take to lower their carbon emissions.

We have consulted on the development of our DSO strategy with stakeholders over 2020 and earlier this year in March, testing our thinking with our Customer Engagement Group in parallel throughout. This has informed the development of our Transition Plan and we will continue to work with the DSO stakeholder community to help shape both the DSO transition and our methodologies for forecasting and modelling. Their help will guide us so that we can ensure transparency and fairness in our decision making.

We will seek input from national stakeholders through our joint work with other licensees at an industry level. We will continue to work with other licensees within industry groups such as the Energy Network Association (ENA) Open Networks Project, to develop and implement new standards and best practice.

Data will be a particularly important focus as it is a foundational element for the transition to DSO. We continue to seek guidance from customers and stakeholders on how to deliver bespoke engagement plans, particularly for customers in vulnerable circumstances, ensuring fairness and inclusivity so no-one is left behind by the transition.

6.1.2.2 Data and data sharing

In ED1 we supported the Energy Data Task Force's recommendations²⁹ and, with industry colleagues, started preparing the available data for sharing from within network operator businesses.

We will presume that all data is open, unless after triaging it, it is classified as confidential or commercially sensitive. In ED2 we will continue to publish our Digitalisation Strategy and Action Plan, regularly updating them in line with changing customer and stakeholder need. We will also continue to expand on the range of planning and operational data that we make available, ensuring it meets the expectations of the Data Best Practice guidance and is guided by our stakeholders' needs; for example, following feedback from our stakeholders we propose to publish:

- heatmaps for all voltage levels that will indicate the hosting capacity/ available headroom by network asset;
- a range of forecasts, by scenario, for all voltage levels and areas of the network; and
- near real-time constraint and merit order information that will enable flexible resources to participate in managing the network and enter into bilateral arrangements to trade curtailment risk.

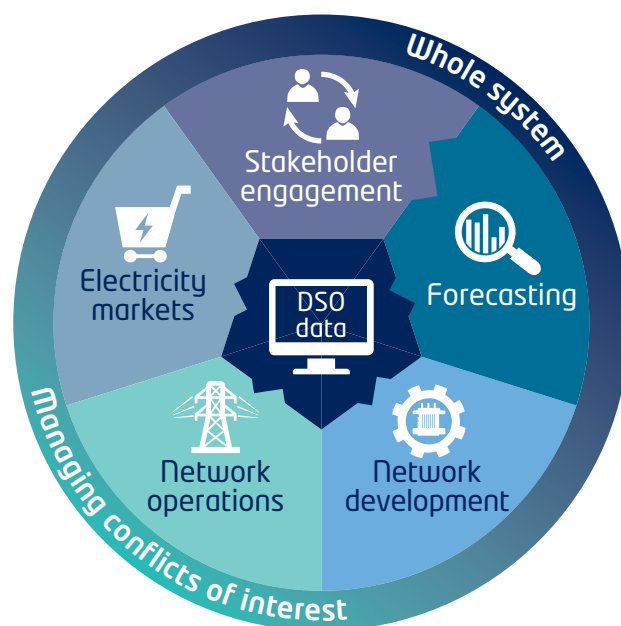
All our data will be accessible via a data repository on our website for customers, stakeholders, and other interested third parties. They can either download our published data, or where practical use a visualisation tool for greater insights.

Application Programming Interfaces (APIs) will also be available to allow data sharing services/ platforms to retrieve and host our published data. More information on our plans to make more data available, the format and accessibility, for current and future stakeholders, can be found in our Data Strategy in [Annex 18](#).

6.1.2.3 Forecasting and network planning

One of our principal roles with DSO is to ensure we economically create the capacity our customers need in sufficient time to allow them to decarbonise their lives. This can only be efficiently achieved through the analysis and understanding of current and future network power flows. The processes of forecasting and network planning are key to enabling us to understand the real world needs of technologies such as electrified transportation and electric heat on domestic and non-domestic demand.

An overview of our approach is provided below. For further information, please see [Annex 19](#) which sets out our forecasting approach in more detail.



29. <https://es.catapult.org.uk/reports/energy-data-taskforce-report/#:~:text=Energy%20Data%20Taskforce%3A%20A%20Strategy%20for%20a%20Modern,and%20understand%20data.%202%20Recommendations.%20...%203%20Appendices>

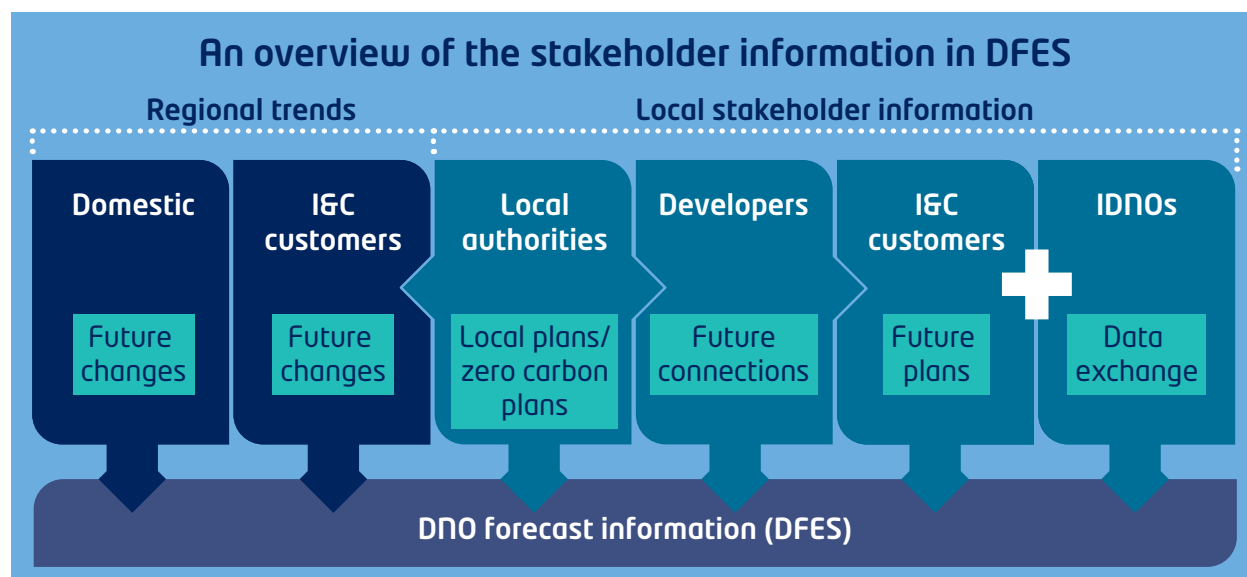
Forecasting: ED1 saw us develop and introduce the ATLAS³⁰ forecasting methodology. ATLAS takes information from our regional stakeholders and using the national Future Energy Scenario framework creates a range of future network demand and generation forecasts.

These help us understand how the network can accommodate the capacity needs of our stakeholders. We continue to enhance the capabilities of ATLAS; for example, we are currently developing an electric vehicle uncertainty framework. ATLAS also allows us to create a range of forecasts, including a central risk scenario known as the Central Outlook which is used for all planning activities. Further information on our forecasting and the range of scenarios is included in [Annex 19](#).

This approach allows us to produce our stakeholder facing Distribution Future Electricity Scenarios (DFES), Long Term Development Statement (LTDS) and Network Development Plan (NDP) information together with various regulatory reports such as load indices. All of this data is published on our website, and provided to other industry/national data sharing services/platforms.

Our ‘connect and manage’ research in ED1 has shown how monitoring and analysis can enable significant additional capacity to be released using existing assets that customers have already paid for. By the end of ED1, LV monitoring will be installed at 5,000 of our most populous ground mounted substations supplying around 1.1 million customers, and we will have access to consumption data from smart meters for up to 70% of our domestic customers.

In ED2 we will continue tactical installation of network monitoring on HV and LV circuits that will help us deliver savings to our customers through the continuation of the Connect and Manage programme. Additional capacity will be released during ED2 from existing assets facilitating the adoption of more LCTs. This greater visibility of the LV and HV networks will enable us to model networks more accurately, and more efficiently target new capacity provided through flexibility services or new assets. Our high voltage (HV) and low voltage (LV) data will be published, both on our website and on industry/national data sharing services/platforms.

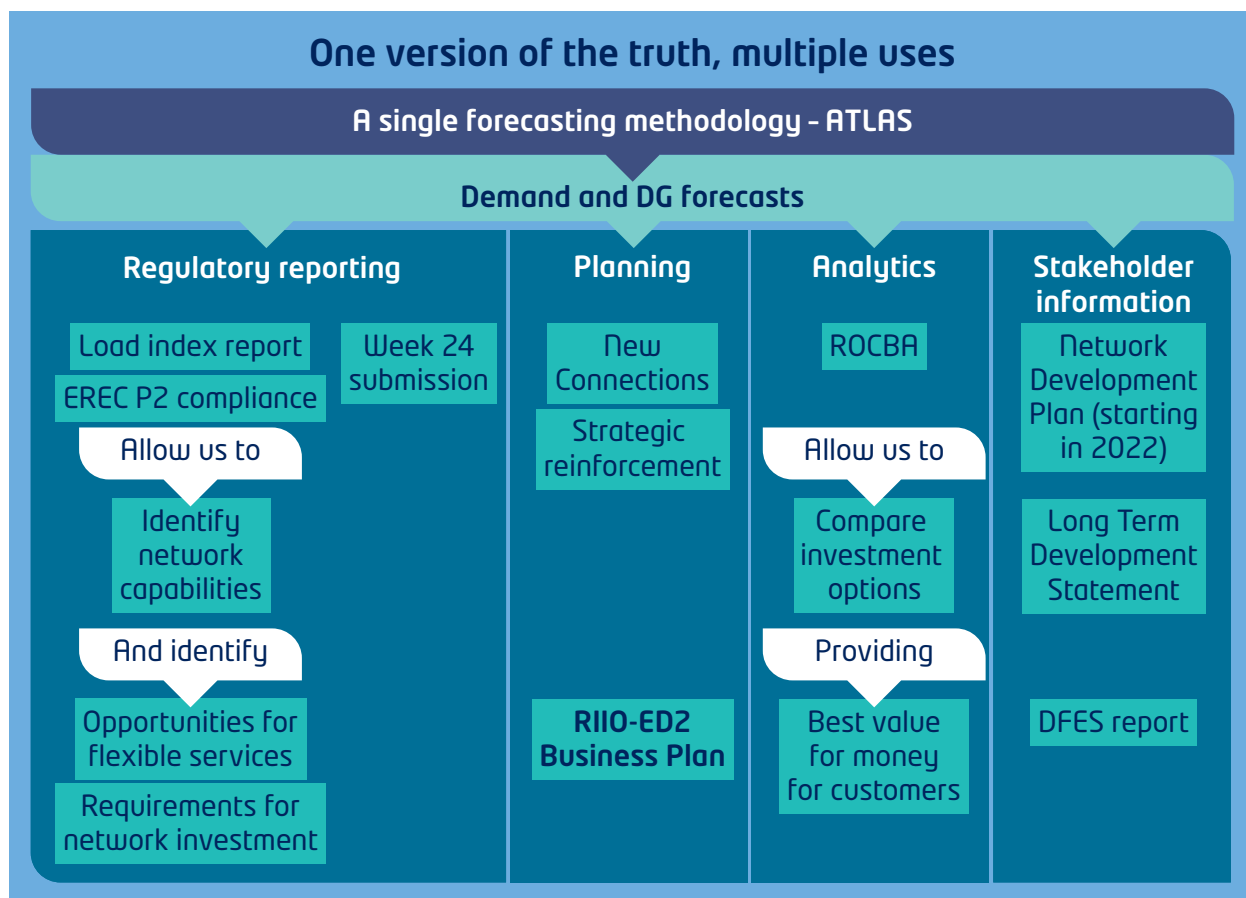


We propose the following deliverables for DSO planning and network development:

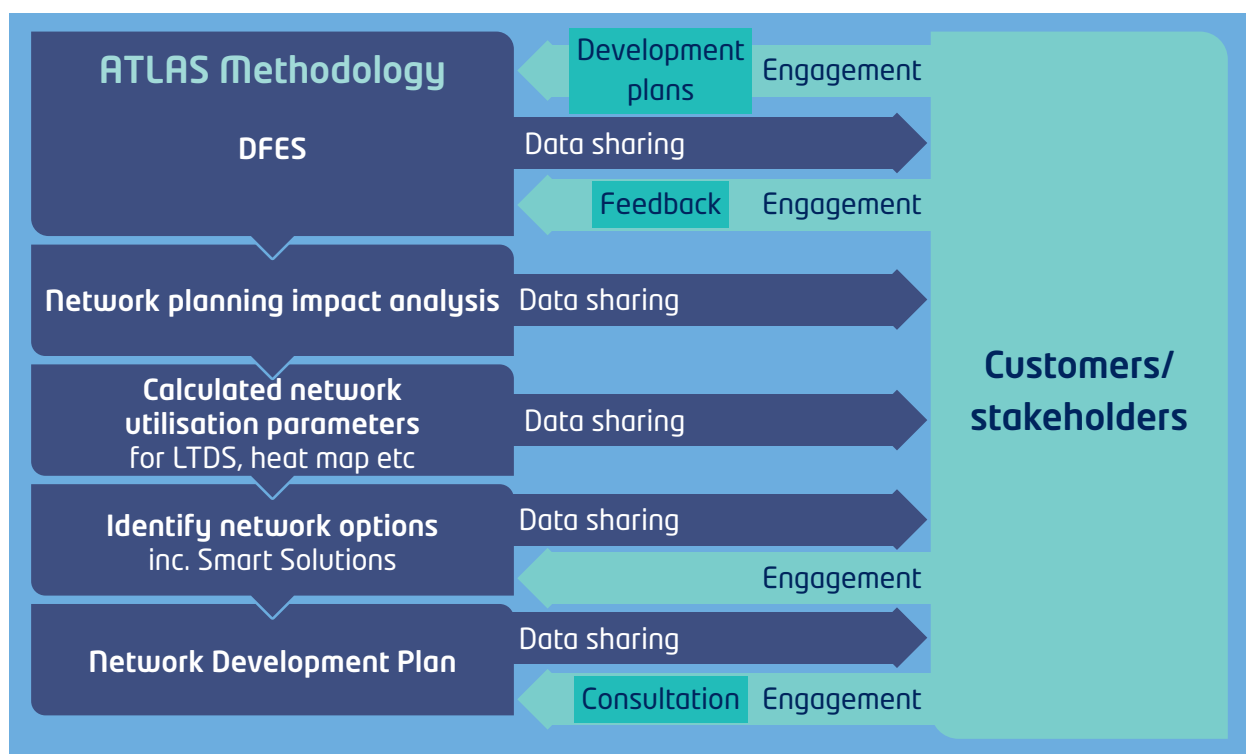
- enhancing forecasting, simulation and network modeling capabilities;
- sharing network planning data to improve network visibility; and
- identifying and assessing options to mitigate network need.

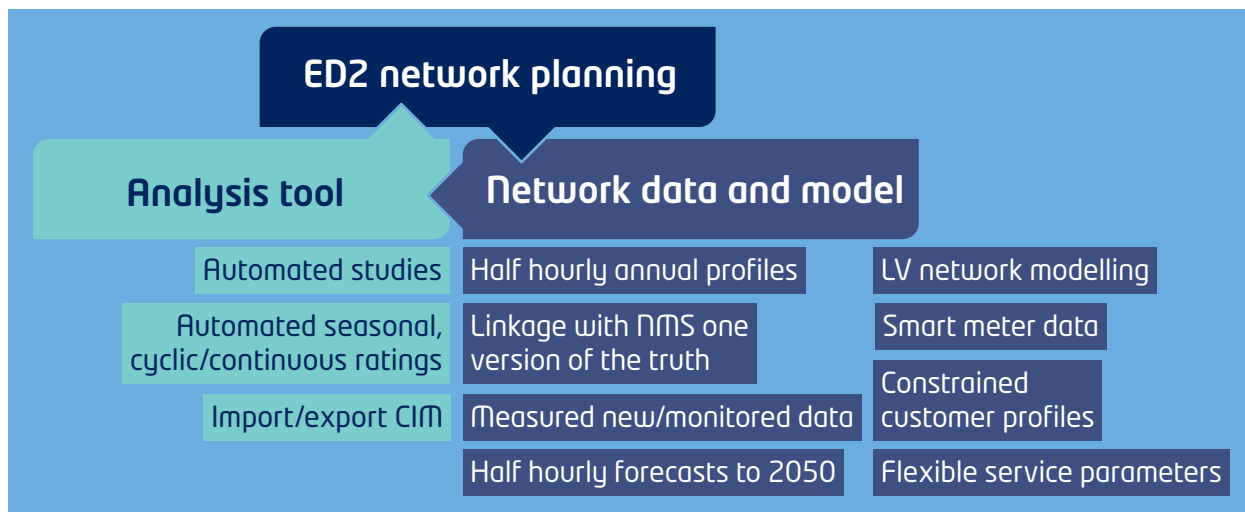
30. <https://www.enwl.co.uk/go-Net-Zero/innovation/smaller-projects/network-innovation-allowance/enwl008---architecture-of-tools-for-load-scenarios-atlas/>

We provide more detail on our proposed DSO performance measures is provided in our ED2 DSO Transition Plan ([Annex 17](#)).



Network planning: In our planning methodology document we explain how we use the forecasts derived from the future needs of our stakeholders, to make well justified, efficient and transparent decisions. The document defines the analysis methodology and our processes to ensure compliance with the national network resilience standard EREC P2/7.





In ED2 we will refresh and upgrade our network planning tools. This will enable us to plan more complex network solutions with the increasing numbers of flexible connections and flexible services solutions within ANM arrangements as well as sharing our single network model and network data with all stakeholders using the Common Information Model (CIM) protocol. This will enable many benefits, such as:

- enabling developers to determine their own point of connection;
- clearly indicating where we have network capacity availability; and
- assisting flexibility services providers to locate in the optimum position for whole system benefits.

6.1.2.4 Increasing options and transparent decision making

In facilitating DSO, we must always ensure that we deliver any new capacity needed by our customers in the most efficient manner possible. This section explains how we will ensure all possible options are identified, how we manage the uncertainty inherent in forecasts, and how we select the most efficient option in a transparent and open manner using our ROCBA evaluation tool.

Increasing solution options: Positively engaging with as many solution providers as possible in all our decisions is key to our strategy of delivering efficiencies for customers. In ED2 we will engage the help of others to find new solutions to our network issues, ensuring that we have the widest range of options possible for evaluation and adopt the most suitable economic approaches.

We will publish information on all network constraints to encourage potential solutions from all parties e.g. flexibility providers, customers, the Electricity System Operator (ESO), Transmission Operators (TOs), other Distribution Network Operators (DNOs) and Independent Distribution Network Operators (IDNOs), and groups such as local or community energy groups. This holistic approach would, for example, allow a community energy group to bring forward a proposal for an energy efficiency programme in its locality to solve a network capacity need.

Managing uncertainty within investment planning: Since autumn 2016 our network investment decisions have been informed by our pioneering Real Options Cost Benefit Analysis (ROCBA) tool, developed in conjunction with the University of Manchester. ROCBA enables us to evaluate the relative economic benefits of all intervention options against the needs across the whole range of our network forecasts, defined by ATLAS.

It allows us to evaluate flexibility services, energy efficiency measures, investment deferral, or network reinforcement on an equal basis to ensure we take informed 'least regrets' decisions. Whilst we plan and design our networks using our Central Outlook scenario, ROCBA allows us to test our options against all possible future scenarios, defined from our DFES, before deciding upon the right course of action.

The Common Evaluation Methodology (CEM) and tool, developed within the Open Networks Project is derived from the ENWL ROCBA tool and as such is the industry equivalent for flexibility evaluations. During ED2 we will continue to develop ROCBA to maintain its position as a state-of-the-art decision support tool across all network investment strategies.

Managing uncertainty within delivery: We need to ensure we appropriately manage the cost variability inherent in the delivery of any selected capacity solutions and that all intervention options are examined equitably. To achieve this, we will include uncertainty in asset-based intervention costs.

In the case of a flexibility services provision the cost of delivery is largely fixed by contract and depends only on its utilisation; whilst for traditional asset-based reinforcement the budget design cost may increase due to external factors.

To ensure the value of flexibility is treated equitably at all stages we will re-evaluate our decisions as delivery progresses. For example, if pre-construction planning indicates a material cost increase in an asset solution, we will re-evaluate the decision based on the new cost data and change the solution if it is more efficient to do so. Due to the nature of asset-based work it is possible that outturn costs may change during project delivery, so we will require that such works are undertaken on a fixed cost basis with shareholders, not customers, bearing the variation risk. This will ensure flexible and asset solutions are equitably compared.

Transparent decision making: Being transparent with our DSO decision making is critical to ensuring our customers and stakeholders are confident that we are efficiently delivering capacity to meet their needs.

In ED1 we started publishing all the information and supporting models used to arrive at our capacity-related decisions in simple and easy to understand language, as our stakeholders had previously told us that we should simplify our materials to support their understanding and aid their ability to make informed decisions.

To further improve transparency in ED2 we will introduce two additional measures to allow our customers and stakeholders to challenge our proposed decisions:

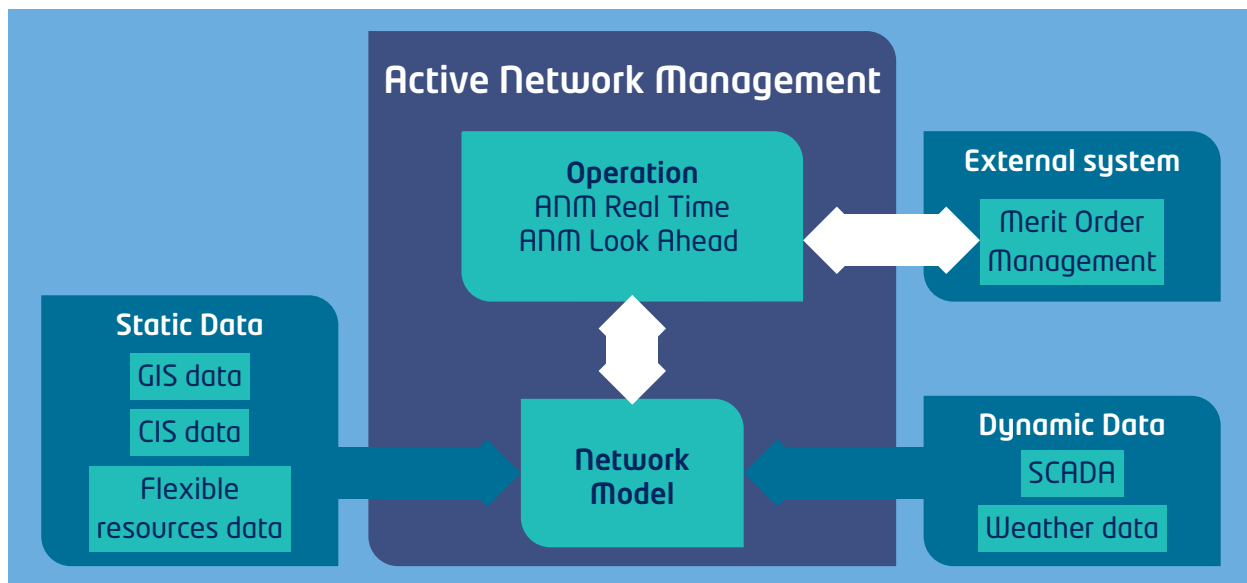
1. After a decision is made and before entering into contract with the successful tenderer(s) we will introduce a standstill period. This will allow a period for scrutiny and challenge of our proposed decision.
2. We will introduce a decisions review process, to ensure that any decisions that are challenged are independently reviewed. A decision will be overturned if the process has not been followed correctly or relevant factors have not been adequately considered. In addition, if the decision-making process itself is found to be flawed an independent body will be empowered to review the methodology and make recommendations to modify it.

6.1.2.5 Real time network management

Our customers have told us consistently that they want us to improve the resilience of power supplies, enable a Net Zero carbon future and keep bills low. The key to delivering more from existing networks and meeting this challenge is to implement the latest real time network

management tools, such as Active Network Management, which uses new flexible resources such as storage and flexible demand to meet capacity needs.

Active Network Management: In ED1 we implemented a new Network Management System (NMS) and Active Network Management (ANM) system, both developed by Schneider Electric. The ANM system is made up of two core components. The first component is the system which carries out network modelling activities in real time to manage network constraints using flexible network assets, flexible connections, and flexibility services; the second component is a Merit Order Management (MOM) system. The MOM system holds the contractual data for all flexible connections, and flexible services which ANM uses to control network power flows.



ANM directly integrates with NMS and holds real time data for the network topology, running arrangements, metering data, and other system monitoring devices. The MOM system has been developed as a separate, standalone system so that it is ring fenced from other DNO activities.

The MOM system determines the order in which flexible resources are to be dispatched in real time to ensure our network operates within its capability; for example, a network constraint. In ED2 we will further develop the MOM solution to facilitate secondary trading of distribution flexibility services, including trading of curtailment liability by linking it to platform-based marketplace services. In addition, we will determine if the MOM system could be more efficiently or equitably managed by a third party.

We propose the following deliverables for DSO network operation:

- developing flexible dispatch infrastructure to actively manage network operations;
- sharing constraint information to improve network visibility;
- inclusion of a decision-making framework for when DERs are instructed to dispatch in real-time and delivering ongoing stakeholder engagement; and
- network coordination between the ESO and DNOs to reduce the overall system operation cost.

More information on our proposed DSO performance measures is provided in our DSO Transition Plan ([Annex 17](#)).

Flexibility services: In winter 2020 we published our expected ED2 requirements for flexibility services and sought feedback from interested parties in the form of an Expression of Interest (EoI). This provided the market with indications of our future needs and volumes; whereas the

Eol responses allowed us to understand the market's preferences and intentions in terms of capacity and likely forward prices in specific locations.

In ED2, to ensure our customers receive the most efficient DSO service, we will tender for the provision of all market operation services. We will invite third parties to tender to run our flexibility auctions, procure flexibility services on our behalf, facilitate the secondary trading of curtailment risk and other DSO ancillary services such as provision of services to the ESO markets.

To further promote competition for platform-based marketplace services in ED2, we will regularly re-tender for the services. This will include seeking fixed cost provision, rather than percentage of flexibility purchased, and being open to non-standard tenders to help develop alternative routes to flexibility services providers.

Resolving ESO/DSO conflicts: The potential conflicts between the needs of national electricity system operation (ESO) and local DSO remain one of the most important and challenging areas.

By the end of ED1 we will publish our rules, after consultation, for generating the merit order for flexibility services to be utilised (i.e. the curtailment stack/list) and how each network user will be able to access the information on all network constraints. Customers who have accepted a flexible connection already receive information on the usage of their flexibility, via the curtailment index methodology. In ED2 we will ensure they have visibility of all network constraints that affect them including visibility of the respective flexibility merit orders.

Sharing of this merit order information with each flexibility service provider will help them identify their curtailment risk in advance, so that they can evaluate the impact on other contractual obligations e.g. provision of flexibility to other parties such as the ESO or suppliers. By introducing bilateral trading, it will allow the potential to trade away their curtailment liability with others in the stack, or trade to accept additional curtailment risk in return for financial reward. We expect only a few trades initially and so will facilitate these trades through a broker-type service offered by us, acting as a neutral market facilitator (i.e. a user will ask us to find a willing trading party).

In ED2 we will move to a platform-based marketplace to facilitate direct bilateral trading of curtailment risk, which will reduce the friction of trading curtailment and any associated transaction costs. Our customers and stakeholders told us that these measures are essential to improving flexibility market liquidity and delivering optimum whole system benefits.

We believe that when presented with their curtailment risk information our customers will make rational economic decisions considering their curtailment liabilities and obligations in the energy and ancillary services markets.

On the basis that other system and network licensees could benefit from having our curtailment information we will, on request, provide them access to the real-time data, via Inter Control Room Protocols (ICCP) where appropriate, with a sufficient level of granularity to allow them to cross reference against their own service provisions i.e. MPAN/MSID.

In sharing data at this granularity, the other relevant licensees can satisfy themselves that coordinated conflict management or primacy rules are a backstop, and distributed energy resources will be able to stack revenues for their flexibility services, which community and local energy groups consistency tell us is important for their financial success.

We propose the following deliverables for market development:

- efficient, user-friendly and accurate processes, contracting and procurement;
- delivering stakeholder engagement and sharing market information; and
- managing conflict of interests and open governance.

More information on our proposed DSO performance measures is provided in our DSO Transition Plan ([Annex 17](#)).

6.1.3 Whole systems thinking

During ED1, we have been working closely with key stakeholders to help them develop new economic plans in which decarbonisation has a central role.

We have worked with Cadent Gas to develop three regional energy masterplans – providing near to mid-term certainties around the future of energy supply and demand.

The plans have a crucial role in providing certainty for stakeholders, allowing them to act in areas such as transport policy, regional renewable generation and heat.

The documents will underpin regional government energy action plans and have already been launched with key regional stakeholders, such as Greater Manchester Combined Authority.

Alongside these plans, our ‘Leading the North West to Zero Carbon’ plan³¹, published in 2019, articulates how we will lead and encourage businesses, our customers and our colleagues on the decarbonisation journey.

In ED2 we will build on this work with other utilities to develop plans together that benefit the whole region. We are committed to developing these pathways every two years, and sharing them with stakeholders as part of their work on local area action plans.

Our Innovation Strategy in ED2 will adopt a holistic ‘whole system’ approach to consider the widest application of our innovation and maximise benefits to customers. One of the five ‘themes’ we are adopting to provide strategic direction to our innovation plans includes the ‘whole energy system’. As a key theme this seeks to enable joined up and efficient approaches across the wider energy system to identify solutions for planning, forecasting, design, construction, operation, maintenance and data.

The joint Ofgem/BEIS Smart Systems and Flexibility plan³² recognises that our electricity system is undergoing fundamental change. As the system changes and technologies evolve, there are greater opportunities arising for companies to collaborate to generate optimal whole system outcomes.

To perform our role as a DNO effectively and to ensure an efficient, co-ordinated and economical system, interactions between local electricity distribution networks and national electricity transmission networks are already an integral part of our way of working, and there are established processes in place to facilitate the flow of information and system planning. For ED2 we have worked with National Grid to develop our programme at shared sites and we have asked them to review our Engineering Justification Papers (EJPs) for these sites.

The work that has been undertaken to date, and continues via the Open Networks project, has identified further improvements and developments that can be made to system co-ordination and collaboration to provide increased consumer benefits.

31. <https://www.enwl.co.uk/globalassets/innovation/zero-carbon-documents/leading-the-north-west-to-zero--carbon.pdf>

32. <https://www.ofgem.gov.uk/publications-and-updates/upgrading-our-energy-system-smart-systems-and-flexibility-plan>

We have collaborated with other DNOs via the open networks project to deliver a Whole System Cost Benefit Analysis methodology and model to support our collective approach to whole systems solutions.

We maintain that collaboration across the sector will be critical to delivering these important changes for customers and we remain committed to our leadership and active support of the various Energy Networks Association (ENA) groups addressing these issues. The output from the Open Networks project has demonstrated the importance and benefit of this collaboration we will continue to be an integral part of the project as it develops.

Further details of our Whole Systems approach can be found in [Annex 20](#).

6.1.3.1 Whole system outcomes

Our stakeholders have told us that we should consider our network needs together with the needs of the whole energy system when making decisions to maximise benefits and ensure a more cohesive approach to energy system planning and operation. This wider responsibility is central to our DSO transition plan and encompasses data sharing, forecasting and planning.

Within network planning: In ED2 we will share, in planning and operational timescales, our reactive power (MVar) forecasts at the interface points with National Grid ESO to enable the ESO to enhance their modelling of reactive power flows for managing network voltage.

Within investment decisions: In ED2 we will introduce a process and methodology within the ROCBA evaluation tool to identify and evaluate the benefits of the options from the perspective of other system or network licensees. Where possible it will be quantitative, but even if it is only qualitative it will allow us to consider whole system benefits in our decision-making.

Promoting whole system options: The publication of a full range of heatmaps, from extra high voltage (EHV, at 132kV) to LV, in ED2 will facilitate the development of the flexibility services markets and enable third party options to be developed for mitigating network needs.

In DCPR5 (2010-2015, the price control before ED1) we successfully delivered the CLASS project using Low Carbon Network innovation funding. CLASS showed how demand can be varied using voltage control. In ED1 CLASS became business as usual and now, as well as managing our own peak demand needs, CLASS can be used by the ESO for managing frequency and system security. In ED2 the CLASS functionality will be evaluated further to be offered to the ESO for the provision of reactive power absorption for managing network voltage.

6.1.4 Helping our customers and stakeholders decarbonise

As a network operator we have a dual role to play in the drive to reach Net Zero. As well as reducing our own carbon footprint, we have a responsibility to lead and support our customers and other stakeholders to do the same.

Through our cycle of engagement we have heard from many different types of stakeholders including large businesses, small and medium-sized businesses (SMEs), local and county councils and the combined authorities and housing associations. It's clear that they believe our role extends beyond the day-to-day operation of the electricity network; it's also our job to act as a neutral and trusted source of help and advice to support them on their decarbonisation journey.

Many of our customers and stakeholders are concerned about the impacts of climate change and want to do all they can to help mitigate global warming to 1.5OC in line with the latest scientific advice. They have told us they expect our approach to carbon emissions reduction to be guided by the science too. We are working with the Manchester-based Tyndall Centre for Climate Research to inform and guide our approach which we will continue to adapt as scientific understanding evolves.

Supporting customers with decarbonisation is a core DSO function which will contribute to the achievement of Net Zero.

6.1.4.1 How we'll support customers to decarbonise in ED2

During ED2, in line with our *Leading the North West to Net Zero* plan, we will continue with our dedicated service to support customers with their decarbonisation plans and encourage the mass uptake of low carbon technologies. We will continue our cycle of engagement to gain more insight and understanding of our customers' experiences and use this to develop our services further.

Current services which will continue in ED2:

- dedicated website resources and engagement events;
- targeted support to help businesses overcome barriers to the adoption of low carbon technologies; and
- decarbonisation pathways research to help provide confidence to investors.

Additional support planned for ED2:

- a clear strategy for stakeholders including an action plan so they can see how we are responding to their issues and hold us to account;
- enhanced resources targeted at overcoming specific barriers to the uptake of low carbon technologies; and
- expansion of our dedicated resources to additional customer groups including SMEs and domestic customers.

In addition to the above actions we will lead by example and share information about our own decarbonisation journey. Our commitments to reduce our carbon emissions can be found in our Environmental Action Plan, see [Annex 14](#).

The proposals outlined above form part of our DSO stakeholder engagement approach which will ensure our DSO Strategy is informed by a diverse range of stakeholder views.

6.1.4.2 Understanding the issues facing customers

In 2019 we published our '*Leading the North West to Net Zero Carbon*' plan which sets out how we will reduce our own emissions and help our customers and colleagues to do the same. This plan was published in response to stakeholder feedback, particularly from Greater Manchester Combined Authority (GMCA), who set their own ambitious carbon reduction target and were looking to business leaders to do the same. We have aligned our target with GMCA (which covers around half of our customer base) and have committed to reduce carbon emissions from our business to Net Zero by 2038. This a key objective of our '*Leading the North West to Net Zero Carbon*' plan which will be delivered in ED2 as part of our Environmental Action Plan.

With the launch of our plan we employed a dedicated strategic decarbonisation manager who is responsible for understanding our customers' and stakeholders' decarbonisations aspirations and developing services to meet their needs. This engagement has been underpinned and informed by research undertaken with the Tyndall Centre and Impact Research which has given us a greater understanding of the barriers faced by businesses and how we can tailor our advice and messaging to suit different audiences.

As well as supporting the uptake and connection of low carbon technologies to our network, we know that customers expect us to go further and offer decarbonisation advice and support.

They see us as a trusted source of expert advice on low carbon technologies and energy efficiency measures.

One of the main issues customers and stakeholders face, particularly larger organisations such as local authorities and businesses, is uncertainty and the perception that there isn't enough network capacity to meet the extra demand created by the uptake of low carbon technologies. In ED1, working in partnership with our main gas network, Cadent, we became the first DNO to produce decarbonisation pathways to address this.

The pathways provide near-term to mid-term certainties around the future of energy supply and demand and are intended to support local authorities in their decision-making and investment planning.

GMCA is not the only authority to set a challenging Net Zero target in our region. We are also working closely with Cumbria County Council and Lancashire County Council and the 24 district, borough, and city councils and 15 unitary authorities in our region to understand their plans and develop effective working partnerships to help them achieve their goals.

Our region is geographically diverse, ranging from the dense urban populations of Greater Manchester to the rural counties of Lancashire and Cumbria, all of which have their own Net Zero challenges.

Cumbria's carbon footprint shows that visitors are responsible for 50% of Cumbria's consumption based carbon footprint³³, many of whom drive to the area from other parts of the UK. When this is considered alongside the dispersed nature of communities across the county and the reliance on private vehicles for transport it shows that electric vehicle charging infrastructure will be key to decarbonising the country. Cumbria is also blessed with natural resources which means it can generate more energy than it needs. The council has requested our support to help identify how the benefit of this excess generation can be maximised for the county. Understanding the individual needs and ambitions of our stakeholders is key to working in partnership with them to identify and support the most efficient and economical routes to decarbonisation.

We recognise that our business customers face a number of barriers to the adoption of low carbon technologies. Many of them do not have dedicated energy managers to research new technologies and can be put off by reports of poor user experiences from others. Other barriers include the complexity of integrating onsite renewable energy generation and the cost to install equipment. In some cases there may also be reinforcement charges to add to the overall cost.

At the same time we know that these businesses recognise the need to decarbonise and understand the reputational and wider societal benefits of doing so. As large energy users account for 62% of electricity demand in our region, it's a priority for us to help them reduce their demand and carbon emissions. We are committed to working with businesses to help them identify and adopt the most appropriate decarbonisation solutions.

6.1.4.3 Stakeholder engagement to inform ED2 proposals

The stakeholder engagement tools we have used to inform the development of our proposals to support our customers with decarbonisation in ED2 include:

- Tyndall Research on the top five things business can do to decarbonise;
- Impact Research on the uptake of new technologies;

33. 6.1 MtCO₂e from visitors whilst in Cumbria and visitor travel to and from Cumbria Vs 6.3 MtCO₂e from Cumbrian Residents. Data taken from Cumbria Carbon Baseline Report 2020
<https://slacc.org.uk/wp-content/uploads/2020/06/Cumbria-Carbon-Baseline-Report-2019-200229-Final.pdf>

- decarbonisation pathways produced in partnership with Cadent and Northern Gas Networks;
- interviews with key industry stakeholders;
- analysis of customer enquiries and correspondence we have received;
- iterative consultation, guidance and feedback from the Sustainability Advisory Panel; and
- willingness to pay and acceptability research as well as information from one to one meetings, our deliberative panel, online community and advisory panels.

Our willingness to pay and acceptability testing shows that there is strong support from customers and stakeholders for education and outreach programmes to help customers on their decarbonisation journey. As a result we will:

- continue to engage with GMCA, county councils, local authorities and businesses across our region. Our relationships with these key stakeholders will be managed as part of our company-wide, strategic and topic-led stakeholder engagement strategy which is embedded across the business and ensures our stakeholders are kept informed and can influence all parts of our business;
- update our decarbonisation pathways in partnership with the Cadent every two years throughout ED2 to make sure they include the latest forecasts and technology developments and provide the certainty our partners have told us they need to make their investments;
- deliver targeted engagement and outreach support to different customer segments in our region to help them overcome the barriers to the uptake of low carbon technologies. These customers include, but are not limited to, large energy users, SMEs and domestic customers;
- continue to develop our Go Net Zero³⁴ web portal which has been developed to provide the trusted source of information that customers and stakeholders have told us they want. The content of the portal incorporates research from the Tyndall Centre on the top five actions different business sectors can take to reduce their emissions. It also includes detailed guides on low carbon technologies and case studies of our own decarbonisation projects. We will promote and develop this resource to expand the number of businesses we support in ED2;
- work in partnership with other DNOs to deliver support to SMEs through organisations such as local chambers of commerce. Support will therefore be tailored to their needs by the expert organisations that they are used to working with. This will also ensure support is provided for an important group of customers who are hard to reach and at risk of being left behind in the energy system transition; and
- provide advice and support to domestic customers and promote via an outreach programme targeted to encourage households to take action to reduce their emissions and install low carbon technologies.

6.1.5 Digitalisation

Technology and information are vital to almost every business, enabling everything including improved customer service, increased job satisfaction and rapid innovation. Within the electricity industry, it will take on an even greater significance as we transition to delivering Distribution System Operations (DSO), implement the UK's Energy Data Taskforce (EDTF) recommendations and support the road to Net Zero carbon.

Digitalisation will help us deliver network reliability and security, excellent service and efficient operations but we also recognise those customers or stakeholders who may have digital

34. www.enwl.co.uk/GoNetZero

accessibility challenges, ensuring digital remains an enabler, not a hindrance to engagement with us.

We will fully implement the recommendations of the EDTF, led by industry regulator Ofgem, and working in collaboration with other energy network operators and the Energy Networks Association focusing on:

- digitalisation of the energy system – in the consumers interest, supporting the principles of ‘new data needs’, ‘continuous improvement’ and ‘digitalisation’;
- maximising the value of data – to aid sharing, data should be ‘presumed open’. It should be ‘discoverable, searchable and understandable’, with common ‘structures, interfaces and standards’ and be ‘secure and resilient’;
- visibility of data – should be enabled by publishing data catalogues with meta data describing what is available;
- coordination of asset registration – to increase registration compliance, improve the reliability of data and improve the efficiency of data collection; and
- visibility of infrastructure and assets – should be provided by a unified digital system map of the energy system.

For more detail on our digitalisation strategy see [Annex 21](#).

6.2 Enabling our people and business

Our RIIO-ED2 business plan is ambitious in its scope as we look to deliver the actions we need to take to enable Net Zero and satisfy the needs and priorities of our customers and stakeholders. This section sets out how we will continue to put innovation at the centre of our approach to meeting future challenges and how we plan to develop both our own workforce and work with our supply chain to enable the capacity we need to be able to deliver the plan.

We have a substantial internal workforce which we plan to continue to develop and expand in particular areas of skills where we see a sustained increase in work for the foreseeable future. Much of our investment will continue to be delivered by our contract partners and we are reviewing the appropriate contracting structure to manage the increases in overall work included in this plan. This is likely to include both long-term framework contracts for delivering a variety of activities (often within a specified geography) and specialist tenders focused on particular programmes of work.

We will continue to develop the proposals outlined in this section and provide further information in our Final submission in December 2021.

6.2.1 Innovation

Since 2010, we have invested over £80 million in research, exploring and trialling new technologies and commercial models with our stakeholders and academic partners. We have invested a further £50 million in operational technologies to make our network smarter.

These investments have driven a whole host of improvements for customers, halving the number and duration of supply interruptions and delivering reductions in bills. Continued investment in research and engagement has given us insights into what is needed to adapt our business in future. Customers will soon see new choices in how they interact with us and how they connect to, and use, our network.

Innovation is key to our success. We seek to innovate every day across all our business activities to ensure that we can respond to the evolving needs and expectations of our customers in an increasingly uncertain energy future. All of our innovation projects are aligned with our innovation strategy –to address the challenges of energy system transition, while maintaining a safe and reliable network and ensuring that the most vulnerable in our communities can benefit from changes we make elsewhere in the energy industry. Our size, as a single-licensee DNO also allows us to take a more focused approach to innovation, adopting a ‘flatter’ structure, phased approach and drive for efficient delivery, we maximise the value of innovation funding to deliver benefits to our customers. Our benefits as a single Licensee are detailed in [Annex 22](#).

In ED2 we plan to invest even further in innovation, drawing funding from our own expenditure and increasing our compulsory contribution from 10% to 15%. We are also proposing to invest £25 million on Network Innovation Allowance (NIA) projects in RIIO-ED2, which together with a £21.5 million investment across Network Innovation Competition (NIC) and Strategic Innovation Fund (SIF), will contribute towards £170 million benefits in RIIO-ED1 and a further £200 million in RIIO-ED3. For more detail on how we will fund our innovation please see our ED2 Innovation Delivery Plan ([Annex 3](#)).

To ensure we target our innovation resources appropriately across the full range of current and future challenges, and our stakeholders have visibility of the areas on which we are focused, we have forged our innovation strategy and associated ED2 Innovation Delivery Plan around three core challenges facing distribution network operators:

1. The energy system transition (the change in energy use required to facilitate the Net Zero carbon targets)
2. Asset management (further optimising our use of existing assets)
3. Vulnerability (ensuring everyone benefits from our innovation and that no one is left behind)

To ensure we have a balanced portfolio of projects and achieve the best overall outcomes for our customers, we have identified five key innovation themes which relate to the challenges of the low carbon future and to our business plan. Each of our projects is designed to support one or more of these themes:

- **Consumer vulnerability:** We will support the needs of consumers in vulnerable circumstances today and in the future, and ensure that everyone can experience the benefits of the energy transition and any adverse effect of change is minimised.
- **Net Zero and the energy system transition:** To facilitate and accelerate the UK’s transition to Net Zero greenhouse gas emissions before 2050.
- **Optimised assets and practices:** To develop and implement industry-leading techniques for optimising assets and practices for energy networks.
- **Flexibility and commercial evolution:** To develop and test innovative solutions to increase the flexibility, transparency and efficiency of the energy system, enabling information to be more open and networks to be more responsive to change.
- **Whole energy system:** To enable joined up and efficient approaches across multiple aspects of the energy system around planning, forecasting, design, construction, operation, maintenance and data.

Our ED2 Innovation Delivery Plan describes how we plan to deliver our innovation activities, including establishing our brand-new Innovation Oversight Panel, Collaborative Incentive Scheme and the new Collaboration Portal on our website. We describe how we will manage project delivery and reporting, and confirm our framework for rollout of proven innovation into BAU.

Our innovations have helped to keep bills low while responding to the challenges of a Net Zero future.

Further details of our Innovation Delivery Plan for RIIO-ED2 in line with our innovation strategy can be found at [Annex 3](#).

6.2.2 The future of our workforce

To deliver our business plan and set of commitments for ED2 we need a workforce that is equipped to build, operate and maintain the network for years to come but also drive toward a more ambitious agenda to meet the challenges of the move to Net Zero.

A key priority to us now and in the future is to have a workforce that is representative of our communities. We are committed to this and recognise the significant cultural shift needed to support this.

6.2.2.1 Key challenges

Whilst we plan to invest more in our network, our plans for ED2 will not need us to materially increase the size of our employee base. We will need to take our colleagues on a journey with us to upskill them to meet the changing needs of electricity users as we move towards a Net Zero world and to ensure that we can attract and retain people from diverse backgrounds who are truly representative of our customers.

We have worked with internal and external stakeholders including our CEG, Trade Unions at a national level and industry bodies and identified the following challenges, which when successfully achieved will drive the continuous change in culture and behaviours required to meet the demand of the changing electricity industry.

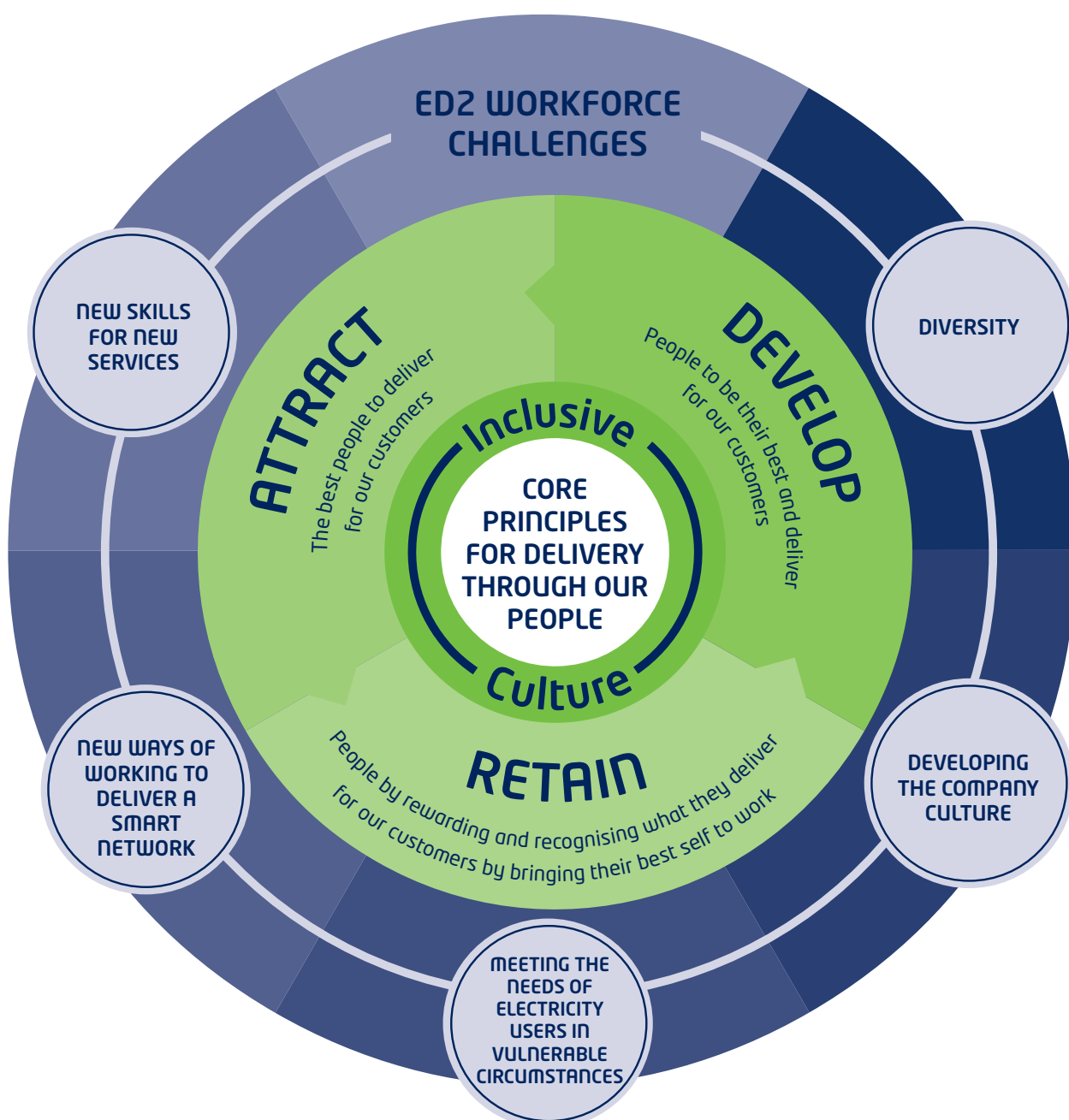
1. **Diversity:** We recognise that our company and our supply chain should be more reflective of the communities we serve. We will make significant changes in this space, using our knowledge, skills and influence to encourage our colleagues, customers and supply chain to positively influence the case for diversity.
2. **Developing the company culture:** Our people will only be able to reach their potential and give fully to their roles if they connect fully with the values of the business, feel that they belong, and that their physical and mental wellbeing is prioritised.
3. **Meeting the needs of electricity users in vulnerable circumstances:** Our commitment to deepen the support we give to people who are in vulnerable circumstances requires our colleagues to have a greater depth of customer understanding.
4. **New ways of working to deliver a smart network:** Our business plan is underpinned by the introduction of new technologies to enable our people to deliver a more resilient and reliable network to our customers through a smart network. This technology will require us to balance the current core skills with a programme of upskilling and multiskilling to ensure that our people can develop and embrace this technology.
- **New skills for new services:** Our commitment to lead the way in the transition to Net Zero and DSO will be reliant upon the introduction of new services and new skills to the business and ensuring that we and the electricity industry more broadly are attractive career options in a competitive labour market.

6.2.2.2 Workforce resilience strategy

Our workforce resilience strategy centres around what we will do to attract, develop and retain people to ensure that we can meet the everchanging needs in the world around us.

- **Attract:** We strive to have a culture that will attract the best people to deliver for our customers
- **Develop:** We commit to having a culture where we develop people to be their best and deliver for our customers
- **Retain:** We strive to be a great place to work and foster a culture where every individual is recognised and rewarded for their unique contribution to our customers and bringing their best self to work

We recognise that all three elements are intrinsically linked and dependent on having an inclusive culture where we are seen to be an employer of choice and a place where the most talented individuals are happy to thrive.



6.2.2.3 Diversity

Our workforce has always provided a reliable, resilient and safe network for our customers. Attraction of new entrants into the business has not led to diverse candidates into the industry and does not align with our responsibility framework to be truly reflective of the communities we serve.

We recognise the significant cultural shift that will be required to fully integrate underrepresented groups into the business. We believe that this is the bedrock to diversity. We cannot achieve our goal to be more diverse if our colleagues don't feel comfortable to share their diversity with us and have a positive experience of working for us.

In 2021 we are launching our new Diversity and Inclusion Strategy and Roadmap which will provide the clear direction that we need to make a difference here at Electricity North West and in the wider Industry. This strategy has been formed following extensive internal and external stakeholder engagement. We have already laid the foundations for this through the following key achievements:

Achievements over the past two years

- **Set up a D&I steering group with ELT sponsorship**
- **Received accreditation with:**

**GMCA Good
Employment
Charter**

**Disability
Confident**

**Forces
Friendly
Covenant**

**Real Living
Wage
Employer**

**Social
Mobility
Pledge**

**Business
in the
Community**
- **Launched a new Applicant Tracking System which allows for:**

**Greater
accessibility to
diverse
candidates with
audio, visual and
language
translation**

**Improved
management
information to
identify diversity
of candidate pool**

**Ability to recruit
via blind CVs
reducing
conscious bias in
the recruitment
process**
- **Conscious inclusion training delivered to all managers in Operations**
- **Incorporated multi faith rooms and breastfeeding facilities at offices and depots**

In addition to this infrastructure, we have learnt a lot about the significant journey that we need to go on through reaching out in our communities and customers and partnering with underrepresented groups. This has helped us to understand what the barriers are to attracting candidates from these diverse backgrounds. Through partnering with local mosques, we have identified the need to support with CV writing skills and to advertise roles in local networks. We will continue to work in this joint way in our local community through ED2 to ensure that we are an employer of choice for candidates from all backgrounds.

Our success will be measured by goals that we have set. The goals are challenging and stretching but provide a platform to make a real difference to the North West. To embed and deliver these goals we are proud to be introducing a dedicated Diversity and Inclusion Manager role as part our leadership team.

ED2 Diversity goals			
Measure	Current	Goal	Stretch
Gender split (female/male)	25/75%	30/70%	32%
Females in engineering roles	7%	12%	15%
Ethnic colleagues	4%	10%	12%
Ethnic minority attraction – candidate pools	10.5%	15%	20%
Disabled colleagues	0.6%	5%	5%

We are confident that we can achieve these goals and share details of a roadmap of positive actions to bring this to life in [Annex 15](#).

6.2.2.4 Developing the company culture

ED2 is an exciting opportunity for us to really make a difference by driving inclusivity and a sense of belonging so that we have the environment where diversity and new skills to achieve our business commitments can thrive. We recognise the complexities of developing a culture, changing behaviours and driving change whilst maintaining our heritage.

Throughout ED1 we have made incremental advances to lay a firm foundation for our cultural change journey. We are proud that our employee engagement scores are at the highest levels since the beginning of ED1 as we believe that this provides the right environment for change. To support the development of our company culture we are focussing on the following areas in ED2 to make sure that we can attract, develop and retain people the best people to help us to deliver a better service to our customers. We will share our success in this area with key stakeholders by having metrics in place for Inclusion, Engagement and Mental Wellbeing.

Developing company culture				
Inclusion	Engagement	Mental wellbeing	Reward and recognition	Agile working

Inclusion

Critically, we aspire to be a company where all colleagues feel that they belong. We are setting goals to support this which will measure how different people experience the same company through inclusivity surveys. On our journey so far, we have had success with our goal have having a more inclusive leadership population. We are delighted that that this year we reported that 32% of our leadership population are female which has been achieved by ensuring that we have created an environment where females can embrace development, thrive and reach their potential.

We have set up a roadmap of positive actions that will underpin our goals for inclusivity into ED2 including setting up employee-led networking groups for underrepresented groups such as the LGBTQ+ community, working parents and a group to understand the impacts of the menopause. We will also embark on a programme of conscious-inclusion training for all colleagues so that we have a foundation of education and two-way engagement in place.

Engagement

Our CEO is passionate about workforce satisfaction and culture through keeping our colleagues regularly updated on business change. As part of our monthly engagement plans,

colleagues are provided with essential updates on health and safety, business performance and business-wide change initiatives. We engage with our colleagues via monthly team briefs, emails, intranet updates and CEO and ELT video blogs. We have worked hard throughout ED1 to build strong relationships with our Trade Union partners which has created an open and transparent environment and a foundation for the changes we need in ED2. We are proud that we consistently meet our target of 75% colleague satisfaction levels and will measure our performance in ED2 via workplace surveys and feedback from our Trade Unions.

Looking forward to ED2, we have learned a lot about the culture and levels of workplace satisfaction throughout the pandemic. We are excited that we are embarking upon a project to trial agile working as we believe that this will allow us to develop an inclusive, forward thinking culture.

Mental health

We recognise that key to having productive and engaged employees is making sure that we are looking after their wellbeing. Our formal proactive approach to managing mental health commenced in 2018, where we identified a need to support our colleagues and leaders on understanding the impacts and stigma associated with mental health.

Our demographic is 75% male. Research shows that males are less likely to talk about mental health, it was important to us that we created an environment where mental health could be discussed, stigma was reduced, and professional confidential support was promoted. In 2020, there was an overwhelming consensus for us to consider working in partnership with a mental health charity who understand our industry and recognise the challenges faced by a male dominated workforce. We chose to work with Mates in Mind, who are supporting our mental wellbeing focus for the next two years.

Since then we have facilitated colleague engagement groups and introduced the following support for our colleagues and leaders, helping support their mental wellbeing and remain in work:

- established a Wellbeing Steering Group attended by Senior Leaders to drive change and raise awareness,
- completed mandatory mental health awareness training for all leaders in 2021
- selection, training and promotion of 50 mental health champions,
- introduced an online wellbeing hub offering support to boost positive mental health. The hub supports mental, physical, financial and social wellbeing and has been visited by 30% of colleagues in the last 12 months,
- accessibility to independent, confidential support including counselling and Cognitive Behavioural Therapy,
- wellbeing action plans to proactively and positively support colleague mental health
- wellbeing theme included within our people policies, and
- built wellbeing awareness into our corporate induction and leadership development programmes.

We will continue to build on this foundation in ED2 and measure progress via absence rates, and engagement with wellbeing support mechanisms.

6.2.2.5 New skills requirements for ED2

To deliver our ambitious plans we have identified the following three areas that require us to upskill or to bring in new skills to the business to enable us to meet the demands of customers and the industry.

1. Meeting the needs of electricity users in vulnerable circumstances

ED2 brings a new skills challenge for all our colleagues if we are to deliver our business plan commitments for customers. We need to educate our employees on how to recognise the signs of vulnerability in our customers and understand what they can do to help them; we will carry out formal training each year. We plan to invest over £2 million to help our colleagues recognise the signs of vulnerability in a customer and understand what they can do to support them. Raising awareness on customer vulnerability will drive inclusivity as colleagues develop greater empathy and understanding of social and domestic challenges for customers and colleagues.

2. New ways of working to deliver a smart network

Our business plan is underpinned by the introduction of new ways of working to deliver a smart network resulting in a more resilient and reliable service to our customers. These new methods and technologies will require us to do several activities in ED2. We need to balance the current core skills with a targeted attraction strategy to offset attrition, deliver a strong programme of upskilling and multiskilling. This will ensure that our people can develop and deliver the changes needed for our customers and that we have a robust supply chain in place for any outsourced work aligned to our drive to be representative of our communities.

We have a strong track record of attracting apprentices to support our workforce renewal plans. We are proud to have won awards for our apprenticeship scheme including 'Best learning and development initiative' at the People in Power Awards hosted by the National Skills Academy for Power in 2019.

We were also the first DNO to introduce the Electrical Power Networks Engineer end assessment gateway and all attendees successfully passed.

The apprentice scheme is a great way to improve diversity at our company. In 2020, 21% of successful candidates were female and 25% were from an ethnic minority background. We will continue with our apprenticeship programme and develop this further by introducing apprenticeships in areas such as IT and Cyber security to meet the changing needs of the business and the industry.

3. New skills for new services

The Net Zero carbon challenge provides us with a clear impetus for adaption, development and change and as such has heavily influenced our Workforce Resilience Strategy. We welcome the challenges and opportunities that are facing the electricity industry in delivering on the carbon goals for our communities. These challenges will require us to develop, adopt, and adapt to delivering new services to our customers.

The move to our role in distribution system operation will allow us to provide advice and support to enable our customers to move towards Net Zero, adopt low carbon technologies and show them how they can benefit from flexible markets. A successful transition to DSO will be delivered by motivated and skilled colleagues across several teams within Electricity North West, not just by the central DSO team.

We recognise that data management, governance, analytics and data sharing are key components of our DSO Strategy, our Grid Digitalisation Strategy and our Digital Strategy. Recruitment of new skills will be required to implement these strategies. We will focus on how to attract these new skills into our company by partnering with universities to ensure a pipeline of talent through offering internships and work placements as well as working hard to ensure that we are an employer of choice to more experienced candidates.

6.2.3 Working with our supply chain to deliver value

The way we procure services and materials plays a key role in supporting the delivery of the ED2 business plan and we put customers, value and corporate responsibility at the heart of all our procurement activity. We use the power of competition to secure the best value for our customers.

Our primary strategy in respect of resourcing is to upskill our internal workforce as outlined in [section 6.2.2](#), ensuring security, productivity and flexibility.

Where our business plan contains a significant increase in a specific type of work, in areas such as network automation and telemetry, we will engage with suitable third parties through competitive tendering processes to enable peak workload management and for those areas where the market can offer a more efficient cost than internal resource.

During ED1 we put in place new competitive frameworks agreements for underground cable laying. The agreements will take us deep into ED2 by utilising an extension to 2028. This has provided the pricing and resource structure which allow us to continue developing visibility of upcoming work for our contractors to ensure a suitable overall resource level and price stability.

6.2.3.1 Our approach

In line with our workforce resilience strategy, we will continue to insource those activities defined as core competencies unless it is a service that is widely available in the market place (e.g. excavation and backfill for underground cable work), providing a more efficient cost option.

Our approach is category-focused, allowing our teams to specialise in particular areas to develop expertise and relationships with the market, helping deliver excellent results. We set high standards for our suppliers, particularly concerning compliance around health and safety, quality, environmental capabilities and corporate social responsibility. We also expect our suppliers to adhere to our publicly-available 'Supply Chain Charter'³⁵. This Charter covers: ethical standards; health and safety; performance and reporting; real living wage; modern slavery; environment; and our purpose and principles.

We recognise our role as a public service utility and want to use our position to help raise awareness amongst our suppliers and other stakeholders of key environmental and corporate and social responsibility issues and how they might be addressed. We will continue to follow "The Utilities Contracts Regulations 2016 (UCR)" for all procurement activity above the applicable thresholds. The principles we follow are:

- equal treatment;
- proportionality;
- transparency; and
- non-discrimination.

To further increase our performance both commercially and operationally, we are transitioning to a more dynamic and value-focussed procurement process for ED2, while retaining the fundamentals of the regulated approach.

We aim to develop a strategic planning phase at the start of every procurement exercise which establishes the most appropriate approach to take. By understanding through collaboration with incumbent and potential suppliers, we will develop detailed scopes clearly outlining our requirements both from a technical and value perspective.

35. <https://www.enwl.co.uk/about-us/information-for-employees/our-supply-chain-charter/>

All procurement activity is developed in partnership with our internal stakeholders to create scopes of work that are written in an unbiased way, ensuring we do not specify any brands or outputs that would restrict competition. Our specifications ensure compliance with our procurement policy whilst supporting innovative solutions to meet our requirements.

We aim to improve our delivery of fit-for-purpose suppliers who have been selected for their key attributes and capability to work collaboratively. Given the huge changes in how we use IT and data including, but not limited to, our increasing work on distribution system operation, we are focusing on our approach in the IT sector with suppliers whose scale of business facilitates dynamic and tailored solutions to support our objectives to optimise our hardware and software solutions.

During ED1 we have improved our strategic planning and collaboration with our supply chain by developing our requirements throughout the lifecycle of agreements aligning them to the changes in our environment and service requirements. By taking this approach we will maintain and improve our capacity to keep up with developments in technology and advancements in asset and resource optimisation throughout ED2.

We frequently review our use of competition and contracting strategies, and continue to develop different routes to market. We have summarised these strategies and their benefits in the table below:

Strategy	Benefit
Strategic relationship	Collaboration with our supply chain partners aids our capability to be front and centre in the pursuit of increased network reliability.
Framework agreements (FAs)	By engaging with key suppliers in agreements over several years, we reduce the overall time spent on supplier selection, so we can focus more time on matching suppliers to solutions.
Mini-tenders	By the selection of suppliers who operate within our locality, we take advantage of supply and demand whilst fostering competition in each award. This works particularly well with small projects and suppliers who have less than 30 employees. We aim to support and develop these suppliers under contract periods longer than two years.
Spot-buys	With improvements in our forecasting capability, we have taken advantage of commodity fluctuations and we will continue to monitor areas of opportunity to increase the benefit we can extract from this approach and ultimately deliver value to our customers.
Dynamic purchasing systems (DPS)	In ED2, we aim to take advantage of the flexibility provided through the use of DPS which creates healthy competition between pre-approved suppliers. The capability to add suppliers throughout the term of the agreement will improve our options for supplier selection and reduce the sourcing time, thereby freeing-up resources to focus on optimising the supply chain.

We have developed category plans detailing our strategy in the following areas: IT; support services; plant and materials (including innovation); and construction. Each category develops the procurement strategy and process and breaks it down into tiers of supplier spend and impact on the business. Key tender activity is planned out to focus resources on the high impact and risk services and materials.

We remain flexible in our approach to benefit from working with suppliers on creative solutions to our everchanging market. At all times we maintain our focus on our key stakeholders from across our business and ensure we consider:

- the interests of current and future customers;
- the environment;
- health and safety;
- data protection; and
- cyber security.

We use targeted key performance indicators throughout the tender process and awarded contracts to gauge the health of our suppliers, maintain performance standards and provide evidence for future supplier selection.

6.2.3.2 Corporate social responsibility in procurement

As we work with our local communities to transition to a low carbon business model, it is vital that we behave responsibly, acknowledging the impact and the transformative role that we and our suppliers have in our local communities. This is articulated in our approach to CSR through our 'transforming our communities' purpose-led responsibility framework ([section 6.1.1](#)). This incorporates our approach to working with our suppliers.

We are an accredited Real Living Wage employer and we encourage all our suppliers to attain this standard. All our tenders request this commitment and it makes up part of our supplier selection criteria. Mapping our supply chain provides a clear insight to the makeup of our suppliers across the UK, Europe and other continents.

Understanding the conditions people are employed in when manufacturing our materials is key to ensuring that we adhere to the commitments we make to our customers in our Environmental Action Plan (see [Annex 14](#)).

Our impact on the environment is a key focus area and single use plastics are predominantly part of our supply chain in the form of primary and secondary packaging. We are working with our suppliers to highlight areas that can be focussed on for removal to alternative packaging or changes in storage and distribution processes. In ED2 we will be working with other utilities to pool our demand to drive the agenda with common suppliers. As an example of simple innovation being deployed to remove packaging, we are working with suppliers using tubs to act as a storage and transportation products.

As part of our tender process we also work with suppliers to reduce the delivery miles to Electricity North West depots for finished goods and services. Our logistics requirements in the reduction of CO₂ will continue to be supported by our logistics provider. This approach requires detailed forecasting of demand and we will be implementing a new planning system to make this easier to manage (see 'Key agreements' below).

Here are some of the organisations we work with to deliver responsible procurement:

Slave Free Alliance and Hope for Justice: We are founding members of the Slave Free Alliance³⁶, a social enterprise and membership initiative launched by Hope for Justice³⁷, we will continue to work with and support the Utilities Modern Slavery Working Group (UMSWG) which is now well-established and meets monthly to discuss modern slavery developments and best practice with 20 utility companies currently involved.

36. <https://www.slavefreealliance.org/>

37. <https://hopeforjustice.org/>

Examples of supply chain initiatives we have worked on include setting a standard across the utilities sector for pre-qualification questionnaires, which are used by procurement teams to assess the suitability of potential suppliers prior to issuing an invitation to tender. Work will continue with this group to promote awareness and best practice amongst utilities and our suppliers.

Supply Chain Sustainability School: During 2021 we became members of the Supply Chain Sustainability School³⁸ which will help support us with our environmental reporting. As we develop our sustainable procurement plans, we will work with other utilities and companies outside of our industry to implement new information gathering systems. By embedding the strategies through monitoring of key performance indicators and supplier codes, we will understand the percentages of suppliers meeting our targets. Through this group we will gain the support to develop and report against key metrics for our industry.

Recycling Lives – Operational waste management: Part of the ethos of Electricity North West's purpose-led responsibility framework is to be a responsible employer, working with our communities to offer 'fresh starts' to talented individuals. In 2020, we awarded part of our operational contract to Recycling Lives³⁹ who are a company that rehabilitates ex-offenders by working with HMPS to provide future employment and security on release from prison. They work with offenders during their sentence and select those who show desire to rehabilitate and work in the community. They are based in Preston and their submission in the recent tender created the opportunity to reduce cost due to their location to service our Blackburn depot and two satellite depots based on our substation sites.

Their unique business model for resource has helped us work closely with members of our community who require support to move them into full-time employment. Throughout ED2 we aim to work with organisations such as Recycling Lives strategically and look at other opportunities where we can work together to improve our waste management and our communities.

Living Wage Foundation: We are an accredited Living Wage employer⁴⁰ and we have built into our supplier selection process the expectation to pay the real Living Wage. During ED2 we will widen this to our secondary suppliers as well as our contracted suppliers. We will continue to promote the importance of paying the real Living Wage throughout ED2.

Anthesis (develop our approach to capturing Scope 3 emissions): We are currently working with Anthesis to develop Science Based Targets via the Science-Based Targets Initiative. Adoption of a suitable approach will provide insight into the Scope 3 value chain emissions beyond those currently calculated. Scope 3 emissions are indirect greenhouse gas emissions resulting from an organisation's operations. They also can be described in value chain terms as upstream (purchasing) and downstream (customer) activities.

Achilles: We work with Achilles⁴¹ who administer our selection database and primary supplier pre-qualification. As part of the service they also run a Utility group to develop their system against the needs of this community. It is important for us to create a complete picture of our supply chain not just in terms of performance, but also in relation to ethical and environmental standards. For the start of ED2, the group will be creating a new template for the audit service provided which we use to assist our pre-qualification of suppliers during tender but also to build up our understanding of our end to end supply chain. Over 80% of our supplier base is registered on Achilles which provides us with an excellent, up to date data source.

38. <https://www.supplychainschool.co.uk/>

39. <https://www.recyclinglives.com/>

40. <https://www.livingwage.org.uk/accredited-living-wage-employers>

41. <https://www.achilles.com/>

6.2.3.3 Key agreements

In addition to the framework agreements for underground cable laying previously referred to, which have the potential to run until 2028, we will award our new logistics agreement in April 2022 and it will potentially run for eight years covering all ED2 requirements. This avoids any impact from mobilising the new contract and associated potential material supply interruptions.

As part of our efforts to improve efficiency in logistics, we are also launching a new system to allow our teams out on site to access their material and equipment provisions via their mobile devices. This will save time and reduce mileage between site and depot stores by locating parts remotely and arranging delivery without the need to return to the stores.

Our generator framework agreement, which will run deep into ED2, was awarded to a new supplier in April 2021 deploying new equipment which is more efficient than previous models. The communication between our teams ordering the service and the generator provider has also been improved to take advantage of an app-based ordering capability. The added benefit of locating the generator provider at a site within the centre of our geographical catchment area enables delivery within three hours from order to site and this in turn will reduce the time our customers are without electricity.

6.2.3.4 Using data

Recent events with Covid-19 and Brexit have highlighted the need to understand at a granular level supplier capability and risks residing in the supply chain. We have developed our sourcing portal to include all our contracts and created detailed reports to support our understanding of demand/spend per agreement, expiry dates for renewal or tendering, supply chain map for locations, and adherence to our policies such as modern slavery and real living wage. The outputs facilitate greater analysis and understanding of our Procurement KPIs while making the whole process more efficient.

To support the breadth of change required for our IT procurement we have implemented a dynamic team who can provide the depth of knowledge of the suppliers and services required to match our aspirations to enhance our systems and software. We will utilise all the available sourcing strategies and processes at our disposal to create a supplier portfolio to support of customer's requirements.

An example of this is with Chime our supplier for a new asset planning and resource/material planning system. The new system creates an item level forecast for planned work which will interface to our materials planning system, generating a material forecast for our suppliers. The forecast will also be used to support our tendering activity with accurate material and resource demand.



Keeping bills low and financeability

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Section 7: Keeping bills low and financeability

7.1 The impact of our plan on bills

Currently around 16-20% of an average domestic customers' electricity bill comes to Electricity North West so that we can manage and invest in the local network. This [interactive graphic from Ofgem⁴²](#) shows where the rest of the money from your bill goes. In ED1 to date (between 2015-2021) the average cost for our services to an average household in the North West is £89.14 in today's prices (compared to the average cost of other networks across ED1 to date of £97).

Depending on how much we invest and how we manage our other costs this could go up or down for ED2 (2023-2028).

There is an key tension we have heard again and again from customers throughout our engagement. Customers want us to invest significantly to improve services even further as they recognise an increasing reliability on the power network. They also want to see us hit stretching environmental targets towards Net Zero, with stakeholders in particular pushing this priority very strongly.

At the same time, they want us to balance the costs of any investment to all bill payers. We recognise the unique position we have been in with half of our two-year engagement cycle being conducted during a global pandemic. Customers and stakeholders have told us that we need to keep bills low, understanding that not everyone can afford bill increases, and that we don't yet fully understand the economic impacts of Covid-19.

Throughout our engagement, many customers, and in particular future customers, asked us if it was possible to means test bills as a way of achieving a fair balance. Whilst we were clear that this is not an option, it focused our minds on how we can provide best value for those who may be struggling. Through our proposals for [customers in fuel poverty](#), see section 5.1.2.5, page 70 and our [Smart Street consumer value proposition](#), see section 5.5.1, page 101, we hope go some way to addressing this point.

We will ensure that our plan continues to represent excellent value for money for all North West customers and that the benefits of the investments we make outweigh the costs to customers. This area has been thoroughly tested through two rounds of willingness-to-pay research and large-scale quantitative acceptability testing with both domestic and business customers as well as stakeholders. We have also held in-depth discussions with our deliberative panel on the issue.

Customers recognise the delicate trade-offs we have to make in the balancing services against costs. This was made clear in our second deliberative panel on costs.

42. <https://www.ofgem.gov.uk/data-portal/breakdown-electricity-bill>

In our willingness to pay and acceptability testing research, 80% of customers told us that they would be willing to pay an additional £9.80 on their bills for the package of improvements in this plan. Given the huge amount of engagement we have done, and the strong views we have heard from the vast majority of customers, we want to deliver a plan to meet this ambition.

To deliver the outcomes that customers and stakeholders have asked for in this plan, we will need to invest £2bn over the ED2 period. This is a 53% increase in expenditure and alone would require an additional £9.69 per year from the average domestic customer in the North West.

The great news for customers is that we can deliver this level of investment for less. Through innovation, efficiencies; lower financing costs and good management of our pension deficit throughout ED1, we are able to keep costs as low as possible for customers during ED2 and offset the majority of this bill rise, so that the actual average bill increase is expected to be approximately £2.03.

Based on the current information available we are proposing to add just £2.03 to our part of an average household bill, bringing the average annual bill for ED2 to £92.05, still lower than the average of all networks measured either across ED1 or just for this year.

£2.03 is a price that 97% of our customers are willing to pay to deliver this plan, and as one of our members of our Plugged In Public Panel said – is less than the cost of a cup of coffee.

7.2 Running an efficient business

7.2.1 Benchmarking our current costs

Crucial to ensuring that our plan is efficiently priced and the bill is as low as possible is to check our current cost performance. To do this, we have undertaken a comprehensive programme to assess our costs against those of other network companies. By benchmarking our costs in this way, we are able to see how efficient we are and make sure that we are competitively priced going forwards.

At the final assessment as part of the last price control, RIIO-ED1, we were judged to be the most efficient DNO. This formed the basis for benchmarked allowances which we have subsequently outperformed whilst delivering our ED1 promises. This efficient operational performance forms the starting point for our RIIO-ED2 forecasting.

As part of this, and to check our current efficiency position, we have repeated the approaches to cost assessment that determined the level of efficient costs at ED1. Firstly, we re-ran the high-level ('totex', ie total expenditure) modelling based on data up to 2020 using expert external consultants, Oxera, to validate the findings. This involved looking at the total expenditure of different network companies over the RIIO-ED1 period to date and the results showed that our costs were around the upper quartile level, ie fourth out of the 14 DNOs and at the level that has previously been deemed 'efficient' by Ofgem.

We have supplemented this with our own detailed efficiency appraisals again re-using ED1 models as our basis and latest data up to 2020. This gives us the latest view of our relative efficiency in individual activity areas and areas to focus on in terms of setting stretching targets into the ED2 period. The outcome of this analysis was that our ED1 costs are 5% more efficient than the benchmark suggested by the models.

These conclusions give us confidence that our starting costs are efficient whether looked at from a total level, or activity-by-activity. We have achieved these levels of efficiency despite

not being able to access some of the economies of scale of larger DNOs by being focused on driving innovative approaches throughout our business and working to a highly efficient business operating model. [Annex 22](#) gives further context on the challenges of being the smallest DNO Group and also the value we bring to the sector as a whole.

Further details of our approach and the evidenced conclusions supporting the efficiency of our plan can be found in [Annex 23](#). This also includes details of our benchmarking results and the relevant external reports noted in this section.

7.2.2 Ensuring effective scope of work

We have also worked with industry-expert consultants to review the technical aspects of our plan. This external expertise and scrutiny adds weight to our plans and gives confidence that they have been thoroughly tested. This work has involved reviewing the models and data that we use as inputs to our decision making, and then scrutinising in detail the individual investment proposals that result. This ensures that the work we propose is effective at achieving the goals we have set.

The technical report of our expert partners covering these reviews is included as [Annex 6](#).

7.2.3 Efficient future costs

7.2.3.1 Ongoing efficiencies

Having established an efficient starting position for our costs, we have challenged ourselves to set stretching efficiency targets in the context of an increasingly onerous operating environment. Our main overarching assumption is that we will find ways to continually achieve further efficiencies and reduce costs to customers. This is in the form of an annual ‘ongoing efficiency’ assumption of 0.5% per annum (i.e. we forecast that, all things being equal, our costs will reduce by this factor each year).

Whilst we do not currently have detailed plans for how we will achieve this, we know from our experience that by continually looking for different and innovative ways of doing things and learning from best practice in other sectors, it is a realistic target.

There are a number of different ways of assessing what this factor should be and we have worked with NERA to assess these approaches using up-to-date data. This includes looking at what the equivalent factors have been in similar industries. Their report is included within [Annex 23](#) and conclusion was a central view of 0.3% per annum. We have decided to be more ambitious than this in setting ourselves the 0.5% per annum target which is the equivalent of a saving of around £30m over ED2 compared to using current prices.

7.2.3.2 Real Price Effects (RPEs)

Historically, overall inflation indices such as the Retail Price Index (RPI) or the Consumer Price Index (CPI) do not necessarily accurately represent the inflationary cost pressures that we are subject to as a network operator. Inflation that we experience above that which would be captured in a general index such as RPI or CPI is termed Real Price Effects (RPEs). In past price controls, this has been treated as an additional cost forecast, to be added onto the baseline.

For ED2, we are working with Ofgem and collaboratively with the other DNOs to identify an appropriate form of indexation that can operate through the ED2 period, such that customers only pay for the actual RPEs that we experience. This removes the risk that either customers will pay for inflation that doesn’t happen, or that our costs are above those that are allowed due to factors outside of our control.

We are supportive of Ofgem’s approach to index RPEs. We will provide further details on our specific proposals for RPE indexation in our final submission in December.

7.2.3.3 Benefits of innovation

Innovation is at the heart of our business and we continue to invest heavily in both specific innovation programmes (primarily addressing future challenges) and undertaking ‘business-as-usual’ innovation activities (mainly looking at current activities). Our ED2 plan includes both the rollout of programmes trialled under our innovation programme (e.g. Smart Street and Sentinel), as well as including the benefits of previous innovation in terms of providing new, more effective solutions to network issues.

As noted in [section 6.2.1](#), our Innovation Delivery Plan provides further details of our proposals for ED2, and also the benefits of individual previous innovation projects included within our ED2 plan.

7.2.3.4 Enabling competition

As detailed in [section 6.2.3](#), one of the ways we ensure efficient current and future costs is through enabling market competition for goods and services. Ofgem identifies three types of competition; native competition, early competition and late competition.

Native competition refers to how network companies can minimise costs through competitive processes and procurement. Early competition refers to tenders run during the early stages of a project’s lifecycle, typically as part of the needs identification, development of idea or early design states. Late competition occurs further on in the process, as part of the detailed design, build, or operation stages of the project.

We support competition, innovation and enabling new forms of service provision by new parties. This is evidenced by the fact that we were assessed as having enabled the most competition in connections of any DNO at the start of RIIO-ED1. We are always willing to encourage the use of alternative providers where this is the most efficient way of delivering a service.

Ensuring we maintain the most competitive market for new connections is discussed in [section 8.3.6](#). This section sets out how we use competition more generally to ensure the lowest prices to customers.

We already utilise native, early and late competition type models where currently appropriate, for example:

- All our load-related proposals seek flexibility alternatives adopting the flexibility best practice established by the Energy Networks Association (ENA) (early competition).
- We tender all our framework contracts, and comply with OJEU rules (native competition).
- Certain construction projects are also competitively tendered to ensure best value (native competition).
- To ensure best value for consumers, we seek competitive offerings for almost all the services and produces we purchase (native competition).

The status quo model for competition is native competition. We employ this approach and apply it to all our supply chain. Further, we utilise tendering and competition testing extensively on our procured expenditure with ~80% covered by competitively secured framework agreements and more on top of this tested separately through one-off competitive processes. We understand that every pound we spend is funded by customers and as such we are targeting to increase the percentage we test in RIIO-ED2 from our already strong current position in RIIO-ED1.

Our overriding principles for procurement are to:

- ensure compliance with the relevant Procurement legislation;
- deliver best value for money;
- put controls in place to prevent potential fraudulent activities; and
- contract with, and only use, reputable suppliers and organisations.

All colleagues have a duty to report any potential conflicts of interest with regards to procurement or purchasing activity at the earliest opportunity.

All contracts valued at over £25,000 require two written quotations, with contracts valued at over £50,000 requiring at least three. All contracts in excess of £100,000 must be procured via a formal tender process.

Early competition can provide benefits for consumers by identifying new or innovative solutions to network problems thus ensuring the most cost benefit efficient solutions are taken forward. We already run tenders for alternative services to traditional network build solutions, for example distributed energy resource (continuous or on demand).

Ofgem is awaiting publication of the Electricity System Operator's (ESO's) early competition plan before making any decision on early competition in electricity distribution. Notwithstanding this it has asked us to highlight any projects over £50m that may be suitable for early competition. Most of our investment programme comprises a large number of relatively small projects given the nature of our network, and no one project that we are proposing in ED2 is greater than £25m in value. [Section 9.6](#) lists our large projects over £2m.

The criteria for identifying projects as suitable for late competition, as set out in Ofgem's Sector Specific Methodology Decision⁴³ (SSMD), are projects that are:

- new – involving a completely new asset or replacement of an existing one;
- separable – the boundaries of ownership between new and existing assets are clearly identifiable; and
- high value (in excess of £100m expected capital value).

We do not have any projects during RIIO-ED2 that will exceed the £100m threshold.

Ofgem highlights and asks us to consider if projects can be packaged into suitable work to be subject to either late or early competition. The nature of the work we do is that distribution assets are generally relatively small in value and our interventions are widely distributed across our region. As a consequence, no packaging opportunities have been identified.

7.3 How we'll deal with uncertainties

There are many uncertainties around our plan that we simply do not yet know. We make forecasts and assumptions as accurate as possible, but in a fast-moving world it is not always possible to clearly state what will happen up to seven years away. These changes could be driven by central government, regional stakeholders or general changes in customer behaviour, amongst other factors.

To deal with this, there are usually a range of 'uncertainty mechanisms' which operate in cases where the degree of uncertainty is such that it is appropriate to be able to flex funding arrangements (up or down) either within a price control, or as part of its closeout process after it has finished.

43. <https://www.ofgem.gov.uk/publications-and-updates/riio-ed2-sector-specific-methodology-decision>

For ED2, a range of uncertainty mechanisms have been proposed to cover specific areas. Many of these are revised or new for ED2 and we will continue to work with Ofgem on their detailed definition and design ahead of ED2.

In addition, we will continue to work with Ofgem and the other network operators to identify any other areas where this approach should be applied to fairly share the risk of future uncertainty.

More detail on our proposed approach to dealing with uncertainty in ED2 can be found in [section 10.1](#).

7.4 The role of finance

Electricity distribution networks are long-term, asset intensive businesses. Investment in day-to-day operations, together with capital investment to renew and replace the network infrastructure, will continue to deliver for customers and stakeholders for decades to come. It therefore makes sense to finance these investments over a long period of time, rather than ask customers to pay for it all in the year it is spent.

We finance these with a combination of lower-cost debt finance and higher-cost equity finance. An optimum balance needs to be found between debt and equity finance. Ofgem has determined that this optimum is achieved at 60% debt and 40% equity for ED2.

A key requirement of funding investment in the network is to get the balance right between current and future customer bills, notably when calibrating the financial components of the price controls. Ofgem has determined that investments made in each year of ED2 will be repaid over the following 45 years.

Given the longevity of our network assets, it makes sense to also finance this investment over long timeframes. This applies to both our debt finance and equity finance.

We have followed this approach for many years, raising our debt as efficiently as possible over a period of approximately the last 25 years. As a smaller, independent network, with smaller investment needs, we access the UK bond market less frequently than others, as it is generally only efficient to access this long-term market with a minimum of £250m at a time (this is referred to as “benchmark” size, below which investor appetite falls, and debt costs rise). These factors result in a debt finance profile that does not match with the smooth, 17 year trailing average profile on which Ofgem proposes to base the RIIO-ED2 debt allowance. This ‘one-size-fits-all’ debt allowance results in a significant under-funding on our debt costs, leading to financeability issues for us in ED2.

7.4.1 Engaging with our stakeholders on finance

We convened our deliberative ‘plugged in public panel’ of 40 members of the public and ran a four-hour workshop with them to educate them about financing issues and hear their views. This was the first time that we had sought to discuss financing issues with our customers.

The panel learned how networks are financed, the role of credit ratings and the impact on customers’ bills. Members were able to ask further questions to help their understanding. The quality of their follow-on questions showed the good understanding that they had obtained.

The session facilitated debate on three key themes:

(1) How Electricity North West's credit rating impacts them as customers.

The members indicated that overall it was very important to them that Electricity North West has a good credit rating. They saw the significant impact that it could have both on their bills and the company's ability to deliver key investments which they wished to see, such as those needed to reach environmental targets.

Members were also asked to consider what, if any, range of bill increase they would find acceptable to protect the company's credit rating. The Panel was reasonably split on this question, but most of the reasoning given for members choosing a small bill increase centred around wanting to find the fair balance between ensuring the financial health of the company and charging customers a fair price.

(2) Over how long should the cost of planned network investment be spread?

Overall, members took the view that it was better to spread the costs out over shorter periods to take responsibility for investments being made today and to benefit from this being anticipated to be the more cost-effective approach. Some members wished to see this approach taken after the economy has recovered from the Covid-19 pandemic.

Members also discussed how important factors such as stable and predictable bills; minimising the risk of higher bills in the longer term; and the delivery of company outputs and the planned network investment were.

Members consistently said that these factors were all important to them, which agreed with their view that the credit rating of the company is important.

(3) Whether Electricity North West should be engaging with customers on questions such as how the company is financed.

On this subject, there was a very positive response from members. The majority voted to say they thought this was the right thing to be doing. Some members highlighted that some points discussed had been challenging due to the complexity of the issues being discussed, but overall the Panel was keen to see this sort of engagement in future.

7.4.2 What is meant by financeability?

Financeability reflects the ability of networks to raise finance. It applies equally to debt and equity finance. Financeability is critical in ensuring that networks have enough cash available to cover the day to day needs of the business, while also supporting longer term investment and growth.

Ensuring financeability protects customers and keeps bills low over the long-term. Ofgem has a duty, set out in the Electricity Act 1989, to have regard to the need to secure that each licensee is able to finance its activities (the Financing Duty). Ofgem achieves this by setting fair price controls. It is an important part of the covenant with investors that Ofgem will ensure that, provided each licensee is efficient, it should be able to fund all the demands on them for investment etc in order to meet reasonable demands for supply. This covenant allows networks to achieve an investment grade credit rating (with sufficient headroom to accommodate any pressures), while also delivering sufficiently attractive returns to equity shareholders to attract new investment.

Equity investors, unlike debt investors, don't have a maturity or repayment date. Equity investors tend to hold investments over the very long term. To attract new investors, potential equity investors need to have confidence that the regulator will set fair price controls over many regulatory periods, such that they can have confidence that they, should they decide to invest, will receive a fair return over a long term. The more uncertainty shareholders have in this outcome, the higher the returns will need to be to attract investment in the sector. Clearly the historic and current treatment of those already invested is a critical part of building this confidence.

This investor confidence is even more critical in the upcoming regulatory periods. Whilst, from a short-term bill perspective, it would be easy for Ofgem to reduce returns, once investors lose confidence in the sector, it would be expensive and take time to regain the confidence needed to attract new investment again. Delivering Net Zero carbon requires significant investment in the UK's distribution networks. It is critical that our ability to obtain finance at this time is not hindered by setting either the debt allowance or equity returns too low. Failure to attract finance will result in our having to defer investment, in turn delaying the transition to Net Zero. Customers are keen to see us lead the way to Net Zero, so it's very important for these returns to be set correctly:

90% of stakeholders assessed the delivery of company outputs and the planned network investment as 'Very important' or 'Quite important'

"This is what we've all been working towards..."

"If ENWL doesn't invest appropriately it can have serious negative consequences down the line"

Taken together with the decision by Ofgem in ED1 to extend the network investment payback period to 45-years, the scale of long-term debt and equity financing required by us will grow significantly, from £1.6bn (i.e. the Regulated Asset Value) at the start of ED1 to an estimated £3.0bn by the end of ED2. This scale will be mirrored by other networks in the sector, and therefore the sector will be 'tapping' the debt markets (and the UK debt market in particular) much more than it has in the past, reinforcing the need to maintain investor confidence. This extended 45-year payback means that it is sensible for companies to seek similarly long dated investment, attracting and retaining debt and equity finance across multiple price controls, reducing what is referred to as refinancing risk.

To achieve this growth in investment, confidence is key: this is why Parliament gave the Financing Duty to Ofgem – to ensure investors could invest with confidence that the businesses they invested in, the networks, would not be burdened with obligations that they could not finance for reasons other than demonstrable inefficiency.

Later in this section, we propose four tests to assess financeability (see page 144, and Section 5 of the [Finance Annex](#) for the reasons on why these four tests were chosen). Based on Ofgem's working assumptions, we conclude that we fail three of these tests. This is primarily due to a mis-match between our debt costs and those assumed by Ofgem when looking at the theoretical, notional company scenario only, together with Ofgem setting equity returns below the levels required to be attractive to new equity investment.

Without any adjustment to Ofgem's financing working assumptions, we believe that there are potentially grave consequences for the long-term health of the sector and the deliverability of Net Zero investment. The push for ever-lower returns has left no headroom to absorb

shocks. Investor confidence in the sector would be severely impacted by any default in a utility company and the resulting increase to financing rates would impact future customer bills, across all regulated sectors, by an amount which we believe would more than offset any short-term benefit to customers from the lower returns in ED2 and the short-term bill savings that it delivers.

7.4.3 How we assess financeability

We believe that any assessment of financeability must be based primarily on the “actual company” position. This is consistent with the Financing Duty and reflects the ‘real-world’, both in terms of our actual expected performance and how investors will view us.

Ofgem instead chooses to focus its assessment based on its “notional company”. Ofgem sets the debt allowance for this notional company based on a 17-year trailing average of financing rates and then aligns this to the average cost of debt in the sector. Whilst we can understand the rationale for starting an assessment here, we believe that the ‘need to secure’ that each and every licensee is financeable means that the rate setting must then be widened to consider the actual company(ies) position(s) in each case, or certainly at either end of the industry spectrum. At the very least, the Financing Duty cannot be discharged by a conclusion that the notional company is financeable without being satisfied that the actual licence holder shares the same, or sufficiently similar, characteristics.

Any approach that could result in a number of networks being underfunded and some to the extent which gives rise to financeability issues whilst others are over-compensated without delivering any better service to their customers, cannot be in the long-term interests of consumers. That some networks are being overcompensated for a regulatory period is also forcing some customers to pay more than they should be paying.

We include the full analysis required by Ofgem in Ofgem Required Model Outputs Annex but have focused on our assessment of our actual company position in this business plan, as this most closely reflects how investors and ratings agencies make their assessments. Our financeability tests are set out below and consider both debt and equity investors. There is clearly no point being able to borrow debt, if we are unable to raise equity to match it.

Our business plan is ambitious, and it requires significant investment from our shareholders and debt investors to deliver it. We have already stated that there will be an increased call on investors to fund this investment and we should not be disadvantaged by offering lower equity returns or higher credit risk to potential investors, than other networks/regions. Using Ofgem’s assumptions for the debt allowance and equity returns, it is not possible for our shareholders to receive any dividends in ED2 without giving rise to large increases in gearing levels. This would then require equity injection (i.e. new equity) to maintain stable gearing level in line with Ofgem’s notional company.

We have had to assume in our plan that no dividends are paid. Equity investors clearly expect to receive a dividend stream from their investments; the absence of such a stream will tend to push required returns higher, and we note that this is in conflict with the need to attract investment. However, it is reflective of the need to invest to deliver Net Zero and demonstrates our investors long-term commitment to our business and the North West.

Based on Ofgem’s working assumptions for debt allowances and equity returns, we conclude that we fail three of the four tests (and the fourth is borderline) and the business plan is therefore not financeable at this time, i.e. based upon Ofgem’s current proposed working assumptions for the cost of capital. We have considered if this could be mitigated by altering

the totex proposals in the business plan but a reduction in the scale of the plan would not have a significant impact on the key financeability metrics and would also require us to disregard the clear views expressed by our stakeholders during the ED2 engagement.

We demonstrate later in this section that our financeability challenges can be alleviated through an increase in the debt allowance and higher equity returns. Whilst this may increase customer bill's in the short-term, it is in customers' long-term interests to retain investor confidence in order to continue to access the long-term capital needed to finance the business. These matters are currently being discussed at the RIIO-2 Energy CMA appeals, and we look forward to continuing to engage with Ofgem to ensure that the right balance is achieved between customers' short-term and long-term interests for ED2.

We set out in the table below the metrics we have used for financeability and discuss in the [Finance Annex – 24](#) the rationale for these tests.

Financeability Test	Description	Result
Test 1⁴⁴	Debt The company should be expected to maintain a credit rating of at least Baa1/BBB+ in the unstressed base case.	Fail
Test 2⁴⁴	Debt The company should be expected to maintain an investment grade rating in a realistic stress scenario.	Borderline
Test 3⁴⁴	Equity The notional allowed equity return should be in line with market data and expert analysis	Fail
Test 4⁴⁴	Equity Equity investors should receive the agreed notional allowed return, and the value, or otherwise, of any incentivised performance. Equity investors should not be required to subsidise efficiently incurred debt costs.	Fail

7.4.4 Setting a fairer price control

We believe that all stakeholders should work together to create a business plan and price control that works for everyone, for both current and future customers, and is deliverable (both in terms of being possible for us to practically deliver on our commitments and is financeable). Our stakeholders have been very clear on the ambition they expect from us in ED2, including significant investment in Net Zero projects. We would hope that Ofgem will be keen to set the financial parameters of this price control at a level that is sufficient both to attract the investment needed to support these plans and generally to retain investor confidence.

Getting the balance right between supporting future investment and protecting customer bills today is of utmost importance.

In our session on finance that we held with our deliberative panel, the panel was in support of the following factors being considered in arriving at this balance:

- **Intergenerational fairness.** It is not appropriate to suppress bills in the next price control if it leads to problems and higher bills in the future.
- **Net Zero roadmap.** The investment required on decarbonisation projects in the coming years is a significant step change over what has gone before and must not be delayed.
- **The value of protecting credit ratings.** A strong, stable credit rating is important to ensure that we can access funding efficiently when required.

44. The applicability of our Debt and Equity Financeability tests is set out in Section 5 of the [Finance Annex](#).

- **Attractiveness of the sector to investment.** Ensuring that shareholders receive a fair and predictable return is important to attract and retain patient long-term investors. This is important given the length of time that both debt and equity investors commit their cash to the business, confidence in the fairness of future price settlements is key.

We have used these factors in arriving at this business plan. The key to meeting the long-term Net Zero targets is network investment and this is underpinned by the ability of networks efficiently to attract and retain both debt and equity finance.

It is also clear that financeability must be assessed with respect to both debt and equity finance. We do not believe that it is appropriate for one to be prioritised over the other. In particular, whatever rate is determined to be required to attract new equity to the business, equity investors need to be reasonably likely to receive this rate. If equity investors are being required to subsidise any under-funding on debt which has been efficiently incurred then this would undoubtedly be to the detriment of confidence in long-term network financing, of long-term investment, and, ultimately, of customers' interests.

By way of example, were there to be a significant interest rate rise in the near future, it would be impossible for licensees to judge whether any future debt issuance would be funded in full over its duration, or whether equity would need to subsidise this debt issuance in the future. This level of uncertainty does not serve to support investor confidence.

We discuss later the amount of importance that the credit rating agencies attach to the quality and fairness of the regulatory environment in assessing their ratings. Anything that affects this environment directly impacts on the cost of debt finance in the future, affecting customers through future bills.

Progress on the Net Zero roadmap is of high priority to all our stakeholders, including local government. We can only be confident in our ability to deliver the ambition outlined in our plan, if we receive the new equity investment required. This investment can only be confidently made if investors are satisfied that our efficiently incurred debt costs will be met in ED2 and in future price controls, regardless of where they fall on the spectrum of debt costs within the industry.

7.4.5 Our financing

The regulatory price control includes allowances to cover a network's cost of financing. Ofgem has elected to set the same allowances for every network, with some very minor adjustments. While this approach is simple, it does not reflect the fact that networks have very different costs of financing, particularly as result of the variation in timing of past debt issuances and the size of the enterprise being financed.

Financing allowances are set based on a 'notional' network company, financed with 60% debt and 40% equity. The debt financing in the notional company is assumed to have been issued in equal amounts over the past 17 years. This assumption may potentially be suitable for large networks and groups that issue debt every year. However, it is not factually correct and is not, we believe, economically efficient for all networks, particularly those like us, which have relatively smaller and less frequent financing requirements, and therefore cannot match the average of the last 17 years.⁴⁵

It is not practical or economic to raise small amounts of cash to pay for the individual elements of our network investment. It is more efficient to raise finance in larger sums that will fund our investment programme over many months and years. This is because, in general, the UK

45. Additional analysis included in 'Benefits and Costs of the Single Licence Model' report by Economic Insights.

public bond market prefers debt to be issued at a minimum size of £250m, as these issuances are typically eligible to be included in many ‘benchmark’ indices, including the iBoxx Utilities index⁴⁶. This increases the number of investors that can buy and hold the bonds (many investors are not allowed to invest in sub-benchmark sized issuances) and increases the likelihood of a more competitive bond tender process and reduced new issuance premium. Frontier Economics has also demonstrated that issuance and illiquidity costs are proportionally lower for benchmark sized issuances⁴⁷, reducing the financing cost per pound borrowed for our customers.

It is no surprise then that we have several high value bonds in issue and that these bonds have been issued over the past 25 years or so. These bonds have not only financed new investment, but also have refinanced our older borrowing as it matured, giving rise to a profile of debt issuance that is specific to our business (including our relative size) and past customer needs. The relevant characteristics of each individual network will differ meaning that, across the industry, no two networks will have the same debt profile or portfolio.

As a result of our debt profile we were obliged to go to market at a time when interest rates were higher than in recent years and, as a result of the long dated maturity of our debt and high break costs (both of which are standard in the market), we have been unable (until recently, and then only for smaller sums) to take advantage of the current unusually low rates.

Not only do the duration and maturity of bonds vary by licensee, so does the use of “inflation linked” bonds and “nominal” bonds.

The interest payment on “nominal” bonds can be viewed as containing two elements – a real return, plus a payment for inflation. Only the real return is allowed through the revenues of a licensee. The inflation element of interest payments is compensated by Ofgem applying an inflation adjustment to the Regulated Asset Value (RAV).

It therefore makes sense to instead borrow using inflation linked “index linked” bonds, rather than nominal rate bonds, as this matches the interest cashflows with allowed revenue more closely. It also means that we do not need to be constantly raising small amounts of debt in the market each year to match the inflation growth – as a smaller infrequent issuer, these small debt raisings would be particularly inefficient. Whilst more recently we have used index linked bonds to match this risk, it is possible to achieve the same economic risk reduction by using a combination of nominal bonds and index linked derivatives to create a combined “proxy” or “synthetic” index linked bond.

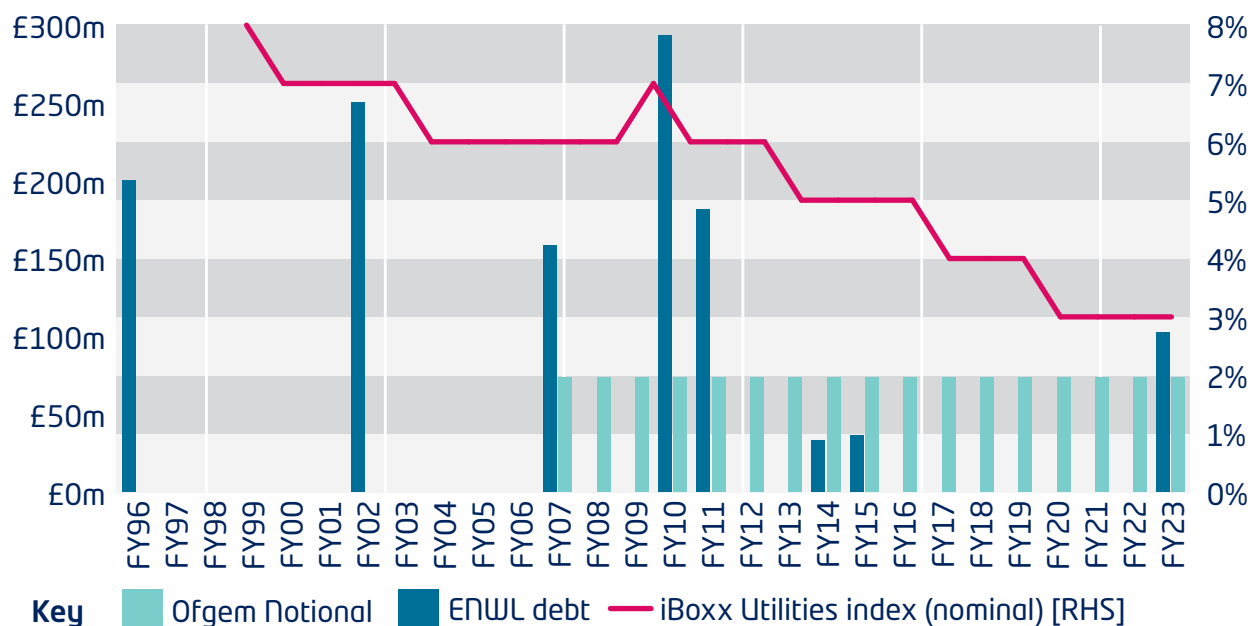
As a result of these factors, we have a mismatch between our debt profile and that of the notional company. Our debt costs are higher than those of the notional company. This is not because we hold more debt. Instead it is because the timing of our borrowings and our use of derivatives (and the market rates of interest at the time) differ from the assumptions used for the notional company.

The chart below shows the expected profile of our debt financing at the start of ED2 compared to the notional company. Our debt shows the economic timing of our issuances, incorporating derivatives used for risk management purposes. We have a high portion of our debt issued prior to the assumed position in the notional company, at times when the market rates for financing were more expensive, such as before the financial market crisis. We explain later in our plan how this mismatch creates financeability issues for us in ED2.

46. Markit iBoxx GBP Regulated Utilities Index Guide, March 2021
<https://www.markit.com/Company/Files/DownloadFiles?CMSID=b98647b8c0ff4467a29c74313a72c4c2>

47. Transaction Cost Premium for Infrequent Debt Issuers, September 2020, Frontier Economics

Expected profile of debt financing



To better understand how this mismatch leads to an under-funding position, it is helpful to analyse the costs and allowance on a nominal (with inflation) basis. This approach compares our total level of funding with our total debt costs.

As we noted above, inflation is stripped out of the cash debt allowance we receive and is instead added to our Regulatory Asset Value ('RAV') each year. Our nominal debt allowance includes both the cash debt allowance and the inflation increase on the debt portion of our RAV.

From a debt cost perspective, the interest rate on fixed and floating rate debt includes inflation and the nominal cost of this debt is equal to the cash interest cost. On inflation-linked debt, inflation is stripped out of the cash cost and added to the balance outstanding (similar to the allowance) and to calculate the nominal cost of this debt it is necessary to add both these elements together.

On a nominal basis, we forecast that Ofgem's approach will result in us being under-funded by £81.8m in ED2.

Nominal, £m	FY24	FY25	FY26	FY27	FY28	Total	Average
Debt allowance	54.2	58.4	61.6	63.3	64.7	302.2	60.4
Forecast debt cost	73.2	75.3	82.4	73.9	79.2	384.0	76.8
Under-funding	(19.0)	(16.9)	(20.9)	(10.6)	(14.5)	(81.8)	(16.4)

Allowance rate (%)	4.25 %	4.25 %	4.15 %	3.95 %	3.75 %		4.07 %
Finance cost (%)	5.74 %	5.48 %	5.55 %	4.61 %	4.59 %		5.19 %
Under-funding (%)	(1.49)%	(1.23)%	(1.40)%	(0.66)%	(0.84)%		(1.12)%

We highlight that we have removed £18m from our forecast debt costs in respect of bonds that were issued at a premium in 2001/02 and carry a higher ongoing interest cost than would otherwise have been the case. We do not believe it is appropriate for our customers to cover this higher interest rate and have removed it from our under-funding estimate. In effect, we have deemed these costs "inefficient".

Moving on to the return our shareholders receive, the equity return, setting the same return for all companies is also problematic. Equity returns are calculated by Ofgem using market data from a small number of listed different utility companies. These listed companies typically have a broad range of regulated and non-regulated operations and are not a good representation of the RIIO-ED2 networks. As such, we believe it is also appropriate for Ofgem to consider adjustments to the calculated equity return to reflect the differences in sector risk, and potentially also the specific characteristics of individual networks. This would particularly be the case if the risks were different, for example, if network size meant that a network was more likely to be underfunded for its debt costs.

7.4.6 How we manage finance risk

The table below sets out the key finance risks faced by networks and how we manage those risks:

Description	Management approach
Refinancing Risk	
The risk that networks cannot raise finance efficiently when needed. This risk is greatest during periods of market disruption, such as during the 2007-2009 financial crisis.	<p>We aim to maintain a “comfortable” investment grade credit rating of Baa1/BBB+. During periods of uncertainty, there is often a ‘flight to quality’ when investors will only invest in higher rated companies. Maintaining a strong investment grade rating reduces the risk that we will be unable to secure financing during these periods. There is never a guarantee that this will be the case and we always therefore try to raise financing 12 months in advance of it being required (below). We took advantage of this contingency/risk management period when we had to delay a planned refinancing in March 2020, due to the market disruption associated with the Covid-19 pandemic.</p> <p>This credit rating target is a key component of our debt financeability test discussed later.</p>
Liquidity Risk	
The risk that networks do not have enough cash or facilities available to meet payments falling due.	<p>We maintain cash and bank facilities to cover the next twelve months of operations. This includes the repayment of any borrowing falling due. Whilst there is a cost associated with the early financing and/or committed bank facilities needed to achieve this, this policy ensures that we should not run out of cash even if there is market disruption lasting for months, at a time when we need to raise money.</p> <p>Managing liquidity risk incurs a cost. We adjust Ofgem’s working assumptions to include this cost in our forecasts.</p>

Description	Management approach
Interest Rate Risk	
The risk that interest rates rise sharply, increasing the cost of floating rate debt and debt financing costs.	<p>Our policy is to hold only a small amount of floating rate debt. This is typically on our revolving bank facilities.</p> <p>Our debt financing is largely UK public bonds, which have interest rates fixed at time of issuance.</p> <p>Ofgem assumes a relatively high proportion of floating rate debt when calibrating the debt allowance. We do not feel this is appropriate, as it exposes the financeability of the company to sudden upward interest rate movements.</p>
Inflation Risk	
The risk that inflation falls, reducing both our cash flows and the level of debt financing available.	<p>We receive a “real interest rate” (i.e. excluding inflation) debt allowance in cash. Inflation is added in addition to the value of our “regulatory asset value” (RAV)</p> <p>Index linked debt also has inflation stripped out of its annual cash payments, with inflation added to the loan amount. This means the loan amount is growing in line with the RAV.</p> <p>Having a high proportion of index linked debt ensures that our financing costs are matched closely with the price control’s indexation. Holding a fixed rate bond(s) and a derivative(s) together achieves the same result.</p> <p>In comparison, holding nominal debt results in a cash shortfall, that is effectively subsidised through additional borrowing.</p> <p>We hold approximately 60% of index-linked debt including derivatives. Derivatives are a critical tool in risk management and help manage inflation risk.</p>

7.4.7 Our financeability assessment

Ofgem’s guidance for the RIIO-ED2 business plan includes a requirement for our Board to conclude as to whether the business plan submitted is “financeable”.

While Ofgem does not explicitly restrict this assessment to debt financeability, the guidance and tools provided to networks, including a ‘rating simulator’ included in the Business Plan Financial Model (BPFM), are weighted heavily towards looking at credit ratings and the debt investor perspective.

As we need to fund investment with both debt and equity, particularly when significant investment is required (as is now the case), this focus is too narrow for our company. To be able to secure the financing that we will need, each component of the cost of capital will need to be provided with an appropriate return for the risks run by each of debt and equity investors.

We cannot see how it is fair and equitable to base this financeability assessment on a notional company. Whilst it is a valid starting point, we do not believe that it provides an accurate and reliable assessment of our future credit rating or equity returns. Investors, and the ratings agencies, do not invest in a notional company, they invest in real/actual companies. We have therefore followed an approach to assessing the likely credit rating impact, and the required

level of equity returns, that is modified from that suggested by Ofgem. We believe that our approach more closely represents the likely view of the commercial arena in which we operate and we believe that it is the most appropriate view by which Stakeholders can judge our financeability. The details of the modifications that we have felt necessary are outlined in the [Finance Annex](#) Section 5.

Test	Description	Results	Outcome
Test 1	The company should be expected to maintain a credit rating of at least Baa1/BBB+ in the unstressed base case.	In respect of two of the three agencies, there would be a strong expectation of ratings below the Baa1/BBB+ requirement to BBB.	Fail
Test 2	The company should be expected to maintain an investment grade rating in a realistic stress scenario.	While not clear cut, there would be a strong possibility of a downgrade to sub-investment grade and breach of licence conditions in a stressed scenario.	Borderline
Test 3	The notional allowed equity return should be in line with market data and expert analysis.	Ofgem's proposed allowed return on equity is below that awarded by the CMA to the PR19 appellants and significantly below the Oxera analysis prepared for the ENA. It is not in line with market data/expert analysis.	Fail
Test 4	Equity investors should receive the agreed notional allowed return, and the value, or otherwise, of any incentivised performance. Equity investors should not be required to subsidise efficiently incurred debt costs.	The forecast return for our shareholders is 0.9 percentage points below the target notional return, as a result of equity having to fund efficiently incurred debt costs. Return levels are also too low to support any dividend payments without leading to increasing gearing levels.	Fail

Based on the above tests, we have concluded that the ENW Business Plan does not appear to be financeable under the current working assumptions for cost of capital.

7.4.8 Addressing the financeability issue

As detailed above, we believe that the ENW business plan model would be downgraded to Baa2/BBB in RIIO-ED2 under Ofgem's working assumptions. We also believe that under certain stress scenarios, there is a small but real risk that we could be downgraded to below investment grade. To address the financeability gap, we have considered a range of potential mitigating actions, including a mix of financing and regulatory mechanisms. These are discussed in detail in the Finance Annex.

Whilst we have considered reducing the ambition of our business plan, modelling has demonstrated that this would not have a significant impact on the key financeability metrics. This would also require us to disregard the clear views of our stakeholders as well as the importance of our contribution to Net Zero delivery.

We have considered whether shareholders should be asked to inject more cash into the business. This cash could be used to restructure our debt financing to match more closely to

the notional company debt costs. However, this would have to be a very substantial amount of cash to reduce sufficiently the interest cost and improve the interest cover ratio. Not only would this be economically irrational, given our debt financing structure, it would also simply exacerbate the equity financeability issue, as we would be asking equity to invest at returns below the Allowed Return.

We would also be concerned about the wider implications for investor confidence in the sector, and therefore the long-term interests of customers. In effect, equity would be being asked to inject significant additional money, because of the non-funding of efficiently incurred debt costs.

Simple return levels are not the only factor important to equity investors. Certain investors, including many pension funds, often require investments that deliver a steady return of capital through dividend payments. We would highlight that this business plan model assumes that no dividends will be paid in RIIO-ED2. This is a strong demonstration of shareholder support to our ED2 plans and the North West. However, as the lack of dividends is driven by the debt allowance mechanism working to underfund Electricity North West for its efficiently incurred cost of debt, this represents a further concern in connection with the investment proposition for future investment.

Regulatory adjustments to the timing of cashflows were also evaluated, but these had to be dismissed because rating agencies have said that they disregard these adjustments and therefore they will not help to improve credit ratings. Of the remaining mitigating actions, only one was considered appropriate and effective – an increase to the cost of capital allowance in the price control. In practice, absent any change to the cost of capital, the lack of headroom would make deliverability of the plan more difficult, particularly if unfunded additional requirements were placed on the network.

We note that these issues are being considered in the ongoing CMA appeals in respect of RIIO-GD&T2, focusing largely on equity, but covering debt financeability in one case. The statutory deadline for the CMA final determinations is 30th October 2021, although crucially the exact date of publication of the full detailed decision is not known. Our final business plan submission in December 2021 will include our formal proposals for the RIIO-ED2 equity return and debt allowance.

For the purposes of this draft submission, we are including an adjustment to Ofgem’s working assumptions for both equity and debt allowances to demonstrate how the financeability issue could be addressed, and to understand the potential impact on the average domestic customer bill. This will allow us to conduct further stakeholder engagement on the likely bill impact, as discussed in the next section.

Given the above, we would propose an increase in the cost of capital elements as set out below. These will be revised for our final business plan submission in the light of the CMA findings and the market conditions at the time.

- A debt allowance of 3.21% which would cover our efficiently incurred debt costs⁴⁸; and
- An equity return of 5.81%, being the bottom of the range recommended by Oxera in its paper for the ENA.

48. This increase in allowance would be delivered by Ofgem adopting a different methodology for setting the RIIO-ED2 debt allowance. It does not represent a proposal for a simple pass-through of debt costs. We have highlighted that the under-funding position of £81.8m outlined in this paper does not include approximately £18m of forecast interest costs that we do not consider appropriate to be funded by customers.

Based on 60% gearing, this results in a vanilla WACC of 4.25% (CPIH real), compared to the 4.61% received in ED1 (CPIH-real), and the 3.01% WACC proposed by Ofgem. This would, as set out below, ensure that the business is financeable at an additional cost per domestic customer of £6.43 per annum, compared to the Ofgem proposals. We would contend that this is consistent with the statutory duties and represents value for customers to ensure that we remain financeable and retain long term investor confidence in ENWL and in the wider sector.

We will continue to engage with Ofgem regarding the cost of capital and the debt allowance calculation mechanism in particular. Given that Ofgem already propose that GB customers should fund (broadly) the average cost of debt of the sector, a change to Electricity North West's cost of debt allowance, whilst increasing the bill to our customers, would not necessarily have to lead to an overall increase in the bills to all GB customers, were the mechanism to be amended to ensure that each network only receives its efficiently incurred debt costs, and no more. However, this is a broader discussion and we focus in this plan, only on that which is required to make Electricity North West's business plan financeable.

The Alternate Cost of Capital Annex includes both the results of our financeability tests with the higher capital allowances, together with more detailed justifications. All four financeability tests are passed with our proposed cost of capital allowance.

7.4.9 The average domestic bill impact of our ED2 plan

The average bill for our domestic customers in ED1 is forecast at £90.02 (2020/21 prices).

Based on Ofgem's working assumptions for the debt allowance and equity return, the forecast average bill for our domestic customers in ED2 would be £85.62 (2020/21 prices), a decrease of £4.40 (4.9%). As highlighted above, we believe that we face significant financeability challenges under these working assumptions. While lower returns and allowances may provide a short-term benefit in bills, we do not believe the reduction in investor allowances proposed by Ofgem is in the long-term interests of our customers and it risks being offset by larger rises in future periods.

The roadmap to Net Zero requires significant investment in the ED2 price control, that ramps further and beyond, and our business plan reflects the high level of ambition desired by our stakeholders, clearly evident in the 50%+ increase in planned network investment. Our strong focus on cost efficiency and risk management allows us to deliver this without any sharp increase in bills: we highlight the approximate £4.60 reduction in bills through pension deficit repair costs as an example.

We believe that an increase in both the debt allowance to 3.21% and equity returns to 5.81% are required to resolve our financeability challenges. This would result in an average ED2 domestic customer bill of £92.05 (2020/21 prices) per annum, an increase of £2.03 (2.3%) over the average for ED1.

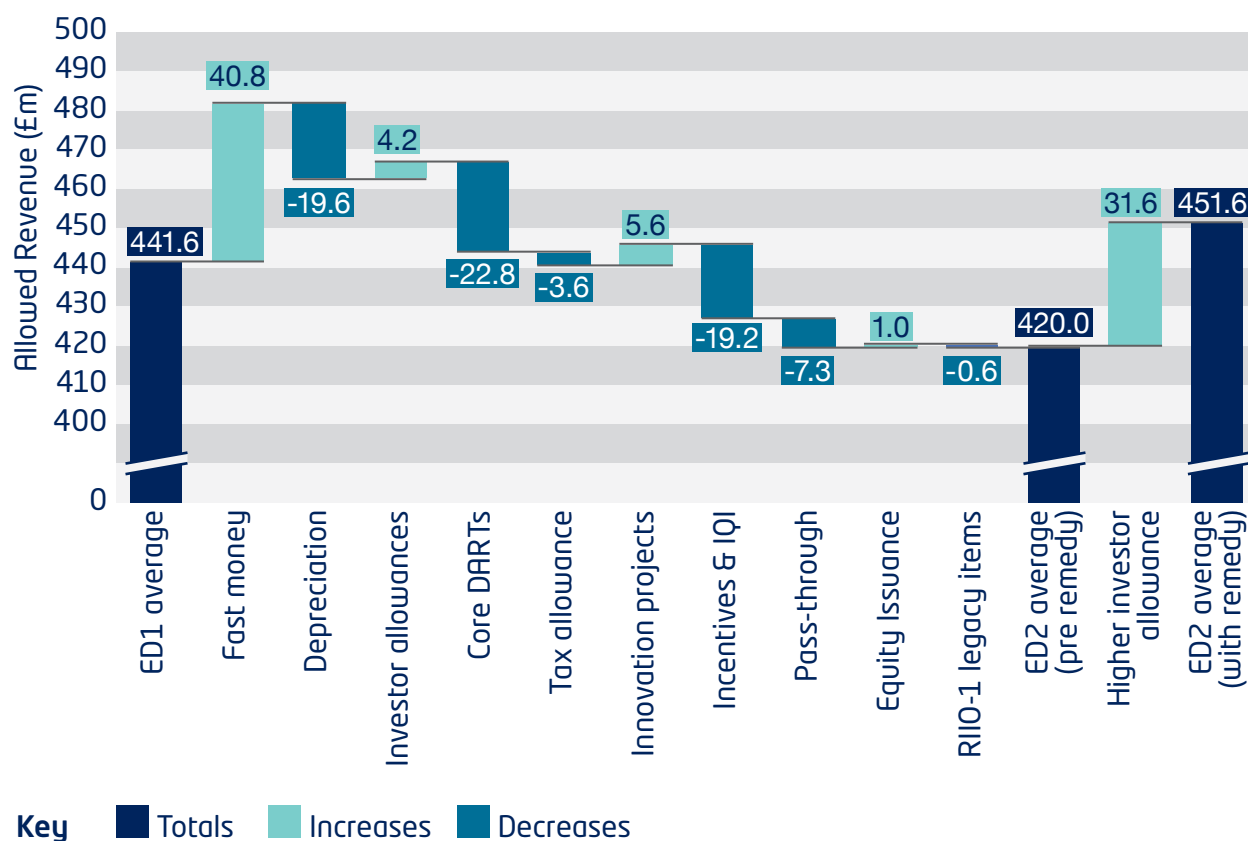
2020/21 prices	Allowed Revenue (£m)	Domestic Customer Bill (£)
ED1 average per annum	441.6	90.02
ED2 average (before remedy) per annum	420.0	85.62
Proposed increase in debt allowance and equity returns	31.6	6.43
ED2 average (after remedy) per annum	451.6	92.05

Our Plugged-In deliberative panel was supportive of our engagement in this area and 74% voted that an increase in customer bills would be acceptable to pay for higher financing returns.

We take any proposal that impacts our customers very seriously, both in respect of the short-term and long-term bill implications. For the reasons outlined in this section, we would hope that we have put forward cogent and strong arguments as to why it is appropriate for Ofgem to reconsider how the cost of capital allowances are set for Electricity North West.

Our business plan reflects a significant change in investment. Including our proposal for higher cost of capital allowances, we are able to deliver this for only a small increase of £2.03 over our average bills in ED1 which will continue to ensure the investor confidence that Electricity North West and the wider sector requires. We believe this represents excellent value for our customers, while also providing the financial security and returns needed to attract this critical investment.

Allowed Revenue ED1 to ED2 walk





Activities to deliver customer outcomes

This section describes the core activities that will underpin the delivery of the outcomes that our customers and stakeholders have asked for.

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Section 8: Activities to deliver customer outcomes

8.1 Engaging with customers and managing network activities

This section describes the core activities that will underpin the delivery of the outcomes that our customers and stakeholders have asked for. We have fantastic experience and expertise in running these business functions, and we strive to continually improve to increase service levels and efficiency, providing excellent value to our region and the communities we serve.

In [section 5](#) we set out all the services and investments that customers and stakeholders have asked us to deliver. This section explains briefly the activities we need to undertake to successfully achieve these outcomes. [Section 9](#) then details the cost of delivering increased ambition – as per customer and stakeholder feedback – in each of these areas.

8.1.1 Engaging with customers

8.1.1.1 Running the customer contact centre

The customer contact centre is based in North West of England, recruiting local people who understand our customers and are best placed to engage and support them. It operates 24 hours a day, 365 days a year to provide all customers with an exceptional level of service.

Customers can call our 24-hour emergency number 105 or get in touch via social media on Facebook or Twitter to report power cuts, electrical hazards or incidents. In a power cut, once a customer registers with us we will keep them regularly informed with details of the incident and expected time for the restoration of supplies.

On our website there is also a frequently updated list of any power cuts in our region⁴⁹. Customers can track the repair of an unplanned power cut and keep up to date with information from our engineers.

Our highly skilled customer service experts are on hand to deal with any customer query about our activities and network, whether it covers connection issues, power cuts or more general enquiries. We resolve the majority of issues referred to us about any subject with just one call and on the same day.

Vulnerability can mean many things and we have trained our team of customer service experts to deal with sensitive situations meaning we can help customers if they need some extra support, either over the phone or face-to-face.

Many of the wider factors that cause vulnerability, for example mental health concerns, mobility issues or if a reliance on electricity for medical reasons, are addressed by a range of

49. <http://www.enwl.co.uk/powercuts>

organisations and we bring many different organisations and sectors to work together to support customers and minimise the impact on their daily lives.

Currently there are about one million people who access support services available through the Electricity North West Priority Services Register (PSR)⁵⁰. For these customers we maintain regular contact to make sure we keep contact details up-to-date and register a unique password so if we ever need to visit a customer at home they will feel safe knowing it's really us. We also contact them at least six days before any planned work and send reminders the day before to help them prepare as well as sending warnings of bad weather that may cause power cuts.

Once we are aware of a power cut our welfare team will make every effort to contact customers on our Priority Services Register who are affected. We keep our priority customers up to date with text messages and phone calls, prioritise their calls with number recognition and automatically route them straight through to a dedicated team member.

As well as their own details, PSR customers can nominate up to six friends, carers or family members to receive updates on their behalf. If a power cut lasts several hours we can provide additional welfare support such as hot food and drinks, blankets, flasks, analogue telephones that work without electricity, glow in the dark torches, small generators or alternative accommodation.

The Priority Services Register is a database shared by all energy suppliers and distribution networks. The register has 28 different codes to capture a situation or health condition that could leave someone in a vulnerable circumstance should their electricity supply fail. We are committed to simplifying the registration process for everyone, increasing accessibility and minimising the effort required by the electricity user.

8.1.1.2 Running the control room

The control room is at the heart of the day-to-day operations and controls the entire network. Our expert control engineers monitor the network, identify issues and restore power quickly after unplanned power cuts. This team is responsible for identifying all network faults and dispatching appropriate field teams to restore supplies.

The control room team also monitor and manage the safety of everyone working on the network and manage planned network outages for work to be conducted safely. Control room technology enables the first response to power cuts to be addressed by rerouting the network automatically, which means responses can be very quick. Our highly trained engineers in the control room deal with additional complex issues and a range of other activities to keep power flowing.

8.1.1.3 Keeping our records up to date

It is vital to have good asset and geographical records as these are the basis for carrying out work on site and informing decisions about the future network investment requirements. Records are a key safety management tool in terms of ensuring that anyone working on or near our network knows what assets are in the vicinity.

Our data management team ensure that all records of our network are highly accurate, and this data is used in both planning work on the network and to drive our world-leading Network Management System.

⁵⁰. <http://www.enwl.co.uk/priority>

8.1.2 Supporting investment delivery

Managing our network requires considerable support activity, whether through the delivery of capital work, or providing the capability to manage day-to-day operations. Therefore, the business undertakes a range of functions to support the delivery of investment and operation of the network.

8.1.2.1 Design and planning

Our operations teams undertake regular detailed inspections to ascertain the condition of assets. Our asset management team uses this data and the latest asset strategies to build the optimised investment programme. This process incorporates the latest innovative solutions to produce an investment programme that factors in innovation efficiencies. The design and planning teams turn the investment programme into detailed scope and solution specifications containing all of the information required to implement the necessary engineering work on site.

Our capacity planning team also undertake the forecasting of future requirements across the network using data from a wide range of national and regional stakeholders to determine trends and what this means for the loading of every asset in the network across multiple future scenarios.

8.1.2.2 Project management

Regional project management teams ensure the timely and efficient delivery of the approved investment programmes ensuring tight control of scope and solution. Our in-house teams focus on delivering the core service of managing and maintaining the network and project managers work closely with engineers and resource managers to ensure we maximise the use of our core team.

We use contracted partners to deliver projects such as excavation, cable laying, overhead lines work and plant installation. This ensures that we retain the right base of skills and experience in the business and gives us flexibility to deal with less predictable or more discrete projects.

8.1.2.3 Work management

Work management is a broad category that includes all the activities required to plan and efficiently deliver investment on the network. It ranges from strategic resource planning through to the efficient co-ordination and scheduling of resources between supply restoration, repair, maintenance and planned capital programme work and the subsequent management, monitoring and reporting of delivery against the plan.

8.1.2.4 Managing materials and stock

We use an external logistics provider with an offsite storage facility, together with local stores in depots supported by a number of satellite stores. Materials that are distributed by our provider are purchased by us through framework agreements with suppliers or are purchased by framework contractors through the same procurement arrangements. Careful stock control and liaison with our policy team ensures that we minimise the stock holdings but always have the right items in stock when required. This arrangement is competitively tendered every five years to ensure we continue to get the best rates.

Our commercial specialists support project managers in the delivery of any network investment and connections work undertaken by specialist contracting resources, focussed on cost control and maintaining high quality.

Contracts with partners have been established through formal market testing to allow for an element of flexibility to deliver additional or a different mix of work, as required. This allows us to increase or decrease resources according to specific project requirements.

We have tested the potential for delivering greater work volumes with our partners across the contracting market and have confidence in our ongoing delivery capability as our programme of work ramps up.

We operate a highly focused and effective procurement team that is closely integrated with our commercial and contract management teams and supports colleagues from across the business using a proven and effective 'category management' procurement approach.

Procurement activities are delivered in accordance with the Utilities Contracts Regulations 2016. The majority of orders placed are via framework agreements that are tendered competitively. Individual 'one off' competitive tenders are generally used for larger capital construction projects.

Our supply chain specialists negotiate competitive agreements by market testing with plant, materials and equipment providers, while also seeking out, encouraging and rewarding supplier innovation. As standard practice, we place two contracts for all key plant elements ensuring an alternative supplier should the principal supplier encounter delivery issues. This contracting strategy allows volumes to be flexed upwards should quantities need to increase beyond a supplier's capacity.

We are able to deliver the benefit of economies of scale in much of our purchasing activities by working in collaboration with other operators. Along with other DNOs and utilities, we established the Selectus buying consortium. For key items where there is commonality of technical specification, we collaborate with other DNOs to consolidate volumes with the greater economies of scale delivering savings. More information on how we manage our supply chain is available in [section 6.2.3](#)

8.1.2.5 Operational training

Ongoing staff training is a key component of our day-to-day activities. Colleagues who work on the network are appropriately trained and equipped to work safely and efficiently. This is achieved by delivering programmes of specialist technical training for both full-time employees and the contractors who work on our behalf.

In developing our plans for ED2 we have ensured that we maintain appropriate workforce resilience. We have developed an efficient programme that focuses on upskilling and multiskilling more staff to improve their operational efficiency and effectiveness. This ensures we can undertake a changing work mix and specific new activities such as an increase in control technologies that enable autonomous and remote control of the network and wider communication of data around the network.

We also continue to operate a modern apprentice scheme with approximately 90 apprentices across the company. This helps recruit and train the next generation of craftspeople and engineers. We have planned in detail the recruitment necessary for the replacement of retirees to ensure our workforce remains resilient. Our purpose-built training academy in Blackburn, Lancashire is key to delivering this training for both new apprentices, but also other colleagues and contractors.

The recruitment of new team members is helping us address the diversity of our workforce as we work towards our goal of having a diverse workforce that is representative of the communities we serve. Our detailed workforce resilience strategy can be found as [Annex 15](#).

8.1.2.6 Vehicle repair and operations

We need to operate and maintain our vehicle fleet to ensure it is as efficient as possible. We run a fleet of around 600 operational vehicles. This fleet ranges from small vans through to specialist equipment for installing wooden electricity poles and working on steel pylons.

The size and nature of the fleet is determined by the operational requirements. We maintain this fleet through a network of our own garages located at our depots in the more rural north of our region and through contracted specialist partners in the southern part of our region. See [section 8.1.3.3](#) for more on our plans to update and replace our vehicles.

8.1.2.7 Setting network policy and standards

Our engineering policy team have established and continue to manage a comprehensive set of asset life management strategies. These strategies cover aspects such as condition assessment requirements, maintenance, refurbishment and replacement specifications.

8.1.3 Replacing and investing in non-operational assets

There are a range of assets which are not used in the real-time management of the network but are nevertheless required to support the efficient running of the business, including IT systems, buildings and vehicles.

These are managed, maintained and replaced as required. Investment requirements are driven by general technology refresh cycles and the need to protect people, processes and systems from threats including cyber-attack and terrorism. We also develop these resources to help our operations run more efficiently, whether by changing how we use vehicles or introducing new tools and techniques.

8.1.3.1 Maintaining and replacing our IT systems

Information Technology already provides key capabilities such as our website and other channels for customers and consumers; scheduling of our workforce so that service improvements and fault re-connections are done safely with priority, and back-office systems for finance, HR, and our assets.

8.1.3.2 Investing in our buildings

We own a number of offices and operational depots. Some of these are major sites capable of housing hundreds of people and some are small parts of substation sites used by just a few people. We operate a fit-for-purpose accommodation strategy, centred on the delivery of a sustainable, cost efficient property portfolio offering safe and compliant accommodation.

8.1.3.3 Replacing our vehicle fleet

We need to replace vehicles when they become worn out or are no longer fit for purpose. We also purchase new types of equipment that become available that help us do our job quicker or more efficiently. This includes generators and other forms of mobile plant. Examples include expanding our MEWP (Mobile Elevated Work Platform) fleet to enable us to work safely on overhead lines and vegetation management activities, often a long way from the nearest road.

New vehicles are fitted out to an agreed standard by a framework contractor. An example of our embedded innovation is that we have developed components including van racking that can be recycled from one vehicle to the next. This reduces cost and can speed up the turnaround of new vehicles. Electricity North West branding is standard across each vehicle type and is applied by the fitting out contractor.

We also work with manufacturers to develop safer and more cost-effective vehicles, such as our work with Toyota to develop and fit out a Hilux model which meets our operational needs but is £10,000 per vehicle cheaper than competitors' equivalents. This is now our standard vehicle for this role.

Where the technology is available and the whole-life cost is neutral to our customers we will introduce electric vehicles into our fleet. A good example of where we have done this is when we became one of the first organisations in the world to buy new JCB electric mini-diggers⁵¹.

Further detail is available in our Environmental Action Plan in [Annex 14](#). See [section 9.2.3.3](#)

8.1.3.4 Investing in tools and equipment

We use a lot of specialist tools in the course of our activities which also need replacing when they become worn out. Where possible, these are increasingly with battery-powered equivalents, eg chainsaws, hedge cutters and road saws. As the network gets smarter with more technology installed, we also need to ensure we have the right tools to install, commission, maintain and fix these new devices.

8.1.3.5 Innovation - research and development

Innovation is the 'ideas cauldron' where we take novel techniques and potential solutions, whether they be technological or commercial, and analyse, develop, trial and ultimately transform them into practical solutions to: deliver a better, Zero carbon service for our customers; improve network performance and safety; and deliver ever more efficient ways of working.

Innovation extends across all areas of our business and this strategy looks to facilitate our delivery of many of our other key strategies, thus forming an integral part of our overarching business plan. You can read about our track record on innovation in [section 3](#).

We have developed our innovation strategy and associated plan around three core challenges facing distribution network operators:

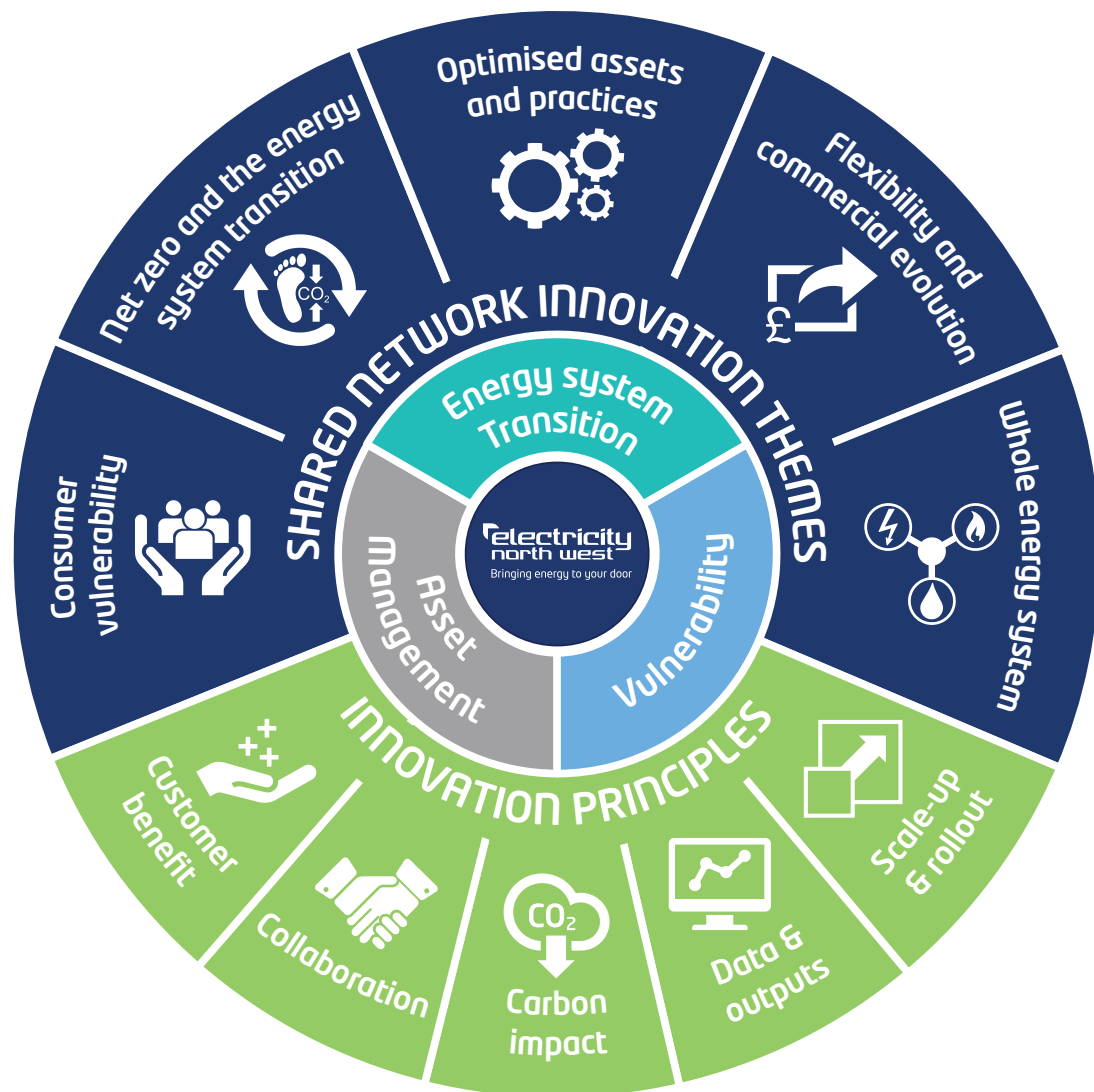
- the energy system transition (where passive networks become increasingly active);
- asset management (further optimising our use of existing assets); and
- vulnerability (ensuring everyone benefits from our innovation and that no one is left behind).

To ensure our innovation activities are focused on the areas identified as most important by our stakeholders, we have adopted the five innovation themes outlined in the ENA's national strategy. Each of our projects will tackle one or more of these themes:

1. Consumer vulnerability
2. Net Zero and the energy system transition
3. Optimised assets and practices
4. Flexibility and commercial evolution
5. Whole energy system

To ensure our innovation projects are aligned with the needs of stakeholders, and that all deliverables are communicated in a manner consistent with our industry peers, our five innovation principles are the pillars which underpin all of our innovation projects.

51. <https://www.enwl.co.uk/about-us/news/latest-news-and-views/2019/electricity-north-west-one-of-the-worlds-first-to-buy-jcb-electric-mini-digger/>



These principles influence our innovation decision-making process, guiding how we choose which innovations to pursue. To ensure consistency across the industry and alignment with the needs and expectations of stakeholders, these principles mirror those of the electricity industry's national innovation strategy, published by the ENA in March 2020, and are:

1. Customer benefit
2. Collaboration
3. Carbon impact
4. Data and outputs
5. Scale-up and rollout

Further details can be found in our innovation strategy.

8.2 Maintaining and repairing the network

The main element of the day-to-day management and maintenance of the network is responding to faults through our 24/7 response service and making any necessary repairs. We also regularly inspect our substation sites and patrol our overhead lines, making good any immediate issues that are observed. Alongside routine maintenance of key equipment, managing the vegetation near our overhead lines and responding to any safety incidents enables us to keep the network safe and reliable for all customers.

8.2.1 Repairing faults

When a fault occurs on the network, we act to restore power as soon as possible, and then repair the network. We restore the vast majority of customers by automated switching from the control room with the remainder restored by generator or repair. In a typical day, we will respond to 35-40 faults causing power cuts, and 30-35 other incidents requiring responses.

Responding to faults quickly is critical to supporting our customers. The majority of fault response work is carried out by our own engineers and technicians supported, when necessary, by a contract partner for activities such as excavation and reinstatement. Our field teams are located at local depots enabling us to store materials, specialist plant and base employees close to areas affected by faults enabling fast supply restoration, particularly during severe weather.

8.2.2 Dealing with severe weather

Another important component of maintaining and repairing the network is preparing for and responding to severe weather events. We have well-tested processes and procedures in place to rapidly respond to extreme weather events. Our response to Storm Emma (2018) and Storm Desmond (2015) demonstrated the company's capabilities and organisation in response to severe storms and equally highlighted the important role we play for the community.

As an example, Storm Emma, the 'Beast from the East' arrived on Thursday 1 March 2018. The numbers of properties affected rose rapidly from an initial estimate of 3,000 to 23,000. Our customer contact centre received more than 5,600 calls during Friday 2 March with more than 3,500 calls handled by our automated messaging system and 800 customer call backs made. Our engineers worked in the highly challenging conditions to gradually bring all 23,000 customers affected by the storm back online, with final restorations made by 21:00 on Saturday 3 March.

The quick and effective response was the result of careful planning and preparation, as well as the dedicated work of our teams. Four days ahead of the weather front hitting the region, we held companywide weather preparation calls, created a specific plan for Storm Emma and worked to keep local stakeholders fully informed.

8.2.3 Inspecting and maintaining the network

Regular inspection and maintenance of equipment is essential to ensure the network is fully operational and fit-for-purpose. Maintenance activities include the activities and testing needed to ensure all assets are in good condition and able to function effectively and safely.

For example, a proportion of older switchgear assets and most network transformers are filled with electrical insulating oil, which as part of maintenance needs changing for clean oil. We operate our own dedicated oil reprocessing plant, which allows us to reprocess and recycle

almost 100 percent of all oil used in our equipment, reducing operational costs and benefiting the environment. We also recycle around 95 percent of all electrical plant and equipment removed as part of our activities.

8.2.4 Tree-cutting

We invest in the cutting of trees that grow close to power lines, preventing safety hazards which can cause power cuts. We carry out a regular five-year cyclical programme of cutting trees that grow close to power lines and our tree trimming activity is completed by specialist in-house teams, who consistently deliver industry-leading levels of cost and environmental performance.

We have been working with industry and other stakeholders on an evolved approach to vegetation management that looks to mitigate the increasing risks of diseased trees by implementing a more extensive management process than the routine felling/trimming currently undertaken. This will also address the projected increase in growing rates identified as a key risk in the climate change adaptation reporting.

8.3 Investing in the network

8.3.1 Improving reliability and speed of restoration

8.3.1.1 Improving performance

We've made significant improvements in the overall performance for customers over recent years such that, on average, a customer in our region experiences a power cut less than once every three years and is without electricity for just half an hour every year. This represents a reliability level of 99.995% and represents upper quartile performance across the 14 DNOs within Great Britain.

We do this by investing to maintain the overall health of the network to manage medium and long-term performance and investing in the rollout of new technology to the network to minimise the impact of those faults that do happen. Combined with improvements to our operational response and practices, these measures enable us to minimise the customers affected by faults and restore those who are affected as quickly as possible.

However, there are still many customers who receive a performance significantly worse than the average due to the nature of the network that serves them and exposure to factors such as weather and trees. In addition, our research has identified that the importance of electricity is increasing in customers' lives and improving its reliability is a key priority, so we need to continue to improve both the average performance for all customers and the service provided to those who are comparatively poorly served.

Customers and stakeholders support our proposal to deliver a targeted programme of enhancements which aims to improve the reliability of our poorest performing circuits on a sustained basis. We are proposing that this programme replaces the current Worst-Served Customer arrangements which only allow for tactical improvements in response to extremely poor performance.

8.3.1.2 Looking after 'worst served customers'

In ED1 our commitment to deliver for our customers was also distinct in our unique approach to providing electricity to 'worst served customers' (which Ofgem define as customers experiencing 12 or more higher voltage faults over a three year period with a minimum of three faults in each year). Through concerted efforts on this front in recent years we have achieved a significant decline in the number of customers that Ofgem would define as 'worst served'.

Through targeted investment, we have reduced the number of worst served customers from over 1,500 at the start of ED1 to less than 300 in recent years. We have committed that by the end of ED1 no customer will meet Ofgem's definition of 'worst served'.

In response to feedback from us and other stakeholders, Ofgem have amended this scheme for ED2, both by dropping the minimum requirement in each year to two, and by enabling network operators to propose programmes of work in advance, rather than respond to performance issues after they happen.

8.3.2 Replacing and refurbishing network assets

Our network is a complex and interconnected system comprising transformers and switchgear, overhead lines and underground cables linking our connections with the National Grid to every home and business within the North West.

Much of this equipment is long-lived and some of our underground cables are over a century old. With time, operation and wear however, assets degrade and become increasingly prone to failure as they age.

To manage this medium-term risk of failure, the largest part of our investment programme is devoted to the replacement and refurbishment of our existing equipment where we carefully assess the condition, health and likely probability of failure of our assets against the consequences of such failure. This enables us to undertake a highly targeted and efficient programme of asset renewal which maintains the overall underlying condition of the network.

8.3.2.1 Assets included within the Network Asset Resilience Measures (NARMs) framework

We gather information relating to both the health and criticality of all our inspectable assets. This information is known as the Network Asset Indices, and these provide an indication of the risk of condition-based failure of network assets.

For most of our asset types or classes⁵², the approach to undertaking this forecast of probability and consequence of failure is specified in the Common Network Asset Indices Methodology (CNAIM). This is a common and systematised approach to assessing asset risk that was established in the early part of ED1 and approved by Ofgem. Fundamentally, it uses condition and other data to identify a Probability of Failure (PoF) for an individual asset, which can be combined with an assessment of Consequences of Failure (CoF) to create a total risk score. This score can then be projected through time using common deterioration assumptions within the methodology.

For ED2, this approach has been further developed in the CNAIM2 methodology such that the difference in lifetime risk resulting from an intervention such as replacement of equipment can be measured and compared to the cost of making the intervention to check that the overall benefits outweigh the costs. As part of this approach, we measure the impact of interventions using the metric of risk points, identifying the difference between the pre- and post-intervention risk.

⁵². Including our ground-mounted transformers & switchgear, together with wooden poles, steel towers and our oil- and gas-filled cables.

A summary of our Network Asset Indices Methodology (NAIM), which fully complies with Ofgem's Common NAIM requirements is included as [Annex 25](#). This includes additional context of the development of CNAIM itself.

In ED2, this is used in the NARMs framework where we identify:

1. our forecast risk start position in 2023;
2. what would happen to this risk level by 2028 if we did nothing; and
3. what our proposed 2028 outcome would be, and what volumes of work we are proposing to achieve this.

As noted in [section 5.2.1.1](#), we have discussed our approach in this area with customers and stakeholders, and explored their attitude to underlying network health and risk more generally. The strong feedback that we received was that we should at least look to maintain network risk at its current levels, given the increasing importance of electricity in the future with the Net Zero transition.

Our plan looks to achieve just that, through a balanced portfolio of investment in our different asset types. The cost of this plan is also reduced through our use of techniques such as refurbishment, a number of which are the direct result of previous innovation programmes.

[Section 9.4.2.1](#) gives further detail on how we have used the CNAIM methodology to develop our proposals for maintaining network risk through ED2. We have also prepared Engineering Justification Papers (EJPs) which cover the detailed proposals for each of our main equipment types within the NARMs scope. These are referenced through [Annex 25](#).

8.3.2.2 Assets not included in the NARMs framework

A number of our equipment types are not included in the NARMs framework. This is usually because detailed condition data is not collected due to the equipment's inaccessibility (eg buried cables) or low cost, where the costs of inspection are high compared to the cost of replacement⁵³. In these cases, our activity levels are driven by responding to known and emerging reliability issues such as clusters of faults on the same length of cable.

In ED2, we are forecasting increases from current levels for a number of these equipment types. This is due to the identification of issues which are most effectively dealt with through asset replacement and/or the increasing urgency of replacement work as this equipment ages and deteriorates.

In some cases, these forecasts are supported by our development of risk-based models which use CNAIM principles to allow us to identify the highest priority units for replacement. An example of this is our model for overhead mural services. These are fixed to the outside of houses and were originally installed to enable cheap connection to the electricity mains through multiple houses sharing one connection. Our new model enables us to identify the worst condition ones for replacement and also ensure that the new service we install is future proof for future loadings.

Where our ED2 forecast for these assets is significantly higher than the current rate in ED1, we have prepared detailed EJPs which outline the need, justification and costs of the proposed programmes. These are referenced through [Annex 29](#).

53. For example, services to individual properties and equipment mounted directly on wooden poles

8.3.2.3 Civil structures

Much of our equipment is housed in specific buildings or supported by civil structures. We have approximately 15,000 ground-mounted operational sites and of these approximately half have buildings containing operational assets. Management of operational buildings is included as part of our asset management strategy used for all operational equipment and is monitored using the same condition data capture process.

8.3.2.4 Communication equipment

Our communication equipment enables us to monitor and manage the electricity network remotely from our central control room. We own and operate a private communications and data network to do this. This equipment is also subject to a specific asset management approach which recognises that it has a much shorter operating life than is typical for an electrical network.

Following a massive ramp up in the amount of control equipment on the network over the last decade to deliver significant improvements in reliability, the health of the communications equipment is a key driver of the performance we deliver for our customers.

8.3.2.5 Operational IT

The key strategic focus of our Operational IT in ED1 has been the delivery of a new Network Management System (NMS), which is critical to management of the electricity distribution network. The new system, delivered by our strategic partner Schneider Electric, is the best possible platform for current management and future Smart Grid needs.

NMS not only supports optimal management of the electricity network but it also enables ongoing improvement of customer service based on delivery of better customer data around service impact and restoration. Our Customer Contact Centre employees will have access to NMS data to facilitate this. The new NMS facilitates delivery of future smart grid functionality, including the delivery of innovative DSO capabilities.

Going forwards we build upon the NMS foundation layer as we develop our Operational IT requirements to support the development of flexibility markets and the deployment of these resources to manage constraints on the network.

Our IT strategy describes the development of our Active Network Management systems and how we will utilise smart meter data to automatically operate and control the network configuration to provide maximum capacity to customers. Some more detail on our overall IT strategy is described in [section 8.4.2](#) below and the detail can be found at [Annex 26](#).

8.3.3 Managing the network's safety and environmental impacts

8.3.3.1 Reducing environmental impacts

We recognise the impact our operations have on the environment and regularly report on our impact and what we're doing to reduce it. It's an area supported by our customers and stakeholders and we set out in our detailed Environmental Action Plan ([Annex 14](#)) how we will reduce it further. A number of environmental improvements can be achieved by changing the network equipment we use, such as cables insulated by a bio-oil, and this activity is the direct work on the network to make such changes.

8.3.3.2 Reducing electrical losses

In parallel with our approach to decarbonising our own operations, there are a range of options for reducing the amount of electricity lost from the network in the form of ‘losses’. This electricity has to be generated (with an associated carbon cost) and paid for via bills.

In addition, the connection of large amounts of small-scale renewable generation at lower voltages can actually increase losses from the network. In ED2, we propose to continue our approach to managing losses through a programme of targeted replacement of higher loss equipment and also opportunistically upsize assets (and hence reduce losses) in the course of other work. The details of this strategy are set out in [Annex 27](#) and the associated Cost Benefit Analyses (CBAs).

8.3.3.3 Ensuring standards compliance

We have a legal responsibility to ensure our network remains safe. Part of this requires us to ensure adequate clearances of live electrical apparatus from buildings and the ground to minimise the risk of accidental contact.

Since 2006, we have been rectifying these clearance issues where they are known to exist and have largely eliminated them. We do however regularly check our overhead lines for any new issues, eg construction of new buildings near an overhead line and take steps to ensure adequate clearances are maintained.

8.3.3.4 Undergrounding for visual amenity

Since 2005 we have been working with our stakeholders to continually develop a programme of undergrounding for visual amenity in National Parks and Areas of Outstanding Natural Beauty. This programme has successfully removed lines from a number of prominent sites and become a model of public-private partnership working.

Potential sites for undergrounding are identified by stakeholders such as the National Park Authorities. Our engineers then design and cost-up projects to address these sites. The actual site prioritisation and selection is then undertaken by a specialist stakeholder panel. We work with relevant stakeholders to ensure that all of the specific allowance made available by Ofgem for this activity is fully utilised.

8.3.4 Improving resilience to extreme events

As well as maintaining performance under normal operating conditions, we also have to plan for more extreme circumstances. This activity describes the specific work to change the network to manage or mitigate these risks which may have a lower chance of happening, but a big impact on customers when they do occur.

8.3.4.1 Preventing flooding

We have developed a number of innovative techniques to protect parts of our network from flooding during the ED1 period as we have increased protection to address the risks that became apparent during the terrible, record-breaking storms of 2015 and 2016. This involves constructing water tight barriers around some assets, improving pumping capabilities and remote monitoring at others and even lifting whole substations on to 3m high stilts to escape potential flood waters.

8.3.4.2 Preparing for new Electricity System Restoration (ESR) standards (previously 'Black Start')

We are also including in our plan the measures to comply with potential higher standards for Electricity System Restoration (ESR) resilience and also to ensure that our telecommunications equipment remains suitably resilient. As the networks of the future are increasingly data-enabled, it is more important than ever that the data networks that support this are as at least as resilient to external threats that the electrical network.

8.3.5 Ensuring capacity is available for all

The demand for electricity is likely to increase significantly from its current levels in all scenarios as the transport and heat sectors are increasingly electrified. Although there are likely to still be some offsetting reductions from energy efficiency improvements and changes in industrial demand, nonetheless we need to plan for an increase in low carbon technologies (LCTs) both in consumptions and the connection of renewable generation to our network.

In 2019, we produced our first 'Distribution Future Energy Scenarios and Regional Insights' (DFES) document which identified future projections for load growth in the North West under a range of scenarios. This has formed the basis of our subsequent calls for flexible services in specific locations identified as reaching capacity constraints. In its updated 2020 form⁵⁴, it also underpins our longer-term forecasts for reinforcement requirements into RIIO-ED2 and beyond.

We are working with the industry through the Open Networks project to standardise and further develop the DFES process such that we can give clear signals as to future capacity requirements and a clear and simple approach for potential providers to interact with us and hence unlock the potential of flexible solutions.

In terms of the network requirements, the three main contributory areas are the appropriate and timely provision of capacity, the removal of constraints to the connection of renewable generation and the unlooping of shared services where LCT uptake is likely to enable full utilisation of the LCT and also mitigate against the safety risk of overloaded services.

As part of our plan, we are also proposing the introduction of a capacity mechanism to deal with the uncertainties of future load growth due to consumer uptake of LCTs.

8.3.5.1 Supporting community energy

Community energy has an important role to play in the path to Net Zero, however to date the number and scale of community energy schemes has been limited. Working with community energy groups we have developed a community and local energy strategy that describes how we can provide specific support to such groups as they develop their projects.

In ED2 we will also be able to provide additional funding support for the most deserving cases as part of our detailed plans for supporting the community energy sector. Further details on our specific proposals can be found as [Annex 28](#).

8.3.5.2 Supporting energy efficiency

There are a number of ways we will support energy efficiency. We will provide advice to customers via our website and undertake extensive promotion to encourage customers to improve their energy efficiency and tell them how they can do it.

Additionally, when purchasing flexibility from the developing markets we always make it clear that energy efficiency can be used as a valid technique for reducing energy demand. Larger

54. <https://www.enwl.co.uk/get-connected/network-information/dfes/>

customers are able to contract with us directly and smaller customers through an third party who can aggregate the effects of lots of energy efficiency improvements.

Our third support to energy efficiency is through working on our own network using the Smart Street technology. Smart Street is our innovative and award-winning initiative to reduce customers' consumption and hence bills by dynamically managing the voltage on the LV network. It has been proven to reduce customers' energy consumption by up to 8% leading to a reduction of up to £60 in annual energy bills and we are currently rolling it out to 64,000 customers in the North West as part of a £18m project funded under the Innovation Rollout Mechanism (IRM) in RIIO-ED1.

There are approximately 250,000 fuel poor households in the North West that cannot afford to keep adequately warm at a reasonable cost, given their income. As such, the scope to roll out the Smart Street initiative further is significant (see CVP, [section 5.5](#))

8.3.6 Making new connections

Connecting properties efficiently and economically is a crucial service for our customers. It is a service that facilitates economic growth and allows us to support delivery of our stakeholders' priorities. New connections can be for:

- new electricity demands, such as a newly built house, housing site or business;
- generation connections, such as wind and solar farms, or
- unmetered connections, such as local authority street lights.

We offer a fair, efficient and competitive service to all customers seeking a new connection. We believe that competition is in our customers' interests as it widens choice, drives improvements in service and reduces costs. We make sure our customers in the North West benefit from competition and have been at the forefront of developing a competitive market for connections in the electricity industry.

There are some activities, such as ensuring that all new assets are constructed to suitable standards, that we carry out to protect customers and support the competitive connections market.

Sustaining this level of competition is core to our forward connections strategy, further details of which can be found at [Annex 7](#).

The level of activity we undertake in this area will in part be dependent on the result of Ofgem's ongoing Access and Charging review and consequently the extent to which the costs of new connections are charged to those requesting the connection or socialised. Greater socialisation of costs is likely to lead to an increase in the level and number of connections applications.

In terms of service standards, we are currently assuming a continuation of the current ED1 requirements on the timescale for providing quotations and then completing the final connection. This area is currently being discussed within the industry to identify what the form of targets should be going forwards.

8.3.7 Supporting the smart meter roll-out

In some instances work may need to be carried out on our network to facilitate the installation of a smart meter. Our plan is based on a need to undertake work in 7% of the remaining smart meter installations that are still required to complete the roll out and to comply with a nationally agreed service level agreement.

8.3.8 Diverting our equipment

Diversions describe the activity required when we have to move our assets because the current route or site becomes unavailable, for example through the termination of the legal rights to locate our equipment, or because of the construction of a new road.

Where diversions are required, at the specific request of third-parties, we will seek to charge them where appropriate. However, where the diversion means that a new and potentially better asset replaces the old one we will make a contribution to the costs to reflect this improvement in our network.

Every year we deal with a number of claims from property owners relating to the reduction in value or productivity of their property and/or land as a consequence of our assets. In these cases, we often pay the grantor a sum to convert our access right from a terminable wayleave to an easement, which gives us permanent right to remain.

This is done where it is cheaper than moving the assets involved and where there is a continued requirement for the assets. In some cases, it is cheaper to move or divert the assets. This may also be the case where the landowner or developer wishes to develop a new site and serves us with a termination notice.

8.4 Running an efficient company

8.4.1 Managing our people

We have a centralised Human Resources team, responsible for recruitment, payroll, development and the well-being of our people. They also deliver non-operational training, ie that not directly related to operating the network. These training programmes include aspects of our customer service such as our vulnerability awareness training.

8.4.2 Managing our IT

Technology, information and data are vital to every business, enabling everything from improved customer service, to driving efficiency and rapid innovation.

Within the electricity distribution industry, it will take on an even greater significance because of the need to: digitalise our businesses; open-up our data to improve transparency and fuel innovation across the energy system; support the road to Net Zero carbon. Additionally, the growing importance of IT will require us to bolster the cyber resilience of our network to reflect the bigger role of electricity in all our lives and an increasingly hostile “cyber” world.

Our IT underpins our Digitalisation Strategy and is vital to support our collective journey to Net Zero carbon and will help us transition to delivering distribution system operations (DSO) and implement the recommendations of the UK’s Energy Data Taskforce (EDTF).

Our digitalisation strategy is aligned to the objectives and action plans of these initiatives as well as the Department for Business, Energy and Industrial Strategy (BEIS) energy strategy and policies and the Energy Network Association’s Open Network Project.

For our customers, consumers and stakeholders, this will mean increased openness and transparency through improved digital services, which will support market innovation, energy supply chain efficiency and economic growth.

Our plans include:

- **Digitalisation Strategy** – outlining how we will leverage technology that uses digitised data to transform and automate business processes and create additional value for consumers, customers and stakeholders (see [Annex 21](#))
- **Digitalisation Strategy Action Plan** – describing what we have done and are planning in the next six months to deliver our digitalisation strategy (see [Annex 21](#))
- **IT Strategy and Investment Proposals** – describing how IT will support our digital transformation and what we will invest in (see [Annex 26](#))
- **Data Strategy** – providing specific guidance on how we will implement the Data Best Practice guidance (see [Annex 18](#))
- **Cyber Resilience Plan** – detailing our IT and OT Cyber Plans (see [Annex 11](#)).

8.4.3 Managing our buildings

The aim of our property strategy is to provide a consistent standard across the estate, encourage staff to respect their working environment, identify and implement innovation wherever there is demonstrable benefit, develop the non-operational estate to its maximum potential and achieve the optimum balance between leasing and owning the non-operational estate.

Excluding network locations, our property estate consists of 14 sites, a combination of offices and industrial depots servicing the whole business footprint. In addition, we have a training academy located adjacent to or Blackburn depot and our control rooms are based at our Manchester and Preston office locations Through ED2 we will work to make more of our buildings carbon neutral providing a leading example for the region.

8.4.4 Running our corporate functions

Many colleagues are involved in running our corporate functions and meeting all our statutory and regulatory obligations as well as delivering efficient overall management and support of the business. We operate a robust governance and control framework including extensive external audit. These activities include paying suppliers, running the finance function, dealing with Ofgem and dealing with investors and financial markets, communications and stakeholder engagement, managing and paying taxes and insuring the network and operations.

8.5 Performing our other business functions

We undertake some activities that are driven by the requests of individual customers, by the need to support specific projects or to ensure that we comply with the obligations placed on us as a network company. Most of these are funded in slightly different ways to our other areas of expenditure, with many of them funded by the customer who requests the work.

8.5.1 Making metered connections (outside price control)

Our customers can choose who makes their connection for them. We offer an end to end connections service. Alternatively they can use an independent connection provider (ICP), who will complete the work required and then transfer ownership of the equipment installed to us to operate and maintain, or an independent distribution network operator (IDNO) who will complete the work, retain ownership and operate and maintain the equipment on the customer's behalf.

Irrespective of who the customers choose, they pay for the work to make the new connections to our existing network.

In some cases, connecting to our network requires us to reinforce the existing network to create additional capacity or ensure any additional load from increased demand does not compromise the quality of supply for new and existing customers.

8.5.2 Making unmetered connections (outside price control)

There are circumstances in which it is not practical or financially viable to meter a supply as the cost of metering could considerably outweigh the value of the electricity consumed. These are typically connections to street lighting and other highway equipment. Our plan includes the activities of making new connections, transferring connections to new equipment and disconnecting existing unmetered connections.

8.5.3 Undertaking other customer-funded activities

There are other services that we provide to a variety of customers on request, these services include:

- where a customer wishes to move their service position;
- revenue protection activities to combat theft of electricity; and
- construction of assets for other DNOs or National Grid at shared sites.

8.5.4 Paying our licence and grid connection costs

Ofgem determine how much we should pay for our distribution licence fees and to National Grid for the costs of their transformers to connect our network to the national grid.



Overall expenditure forecasts

This section summarises the key trends in the costs for the activities described in [section 8](#).

In section 9

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Section 9: Overall expenditure forecasts

This section summarises the key trends in the costs for the basic core activities described in [section 8](#), as well as the extended activities to meet the ambition that our customers and stakeholders have told us they want in ED2. We have significantly improved efficiency during the current regulatory period, sharing significant savings with customers through lower prices. This has been enabled by the powerful efficiency incentives that are a key feature of the RII0 regulatory regime. These gains are consolidated into our forecasts here, delivering significant additional benefit to customers. We also plan for continued efficiency improvements across the ED2 period with underlying efficiency improving by 0.5% per annum.

9.1 Summary cost breakdown

The table below summarises the costs of delivering all of the proposals in described in [section 5](#) of this draft plan, with the costs shown for each of the activities required to enable this delivery as described in [section 8](#).

Category and description	Draft business plan £m	ED1 average £m	ED2 average £m	Change
20-21 prices: Engaging with customers and managing network activities				
Engaging with customers <ul style="list-style-type: none"> Running the customer contact centre Running the control room Keeping our records up to date 	70.8	7.9	14.2	80%
Supporting investment delivery <ul style="list-style-type: none"> Design and planning Project management Work management Managing materials and stock Operational training Vehicle repair and operations Setting network policy and standards 	274.9	42.1	55.0	31%



Category and description	Draft business plan £m	ED1 average £m	ED2 average £m	Change
Replacing and investing in non-operational assets <ul style="list-style-type: none"> • Maintaining and replacing our IT systems • Investing in our buildings • Replacing our vehicle fleet • Investing in tools and equipment 	85.9	11.6	17.2	49%
Innovation (research, design and development)	27.9	6.6	5.6	–15%
20-21 prices: Maintaining and repairing the network				
<ul style="list-style-type: none"> • Repairing faults • Dealing with severe weather • Inspecting and maintaining the network • Tree-cutting 	300.5	50.9	60.1	18%
20-21 prices: Investing in the network				
Improving reliability and speed of restoration <ul style="list-style-type: none"> • Improving performance • Improving service for worst-served customers 	40.6	6.5	8.1	24%
Replacing and refurbishing network assets <ul style="list-style-type: none"> • Services • Rising lateral mains • Woodpole lines • Steel towers • LV & HV cables • EHV & 132kV cables • LV & HV plant • EHV & 132kV plant • Civil structures • Communication equipment • Operational IT 	502.1	65.6	100.4	53%
Managing the network's safety and environmental impacts <ul style="list-style-type: none"> • Maintaining a safe network • Reducing environmental impacts • Reducing electrical losses • Ensuring standards compliance • Undergrounding for visual amenity 	112.6	8.7	22.5	158%
Improving resilience to extreme events <ul style="list-style-type: none"> • Preventing flooding • Protecting critical national infrastructure • Preparing for a electricity system restoration 	8.1	2.1	1.6	–23%



Category and description	Draft business plan £m	ED1 average £m	ED2 average £m	Change
Ensuring capacity is available for all <ul style="list-style-type: none"> • General reinforcement at EHV • General reinforcement at LV and HV • Fault level reinforcement at EHV • Fault level reinforcement at LV and HV 	116.6	12.3	23.3	89%
Supporting energy efficiency	76.8	2.2	15.4	588%
Making new connections	90.8	2.6	18.2	594%
Supporting the smart meter roll-out	10.9	4.3	2.2	–50%
Diverting our equipment	77.0	4.6	15.4	233%
20-21 prices: Running an efficient company				
<ul style="list-style-type: none"> • Managing our people • Managing our IT • Managing our buildings • Running our corporate functions 	237.6	37.8	47.5	26%
Total net costs inside the price control	2,033.3	265.9	406.7	53%
20-21 prices: Performing our other business functions				
<ul style="list-style-type: none"> • Making metered connections (outside price control) • Making unmetered connections outside price control • Undertaking other customer funded activities • Paying our licence and grid connection costs 	316.8	84	63.4	–25%
Total net costs outside the price control	316.8	84.0	63.4	–25%
Total DNO Net Costs	2,350.2	349.8	470.0	34%

9.2 Engaging with customers and managing network activities

9.2.1 Engaging with customers

Many of the proposals for new or expanded services described in [section 5](#) of this draft plan require an expansion of resources dedicated to communicating to customers or direct support for customers in more vulnerable circumstances. Therefore the costs for these activities are increasing significantly.

9.2.1.1 Running the customer contact centre

Our customer contact centre is at the heart of all our engagement with the communities we serve across the North West and leads the ways we support customers in vulnerable circumstances. Whilst underlying costs in the contact centre are forecast to reduce with increased efficiency, the involvement of the contact centre in half of all the proposals in this business plan and the considerable steps for in support for customers in fuel poverty and other vulnerable circumstances means that these is a significant increase in expenditure in this area.

These new services include collaboration with other utilities to support vulnerable customers, managing the use of timed appointments for vulnerable customers and continuing to expand the Priority Services Register.

Increasing communication channels for customers, expanding our enquiry and complaints service, increasing our support funds and increasing support to business customers are also drivers of increased cost.

9.2.1.2 Running the control room

Our control room is the hub that drives the performance of the network. Whilst underlying costs are falling, there are two cost pressures that are reflected in control room expenditure forecasts. The increased investment programme drives more outage management for the control room to co-ordinate and the connected nature of all new equipment presents a growing commissioning requirement for control room staff.

Developments in our Operational IT platforms to support our distribution system operation roles and facilitate the region's transition to Net Zero all also require significant control room involvement.

9.2.1.3 Keeping our records up to date

Good data is an enabler for the vast majority of our proposals and therefore the data management team that keep our records up to date are involved in many of the new investments we will be making in ED2. We have invested heavily in improving the quality of our asset data recently in preparation for the smart meter roll out and the development of our new Network Management System. This provides the opportunity for some cost savings in ED2 to be realised.

Our data strategy describes how we are sharing this information with a wide-range of customers and other parties to enable innovation across the energy value-chain and can be found at [Annex 18](#).

9.2.2 Supporting investment delivery

The costs for work to support investment delivery such as design and planning and project management are driven in part by the programme of work we have to deliver. Our programmes of work to provide capacity on our network in support of the transition to Net Zero and to maintain the overall health of the network and its risk of failure are growing significantly, as described later in this part of the draft plan, and therefore these supporting activities will also increase. However, these increases are much lower than the increases in the overall capital programme because of improving efficiency and economies of scale.

9.2.3 Replacing and investing in non-operational assets

9.2.3.1 Maintaining and replacing our IT systems

The key driver of our costs related to non-operational IT is the need to refresh and replace legacy systems, particularly our enterprise management system for finance and work management which will no longer be supported by its vendors because of its age in the ED2 period. [Annex 26](#) – IT strategy includes further details of our forward plan including individual project proposals in this area. IT is a fast moving aspect of our business and so this element of our draft business plan could be subject to a range of updates in our final business plan.

In ED2 we will enhance systems to better serve customers – especially those in vulnerable circumstances; better inform and support our workforce and contractors; and entirely change consumption billing by using Smart Meters.

We'll evolve how we deliver and consume IT to be as affordable as possible, and with enhanced security controls we'll make use of far more data – such as Smart Meter readings – and share data more so that new entrants to the energy market can offer more services to customers, supporting the move to Net Zero.

9.2.3.2 Investing in our buildings

There are two drivers of costs in this category, our work to maintain our buildings on an ongoing basis and work to deliver an additional carbon neutral depot every year of ED2. This is driving up costs compared to the average cost levels across the ED1 period. Further details on our Net Zero depot programme can be found within our Environment Action Plan (EAP) – [Annex 14](#).

9.2.3.3 Replacing our vehicle fleet

Our vehicle forecasts are based on two component parts, the costs of vehicles replaced on a like-for-like basis; and the costs of introducing electric vehicles into our fleet.

We expect to maintain our fleet at the current size of approximately 960 vehicles, wheeled plant and trailers, replacing vehicles at the end of their asset life.

Where the technology is available and the whole life cost is neutral to our customers we will introduce electric vehicles into our fleet. We estimate that the additional initial purchase costs will be offset by a reduction in fuel costs over an eight-year period. This will mean that the introduction of electric vehicles will result in a higher capital outlay, but costs will be recovered in the remaining years of ED2 and ED3.

Approximately half of the fleet will be scheduled for replacement during the five year period of ED2. From the total vehicles identified for replacement we plan to replace about 200 with an electric equivalent. This will focus predominantly on the replacement of our 4x4 vehicles and jointer vans along with a continued increase in the use of electric mini diggers.

The scale of this electric vehicle fleet justifies the inclusion in our forecasts of the costs of electric vehicle maintenance facilities including a workshop and telematic application technology. Further details on our fleet electrification programme can be found within our Environment Action Plan (EAP) – [Annex 14](#).

9.2.3.4 Investing in tools and equipment

We use a range of specialist tools and equipment in undertaking our activities and these need continual repair and replacement. In ED2, some of the new technology that we will be using on the network will also need specialist equipment to commission and maintain it.

9.2.4 Innovation - research and development

Our innovation programme has been extremely successful in developing new techniques to support the transition to a zero carbon economy in ED1. We have also developed and proven new technologies, such as Smart Street, that deliver significant customer benefits and will be rolled out further as part of this business plan.

Our RIIO-ED2 innovation plan is ambitious, with an increase on that achieved in RIIO-ED1. Our analysis of the benefits of our planned innovation in RIIO-ED2 reveals £171m of future benefits. More details are set out in section 6.5.5 of our Innovation Delivery Plan ([Annex 3](#)).

The NIC and Low Carbon Network Fund (LCNF) projects undertaken during RIIO-ED1 will accelerate the transition to Net Zero whilst securing huge savings for our customers, in particular for those in vulnerable situations. They will also act as key enablers of our

development to DSO, by providing the functionalities and capabilities required and allowing us to operate a flexible distribution network. Our NIC innovation projects are expected to bring a total of £77m in savings for our customers during RIIO-ED2. This demonstrates why it's important for us to continue to innovate through RIIO-ED2, as the need to decarbonise our energy system in an affordable manner grows.

The NIA has been an invaluable facilitator of innovation during RIIO-ED1. It has allowed us to deliver cutting-edge innovation projects across the TRL spectrum that have the potential to benefit our customers in the short, medium and long-term. To the end of March 2021, the NIA has allowed us to invest £18.6m into a portfolio of innovation projects. These projects have led directly to benefits and savings for our customers, but also served to de-risk much larger and more expensive NIC projects by testing solutions before investing more of our customer's money. During RIIO-ED2, we expect the deployment of our 3 projects into BAU to provide approximately £94m in benefits for our customers.

9.3 Maintaining and repairing the network

We expect the volume of faults to fall slowly as we continue to maintain overall asset risk and target the weakest parts of the network. However, as we deploy new techniques to identify faults before they impact our customers this does create a new volume of work to basically fix the network before the fault actually happens.

We have looked at the initiatives that we have identified to deliver the improved service levels described in [section 5](#) and produced a list of additional actions that will impact on our costs and performance in the RIIO-ED2 period. We have classified these as either impacting the volumes of faults that we will have to deal with or the unit cost of addressing those faults.

As part of our benchmarking exercise we have reviewed our unit costs against those reported by the other DNOs and adjusted them where appropriate to reflect our ambition to deliver at a competitive unit cost.

The overall effect is an increase in the costs of repairing faults, reduced costs for inspecting and maintaining the network and increased costs for tree cutting, primarily to improve storm resilience and address the impacts of Ash Dieback disease, as outlined in [section 5.2.2.2](#).

9.4 Investing in the network

Our network investment programme is at the heart of our ED2 proposals and drives many of the commitments we are making on future service levels and achievement of wider goals such as Net Zero. Our overall programme design is guided by the insight we have received from customers and stakeholders on their priorities and willingness-to-pay.

The detailed design of our programmes to support these aims is also supported by a range of analysis tools and decision-making approaches. [Annex 29](#) sets out in detail how we have used the Cost Benefit Analysis (CBA) tool specified by Ofgem and how we have developed Engineering Justification Papers (EJPs) to support key elements of our proposals.

EJPs not only set out the details of the requirement and our proposals, but also the other options we explored for meeting the requirement and the reasons why we chose the approach we did. In total, over 70% of our network investment programme is covered by detailed EJPs which are referenced in [Annex 29](#).

The sections below discuss each of the key network investment activities in turn and the key elements behind their ED2 forecasts.

9.4.1 Improving reliability and speed of restoration

Our programmes to directly address the service customers receive on our poorest performing circuits and also those areas with high levels of vulnerability will drive an increase in expenditure dedicated to improving the reliability of the network compared to ED1.

9.4.2 Replacing and refurbishing network assets

As described in [section 8.3.2](#) for many of our asset classes our asset management approach utilises the Common Network Asset Indices Methodology (CNAIM) approved by Ofgem to assess asset risk.

Our forecasts for the costs of replacement and refurbishment of those parts of our network where the CNAIM methodology is not appropriate are described separately.

9.4.2.1 Common Network Asset Indices Methodology (CNAIM)

The main aim of the replacement and refurbishment programme is to manage the underlying lifetime risk of the network. This is achieved by intervening on equipment when it is higher risk but before it fails. As equipment deteriorates over time, its risk of failing starts to increase. If it does fail, the consequences can be significant and costly. Judging when to intervene and in what way is a key asset management challenge and one where we have developed sophisticated analytic techniques to assist.

CNAIM covers the vast majority of our overground equipment including switchgear, circuit breakers and transformers at substations of all voltages; supports for overhead lines (wood poles of steel towers) and the lines themselves at all voltages; underground cables with assisted or pressurised insulation (either gas or oil).

The overall level of investment in ED2 depends on four key assumptions:

- the desired overall risk level to be achieved;
- the assumed incidental impact of other work;
- the balance of interventions across different equipment types; and
- how targeted the programme can be in terms of identifying the very highest risk equipment for priority attention.

We have optimised our investment forecast to ensure the most efficient delivery against the risk target. This optimisation involves three aspects:

- reviewing the balance of investments across asset types;
- re-evaluating the refurbishment vs replacement trade-offs by asset type; and
- ensuring optimal targeting at the highest risk examples of each asset category.

As the network risk is a sum of the risks for all the individual equipment types, it could be possible for example to manage overall risk by significantly over-investing in one type of equipment and completely ignoring another such that its rate of failures begins to increase significantly. This might achieve short-term objectives, but would result in longer-term issues.

Based on customer and stakeholder feedback as described in [section 5.2.1.1](#), our plan aims to deliver a level of lifetime risk in 2028 at the same level as 2023, taking into account the expected incidental impacts on risk of our other proposed programmes (which may also replace poorer-condition assets). As a consequence, we have developed a balanced programme which seeks to deliver stable underlying risk levels at an efficient cost.

The resulting outcome in terms of investment by major equipment type is as follows:

£m (20-21 prices)	Draft business plan
Transformers	70
Switchgear	89
Overhead lines	41
Underground cables	49
Total	249

In our submission, we include supplementary Engineering Justification Papers (EJPs) which give further detail on each of these equipment types and the proposed programmes to deliver the appropriate level of risk reduction.

The unit costs used in our submission are largely based on our experience over the first five years of ED1, benchmarked against the performance of the thirteen other DNOs.

Additional unit cost assumptions have been included associated with EU Ecodesign Transformers and the removal of SF₆ options from newly-installed switchgear.

The refurbishment element of this plan largely reflects the continuation of programmes at their current rates including oil regeneration in transformers, tower painting, switchgear refurbishment and oil cable joint renewals. These options have all been individually modelled and shown to generate better risk reduction per £ than replacement where they are applicable.

9.4.2.2 Non-CNAIM

The largest group of assets not covered by the CNAIM methodology are solid cables. This is because it is not possible to collect data on the condition of these cables without disturbing them and, as they have no moving parts, they do not suffer from wear and consequently have very long lives. Additionally the CNAIM approach of measuring condition does not work well for civil engineering structures and is not yet applied to new devices recently fitted to the network because there is insufficient information on how they age over time and what condition measures are good indicators of potential failure.

For these non CNAIM assets our base forecast assumes that replacement activity broadly continues at current levels, predominantly focused on solid cable replacement. For low voltage and high voltage underground cables we have identified a need to increase expenditure to address a particular type of cable that is starting to fail more often. Future versions of the plan will consider more fully the requirements for ancillaries (e.g. batteries), smart device management and the strategy for managing cut-outs and service positions in customer's properties post smart metering rollout.

For refurbishment, the base forecast assumes continuation at current levels with a reduction in protection refurbishment work following the completion of significant work in this area in ED1.

9.4.2.3 Civil structures

Civil works are assumed to continue at current, reduced levels as there is currently little evidence to support increased expenditure in this regard other than where our forecasts also include civil costs associated with other asset replacement.

9.4.2.4 Communication equipment

Our programmes of work to replace communication equipment used to control the electrical network increase as the first generation of remote control equipment comes to the end of its life and greater reliance is placed on communicating with all equipment effectively to continue to improve the reliability of the network.

9.4.2.5 Operational IT

The systems to support the implementation of distribution system operations continue to require a significant operational IT expenditure level. This expenditure builds upon the foundation platform of the new Network Management System delivered in the ED1 period.

9.4.3 Managing the network's safety and environmental impacts

There is a significant increase in expenditure in this cost category as a result of the new safety programmes that we are introducing to address small rural transformers, underground cable pits, overhead line safety and cut-out safety. We are also continuing our programme managing safety in high-rise buildings.

New programmes to address environmental issues such as new legislation on PCBs and our own carbon footprint are also increasing costs in this category. We will continue with a proactive programme to reduce electrical losses in our equipment.

This category also includes assumptions on costs associated with discharging our ongoing environmental and safety responsibilities in legislation such as contaminated land remediation and other environmental liabilities.

The costs of our programme to continue with the undergrounding of overhead lines in Areas of Outstanding Natural Beauty and National Parks will be consistent with current activity levels.

9.4.4 Improving resilience to extreme events

9.4.4.1 Preventing flooding

Our programme for flood protection will be smaller than our existing programme because the largest and highest risk sites have already been protected giving reductions in this cost category. Our programme for ED2 is based on delivering improvements at sites identified as potentially being at risk based on updated flood data from the Environment Agency and the latest climate change impacts assessment from the UK Climate projections 2018 (UKCP18).

9.4.4.2 Preparing for updated Electricity System Restoration requirements

We do not anticipate any capital expenditure in response to the revised standards issued by BEIS as the activities associated with meeting the new standard will require additional staff in our control room. [Section 5.2.2.6](#) includes further details on our proposals.

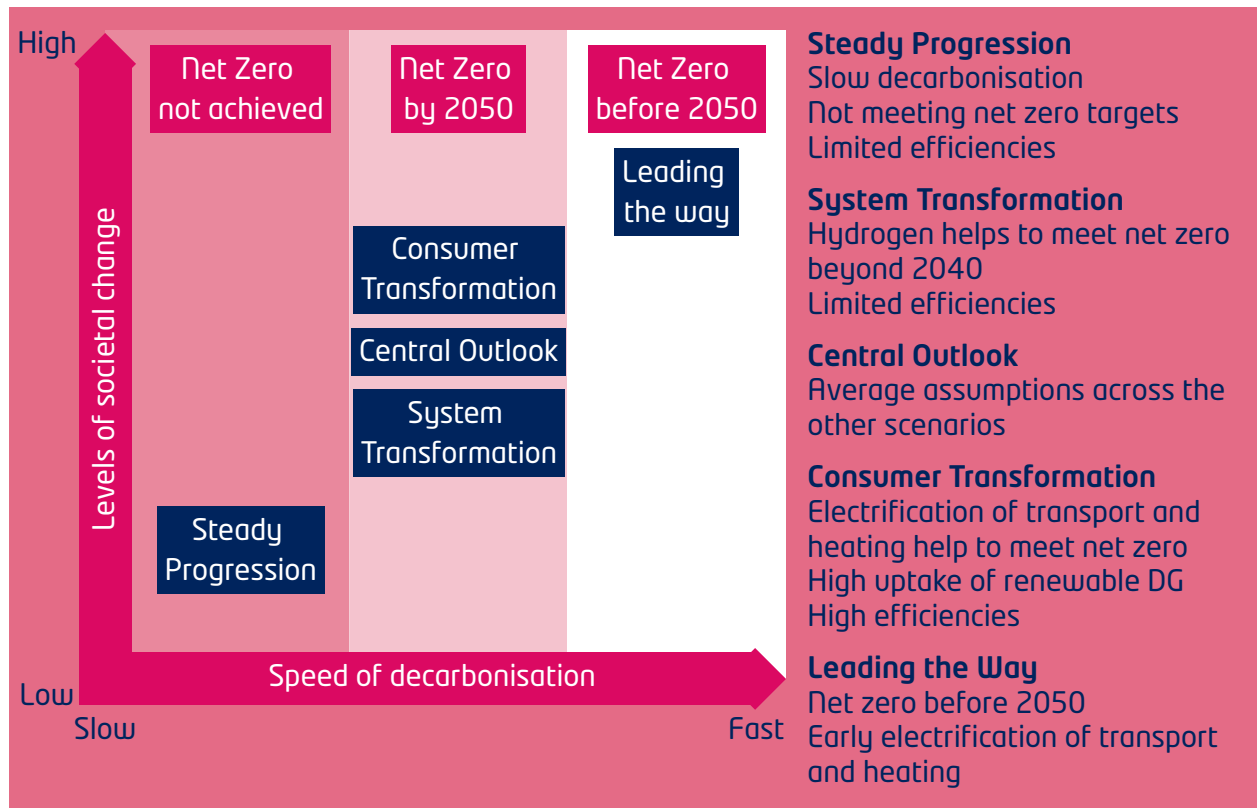
9.4.5 Ensuring capacity is available for all

Even with our industry-leading collaborative work with local authorities to develop regional [decarbonisation pathways reports](#)⁵⁵, capacity requirements remain a major area of uncertainty in the ED2 period. We are required to forecast the effects of the drive to a Net Zero economy and the associated impacts on the electrification of transport and heat together with growth in renewable generation.

The methodology followed to produce our load related investment plan follows a simple framework, as shown below.

55. <https://www.enwl.co.uk/go-net-zero/you-and-your-business/decarbonisation-pathways/>

9.4.5.1 Forecasts



Our forecasts are informed by our 2020 Distribution Future Electricity Scenarios (DFES) which consists of four scenarios that are part of whole system Future Electricity Scenarios driven by national policies to meet Net Zero by 2050 and a fifth Central Outlook scenario defined based on our ATLAS⁵⁶ forecasting methodology. Our forecasts are also informed by accelerated decarbonisation versions of the DFES scenarios which consider the ambition of local authorities in our region to meet Net Zero before 2040.

Our Central Outlook scenario has been identified as the highest certainty scenario that informs an optimal network investment plan used as our baseline (ex-ante) allowance. The other DFES scenarios and their accelerated decarbonisation versions have been used to

- inform a min-to-max investment range that could be funded by uncertainty mechanisms, and;
- confirm via cost assessments that Central Outlook scenario is at similar investment levels with the 2050 Net Zero scenarios and does not foreclose network development beyond RII0-ED2 if decarbonisation is accelerated to meet ambitious early Net Zero targets.

9.4.5.2 Network impact assessment

All DFES 2020 scenarios and their accelerated versions have been used to assess future network impacts, ie thermal, voltage, fault level and harmonic distortion issues. Different approaches have been used to identify Extra High Voltage (EHV or primary) and the High Voltage & Low Voltage (HV & LV or secondary) network investment requirements because of the difference in volumes and costs of interventions required at different voltage levels, as well as the differences in the availability of monitoring data.

EHV network impacts have been identified through a range of processes that extend from a high-level identification of network constraints using comparisons of local peak demand

56. Architecture of Tools for Load Scenarios (ATLAS). NIA project, ENWL. [Online: www.enwl.co.uk/atlas](http://www.enwl.co.uk/atlas)

forecasts with substation capacity to more detailed power systems analysis where detailed electrical parameters and operational aspects are modelled for all EHV assets.

HV and LV network impacts have been identified using different tools and approaches depending on the type of issue. For example, thermal and voltage issues have been identified using our Future Capacity Headroom (FCH) model.

9.4.5.3 Optioneering

We have undertaken a comprehensive optioneering exercise based on the identified network issues associated with forecast levels of demand and generation. Alternative approaches are thoroughly assessed to ensure that the optimal development (“best view”) plan is identified, considering the timing of interventions and not foreclosing future pathways.

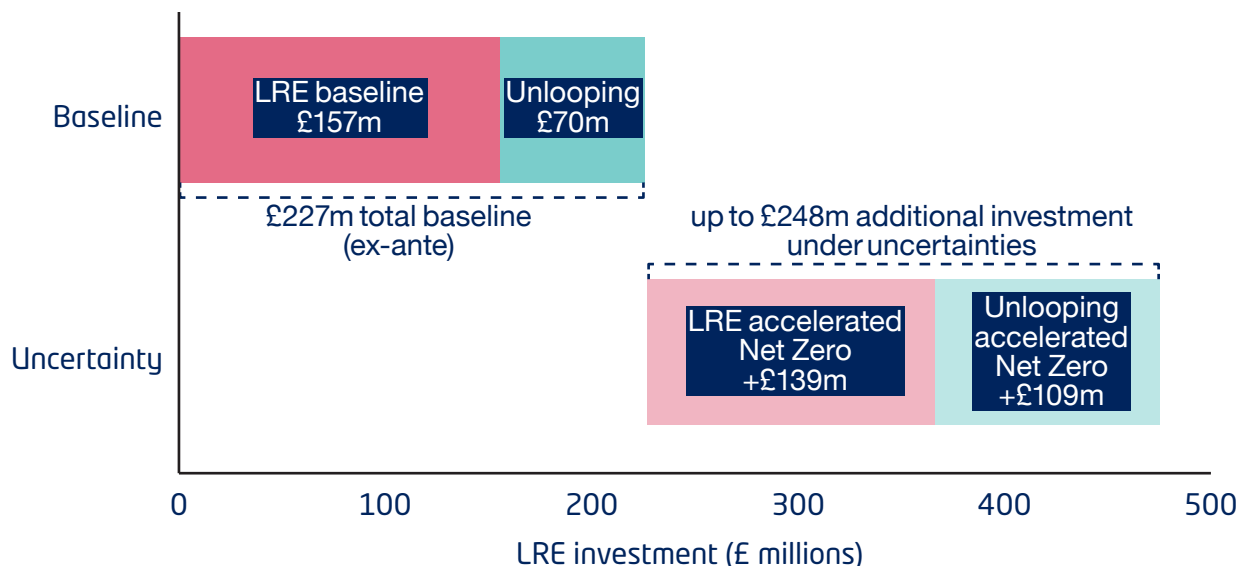
For the development of the EHV network, this is supported by use of rigorous cost benefit analysis (CBA) which ensures that flexible solutions are considered equitably alongside traditional asset solutions. The results of a recent expression of interest for flexible services have been used to estimate at high level the savings from flexibility.

For the HV and LV network, a network optimisation approach has been followed to mitigate all risks from identified issues at minimum cost. The use of permanent LV monitoring is an important first step in the optimisation process, as it allows us to target interventions only when, where and at the proper size needed to avoid stranded and overloaded assets. Our LV monitoring programme overcomes the limitations of smart meter data because it takes into account unbalances and neutral conductor loading. The use of LV measurements from our LV monitoring programme and smart meters will also allow us to procure larger levels of flexible services in HV and LV networks and increase savings.

Engineering Justification Papers (EJPs) have been prepared for every EHV network reinforcement scheme exceeding £2m and for the LV monitoring programme with associated CBAs to justify our proposed interventions.

9.4.5.4 Load related investment plan

The most cost efficient network solutions identified through our comprehensive optioneering process have been selected for our load related investment plan. Costs have been developed for the preferred solutions based on our projected view of unit costs and consistent with future efficiency assumptions. Any overlap with the asset replacement programme was reviewed and duplicated units removed from one or the other programme to avoid double counting.



Using “best view” solutions, informed by our high certainty Central Outlook scenario, our ex-ante cost is £157m, with £63 and £94 million spend required for EHV and HV/LV network, respectively. This cost includes a proposed £20.6m programme for permanent asymmetrical LV monitoring and excludes the proposed service unlooping programme that has an ex-ante allowance cost of £70m. This is the area of our cost base with the highest growth forecast given the scale of the future Net Zero challenge. More information on our Central Outlook scenario from our DFES is available in our Load Related Investment Planning Methodology (Annex 19).

To assess the scale of uncertainty in RIIO-ED2 load related budgets, we have produced and costed network investment plans for all other DFES scenarios and corresponding accelerated decarbonisation versions. The accelerated decarbonisation plan for our region has a total cost of £296m, which is +£139m higher than the baseline ex-ante allowance cost. This excludes uncertainties in requirements for unlooping.

9.4.5.5 General reinforcement at extra high voltage (EHV)

The forecast of future works required on the 33 and 132kV systems includes a level of smart grid discount, but more work is required on how we plan for future flexible services market. At this voltage we have adequate short-term capacity to accommodate load growth at 16 of our 17 Grid Supply Points with the exception of the Harker/Hutton group in Cumbria where large numbers of windfarm applications have essentially used up the capacity. To increase this, we require National Grid to undertake works on their side of the shared site which they are planning to complete in RIIO-T2.

9.4.5.6 Reinforcement at high voltage and low voltage

It is on the lower voltages that many of the constraints will appear in the short term as a result of Low Carbon Technology (LCT) uptake and our programme includes significant proactive programmes of constraint removal where we can identify that these constraints already are or are likely to become barriers to LCT take up in that area. In addition, this forecast includes our responses to localised capacity issues that are identified, or are referred in by customers reporting voltage issues, flickering lights etc.

9.4.5.7 Fault levels

We are additionally planning for the continuation of programmes to remove fault level constraints in key areas. The ‘fault level’ refers to the ability of switchgear to safely clear fault current in the event of a fault and it can limit the capacity of the associated network, either for demand or for export of generation. This can often be the limiting factor that prevents additional generation being connected to a part of the network. Our 6.6kV network is a particular focus in this regard and this voltage forms the majority of our HV system in Greater Manchester. As a result, we have pioneered innovative re-rating techniques on certain types of existing switchgear and our pioneering Respond project has developed a toolbox of techniques we can employ in this regard on higher voltage equipment.

9.4.5.8 Unlooping

Around 40% of the domestic services in our region are ‘looped’, i.e. they are connected to another service cable rather than have a direct connection to the mains. Whilst perfectly safe for traditional domestic demand, their limited capacity can cause issues if a LCT load such as an EV fast charger is connected with a risk of overloading. We are commencing a programme of unlooping these services at locations with existing LCT equipment in RIIO-ED1 and are

planning to significantly scale up this programme in RIIO-ED2 to ‘futureproof’ those services which may be inadequate due to legacy housing design.

9.4.5.9 Supporting energy efficiency

This is a new category of costs created specifically for the Smart Street programme that we plan to roll out in response to customer and stakeholder demand.

9.4.6 Making new connections

This is the element of new connections costs that are socialised and paid for by all customers in line with the current connections charging rules. In general, customers requiring a new connection pay for the cost of it, but if we are required to reinforce our network at higher voltages to accommodate the request, then some of this cost is shared due to the likely future shared benefit of the additional capacity being created.

Forecasting in this area is highly uncertain as it is based on customer behaviour and general economic conditions in the region, however we work closely with stakeholders including Local Authorities to identify likely growth areas. At present, there is also uncertainty regarding the lasting impact of the Covid-19 pandemic both in terms of the impact on economic activity but also with respect to the policy response and potential related stimulus measures.

At present, Ofgem are also consulting on potential changes to the charging rules through the Access & Charging Review and this may result in changes to customer behaviour and hence the number of connection requests if, for instance, more of the costs are socialised. We are inputting to this debate and will update our assumptions in this area when Ofgem publish their final decision.

9.4.7 Diverting our equipment

Our draft plan includes a significant increase in diversions requirements based primarily on land agent activity. We have agreements in place with land owners allowing us to place our apparatus on their land. These agreements allow us to also gain access to our equipment so that we can find and fix faults on the network when they occur, undertake necessary maintenance, or to facilitate other connections to the network in the area. Agreements are usually either a ‘wayleave agreement’ (terminable licence) or an ‘easement’ (also known as a deed of grant – held in perpetuity). There are also two forms of wayleave agreements; annual or termed. The annual agreements pay a ‘grantor’ (the landowner) a rental and/or compensation payment for the placing and retention of our apparatus on their land. These payments are negotiated with the NFU using a model to calculate all of the ‘loss’ elements (or outputs) incurred due to the presence of the apparatus (e.g. loss of time, seed, additional weed control and so on). These costs vary from year to year, increasing and sometimes decreasing according to the costs of the outputs.

Termed agreements are specific to HV ‘Injurious Affection’ (perceived diminution in the value of a property due to the presence of our apparatus) and LV ‘set value claims’. These were agreed with Land Agents when claims were submitted against our HV and LV wood pole network during ED1. In order to ensure that we are securing our network and controlling future cost (consideration being given to the upward trend in house values within the North West and the early conversion of 14 year termed agreements to ensure that we benefit from the % reduction differential as much as possible) our ED2 plan includes for the conversion of the existing HV termed agreements to easements and all new HV claims being secured by way of an easement. We have also included the projected future claims against the underground network in these costs.

Many of our substations are positioned on land we rent from land owners, and we have seen a similar trend in rent payments rising over ED1. This is particularly seen in major urban areas and city centres, where we are seeing rental demands from landlords increasing significantly over and above current rates paid both previously and elsewhere. This is becoming increasingly more apparent as we see the decline in city and town centres as well as the ongoing economic impact of COVID.

We are also seeing a new trend of investors (supported by Land Agents), actively purchasing land on which our substations are located, to make commercial gain on lease renewals. This situation is exacerbated by many older assets being located in buildings in city centres, installed under historical contracts (such as supply agreements) that were not protected in the privatisation of the industry in 1990. As assets age and require renewal, this exposes DNOs to further financial risk. As we release more network data, this will enable investors to download and map our network (as has already been done by Land Agents in regards to Injurious Affection claims against tower and wood pole lines and in ED2, our underground network) allowing them to develop strategies for pursuing and submitting claims associated with our installed equipment. As such, we forecast a continued rise in costs associated with these activities through ED2.

We need to ensure we facilitate the connection of low carbon technologies to ensure the delivery of our Net Zero ambitions. However, these connections will inevitably lead to an increase in the number of land consents, many of which may be 'wayleave' consents, which will also lead to an overall increase in payments. Equally, as we move towards Net Zero, reliance and demand for electricity is expected to rise, increasing the leverage land owners will have over us when agreeing new or renewed leases and consents.

Over the course of ED1 we have seen more aggressive approaches from land owners and their agents, leading to higher volumes of claims, a number of which are accompanied by hostile notices served by individual land owners or their agents. This trend has sharpened particularly over the Covid-19 pandemic with landowners serving Notices to Remove as a trigger to negotiate higher easement considerations and landlords negotiating for increases in rental values through lease renewals due to financial struggles. As such, we are forecasting a greater workload to continue into ED2, driving a greater need for resource in our legal and Land Rights & Consents teams.

Finally, we have seen a sustained and continued increase in diversion costs arising from developer led Wayleave Terminations as well as Injurious Affection and Development Loss Claims (where apparatus is retained in situ). This affects our LV, HV,EHV woodpole, and EHV, 132kV tower networks. We believe this is driven by local authorities designating greenfield sites on the fringe of urban centres as housing sites to meet housebuilding targets set by central government. In addition, brownfield sites that have previously been viewed as non-viable due to for example, the level of ground contamination, are now beginning to see development as the demand for available land increases.

Land Agents are increasingly representing developers in claims against DNOs and this in turn drives up costs associated with any compensation payments and the agents associated fees. As this trend is expected to continue through ED2, the continued expansion of urban areas into the countryside will drive our need to divert our equipment to accommodate new developments.

9.5 Running an efficient company

While the base costs of our corporate activities are reducing with ongoing efficiency improvements a significant number of our new initiatives require significant support from our corporate functions driving an overall increase in costs.

These include stakeholder engagement and community support activities including the creation of new vulnerable customer panels, expanding our referral networks and support for customers in fuel poverty.

We must also include the costs of our support for community energy schemes and decarbonisation advice as well as the development of flexibility services markets. The costs of increased cyber security requirements also add to ongoing IT costs.

Our community outreach teams will be increasing activity associated with safety campaigns and education.

9.6 Significant projects

The most significant projects identified to date include the following, all of which are likely to cost at least £2m in ED2, and each of which is covered by a specific accompanying Engineering Justification Paper (EJP). For each site which is shared across both distribution and transmission, we have asked National Grid to review the associated EJPs.

We are currently consulting on whether to accelerate a sub-set of these projects into ED1 as part of our Green Recovery programme along with other initiatives. These projects will help to support the transition to Net Zero and economic recovery from the effects of Covid-19⁵⁷.

Project and driver	Approx. cost £m
Little Hulton (Manchester) Reinforcement by upgrading cables and replacing the 33kV transformers to accommodate demand growth in NW Manchester.	3.5
Frederick Road GSP (Salford) Replacing current 132kV transformers with larger units and increasing the size of the overhead line circuits to cater for demand growth in Manchester and Salford.	5.9
Southern Gateway (Manchester) Establishing a new primary substation in South Manchester to cater for forecast demand growth and give greater network flexibility.	4.3
Northern Gateway (Manchester) Establishing a new primary substation in North Manchester to cater for forecast demand growth and give greater network flexibility.	4.6
Mayfield regeneration (Manchester) Establishing a new primary substation in Central Manchester to cater for forecast demand growth and planned inner city regeneration activities.	3.1
Lower Darwen (Lancashire) Rearrangement of the 132kV feeding arrangements which will add more 132kV switchgear at the site. This will manage voltage problems under fault conditions and therefore ensure customers receive correct voltage levels at all times.	RIIO-ED2 1.8 RIIO-ED3 1.8 Total 3.6

57. www.enwl.co.uk/greenrecovery

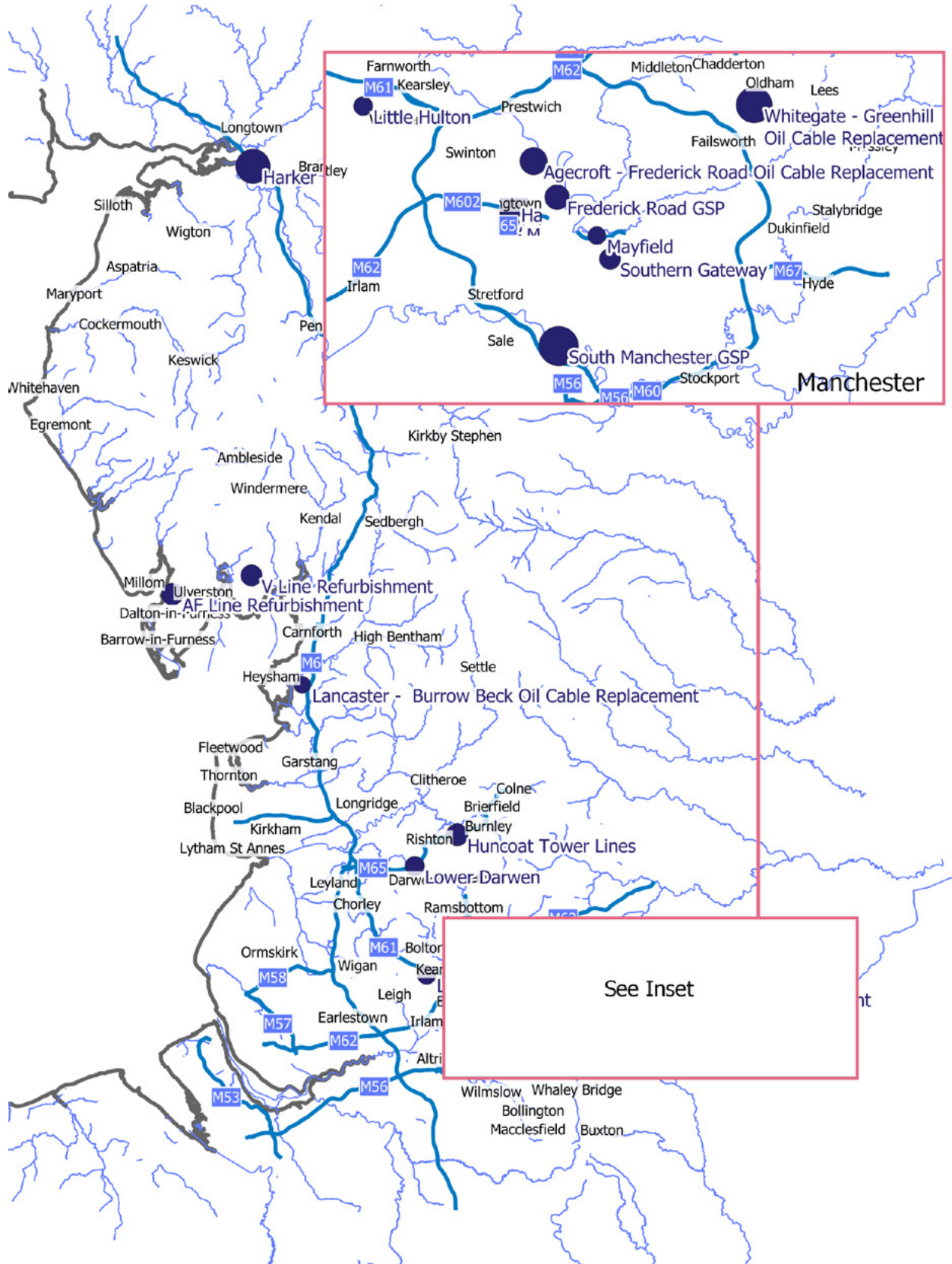


Project and driver	Approx. cost £m
South Manchester GSP The 132kV switchboard and associated plant is at the end of its useful life and will be replaced. This will improve the reliability of supply in the south Manchester area.	15
Harker GSP (Carlisle) National Grid will replace their plant on a shared 132kV switchboard in the ED2 period ⁵⁸ . We will need to divert our circuits to connect to the new plant.	11.3
Lancaster – Burrow Beck 33kV oil cable replacement The 33kV circuits that provide supply to these areas are old and require replacement. They are filled with oil and pose an environmental risk when they fail. They currently are not reliable. New solidly insulated cables will be used to replace the old cables. This will improve reliability and reduce the risk to the environment to nothing. We will also improve the design of the cable layout, improving reliability to our customers.	2.8
132kV Steel Tower line refurbishment: AF line (South West Cumbria) This line of towers is part of a ring system providing supplies to the west of Cumbria. It is exposed to year round corrosion and severe weather as it is very near the coast. This causes the towers, conductor and insulators to corrode. We will carry out a programme of replacing parts of the line which are no longer safe to have in service, therefore improving the reliability of the circuits and making them safe.	4.7
132kV Steel Tower line refurbishment: V line (South Cumbria) This line of towers is also part of the same ring system as the AF line, providing supplies to the west of Cumbria. It experiences the same weather as the AF line with the same effects. We will carry out a programme of replacing parts of the line which are no longer safe to have in service, therefore improving the reliability and safety of the circuits.	4.4
132kV Oil Cable Replacement Whitegate GSP to Greenhill BSP 1 and 2 (Oldham) Greenhill BSP is fed from two 132kV oil cables which are obsolete and pose both a reliability and environmental risk. We will replace these cables with Solidly insulated cable improving reliability and removing the environmental risk.	12.4
132kV Oil Cable Replacement Agecroft BSP to Frederick Road BSP 1 and 2 (Salford) Frederick Road has three circuits feeding it at 132kV. Two of the feeders from Agecroft BSP are oil cables which are obsolete and pose both a reliability and environmental risk. We will replace these cables with Solidly insulated cable improving reliability and removing the environmental risk. Note this project also provides increased capacity to the site and is related to the transformer replacement above.	7.2
33kV Tower Circuits in the Huncoat Area HA, HC and HL Three 33kV tower lines in the Huncoat area of East Lancashire requires intervention because of condition and third party issues. We propose to underground the circuits removing the need for maintenance and solving the third party issues.	4.7

58. Where two companies have switchgear connected together to permit electricity to pass from one to another this is known as a shared site. Each company owns their own assets and where a common asset needs replacing this needs both the site owner and the second company to work together to replace their respective



Significant projects map:





Regulatory detail

In section 10

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uncertainties 192

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Section 10: Regulatory detail

Given the complexities of a price control, there are a range of mechanisms that need to be developed to ensure that:

- we have suitable arrangements for dealing with future uncertainties;
- it is clear what we will deliver and what will happen if we don't; and
- where and how incentives will operate through the price control.

These areas will continue to be discussed with Ofgem through the ED2 process and we will update our views in the final submission but this section gives an early sight into our thinking on these aspects in our draft plan.

10.1 How we'll deal with uncertainties

As we enter a period of fast moving changes for our sector, there are some uncertainties around our plan that we simply do not yet know. We make forecasts and assumptions as accurately as possible, but given the significant change expected in our sector it is not always possible to know what will happen for certain.

Our plan is comprehensive and covers a range of activities. Where the activity to be delivered is significantly dependent or impacted by factors outside of our control there is the potential for the timing, level and/or need to be uncertain. Factors outside of our control could be changes to central government policy, regional stakeholders or general changes in customer behaviour.

The regulatory framework we operate in includes several standard 'uncertainty mechanisms' to facilitate managing change. These ensure that consumers and stakeholders receive the services they need as these change, and that we are able to change our resources to still deliver. The framework also allows for us to submit Electricity North West-specific uncertainty mechanisms which only apply to us and our unique operating circumstances reflecting our region. This section sets out our approach to uncertainty and the bespoke mechanisms we need given the circumstances we are operating in within the North West.

Most of our plan is well known, where we are able to provide an efficient cost estimation and volume that can be assessed and ultimately provided for by Ofgem. These 'set in advance' efficient cost allowances are based on Ofgem's knowledge of companies' comparable activities, our business plan submission, and the outcomes we will deliver.

In general, upfront baseline funding for activities is preferable to the use of uncertainty mechanisms because it gives us strong incentives to seek to be as efficient as possible and reduces the administrative burden on stakeholders. Where baseline allowances are set, it may be relevant for associated licence obligations to be put in place.

For some particularly bespoke, uncertain and high-cost outcomes, we have given consideration as to whether to apply a different regulatory mechanism known as Price Control Deliverables

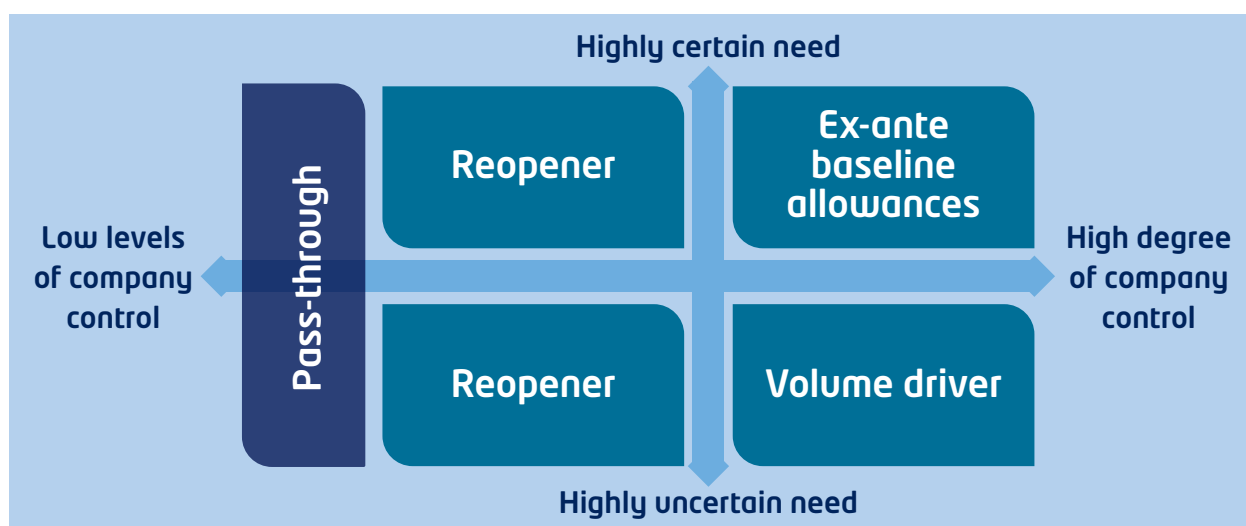
(PCDs) as these may be beneficial in these limited circumstances. Where any common PCDs are applicable we consider that these should be carefully developed. Proposals for PCDs need to be mindful of the particular needs of customers and wider stakeholders of the electricity distribution sector. We strongly view that PCDs should therefore be used only where required and where it can be demonstrated that these drive value to consumers.

With regard to uncertainty mechanisms there are usually a range of common mechanisms which operate in cases where the degree of uncertainty is such that it is appropriate to be able to adjust funding arrangements (up or down) either within a price control, or as part of a process after it has finished.

Whether a cost area or activity has an uncertainty mechanism, and what type of mechanism is applied, is determined through a principle-based approach which we have set out below. This principle-based approach simply considers:

- the ability of the company to control the cost or volume of activity required;
- the ability for the regulator to know what an efficient cost or level of activity should be; and
- the materiality i.e. is the activity or cost sufficiently meaningful that an uncertainty mechanism is required.

How uncertainty mechanisms might be applied in principle



At this stage of developing the regulatory framework it is normal for the full detail to be under development. We continue to work actively with Ofgem on the detailed definition and design of mechanisms ahead of ED2, which is becoming more urgent to progress. This will include seeking key progress ahead of us submitting our final business plan to ensure our plan is based on as full knowledge as possible of how the sector will operate in the ED2. Uncertainty mechanisms should generally be common across the industry so are best developed multilaterally with stakeholders including Ofgem.

In the absence of clarity on the detailed mechanics of uncertainty mechanisms in key areas we may need to submit the upper-bound costs in our final business plan submission to Ofgem. This is the next best option for customers if our customers and stakeholders can't be secure knowing mechanisms exist to enable us to meet their needs. Ultimately this approach aims to ensure that the outcomes our customers and stakeholders have told us they need can be delivered. We prefer uncertainty mechanisms being in place as to allow us to be confident of being able to meet customer's and stakeholder needs, should their needs turn out to be higher (or lower) than in this draft plan. The alternative would be only to include highly certain costs

and deliver only the highly certain needs associated with those scenarios. However, this could mean vital behavioural changes customers are making to how they live their lives, or the delivery of decarbonisation and Net Zero become very hard to deliver, leaving some needs unmet.

For ED2, a range of uncertainty mechanisms have already been proposed by Ofgem following engagement with stakeholders. These cover specific targeted areas and are set out in the table below. Many of these are revised or new for ED2, covering uncertainties that Ofgem acknowledges are present for the period of change we are moving to.

Generally, the types of uncertainty mechanisms that we and Ofgem are considering for ED2 take a range of forms including:

- **Pass-through** – these are items outside the companies control but where it is certain that they are required; such as the fees we pay to Ofgem to fund their regulation activities.
- **Volume drivers** – where the efficient cost per activity or outcome is known but the level/ scale of the activity or outcome is unknown; volume drivers adjust or flex to allow for material changes in the volumes required.
- **Reopeners** – These are often very detailed submissions to Ofgem. The company usually sets out to Ofgem the activities and outcomes alongside the efficient costs to deliver them and why additional cost or volume of activity is required or has been required.
- **Indexation** – For a limited number of cost allowances there is also then an additional step to consider if the cost area should be specifically indexed. Indexation is where the scale of costs and volumes is known, but we also know these costs will change in a way by reference to a measurable index. The index scales the costs up or down to account for what the efficient costs are in future years when incurred. This is usually undertaken on an annual basis.

The areas for uncertainty mechanisms confirmed by Ofgem for ED2

Area covered	Type of mechanism	Proposed Ofgem Change from ED1	Our proposal
Real Price Effects	Indexation	Revised for RIIO-ED2	Covered by index. See section 7.2.3.2 .
Enhanced Physical Site security	Baseline allowance and/or re-opener	No change proposed	Baseline costs of £4.6m included.
Cyber resilience	Baseline allowance and/or re-opener	New for RIIO-ED2	
Net Zero	Re-opener	New for RIIO-ED2	Zero baseline. This provisions for major future changes, such as those in the law.
Coordinated Adjustment Mechanism (CAM)	Re-opener	New for RIIO-ED2	Zero baseline. This provisions for changes of obligation between sectors.

Area covered	Type of mechanism	Proposed Ofgem Change from ED1	Our proposal
Strategic investment/ Load related expenditure	Dependent on Model for strategic investment: could include ex-ante allowances, volume drivers and/or re-opener	New/reformed for RIIO-ED2	This covers the majority of our £125m baseline reinforcement forecast and is the key mechanism that adjusts to reflect different Net Zero pathways.
Streetworks costs	Re-opener	No change	Our Current street works requirements are included in our baseline. The reopener provides for the impact of any changes, legislative or otherwise for example, new environmental driven requirements regarding spoil.
Rail electrification	Re-opener	Reform for RIIO-ED2	Baseline of £3.2m included to cover costs of HS2, Metrolink etc.
Electricity System Restoration (black start)	Re-opener	New for RIIO-ED2	Baseline costs of £6.2m included and details included in section 5.2.2.6 .
Smart meter interventions	Volume driver	No change	Baseline costs of £10.9m included reflecting the continuation of smart metering rollout until 2025.
Environmental legislation	Re-opener	New for RIIO-ED2	Zero baseline. This provisions for the impact of future changes in environmental legislation.

A key area of policy change is being led by Ofgem which will change how customers pay for connecting to and use of the distribution network. This is referred to as the Access Significant Code Review (Access SCR). How this policy review progresses and the response of network users to any policy changes is a key emerging uncertainty that may have wide ranging impacts. This is a good example of a source of uncertainty for our plan due to Ofgem led developments which benefit customers overall, but may lead to us needing to make material changes. Other SCRs are underway, though of lessor or unknown materiality of impact based on our current best estimate.

We have not listed the cost pass-through items being proposed by Ofgem in the table above. Proposed pass-through items include; Ofgem licence fee, business rates, pensions adjustment, miscellaneous pass-through, smart meter IT costs including DCC charges, business rates payments, pass-through transmission connection point charges incurred, supplier-of-last-resort costs and resultant bad debts. We support these categories continuing as cost pass-through items and our plan has been developed on this basis.

We will continue to work with Ofgem, key stakeholders and the other network operators to identify any other areas where uncertainty mechanisms should be applied to enable our

customers' needs and fairly manage the risk of future uncertainty. One such area under active consideration is that of compliance with new legislation regarding polychlorinated biphenyls (PCB) contamination in transformers as set out in [section 5.3.2.8](#). We will confirm our proposed treatment of these costs in our final business plan submission in December.

10.1.1 Load uncertainty

The biggest example of the need for an uncertainty mechanism is the speed of the transition to Net Zero. This will impact the demand for electricity and the load on our network and the level of required investment in the ED2 period. We have made assumptions based on sophisticated modelling to reflect this as accurately as possible in our plan however it remains uncertain. [Section 5.3.1](#) discusses our forecasting and scenarios approach in more detail and 8.3.5 details the DFES outcomes that result from this.

Our costs for managing the network are agreed through a business planning and price control process before the price control starts in 2023. This means that we have to predict now what will happen in our region and how much investment is needed up to 2028. There is a risk that the business is either under or overfunded depending on what actually happens.

At present, we are further evaluating the best way to manage this load uncertainty. We proposed that most of the uncertainty around load potential on the network is covered by a mix of “ex-ante” allowances and a “volume driver”. Whilst we have included outline forecasts for network reinforcement in ED2, we are proposing that the possibility of customers' needs changing is managed through a flexible approach, as automatic in nature as possible to adjust our allowances both upwards and downwards. This means that whether customers find they need more distribution network capabilities than we included in our plan based on our central view, that we are only funded for efficient interventions based on what actually happens. If we materially underestimate then we will be appropriately funded to deliver what is needed for the region, and if we have materially overestimated in our baseline then customers won't pay more than necessary.

We are also considering how the costs of unlooping services, where more than one customer shares the same wires to link into our distribution network, are dealt with in regard to uncertainty mechanisms. This is important as looped services are impacted when customers have new requirements such as when they buy an electric vehicle to charge at home. This leads to the level or scale of unlooping being a potentially specific uncertainty driven by factors such as electric vehicle uptake and customer charging behaviour. We currently propose a baseline ex-ante level of allowances is required. We are also continuing to work on the design of a potential mechanism with Ofgem, wider stakeholders and the other network operators to manage the uncertainty associated with unlooping.

10.1.2 Our bespoke uncertainty mechanisms

As set out earlier in this section, we also have considered the need to propose additional Uncertainty Mechanisms which would be additional to the common ones presented in [section 10.1](#). We have at this stage only confirmed the need for one bespoke uncertainty mechanism given the circumstances we are operating in within our North West region.

10.1.2.1 Moorside

In our ED1 licence we have a bespoke mechanism to manage the impact of major changes required to our network should new generation connections take place near Sellafield in Cumbria. To date we have not used this as additional allowances haven't been required as the need has not arisen. This is a great example of where an uncertainty mechanism has worked well for all stakeholders and customers.

In ED2 there continues to be the potential for new nuclear generation to be developed in this area, which by its nature is large and would necessitate major works on our network to facilitate this. However, as in ED1, this is not certain to be required, so we are not requesting any baseline allowances and instead propose a continuation of a bespoke uncertainty mechanism (our ED1 Moorside condition). We will continue to work with Ofgem to update the mechanism, so it best reflects the circumstances and uncertainty for ED2.

10.2 Output mechanisms

Output mechanisms are the means by which our delivery in ED2 can be tracked and monitored. They also set out what will happen if we don't deliver against our commitments. Ofgem has specified a number of different approaches which will operate in ED2, broken down into Licence Obligations (LOs), Price Control Deliverables (PCDs) and Output Delivery Incentives (ODIs).

10.2.1 Licence Obligations (LOs)

Licence obligations are one of the RIIO building blocks and are used broadly to set minimum service standards or requirements by which companies (DNOs) should adhere. LOs contain an output or standard that is set out within the licence conditions of a DNO and can be common (i.e. applying to all DNOs) or bespoke (i.e. a single or subset of DNOs). LOs as a regulatory mechanisms offer protection to consumers where should a company fail to meet the requirements set out in an LO, Ofgem has the power to take appropriate enforcement action against the company involved.

Our plan has given consideration to common LOs which are likely to apply to our sector for the RIIO-ED2 period. In many cases our plan is to deliver service beyond those minimum standards as set out in our LOs representing the challenges and input from our enhanced stakeholder engagement. In simple terms as set out within our plan it efficiently delivers the minimum service standards or requirements defined by the LOs contained within our licence. At this stage not all minimum service standards or requirements are set or agreed by Ofgem, but we have included assumptions of what these will be in our plan.

As part of our draft plan we are not proposing any bespoke LOs. We have led proactive engagement with Ofgem and will continue to work with them and others on the inclusion of these obligations in our Licence. We propose that this is based on targeted updating, revisions and additions to our current RIIO-ED1 licence.

10.2.2 Common Price Control Deliverables (PCDs)

These are measured outcomes for programmes and investments that are common across most or all DNOs. In each case, we are required to specify how delivery will be measured and the consequences of non-delivery. Ofgem has specified three areas where this approach will apply in ED2 and our current view on each is set out below;

Area	Plan ref	Our plan	Our proposed PCD
Network Asset Resilience Measure (NARMs)	5.2.1.1	Maintain risk at current levels through a targeted investment programme. Estimated cost – £249m	Scaled clawback of allowances based on the proportion of risk improvements not delivered. We are working on a proposal to include both overall and asset type level indicators in this framework.

Area	Plan ref	Our plan	Our proposed PCD
Worst-Served Customers (WSC)	5.2.1.4	Deliver sustained improvements for all customers historically qualifying as 'Worst-Served' under the ED2 definition through a programme aimed at 27 specific circuits. Estimated cost – £21m	An improvement of 50% over the whole delivered programme with scaled clawback of allowances for every percentage point we underachieve by. For any circuits where work is not delivered, return of 1/27th of the total allowances.
Cyber Resilience	5.2.2.4	Deliver a range of projects which will materially improve our cyber resilience capabilities. Estimated cost – £17m	This area is under discussion with Ofgem and the other DNOs, however we propose that delivery is linked to achievement against the Cyber Assessment Framework.

10.2.3 Bespoke Price Control Deliverables

These are PCDs for activities which are unique to an individual DNO. At present, we propose the three bespoke programmes in the table below, however we do not know the content of other DNO's plans and hence will be able to confirm whether the programmes below are unique or not in our Final submission.

Area	Plan reference	Our plan	Our proposed PCD
Smart Street	5.5.1	To roll out the Smart Street programme to 250,000 customers in ED2. Estimated cost – £78m	We have also included Smart Street as one of our Customer Value Propositions (CVPs). We intend to explore with Ofgem the most appropriate outputs framework for this programme.
Sentinel	5.2.3.4	To roll out the Sentinel technology on rural overhead line circuits to improve safety and ability to restore supplies during storm events. Estimated cost – £24m	Our proposals for Sentinel are still in development. Further detail, including our proposed PCD for the programme will be included in our Final submission.
Electricity users in vulnerable circumstances network improvements	5.2.1.5	To deliver a programme of work to materially reduce the risk of power cuts in areas with higher relative levels of vulnerability. Estimated cost – £20m	We propose that this is an input-based PCD based on the delivery of specified activity. We will provide further details on this proposal in our Final submission.

10.2.4 Our bespoke output delivery incentives (ODIs)

As well as bespoke uncertainty mechanisms, Ofgem has also asked us to specify any new and bespoke incentives that we are proposing in our Draft submission. These are additional to those mechanisms which Ofgem are proposing as common for all DNOs.

10.2.4.1 Dig, fix and go

Following our testing of the proposal on more rapid completion of streetworks (see [section 5.1.1.6](#) for further details), we are proposing a bespoke incentive mechanism (ODI-F) that aims to drive a transformational change in how much disruption our emergency street works cause to our customers and stakeholders. This is a proposal formed and led by our customer and stakeholder feedback. Comprehensive information on how we suggest that this should work can be found in [Annex 8](#).

We are not currently proposing any other bespoke incentives.



Glossary

Term used	Definition
AccountAbility Principles Standards	An internationally-recognised standard for stakeholder engagement
AONB Areas of Outstanding Natural Beauty	Areas which are protected by legislation due to their visual or environmental qualities
AT Acceptability testing	An analytical technique to assess how acceptable particular propositions are to customers
Asset management	A systematic and cost-effective process of operating, maintaining, upgrading and disposing of assets
BEIS Department for Business, Energy and Industrial Strategy	The government department responsible for energy issues among other areas
Black start	A restart of the electricity distribution and/or transmission network after a complete loss of power due to lack or loss of generation. Increasingly referred to as 'Electricity System Restoration'
BCF Business Carbon Footprint	Measure of the carbon emissions of a business
BPSR Business Priority Services Register	A free support service operated by Electricity North West to help reduce the impact of power cuts on our business customers
CAF Cyber Assessment Framework	Guidance for organisations to complete self-assessments for cyber risks
CAPEX Capital Expenditure	Expenditure on investment in long-lived network assets, such as underground cables, overhead electricity lines and substations.
CBA Cost Benefit Analysis	Systematic process for calculating and comparing benefits and costs of a project or investment decision
CCG Consumer Challenge Group	Ofgem-appointed group who will assess draft business plan submissions and provide feedback before final submissions to Ofgem in December 2021
CEG Customer Engagement Group	Independent groups set up by network companies as part of Ofgem's stakeholder engagement guidance. The groups have responsibility to challenge the business to ensure business plans address the needs of customers
CI Customer Interruptions	Number of customer interruptions per 100 connected customers.
CLASS Customer Load Active System Services	An innovation from Electricity North West to provide services to help the National Grid and additional capacity on the network by changing voltage when required by the distribution system grid operator.
CML Customer Minutes Lost	The duration of interruptions to supply per year. 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
CNAIM Common Network Asset Indices Methodology	Framework for assessing condition-based risk for electricity distribution assets
CNI Critical National Infrastructure	Assets that are essential for the functioning of society and the economy
Consumer	An 'end user' of gas and electricity, and therefore Electricity North West's services, whether for domestic or business use, including future users
Cost of capital	This is the minimum acceptable rate of return on capital investment. It includes both the cost of debt to a firm, and the cost of equity[S2]
CPI Consumer price index	A measure of the average change from month to month in the prices of goods and services purchased by most households in the UK
Customer	An individual, business or organisation that pays for Electricity North West's services (may be domestic or business and includes future customers)
CIVC Customers in vulnerable circumstances	Customers or consumers who may need additional support due to their current situation, who may be more adversely affected by power cuts or other issues relating to the services that we provide
CO₂ Carbon dioxide	A greenhouse gas, contributing to climate change
CVP Customer Value Proposition	A business plan proposition where a company could bid for reward by demonstrating the additional value its Business Plan will generate for existing and future consumers and consumers in vulnerable situations



Term used	Definition
Competition tests	Tests introduced by Ofgem into distribution network operators' licences in 2010 to assess compliance with legal requirements in respect of the making of connections and to measure the development of competition in relevant market segments of the connections market. Passing these tests allows a DNO to charge an unregulated margin for contestable connections activities; not passing them could result in Ofgem referring a DNO to the Competition Commission
Competitive connections	Connections where there is competition to distribution network operators from third party providers in building the connection
CSAT Customer satisfaction	Measurement used to quantify the degree to which customers are satisfied with a service
DCUSA Distribution Connection and Use of System Agreement	Multi-party contract between licensed electricity distributors, suppliers and generators in Great Britain
Decarbonisation	The reduction or removal of carbon dioxide from a process
Defra	Department of Environment, Food and Rural Affairs
Distributed energy	Small power sources embedded in the distribution network to provide power to meet demand, rather than those connected to the transmission network
DFES Distribution Future Energy Scenarios	Forecasts providing a projection for growth or reduction of energy
DPCR5 Distribution Price Control Review 5	The price control applied to the electricity distribution network operators from 1 April 2010 until 31 March[CP4] 2015.
DNO Distribution Network Operator	A company that has a licence to operate part of the GB electricity distribution network which includes all parts of the network from 132kV down to 230V in England and Wales, and 66kV to 230v in Scotland. There are 14 licensees in Great Britain which are currently owned by six different DNO groups
DRS Discretionary Reward Scheme	An Ofgem run scheme designed to encourage and incentivise DNOs for better performance in areas that cannot be easily measured or incentivised
DG Distribution generation	Any generation which is connected directly to the local distribution network, as opposed to the transmission network, as well as combined heat and power schemes of any scale
DSO Distribution System Operation	The 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
DUoS Distribution Use of System	Charge that is applied to all electricity bills to cover the costs of the electricity distribution network
EA Environment Agency	The regulator responsible for monitoring and regulating environmental policy across a range of sectors in England
EAP Environmental Action Plan	These are DNO plans to address the impacts of their business and network activities on the environment and set out their commitments to addressing these impacts
Embodied carbon	The measure of the carbon footprint of a material/product which considers how much greenhouse gas is released throughout the supply chain
Engagement	Organisational process to involve people who may be affected by decisions or can influence actions of an organisation
EHV Extra High Voltage	In relation to our distribution network this means 33kV
EJP Engineering Justification Paper	Sets out the scope, costs and benefits for major projects or aggregated investment programmes aimed at reinforcing the network or improving asset health
ELT Executive Leadership Team	The eight executive leaders at Electricity North West Ltd, two of whom are Directors on the ENWL Board
ENA Energy Networks Association	The trade organisation that represents energy networks in the UK, of which Electricity North West is a member
ENWL Electricity North West Limited	The North West's electricity distribution network operator
EV Electric vehicles	Vehicles that are powered by electricity
Ex-ante	Refers to a value or parameter established upfront (e.g. at the price control review to be used in the price control period ahead)
Ex post	Refers to a value or parameter established after the event (e.g. following commencement of the price control period)
Fast money	Fast money allows network companies to recover a percentage of total expenditure within a one-year period

Term used	Definition
Financeability	How an organisation is funded. 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
Flexible services	Contractual arrangement provided by third parties to increase electricity capacity or reduce demand
Framework contractors	A contractor with whom we have a long-term agreement to carry out work at a pre-agreed price and under pre-agreed terms and conditions
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 satisfactory heating
Future customer	Young people who are end users of electricity now but do not currently have bill paying responsibility
GDN Gas Distribution Network	GDNs transport gas from the National Transmission System to final consumers and to connected system exit points
GEMA Gas and Electricity Markets Authority	Ofgem's governing body comprising executive and non-executive members. Its role is to protect current and future consumers by working to deliver a greener, fairer energy system
GMCA Greater Manchester Combined Authority	The ten Greater Manchester councils and Mayor, who work with other local services, businesses, communities and other partners to improve the city-region
Gearing	A ratio measuring the extent to which a company is financed through borrowing. Ofgem calculates gearing as the percentage of net debt relative to the RAV
Green recovery	UK Government plan to encourage investment and cut carbon emissions following the Coronavirus pandemic
GSOP Guaranteed standards of performance	Guaranteed Standards set service levels to be met in each individual case and are established by a Statutory Instrument. If the licence holder fails to provide the level of service required, it must make a payment to the customer affected subject to certain exemptions
Hard-to-reach	People 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
Heat pump	Device that transfers heat from the ground, water or air that can be used to heat homes
HSE The Health and Safety Executive	A public body responsible for regulating health and safety in Great Britain with the primary function to secure the health, safety and welfare of people at work and to protect others from risks to health and safety from work activity
HV High Voltage	6.6kV or 11kV in the Electricity North West area
ICE Incentive on Connections Engagement	Regulatory incentive scheme for distribution network operators to help improve ongoing engagement with larger connections stakeholders and to ensure that we deliver our commitments
ICP Independent Connection Provider	Accredited company that can build electricity networks to the specification and quality required for them to be adopted by either a distribution network operator or independent distribution network operator
IDNO Independent Distribution Network Operator	Company licensed by Ofgem, to own and operate electricity networks, operating within but separate to distribution network operators' areas
IIS Interruptions Incentive Scheme	An incentive set by Ofgem for DNOs to improve overall the reliability of their networks by reducing the number and duration of interruptions. It sets target levels of performance for DNOs to achieve; rewards are provided for DNOs who beat their targets, and penalties apply for DNOs who fail to achieve their target
IRM Innovation Rollout Mechanism	A RIIO-ED1 mechanism to facilitate the roll-out of a proven innovation that meets certain requirements into business-as-usual in advance of the start of RIIO-ED2
kV Kilovolts	A measure of electrical voltage
kW Kilowatt	A measure of electrical power (1,000 watts)
kWh Kilowatt hour	A measure of electrical energy usage. The continuous use of 1kW for one hour
LAEP Local Area Energy Plan	A plan to inform, shape and enable key aspects of the transition to Net Zero
LCN Low carbon networks fund	A previous mechanism introduced in DPCR5 made available for DNOs and partners to innovate and trial new technologies, commercial arrangements and ways of operating their networks
LCT Low carbon technology	Technologies that emit low levels of CO ₂ , or no net CO ₂ emissions, such as electric vehicles, solar panels, wind turbines and heat pumps
LO Licence Obligation	An obligation placed on the network companies to meet certain standards of performance



Term used	Definition
Load	The amount of power flowing through a network or asset
LV Low voltage	Below 1kV
Max-diff Maximum difference	An analysis technique, also known as ‘best-worst scaling’ 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
NARMS Network Asset Risk Metrics	Metrics to calculate future risk of an asset to prioritise those which need to be replaced or refurbished
Net Zero carbon	Reducing greenhouse gas emissions with the goal of balancing the emissions produced and emissions removed from the earth’s atmosphere
NGO Non-Governmental Organisation	A not-for-profit organisation that is also independent of government
NIA Network Innovation Allowance	A use-it-or-lose-it allowance to fund small projects focused on the energy system transition and vulnerable consumers[S22]
NIC Network Innovation Competition	Annual funding competition for larger and more complex innovation projects
ODI (F or R) Output Delivery Incentive (Financial or Reputational)	An output that is financially incentivised, or reputational only in nature, linked to outputs set by Ofgem or proposed by ENWL
Ofgem Office of Gas and Electricity Markets	Ofgem is the independent national regulatory authority responsible for gas and electricity markets in Great Britain. Ofgem is governed by GEMA, the Gas and Electricity Markets Authority
ON Open Networks	A project coordinated via the Energy Networks Association to transform the way the energy networks operate to meet Net Zero
Opex Operating expenditure	Day-to-day expenditure on operating and maintaining the network, e.g. fault repair, tree cutting, inspection and maintenance, engineering and business support costs
OT Operational Technology	Technology that interfaces with business systems to manage, monitor and control operations
PCB Polychlorinated Biphenyl	Polychlorinated Biphenyls (PCBs) are a family of Persistent Organic Pollutants (POPs) which, while being good electrical insulators, were never specified for use by electricity network operators. They were, however, used in some industrial electrical applications due to their qualities of chemical stability, fire resistance and not easily generating a vapour. PCBs, as a carcinogenic compound, can cause harm to human and environmental health and there is a legal requirement to remove from use all PCB contaminated equipment by 31 December 2025
PCD Price Control Deliverable	A mechanism to capture those outputs that are directly funded through the price control and where the funding provided is not transferrable to a different output or project. The purpose of a PCD will be to ensure the conditions attached to the funding are clear up-front
POP Persistent Organic Pollutants	Toxic chemicals that adversely affect human health and the environment
Price control	The control developed by the regulator to set targets and allowed revenues for network companies. The characteristics and mechanisms are developed by the regulator in the price control review period depending on network company performance over the last control period and predicted expenditure (companies’ Business Plans) in the next. The current period RIIO-ED1 runs from 2015-2023. The next period, RIIO-ED2 runs from 2023-2028
PSI Planned Supply Interruptions	Notice of a planned interruption to supply. Distribution companies are required to give customers at least two days’ notice for planned power cuts that enable work to be carried out on the network
PSR Priority Services Register	A free register operated by distribution network operators providing those who qualify with free support services
QOS Quality of Service	Ofgem sets quality of service standards which must be met by DNOs. The standard is a level of service that is reasonable to expect the company to deliver. If the company fails to meet this service level, under certain circumstances a payment must be made to customers under the guaranteed standards of performance scheme to compensate for the inconvenience caused
RAMs Return Adjustment Mechanisms	Financial mechanism set by Ofgem to mitigate against the future risk of DNOs earning materially higher or lower than the expected return

Term used	Definition
RAV Regulatory Asset Value	The value ascribed by Ofgem to the capital employed in the licensee's regulated business (the 'regulated asset base'). The RAV is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. These vary between classes of licensee. A deduction is also made in certain cases to reflect the value realised from the disposal of assets comprised in the regulatory asset base. The RAV is indexed to allow for the effects of inflation on the licensee's capital stock
Reliability	The ability of a network to provide a continuous supply of power
Resilience	Ability of a network to cope with extreme situations i.e. storms or floods and recovery quickly from black outs
Re-opener	A mechanism used by Ofgem to alter or re-set the revenue allowances (or the parameters that give rise to revenue allowances) under a price control before the next scheduled price control review
Renewable energy	Energy created from renewable sources (ie weather). Renewable means that it can't run out but level of output may be affected by other factors (ie climate change)
RIIO Revenue = Incentives + Innovation + Outputs	Ofgem's current regulatory framework standing for the calculation to determine a company's revenue using incentives to deliver innovation and outputs
RIIO-ED1 Revenue = Incentives + Innovation + Outputs, Electricity Distribution 1	The first RIIO price control period for electricity distribution networks running from 2015-2023
RIIO-ED2 Revenue = Incentives + Innovation + Outputs, Electricity Distribution 2	The second RIIO price control period for electricity distribution networks running from 2023-2028
RLM Rising lateral mains	Name given to the electrical distribution system in multi-occupancy buildings such as flats. Electricity rises through the building on mains cables and laterally through service cables to individual properties to provide the power.
RPE Real Price Effects	An increase in the real (adjusted for inflation) price of a good/service or basket of goods and services
RPI Retail Price Index	Measure of inflation based on the prices of various retail products on which consumers in the United Kingdom typically spend their money
RoRE Return on Regulatory Equity	The financial return achieved by shareholders of a licensee during a price control period from its outturn performance under the price control.
RRP Regulatory reporting pack	A set of data and documents produced annually by network companies which reports on their performance against their regulatory and financial objectives. These documents are submitted to Ofgem to review, compare and monitor the performance of network companies
SECV Stakeholder Engagement and Consumer Vulnerability	Incentive set by Ofgem to encourage DNOs to engage effectively with a wider range of stakeholders to inform how they plan and run their business
Segmentation	A way of grouping individuals based on common characteristics to ensure representative engagement and response to views. Grouping can be via demographic or attitudinal and behavioural attributes
Sentinel	Sentinel technology is Electricity North West's integrated, customised fault location sensors which enable earlier detection and response to broken or damaged conductors. This project is designed to improve the quality of supply for customers who experience weather-related outages and improve the safety of the electricity distribution system
SF ₆ Sulphur Hexafluoride	Odourless gas. It is used as an insulation in electrical circuits (circuit interrupters, Busbars, (electric piping) some cable types and Transformers, but not in ENWL) but is a potent greenhouse gas
Smart Grid	A distribution network capable of dynamically routing energy to proactively balance supply and demand, and to react quickly to unexpected events by using data and digital communications technologies
Smart Meter	Meters that record the energy consumed in a property and can be read remotely. They also provide consumers with almost immediate information on their energy use



Term used	Definition
Smart Street	Innovation project now being rolled out on our distribution network. Smart Street uses innovative voltage control techniques to enable our networks and customers' appliances to perform more efficiently and make it easier to adopt low carbon technologies onto the electricity network
Stakeholder	Any individuals, organisations or communities that are impacted by the activities of the network companies. This includes existing and future consumers
STEM Science, Technology, Engineering, Maths	Approach to learning and development that integrates science, technology, engineering and maths
Slow Money	Slow money is where costs are added to the RAV and therefore, revenues are recovered slowly (e.g. over 20 years) from both current and future consumers
Substation	Part of the distribution network that reduces electricity voltage so that it is easier and safer to deliver electricity to homes and business
Sustainable	Capable of being continued long-term at a steady level without causing ecological damage
Switchgear	A device that can switch on and off a supply of electricity and hence controls its flow
TTC Time to Connect	The time taken by a distribution network operator from a customer accepting a quote for a new connection, to that connection being made
TTQ Time to Quote	The time taken by a distribution network operator from a customer applying for a connections quote to providing the quote
Totex Total Expenditure	A distribution network operator's total expenditure on the regulated business
Transformer	Converts AC electricity from one voltage to another
Transitory vulnerability	A temporary situation that may make consumers vulnerable for a particular period
TO Transmission Owner	The company which owns and maintains the high voltage electricity transmission system. In England and Wales, this is National Grid Electricity Transmission Limited
Triangulation	A qualitative research strategy employed to test the credibility or validity of research findings through the convergence of information from different sources
tCO₂e Tonnes of carbon dioxide equivalent	This is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential
UM Uncertainty mechanism	A regulatory mechanism used by Ofgem to allow price control arrangements to respond to change. They protect both end consumers and network operators from unforecastable risk or changes in circumstances
UVA Undergrounding for visual amenity	Method for reducing the visual impact of Electricity North West's network assets on the environment whilst still distributing power to customers. Any decision to underground cables must balance the concerns about the visual impact of overhead lines and the cost of undergrounding to consumers
WACC Weighted Average Cost of Capital	WACC is the total return on assets allowed by Ofgem to compensate debt and equity investors. For ED2 it is weighted 60% debt and 40% equity according to Ofgem's modelled level of debt (gearing) in the business
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 efficiencies and value for consumers
WTP Willingness to pay	The maximum amount a customer is willing to pay for a product or service
WSC Worst served customers	In ED1, a worst-served customer is defined by Ofgem as a customer who experiences 12 or more high voltage unplanned interruptions over a three-year period, with at least three higher voltage interruptions each year
YFNW Youth Focus North West	An organisation that works in partnership with young people to give them a voice where it counts. It gives young people the opportunities to make a difference individually, locally, regionally and nationally

Thank you for all your engagement so far
and for taking the time to read our plan.

Send us your comments:

stakeholderengagement@enwl.co.uk

or visit www.enwl.co.uk/engagementhub



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