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Enabling the path to Net Zero

Our RIIO-ED2 Business Plan for 2023 – 2028

SP ENERGY NETWORKS

PRINCIPAL PARTNER
UN CLIMATE CHANGE CONFERENCE UK 2021
IN PARTNERSHIP WITH ITALY

Who we are

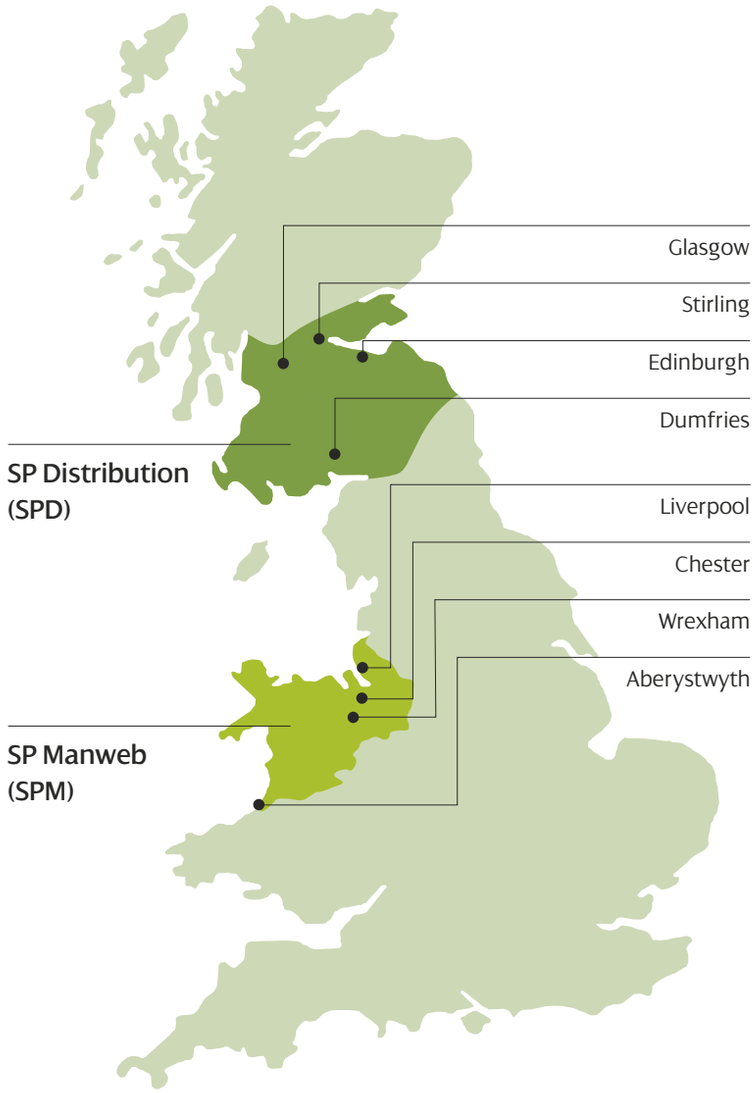
We keep the electricity flowing to 3.5 million homes and businesses, 24 hours a day, 365 days a year.

We always strive to deliver a first class service to our customers – whether that's by enhancing the safety and reliability of our network, connecting new customers, or providing support to our vulnerable customers when they need us most.

We own and operate two regulated distribution networks, SP Distribution plc (SPD) and SP Manweb plc (SPM). We are the only DNO group to operate across all three nations of GB – Scotland, England and Wales. We also own and operate one transmission network in Central and Southern Scotland, SP Transmission plc (SPT).

We are part of the ScottishPower group and fully owned by Iberdrola – a global energy leader, the number one producer of wind power and one of the worlds biggest utilities by market capitalisation.

Our business is crucial to the delivery of the UK's Net Zero targets and the transition to a more sustainable future. We are committed to making this happen at pace, and placing our customers and stakeholders at the heart of this journey.



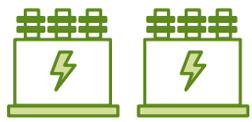
Key facts

>7m people served

across 3.5 million homes and businesses

30,000

substations across our distribution network areas



>2,400 employees

across our distribution business

>100,000km

of cables and overhead lines, enough to wrap 2.5x around the world

WHAT IS RIIO?

Network companies in GB are regulated by Ofgem. As part of this process, companies submit business plans for set periods of time – known as 'price controls'. These set out what we will deliver, the benefits, and costs.

This plan details out our proposals for 2023 to 2028 – the next price control period, known as RIIO-ED2.

We submitted our draft business plan in July 2021, based on extensive engagement with our customers and stakeholders. Following further engagement on our proposals, this is the final version of our plan.

Ofgem will assess our plans during 2022, with a final decision on our proposals due in December 2022.

We submit our *final business plan*	Dec 2021
Ofgem will *deliver their draft determination*	June 2022
Ofgem will *deliver their final determination*	Dec 2022
RIIO-ED2 begins	April 2023

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Our RIIO-ED2 submission and supporting documents

We have an ambitious business plan for RIIO-ED2 and this document sets out our strategy, plans and commitments in summary.

This covers many complex and interrelated topics. To make this accessible, we have structured the core of this document around our RIIO-ED2 strategy, based on the priorities of our customers and stakeholders.

This sits on top of a comprehensive suite of supporting information and evidence that covers every single feature of our plans and every pound of expenditure.

Core business plan

- *A 200 page synopsis of our plan, designed for both industry and public consumption.*

Supporting Documents

- *Our RIIO-ED2 Commitments.*
- *Executive Summary.*
- *SPEN RIIO-ED2 Board Assurance Statement.*

For details of how we align our business plan to Ofgem's Guidance for RIIO-ED2, please refer to ***Pg 200***

Annexes

- *>**120** Strategies and Supporting Evidence.*
- ***132** Engineering Justification Papers (EJPs).*
- ***119** Cost Benefit Analyses (CBAs).*

Additional Information

- *RIIO-ED2 Business Plan Strategic Summary.*
- *Business Plan Data Tables (BPDTs).*
- *Ofgem Financial Models (SPD / SPM).*
- *RIIO-ED2 Output Summary Table.*
- *RIIO-ED2 Business Plan Incentive Table.*
- *Ofgem Minimum Requirements Index sheet.*

A message from our CEO

SP Energy Network delivers an essential public service. We 'keep the lights on' across 3.5 million homes and we are proud of the service we deliver, with customer satisfaction scores exceeding 9 out of 10, ahead of well-known high street names such as John Lewis. Our role is becoming even more central to all our lives as we seek to rapidly decarbonise generation, transport and heat systems. That's why I am delighted to present this business plan, which sets out our ambition to play a leading role in facilitating Great Britain's Net Zero targets.

Generating economic growth
in our communities through recruitment in RIIO-ED2

>1,100 jobs

Our baseline RIIO-ED2 expenditure
is £3.3bn across SPD & SPM

£3.3bn expenditure

Through this huge period of change we'll continue to ***support the vulnerable***
to ensure no one is left behind

£62.5m in support

This plan is the most important we have ever produced, developed at a pivotal time. The challenge to achieve legislated Net Zero targets will impact every part of society, with electricity at the heart of the solution. We forecast that up to 1.8m electric vehicles, 1.1m heat pumps, and up to triple the amount of distributed generation, will be connected to our networks by the end of this decade. This is a radical change.

Our job in RIIO-ED2 is to make this a reality – by building on the trust we enjoy from the communities we serve, by improving our services through our extensive innovation programme, and by delivering timely and cost-effective network solutions that match our customers' expectations.

We propose to spend over £3.3bn, a 28% increase on what we do today, in enabling the path to Net Zero. This has been built upon our largest ever engagement programme, with over 19,000 customers and stakeholders shaping our 100 plan commitments. This plan reflects the voices of the communities we serve, and their priorities form the foundation of our RIIO-ED2 strategy.

Those voices have been clear: we must be bold as we reimagine the role of our network, the services we provide, and the capabilities of our business. We must match the ambition of our customers alongside the devolved governments and major cities that we serve, whose elected representatives have set out their visions to achieve Net Zero and the targets newly agreed at COP26.

But we can't do this by ourselves. To deliver what our communities want, this will also require our regulator, Ofgem, to modernise, to be more agile, and to develop a framework that is fit for delivering Net Zero.

Net zero will be a consumer-led revolution through rapid adoption of low carbon technologies. This will see electricity demand profiles, generation patterns, and consumer behaviour, dramatically change in a relatively short span of time. To respond, we will realise the Distribution System Operator (DSO) model, evolving how we plan, design, and operate the grid. We will establish a transparent and discrete DSO business unit and roll out our leading DSO innovations to 40% of our network, building a flexible grid and that will unlock capacity without sacrificing the standards of safety, security and reliability our customers expect.

*Our network spans three Government regions with their own **Net Zero targets**, so we've set our own to stay out in front*

Achieve Net Zero Carbon by 2035

Supporting local communities
*Through our award-winning Transmission Green Economy Fund – read more about how we're bringing this same concept to RIIO-ED2 on **Pg 106**.*

In response to an unprecedented rate of change, we will continue to build on our track record of exceptional service with a 9.4/10 customer satisfaction target. We will also address the changing needs of our vulnerable customers through our extended support proposals, delivering over £62m of direct benefits. And we will support local decarbonisation ambitions through both our community energy strategy and our proposals for a £30m Distribution Net Zero Fund to support local green initiatives – building on the proven success of our ground-breaking Green Economy Fund in our Transmission business.

This will require our business to ready itself for a digital and sustainable future. We are facing a significant increase in our work in a context of rapid digital evolution – we will provide a better, faster service for customers by re-thinking our digital infrastructure and how we unlock the value of our data. This will be supported by a broader, more diverse, and more inclusive workforce, enhanced with the skills we will need for the future. And, as we support Great Britain's Net Zero targets, we too will lead by example with our own, newly enhanced, Net Zero target of 2035.

In delivering this plan, we can tangibly and meaningfully contribute to a just transition to Net Zero. This is both about addressing the societal impacts from climate action and doing the right thing by our communities by delivering positive social change through the low carbon transition. We will generate real economic growth by recruiting for over 1,100 jobs during RIIO-ED2, targeting this from the communities that we serve, with more again in our supply chain. This is something that resonates strongly with me, given that the areas we serve face extremes of rural and urban poverty. We must ensure all communities have opportunity in the transition to Net Zero.

I also recognise that this plan is put forward at a time when our customers will be under pressure from rising energy costs, and the potential knock-on impacts from electricity supplier failures. That is why we have robustly tested and challenged our plan for efficiency and innovation, which will reduce our costs by over £201m. Across both our licence areas, despite spending £3.3bn to deliver Net Zero, our unique regulatory model holds costs broadly flat over the next five years, and reducing in real terms over the next ten years, because our investors accept that they will recover their costs over 45 years. At a cost of 30 pence per day for the service, benefits, and opportunities that we will deliver, we think this represents great value for the consumer.

At the time of writing this plan, it is also important to note that the current circumstances in the competitive gas wholesale and retail markets presents a far more profound risk to our customers' bills. This is in stark contrast to our RIIO-ED2 plan, which seeks to spread those costs and keep bills down through our regulatory model. Our plan can ultimately drive GDP growth, employment, and better health outcomes for the communities we serve, as well as deliver our Net Zero targets. To do so, it is essential that Ofgem does not cross-contaminate their position with the energy retail markets that they regulate with their decisions on the critical Net Zero investment proposals being put forward for RIIO-ED2.

This is also why it's important that all voices are heard in this time of change. I'd like to thank all our customers and stakeholders that have engaged with us in the development of our RIIO-ED2 business plan. I would also like to thank our Customer Engagement Group, who have been with us every step of the journey in developing our RIIO-ED2 proposals, adding further independent challenge to ensure our plan is the best that it can be.

In over 30 years of my career in this industry, I have witnessed an enormous amount of change across the full value chain of the electricity sector. The decades since privatisation have delivered huge improvements in service to our customers, and I'm proud to lead a business that continues to push the boundaries. But I see greater change, and greater opportunity, ahead.

SP Energy Networks has a track record of delivering on our commitments, and we'll continue to do the same in RIIO-ED2. Getting to Net Zero is not a question of 'if', but 'when' – and we can lead by example as we enable the path to a truly sustainable future. By starting this journey now with you, our customers, and our stakeholders, we can build a better future, quicker.

Thank you,

Frank Mitchell,
Chief Executive Officer
SP Energy Networks

Our RIIO-ED2 Business Plan highlights

In this plan, we set out our proposals for the RIIO-ED2 price control period, from 2023 to 2028. This comes at a critical time, as our society grapples with the radical changes needed to deliver Net Zero carbon emissions. This will mean a transformation in the energy system and our role in it.

That's why we have developed our most ambitious business plan ever. This has been built on the priorities of our customers and stakeholders – the foundation for our RIIO-ED2 strategy, summarised below.

Through this, we will deliver on **100 commitments** across the full range of our activities, working with the communities we serve to enable a just transition to our Net Zero future.

OUR RIIO-ED2 STRATEGY AND BENEFITS

Develop a network that's ready for Net Zero

We will develop the network of the future, to enable Net Zero. This will unlock capacity, enhance our connections service, and enable us to evolve as a Distribution System Operator (DSO). We will continue to deliver world class levels of safety, reliability, and resilience of supply.

We will enable Net Zero ambitions by connecting 670k Electric vehicles and 370k heat pumps.

>1m

Our DSO Strategy will enable the realisation of £370m of direct benefits.

£370m

Our digital enabled connections strategy could allow us to realise £15m of savings to connections customers per annum.

£15m

Be the trusted partner for customers, communities and stakeholders

We will develop our role from service provider to trusted partner. We will engage more with our customers, enhance the services that we deliver for them, and provide dedicated support and bespoke funding to enable our communities to deliver their Net Zero ambitions.

We will increase customer satisfaction to 9.4 out of 10 – maintaining industry-leading ambition and performance.

9.4/10

We will provide support services to more customers than ever before, delivering social benefits of £62.5m.

£62.5m

We'll provide funding and support through our Distribution Net Zero Fund with 25% allocated to kick-start community-led schemes.

£30m

Ready our business for a digital and sustainable future

We will transform our operations to build a Net Zero workforce. We will create jobs, upskill our people, drive sustainability in our business and supply chain, and embed digitalization and unlock the value of data – sharing the benefits with our customers and stakeholders.

We will reduce our carbon footprint by 37.8% in RIIO-ED2 and achieve Net Zero carbon by 2035.

by 2035

We'll create over 400 new jobs, and recruit over 700 new employees to replace retirees.

>1,100 jobs

Embedding new digital approaches, innovation and process redesign will save customers over £36m.

>£36m

OUR PLAN IN NUMBERS

In RIIO-ED2 we will spend £3.3bn to deliver our ambitious plan. This is a 28% increase in our expenditure compared with RIIO-ED1.

£3.3bn

Our domestic customers will pay an average of 30p per day for our services, approximately 17% of the average electricity bill.

30p

We have embedded £201m of savings in our baseline plan by building on our track record of innovation and efficiency.

£201m

100 business plan commitments, define our ambitious outputs across all of our customers and stakeholder priorities.

100

We forecast savings of £36m in our baseline plan from planned use of flexibility to address network capacity constraints: 550MW across 1,352 locations at all voltage levels.

£36m

We are proposing 4 unique Consumer Value Propositions (CVPs) under the RIIO-ED2 framework, which we estimate will provide £83m of total benefits.

£83m

OUR PLAN IS BUILT ON ENGAGEMENT

To ensure our plan reflects the needs and priorities of our customers and stakeholders, we've conducted our largest ever programme of engagement, involving over 19,000 people.

We used the feedback they provided over multiple phases of engagement to design and then refine our business plan proposals. Every one of the 100 commitments in our plan can be linked back to feedback and support received from our customers and stakeholders.

You will find more information on our approach in ***Chapter 3*** and you can see the full record of our engagement, showing the golden thread for each of our 100 commitments in our ***Triangulation Records: Appendices 3.1c – 3.1m***

Through various formats, we engaged 19,174 customers and stakeholders during the development of our plan.

19,174

Our RIIO-ED2 phases of engagement

Customer segmentation

PHASE 1

Understanding what customers and stakeholders want

1

PHASE 2

Exploring needs

2

PHASE 3

Determining service levels

3

PHASE 4

Assessing acceptability

4

IN THIS CHAPTER

Our RIIO-ED2 strategy and commitments, summarising our ambition for RIIO-ED2. *Pg 7*

Our expenditure in summary, highlighting our Totex, drivers, and bill impact. *Pg 11*

Changes between draft and final plan, which provides a summary of how we've enhanced our plan for final submission. *Pg 14*

CHAPTER 1

Enabling the path to Net Zero for our communities

This is a time of unprecedented change for our business and the wider energy sector. To enable legislated Net Zero targets, we must transform the architecture of our network, the services to our customers, and the capabilities of our business.

This will bring many challenges but also the opportunity to support positive change in the communities we serve.

For RIIO-ED2, we have put forward an ambitious plan to enable the path to Net Zero and support a just transition.

What is Net Zero?

To halt the devastating potential of climate change, we must reduce the amount of greenhouse gases we produce. Net Zero is a way of achieving this.

A landmark study by the Intergovernmental Panel on Climate Change (IPCC), a group of scientists whose findings are endorsed by the world's governments, have described the climate emergency as a 'code red for humanity'. But there is hope that deep cuts in emissions of greenhouse gases could stabilise rising temperatures, if the world acts fast.

To meet the 1.5°C global warming target set out in the Paris Agreement, global carbon emissions should reach Net Zero by 2050. The UK and Welsh governments have adopted this target, with the Scottish government accelerating their target to 2045. Cities and local authorities have also set their own ambitious Net Zero targets – such as Liverpool City Region who are targeting Net Zero by 2040.

That's why Net Zero is at the heart of our RIIO-ED2 strategy and why we're committed to going above and beyond to enable the pathway to Net Zero for the communities we serve. It's also why we were so proud to be a principal partner for COP26, the UN Climate Change Conference held in Glasgow in November 2021.

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We're the only network operator to serve communities across all three governments: UK, Scottish, and Welsh.

Each have bold ambitions to deliver on their own sustainability and Net Zero targets. In our unique position to support these objectives, we recognise that each region has distinct opportunities and challenges.

We also recognise that our cities and communities have their own targets for Net Zero – for example, Liverpool City Region target Net Zero by 2040, with Glasgow and Edinburgh targeting 2030. As we support these ambitions for Net Zero, we are committing to our own, enhanced target of achieving Net Zero by 2035.

We will enable the communities we serve to meet their targets through our industry-leading planning tools, investment in network digitalisation to unlock capacity, and our bespoke proposals to work collaboratively with our communities. These include funding local green economy initiatives, supporting community energy, and proactive decarbonisation planning with local authorities.

The scale of the challenge

The electricity distribution network is a product of almost a century of incremental evolution. When much of the current electrical infrastructure was installed, our homes used gas or solid fuel for heating and there was, on average, only twenty appliances running on electricity – if we compare that to today, there's more than fifty in the average home. And, over the next two decades, we expect to see electricity demand rise significantly as we decarbonise heat and transport.

Our distribution networks were designed for predictable, stable demand at a time when mainstream electric vehicles, the predicted rise in heat pumps and renewable energy would have been unthinkable. With Net Zero, electricity demand, generation, and consumer behaviour, will all change.

Our network has served us well, but, with so much change ahead, now is the time to invest for the future. We need to future-proof the network to ensure the continued safe, secure and reliable service that our customers want.

To deliver a smarter, more flexible network, we will establish a future system architecture that can support a more dynamic and active network. By realising the Distribution System Operator model, we can unlock capacity, connect more generation, support heat pumps and EV charging, and progressively digitalise our network.

Through a comprehensive strategy to evolve our services, our community partnerships, and our business capabilities, we will deliver significant benefits in RIIO-ED2. Looking further ahead, we will see the demands on our network and expectations on our business continue to evolve. That's why now is the time to prepare for this and establish the platform for our shared Net Zero future.

Net Zero targets

	UK	Scotland	Wales
Net Zero target dates:	2050	2045	2050 *Public sector by 2030*
% Greenhouse gas emission reduction targets:	68% by 2030 78% by 2035	75% by 2030 90% by 2040	63% by 2030 89% by 2040 *Avg 58% (2026-30)*
Renewable generation targets:	100% decarbonised power generation by 2035	50% of energy consumption by 2030, and almost 100% by 2050	70% of generation by 2030 *(set in 2017)*

UK Targets for transport and heat

End the sale of new petrol and diesel only vehicles by 2030 (with hybrid sales ending in 2035)	by 2030
Install 600,000 heat pumps per year by 2028	600,000

Reducing emissions, improving air quality
In partnership with transport group Stagecoach we rolled out the UK's first fleet of six fully electric buses serving rural communities.

Our RIIO-ED2 Strategy and Commitments

We have an ambitious plan for RIIO-ED2, encompassed by a clear strategy that has been shaped by the priorities of our customers and stakeholders.

These priorities have been aligned to three strategic pillars, which provide a consistent focus to our plan and enable us to deliver our ambitious agenda. To support this framework, we have a future vision for our business which articulates the role we must play in RIIO-ED2 and beyond.

We will:

"Work with the communities we serve to enable a just transition to our Net Zero future"

OUR COMMITMENTS

Based on feedback from our customers and stakeholders, we are making **100 commitments** in our business plan to deliver outcomes that meet their needs. Over the following pages we summarise, under our three strategic pillars, and outline more detail on each throughout the business plan document. We will use **clear performance indicators** to track and report on our delivery throughout RIIO-ED2.

*For more information on our commitments and measures of performance, please see **Annex 1.1.***

Develop a network that's ready for Net Zero

- Develop the network of the future
- Ensure a safe and reliable electricity supply
- Provide timely and efficient connections

Be the trusted partner for customers, communities and stakeholders

- Deliver excellent satisfaction and enhanced services for all customers
- Support vulnerable customers and communities to ensure no-one is left behind
- Work with our communities to facilitate the energy system transition

Ready our business for a digital and sustainable future

- Deliver an environmentally sustainable network
- Build a Net Zero workforce
- Embed digitalisation and unlock the value of data

30 commitments

Develop a network that's ready for Net Zero

We will develop the network of the future, to enable Net Zero. This will unlock capacity, enhance our connections service, and enable us to evolve as a Distribution System Operator (DSO). We will continue to deliver world class levels of safety, reliability, and resilience of supply.

Develop the network of the future

1. Install innovative fault level monitoring across 41 constrained locations.

2. Size and co-ordinate interventions to 'touch the network once' where this delivers benefits for our customers.

3. Continue to assess flexibility, smart, innovative, and reinforcement solutions for all our Load related interventions.

4. Deliver over 14,100 network monitors at large secondary substations and enhanced use of smart meter data.

*Find out more on **Pg 46***

14,100

5. Deliver £87.2m of savings by embedding innovation trials into BAU and adopting best practice from industry.

6. Work with key stakeholders, to accurately forecast Net Zero pathways and update our DFES forecasts annually.

7. Be a neutral facilitator of an open and accessible distribution flexibility services market.

8. Deliver a discrete DSO directorate for the start of RIIO-ED2.

9. Share data with customers through an online data portal, including visibility of short and long-term forecasts.

10. Implement a new function to consider whole system planning at the start of the investment process.

11. Change processes to embed whole system planning, with executive oversight, and engage strategically with other utility companies.

12. Support Local Authorities to site public EV chargepoints, collaborating to identify optimal sites.

13. Provide a team of specialists that will partner with Local Authorities and regional Governments to support Local Heat and Energy Efficiency Strategies (LHEES) and Local Area Energy Plans (LAEPS).

Ensure a safe and reliable electricity supply

14. Maintain ISO55001 accreditation and ensure all asset managers are certified with Institute of Asset Management.

15. Reduce asset deterioration from ~5.4% per year without intervention to ~1.1% through targeted modernisation.

16. Ensure, on average, customers are 19% less likely to experience an interruption and the average duration reduces by 19%.

*Find out more on **Pg 69***

19%

17. Improve reliability for 7,857 worst served customers, reducing their interruptions by 33%.

18. Ensure that in an exceptional event, no customer should be off-supply for more than 36 hours.

19. Proactively identify overhead line issues using risk based digitalised inspections, flying 1/3 of the network per annum, rectifying clearance issues within 12 months.

20. Work with regional environment agencies and continue to target 100% compliance as flood maps and assessments evolve.

21. Improve fire safety at over 1,000 substations integrated in third-party buildings.

22. Employ smarter security measures and access restrictions to 100% of ground mounted substations.

23. Safeguard 14,000 residents of flats and tenements each year by proactively upgrading poor condition internal mains, regardless of ownership.

24. Replace nearly 2,000 of our last remaining poorest condition underground link boxes, and modernise over 2,000 low voltage pillars.

Provide timely and efficient connections

25. Offer 100% of connections customers a pre-quotation consultation, face to face or virtually, by 2025.

*Find out more on **Pg 80***

100%

26. Offer a point of contact to all connections customers with 30+ quotes per year, or with a project exceeding £1m by 2025.

27. Offer 80% of HV and EHV customers the choice of a flexible connection, where known constraint exists by 2025.

28. Quote within 70% of industry deadline for major connections and by 2028 budget offer at enquiry for 100% of customers.

29. Make connections related network information available near real-time, including capacity and constraints by 2025.

30. Improve timescales for delivery of a connection by 2% a year.

35 commitments

Be the trusted partner for customers, communities and stakeholders

We will develop our role from service provider to trusted partner. We will engage more with our customers, enhance the services that we deliver for them, and provide dedicated support and bespoke funding to enable our communities to deliver their Net Zero ambitions.

Deliver excellent satisfaction and enhanced services for all customers

31. Deliver customer satisfaction of 9.4/10 across every service and every channel, by 2028.

9.4/10

Find out more on Pg 90

32. Resolve 90% of complaints in 1 working day, 99% in 31 days, with 0 repeat complaints or Ombudsman findings against us.

33. Respond in 10 seconds or less, regardless of channel, in a power cut or emergency, and less than 1% of these calls abandoned.

34. Respond on average within 5 minutes to all non-urgent matters, providing the customer with key information.

35. Establish and promote a service for customers to register contact method and language of choice, and use this to contact them.

36. Proactively contact 99%+ of customers who register contact method choice, during a power cut and when power is restored.

37. 95% of highest risk customers (vulnerable and commercial) spoken to face to face in advance of a planned power cut.

38. Contact all PSR customers when a power cut occurs via their channel of choice and highest risk customers by phone call.

39. State restoration time, name dispatched, reason, location and support available for vulnerable customers in 99% of unplanned power cut updates.

40. Restore 80% of customers within the restoration time initially stated, during an unplanned power cut.

41. All customers notified at least 10 days before a planned outage, 90% notified by preferred method 48 hours before.

42. Visit 99% of customers within three hours, when asked to carry out a safety check.

43. Deliver 90% of requests for earthing, shrouding or maintenance work to the customers' date, subject to access and traffic.

44. Support 40,000 customers with services to reduce costs and benefit from energy transition, achieving SROI of £1.47 per £1.

45. Undertake risk assessment for all commercial customers who register with us, and record actions within 3 months.

Support vulnerable customers and communities to ensure no-one is left behind

46. Transition our vulnerability partnership model to be proactive.

47. Create a single vulnerability register for all our partners, introducing a 'register once' service for customers.

48. Register 80% of customers in our PSR, across all common needs codes, based on national available data, by 2028.

49. Broaden our view of vulnerability beyond common utility codes, building into service offerings and partnership model.

50. Contact 100% of vulnerable customers every 2 years, achieving minimum 60% fully validated data.

51. Create an LCT prioritisation ranking to target services, using data on social and technological factors.

52. Achieve relevant recognised international standards and score Top 5 in UK through ICS benchmark.

53. Capture customer individual needs during a power cut, with 99%+ of needs being met.

54. Deliver direct support to 276,000 vulnerable and disadvantaged customers.

Find out more on Pg 93

276,000

Work with our communities to facilitate the energy system transition

55. Deliver community energy outreach campaigns and partner events.

56. Deliver new Community Energy Strategy developed with partners and reviewed annually.

57. Offer extra technical advice and signposting to communities who wish to explore low carbon technology.

58. Ring-fence ~25% of our proposed Net Zero Fund for community-led energy projects.

59. Create a £30m Net Zero Fund to support low-carbon projects, aligned to national,regional and local ambitions.

£30m

Find out more on Pg 106

60. Launch a new Just Transition Strategy by 2023, engaging further on local needs and embedding principles in business. Progress checked via independent annual review.

61. Achieve highest category status on AA1000SE stakeholder engagement standard annually following evidence check and interviews.

62. Retest stakeholder priorities annually, present results and actions to independent group.

63. Launch new online collaboration and engagement platform, where stakeholders can influence decision making.

64. Embed annual engagement programme, including executive level-led strategic events.

65. Report annually on engagement performance, including generating a positive SROI value of every initiative over 5 years.

35 commitments

Ready our business for a digital and sustainable future

We will transform our operations to build a Net Zero workforce. We will create jobs, upskill our people, drive sustainability in our business and supply chain, and embed digitalization and unlock the value of data – sharing the benefits with our customers and stakeholders.

Deliver an environmentally sustainable network

66. Maintain and improve our ISO14001 certificated Environmental Management System, achieving 'beyond compliance'.

67. Publish an annual report of progress against all sustainability commitments.

68. Improve quality of environmental data collected and analysed at all stages of the asset lifecycle.

69. Identify and ensure delivery of appropriate environmental training for staff, contractors and suppliers.

70. Further enhance sustainability standards in contracts and target more than 80% of RIIO-ED2 contracts by value, meeting these by 2023.

71. Reduce Scope 1, 2, 3 business carbon footprint by 67.2% by 2035 from a 2018/19 base, in line with science based targets.

72. Minimise carbon footprint to achieve Net Zero carbon by 2035.

*Find out more on **Pg 112***

2035

73. Achieve Carbon Neutrality by 2023 for our Scope 1 and 2 business carbon footprint, excluding Losses.

74. Replace 100% (over 800) of our cars and vans with electric alternatives by 2030 and seek to accelerate this to 2028.

75. Reduce our SF_6 leakage by 10% over the RIIO-ED2 period, compared to RIIO-ED1.

76. Analyse our generator use and set targets to reduce carbon emissions by the end of RIIO-ED2.

77. Continue with a 100% UK renewable energy tariff for all buildings and reduce consumption by 15.2GWh (8%) over RIIO-ED2.

78. Avoid an estimated 36GWh of network losses, limiting losses to a lower level than would otherwise be the case during RIIO-ED2.

79. Reduce business travel emissions by at least 580 tCO_2e by the end of RIIO-ED2.

80. Require strategic suppliers to set science based targets within 5 years, aiming for 80% of our supply chain by value.

81. Continue to target 0 environmental regulatory interventions and notifiable breaches.

82. Implement Pollution Prevention Plans at 100% of our 132kV projects.

83. Reduce the volume of fluid (oil) used to top up pressurised cables by around 10% (3,490l) by replacing over 19km of cable.

84. Remove PCBs from our network by the end of 2025.

85. Use low-carbon alternatives to concrete bunding for RIIO-ED2 retrofit projects, where technically feasible.

86. Continue to proactively minimise impacts of noise and take timely action to rectify noise complaints.

87. Deliver 10% enhancement of biodiversity on 25 hectares of non-operational land through local collaboration.

88. Deliver 500 biodiversity units across our RIIO-ED2 work programme to mitigate our impacts and enhance local biodiversity.

89. Remove 35km of overhead line in Areas of Outstanding Natural Beauty, National Parks and National Scenic Areas.

90. Divert 100% of our waste from landfill by 2030, excluding compliance waste.

91. Establish baseline and targets for waste reduction per £1m of annual expenditure, by the end of RIIO-ED2 and 2030.

Build a Net Zero workforce

92. Grow talent from our local communities, to fill 90% of field vacancies and 50% of engineering/technical vacancies through our trainee programmes.

93. Create opportunities for our workforce to develop new skills for the journey to Net Zero through internal trainee programmes and upskilling plans.

*Find out more on **Pg 124***

94. Drive for an inclusive and diverse workforce through our policies, recruitment and by training our people leaders in diversity and inclusion, measured by improved D&I data for our workforce.

95. Safeguard the health and wellbeing of our people through action plans driven by employee feedback and increased mental health first aiders to a 1:25 level by 2024.

96. Embed a digital and sustainable culture within our workforce through new and enhanced capabilities, giving them the skills for the future.

Embed digitalisation and unlock the value of data

97. Operate a risk-based approach to Cyber Security, creating actions plans for mitigation steps.

98. Create a new digital environment for our business including a representation of our energy system and operation.

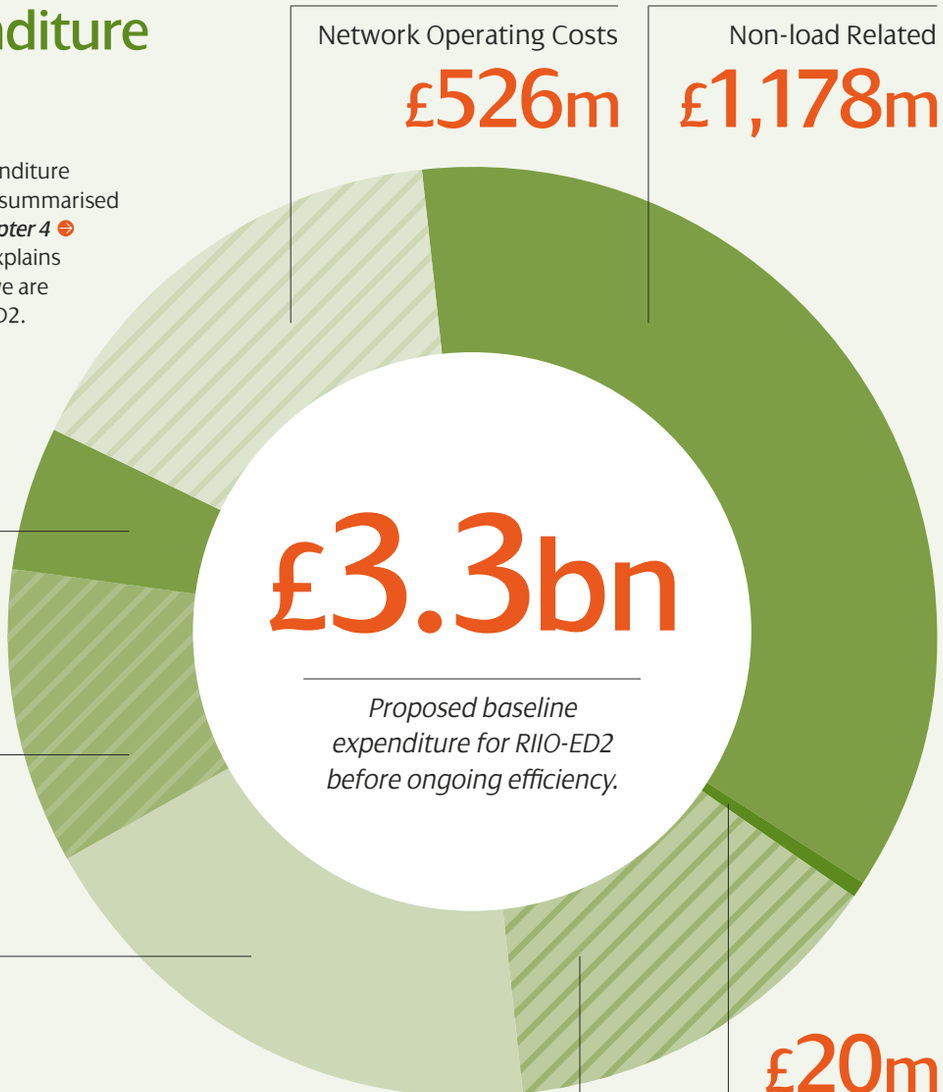
99. Refresh and publish our Digitalisation Strategy every 2 years and our Action Plan at least every 6 months.

100. Make data more accessible and take a 'presumed open' approach.

*Find out more on **Pg 133***

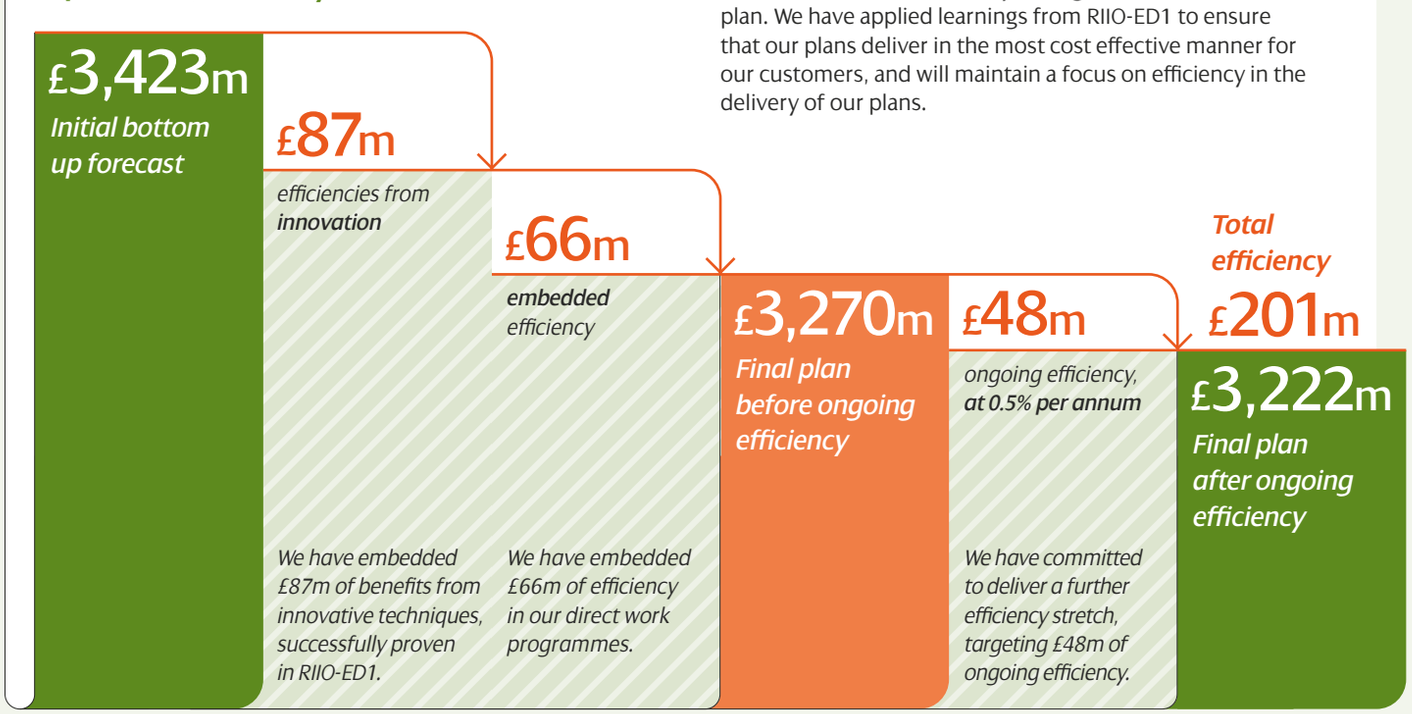
Our RIIO-ED2 expenditure in summary

To deliver our RIIO-ED2 commitments, our expenditure plan covers all aspects of our business, which is summarised here by Ofgem's high-level cost categories. ***Chapter 4*** outlines what we will deliver, and ***Chapter 5*** explains our expenditure in more detail, including how we are proposing to manage uncertainty during RIIO-ED2.



Expenditure, efficiency and innovation

We have embedded efficiency throughout our RIIO-ED2 plan. We have applied learnings from RIIO-ED1 to ensure that our plans deliver in the most cost effective manner for our customers, and will maintain a focus on efficiency in the delivery of our plans.



Our proposed total expenditure (Totex) and cost drivers

Our proposed RIIO-ED2 expenditure is £3.3bn, before ongoing efficiency, which will mean we spend £144m more each year during RIIO-ED2 than we have in RIIO-ED1– a 28% increase. Some of the core drivers of the increased level of expenditure are outlined below. These are imperative to facilitate the transition to Net Zero, meet the needs of our customers and to manage our impact on the environment.

*For full details on our Expenditure across SPD and SPM, please read; **Chapter 5A – Our Expenditure.***

*Customer demand will increase with the uptake of Net Zero technologies such as electric vehicles and heat pumps – we need to invest to reinforce our LV network to enable these to connect and to improve visibility of our network. You can read more in **Chapter 4A***

*We are investing in Distribution System Operations, to enable faster connection, improved management of constraints and increased levels of flexibility and reliability. You can read more about our transition to DSO in **Chapter 4A***

*Sustainability is a feature throughout our RIIO-ED2 plan. A key programme of work will be to remove all traces of PCBs – hazardous to health and the environment – through a targeted replacement programme, in addition to our other environmental programmes. You can read more in **Chapter 4C***

The majority of our Network Operating costs, Closely Associated Indirects and Business support costs are broadly in line with RIIO-ED1 levels, and have increased only in areas which facilitate new or increased activity such as DSO and Net Zero.

*Our Digitalisation Strategy is a critical enabler of our plan to offer new, enhanced services to our customers, share more data, improve the effectiveness of our operations, and increase the use of data in decision-making. You can read more in **Chapter 4C***

Expenditure £m (2020/21 Prices)	RIIO-ED2 Total	Annual Average RIIO-ED2	Annual Average RIIO-ED1
Connections Inside the Price Control	63.6	12.7	3.1
Network reinforcement	358.7	71.7	40.7
New Transmission Connection Charges	22.2	4.4	1.6
Total Load Related Expenditure	**444.5**	**88.9**	**45.4**
Asset Replacement & Refurbishment	584	116.8	97.8
Operational IT & telecoms	221.4	44.3	10.4
Safety Programmes	126.6	25.3	38.2
Environmental Programmes	103.3	20.7	4.4
Resilience & Network Diversions	142.6	28.5	25.0
Total Non-load Related Expenditure	**1,177.9**	**235.6**	**175.8**
Faults, Severe Weather & ONIs	306.6	61.3	54.9
Inspection, Maintenance and Tree Cutting	196.4	39.3	34.3
Other activities	22.6	4.5	4.0
Network Operating Costs	**525.5**	**105.1**	**93.2**
Closely Associated Indirects	**606.6**	**121.3**	**111.8**
Business Support Costs	**331.4**	**66.3**	**67.7**
Non Operational Capex	**164.3**	**32.9**	**12.4**
Smart	**20.2**	**4.0**	**4.1**
Totex Within Price Control	**3,270.4**	**654.1**	**510.3**
Ongoing Efficiency	48.3	9.7	
Totex net of Ongoing Efficiency	**3,222.1**	**644.4**	

Connections

The majority of our connections expenditure is funded directly by customers, and is therefore not included in the above 'Totex Within Price Control'. In ***Chapter 4A*** we discuss our forecasts, which predict a significant increase in our connections activity during RIIO-ED2, and we outline our strategy to provide timely and efficient connections.

Network Innovation Allowances

In addition, we are forecasting to spend a further £35m on Network Innovation Allowances (NIA) during RIIO-ED2, which builds on our successful RIIO-ED1 innovation projects, and will deliver benefits for the future. You can read more in ***Chapter 5A***

Managing uncertainty

Due to the scale and pace of change necessary to deliver Net Zero targets, there is cost and volume uncertainty in several aspects of our plan. We have detailed in ***Chapter 5B*** how our plans can adapt if mechanisms for managing uncertainty are available.

Bespoke incentive mechanisms

The RIIO-ED2 framework has introduced the opportunity for DNOs to propose bespoke outputs and incentives, developed in collaboration with customers and stakeholders. We outline £185m of bespoke initiatives in ***Chapter 5C***, which will deliver further benefits to our communities.

Domestic customer bill impact

Distribution Network Operator (DNO) charges account for around 17% of the average domestic electricity bill. These charges can vary across DNOs due to their size and number of customers. For SPEN, 90% of our customers are domestic, representing 44% of our revenues. The majority of our costs are recovered over a 45-year period, controlled through Ofgem's regulatory model.

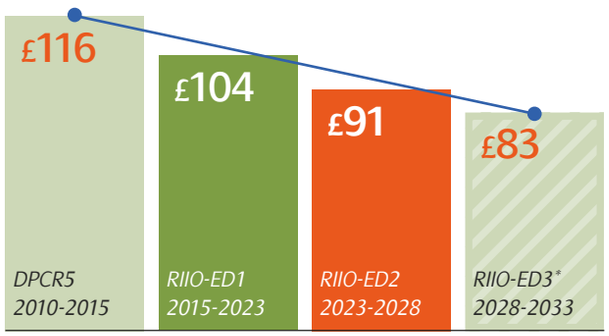
In SPD, we forecast a 12% reduction in the average domestic bill during RIIO-ED2. Although our expenditure increases, this is offset by two other reductions: the ending of historic financing arrangements (linked to the timing of privatisation) and the ending of our established pension deficit funding, as agreed with the Government's Actuary Department as part of the 2020 Reasonableness Review.

In SPM, our expenditure also increases, but the reductions from the ending of our established pension deficit funding will not arrive until 2029, the first year of RIIO-ED3. This means that average bill during the period will increase by 6%. However, due to the impact of COVID-19 on electricity demand, our annual charges in RIIO-ED2 will remain broadly aligned with the final year of RIIO-ED1. Looking ahead to RIIO-ED3, using equivalent RIIO-ED2 parameters, we would anticipate around a 10% reduction in bills, to a level below RIIO-ED1.

All of the above is based on Ofgem's instructed financing arrangements for this draft plan submission. The bill calculation shows our actual published domestic tariffs to 2023. For RIIO-ED2, we have adapted Ofgem's approach to provide a statistically more robust forecast. Further details can be found in ***Annex 5D.8 Customer Bills***

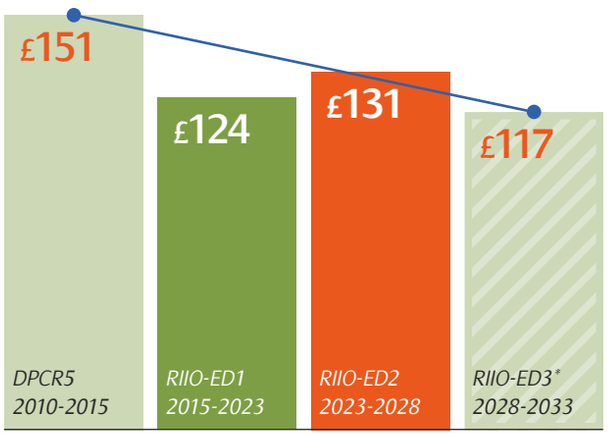
SP Distribution

Average customer bill impact (2020/21 Prices)



SP Manweb

Average customer bill impact (2020/21 Prices)



**RIIO-ED3 estimate uses same expenditure & financeability arrangements as RIIO-ED2.*

Forecast revenues

£m (2020/21 Prices)

Our revenues are derived from Ofgem's regulatory model, where the majority of our expenditure is recovered over 45 years, via our Regulated Asset Value (RAV).

SP Distribution's RAV is forecast to grow by around 8% during RIIO-ED1 (from £1.8bn to £2bn), and is projected to grow by a further 26% (to £2.5bn) during RIIO-ED2.

SP Manweb's RAV is forecast to grow by around 21% during RIIO-ED1 (from £1.8bn to £2.2bn), and is projected to grow by a further 21% (to £2.7bn) during RIIO-ED2.

Ofgem are proposing that the return on equity for this investment reduces from 6.0% in RIIO-ED1to 3.65% in RIIO-ED2, on a comparable RPI measure of inflation (which is 4.65% on their revised CPIH inflation basis).

For more detail on this, including our own assessment of necessary financing arrangements, please read ***Chapter 5D.***

	SPD Total	SP Distribution Averages		SPM Total	SP Manweb Averages	
		RIIO-ED2	RIIO-ED1		RIIO-ED2	RIIO-ED1
Depreciation	**732**	146	172	**776**	155	166
Return	**325**	65	64	**362**	72	68
Revenue associated with RAV	**1,057**	**211**	**236**	**1,138**	**228**	**235**
Fast Pot	**484**	97	48	**534**	107	53
Non-Controllable Opex (Rates)	**337**	67	71	**223**	45	44
Equity Issuance Costs	**5**	1	0	**5**	1	1
Tax Allowance	**58**	12	9	**59**	12	3
Pension Deficit Funding	**60**	12	33	**160**	32	32
Other	**29**	6	5	**27**	5	*-1*
Revenue not associated with RAV	**973**	**195**	**166**	**1,008**	**201**	**132**
Allowed Baseline Revenues	**2,029**	**406**	**402**	**2,146**	**429**	**366**

Evolution of our plan between draft and final

We published our draft RIIO-ED2 Business Plan on 1st July 2021. In support of our draft plan, we provided extensive evidence covering our engagement process, engineering analysis, and cost benchmarking. This ensured that our draft plan was ambitious, efficient and innovative.

For our final plan, we've robustly tested our proposals, extended our analysis, and challenged our costs. We've gone the extra mile to make sure our plans are ambitious and will deliver value for money.

Following the publication of our draft plan, we commenced 'Phase 4' of our engagement programme to further challenge and test our proposals. This involved a comprehensive programme of engagement with our customers and stakeholders on our strategies, outputs, incentives and commitments – and, importantly, testing their 'willingness to accept' the cost of our proposals.

We have incorporated our Phase 4 engagement into our final plans. In response to this feedback, we have enhanced our proposals and addressed gaps that our stakeholders highlighted – for example, updating our Whole System Strategy. These findings are fully detailed within our engagement triangulation records.

Since our draft plan submission, we have also considered and responded to independent challenge from our Customer Engagement Group (CEG) and the RIIO-2 Challenge Group, both of whom published reports on our draft plan. We have provided detailed response to this feedback, which can be found in ***Annex 1.2*** *for the CG and* ***Annex 3.2*** *for the CEG.*

Responding to new Ofgem requirements

On 30 September 2021, Ofgem published updated business plan guidance. This required us to address new 'minimum requirements' in our final business plan. This focused on DSO, Digitalisation, and the Access & Charging Significant Code Review.

We have fully addressed all of these new minimum requirements. Full information can be found in the relevant chapters of this business plan and in the associated annexes.

More information on the changes we've made to our plan throughout this process can be found our ***RIIO-ED2 Business Plan Narrative Change Log.***

KEY UPDATES FOR FINAL PLAN

Engagement

We commenced 'Phase 4' of our engagement programme in Q3 2021, where we engaged 3,456 customers and 481 expert stakeholders on our proposals. The results of this process are fully detailed in our engagement 'Triangulation' Records. In November, we conducted our final 'Willingness to Accept' testing, which demonstrated further customer support for our final plan proposals. For more detail on our engagement, please see ***Annex 3.1*** *and* ***Annex 3.2***

Commitments

Our stakeholders told us that we could do more to enhance our draft plan commitments and to aid navigation. We have revised and expanded these to 100 commitments across our final plan, making them more ambitious where this was clearly supported. A full summary of our RIIO-ED2 commitments, including reference to performance levels in RIIO-ED1 where applicable, can be found in ***Annex 1.1***

Going further for customers

As part of our draft plan we submitted three bespoke incentives and three 'Consumer Value Propositions' (CVPs), all fully specified and evidenced. Following feedback and customer testing, we have revised and simplified our incentives and added one further CVP to our final plan. Full details can be found in ***Chapter 5C***

Costs and efficiency

Following draft plan submission, we undertook a further review and challenge on our expenditure proposals to ensure our final plan is as efficient as possible. Our final plan is in line with our draft plan. We are proposing £3.3bn of expenditure in order to deliver our commitments. Using Ofgem's RIIO-ED1 cost assessment methodology, we can demonstrate that our plan is 5% efficient when compared with available industry data.

Supporting evidence

We submitted as full and complete a draft plan as possible to ensure the robustness and accuracy of our costs, forecasts and outputs. For our final plan, we have provided additional annexes and technical justifications, alongside further independent external assurance and benchmarking reports.

Next Steps

Our final business plan is an important milestone, but significant work remains ahead of the start of RIIO-ED2 on 1 April 2023. Ofgem, our Customer Engagement Group (CEG), and the RIIO-2 Challenge Group, will all undertake a review of our plans. Meanwhile, we will be working closely with Ofgem and other Distribution Network Operators to develop the detail of many of the RIIO-ED2 regulatory mechanisms. We will also continue to engage with stakeholders for insight and feedback on important topics that will impact RIIO-ED2. For example, ongoing developments related to Ofgem's Access & Forward Looking Charges Significant Code Review (SCR).

CHAPTER 2

Our RIIO-ED1 Track Record

In RIIO-ED1, we set out over 90 commitments to meet the needs of our customers and stakeholders. These were enabled by our vision and three strategic anchors:

- Getting closer to our customers, communities and stakeholders;
- Creating a leading position in engineering and asset management;
- Equipping our people with the skills they need for the future

These anchors enabled us to deliver our commitments across the key areas of our RIIO-ED1 contract – Safety, Reliability and Availability, Customer Service, Environment and Connections.

We have highlighted in this section some of our successes in delivering RIIO-ED1. We are proud of our track record. We're delivering on our commitments for our customers, exceeding targets, and going further to address the needs and priorities of our customers. We will continue to deliver in RIIO-ED2.

Safety

Safety is fundamental to our business; our commitment to safety for our workforce and the public goes far beyond legal requirements. For our internal workforce, our total recordable injury rate has been continually below target of less than 0.35. We have also maintained 100% compliance to our extensive audit regime, and received no probation notices from the Health and Safety Executive (HSE).

During RIIO-ED1, we have also placed enhanced focus on public safety and education. We have invested in communicating the potential risks from our network assets to the public and collaborated with the wider industry to improve public understanding and minimise risk.

Customer service

At the start of RIIO-ED1, we set ourselves the goal of becoming the top DNO for customer service. Our first step was to reorganise our business, implementing a locally based delivery model. This model ensures that our front line operations, customer service and project delivery teams were embedded in each 'district' within our licence areas. This enables a joined-up approach to how we serve our customers and stakeholders, ensuring that we deliver our plans with a community focussed approach.

Through continuous improvement, we are delivering industry leading customer service and leading the industry in our approach to Social Return on Investment. Our Broad Measure of Customer Services scores have trended upwards since the start of RIIO-ED1, and delivered 9.2 for SPD and SPM in 2020/21.

We have also pushed ourselves further than our own industry. We have benchmarked first against the top 50 companies in all UK service sectors in the Institute of Customer Service Index Survey, and were the first utilities organisation to achieve BSI Customer Service Kitemark and inclusive Service Verification Scheme certification.

9.23/10

We continue our progression to be a leader in customer service with a BMCS score of 9.23/10 in 2020/21.

31p per day

Our customer bills have fallen by 6% since 2015/16, with our customers paying around 31p per day for our service – less than a Netflix subscription or less than half the price of a 2nd class stamp.

7/10

Our highest scores to date for both SPD and SPM in the Stakeholder Engagement and Consumer Vulnerability Score, this positive score reflects the activities we do and relationships we have with a variety of stakeholders.

1st

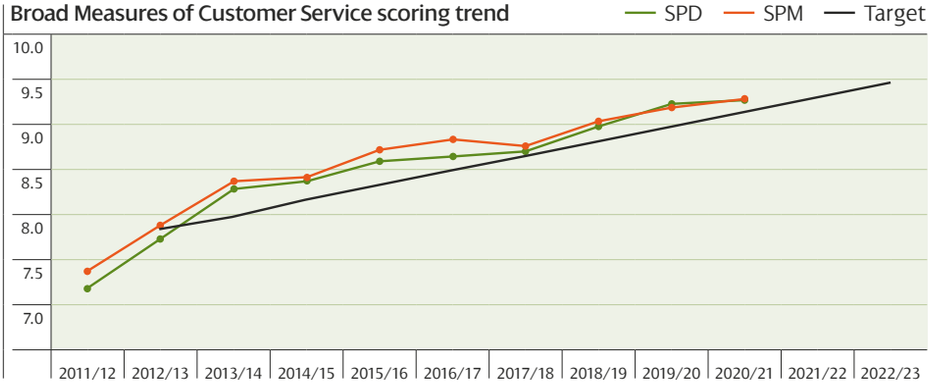
Benchmarked externally by the Institute of Customer Service above household names such as John Lewis, and the first utility to be awarded the BSI Kitemark for Customer Service.

>900

Apprentices, trainees and graduates recruited since 2015.

*Full detail on our RIIO-ED1 performance to date can be seen in **Annex 2.2**.*
*For more detailed breakdown on our latest performance metrics for the year 2020/21, please refer to our **Annual Performance Report**.*

Broad Measures of Customer Service scoring trend



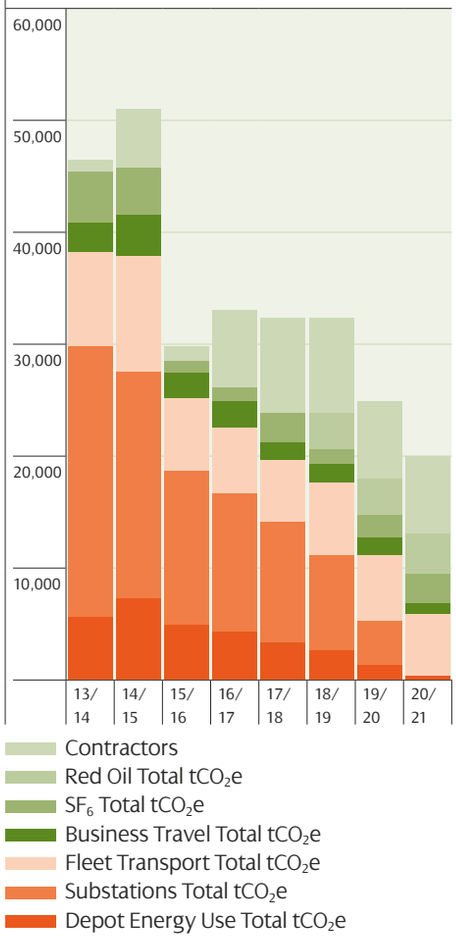
Environment

In RIIO-ED1 we commenced our work to reach our low carbon targets and have already met many of our 2023 goals. We have prioritised the reduction of SF_6 leakage on our network, and have achieved significantly reduced leakage from fluid filled cable.

–85%

85% reduction in fluid filled cable top ups in SPM with a leakage rate of 0.3%.

Carbon Footprint CO_2 targets *tCO_2e*



Since 2013/14, the year of our baseline measurements, SPD and SPM have jointly achieved a 57% reduction in Scope 1 and 2 Business Carbon Footprint, excluding losses. In 2013, we set a target to reduce emissions by 15% by 2023. We hit that target in our 2015/16 reporting year and are on track to achieve our 2035 Science-Based Targets.

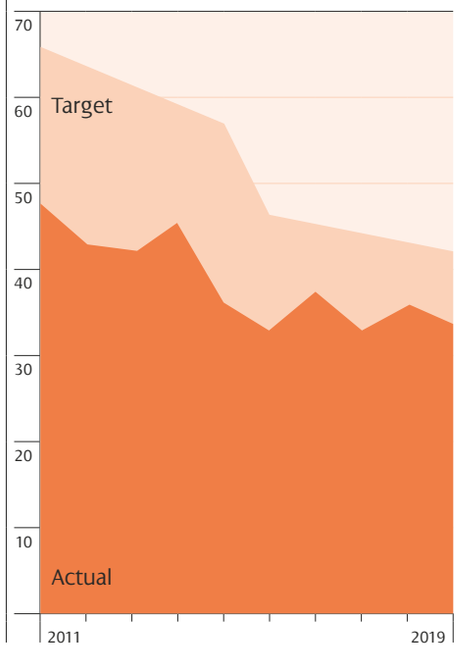
–57%

57% reduction in Scope 1 and Scope 2 Business Carbon Footprint, excluding losses.

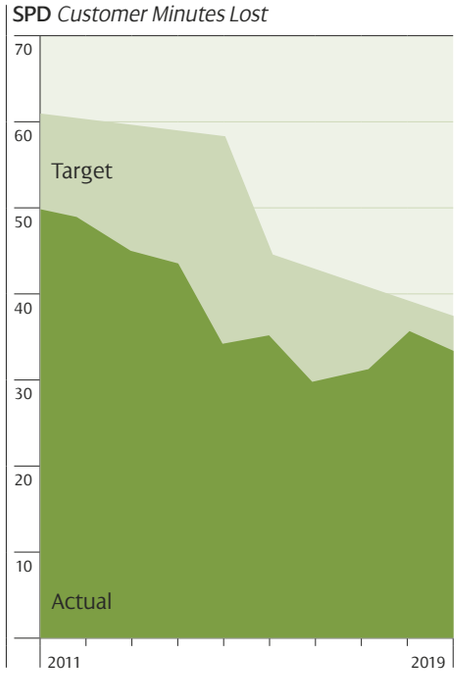
Reliability and Availability

Our customers remind us that reliability and availability is of the utmost importance and we continue to outperform our stretching targets. In 2020/21, Customer Minutes Lost were less than 35 for SPD and SPM vs. a target of 41 and 37 respectively. 99% of vulnerable customers experienced no supply interruptions or were restored within 6 hours in 2019/20.

SPM *Customer Minutes Lost*



SPD *Customer Minutes Lost*



>80%

Nearly 80% of our asset health outputs have been delivered, ahead of our baseline plan targets.

Connections

In connections, our focus is on first class service where we set out to ensure the service received by our customers is industry leading. Overall, our Time to Quote has improved, delivering above average performance, however Time to Connect has remained static due to continued focus on service as a priority. This focus on quality of service rather than speed has proven effective, as demonstrated in our BMCS scores, however has meant our Time based metrics have not seen significant improvement during RIIO-ED1.

Innovation

20%

20% of total industry innovation funding across 53 projects; the largest portfolio on a per DNO licence basis.

2.6GW

2.6GW of Flexibility tenders conducted, across all voltages and types of Flexibility. We were also the first DNO to tender for reactive power services in the flexibility market.

4.9GW

4.9GW of generation capacity connected directly to our networks, equivalent to c80% of maximum system demand.

>£60m of benefits

Delivered to the local economy from our industry leading Active Network Management project at Dunbar, the precursor to our DSO plans for RIIO-ED2.

OUR RIIO-ED1 TRACK RECORD:
Expenditure and Efficiency

During RIIO-ED1, we have demonstrated strong performance, and are delivering our outputs and commitments while keeping customer service at the heart of our business.

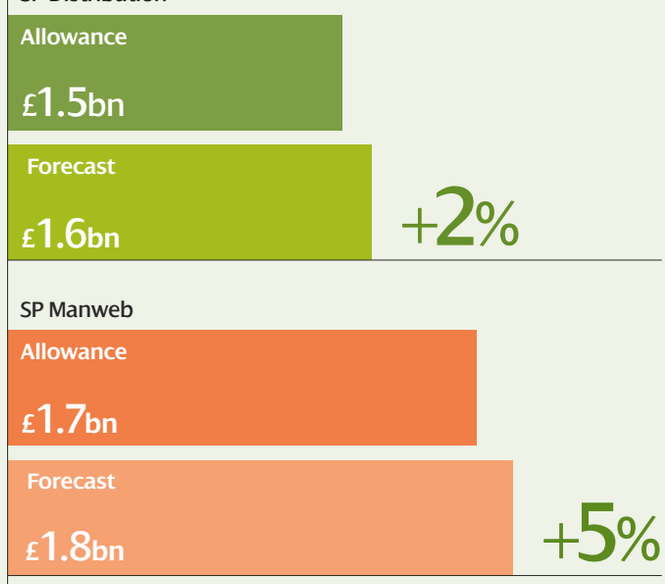
Overall, the cost of delivering our RIIO-ED1 plan is slightly above our regulatory allowances, driven upwards by emergent requirements on our network, and by external cost pressures. We believe this delivers value for our customers, as we have proactively addressed emerging risks to improve the health and network reliability, as opposed to defer investment at the expense of long-term safety, security and service.

During RIIO-ED1, we have delivered extensive savings against our original forecast. At the start of the price control, we successfully negotiated competitive contracts for several of our high value programmes, such as rising and lateral mains and civil programmes. We have also commenced our digitalisation journey, establishing the platform for RIIO-ED2 by investing in our digital systems and realising savings through improving processes and redeploying personnel.

We have however experienced upwards cost pressures from pensions and real wage increases for our workforce, and through upwards pressure on contractor and materials costs, further exacerbated by the recent pandemic.

We continue to prioritise delivery of our outputs and commitments, and will deliver our RIIO-ED1 contract in full and will not compromise on customer service, asset risk or network performance.

RIIO-ED1 Totex forecasts *(£, 2012/13 prices)**



**As per our Regulatory Reporting Pack submission 2020/21*

Savings through efficiency

£40m Unit cost savings

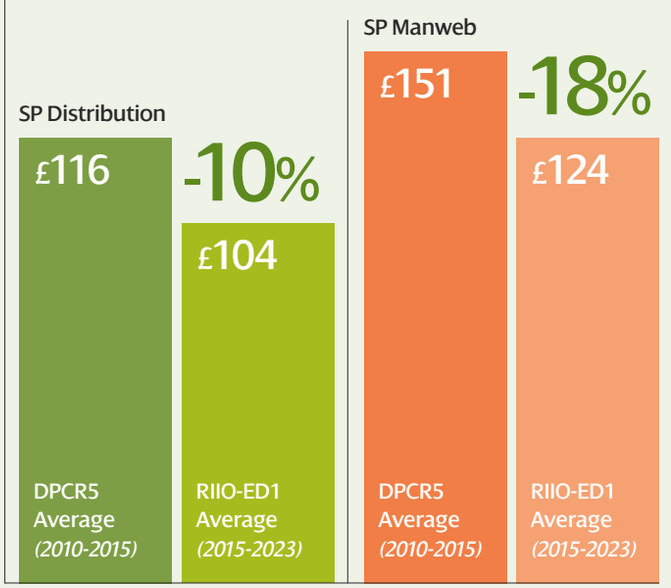
£22m Indirect savings vs. DPCR5

£27m Innovation benefits

CUSTOMER BILLS IN RIIO-ED1

During RIIO-ED1, our average customer bills have fallen by 10% in SPD and 18% in SPM in real terms since the previous price control. The costs to our customers remains a key focus for us, which is why we continue to drive innovation and efficiency, which can be embedded into long-term expenditure savings.

Average Domestic Customer Bill *(£, 2020/21 prices)*



RETURN ON REGULATED EQUITY (RORE): OPERATIONAL PERFORMANCE

RoRE is a measure of financial and operational performance which Ofgem uses as indicator of overall financial performance. After six years of RIIO-ED1, our RoRE performance is 6.8% and 5.5% in SPD and SPM. A key aspect of our operational performance is of our incentive results. This is driven by outperforming targets in areas that deliver direct customer benefits, such as in customer service and reliability of supply.

Operational Performance
RIIO-ED1

	SP Distribution		SP Manweb	
	National Gearing	Actual Gearing	National Gearing	Actual Gearing
Allowed Equity Return	6.0%	5.7%	6.0%	5.7%
IQI Penalty	*-0.3%*	*-0.3%*	*-0.3%*	*-0.3%*
Totex Performance	*-0.4%*	*-0.4%*	*-1.1%*	*-1.0%*
Outputs, Incentives and Innovation	1.5%	1.4%	0.9%	0.8%
Penalties and Fines	0.0%	0.0%	0.0%	0.0%
RoRE – Operational Performance	**6.8%**	**6.4%**	**5.5%**	**5.2%**

OUR RIIO-ED1 TRACK RECORD:
Innovation

Our Innovation track record is industry leading

In RIIO-ED1, we are in the top tier of the electricity sector for innovation, punching above our weight in both our portfolio of projects and level of funding. SPM and SPD are delivering the most Network Innovation Competition (NIC) funded projects across the distribution sector and have the greatest share of NIC funding by licence.

Innovation benefits are passed to our Customers

During RIIO-ED1, our activities in innovation, and use of the opportunities of the regulatory framework, have enabled us to deliver over £27m benefits for our customers so far which we are able to pass on to our customers. In addition, we have been able to unlock potential benefits for all GB customers through recognised, award-winning innovation which supports the energy transition and is embedded within our RIIO-ED2 Business Plan.

Innovation is critical to the Net Zero transition

Our communities are becoming increasingly reliant on electricity networks to power heat and transport, and to facilitate decentralised and decarbonised generation. This transition is driven by our customers, with innovation playing a key role in minimising costs and disruption, particularly for customers in vulnerable situations.

In response to the change we are seeing, we have developed the world's first real-time fault level monitor to facilitate renewable generation connections as the UK decarbonises. Further, we have made use of artificial intelligence and data to enhance LV network planning and operational capabilities, and, throughout RIIO-ED2, we will continue to utilise the innovation opportunities afforded by the RIIO regulatory framework while further increasing BAU activities.

INNOVATION HIGHLIGHT:

Project Charge is a Network Innovation Competition funded project due to complete in 2023. This is bringing together transport and energy system planning for the first time to accelerate the investment and deployment of public EV charging infrastructure.

The project will secure a cleaner, greener future for our customers in SP Manweb, and ultimately the UK as a whole, by identifying optimal locations for chargepoints for EV motorists while making best use of available capacity on the electricity network. Ensuring chargers can be installed in the right locations, at the lowest cost.

£310m

By scaling up Project PACE across other regions, the potential UK savings from public EV charging infrastructure is in the region of £310m.

*For more information about how we are creating more EV infrastructure in RIIO-ED2 see **Pg 62***

INNOVATION HIGHLIGHT:

Project PACE is a flagship of our strategic partnership with the Scottish Government for the decarbonisation of transport. We are working in collaboration with local authorities and Transport Scotland to install 180 public chargers, targeting areas where the market has not provided public EV charging infrastructure.

With funding matched between the Scottish Government and SP Energy Networks, this project pilots an innovative DNO-led model for deploying universally accessible public EV charger infrastructure, including managing costs and delivery timescales. By choosing charging locations that make effective use of the existing electricity network, Project PACE is expected to achieve £30,000 to £60,000 average savings on connection costs per location providing, a total benefit of £1.3m to £2.6m. Scaling up the innovative site selection approach across other regions is projected to create potential benefits of £310m savings across the UK.

CHAPTER 3

Co-creating our plan with customers and stakeholders

IN THIS CHAPTER

We provide an overview of how we have engaged with our customers to understand their needs and how we ensure that we are talking to the right customers. *Pg 21*

We detail our four phased approach to our RIIO-ED2 engagement programme, to ensure we truly design a business plan around the needs of our customers and stakeholders. *Pg 22*

We outline how we have sought deep insight, input and challenge from external experts. *Pg 26*

We've engaged directly with more customers and stakeholders than at any other time in our history, to best understand their current and future needs, and to make sure the services we develop deliver maximum benefit for them. It has been important for us to understand where their priorities and ambitions lie, and this knowledge has been key to building our strategy and plans.

Building our plan for the future is not a journey we can do alone. We have engaged with a huge range of stakeholders to understand what they require both now and in the future. What is important to our customers and stakeholders is important to us, and their feedback shapes our business decisions.

Engagement is at the heart of our business plan and it is the views and preferences of our customers and stakeholders that have helped define the commitments we propose to deliver in the RIIO-ED2 period.

We know that we need more than just a well researched strategy to meet the challenges that face us. That's why everything we've developed has been tested and built following engagement, insight and direction from our customers, stakeholders and communities.

We've engaged over 19,000 customers and stakeholders *through the process of building our RIIO-ED2 plan.*

19,174

You'll see the results of our customer and stakeholder engagement in each of our strategic priorities, summarised throughout ***Chapter 4*** *of our plan.*

Chapter 8 *sets out our future Stakeholder Engagement Strategy, for the RIIO-ED2 period.*

Building on our strong track record

We have a mature and proven strategy for effective stakeholder engagement. Now in its ninth year, it's updated annually to continuously improve our approach. It sets out how we engage with a simple, nine-step process, supported by appropriate tools and processes.

Our strategy builds on feedback from recognised experts, Ofgem, independent expert consultants, our Strategic Stakeholder Panels and Accountability – the owners of the global standard for stakeholder engagement. This strategy is a combination of industry best-practice, stakeholder and customer feedback, and years of our own experience delivering high-quality engagement.

All of this has combined to deliver a RIIO-ED2 engagement programme that not only aligns with Ofgem's Enhanced Engagement Process, but that seeks to go even further than this at all times – to deliver the best outcomes for our stakeholders and the communities we serve.

Directly influencing our strategy and priorities

Building on our strong track record of engagement in RIIO-ED1, and learning from best practice across the industry, we designed a best-in-class customer and stakeholder engagement approach to drive the development of this business plan.

Influenced by our ongoing engagement and the ever-changing environment in which we operate, each stage of the development of our plan was guided by specific and actionable feedback.

Stakeholder and customer feedback was triangulated with other evidence like cost-benefit-analyses to form a 'golden thread' that runs through our business plan. This thread links the priorities of our customers and stakeholders to our commitments and the benefits these will deliver for society.

Talking to the right stakeholders

In line with our longstanding engagement strategy we seek to gather insight from those who are best placed to provide informed, specific, and unambiguous feedback.

For each topic area in our plan, we started by reviewing our existing stakeholder contacts registered in our stakeholder database. This provided an excellent foundation and ensured we captured those stakeholders who we have ongoing engagement with on a 'business as usual' basis. This was important as we already have strong partnerships with key stakeholders with a high degree of topic-specific knowledge, who were able to bring expert insight to our RIIO-ED2 engagement.

We then performed an extensive gap analysis, utilising the STEER (Social, Technologic, Economic, Environmental and Regulatory) method and reviewing the geographical spread to make sure we had solid representation across Wales, Scotland and England. We then benchmarked our database against those engaged by other UK utilities and those mapped as part of our RIIO-T2 engagement.

Any gaps were closed by performing bespoke desktop research, using subject matter experts and challenge from internal colleagues.

Finally, we placed stakeholder groups on the traditional engagement matrix, based on their levels of influence and interest. The resulting heat maps helped us to target our engagement appropriately. Once we had this for each topic area, we shared the resulting maps and full stakeholder list with our Customer Engagement Group for further feedback.

Customers support our business plan

In November 2021 we commissioned an independent market research agency to conduct 'willingness to accept' testing on our final business plan package with 1,657 customers.

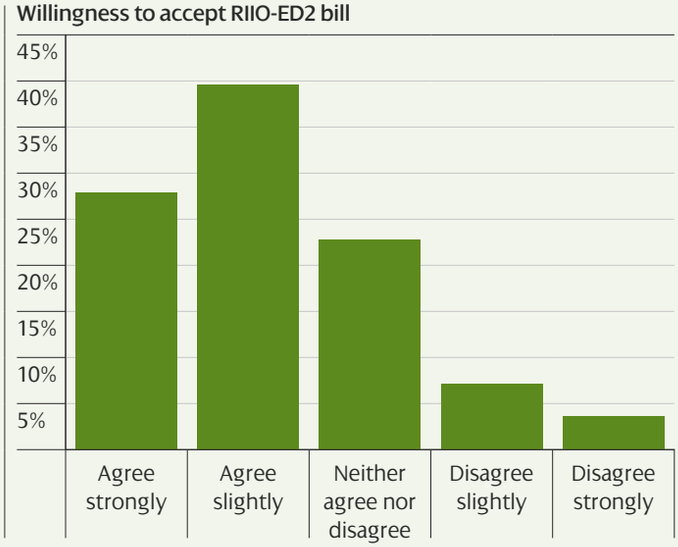
Given the current upwards pressures on energy bills, due to gas wholesale price increases and energy retailer failures, we were acutely aware of our responsibility to be transparent with our customers on the costs and benefits of our plan, and ask them whether they believe this represents value for money.

We presented the plan within the context of its impact on the average domestic energy bill, compared to the current RIIO-ED1 period, so customers could make an informed choice about the value it represented for them. We also provided a more nuanced scale for their response instead of a binary choice.

We were delighted that more than two-thirds (67%) of customers found our plans to be acceptable, with only 11% disagreeing.

*Full details of our this research can be found in **Annex 3.2B Consumer Engagement: Phase 3 and 4.***

Willingness to accept RIIO-ED2 bill



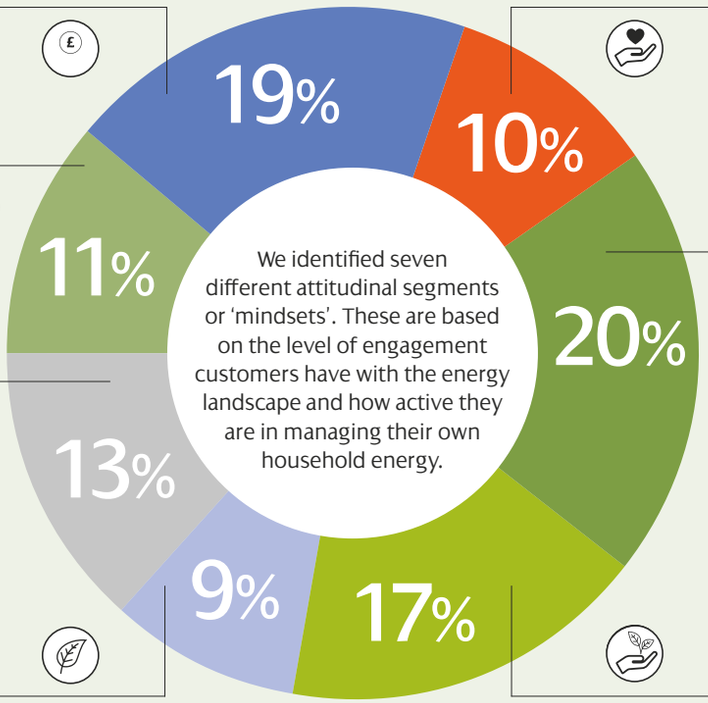
Understanding our customers

Before we asked customers and stakeholders what we should deliver in RIIO-ED2 and beyond, we identified a need to better understand and categorise our customer base. In 2020 we embarked on a significant programme to identify the attitudinal behaviours of our customers, both domestic and commercial. We used this information to create customer segments. Behind each segment lies a series of characteristics that make that segment unique. These form the foundation of a customised approach to obtaining a better understanding of our entire customer base, which then leads to better outcomes. This research was built into our four-phase engagement programme you'll read about on the next pages.

To complete our segmentation exercise, we engaged a representative sample of 3,076 domestic and commercial customers.

3,076

Domestic customer segmentation



Cost is king
"Help me find ways of saving money and avoid waste"

Careful and caring
"Support me in trying to make a difference to my life and others in my community"

Go with the flow
"Take the lead and make it easy for me to make small changes in my life"

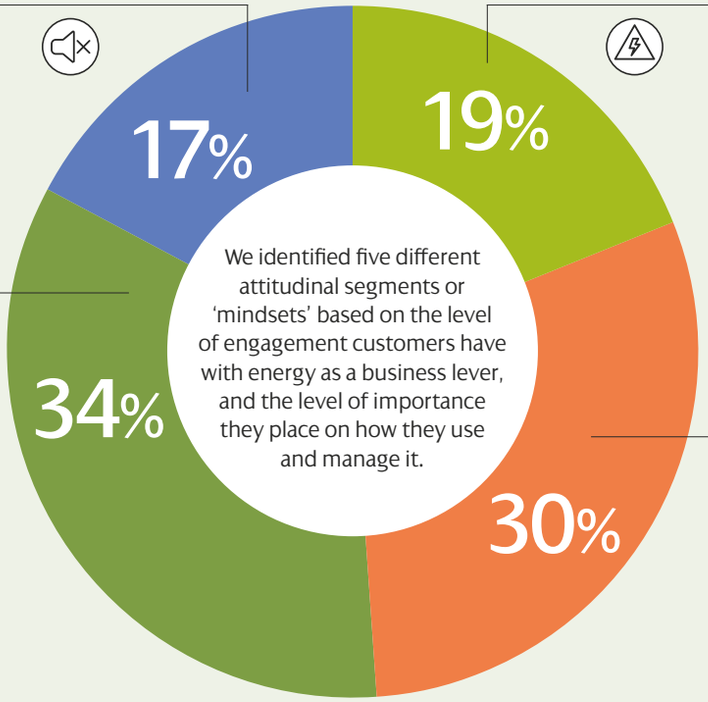
Control seekers
"Help me feel more in control around my current and future energy usage/footprint"

Unplugged
"Keep the power on and be there for me in an emergency"

Seen to be green
"Keep me up-to-date and 'in the know' so that I can try and do the right thing"

Actively Green
"Inform and empower me to make an even bigger positive environmental impact"

Commercial customer segmentation



Silent partner
"Keep the power on"

Hoping to harness
"Make it easy and help me control my energy and save money"

Deal seekers
"Help me optimise energy efficiency and get the best deal"

Open for business
"Support me and my businesses"

Energy experts
"Partner with me"
<1%

Note: Due to rounding, figures for the graphs above may not total 100%.

Our phased approach to engagement

To make sure our engagement and insight is robust and representative of the views of our customers and stakeholders on every aspect of our plan, we developed a phased approach to research and engagement through four defined phases.

Each of these phases have been guided by a comprehensive engagement plan that matches specific areas of engagement to the most appropriate groups of customers and stakeholders – via tailored methods.

Whenever possible, engagement was delivered by the teams building our business plan proposals.

From the beginning, our project team made sure that the needs of customers and stakeholders actively shaped the commitments we plan to deliver.

Engagement Phase	What did we engage on?	Who did we engage?	Number of customers/stakeholders
Customer segmentation	Identifying the attitudinal behaviours of our customers	Representative sample of domestic and commercial customers	3,076 *focus groups and surveys*
Phase 1: Understanding what customers and stakeholders want 1	Customers' priorities and ambition	Representative sample of domestic and commercial customers	1,353 *customers via in-depth interviews and qualitative engagement methods*
	Stakeholder priorities	Expert stakeholder groups including: *Local Government, Academia, Charity, Transport, Renewable Developers, Water, Construction, Government, Suppliers, Aggregators, Community Groups and more*	91 *expert stakeholders via in-depth stakeholder surveys*
Phase 2: Exploring needs 2	Detailed engagement on customer needs and preferences	Customer groups: Domestic customers (including vulnerable customers), small businesses, large businesses, UMS and generators	5,708 *customers and stakeholders via in-depth interviews and qualitative engagement methods,*
	Detailed engagement on stakeholder needs and preferences	Expert stakeholder groups including: *Local Government, Academia, Charity, Transport, Renewable Developers, Water, Construction, Government, Suppliers, Aggregators, Community Groups and more*	332 *expert stakeholders via workshops and surveys*
Phase 3: Determining service levels 3	Testing proposals, service levels, ambition, willingness to pay and affordability	Representative sample of domestic and commercial customers	3,927 *customers via workshops and surveys*
	Detailed engagement on draft commitments	Expert stakeholder groups including: *Local Government, Academia, Charity, Transport, Renewable Developers, Water, Construction, Government, Suppliers, Aggregators, Community Groups and more*	750 *expert stakeholders, via facilitated workshops, surveys and bilaterals*
Phase 4: Assessing acceptability 4	Testing overall acceptability of the final business plan, with deeper engagement on bespoke ODIs and financial elements	Representative sample of domestic and commercial customers	3,456 *customers via workshops and surveys*
	Detailed engagement on our draft business plan and testing acceptability of final business plan	Expert stakeholder groups including: *Local Government, Academia, Charity, Transport, Renewable Developers, Water, Construction, Government, Suppliers, Aggregators, Community Groups and more*	481 *expert stakeholders, via open online consultation, facilitated workshops, surveys and bilaterals and focus groups*

Phase 1: Understanding what customers and stakeholders want

First, we set out to identify overarching priorities. We tested a broad set of priorities delivered across functions that we deliver now, and will do in the future. The priority set was shaped by subject experts, prior engagement, regulatory guidance, and government objectives.

Customers were asked to assign an importance to each priority and to pick their top five. Several 'packages', consisting of different priorities and ranges of service levels, were presented to assess level of ambition.

We also gathered the views of expert stakeholders on the priorities that should guide our investments, strategies and actions. This provided a consolidated view of what was important.

Our customer and stakeholder priorities

Develop a network that's ready for Net Zero

- Develop the network of the future
- Ensure a safe and reliable electricity supply
- Provide timely and efficient connections

Be the trusted partner for customers, communities and stakeholders

- Deliver excellent satisfaction and enhanced services for all customers
- Support vulnerable customers and communities to ensure no-one is left behind
- Work with our communities to facilitate the energy system transition

Ready our business for a digital and sustainable future

- Deliver an environmentally sustainable network
- Build a Net Zero workforce
- Embed digitalisation and unlock the value of data

Phase 2: Exploring needs

By identifying specific needs we were able to develop a targeted set of commitments to best serve our customers and stakeholders in the energy system transition.

Our engagement with stakeholders was facilitated by bespoke engagement plans based on questions designed by engagement experts to extract specific, unambiguous and actionable feedback. We engaged across 14 online workshops, complemented by surveys to extend reach.

We also gathered the opinions of over 5,000 customers to capture a representative sample of the communities we serve. They were reached through a variety of channels. Those unable to engage digitally were reached in person, adhering to social distancing measures. The 'Future Spark' project saw students at the University of Strathclyde engage with us in a innovative gamified format.

Phase 3: Determining service levels

By analysing the priorities and the specific needs expressed by our customers and stakeholders in Phases 1 and 2, our subject matter experts designed a set of draft commitments. These commitments were directly shaped by the feedback we gathered but also reflected other sources of evidence, through a process of triangulation.

The objective of Phase 3 was to assess whether the commitments we proposed, and their level of ambition, effectively met the needs and priorities of customers and stakeholders while ultimately delivering the outcomes they prioritise. In doing so, we tested our commitments at events with expert stakeholders. We also engaged a representative sample of customers to assess their willingness to pay for our proposed commitments, while also testing the affordability of the changes.

As part of this research, we provided our customers with a clear picture of the distribution element of their bill which could potentially be impacted by their feedback. To ensure that our customers could provide informed views, we packaged the commitments in a set of simplified statements. These were tested with customers in qualitative sessions to ensure they accurately reflected the true commitments.

Our multi-pronged engagement gave us the confidence that our customers and stakeholders support the commitments we proposed and that these facilitate broader outcomes of societal interest such as the energy system transition. You can find more information on our proposals and see how they were shaped by insight from customers and stakeholders throughout *Chapter 4.*

Phase 4: Assessing acceptability

The final phase took place after publication of our draft business plan. We felt it was critical to transparently publish our plan in full, and immediately launched an open consultation across a variety of channels to allow for open and honest feedback.

We also held 11 bilaterals with stakeholders, 17 workshops and focus groups with experts to delve into topics and launched 10 bespoke consultations on specific elements of our plan. We also conducted in-depth qualitative and quantitative testing of our bespoke incentive mechanisms with 1,799 customers.

Finally, we commissioned independent research, with another 1,776 of our customers and stakeholders to access their overall acceptability of our final business plan package.

Triangulation of customer and stakeholder feedback

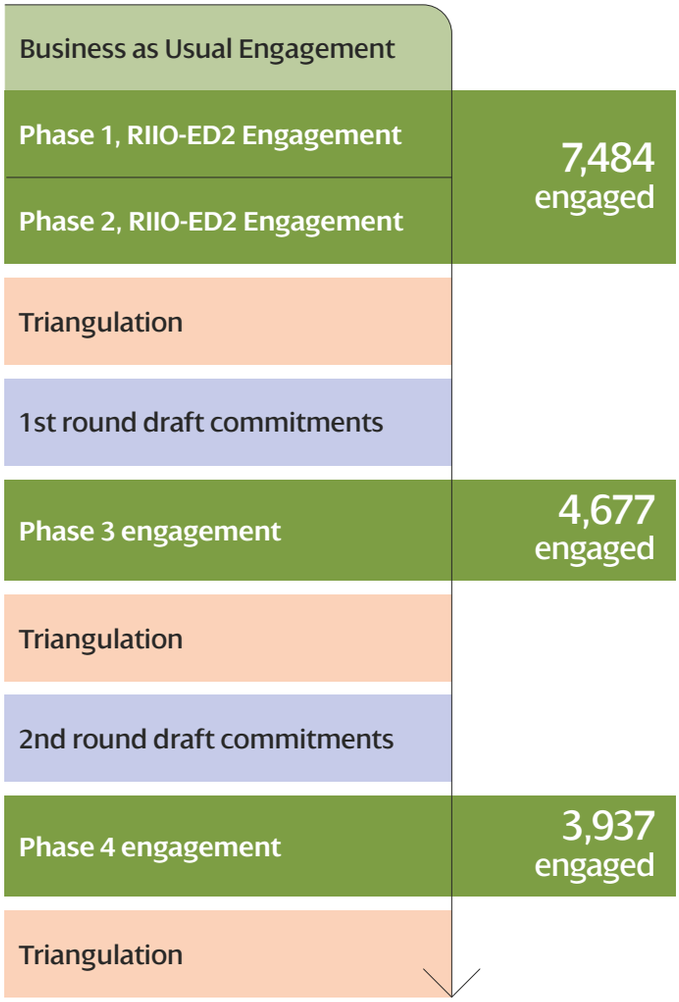
Not all consumers, network users and stakeholders have the same needs, priorities and opinions. Throughout our engagement programme we have consistently 'triangulated' feedback gathered to gain a comprehensive understanding of their views.

*The comprehensive record, detailing the golden thread of development of each commitment through multiple phases of engagement, is available in our **Triangulation Records, Appendices 3.1c – 3.1m***

*For more information on our consumer research and stakeholder engagement, please see: **Annex 3.1** and **Annex 3.2***

This involved combining our research and feedback to ensure we avoid any bias and provided us with a more credible, robust and balanced view from our customers and stakeholders. It serves to provide data from different aspects of our strategic topics and gives us confidence in our desired outcomes. Using multiple and independent pieces of data, this process allowed us to refine our initial ideas into a set of clear commitments focused on addressing the needs of all our customers and stakeholders.

The primary objective of the triangulation process was to build a complete picture of our customers' and stakeholders' needs across all groups and segments. Once constructed, this picture was used by decision makers along with other key pieces of evidence, such as Cost Benefit Analyses (CBAs) and Engineering Justification Papers (EJPs), to define deliverable and ambitious commitments to address the needs and preferences of our communities.



Strategic trade-offs

When interpreting feedback and considering how to change our plan, we had to make trade-offs between what different groups wanted and what is realistic and possible. Here are a couple of examples:

FEEDBACK

We proposed achieving Net Zero by 2040, but stakeholders wanted us to bring this substantially forward – with some stating 2030 was preferable.

OUR RESPONSE

We have set our Net Zero target by reviewing and balancing costs, and aligning with science based targets. Achieving Net Zero by 2030 would require >£120m in accelerated expenditure, hence by assessing cost and deliverability we are able to deliver Net Zero by 2035 in a more sustainable and cost effective manner. This reduces cost to customers and achieves Net Zero Carbon in a robust and economic way.

FEEDBACK

Our CEG challenged our Distribution Future Energy Scenarios – stating: "the level of new renewable generation assumed in the baseline scenario is lower than that predicted by some stakeholders".

OUR RESPONSE

Our baseline forecast will be lower than predicted by some, and in determining our baseline we have considered a range of views. We have excluded scenarios which were deemed unable to achieve Net Zero and have applied regional adjustments only where we have sufficient stakeholder evidence. This method protects customers by making sure we have sufficient investment to enable Net Zero, but does not request excess allowances for higher scenarios which may not materialise. Uncertainty mechanisms are available and will be fully utilised should a higher scenario materialise.

Confidence in the process

It was important that we accurately interpreted the views of our stakeholders. Our phased approach and triangulation process ensures that we address all pieces of feedback on an iterative basis throughout our engagement programme. Our triangulation records show exactly who said what, when and how we have interpreted that information.

EXAMPLES OF HOW CUSTOMERS AND STAKEHOLDERS HAVE CHANGED OUR BUSINESS PLAN

Priority area	Customer and stakeholder priorities	How feedback shaped our plan
Develop the network of the future	Customers and stakeholders asked us to work collaboratively with Local Authorities, energy industry partners and third sector organisations to find whole system solutions and facilitate Net Zero.	We have committed to creating our 'Strategic Optimisers', strongly supported by Local Authorities, and have committed to use a whole system approach at the start of our investment process.
Ensure a safe and reliable electricity supply	Stakeholders believe it is critical to increase network visibility and protect the network against risks posed by climate change (especially flood risks) as a way to improve reliability.	We have committed to improving network visibility through the installation of network monitors and to improve the flood resilience of our network.
Provide timely and efficient connections	Customers expect faster timescales for both the provision of a quote and the delivery of a connection. This includes improving upon guaranteed standards of performance timescales.	We have two commitments to reduce quote and delivery timescales. We also set out digital and self-service initiatives to make processes more agile, whilst delivering Ofgem's baseline expectations. Our ambition to exceed expectations led to our Low Voltage Connection Offer Accelerator proposals for faster LV quotes.
Deliver excellent satisfaction and enhanced services for all customers	Customers want a fast response from us, especially during power cuts. They expect us to answer almost immediately. Whilst different groups of customers prefer to engage with us in different ways, all customers expect us to offer, and be aware of, their preferred method of contact.	We have ambitious commitments to ensure a fast and consistent response to customers, no matter the channel used to contact us. We are also offering the broadest range of communications channels yet and, for the first time, to register the preferred contact channel and language of any customer.
Support vulnerable customers and communities to ensure no-one is left behind	Both customers and stakeholders believe that we have an important role to play in addressing issues such as fuel poverty and supporting those who may be left behind, ensuring that all benefit from low carbon technologies.	We have committed to our most ambitious support package yet: helping 276,000 fuel poor customers with advice and support and removing barriers to low carbon technologies.
Work with our communities to facilitate the energy system transition	Our customers and stakeholders highlight the barriers faced by those looking to undertake community energy schemes and the essential role of community anchor organisations.	We are addressing these barriers is by ring-fencing 25% of our proposed Net Zero Fund for community-led energy projects. We will also proactively communicate the opportunities from a whole system and DSO approach to customers and communities.
Deliver an environmentally sustainable network	Decarbonisation is the primary area of focus for most stakeholders. They strongly advocate for us to be ambitious in our efforts and believe we should set an example for others to follow.	We have fast-tracked our target for the achievement of Net Zero to 2035 and proposed an accelerated date for the decarbonisation of our fleet.
Build a Net Zero workforce	Stakeholders shared the sentiment that we should be as ambitious as possible in building a diverse and resilient workforce and believed that upskilling existing employees is essential.	We have developed an additional commitment on the cultural change required for achieving Net Zero, and will commit to ensure that our workforce is supported to achieve digitalisation and sustainability aims.
Embed digitalisation and unlock the value of data	Stakeholders believed that gathering data from a wider range of sources, standardising data among DNOs, and making it available in a wide range of accessible formats, is critical.	We introduced commitments to enhance our approach to the capture, analysis and sharing of data. We propose to create a data strategy to manage an increased volume, velocity and breadth of data.

Independent challenge

Scrutiny plays an important part in driving our plan's authenticity. As such, we have sought deep insight, input and challenge of our plan through our Customer Engagement Group (CEG) and through our engagement with Ofgem's RIIO-2 Challenge Group.

Number of meetings since establishment: *37 main CEG meetings and 60 sub-group meetings* **97**

Formal meeting hours with our teams **200+**

Number of senior managers who have presented to CEG, including six Directors **40+**

Actions, challenges and feedback submitted **651**

Our Customer Engagement Group

Chaired and operated independently, the CEG was set up in January 2020 and is completely separate from our business and Ofgem – offering us a unique perspective on our plan. It comprises industry experts who provide valuable external examination of our plans to assess if we're adequately addressing the needs and preferences of our customers and stakeholders.

The CEG plays a crucial role in scrutinising our engagement process and ensuring our business plan is robust by challenging its priorities and understanding of the changes occurring within every level in the energy industry. The CEG also reviews our expenditure proposals and innovation strategies, future network requirements and the support proposals for vulnerable customers.

The CEG meets with us regularly – to review and challenge the development of our business plan at each stage in the process. Our RIIO-ED2 team has an open working relationship with the CEG.

The Group has been very detail-oriented, going to significant lengths to audit evidence records. With over 600 pieces of feedback, questions or challenges recorded in the log, as well as over 200 hours of formal meetings with our representatives, we believe that they've delivered an incredible level of in-depth and robust challenge across all of our engagement activities.

Members of the group

The group is made up of nine stakeholders from a range of industries and organisations across our SPD and SPM licence areas. All members have a strong track-record of demonstrating leadership at a senior level and a proven ability to challenge opinions, assumptions and vision. In addition to the core membership, the group is also supported by three Special Advisors, who provide ad-hoc advice and input on their particular area of expertise.

John Howard, Customer Engagement Group Chair

John has a distinguished 20-year career in regulated industries and consumer affairs. A qualified solicitor, John joined the BBC, becoming an award-winning consumer journalist. He has been a member of the Board of Energywatch and was non-executive director at Ofgem for nine years. During that time, he was a member of the RIIO-ED1 Price Control Committee and member of the 2015 Challenge Panel.

You can read more about our CEG, the governance process and challenges that have been raised in ***Annex 3.1***

Ofgem's RIIO-2 Challenge Group

Independent scrutiny has been provided by the RIIO-2 Challenge Group (CG), which is responsible for reviewing the RIIO-2 plans of all Electricity, Gas, Transmission and Distribution companies.

Our RIIO-ED2 team has met with the Challenge Group on four separate occasions in advance of our final submission. Firstly, we met with them as an introductory session. Secondly, we met with them to discuss our RIIO-ED1 track record and to discuss our RIIO-ED1 achievements.

Thirdly we provided them with an overview of our RIIO-ED2 plan ambition, in which we outlined our priorities and sought feedback on the commitments which we propose to deliver during RIIO-ED2. Then, at our fourth meeting we welcomed the opportunity to discuss their feedback on our RIIO-ED2 draft submission. These sessions were attended by representatives from our senior management and executive team with all agreed follow up actions progressed.

We have addressed their challenges in our final submission and submitted an annex which provides a cross reference between our submission contents and the feedback and challenges received.

Refer to ***Annex 1.2: RIIO-2 Challenge Group Draft Business Plan Feedback*** *for further information*

Another independent view

In July 2021 we commissioned Steve Workman, formally a member of Ofgem's Stakeholder Engagement and Consumer Vulnerability panel, to conduct a review of our RIIO-ED2 engagement.

His overall view was that our programme *"is impressive"*, *"well planned and executed"*, that we have *"adopted a logical stepped approach"* and that the *"range of customer groups and stakeholders is extensive"*.

The report notes *"The Triangulation Method, as used, brings added rigour to the engagement process. This demonstrates SPEN's commitment to 'get under the skin' of stakeholder research and test hypothesis from more than one angle."* You can read Steve Workman's full report, appended to ***Annex 7.1.***

Our RIIO-ED2 plan is underpinned by the three pillars of our strategy, developed through engagement with our customers and stakeholders. These pillars enable us to meet the changing needs of our customers and stakeholders as we collectively strive for a just transition to Net Zero. In short, our plan is designed to meet the needs of our communities, now and in the future.

In this chapter, we lay out in extensive detail what this means for our network, our customers and communities, and our business. We outline what we will deliver, how we will measure our success, and how we will continue to evolve in an agile and transparent manner on our journey to:

"Work with the communities we serve to enable a just transition to our Net Zero future".

CHAPTER 4

Our RIIO-ED2 Business Plan in detail

IN THIS CHAPTER:

Everything you'll read about in our plan is built on a strong foundation of **efficiency, innovation** and with a **just transition** in mind.

PART A

Develop a network that's ready for Net Zero

Our ambitious programme of work to develop the network of the future that enables the energy transition and facilitates Net Zero, *Pg 31*

How we will keep electricity supplies reliable, secure and safe, *Pg 63*

Our proposals on how we respond to increasing demand to deliver timely and efficient major and minor connections, *Pg 76*

PART B

Be the trusted partner for customers, communities and stakeholders

How we will deliver excellent satisfaction and enhanced services for all customers, *Pg 84*

Our support to vulnerable customers and communities that will ensure no-one is left behind, *Pg 93*

How we will work with our communities to enable the energy system transition and our proposed Distribution Net Zero Fund, *Pg 102*

PART C

Ready our business for a digital and sustainable future

How we will deliver upon sustainability ambitions through environmental, social and governance initiatives, *Pg 108*

How we will ensure a diverse, inclusive and healthy workforce that will benefit from a just transition, *Pg 120*

Our ambitious programme of digital and data initiatives that will enable us to unlock Net Zero benefits for our customers and stakeholders, *Pg 126*

Efficiency *Pg 28*

Innovation *Pg 29*

Just transition *Pg 30*

Efficiency — *pushing ourselves further*

We are acutely aware of the financial pressures on our customers, particularly in the current economic climate. Our plans have been carefully developed to ensure that we can deliver on our commitments while ensuring that our costs are as efficient as possible. Through every part of our forecast, we have tested and challenged our proposals to make sure we deliver value for money.

In developing our RIIO-ED2 forecast, we have ensured efficiency is embedded in all areas of our expenditure. We build our forecast from the bottom-up and continually challenge ourselves to seek opportunities for further efficiencies. We have taken a structured and iterative approach to the development of our plans, and have developed our final expenditure plans through five iterations of review, assessment, and feedback. This process has embedded £66m of efficiency in our direct activities.

We have also completed a bottom up review of each component of expenditure within our plan. This is to ensure solutions are thoroughly challenged, clear, and transparent, and that we have embedded the most innovative and cost effective solution.

*Our business plan is accompanied by a supporting **Annex 5A.3: Cost Assessment.** This annex provides a step by step process of how we have tested and iterated our plans to ensure that they are efficient, and deliver value for our customers.*

By applying Ofgem's RIIO-ED1 cost assessment methodology in building our Totex forecasts, we have developed a plan which is 5% efficient against historical benchmarks.

Some of the highlights of our efficient approach are outlined here;

Granular unit cost modelling – We have developed a unit cost database that details the target costs for our direct activities, at a granular level – building our forecasts from the bottom-up. This has been assured by independent external experts. Our costs have also been benchmarked for efficiency against historical industry performance, and during ED1 we are able to demonstrate that we are the most efficient DNO across the majority of unit cost categories we deliver.

Efficiencies through digitalisation – Our RIIO-ED2 plans will require us to deliver a Totex programme which is 28% larger than RIIO-ED1 (on an equivalent basis). However, by embedding new digital innovations, we anticipate that we will need to grow our workforce by only 17% in comparison. By investing in data and digitalisation solutions, we believe we will be able to save around £15m per annum for our customers.

Flexible network solutions – Flexibility is an innovative option to manage capacity constraints on our networks in real time from demand and generation customers. We have tested the flexibility market for every capacity shortfall forecast in RIIO-ED2, and have identified opportunities to utilise flexibility and avoid traditional reinforcement. This will result in an estimated £36m of savings during RIIO-ED2, which could increase to £145m in our upper scenario.

Assessing our plans for efficiency via the regulatory framework

The RIIO-ED2 Cost Assessment methodology is still not final. This means that we are not yet certain of how Ofgem will assess the efficiency of our plans once they have been submitted. Ofgem have indicated that they will build on the foundation set in RIIO-ED1, and will adapt this original methodology to recognise that elements of this framework require development.

In assessing our plans as part of our RIIO-ED2 development, we have tested our expenditure in the following ways;

We have replicated the suite of benchmarking models used in RIIO-ED1. This includes quantitative econometric benchmarking using regression techniques.

We have used historical benchmarks to test our plan against Industry leading, upper quartile, and average comparators, including quantitative activity level modelling, ratio analysis, and unit cost benchmarking.

We have completed over 100 Cost Benefit analysis papers (CBA), and over 130 Engineering Justification Papers (EJP) to select the optimum and most efficient solution.

We have completed independent external assurance of our benchmarking models and results.

Innovation — *central to everything we do*

We are constantly innovating to provide benefits for our current and future customers, and to help pave the way to a safer, more reliable, and more cost-efficient Net Zero energy system. We do this by delivering award winning innovation, having a strong culture and strategic focus on innovation, and having a clear process to embed successful innovation developed by us and others.

Our RIIO-ED2 Business Plan is built on proven past innovation. By adopting this approach, we have embedded an **£87.2m** reduction in our RIIO-ED2 Totex expenditure – a clear demonstration of the future benefits innovation projects can bring, and the critical role innovation will play in the just transition to Net Zero.

A breakdown of the innovations embedded throughout our RIIO-ED2 business plan are detailed in ***Annex 2.1: Innovation Strategy***

For more details on our Network Innovation Allowance, see ***Chapter 5A***

RIIO-ED2 savings from embedded innovation

£87m

Our culture of innovation

We have developed a strong innovation culture within our business, exemplified by our Delivering Real Innovation and Engagement (DRIVE) campaign.

Central to DRIVE are 100 innovation champions, based at every office and depot, who help transition successful innovation by engaging throughout the process. This means potential barriers to BAU roll-out are identified and resolved early, enabling projects like our Engineering Net Zero Model (a key example of BAU innovation in RIIO-ED2) to develop without delay. Innovation champions also support the internal roll-out of proven innovation, including projects delivered by others, such as the SSEN TOUCAN project using thermal imaging to locate cable faults.

Through DRIVE we will set at least three business wide innovation challenges in each year of RIIO-ED2, funding innovation using our Totex allowances. So far, we have generated over 300 ideas from over 1,200 colleagues, with over 90 ideas selected for further development. Our success with DRIVE so far means we have the culture and personnel for rolling-out proven innovation, and delivering more innovation using our allowances in RIIO-ED2.

Building our plan on proven innovations

Our RIIO-ED2 Business Plan is built on proven RIIO-ED1 and DPCR5 innovation from ourselves and others. Firstly, through RIIO-ED1 innovation, we have developed a more targeted and customer-focussed plan than ever before. For example, our **EV-Up** and **Heat-Up** forecasting projects mean we know the likelihood of electric vehicle and heat pump uptake **for every home** in our areas.

By more precisely understanding our customers' requirements, we have been able to more accurately determine where and when interventions are needed in RIIO-ED2.

We have also reviewed over 200 innovation projects completed by ourselves or other network companies. We captured lessons-learnt and evaluated each project's potential to deliver benefits within RIIO-ED2. This identified 68 projects that are either already delivering BAU benefits or have high potential to do so within RIIO-ED2, 21% of which are led by other TOs and DNOs.

We have built our RIIO-ED2 Business Plan with the outputs, enabling us to directly embed benefits of £87.2m for our customers.

In RIIO-ED2, we will also continue to innovate collaboratively on large projects by utilising the network innovation allowance (NIA). More details on how we will do this are set out in ***Chapter 5A***

Enabling a just transition
— at the core of our purpose

What is the 'just transition'?
Climate action* + *social inclusion* = *the just transition
The concept of the just transition focuses attention on the need to anticipate the social implications from a shift to a low-carbon economy. It builds on global frameworks addressing climate change, human rights, labour standards and inclusive growth. This means taking account of the risks, opportunities and impacts for different groups and communities, so that no-one is left behind.

The journey to Net Zero will bring many challenges and opportunities to our society and the only meaningful energy transition is a just one. Our actions in RIIO-ED2 and beyond must evolve our role and services in a way that supports a just transition, delivering benefits to both the economy and society through jobs, growth, and access to low carbon technology.

The link between the drivers of change and the social impact places the just transition at the heart of our RIIO-ED2 plans. Our stakeholders have told us how important this is to them. We are committed to turning this purpose into action, helping to deliver wider benefits and positive social outcomes in our communities.

To guide us on this journey, we have developed a set of 'just transition principles' as well as a just transition Annex ***(Annex: 4.1)*** *which sets out our pathway to a just transition by the start of RIIO-ED2.*

Supporting a just transition through our RIIO-ED2 plan

Our Vulnerability Strategy, our most ambitious and innovative to date

Our Net Zero Workforce Strategy, building a diverse and inclusive workforce based in the communities we serve

Our Whole System Strategy and strategic optimiser proposals, providing support for heat & transport decarbonisation planning

Our Community Energy Strategy, to support community-level action

Our Digitalisation Strategy, which will increase digital inclusivity and access to energy system data for stakeholders

Our Distribution Net Zero Fund, which can support local green jobs and positive social outcomes.

Our RIIO-ED2 commitment

60. We will publish our Just Transition Strategy by the start RIIO-ED2. We will embed the principles of a just transition into our business planning throughout RIIO-ED2 and continue to engage our customers and stakeholders to understand local needs. We will review our progress via an independent annual review.

JUST TRANSITION PRINCIPLES

A PURPOSEFUL BUSINESS
Support a managed transition to Net Zero that creates benefits and opportunities for our communities

- *Just transition embedded in our strategy and operations*
- *Social impact and return core to our planning and investment*
- *Transparent and accountable on public interest outcomes.*

LEAVING NO-ONE BEHIND IN THE ENERGY TRANSITION
Seek to share and ensure access to the benefits of the low carbon future

- *Support our vulnerable and fuel poor customers*
- *Support universal access to energy transition benefits*
- *Optimise Net Zero investment for the right long term solution.*

TRUST AND LEGITIMACY THROUGH CONTINUOUS ENGAGEMENT

TOGETHER WITH OUR COMMUNITIES
Empower and invigorate our communities and strengthen local economies

- *Coordinated approach with partners and stakeholders*
- *Stronger and more sustainable local supply chains*
- *Energise social partnerships to deliver wider benefits.*

SHARING KNOWLEDGE AND OPPORTUNITY
Equip our people and our communities with the skills and knowledge they need to benefit from the transition

- *Investment in knowledge-sharing and re-skilling for Net Zero*
- *Fair work and conditions for our people*
- *Use digitalisation to increase access to the energy system.*

Supporting documents for this chapter

Annex 4A.1: *Future System Strategy*

Annex 4A.2: *Load Related Expenditure Strategy: Engineering Net Zero*

Annex 4A.3: *DSO Strategy*

Annex 4A.6: *Distribution Future Energy Scenarios (DFES)*

Annex 4A.9: *Heat Strategy*

Annex 4A.21: *Network Visibility Strategy*

Annex 4A.22: *LV Services & Cut Outs Strategy*

Annex 4A.23: *EJP and CBA Index*

Annex 4A.26: *Whole System Strategy*

Annex 4A.27: *Strategic DNO*

Some highlights of our strategy

Flexibility defers £36m of network reinforcements in our RIIO-ED2 Baseline scenario, increasing to £145m in our High scenario.

Up to £145m of savings

92% of stakeholders support our DSO investment.

92% support

Our new ENZ Platform builds on RIIO-ED1 innovation to deliver real-time data-driven analytics for our entire network, including all 48,000km of LV network. This is supplemented by the deployment of 14,102 **LV monitors to increase monitoring from 8% to 52%** of large secondary substations.

8% up to 52%

CHAPTER 4 / PART A

Develop the network of the future

The energy landscape is changing. To help our customers decarbonise, we need to develop a network that's ready for Net Zero.

As society prepares for Net Zero, our customers are increasingly turning to electric vehicles (EVs) and heat pumps. We will also see a further leap in renewable generation to power these new low carbon technologies (LCTs), more customers actively participating in the energy system, and the electricity system operator (ESO) increasingly needing to use distribution-connected service providers.

These customer-led changes are far beyond what the network and our internal systems are designed for. They will result in higher network utilisation, more dynamic and volatile power flows, more complex network planning and operation, and increasing whole system interactivity.

However these changes also provide us with new solutions and opportunities. Our customers increasingly have the desire and the tools to participate in the energy system, meaning there is an ever-increasing market of flexibility service providers we can work with to solve network challenges and keep network costs efficient. Digitalisation means we can share data and better coordinate with other parties, facilitating these new solutions.

To respond to these changes, we need to deliver a step-change in network capacity, operability capabilities, and whole system coordination. This means creating additional capacity for our customers' LCTs, enhancing our distribution system operator (DSO) activities and enablers, delivering a new approach to managing the low voltage (LV) network, and taking on a greater whole system role.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

We have comprehensively engaged with our customers and stakeholders to develop this plan. In addition to this tailored RIIO-ED2 engagement, we have built this plan on innovation learnings, commercial and technological developments, and the wide range of industry and government work such as Open Networks.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

84.7%

Commercial:

87.6%

Our stakeholders' priorities

Our customers, and especially our stakeholders, believe that developing the network of the future to enable the energy system transition and facilitate Net Zero targets should be our among our top priorities during RIIO-ED2.

Throughout our engagement, customers and stakeholders asked us to future-proof the network and proactively help local communities in reaping the opportunities presented by LCTs. Investment ahead of need is seen as important by both groups, with most customers telling us that they expect to be able to transition to new technologies immediately and without restrictions.

Furthermore, our stakeholders believe we have a key role to play in forward-looking energy system planning. Building on our work in RIIO-ED1, they asked us to work collaboratively with Local Authorities and other industry vectors to find whole system solutions and facilitate Net Zero pathways.

Collaboration, along with the critical importance of data and digitalisation, is also seen by our customers and stakeholders as a key success factor in our transition to a DSO. Stakeholders, in particular, stressed the need for transparency and conflict management as we carry out the activities and functions of a DSO.

How feedback shaped our plans

In reflecting the importance to customers and stakeholders of our efforts in developing the network of the future, we have committed to deliver an ambitious package of interventions. These range from the implementation of smart substations and network monitoring equipment, to rolling out innovative fault level monitoring technology. Blending flexibility, smart, innovative, and reinforcement interventions will facilitate the potential benefits of LCTs to customers while minimising costs.

In addition, we have introduced a range of commitments that will see us play a prominent role in the development of whole system solutions and Net Zero pathways across energy vectors. This recognises the role that stakeholders believe we should play in forward planning, especially in collaboration with other key parties. Examples include our flagship 'Strategic Optimisers' commitment, strongly supported by Local Authorities, and our commitment to use whole systems at the start of our investment process.

In addressing our customers' and stakeholders' call for transparent operations of our DSO functions, we proposed commitments to be a neutral market facilitator, deliver a discrete DSO function underpinned by comprehensive conflict management regime, and to greatly enhance the sharing of data.

Finally, beyond the fundamental impact of our stakeholders on our proposals, ongoing engagement led us to refine specific commitments – further enhancing our ambition across some and specifying clear deliverables for others.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- First DNO to tender for reactive power and send site-specific pricing signals, to expand flexibility service use and add transparency.
- Partnered with Outram Research to develop the world's first real-time fault level monitor, helping generators to connect more quickly and at lower cost.
- Only DNO to use enhanced tools to forecast EV and heat pump uptake for every customer we serve, to better predict and respond to our customers' needs.

How we'll continue to deliver in RIIO-ED2:

- Increasing delivery efficiency through better foresight of when and where we need to intervene (enhanced forecasting & modelling), and coordinating interventions to reduce the time and cost per intervention.
- We have engaged with our supply chain to confirm they can deliver the volumes, placing long lead-time material contracts now where there is low risk.
- Increasing headcount through recruiting more staff, retraining staff from other areas of the business, and outsourcing to contractors.
- A dedicated DSO directorate and functional model, ensuring enhanced transparency and accountability in delivering our ambitious proposals.

This investment will enable:

670,000
Electric Vehicles

370,000
heat pumps

+4.95GW
renewable generation

The changing energy landscape

Our customers prioritise four main things in their electricity supply: reliability, safety, cost-efficiency, and the freedom to consume when they want (domestic customers especially do not want to be constrained).

The challenge for us in RIIO-ED2 is how to continue delivering these customer priorities against a radically changing energy landscape. In RIIO-ED2 we have a critical role to enable these evolving customers' needs, deliver a just transition to Net Zero, and ensure the continued safe, reliable, and efficient operation of the distribution network and wider system.

	Electric vehicles	Heat pumps	Generation
Now	ca. 20,000	ca. 1,000	4.8GW
2028	0.7-1m	0.3-0.8m	+4.9-6.4GW

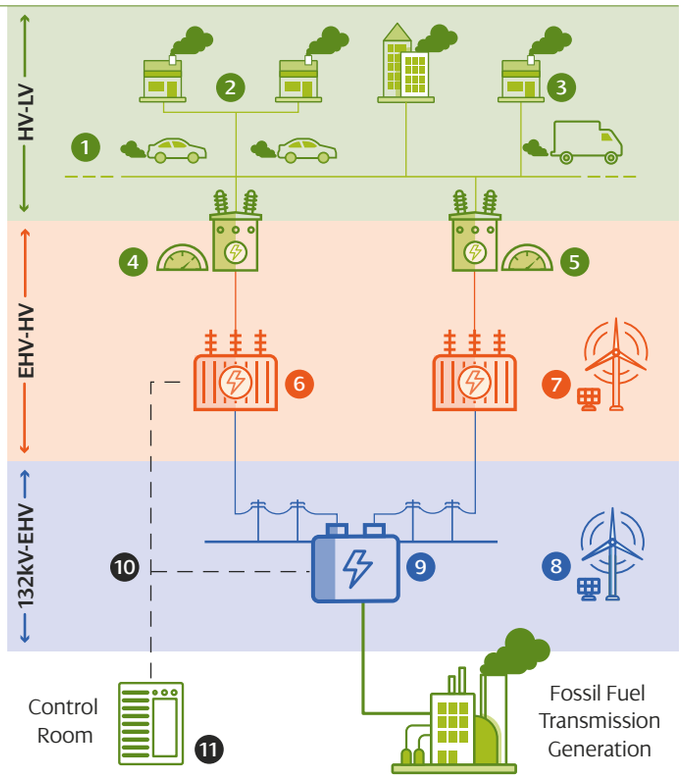
Network of today

Our distribution network was largely developed in the 1960s' to deliver electricity from big transmission-connected fossil fuel power stations to our customers. The network was configured into four main voltage levels for this, and was sized to accommodate industrial, commercial, and typical domestic demand. Just one in ten homes were electrically heated, and there were no EVs beyond the occasional milk float.

This model has incrementally evolved over many years to meet changing customer needs. We have rolled out monitoring and control across the higher voltage networks, although the LV network remains largely unmonitored. We have materially improved network reliability through better asset management. And we have delivered new technologies, such as Active Network Management (ANM), to offer quicker and lower cost connections and accommodate renewable generation growth.

In short, the story of the last 60 years is one of customers' needs evolving steadily and incrementally. Our existing network capacity, planning tools, operational systems, and internal processes are tailored to these customer needs.

This slow evolution is now over. Decarbonisation, decentralisation, democratisation, and digitalisation will deliver a step change in RIIO-ED2: a significant increase in customer demand and generation, more dynamic and volatile power flows, more complex distribution network planning and operation, and increasing whole system interactivity.



1. Petrol/diesel Transport
2. Looped Services
3. Gas Cental Heating
4. Secondary Substation (HV-LV)
5. HV/LV Maximum Demand Indicators (MDIs)
6. Primary Substation (EHV-HV)
7. HV Generation
8. EHV Generation
9. Grid Substation (132kV-EHV)
10. Telecoms Network
11. Control Room

THE CHALLENGE

These customer-led changes are far beyond what the network capacity, our operational systems, and our internal processes are designed for. This creates four core challenges we must deliver in RIIO-ED2:

Create additional network capacity
so we can accommodate our customers' EVs, heat pumps, and generation.

Manage increasing complexity
to safeguard the distribution network and whole system, and to enable new markets and services to operate safely and efficiently.

Respond to increasing network criticality
as our customers become increasingly dependent on their electricity supply for all their activities.

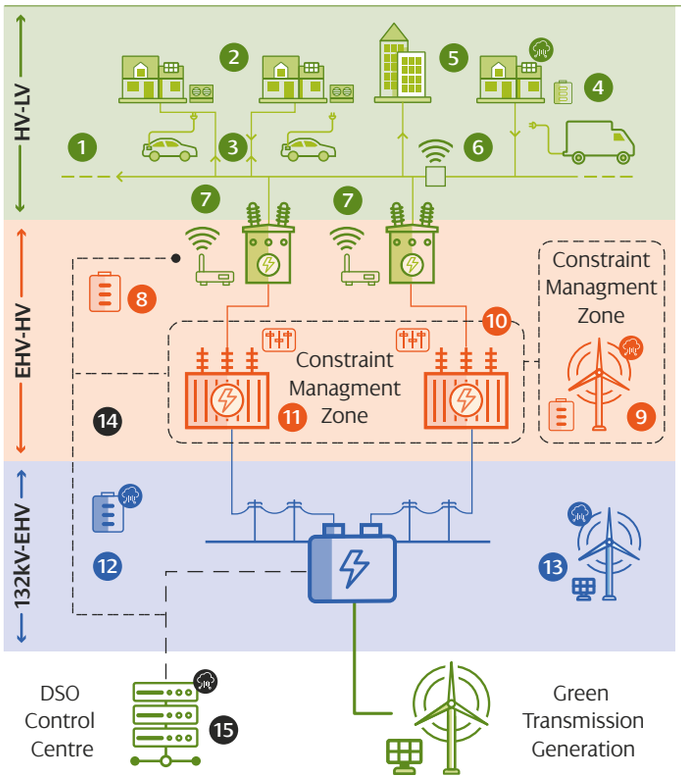
Manage deteriorating asset condition
as utilisation and criticality increase due to greater levels of demand and generation.

Developing our plan

Getting our intervention plan right has never been more important. The traditional method of developing price control plans using statistical economic models wasn't going to be good enough. That is why we've delivered a step change in how investment plans are developed, which sets the standard for others to follow.

We combined our stakeholder-endorsed Distribution Future Energy Scenarios (DFES) forecasts, our new enhanced forecasting tools which predict EV and heat pump uptake for every single customer we serve, a new analytical platform containing a full connectivity model of our network (including all 48,000km of LV), flexibility tenders at over 1,500 sites, and a linear optimisation engine which identifies and sequences solutions.

Together, these systematically identify where, when, and how we need to intervene. We're no longer building a plan on statistical estimates – we're addressing individual known constraints using market tested solutions.



1. Domestic EVs
2. Heat Pumps
3. 3-phase Services
4. LV Storage
5. Solar PV
6. LV Automation
7. Widescale LV Monitoring
8. HV Storage
9. HV Generation
10. DSO Constraint Management Zones
11. Active Fault Level Management
12. EHV Storage
13. EHV Generation
14. Telecoms Network
15. Advanced Network Control
- Flexibility

Network of tomorrow

To respond to the system challenges and deliver our customers' priorities, in RIIO-ED2 we will deliver:

1,180MW additional capacity, including on 43,384 looped service cables, 484km of LV network cable, 1,406 secondary substations, and 36 switchgear sites. We will roll-out active fault level management. We plan to use flexibility at all voltages across 1,352 sites based on market response.

Our Engineering Net Zero platform, to provide real-time data-driven analytics to tell us what is happening on the network right now, and what will happen in operational and planning timescales.

DSO capabilities, to expand our toolbox of solutions to support flexibility markets, analyse and share data, enable transparency and competition, and help manage a more complex and interactive system. This includes expanding LV monitoring from 8% to 52% of our larger secondary substations by 2028, 22 new constraint management zones, and a new discrete DSO directorate.

Asset management interventions, to manage the risk, reliability, resilience, and safety of our network. We will reduce the frequency of customer power cuts by 19% and their duration by 19%, and protect our customers served by rising and lateral mains.

Environmental interventions, to reduce the environmental impact of our network and to increase its resilience to climate change.

Continued innovation, to help deliver a safer, more reliable, and more cost-efficient Net Zero system.

Connections processes and tools, including self-serve connections, that are fit for the forecast surge in connections notifications and applications.

WHAT OUR RIIO-ED2 PLAN MEANS FOR CUSTOMERS

Our RIIO-ED2 Business Plan delivers the capacity our customers and communities need, enables a just transition to Net Zero, and ensures the continued safe, reliable, and efficient operation of the distribution network and wider system.

Customers will have the capacity they need to decarbonise – they will be able to use EV chargers and heat pumps immediately and at full capacity. ✓

Customers will have an increasingly reliable supply as they become more dependent on it, as we reduce the frequency and duration of power cuts. ✓

Customers, our staff, and the general public will be safe from a range of network risks. ✓

Customers will experience a more timely, efficient, and simpler connection process. ✓

Customers will only be paying for what they need – our approach means we have sufficient investment to enable Net Zero, but no excess allowances. ✓

Engineering Net Zero

In order to understand our customers' need for additional network capacity, and establish the appropriate interventions during RIIO-ED2, we have followed a three-stage process.

STAGE 1 *Pg35*
Forecasting our customers' needs

We forecasted our customers' demand and generation growth to understand what the network must accommodate.

STAGE 2 *Pg37*
Network assessments

We undertook industry-leading network assessments to understand the additional network capacity needed to accommodate these new customer needs, and the impact on the underlying asset base.

STAGE 3 *Pg39*
Identifying and selecting interventions

We assessed and market-tested a range of interventions to provide this required capacity, including flexibility services and energy efficiency.

Each of the stages above has been informed by customer and stakeholder feedback. As a result of this work:

Page 41 summarises the key flexible, smart, and reinforcement interventions we will deliver in RIIO-ED2 to provide the additional network capacity our customers need.

Page 43 explains the new network management system we will deliver to facilitate Net Zero.

Pages 45 and 46 explain how we will deliver these interventions efficiently, by using strategic investment and innovation.

DID YOU KNOW?

LV (low voltage) is all voltages up to and including 1kV; HV (high voltage) is all voltages above 1kV up to and including 22kV; EHV (extra high voltage) is all distribution voltages greater than 22kV.

STAGE 1 STAGE 2 STAGE 3

Forecasting our customers' needs

To efficiently plan and operate our network to accommodate our customers' requirements, we first need to understand what these requirements are. We develop Distribution Future Energy Scenario (DFES) forecasts to do this. We then compare these against Net Zero compliant scenarios from the Electricity System Operator (ESO) and the Climate Change Committee (CCC) to develop our RIIO-ED2 investment scenarios.

DFES forecasts

These are forecasts for key customer demand and generation metrics up until 2050. We develop these considering a range of sources, including UK and devolved government targets such as: Net Zero targets of 2045 for Scotland and 2050 for England and Wales; interim legislative 2030 and 2035 greenhouse gas emission reduction targets; Scottish and UK government bans on new petrol and diesel cars and vans; the UK Government Ten Point Plan, Energy White Paper, and Heat and Buildings Strategy; the Scottish Government Heat in Buildings Strategy; and the Net Zero Wales Plan.

Given the uncertainties out to 2050, we create forecasts for four main energy scenarios. These scenarios represent differing levels of customer ambition, government and policy support, economic growth, and technology development. Our stakeholders review our forecasts and we make changes based on their well-justified feedback.

All forecast scenarios show a significant increase in the volume of customer demand and generation that we will need to serve on our distribution network. There are three areas that will change the most:

The electrification of transport:
By 2030, the number of customer EVs on our distribution network could increase from 14,000 now to up to 1.8 million (1.6 million of which will charge at home). An EV can double the demand of a customer property, and materially increase peak network demand.

The electrification of heat:
How heat is decarbonised is a key variable, but one area of greater certainty is that off-gas grid customers will use heat pumps. In some of the high roll-out scenarios, heat pump impact on our network peak demand could be three times greater than EVs.

More generation:
By 2030, the volume of customer generation we connect to our SP Manweb network could double. For SP Distribution, it could triple. By 2050, we could have connected over five times more customer generation than we have to date. Storage is defined as a type of generation, so is included within the generation forecasts.

WHY WE FORECAST SO FAR INTO THE FUTURE

While the RIIO-ED2 price control period covers 2023-28, we forecast customer needs out to 2050. This is because some of the solutions to provide network capacity within RIIO-ED2 will last for decades. We therefore need to understand long-term customer needs to ensure that we know when it's most efficient to use shorter-term interventions or longer-term interventions. This approach avoids short-sighted investment decisions which end up costing customers more. Our DFES is updated annually and published in an open digital format including heat maps where necessary to inform our customers and stakeholders of expected changes.

Using DFES, ESO, and CCC forecasts to develop a robust intervention plan

Different forecast scenarios will have different network impacts, requiring different levels of investment. So how do we know which one to plan for? In addition to the four DFES scenarios, we create a low scenario, a baseline scenario, and a high scenario. Our RIIO-ED2 investment plan is developed to deliver the baseline scenario, but must have the capability to deliver anywhere within the low and high range (which mark the lower and upper range of credible Net Zero pathways).

These three scenarios are developed considering the range of Net Zero compliant scenarios developed by us, the ESO, and the CCC. We only consider Net Zero compliant scenarios as Net Zero is enshrined in legislation – we must deliver it. This means that in developing this scenario range we have not included the DFES or FES Steady Progression scenarios, as they do not meet Net Zero, nor the System Transformation scenarios, as they do not deliver legislated interim targets. Our approach means even a business plan based on the low scenario would contain sufficient investment to deliver 2050 Net Zero and interim targets (although it wouldn't contain enough investment to meet customer needs within RIIO-ED2 where these are above the low scenario).

Table 1: *Our RIIO-ED2 low, baseline, and high scenario*

	Total uptake by 2028		
	EVs	Heat pumps	Generation
High scenario	1.03m	0.81m	+6.37GW
Baseline scenario	0.67m	0.37m	+4.95GW
Low scenario	0.65m	0.34m	+4.95GW

Table 1 shows our low, baseline, and high scenarios for EVs, heat pumps, and distributed generation. Figure 1 shows this same information for EVs and heat pumps out to 2035 (the black line is our baseline scenario, the low and high scenario range is shown in colour).

The baseline represents the best approach for our customers assuming the appropriate regulatory mechanisms are in place. Figure 1 and Table 1 show that our baseline scenario tracks the bottom of the credible range in SP Manweb, and marginally above in SP Distribution due to Scottish Government targets. This is intentional. By basing our investment plan on EV and heat pump uptake at the lower end of Net Zero compliant forecasts, we're confident that we are only asking for the minimum investment needed to enable Net Zero, as actual EV and heat pump levels are unlikely to be lower than this baseline scenario. Where actual levels are higher than this baseline scenario, we will use uncertainty mechanisms to address the difference.

This approach and the use of uncertainty mechanisms means we have a robust investment plan which can adapt to our customers' needs across the range of credible Net Zero pathways, and it protects customers by making sure we have sufficient investment to enable Net Zero, but no excess allowances.

For the complete set of DFES forecasts, a full list of our assumptions, and how we used stakeholder engagement to develop them, refer to our main DFES documents in ***Annex 4A.6***. For comparisons with other industry forecasts, detail on how they have been derived, and how they underpin our systematic network assessments, see ***Annex 4A.2***

Figure 1: *Our RIIO-ED2 Baseline Scenario compared to Net Zero compliant industry forecasts* Scenario range Baseline scenario

STAGE 1 STAGE 2 STAGE 3

Network assessments

Our forecasts show significant customer demand and generation growth. Additional network capacity is needed where this growth exceeds existing network capacity. This can be created or managed by flexibility, smart, energy efficiency, and reinforcement interventions.

To assess the ability of the existing network to accommodate this demand and generation increase, we undertook a comprehensive programme of network assessments. These built on our industry leading enhanced forecasting methodology. These assessments identified where, when, and how much additional capacity will be needed – ***see next page for how we did this.***

These assessments showed that the magnitude of new customer demand and generation will push power flows well beyond what the distribution network is currently designed for.

There are three network challenges in particular that require a significant increase in interventions compared to RIIO-ED1 – these are described opposite. The main change from RIIO-ED1 is the impact to the LV network. It is here that the LCTs needed to enable decarbonisation will connect – we must invest here to facilitate a just transition for our customers and enable Net Zero.

The volumes described opposite are based on our baseline scenario. Given our baseline scenario is at the lower end of the Net Zero compliant scenarios, these represent the minimum number of interventions we must make in RIIO-ED2 to deliver Net Zero – we cannot defer these until RIIO-ED3 without risking Net Zero legislated targets, creating a barrier to a just transition, and accepting and incurring significant risk to our network and the safety of both the public and our workforce.

WHAT IS THE 'DO NOTHING' OPTION

What would happen if we didn't increase network capacity?

A safety risk to customers

If we don't upgrade looped services, the additional strain on these assets presents a fire risk to those customers. If we don't intervene on the LV network, assets would operate beyond their rating, for example overhead line conductors could 'sag' below a safe height presenting a risk to the public.

If we don't upgrade switchgear, there is a safety risk to the public and staff during network faults.

Decarbonisation would slow

Our customers would be less likely to transition to EVs and heat pumps at the rate needed to achieve Net Zero since they may not be able to use their technology to its full capacity, and new generation will not be able to connect to the network due to fault level limitations. We must deliver these interventions in RIIO-ED2 to facilitate Net Zero.

The network would be overwhelmed

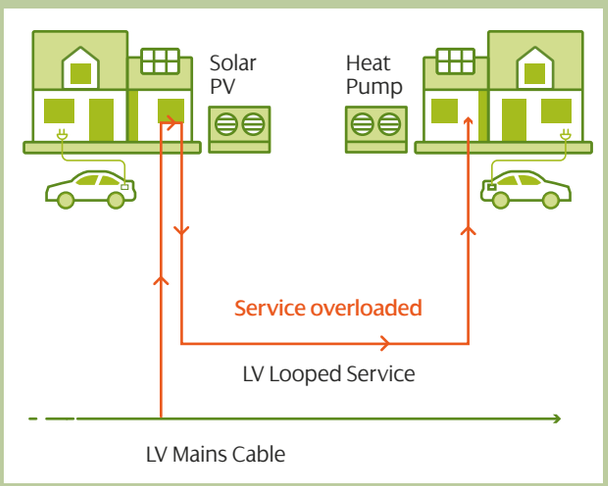
Where customers continue to install EVs and heat pumps without there being sufficient capacity, it will overload the network, leading to power cuts, shortening of network asset life, higher overall costs for customers, and possible safety concerns.

THE THREE NETWORK CHALLENGES

Challenge #1

LV looped service cables and cut out units

These are the network assets which connect individual households to the LV network. Over 500,000 of our customers are supplied by looped services; this is where multiple properties share a single service cable. The forecast electrification of domestic heat and transport means household demand could triple, dangerously overloading these assets. We need to start intervening on these assets in RIIO-ED2 to remove this barrier to customer LCT uptake. Our baseline forecast demonstrates the need to intervene on over 43,000 LV looped service cables and cut out units within RIIO-ED2. This is over 50 times the Load-driven RIIO-ED1 intervention rate.



Challenge #2

The LV network

This is the section of network that runs from local substations to just outside customers' properties. As households are supplied from the LV network, the tripling of household demand that affects LV services and cut out units also impacts the LV network. Based on our network assessments, we will need to upgrade 484km of LV cable and intervene on 1,406 HV/LV substations within RIIO-ED2 to maintain a safe and secure electricity supply to our customers, and facilitate the uptake of the LCTs. This is ten times the RIIO-ED1 intervention rates for LV cable.

Challenge #3

Switchgear

These are the network assets which safely isolate the network in the event of a fault. They are rated to cope with a certain level of fault current that flows in the event of an asset failure ('fault level'). As generators are a source of fault current, increasing volumes of generation will lead to an increase in fault level. Our modelling demonstrates the need to intervene on 28 of our 33kV substations, 4 HV substations and 4 HV interconnected groups within RIIO-ED2. In RIIO-ED1, we used innovation to successfully develop fault level monitoring technology. We will embed this innovation into business-as-usual in RIIO-ED2 and rollout fault level monitoring to manage fault levels at 41 sites. Whilst the total number of interventions is greater that in RIIO-ED1, our planned expenditure is broadly comparable due to our groundbreaking innovation in this area.

A NEW INDUSTRY-LEADING APPROACH TO NETWORK ASSESSMENTS

Using our Engineering Net Zero Model to accurately identify the additional network capacity our customers need.

Getting our asset intervention plan right has never been more important. The forecast growth in demand and generation is a step change from historical levels, the menu of potential solutions is bigger and more complex, and we need to ensure that capacity is available when its needed. Most importantly, we need to ensure continued customer safety and system reliability. The traditional method of developing price control plans using statistical economic models wasn't going to be good enough. We needed far more granular and data-driven insights into where and when our customers need capacity, and the best ways to provide that.

Therefore over the course of RIIO-ED1, we've developed a new and industry-leading approach to developing investment plans. This involved developing and combining two separate innovations.

First, through our award-winning Network Constraints Early Warning System (NCEWS) innovation project, we built a full model of all 48,000km of our LV network. We've combined it with our existing HV and EHV network models, so we now have a complete connectivity model of our entire distribution network. We hosted this connectivity model within an analytical platform – our Engineering Net Zero (ENZ) Model.

Second, we've developed two enhanced forecasting tools. They're called EV-UP and Heat-Up, and they use spatial, demographic, and socioeconomic data to forecast EV and heat pump uptake for every customer we serve. This is relevant as these are the two drivers of increasing demand.

These forecasting tools are complementary to our low, baseline, and high scenario forecasts. The scenarios consider a range of macro factors (such as legislation and technology development) to forecast total EV and heat pump volumes across our whole licence area. EV-Up and Heat-Up show, for any scenario, how these are likely to roll-out across the network – they forecast which individual households will get them and in what timescales.

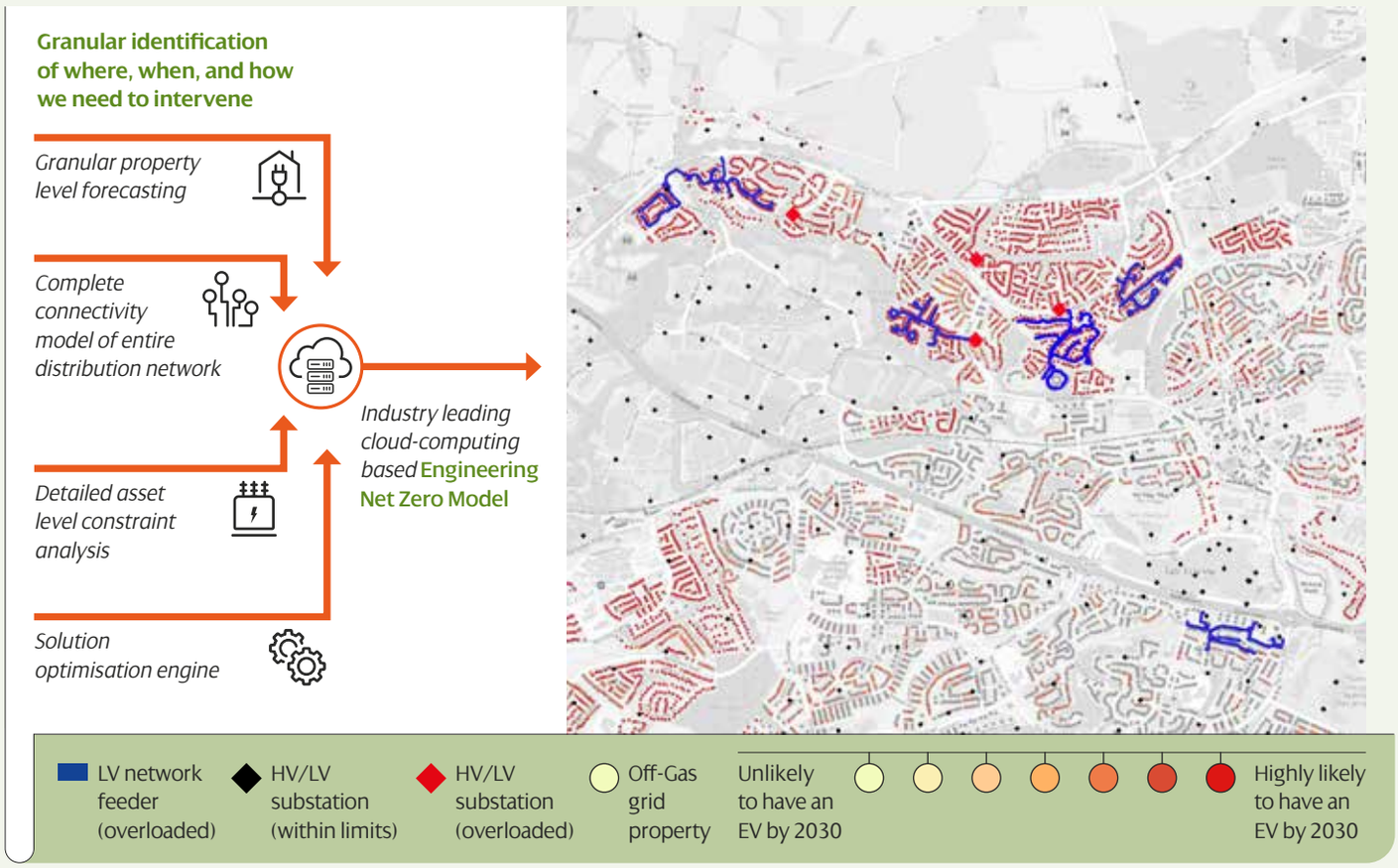
Combining these innovations

To develop our RIIO-ED2 intervention plan, we entered the granular EV and heat pump forecasts into our ENZ Model. This assessed the entire network from customers' cut outs all the way up to the transmission interface, for system normal and fault conditions, for multiple forecast scenarios. For many areas where the analysis showed constraints, we did this analysis for every half hour period to beyond 2030. This approach systematically identified where, when, and how much additional network capacity our customers need. This precise knowledge meant we could then tender for flexibility for every forecast RIIO-ED2 constraint – over 1,500 sites in total.

This modelling was intensive. Each model run analysed over 175,000 iterations per network asset. We didn't have any computers powerful enough, so we had to use cloud-based servers – each model run still took 20 hours to complete. But this approach has provided us with a more detailed view than ever before.

The outcome is that, for the first time, our Load related investment plan isn't built using old world statistical estimates. It's built to address individual known constraints using market tested solutions – we know where, when, and how we need to intervene. This is a step change in how investment plans are developed, and sets the standard for other network companies to follow.

*More on how we're taking the ENZ Model forward in RIIO-ED2 to produce real-time analytics can be found on **Pg 43.***



STAGE 1 STAGE 2 STAGE 3

Identifying and selecting the right interventions

There are six main types of interventions to add or manage capacity. They are not mutually exclusive, so can be combined.

When considering how to best provide capacity for customers in RIIO-ED2, we assessed all interventions on an equal and impartial basis. We considered the ability to deliver customers needs alongside whole life cost, safety, environmental impact, and compliance with standards.

INTERVENTION TYPE	ADVANTAGES	DISADVANTAGES
Flexibility services *Where customers agree to actively manage their demand/generation to help avoid constraints.*	Can help defer or avoid reinforcements. Encourages competition and the democratisation of the energy system (participation by a wider pool of service providers).	Not always available as an option. Doesn't help fault level (switchgear) constraints.
Energy efficiency *Where customers have agreed to passive measures to manage their demand to help avoid constraints.*	Directly benefits customers through lower bills. Helps reduce whole system peak, network losses, and the need for generation capacity.	Cost effectiveness (MW reduction per £) is lower than other interventions. Doesn't help fault level (switchgear) constraints.
Smart network interventions *Where we look to get more out of existing network capacity.*	Often lower cost than network reinforcement. Has secondary benefits, such as enhancing the effectiveness of other interventions.	Can increase network complexity.
Network reconfiguration *Where we adjust the topography of the network to get more out of existing network capacity.*	A low-cost intervention. Quick to implement.	Limited to where capacity is available on neighbouring sections of network.
Using enhanced network asset ratings *Where we seek to increase the thermal capacity of individual existing network assets.*	Typically a low-cost intervention. Quick to implement.	Capacity uplift might only be for short periods. Can increase asset deterioration. Doesn't help switchgear constraints.
Network reinforcement *Where we permanently increase network capacity by replacing existing assets or adding more assets – for example, a new substation.*	Allows significant customer demand and generation growth by providing substantial additional capacity. Enables customer participation in wider market opportunities by providing unconstrained access on an enduring basis. Can improve asset health and reliability.	Can take a long time to deliver, especially where planning permission is needed. Potentially higher environmental impact than other interventions.

Energy efficiency as a potential intervention in RIIO-ED2

Energy efficiency measures can help defer or avoid other network interventions, reduce end-use energy consumption (and therefore customer bills) and CO_2 emissions, reduce network losses, and reduce the total system peak demand that needs to be supplied by generators.

Given these customer benefits, we considered it as a potential intervention for each RIIO-ED2 Load related reinforcement. Where energy efficiency is not currently the most effective intervention and we have had to assume the use of network reinforcement, we will reassess the case for energy efficiency before the reinforcement starts. This ensures we will deliver energy efficiency where it is the most cost-effective solution to a network constraint.

In addition, we plan to work alongside local authorities as they develop their Local Heat and Energy Efficiency Strategies (LHEES) and Local Area Energy Plans (LAEP). We have defined this as our Strategic Optimiser role, in which we will support stakeholders to identify opportunities for economical LCT connection and energy efficiency that will most benefit customers.

To find out more about our Strategic Optimiser role please see: ***Pg 62***

Using customer flexibility to support the Net Zero transition

Flexibility services are where our customers agree to actively manage their demand or generation to help us mitigate network capacity constraints. They will play a key role in helping us manage the pace of the Net Zero transition.

Flexibility services can help us defer or avoid new network capacity, can be deployed more quickly than most types of reinforcement, and can help democratise and bring competition to the energy sector. They provide an agile smart means of managing our network, and are complementary to reinforcement by providing solutions where we need to act quickly or manage uncertainty.

In developing our RIIO-ED2 intervention plan, we used our ENZ Model to establish network capacity requirements (***Pg 38***). We tendered for flexibility services for every RIIO-ED2 network capacity shortfall identified by this process, including all HV/LV substation constraints. We did this through two large flexibility tenders in autumn 2020 and spring 2021, which sought 1.5GW of flexibility across 1,557 sites (see table opposite).

These tenders showed the availability and cost of flexibility, so we could develop a well-justified plan and put in place flexibility contracts for RIIO-ED2. The bid responses from these flexibility tenders were assessed in detail alongside all other viable solutions.

In RIIO-ED2 we will use flexibility to defer reinforcements, including major schemes, where this is in the best interests of customers. For example, in the Carrington–Fiddlers Ferry group we will defer £10.5m of 132kV circuit upgrades, and at Redhouse we are able to defer replacing a 132/33kV transmission transformer, saving our customers £2.8m in exit charges. In Merseyside, we will combine flexibility with network monitoring and automation to defer replacing 10km of the 132kV cable that runs into the centre of Liverpool – as well as deferring £9m, this avoids significant disruption for residents.

Flexibility will play a key part in helping to manage the pace of the Net Zero transition. However, our assessments demonstrate that, even with advanced flexibility solutions, significant network upgrades will still be required to facilitate Net Zero. At LV, the network branches out to a degree where local demand or generation profiles can cluster and have significant impacts. Therefore, flexibility services and behind the meter storage must also be highly localised to manage local constraints. This is why we have tested the market at 1,477 LV sites. As the uptake of LCTs gathers pace, the uptake of smart-enabled technology and storage, local load diversity, local network limitations, and consumer behaviour will all be important factors in the development of network interventions.

Where flexibility services are not yet available and we have had to assume the use of network reinforcement, we will re-tender for flexibility within RIIO-ED2 before the reinforcement starts to ensure we are using the most efficient intervention. We plan to run our tender process on a twice annual basis. This will have several beneficial effects including improving service provider confidence, challenging market costs, and increasing certainty on the level of flexibility we can procure in RIIO-ED2.

In addition to using flexibility to manage capacity, we also plan to use it to help restore customer supplies quickly after a fault.

For more information please see our Load Related Expenditure Strategy: Engineering Net Zero, ***Annex 4A.2***

Details can also be found in the Flexibility section of our website: ***www.spenergynetworks.co.uk/flexibility***

Our plan is robustly built by testing the market for every network capacity shortfall identified in RIIO-ED2.

Scheme Voltage	Flexibility Tendered	Market Response	RIIO-ED2 Baseline
132kV	81.8MW *(3 sites)*	282.4MW *(3 sites)*	75.8MW *(3 sites)*
33kV	720.2MW *(22 sites)*	736.9MW *(20 sites)*	212.7MW *(19 sites)*
11kV	222.4MW *(55 sites)*	335.5MW *(55 sites)*	166.3MW *(55 sites)*
LV	454.4MW *(1,477 sites)*	563.8MW *(1,473 sites)*	95.6MW *(1,275 sites)*
Total	1,478.8MW ***(1,557 sites)***	1,918.6MW ***(1,551 sites)***	550.3MW ***(1,352 sites)***

Flexibility defers £36m of network reinforcements in our RIIO-ED2 Baseline scenario, increasing to £145m in our High scenario.

£36–145m

HOW WE ASSESSED WHICH SOLUTIONS TO DEPLOY, AND WHEN

Different solutions have different capital and operating costs, and provide different levels of capacity.

When assessing solutions for each constraint at EHV and above, we have considered how the potential requirements for the solution change across the low to high scenario range through detailed design studies. This considers how robust the intervention is across the range of credible Net Zero pathways, and identifies where the scope, magnitude, or timing of the intervention is sensitive to the range of future pathways.

For each LV and HV network constraint, our ENZ Model (***Pg 38***) uses a linear optimisation engine to determine the most economical combination, sequence, and timing of solutions to meet the required level of network capacity. It does this by assessing the range of credible solutions to resolve the constraint (for example, a series of smaller smart and flexibility interventions versus a single larger reinforcement solution) and selects the combination of interventions that minimises NPV over the long-term planning horizon. It does this for every single HV and LV network constraint. This is a step change in modelling capability and how investment plans are developed, and ensures that we have developed an efficient investment plan.

We have completed a full set of supporting Engineering Justification Papers (EJPs), Cost Benefit Analysis (CBA) and populated Business Plan Data Tables (BPDT) for 100% of our proposals. For details on these, see ***Annex 4A.23***

MEETING THE NEEDS OF OUR CUSTOMERS AND STAKEHOLDERS

Interventions we will deliver in RIIO-ED2

Our network assessments identified three main areas where additional network capacity was needed. For each of these, we assessed a range of interventions and delivery options to meet the needs of our customers and stakeholders. Based on this work, in RIIO-ED2 we plan to deliver against the baseline scenario below.

Together these interventions total £231.0m, equating to 61% of our total £380.9m Load related plan (excl. connections). The majority of the remainder is £107.0m investment in the EHV network (covering 33/11kV substations, 33kV circuits, 132/33kV substations, 132kV circuits). This investment is driven by the same drivers (decarbonisation increasing customer demand and generation), but equates to a 16% reduction in annual investment compared to RIIO-ED1. This is because the EHV network has some capacity available to accommodate this demand growth, and we are adopting cost-saving innovation.

Uncertain expenditure across future pathways

Our business plan is developed to deliver the baseline scenario, but has the capability to flex anywhere within the low and high scenario range. To achieve this, for each of our planned interventions to provide capacity at higher voltage levels, we have considered how the solution would change across this range of future pathways. For lower voltages, we have considered how the volume of activity would need to flex to achieve faster or slower uptake scenarios.

The table below illustrates how our plan would flex to adapt across this range. This means we have a robust investment plan which can adapt to our customers' needs across the range of credible Net Zero pathways. Where actual levels are higher than our baseline scenario, we will use uncertainty mechanisms to address the difference.

Our RIIO-ED2 intervention plan and the credible scenario range

		Looped LV service cables and cut out units	LV Network	Switchgear (Fault level)	Other Load related	Load Related Expenditure (excl. connections)
High scenario						
EVs: *1.03m* **Heat Pumps:** *0.81m* **Generation:** *+6.37GW*	RIIO-ED2 interventions needed	78,431	771km of LV cable 2,144* HV/LV substations: *– 1,112 smart/reinforcement* *– 1,854 flexibility*	34 33kV sites 8 HV sites / groups 41 Fault level monitors / management		
	RIIO-ED2 investment	**£183.0m**	**£160.6m****	**£50.0m**	**£200.0m**	**£593.6m**
Baseline scenario						
EVs: *0.67m* **Heat Pumps:** *0.37m* **Generation:** *+4.95GW*	RIIO-ED2 interventions needed	**43,384**	**484km** of LV cable **1,406*** HV/LV substations: *– 590 smart/reinforcement* *– 1,275 flexibility*	**28** 33kV sites **8** HV sites/groups **41** Fault level monitors / management		
	Intervention rate compared to RIIO-ED1	Over 50x intervention rate	10x cable interventions 3x smart/reinforcement	*Whilst volumes are higher, expenditure is comparable to RIIO-ED1 due to our leading innovation in this area.*		
	RIIO-ED2 investment	**£101.5m**	**£88.3m****	**£41.2m**	**£149.9m**	**£380.9m**
Low scenario						
EVs: *0.65m* **Heat Pumps:** *0.34m* **Generation:** *+4.95GW*	RIIO-ED2 interventions needed	40,921	450km of LV cable 1,378* HV/LV substations: *– 579 smart/reinforcement* *– 1,250 flexibility*	28 33kV sites 8 HV sites/groups 41 Fault level monitors / management		
	RIIO-ED2 investment	**£95.7m**	**£83.8m****	**£41.2m**	**£148.6m**	**£369.3m**

**The breakdown doesn't sum to the total figure as some substations use both flexible and smart/reinforcement interventions.*
***Excludes modifications to the HV network.*

Looped LV service cables and cut out units

Due to our advanced forecasting and modelling work, we have a high level of confidence in the required intervention volumes in RIIO-ED2 for LV service cables and cut outs. The delivery of interventions will be reviewed regularly alongside our EV-Up and Heat-Up enhanced forecasts and customer activity, so that the timing of delivery provides maximum benefits to our customers.

Why haven't we considered customer flexibility as a solution to looped service cables?

There are two reasons for this:

1. Looped services will be overloaded up to three times their rating as customers adopt LCTs. This carries a significant safety risk as the additional strain on these assets presents a fire risk to these customers.
2. It would subject these customers to an enduring constraint, regardless of their choice. This is not what our customers want, and would inhibit their uptake of LCTs.

Flexibility cannot manage looped services due to the level of the potential overload and the associated safety risk – we must replace them.

LV network

We will deliver a portfolio of interventions based on capacity requirements, timing, and network characteristics.

We have considered a range of intervention options: energy efficiency, flexibility services, network reconfiguration, smart solutions (such as LV automation, onload tap changers, monitoring, and solid-state transformers), enhanced asset ratings, and network reinforcement.

We will deliver capacity interventions at 1,406 HV/LV substations, and use flexibility to defer £6m of investment into RIIO-ED3. Where flexibility solutions are not viable or the best value intervention, we will use smart or reinforcement solutions including upgrading existing equipment in 255 substations; applying innovative solutions in 234 substations; and installing 101 additional transformers. We will continue to seek flexibility at highly utilised sites to enable optimal interventions to be progressed.

Switchgear

We will deliver a balance of industry-leading innovation and conventional options to manage fault level.

We have considered a range of intervention options: switchgear replacement, higher impedance transformers, series and bus section reactors, network reconfiguration, active fault level management, and real-time fault level management. We will upgrade equipment to manage fault level at 36 substations/groups.

We will roll out fault level monitoring (an innovation we developed in RIIO-ED1) in constrained areas, targeting 38 sites. We will use innovative active fault level management automation systems to facilitate new generation in 3 fault level constrained areas. We will seek further opportunities to use innovation through RIIO-ED2.

*For more information on our Load Related Expenditure, see **Annex 4A.2***

Utilisation of the network

Our intervention plan maintains loading risk on the primary networks to a similar level as at the start of RIIO-ED2. Network utilisation and the associated 'Load Index' risk demonstrate the scale of the challenge and the effectiveness of our interventions.

At higher voltages (EHV/HV substations and above) network loading risk is quantified using 'Load Index', a regulatory reporting measure. Our plans maintain loading risk at circa 7.5m Load Index risk points. Without intervention this risk would increase by 10.7 times to 80.4m.

Our assessments show that without intervention, nearly 4% of primary and secondary network substations would exceed 100% of their capacity, and 1.7% would exceed 120%. Our intervention plan manages these loading risks, resolving or managing all overloads such that <0.1% of substations are forecast to be at ratings in 2028.

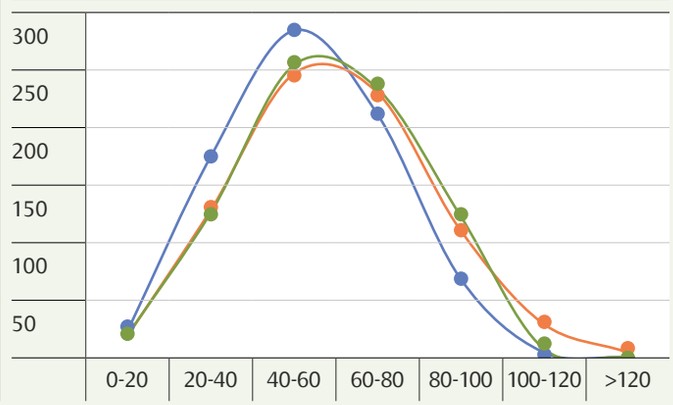
We anticipate an increasing utilisation across our networks, with the number of substations in the 80-100% band increasing from 0.8% in 2023 to 4.3% at the end of RIIO-ED2.

Our forecasts will remain under continuous review during RIIO-ED2, and secondary substation forecasts will continue to be refined with deployment of LV network monitoring.

Forecast changes to utilisation can be seen in the graphs below.

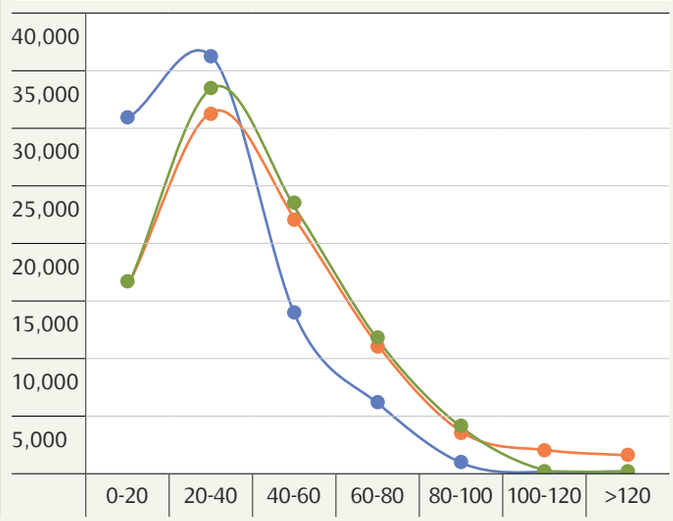
SP Energy Networks – Primary Network Utilisation

Forecast utilisation across substation population *(as % of capacity)*



SP Energy Networks – Secondary Network Utilisation

Forecast utilisation across substation population *(as % of capacity)*



Increasing network visibility and data analysis

LV network monitoring: *a key source of data*

Network monitors provide visibility of the network. The data they deliver helps us efficiently and safely plan, develop, and operate the network to meet our customers' needs. For this reason, our network has extensive monitoring at the HV and EHV voltage levels. However, there is very little monitoring on the LV network as there hasn't historically been a need.

The transition to Net Zero means that LV customer power flows will increase, and the rise of LV customers actively engaging with markets means that power flows will become much more dynamic. We also expect a surge in notifications, connection applications, and customer enquiries to connect LCTs. These changes are going to require significant investment in the network, our operational capabilities, and our internal processes.

Without the data that LV network monitors provide, this investment would be less efficient and less timely, leading to higher costs and a poorer service for our customers. LV network monitoring provides the data we need for:

- *Getting more out of existing network assets by safely operating networks closer to limits.*
- *Supporting the use of lower cost smart interventions which depend on real-time data infeeds, such as automation.*
- *Making more informed and coordinated network interventions.*
- *Facilitating flexibility solutions and increasing the pool of providers and competition.*
- *Responding to network faults more quickly.*
- *Automating LV connection offers.*
- *Delivering DSO baseline expectations.*
- *Improving management of network losses.*
- *Encouraging innovation by sharing data with third parties.*
- *Increasing competition in connections, by enabling ICPs and IDNOs to better serve customers.*

The Net Zero energy system is going to be underpinned by data. LV monitoring is a key source of this data.
Given this, we need to increase LV monitoring over RIIO-ED2. By the end of RIIO-ED1 less than 8% of our 31,808 HV/LV substations (≥200kVA) will have monitoring. During RIIO-ED2 we will deploy monitoring at an additional 14,102 of these substations to increase this coverage to 52%, covering 76% of customers.

LV network monitors are complementary to the increasing penetration of smart meters, and customers get the greatest benefit when these two data sources are combined.

LV monitoring is a key enabler, unlocking over £32m of benefits in RIIO-ED2.

£32m of benefits

A new approach to network management: *our ENZ Platform*

The LV network is on the front line of customer decarbonisation – it's here that the EV chargers and heat pumps needed for Net Zero will connect and, with volumes increasing, begin to cluster. This is a seismic change, and it's why we need to do more than just increase network capacity – we need a new approach to network planning and operation. To enable Net Zero safely, efficiently, and on time, this new approach needs to be driven by data, integrate different systems and technologies, and increase visibility of the LV network.

To achieve this, we will deliver a new integrated real-time network planning platform. We call this our Engineering Net Zero (ENZ) Platform. It stems from our award-winning RIIO-ED1 Network Constraints Early Warning System (NCEWS) innovation project and is an evolution of our ENZ Model.

The ENZ Platform will integrate four previously independent data sources – network monitoring, smart meters, forecasting, and asset condition – and combine them with a full connectivity model of the entire network. It continuously runs to produce real-time network analytics – it tells us what is happening on the network right now, and what will happen in operational and planning timescales. This information means we can make real-time data-driven planning and operational decisions across our whole network. We will increase its capability by the widescale deployment of LV network monitors in RIIO-ED2.

This industry-leading approach means that we will have an integrated data and analytical system covering the entire network. We will have data-driven visibility of the LV network. We can make more informed real-time operational decisions which improve the safety, reliability, and efficiency of the network for our customers. And we can better coordinate the range of Load related, asset management, and DSO interventions, to reduce cost and disruption for our customers while delivering what they want. This will bring a range of benefits, including:

- *Customers will be less affected by faults, as our control engineers will have live visibility of the LV network and so can respond more quickly.*
- *Customers won't have to wait as long for LV connection offers – in fact, they will be able to self-generate them from our website.*
- *Reduced impact on customers' bills, as network planners will have asset condition and utilisation data at their fingertips for all voltages, meaning we can coordinate capacity and asset health interventions and prioritise them by urgency.*
- *Flexibility providers will have more notice of potential constraints, giving them more time to participate.*

The platform marks a significant move forward for us as a network, and a step change for our customers. It will allow us to predict and respond to customer needs more quickly, increase the reliability of our customers' supply, and operate the network more efficiently.

For more information on LV Network Monitoring see ***Annex 4A.21***

For more information on the ENZ Platform see the diagram opposite and ***Annex 4A.1***

OUR INDUSTRY-LEADING ENZ PLATFORM

Real-time analytics of the network in RIIO-ED2

Data Inputs

Monitoring and smart meter data

We will install monitoring at 14,102 HV/LV substations in RIIO-ED2 so 52% of HV/LV substations ≥200kVA will be monitored by 2028.

Our EnergyIP platform will collect smart meter data.

Forecasting data

Long-term generation and demand forecasts (DFES)

Near-time forecasts to plan operational measures

Weather normalised data (our WaNDA project)

Enhanced LCT uptake forecasts (EV-Up & Heat-Up)

Asset condition data

Asset health, criticality, and risk data from our Condition Based Risk Management (CBRM) system.

REAL-TIME ENZ PLATFORM

This will perform automated power flow analysis for the entire network in near real-time using the above data inputs. Combining these data sources with this real-time modelling capability means in RIIO-ED2 we will be able to:

Identify network constraints in real-time	*Enables us to intervene before constraints escalate, and only dispatch flexibility when it's needed, reducing costs for customers.*
Forecast network constraints in the near future	*We can give the flexibility service markets and the ESO time to respond and so increase whole system coordination.*
Automate the design of LV connections and LV reinforcements	*We will be faster to respond to and connect customers. We will be able to process the forecast surge in connection applications and save at least £20m in staffing costs.*
Automate LV flexibility tendering and management	*We will reduce the overheads of flexibility, making it a more cost competitive solution.*
Manage LV faults	*We will reconnect our customers more quickly after a fault.*
Coordinate condition driven replacement with capacity driven reinforcement	*Delivery programmes will be less disruptive and more cost-effective. We will make more efficient intervention decisions, considering a greater range of data than before.*
Track LCT uptake	*We will make more cost-effective and timely interventions for our customers.*

STRATEGIC INVESTMENT

Delivering interventions efficiently

In RIIO-ED2 we plan to use strategic investment to bring forward and coordinate additional capacity where it benefits customers as they transition to Net Zero; this 'touch the network once' approach is more cost-efficient and less disruptive than reactive interventions, and means the capacity is ready when customers need it. It is also essential for delivering the increased volumes of interventions needed to accommodate Net Zero.

This is a change from previous price controls. It allows us to consider a longer horizon in our investment planning, and lower the overall whole-life cost of our assets that are capable of performing through multiple price control periods.

Customers and stakeholders support our use of strategic investment to deliver capacity for customers efficiently and on time.

81%

How we'll use strategic investment

For some asset types, we will deliver proactive intervention programmes to coordinate the delivery of interventions.

Where multiple LV service cables within a single street are forecast to need replacing within RIIO-ED2, we plan to replace them in one go, before the first LV service constraint occurs.
This is instead of reactively replacing them one at a time.

We will look to coordinate this with any work needed on the local LV network.

When delivering network assets that will still be on the network in 2050, we will size the capacity of the assets to accommodate Net Zero.

When replacing a looped service cable so it can accommodate an EV, the new service cable we install will be sized to accommodate a heat pump too.

Where 5kVA, 10kVA, 15kVA, or 25kVA pole mounted transformers need to be replaced due to their condition, we will replace them with 25kVA or 50kVA units as standard to meet 2050 demand.

£381m
of Load related investment to enable Net Zero

Customer benefit

Money saved
this method is more financially efficient than having to repeatedly intervene on the same area of network.

Less disruption
there will be fewer supply interruptions and roadworks outside customers' homes.

Ready to use
customers don't have to wait before they can use EVs and heat pumps, as the capacity is already in place.

Long-term planning responsibility
delivering interventions in RIIO-ED2 and avoiding revisiting areas of network before 2050 helps avoid an undeliverable spike of reinforcements in later years – 'flattening the curve'.

Building on RIIO-ED1 innovation

Innovation developed in RIIO-ED1 in the following areas will help us deliver efficiently in RIIO-ED2.

Fault level monitoring and active management

In RIIO-ED1, we partnered with Outram Research Ltd to develop the world's first real-time fault level monitor. For the first time for any DNO, this gives an accurate real-time understanding of network fault level. We combined this innovation with a network management scheme – another first. These innovations allow us to safely connect more generation without triggering fault level reinforcements.

This is good for our generation customers, who can connect quicker and at lower cost. It's also beneficial for our wider customer base, who pay a portion of interventions to manage fault level.

Due to these advantages, we have included this system in our plans to manage 41 sites with higher fault levels and to facilitate lower cost generation connections.

Forecasting demand growth and network impact

We have delivered a suite of innovation projects covering forecasting (EV-Up, Heat-Up, and Charge) and modelling (NCEWS and Network Analysis and View, NAVI). These projects help us better predict customer LCT uptake, and more accurately assess the network impact of that uptake.

This means we can better target the right interventions at the right time. This results in more efficient expenditure, facilitates the use of flexibility services, and reduces delays for customers waiting for capacity. Consequently, we used these tools to develop our RIIO-ED2 Business Plan and will continue to use them throughout RIIO-ED2.

Flexibility services combined with network automation

We have led the way in the development and use of flexibility services during RIIO-ED1. We were the first DNO to tender for reactive power, and the first to offer site-specific pricing.

At 132kV, we have combined flexibility services with a network automation scheme. One such scheme in the Carrington-Fiddlers Ferry group acts as a secure backup to flexibility – in the event that flexibility is needed and not available, the network automation secures the network by temporarily reconfiguring it. Such innovative arrangements have allowed us to defer significant investment, which financially benefits customers. We will embed this capability as business-as-usual in RIIO-ED2.

Using proven innovation from RIIO-ED1 we have embedded £87.2m of efficiency in our plan.

£87.2m

How we will deliver our Load related intervention plan

The volumes of looped service, LV monitoring, and LV network interventions in RIIO-ED2 are significantly higher than in RIIO-ED1. To prepare, we have:

- Engaged with our supply chain to confirm that they can deliver the volumes. ✓
- Plan to recruit more staff, retrain staff from other areas of the business, and outsource some work to contractors. ✓
- Planned to use strategic investment to bring forward and better coordinate efficient investment. Grouping the delivery of interventions reduces the time needed per intervention. This is because some fixed-duration activities, can be shared across multiple interventions. ✓

Our commitments – developing the network of the future

1. We will install innovative fault level monitoring across 41 constrained locations on our HV and EHV network to help safely accommodate more renewable generation.

2. We will develop a network that enables our communities to transition to Net Zero with over 590 smart-substations, 750km of cable, and 43,000 service cables. We will size and co-ordinate interventions to 'touch the network once' where this delivers benefits for our customers.

3. We will continue to assess flexibility, smart, innovative, and reinforcement solutions for all our Load related interventions, and carefully select the most efficient, co-ordinated, and economical interventions within RIIO-ED2. This will include assessing energy efficiency actions ahead of starting any work.

4. We will increase visibility of our low voltage networks by delivering over 14,100 LV network monitors at large secondary substations and enhancing our use of smart meter data. This will enable us to maximise utilisation of the existing network, identify targeted areas for upgrades, and facilitate customer flexibility.

5. We will deliver £87.2m of savings for our customers in RIIO-ED2 by embedding learnings from innovation projects into BAU and adopting best practice from successful industry trials. We will keep innovation at the core of everything we do, to continue to deliver benefits for our customers and the wider energy system.

6. We will continuously work with the ESO, UK, Scottish and Welsh governments, and other key stakeholders, to accurately forecast our customers' future needs and to facilitate Net Zero pathways. This will include updating our DFES forecasts annually.

*For more information on how we have assured the feasibility of delivering these volumes see **Annex 6.1**. Forecasting and our approach to creating an optimised business plan see **Annex 4A.2**. For how our RIIO-ED1 innovation is helping shape our interventions see **Annex 2.1***

Our role as Distribution System Operator (DSO)

This chapter summarises why we need DSO, how we will deliver it in RIIO-ED2, and the benefits it will bring.

These first two pages introduce our DSO Strategy.

Supporting information for this chapter:

This DSO chapter is a summary of our DSO Strategy (**Annex 4A.3**) – see this for the full list of DSO outputs and investments, and detail on their timescales, costs, benefits, and mapping against Ofgem's DSO baseline expectations.

Annex 4A.1 – our Future System Strategy provides an overall view of our Engineering plan and the role of DSO within it.

Annex 4A.21 – our Network Visibility Strategy explains how we will increase network visibility and the resulting data share.

Annex 4A.23 – the evidence that supports our DSO plans (EJPs, CBAs, and BPDTs).

Annex 5C.4 – our DSO Output Delivery Incentive (ODI) proposals.

DSO is strongly linked with our RIIO-ED2 plans for Load Related Expenditure, data, digitalisation, connections, and whole systems. These interdependencies are explained on *Pg 56*

Why we need DSO in RIIO-ED2

Three major system changes

Decarbonisation

The demand and generation we need to accommodate on the distribution network is significantly increasing.

Decentralisation

The ESO is increasingly dependent on services from distribution-connected providers (known as DER) as their need for services increases and their traditional transmission-connected providers close.

Democratisation & Digitalisation

Our customers increasingly have the desire and the tools to participate in the energy system, and can respond to an increasing number of different price signals.

…give rise to three challenge areas in RIIO-ED2.

Planning & network development

Decarbonisation is well beyond what the network is currently designed to accommodate, and it increases the interaction between the distribution network and other vectors (e.g. transport).

We must accommodate Net Zero safely, efficiently, and on time.

Network operation

ESO service use affects power flows on the distribution network, and so interacts with our responsibility to operate a safe, reliable, and efficient distribution network.

We must facilitate the ESO's utilisation of DER services and coordinate it with our own DER service use, to safeguard system stability and operability.

Market development

Our toolkit needs to encourage and support solutions from flexibility providers and market innovators (both existing and new third parties) whilst managing the more dynamic power flows and higher peak demands that could result.

We must enable these markets to grow and operate competitively, whilst safely and efficiently planning and operating the network in this new environment.

We must respond to these challenges – DSO helps us do this.

Our overarching purpose is to meet our customers' evolving needs, enable Net Zero, and ensure the continued safe, reliable, and efficient operation of the distribution network and wider energy system for all customers. So that we can continue to do this in RIIO-ED2 and beyond, the magnitude and impact of the system changes means there is a clear need for a set of updated roles, activities, and infrastructure on the distribution network – together these are DSO.

For RIIO-ED2, DSO has been defined by Ofgem in a set of 23 Baseline Expectations, categorised into three roles and five activities. Together, these describe the minimum level of DSO we must deliver in RIIO-ED2.

How we will deliver DSO in RIIO-ED2

Changes and investments we're making…

Rolling out RIIO-ED1 developments

Active Fault Level Management (AFLM) – a world first.

Enhanced tools to forecast EV and heat pump uptake for every customer we serve – a DNO first.

An award-winning full network analytical model; this analyses our entire network, including all 48,000km of LV, to accurately predict constraints across our whole network.

New infrastructure investments in RIIO-ED2

14,102 LV network monitors.

Scalable network management and flexibility dispatch infrastructure, incl. 22 Constraint Management Zones (CMZs) where they're needed most.

A real-time, data-driven, whole network analytical platform.

Resilient and cyber-secure operational IT & telecoms – the network's nervous system.

Digital systems and IT platforms.

Delivering a new DSO functional model

A new discrete DSO directorate by the start of RIIO-ED2.

Responsible for network planning and investment, flexibility procurement, and operational decisions.

Dedicated director reporting to the SP Energy Networks CEO.

External assurance and data share to ensure transparency.

External DSO stakeholder panel to inform our delivery of DSO.

…mean we can deliver a full suite of DSO outputs in RIIO-ED2.

Planning & network development

High quality, data-driven intervention decisions that fairly compare all viable options (including flexibility and energy efficiency) and consider whole system outcomes.

Planning processes and intervention decisions which are clear and transparent – stakeholders can follow the progress and decisions for all EHV and 132kV constraints.

Network planning data made publicly available.

Network operation

Getting more out of existing network capacity by operating closer to limits, managing technical losses, and making more use of operational interventions like flexibility services instead of reinforcements.

Whole system operational coordination to ensure system efficiency, stability, and resilience.

Empowering customers and flexibility providers through more data, greater transparency, and more efficient markets.

Market development

Supporting flexibility market growth through data share, reduced barriers to participation, and enabling multiple market participation.

More efficient flexibility market functioning through data-driven near-time and real-time notifications, operational coordination with the ESO, and a clear governing framework.

Giving users confidence that we are a neutral market facilitator through transparency, external assurance, and a discrete DSO directorate.

Together, these DSO investments and outputs will:

- *Invest £185.1m to deliver £370m of direct customer benefits over the next 45 years, and £0.5-1.6bn in wider indirect benefits by 2040.*
- *The coordination, tools, and visibility to enable Net Zero.*
- *Widespread use of efficient and competitive flexibility markets to create capacity more quickly & cheaply than reinforcement.*
- *The continued safe, reliable, and efficient operation of the distribution network and wider system.*
- *Deliver a better customer service and experience.*
- *Meet and exceed Ofgem DSO Baseline Expectations.*

92% of stakeholders support our DSO investment

DSO infrastructure

The delivery of DSO outputs depends on investment in six categories of infrastructure.

NETWORK MONITORING 1

Increasing network visibility to support more efficient network planning and operation.

What we've delivered in RIIO-ED1

Active fault level monitoring/management (AFLM) – first DNO in the world to measure fault level in real-time. This innovation helps connect DG without triggering expensive switchgear reinforcements.

Enhanced LV monitoring project – deployed at 2,438 LV substations by 2023. Informed our RIIO-ED2 LV monitoring specification and supporting data systems.

How we will take this further in RIIO-ED2

AFLM – monitoring deployed at 38 sites and management at three sites as BAU, to defer/avoid switchgear reinforcement.
LV monitoring – deployed at a further 14,102 LV substations, increasing coverage from 8% to 52% of large LV substations.

ENHANCED FORECASTING 2

Better prediction of customer requirements.

What we've delivered in RIIO-ED1

EV-Up and Heat-Up – using spatial, demographic, and socioeconomic data to forecast EV and heat pump uptake for every customer we serve. Instrumental in creating our RIIO-ED2 Business Plan.

PRAE – a T-4 day demand and generation forecasting tool to help us plan our operational actions, such as flexibility service use. Subsequently combined with **WaNDA** to incorporate weather data.

How we will take this further in RIIO-ED2

We've already developed the forecasting tools we need, so we will focus on keeping them up-to-date & calibrated.

SIMULATION AND MODELLING 3

Combined with enhanced forecasting to help us identify precisely where, when, and how to intervene.

What we've delivered in RIIO-ED1

NCEWS – our award winning innovation project built a full connectivity model of all 48,000km of LV network. Combined with HV and EHV network models into a full network analytical tool – our **ENZ Model.**

How we will take this further in RIIO-ED2

ENZ Platform – combining our **ENZ Model** with four data sources (monitoring, smart meters, enhanced forecasting, asset condition) to create a real-time, data-driven, whole network analytical platform.

OPERATIONAL IT & TELECOMS 4

The network's nervous system – everything else on these two pages and most DSO outputs depend on this.

What we've delivered in RIIO-ED1

Investment designed for RIIO-ED1 levels of activity.

How we will take this further in RIIO-ED2

Investing £221.4m to deliver the reliable, cyber-secure, low latency network that DSO outputs and other DSO infrastructure depend on.

DIGITALISATION AND IT PLATFORMS 5

DSO software and data management platforms.

What we've delivered in RIIO-ED1

Smart Data Integration Fabric (SDIF) – the system that enables data to be collected, analysed, and shared in a consistent manner; this means all internal systems are now working from the same data set. Can be used to share whole network models.

Digitalised Network Asset Management System (NAMS) – one integrated system to make more informed and coordinated asset management decisions.

How we will take this further in RIIO-ED2

The **Energy Data Hub** – a dedicated data sharing portal so stakeholders can easily find the data they need.

The **Digital & IT systems** needed for our forecasting, modelling, flexibility platforms, and data sharing capabilities.

SCALABLE NETWORK MANAGEMENT AND FLEXIBILITY DISPATCH INFRASTRUCTURE 6

Coordinating greater use of customer flexibility, automation, and smart tools to manage increasing network complexity and defer reinforcements.

What we've delivered in RIIO-ED1

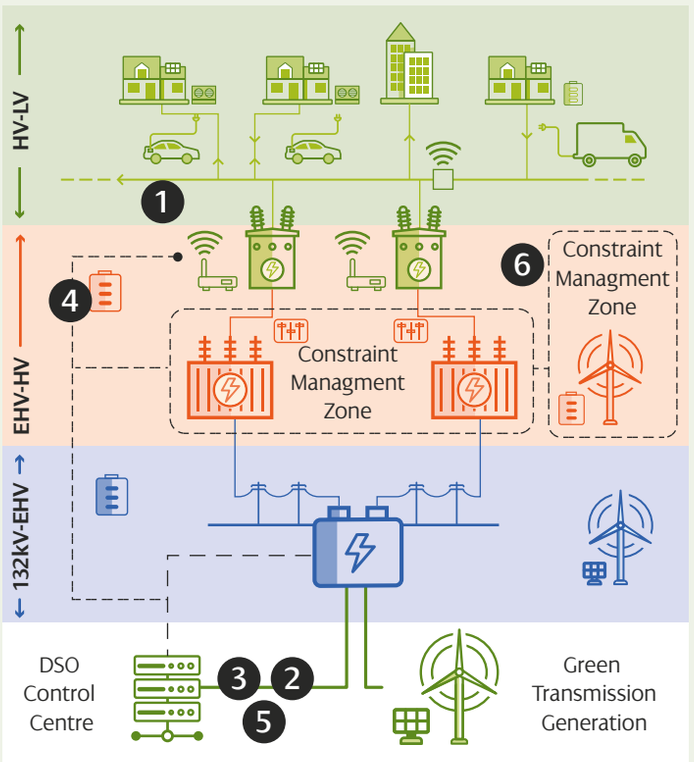
Flexible Power and FUSION - flexibility scheduling, dispatch, and settlement portals stemming from innovation investments. Flexible Power being rolled out as BAU.

Active Network Management (ANM) – wide-area ANM in Dumfries & Galloway that regulates distributed generation (DG) to avoid transmission constraints. Its scale and scope is a GB first.

How we will take this further in RIIO-ED2

Flexibility Platform – enhance capabilities as needed by new flexibility service types and customer requirements.

Constraint Management Zones (CMZs) – our next generation network management platform – ***see opposite page***



Constraint Management Zones (CMZs) are a key part of our DSO infrastructure and at the heart of network operation

CMZs: What they are and why we need them

We operate the distribution network in real-time to keep power flows within safe network limits. This involves our control team monitoring the network 24/7 and making operational interventions where needed.

Network operation is becoming considerably more complex:

- Power flows are becoming more dynamic, meaning it's harder to predict where and when they will exceed network limits and the severity of the constraint.
- There is greater whole system interactivity, especially as the ESO increasingly relies on services from distribution-connected providers.
- The toolset our control team can use is becoming bigger and more complex – some tools can only be used at certain times of day or year (e.g. voltage control), or for certain durations (e.g. flexibility services), or have knock-on effects (e.g. reconfiguration). An increasing number of customers are directly involved in providing tools (flexibility services) or impacted by their use (constrained connections), and tools have varying costs.

In short, there are an increasing number of scenarios where our control team need to intervene (often at short notice), a larger and more complex toolbox of solutions, and an increasing number of parties impacted by our operational decisions – the complexity of operating the distribution network is significantly increasing.

If we are to continue to save our customers time and money by trying to get the most out of existing network capacity and offering flexible connection arrangements, rather than always reinforcing the network, we need to help our control team operate the network.

To do this, we will deploy an automated control system which coordinates and dispatches operational solutions. Using network models, live data from network monitors, and automated analysis, it can make better decisions in shorter timescales than humans can.

We will deploy this new control architecture in areas of the network where it's needed most – we call these CMZs.

CMZs in RIIO-ED2

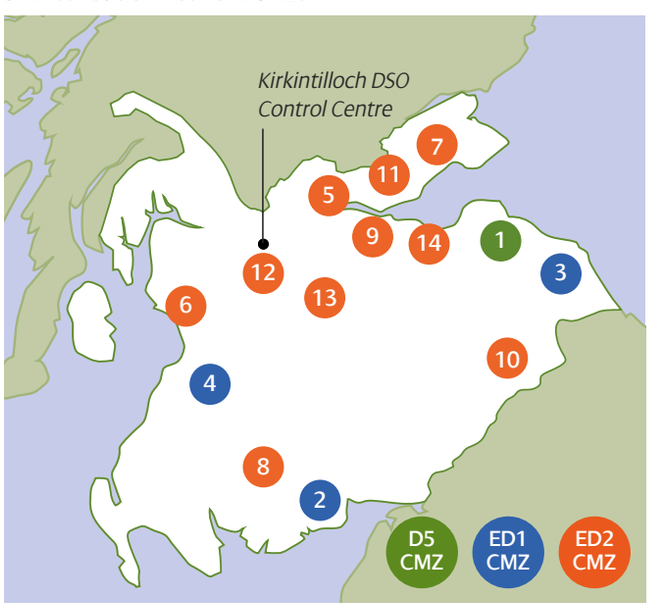
The concept of automated control is not new – we delivered our first ANM in DPCR5. However these RIIO-ED2 CMZ schemes are considerably more sophisticated and have far greater functionality than what has gone before.

Using the same process as to develop our Load related plan (combining our EV-Up and Heat-Up enhanced forecasting tools, our full network ENZ Model, and flexibility tenders at over 1,500 sites to systematically identify where, when, and how we need to intervene), we have identified 22 areas of network where we need to deliver CMZs in RIIO-ED2.

Our 22 RIIO-ED2 CMZs will deliver £328m of direct customer benefits.

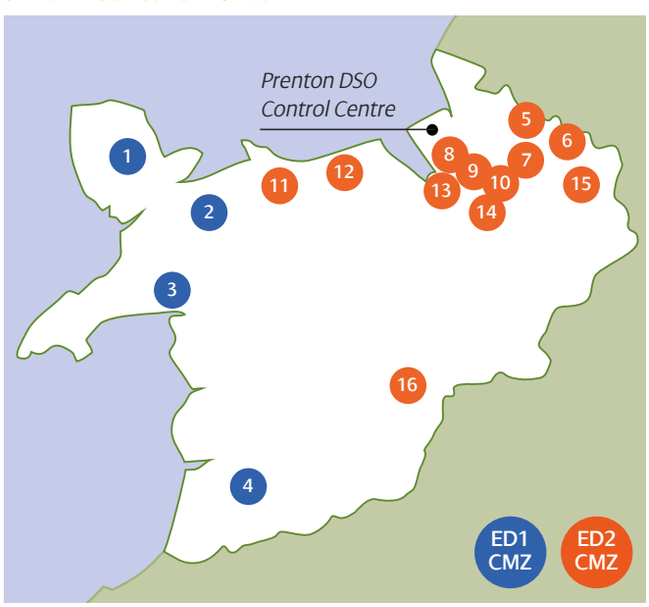
£328m

SP Distribution network CMZs



1. Dunbar
2. Dumfries & Galloway
3. Berwick
4. Coylton
5. Bonnybridge
6. Saltcoats B
7. Redhouse
8. Earlstoun Hydro
9. Livingston East
10. Galashiels
11. Dunfermline
12. Dalmarnock
13. Linmill
14. Kaimes

SP Manweb network CMZs



1. Amlwch
2. Bangor
3. Four Crosses
4. Aberystwyth
5. Bold
6. Warrington
7. Percival Lane
8. Rock Ferry
9. Capenhurst
10. Ince
11. Colwyn Bay
12. St. Asaph
13. Deeside
14. Chester
15. Lostock
16. Legacy

Our DSO functional model

To deliver our DSO outputs we need to create a new discrete DSO directorate.

Why a discrete DSO directorate

DSO involves big changes for us – changes to our activities and infrastructure, our ways of working and processes, and our interactions with customers and stakeholders. Given the magnitude of these changes, and the importance to Net Zero, system stability, and our customers of getting it right, it is essential that our organisation is structured effectively to deliver DSO.

For this reason, we will create a new discrete DSO functional model and directorate within SP Energy Networks by the start of RIIO-ED2. It will be responsible and accountable for delivering DSO, including planning and network development, network operation, and market development.

This new DSO directorate is one measure we're taking to increase transparency and give our customers confidence that we are a neutral market facilitator. This is important – our customers, stakeholders, and service providers must have confidence in us and the markets we interact with, as their involvement is essential for enabling Net Zero efficiently, maintaining system stability, and promoting competition in service provision; customers benefit from all of these.

What we will deliver for RIIO-ED2

Dedicated DSO director
The DSO function will have its own dedicated Director who will report to the SP Energy Networks CEO. Their sole responsibility will be DSO – there will be no job-sharing across DNO parts of the business. This means there is a single named executive who is accountable for DSO in RIIO-ED2, and it ensures visibility and representation of DSO at board level.

Transparency of intervention decisions
Publishing information on all network constraints on the 33kV and 132kV network, so that customers and stakeholders can follow each constraint from initial constraint identification through to how they are managed or resolved. This includes publishing our options assessment and intervention decision rationale. All Load related intervention decisions over £2m will be externally assured and the results made public.

DSO expert stakeholder panel
We will create an independent panel of expert stakeholders to guide and inform our delivery of DSO through RIIO-ED2. We will seek representatives from energy suppliers, flexibility market participants, other network companies, academia, technology providers, government / local authorities, and customer representatives (including vulnerable customers).

Conflict of interest management plan
We will maintain and comply with a Conflict-of-Interest Management Plan. This will be developed with stakeholder input.

The right arrangement for RIIO-ED2

Our proposed approach is the most effective arrangement to deliver DSO in RIIO-ED2:

Clear accountability for resilience and safety – our 3.5m business, homes, and public services enjoy a safe and reliable supply because there is a clear single responsibility for this – the buck stops with us. Given 'DNO' and 'DSO' actions interact and can cause the same issues, full legal separation would introduce uncertainty of responsibility at a time when our customers our increasingly dependent on their supply. We cannot blur responsibilities for the network that enters into people's homes.

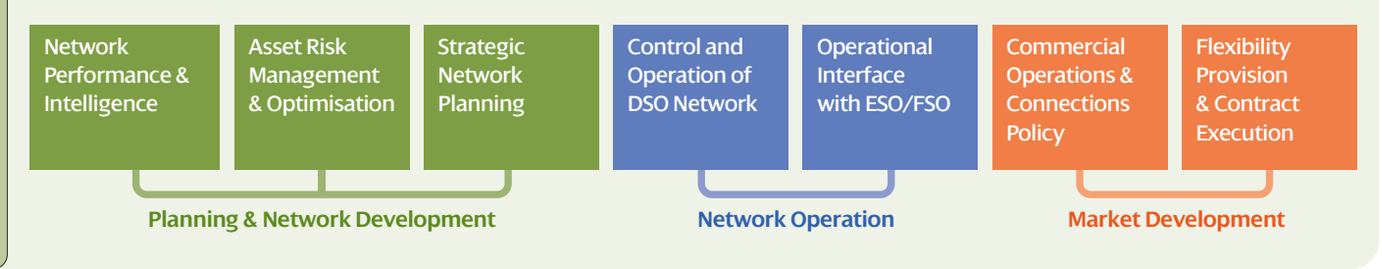
Unnecessarily increasing costs – legal and structural changes have historically been very expensive for customers. There is already enough upward pressure on bills; we shouldn't be adding to them unnecessarily, especially with full legal separation when the benefits case has not yet been made.

We must focus on Net Zero – RIIO-ED2 is critical to achieving Net Zero as we are building the groundwork for a decarbonised energy system. Delivering full legal separation would divert a significant amount of focus and resource at a time when we need to deliver a substantial increase in interventions, tools, and processes to enable Net Zero. Our customers and stakeholders want us to enable Net Zero – we cannot afford distractions.

Customers – the majority of stakeholders haven't asked for separation. Our customers have told us that their priorities are that we keep the lights on, keep the network safe, and keep costs efficient. Regardless of who performs these functions in the long-term, stakeholders highlighted the importance of preventing significant divergence in system management in the short-term.

What we have proposed is the right answer for RIIO-ED2 as it retains clear responsibility for customer safety, ensures accountability to deliver DSO, addresses concerns about perceived conflicts, promotes transparency, keeps options open for future institutional arrangements, and minimises unnecessary costs before the case for any future has been made. This is a 'no regrets' arrangement.

We are still developing the organisational structure, but our latest thinking is that the DSO directorate will be split into seven functions which align to the three core DSO roles.



Benchmarking our DSO outputs against the baseline expectation

We will deliver a comprehensive set of DSO outputs in RIIO-ED2. These describe what and how we will deliver DSO, and so how we meet and exceed Ofgem's baseline expectations. Many of these outputs are enabled by the DSO infrastructure and discrete DSO directorate we plan to deliver.

This page contains a highly abridged summary of our outputs to indicate our performance against Ofgem's baseline expectations. Please see Appendix B of ***Annex 4A.3*** for the full list of DSO outputs and detail on their timescales, baseline costs, benefits, and mapping against Ofgem's DSO baseline expectations.

Please see Appendix C of ***Annex 4A.3*** for the performance measures we propose for each output. ***Please see the next page*** for a spotlight on outputs that support the growth and use of efficient, competitive, and coordinated flexibility markets.

Together our planned DSO infrastructure, discrete DSO directorate, and DSO outputs form our DSO Strategy for RIIO-ED2. It has been developed with stakeholder input and reflects the specific issues faced within our regions. We are confident our DSO Strategy will help us not only meet Ofgem's baseline expectations, but go above and beyond for our customers in transitioning to a Net Zero future.

x15

*of Ofgem's baseline expectations are **confidently met** by our outputs, including:*

Transparently and fairly comparing all viable network intervention options (including energy efficiency and flexibility) within a new discrete DSO directorate responsible for network intervention decisions.

Increasing network visibility through smart meter data and extending LV monitoring from 8% to 52% of large secondary substations. Supported by our Network Visibility Strategy ***(Annex 4A.21)***

Using industry-leading forecasting tools so we can better predict and respond to our customers' needs. Includes tools which forecast EV and heat pump uptake for every customer we serve.

Outputs to support and neutrally facilitate the growth and use of efficient, competitive, and coordinated flexibility markets – ***see next page***

Increasing sharing of historical, near-time, real-time, and forecast planning and operational data to help our customers. Includes a new data sharing portal so stakeholders can easily find what they need.

x8

*of Ofgem's baseline expectations are **exceeded by** our outputs, including:*

Delivering industry-leading simulation and modelling through our ENZ Platform. This integrates monitoring, smart meter, enhanced forecast, and asset condition data with a full power flow model of our entire network, to produce real-time high-quality data-driven network analytics to support our planning and operational decisions.

Ensuring transparency through external assurance of all of our Load related intervention decisions over £2m, with the results made public.

Working with other network companies and vectors, and providing a team of specialists (Strategic Optimisers) to partner with local authorities and regional governments to support the optimisation of network planning, design, and implementation of public EV charging and heat electrification initiatives.

Ensuring network resiliency through an annual network stress test. The results will be shared with other network companies to promote increased energy system resilience.

Targeting hard-to-reach groups with additional support and educational initiatives to facilitate their participation in the energy system.

Flexibility outputs – working with our customers to enable Net Zero

Many of our DSO outputs relate to proactively increasing flexibility service use and supporting the growth of efficient, coordinated, and competitive flexibility markets in RIIO-ED2. Flexibility services are vital to us for accommodating decarbonisation and vital to the ESO for maintaining system stability.

The first DNO to send site-specific pricing signals and the first DNO to tender for reactive power.

The 1st DNO

We have already saved our customers £36m in our RIIO-ED2 Baseline scenario through the use of 550MW of flexibility at 1,352 sites.

£36m saved

How we will drive greater flexibility use in RIIO-ED2

Transparency

So providers clearly understand when and why we use flexibility, and have confidence that we are an unconflicted neutral market facilitator.

- A discrete DSO directorate, responsible for all network investment and flexibility decisions.
- A published Decision Making Framework, so customers clearly understand when and why we dispatch different flexibility service types, and their interaction with ANM and flexible connections.
- Publishing our flexibility valuation methodology.
- Tendering for flexibility for all viable network constraints and publishing the results of all flexibility tenders.
- Transparent intervention decisions with publication of options assessment and decision rationale. Load related interventions over £2m will be externally assured.
- Our use of the Decision Making Framework subject to external assurance checks.

Removing barriers to participation

Making it easier for customers to participate, to increase the depth and liquidity of flexibility markets.

- Non-exclusive flexibility contracts as standard.
- Simultaneously supporting longer and shorter contracts by enabling customers to bid for individual service windows, and even parts of individual service windows, within longer-term flexibility tender needs.
- Supporting the participation of aggregators and third-party platforms by allowing them to 'plug-in' to our flexibility procurement process.
- Supporting secondary trading of service contracts and constrainable connection obligations.
- Keeping the cost of participation low by using APIs to send signals.
- Targeting hard-to-reach groups with additional support.
- Working with other network companies on a common experience, service types, and ESO:DSO primacy rules.

Efficient & coordinated use

To ensure we and the ESO can use flexibility safely and efficiently.

- Developing dispatch infrastructure that's scalable, has low user participation costs by using APIs, and isn't hard coded to our own systems.
- Initiating a DER Service Checker for the ESO, so the ESO can check with us the maximum allowed import and export level of potential service providers, and whether there are any constrainable connection arrangements and planned maintenance outages that affect their availability.
- Using network monitoring, enhanced forecasting tools, and our ENZ Platform to provide near-time 'dispatch warnings' and 'no need notifications' to flexibility service providers and the ESO, so parties have time to prepare and respond.
- Increasing operational coordination & data exchange with the ESO by investing £0.5m to improve control room links.
- CMZ infrastructure facilitating market-based flexibility in a greater range of scenarios by avoiding conflicting network management actions and providing a safety net in the event of market failure. This means we can safely and confidently expand our use of flexibility services.

Data share

To help customers and stakeholders assess market opportunities, participate in markets, operate their existing sites, and spur innovation and competition.

- New infrastructure to gather, assess, and share more data with customers including network monitoring, our integrated network analytical ENZ Platform, and operational IT and telecoms.
- We will publish a raft of new data, including historical network data, flexibility procurement data, constrainable connection and flexibility market performance, network needs in planning and operational timescales, intervention decision data, and a full network GIS from 132kV down to LV.
- We will provide data in a way that can be easily utilised, including through a single main data sharing portal, making data available in machine readable formats, and processes to support the publication of accurate and unbiased data.
- Working with stakeholders to review what data we make available and prioritise what we publish.
- Complying with the Operational Data Licence.

IMPACT THROUGH DSO

Customer benefits

We will invest £185.1m to deliver our DSO outputs and underpinning DSO infrastructure. This will provide:

£370m of direct benefits to customers

£0.5-1.6bn of indirect benefits to customers

EFFICIENT AND TRANSPARENT NETWORK PLANNING

We will accommodate Net Zero efficiently, safely, and on time.

DSO will give us the data and tools to reduce network planning uncertainty, and the processes to impartially consider all viable solutions – we will make high-quality, transparent, data-driven decisions that deliver the right interventions and consider whole system outcomes.

SAFE AND RESILIENT NETWORK OPERATION

We will ensure the continued safe, reliable, and efficient operation of the distribution network & wider system.

DSO will give us the visibility, infrastructure, and data sharing to get more out of existing capacity, efficiently use operational interventions like flexibility, encourage users to participate in flexibility markets, and facilitate the ESO's utilisation of DER services and coordinate it with our own.

EFFICIENT AND COMPETITIVE FLEXIBILITY MARKETS

We will be a neutral facilitator enabling markets to grow and function efficiently and competitively.

DSO will give us the tools to share data with market participants, the transparency and governance to reassure participants that we are not conflicted, and the coordination with the ESO so we can both safely access DER services. Together these will encourage users to offer distribution flexibility services whilst participating in other markets.

STAKEHOLDER INPUT

Our DSO Strategy is the culmination of five years of stakeholder engagement.

In October 2016, we were the first in our industry to publish a DSO Vision in response to evolving customer needs and system challenges. Since then, we have worked alongside industry, government, and our stakeholders to progress this evolution in the GB energy system.

Our DSO Strategy doesn't just incorporate knowledge from our own stakeholders. By building on wider industry work such as the three TEF projects (Transition, Electricity Flexibility and Forecasting Systems, and Fusion), the Open Networks project, Ofgem and BEIS publications, and technological and commercial developments, we are building on a far broader base of stakeholder expertise.

More recently we have worked closely with our Customer Engagement Group (CEG) and stakeholders through the RIIO-ED2 development process. Our CEG has helped shaped the content and framing of our DSO Strategy – we are grateful for their input.

*Please see **Annex 4A.3** for more information how stakeholder input has shaped our DSO Strategy.*

We've been engaging with customers, stakeholders, and service providers on DSO since 2016.

2016-2021

75% of stakeholders think our DSO Strategy will minimise additional costs as the UK transitions to Net Zero.

75%

Delivering DSO

Our DSO plans are ambitious. How and when we deliver them has been considered from the outset.

We have carefully planned for the delivery of DSO activities and infrastructure for RIIO-ED2 that will meet our customers' evolving needs, deliver Net Zero, and ensure the continued safe, reliable, and efficient operation of the distribution network and wider energy system for all customers.

We have done this by working with our suppliers and stakeholders, building on our award-winning innovation projects, and remaining close to our own subject matter experts to determine both the critical path and our ability to deliver.

Knowledge & Experience

Collating our internal Subject Matter Experts (SMEs), previous project experience, and our supply chain relationships in preparation for RIIO-ED2 delivery.

Plan Development

Developing our plans with our collated knowledge & experience, with supporting narrative, strategies, Engineering Justification Papers (EJPs) and Cost Benefit Analysis (CBAs).

Assurance & Deliverability

Externally assuring our work with industry leading organisations, including a dedicated deliverability workstream to ensure that we can deliver our RIIO-ED2 plan.

DELIVERING OUR DSO COMMITMENTS

7. We will be a neutral facilitator of an open and accessible distribution flexibility services market during RIIO-ED2. This market will be aligned with industry best practice, utilising a range of services to meet network requirements. This will be supported by efficient dispatch processes and transparent procurement.

8. We will deliver a discrete DSO directorate for RIIO-ED2 responsible and accountable for delivering DSO. It will increase transparency and be supported by external assurance and stakeholder input. This directorate will be established by the start of RIIO-ED2.

9. We will share planning, operational, and market data with customers, stakeholders, and market participants through our systems and an online data portal within RIIO-ED2. This will include visibility of our user-friendly short & long-term forecasts.

DELIVERING OUR NEW INFRASTRUCTURE DEVELOPMENTS

LV Monitoring

With the increased volumes of LCTs expected to connect to our LV network, we will install LV network monitoring at 14,102 substations in RIIO-ED2. We have developed our delivery approach using experience from our RIIO-ED1 Enhanced LV Monitoring project, and by working with manufacturers. Deliverability is supported by a dedicated strategy, EJP, CBA, and external assurance.

22 CMZs

In RIIO-ED2, we will deliver 22 CMZs where they're needed most. We developed our design and costs for these systems with an industry leading provider and by building on our RIIO-ED1 and DPCR5 experience. We've scaled the rollout to account for supply chain deliverability. Deliverability is supported by an EJP and CBA that were externally assured.

ENZ Platform

The ENZ Platform that we will deliver in RIIO-ED2 is an evolution of our existing ENZ Model. We have therefore developed the deliverability plan for the ENZ Platform based on our in depth knowledge of what it has taken to deliver the ENZ Model.

Operational IT & Telecoms

Our Operational IT & Telecoms investments are a key enabler for nearly all other DSO infrastructure investments and outputs.

Our Operational IT plans build upon our smart system, ANM, and AFLM experience in RIIO-ED1. We have used that experience to consider the right investment approaches and delivery models to meet DSO requirements.

For Telecoms, we are already using our RIIO-ED1 supply chain partnerships which pave the way for the delivery of telecoms enhancements in RIIO-ED2.

Digital Systems and IT platforms

The delivery of our Non-Operational IT investments has been developed from our experience in RIIO-ED1 – from our forecasting and analysis capabilities that started with WaNDA and NCEWs, to the platform testing of Flexible Power, Piclo, and Project FUSION. We have combined this experience with input from solutions providers to prepare our delivery plans for RIIO-ED2.

*For more information on how we have assured the feasibility of delivering DSO activities and enablers, see our Delivering our RIIO-ED2 Business Plan Strategy (**Annex 6.1**) and Net Zero Workforce Strategy (**Annex 4C.4**).*

Interdependencies with the rest of our plan

DSO is not a standalone activity, it has strong links and shares infrastructure with other parts of our plan. Four links are spotlighted below;

Load related plan

Our Load Related Expenditure (LRE) plan sets out how we will deliver in RIIO-ED2 the network capacity our customers need.

Our LRE plan depends on capabilities that we are delivering as part of DSO, for example greater flexibility use to defer reinforcement, enhanced forecasting and modelling so we better know where and when to intervene, and CMZs to coordinate operational capacity interventions. DSO expands our toolbox of solutions – LRE uses some of that toolbox to provide the capacity our customers need.

*The LRE chapter starts on **Pg 35**, **Annex 4A.2** is our Load Related Expenditure Strategy.*

Data and Digitalisation

Data and digitalisation are key enablers for our entire business plan for RIIO-ED2. We have worked collaboratively to leverage SP Energy Network wide investments to support DSO specific investments such as forecasting, modelling, flexibility platforms, and data sharing capabilities.

*The digitalisation and data chapter starts on **Pg 126.***
***Annex 4C.1** is our IT and Digitalisation Strategy.*
***Annex 4C.2** is our Data Strategy.*

Connections

Our Connections Strategy outlines our approach to the connections experience for our customers and how we will manage the forecast increase in connection requests that will be required to facilitate Net Zero.

The DSO investments that we make will help support our approach to Connections. They will allow us to deliver a more timely, efficient, and simpler connection process for our customers, including self-serve connections.

*The connections chapter starts on **Pg 76,***
***Annex 4A.28** is our Connections Strategy.*

Whole system

DSO will allow us to further develop a coordinated whole system approach through better data sharing with stakeholders, data-driven network planning that considers whole system outcomes, and flexibility market and operational coordination with the ESO. We have worked together internally and with our stakeholders to develop our whole system approach for RIIO-ED2.

The whole system chapter starts on the next page.
***Annex 4A.26** is our Whole System Strategy.*

WHERE YOU CAN FIND MORE DETAIL

We have to convey certain DSO information within our business plan submission. The table below summarises where this information can be found within our supporting documents. Our BPI compliance has been externally assured.

BPI requirement	Where you can find this
DNOs must submit a DSO Strategy.	**Annex 4A.3** is our DSO Strategy
Assess the DSO transition issues prevalent in the DNO's region and how these inform the proposed approach.	**Section 2 of Annex 4A.3** explains the transition issues. **Section 3 of Annex 4A.3** explains how these have informed our planned DSO infrastructure.
A clearly articulated vision for addressing DSO transition issues identified, identifying links between the proposed deliverables and the associated outcomes and benefits.	**Sections 3-6 of Annex 4A.3** explain what we will deliver to address the DSO transition issues. **Sections 7-8 of Annex 4A.3** cover the resulting benefits.
Demonstrate how DSO plans deliver the activities and baseline expectations in Appendix 4 of the Business Plan Guidance. Include deliverables which are specific, time bound, and relevant. Show where plans meet or exceed baseline expectations.	**Appendix B of Annex 4A.3** sets out the costs, timescales, and benefits of our DSO Strategy outputs, and maps them against Ofgem DSO baseline expectations. This mapping shows which outputs meet and exceed baseline expectations.
Propose relevant performance measures so stakeholders and Ofgem can evaluate progress and outcomes.	**Appendix C of Annex 4A.3.**
DSO plans developed with stakeholder and CEG input.	**Section 9 of Annex 4A.3.**
Include a specific Network Visibility Strategy.	**Annex 4A.21** is our Network Visibility Strategy.

*More information of how DSO links to our broader plan can be found in **Appendix D of Annex 4.A3***

*Full details of DSO BPI mapping can be found at the start of **Annex 4.A3.***

Achieving a step change in whole system solutions and outcomes

Whole system means going beyond the traditional scope of the electricity network, to harness the opportunities of an integrated, cross-vector energy system, and developing new ways of working and thinking to enable this.

By adopting a Whole System Strategy, we will take a holistic approach to identifying and creating value for customers, our business, and the whole energy system, enabling a more efficient, and just transition to Net Zero.

Our robust strategy will embed whole system thinking across our business, from innovation and investment decision-making, to collaboration with industry partners, stakeholders, customers and parties beyond the electricity sector.

Whole system mission statement and strategic pillars

We all need to work together to achieve Net Zero. We are a central organisation in the energy landscape and have a responsibility to put whole system solutions at the heart of a just transition to Net Zero.

To do so, our whole system strategic pillars aligned to our RIIO-ED2 Strategy, will help deliver the energy network of the future.

Our mission is to unlock the full value of whole system thinking by collaborating not only with other electricity companies, but also key stakeholders including gas and water networks, innovators, network users, non-regulated companies, local areas and communities. This is to ensure efficient investment in the electricity network and to achieve a just transition to Net Zero

Figure 1: *Our whole system strategic pillars*

Our mission statement is underpinned by our strategic pillars

Develop a network that is ready for Net Zero

1. Establish strategic partnerships to achieve common whole system goals
2. Use innovation, markets and flexibility to push the boundaries of whole system thinking
3. Think beyond the electricity sector to support other energy vectors including heat, transport and hydrogen

Be a trusted partner for customers, communities and stakeholders

4. Use whole system thinking to support our communities and vulnerable customers in the transition to Net Zero system transition.

Ready our business for a digital and sustainable future

5. Improve our mastery of data, share data easily to unlock whole system and consumer benefits
6. Embed whole system thinking in our organisation, culture, and ways of working to deliver long-term value

Whole system planning function

At the heart of our plan is a new team of whole system planners. We have delivered many examples of whole system planning in RIIO-ED1 but we need to go further in RIIO-ED2 and beyond. We believe that implementing a dedicated permanent whole system planning team is the most effective way to drive a step change in whole system outcomes and solutions to deliver long term value. More information can be found in our annex.

Our whole system planning function will have accountability for:

- *Maintaining key external whole system relationships*
- *Providing a key point of contact for stakeholders outside the electricity network*
- *Maintaining a view of stakeholder plans and ambitions*
- *Identifying opportunities for whole system solutions*
- *Ensuring stakeholder plans are incorporated in our forecasting and decision making.*

We will build on our track record and use our strategic pillars to achieve a step change in whole system solutions in RIIO-ED2

Figure 2: *illustrates the wide range of whole system initiatives we are carrying out in RIIO-ED1 and proposing for RIIO-ED2. The scope and depth of our whole system ambition increases as we move into RIIO-ED2 and beyond.*

DELIVERING MORE:

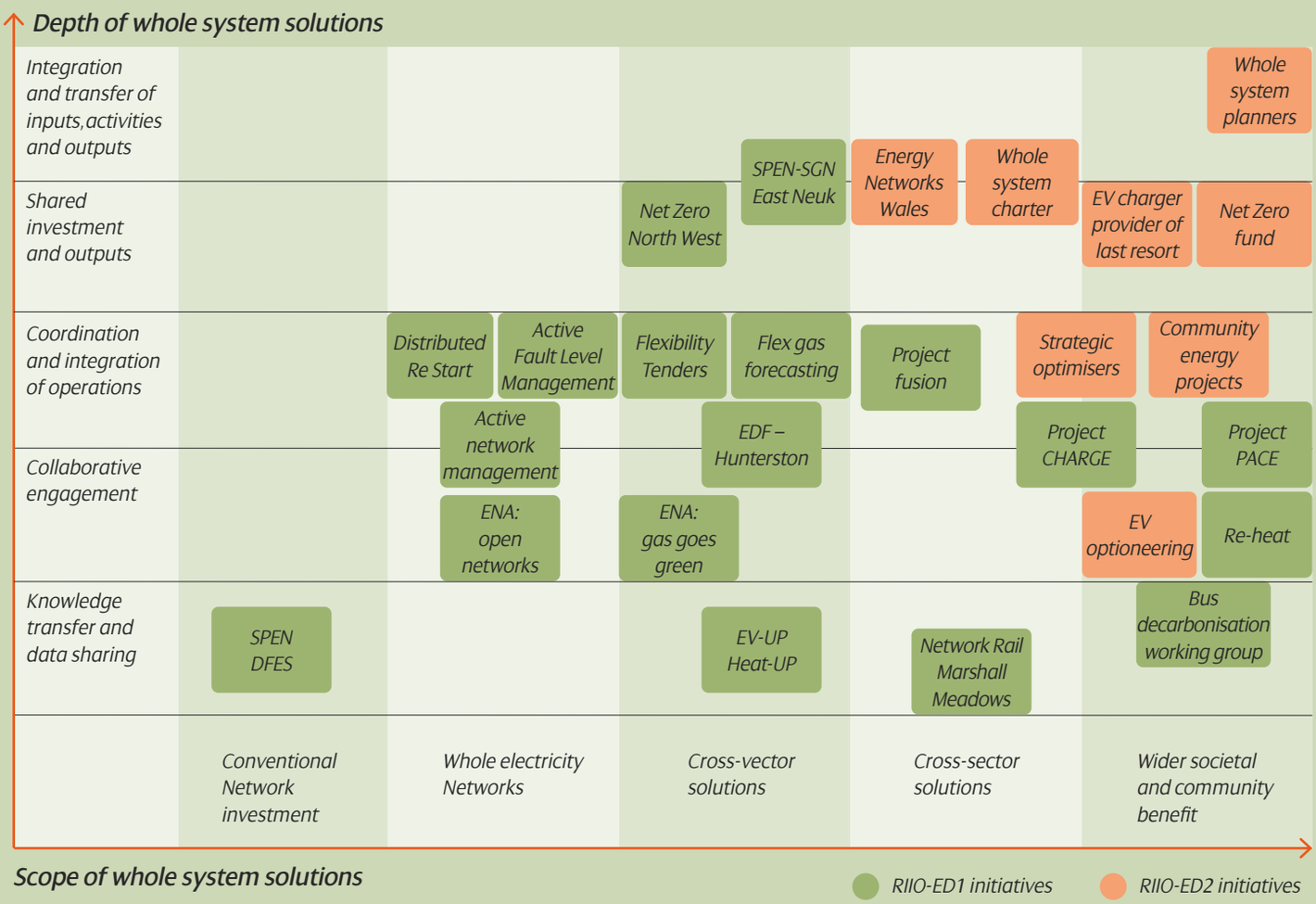
Potential net benefits from our whole system planning function

Potential net benefits from our Whole System Strategy and function have been analysed via Cost Benefit Analysis. This has included examples of whole system initiatives identified and employed in RIIO-T1 and RIIO-ED1, which include the cost and environmental savings from jointly identified solutions from greater coordination across sectors (i.e. between SP Distribution, SP Transmission and the ESO), and the benefits from the use of flexibility services on the network.

We have conducted a sensitivity analysis on outputs to determine a benefit range. Based on our analysis (Table 1), this can be expected to deliver a net present value benefit of between £7.8m to £49.1m over the course RIIO-ED2, depending on the range of sensitivity scenarios (i.e. low, medium and high forecasts). More information on how our innovation project benefits will be tracked and measured can be found in ***Annex 2.1***

Table 1
Whole system planning function NPV *(£m, 20/21)*

Scheme	5-year	10-year	20-year	45-year
Low	7.8	8.0	8.6	9.3
Medium	21.3	21.7	23.4	25.2
High	49.1	50.6	54.7	59



Our Whole System Strategy in action

Establish strategic partnerships to achieve common whole system goals 1

In RIIO-ED1, we have developed extensive strategic engagement both within the electricity sector and beyond the electricity sector to explore opportunities to achieve common whole system goals.

This includes:

- Collaboration through the ENA's Open Networks project to lay the foundations for a smart, flexible energy system
- Working with National Grid ESO and industrial customers on strategic connections, outage planning, and project construction
- Working closely (across both our Transmission and Distribution licences) on decommissioning of Hunterston power station to reduce constraint payments. Lessons from this process will be used in decommissioning of other generators, such as Torness.
- We have collaborated on wider energy sector whole system projects such as Net Zero North West, Flex Gas Forecasting and the ENA's Gas Goes Green project.

In RIIO-ED2, we want to build on these powerful existing engagements and take them further by creating structured collaboration to achieve common whole system goals.

WITHIN THE ELECTRICITY SECTOR:

- Through our involvement in Open Networks, we will continue to make sure ENA member companies follow a co-ordinated and consistent path to achieving Net Zero ambitions.

We will set up regular bilateral engagements with other DNOs where these border our areas.

BEYOND THE ELECTRICITY SECTOR:

- In RIIO-ED1 we have developed charters and pathways for strategic multi-utility engagement in all three of our regional areas that will allow us to identify collaboration opportunities that will deliver whole system benefits:
  - *Liverpool City Region, Cheshire West & Chester and Warrington Decarbonisation Pathway with Cadent Gas*
  - *Energy Networks Wales (including SPEN, WPD & Wales & West Utilities)*
- We will continue to develop innovative whole system solutions with parties such as the Scottish and Welsh Governments, transport bodies, local authorities, academia, and industry.
- We will continually check and challenge our approach through collaboration with the Energy Systems Catapult (ESC). **https://es.catapult.org.uk/**

The Energy Networks Charter in Scotland (including SPEN, SSEN, National Grid, National Grid ESO and SGN)

"Through our involvement in Open Networks, we will continue to make sure ENA member companies follow a co-ordinated and consistent path to achieving Net Zero ambitions."

Use innovation, markets and flexibility to push whole system thinking 2

In RIIO-ED1, we have innovated towards delivering whole system outcomes, including flexibility, Active Network Management (ANM) and Active Fault Level Management.

In RIIO-ED2, whole system is a key focus of our Innovation Strategy (***Annex 2.1***). Other key focus areas include decarbonisation of heat and transport and hydrogen development. Innovating and working together in these areas will ensure the network can support the transition to Net Zero at the lowest cost to customers.

*Our Distributed Restart project (**Annex 4A.26**) will deliver greater whole system security and reliability of supply.*

*Learnings from Project Fusion will inform the delivery of our DSO Strategy (**Annex 4A.3**).*

WHOLE SYSTEM CASE STUDY:
ACTIVE NETWORK MANAGEMENT IN DUMFRIES & GALLOWAY

Our ground-breaking project presents a distribution solution to the management of transmission constraints across 11 Grid Supply Points through an alternative to conventional reinforcement and load management schemes. The technology is capable of scaling to the rest of the network and is being proposed for 22 Constraint Management Zones in RIIO-ED2 as part of our DSO Strategy.

RIIO-ED1 Project Cost: **£8.7m**
Projected customer savings: **c£38.5m**
CO_2 savings: **522,000 tonnes**

Think beyond the electricity sector to support other energy vectors including heat, transport and hydrogen 3

In RIIO-ED1, our strategic partnerships for the decarbonisation of heat and transport with the Scottish Government and SSEN have led to demonstration projects where low carbon technologies are installed in a way that is efficient for the electricity network while satisfying customer needs.

In RIIO-ED2, we will continue to work with local authorities, regional and devolved Governments to shape and support their heat and transport decarbonisation plans (***Annex 4A.27***). This will help us to understand where and when the demand increase will be required. Hydrogen is also likely to play a key role and we will work closely with stakeholders in this area to inform our forecasting and network requirements.

The output of the SPEN-led workstream for Net Zero North West will inform the electricity connection works that will enable 35MW of hydrogen production at Essar by 2025, 90MW by 2030 and associated upstream reinforcement.

WHOLE SYSTEM CASE STUDY:
PROJECT PACE

Project PACE, led by SP Energy Networks in strategic partnership with Transport Scotland, demonstrated the benefits of DNO-led site selection and installation of public EV charging infrastructure. Going forward, Transport Scotland require Local Authorities to engage with the DNO prior to EV charger funding applications being approved.

Support our communities and vulnerable customers in the transition to Net Zero 4

In RIIO-ED1, we have a track record in using whole system thinking to support vulnerable customers and the communities we serve, such as through our Green Economy Fund (via our Transmission licence). This provided communities with electric vehicles and charging infrastructure, low carbon heating and affordable energy solutions for consumers in fuel poverty

In RIIO-ED2, we are proposing to build on the success of the Green Economy Fund and create a new Net Zero fund (***Annex 4B.4***) to provide further bespoke support to our local areas and communities in both our distribution areas. Our Community Energy Strategy (***Annex 4B.3***) also details the support we will give to community energy projects.

*Our record of support through the **Green Economy Fund:***

£20m

has been committed to support communities in the transition to Net Zero.

647 jobs

have been indirectly supported through the Fund and 58 full-time green energy jobs have been created.

22,605

customers have received direct support.

Share data easily to unlock whole system and consumer benefits 5

In RIIO-ED1, we developed our DSO vision, wrote our first Digitalisation Strategy and developed our NAVI connectivity model. These are all crucial building blocks in the mastery and sharing of our data.

In RIIO-ED2, we will develop our Engineering Net Zero Platform, issue a refreshed Digitalisation Strategy annually and share planning, operational, and market data with customers, stakeholders, and market participants through our systems and the Energy Data Hub. We will make use of digital twins to drive better whole system outcomes (***Annex 4C.1***). Crucially, we will also incorporate stakeholder data on their plans and targets into our ENZ platform.

WHOLE SYSTEM CASE STUDY:
RE-HEAT

Re-Heat, led by SP Energy Networks, supported by the Scottish Government, SSEN and delivery partner EON, is the first demonstrator project to trial heat pumps with smart controls and thermal storage to reduce customer bills and reduce peak demand on the LV network. Outputs will inform Scottish Government heat policies.

Embed whole system thinking in our organisation, culture, and ways of working to deliver long-term value 6

In RIIO-ED1, we have delivered many examples of co-ordinated working that have delivered whole system solutions, such as Dunbar ANM. Our integrated distribution and transmission control room facilitates coordinated planning and management and our system design teams work together to achieve whole system solutions.

In RIIO-ED2, we will take forward existing whole system practices and embed them into business as usual. Our whole system Planners will be pivotal in both capturing and incorporating stakeholder requirements into our decision-making framework, alongside core inputs such as asset data, DFES scenarios and core stakeholder engagement.

WHOLE SYSTEM CASE STUDY:
ACCELERATING RENEWABLE CONNECTIONS – DUNBAR ANM

The Dunbar ANM scheme allowed the connection of distribution renewable generators before transmission reinforcement works could be carried out, enabling outputs that would not otherwise have been realised.

Total additional energy generation enabled over the last six years: 653GWh.

Total tonnes of carbon emissions avoided: 98,000.

Total community benefit per year: £75,000.

Stakeholder feedback:
We have engaged with our stakeholders on our plans via a survey, a conference, strategic panels and bilateral engagement:

83% *of stakeholders support or strongly support our mission statement*

92% *of stakeholders support agreed or strongly agreed that the six pillar strategy with enable the delivery of whole system solutions*

92% *of stakeholders agreed or strongly agreed that our proposed target operating model will be effective and efficient in delivering whole system outcomes*

75% *of stakeholders agreed or strongly agreed that our proposed initiatives would lead to the desired whole system outcomes for customers and communities.*

Our commitments and governance process

Our commitments, that will ensure we embed whole system planning into our organisation, consider not only the electricity networks but also the wider energy system and a just transition to Net Zero for our customers.

Progress will be monitored using our whole system coordination register (published annually) and stakeholder feedback. We will host an annual summit with key stakeholders to perform a look back on whole system plans, deliverables and outcomes, together with a look forward to future opportunities and requirements.

10. We will implement a dedicated whole system planning function. Using whole system planning at the start of the investment process, this team will ensure whole system solutions are considered in each of critical decision-making junctures (for example on system design for connections). This will achieve a step change in whole system planning, solutions and outcomes over the RIIO-ED2 period.

11. We will use a structured process to review our existing policies and procedures, identify gaps and implement required changes, to fully embed whole system planning as business as usual. This will have oversight at director level with accountability and reporting to our senior executives. We will use this to engage strategically with other electricity network companies, National Grid ESO and licenced utility companies to work towards achieving whole system outcomes throughout RIIO-ED2.

12. We will engage with all local authorities in SPD and SPM to support the strategic siting of public EV ChargePoint hubs, utilising our extensive network knowledge and working collaboratively with local stakeholders in optioneering, to identify the optimal locations. We will publish a report on our work at the end of the price control, reporting the number of optioneering reports we completed with local authorities and the consumer benefits delivered in relation to reduced connection charges.

13. We will provide a dedicated team of specialists (Strategic Optimisers) that will partner with Local Authorities (and regional Governments) to support the development and implementation of Local Heat and Energy Efficiency Strategies (LHEES) and Local Area Energy Plans (LAEPS).

DEALING WITH UNCERTAINTY
We have developed our Whole System Strategy using a long-term planning horizon to drive value for consumers and wider society, while recognising the uncertainties and risks on the path to Net Zero. Our DFES scenarios reflect differing levels of consumer ambition, Government and policy support, economic growth, and technology development. To verify our forecasts and uncertainty quantification we will continue to proactively engage with stakeholders. Collaboration with the ESC will help shape our approach and develop pathways for us to deal with uncertainty in future scenarios.

Further details on our Whole System Strategy can be found in ***Annex 4A.26: Whole system.***

We will act as a Strategic DNO

As Net Zero targets become increasingly pressing, there is significant pressure on Local Authorities to intervene in the energy system. In RIIO-ED1, we have engaged with many Local Authorities to help them with their decarbonisation plans but the demand for this help is increasing. Therefore, during RIIO-ED2, we propose to act as a strategic DNO, helping Local Authorities achieve a coordinated approach to the decarbonisation of transport and heat at a local level.

EV CHARGEPOINT OPTIONEERING

Project PACE was a RIIO-ED1 project in which we undertook a DNO-led approach to the cost-effective siting of public EV charging infrastructure. Project PACE has been quoted as a success in the House of Commons (HoC) as well as in multiple publications, e.g., HoC Transport Committee's report on Zero Emissions Vehicles[1] and Transport Scotland's Report on Public EV infrastructure in Scotland[2].

This is due to the project's coordinated working approach with the relevant local authorities and forecast connection savings of between £1.3m and £2.6m. Therefore, aligned to the asks of our stakeholders, we will proactively contact all Local Authorities in our licence areas to work with them on EV optioneering works for public EV charging infrastructure. Our EV optioneering proposal has three strands:

1. Use the data sets from our EV-Up project[3] – *to prioritise our EV optioneering works in areas where the market is not expected to deliver, i.e., which have low average household income and low levels of off-street parking.*

2. Work with Local Authorities – *to decide where EV optioneering for public EV charging infrastructure would be most beneficial, for example in supporting local communities or areas where regeneration is being planned.*

3. Apply our Project Pace optioneering methodology – *to complete feasibility studies for the appropriate and cost-effective siting of public EV charging infrastructure for Local Authorities, informed by the EV-Up data and development priorities of the local authority and wider community.*

By working with Local Authorities, we will help to enable universal access to public EV charging infrastructure, supporting a just transition to Net Zero.

1. Zero emission vehicles and road pricing (parliament.uk)
2. Report on Public Electric Vehicle (EV) infrastructure in Scotland – Opportunities for Growth (transport.gov.scot)
3. This data will be available to all parties, with SPEN offering more tailored support to Local Authorities, with the objective to optimising the rollout of public EV charging infrastructure.

Local Authorities don't currently tend to hold expertise in this area, so there is a huge appetite for this. Where 86% of stakeholders we engaged at our DFES workshops supported us carrying out EV Chargepoint Optioneering for all Local Authorities throughout RIIO-ED2. EV optioneering will be funded through a clawback mechanism, details of which can be found in ***Annex 5C.7: Use It or Lose It Allowances and Allowances with clawback*** This also represents our customer value proposition (CVP) 2. Full details of the benefits case for Optioneering can be found in ***Annex 5C.2: CVPs***

STRATEGIC OPTIMISERS

In light of increasing demand for DNOs to support Local Authorities, we propose to set up a team of 'Strategic Optimisers' who will use their extensive network knowledge to support Local Authorities and other stakeholders across the SPD and SPM areas. They will provide crucial advice upfront, for example, on energy efficiency and technology types and how this interacts with the electricity network which will help develop plans for decarbonising heat. This includes Local Heat and Energy Efficiency Strategies (LHEES) in Scotland and Local Area Energy Plans (LAEPs) elsewhere.

Our Strategic Optimisers will also work closely with our EV Optioneering team to ensure a joined-up approach is taken across the local decarbonisation of heat and transport. We believe this whole systems approach will offer significant time and cost efficiencies, through Local Authorities having access to expert electricity network knowledge. It will also allow us to model our scenarios, and therefore our investment decisions, more accurately.

MID-WALES PLANNING

As set out in their Net Zero Wales Plan, the Welsh Government have an ambitious target of meeting 70% of Welsh electricity demands from renewable generation. In light of this, a collaborative whole system planning approach is required to identify the optimal long-term Distribution and Transmission solution to upgrade the Mid Wales networks to meet long term demand and generation requirements and be Net Zero ready.

"We have some big developments including new homes and a primary school and it's intended for these to be zero carbon. Having access to that expertise would be fantastic"

City of Edinburgh Council

DNO OF LAST RESORT

A new distribution licence condition was put in place at the beginning of 2021 to reflect the EU's Clean Energy Package that allows DNOs to own and operate EV charging infrastructure as the 'provider of last resort', following a failed market tendering exercise. We support this new licence provision as we believe that this is fundamental to ensure that no communities are left behind in the roll-out of public EV charging infrastructure as we transition to a decarbonised transport system. We stand ready to work with Ofgem now in developing the necessary policy needed to support this licence condition, including a regulatory mechanism to ensure that where the DNO 'provider of last resort' provisions are required, DNOs are appropriately funded for taking on the role of provider and owner of public EV charging infrastructure.

"SPEN already plays a key role in many aspects across the region. The Strategic Optimiser proposal that forms part of the Strategic DNO role will be very helpful in providing insight and support to the region in developing their energy plans and allow this relationship to develop even further. These plans in turn will enable SPEN to refine their DFES scenarios and provide strong evidence to reduce uncertainty in the region. We support this proposal and see close synergies between the Strategic Optimiser and EV Optioneering roles."

Welsh Government

More details on all of our Strategic DNO proposals can be found in ***Annex 4A.27: Strategic DNO.***

Some highlights of our strategy

NARMs investment to modernise our highest risk assets.

£355.7m

1.1% annual deterioration in RIIO-ED2, down from 2.7% annual deterioration in RIIO-ED1.

down to 1.1%

£87.2m Innovation Benefit facilitating the Net Zero transition.

£87.2m

CHAPTER 4 / PART A

Ensure a safe and reliable electricity supply

Our customers expect our network to be safe and sustainable, and are increasingly dependent on a reliable supply of electricity as they transition to Net Zero. We will meet these requirements by continuing to lead the way in asset management.

The reliability, safety, and environmental impact of our network depends on the risk (condition and criticality) of our network assets and their resilience to a range of external factors.

The challenge for RIIO-ED2 is how to deliver this reliability, safety, and sustainability when network asset risk is increasing by 20% during RIIO-ED1 due to asset deterioration, climate change is increasing severe weather and vegetation threats, the risk of cyber attacks is increasing as we embed greater levels of digitalisation and automation, and our asset base will work harder than ever due to increasing demand and generation levels.

We will respond through a suite of measures including optimised asset modernisation and maintenance, adoption of environmentally-sustainable equipment such as SF_6 free switchgear and replacing PCB assets, measures to improve reliability for all customers including those that are worst served, and improving safety in our communities through dedicated initiatives.

Together, our activities will manage network risk and deliver a safer, more reliable network with lower environmental impact that facilitates Net Zero.

Supporting documents for this chapter

Annex 2.1: *Innovation Strategy*

Annex 4A.1: *Future System Strategy*

Annex 4A.4: *Network Asset Risk Strategy*

Annex 4A.5: *Network Performance Strategy*

Annex 4A.7: *Climate Resilience Strategy*

Annex 4A.8: *Losses Strategy*

Annex 4A.10: *Substations and Switchgear Strategy; EHV to LV*

Annex 4A.11: *Cable Modernisation Strategy*

Annex 4A.12: *Pilots and Light Current Strategy*

Annex 4A.13: *OHL and ESQCR Strategy*

Annex 4A.14: *132kV Plant and Circuits Strategy*

Annex 4A.15: *Civils and Flooding Strategy*

Annex 4A.16: *Operational IT and Telecoms Strategy*

Annex 4A.17: *Electricity System Restoration Strategy*

Annex 4A.18: *Legal and Safety (CV14) Strategy*

Annex 4A.19: *Rising and Lateral Mains Strategy*

Annex 4A.20: *Network Operating Costs Strategy*

Annex 4A.22: *LV Services and Cut Outs Strategy*

Annex 4A.23: *EJP and CBA Index*

Annex 4A.25: *SP Manweb Company Specific Factors*

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

We have undertaken significant stakeholder engagement as part of our plan development and have sought feedback from a range of stakeholders. Our initiatives have been positively received by our stakeholders, and are focused on ensuring the safety and reliability, and minimising the environmental impact, of the network.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

83.1%

Commercial:

84%

Our stakeholders' priorities

On the back of the non-negotiable importance of safety and our relentless focus on reliability over RIIO-ED1, both stakeholders and customers believe that delivering a reliable and safe electricity supply should continue to be two of our top priorities for RIIO-ED2.

Focusing on reliability, our customers – especially those in rural communities, off-gas grid areas and in situations of vulnerability – told us that short restoration times and a reduced number of interruptions were highly important to them. Our stakeholders, in turn, believe it is critical for us to increase network visibility and protect the network against the risks posed by climate change (especially flood risks) as a way to improve the reliability of the network.

Similarly, customers and stakeholders believe that we should continue to focus on safety in line with all relevant regulations. They expressed clear support for a variety of initiatives aimed at improving safety, from public campaigns to modernising the electricity supplies to multi-occupancy buildings and upgrading supplies to properties that share a single electricity service cable.

In general, stakeholders believe it is important to focus the most sophisticated (and costly) solutions to improve both reliability and safety on high risk and high value assets as well as those critical to achieving Net Zero.

How feedback shaped our plans

Reacting to the importance that customers and stakeholders place on a reliable electricity supply, we have committed to deliver a range of ambitious initiatives that will build on our robust reliability performance throughout RIIO-ED1. These include a commitment to reduce both the likelihood that customers will experience an interruption and the duration of interruptions, with enhanced targets in place for our worst served customers. Further reflecting our stakeholders' feedback, we have also committed to improving network visibility through the installation of network monitors and to improve the flood resilience of our network.

Focusing on safety, we have introduced several commitments targeted on network assets and the public. Examples include a commitment to replace assets that present a public safety risk, as well as safeguarding the residents of flats and tenements by upgrading internal mains in poorest condition. We also propose to achieve enhanced safety by improving the fire and smarter security measures at substations and buildings.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- We are on track to deliver our RIIO-ED1 risk outputs in full.
- We have lead all other DNOs in modernising poor-condition services in flats and tenements, reducing the risk to over 98,000 customers to date.
- We have reduced the risks to rural customers by resolving over 149,000 overhead line safety issues.
- On average, customers on our network experience an interruption once every two and a half years, lasting an average duration of just 34 minutes.

How we'll continue to deliver in RIIO-ED2:

- Planned RIIO-ED2 volumes are comparable to what we've been successfully delivering in RIIO-ED1, so we are confident we can deliver them.
- Reducing the time it takes to do everyday activities, from using technology to find faults more quickly to embedding greater levels of automation.
- We have engaged with our supply chain to confirm they can deliver the volumes, and will apply our RIIO-ED1 ESQCR model to deliver our PCB programme.
- Increasing headcount through recruiting more staff, retraining staff from other areas of the business, and outsourcing some work to contractors.

This investment will enable:

Customers 19% less likely to experience a power cut.

Average power cut duration reduced by 19%.

£813.6m monetised risk benefit as part of our long-term strategy.

Managing our assets; keeping electricity supplies reliable and secure

Our customers are increasingly dependent on electricity as they decarbonise. We will manage the health, reliability, and safety of our network for them by continuing to lead the way in asset management in RIIO-ED2.

Why asset management is important in RIIO-ED2:

Our customers depend on us
Our customers are increasingly dependent on a reliable electricity supply as they increasingly use electricity for transport and heating.

We are pushing the network harder
The electrification of heat and transport will increase network power flows. Network assets will be operating at a higher level of utilisation, increasing the deterioration ('wear and tear' rate) of assets compared to RIIO-ED1.

We are managing an ageing and deteriorating asset base
Nearly 80% of our assets have been in service for over 30 years, with all assets at varying levels of deterioration. Our RIIO-ED2 plans will reduce the rate of deterioration compared to RIIO-ED1 but overall levels of asset risk will increase. We will manage the controlled deterioration of our underlying asset base, and optimise intervention on our poorest condition assets.

TO ACCOMMODATE NET ZERO WE MUST CONTINUE TO MANAGE OUR NETWORK'S SAFETY, RELIABILITY, AND ENVIRONMENTAL IMPACT. WE WILL DO THIS BY DELIVERING THREE MAIN ACTIVITIES IN RIIO-ED2:

1. Manage the overall risk (health and criticality) of our network. These activities deliver a safer, more reliable network with lower environmental impact. *Pg 66-68* ➔ sets out how we will do this.
2. Increase the performance & reliability of our network by reducing the frequency and duration of power interruptions. *Pg 69* ➔ sets out how we will do this.
3. Manage the safety and resilience of our network to a range of external factors. *Pg 70-75* ➔ sets out how we will do this.

Our leadership in asset stewardship

Over the course of RIIO-ED1 we have firmly established ourselves as leaders in asset management. This is exemplified by our international position within global forums and technical developments, and our ongoing commitments to improving public safety.

Ofgem has commended our approach to asset management and the quality of our processes. Our plan benefits from this knowledge and experience.

International asset management engagement

We are engaged in a wide range of international working groups including the International Electrotechnical Commission (IEC), the International Council on Large Electric Systems (CIGRE), and the Institute of Electrical and Electronics Engineers (IEEE). We also benefit from engagement within Iberdrola global practice groups, involving networks operating across Spain, USA, and Brazil. These engagements cover a wide range of network asset management topics, ranging from procurement and condition monitoring standards to post-mortem and reliability analyses.

This engagement gives us access to the latest global technical developments and the ability to seek international collaboration when tackling our own network challenges. It also means our contributions to network design, asset management, and innovation are reviewed by international peers and academics.

In RIIO-ED2 we will continue to engage internationally, providing an excellent opportunity to make continuous improvements to our core processes.

Our commitments – leaders in asset management

14. As a steward of critical national infrastructure, we will maintain our ISO55001 accreditation and ensure all our asset managers are certified with the Institute of Asset Management. We will continue our strategic partnership with the IET and our leading contribution to the IEEE, CIGRE and CIRED.

15. We will continue to optimise the level of network risk, reducing asset deterioration from around 5.4% per year without intervention to around 1.1% through our targeted and optimised asset modernisation programme over RIIO-ED2.

Our commitment to public safety

Over RIIO-ED1 we have developed a close working relationship with the Health and Safety Executive. We regularly meet to review the actions we take to improve public safety. These include modernising rising and lateral mains, resolving low ground clearance issues with overhead lines, and mitigating the risks associated with looped services, end-of-life cut outs, and fused neutrals. These risks are increasing as our communities decarbonise.

We are committed to continuing investment in these areas to reduce the public safety risk in the communities we serve.

Optimising the management of our network asset risk

Our network is made up of cables, overhead lines, electrical plant (such as substation equipment and ancillary systems), and civil infrastructure. Collectively, we refer to these as our assets.

The safety and reliability of our customers' supply, and the environmental impact of the network, depends on the condition ('health') and criticality of these assets. Over RIIO-ED1, we will fully deliver on our planned risk reduction; despite this our underlying network risk will increase by 21.8% by 2023.

The challenge for RIIO-ED2 is that our assets continue to age and deteriorate as our customers become increasingly dependent on them for Net Zero.

This section sets out how we will manage the condition and risk of our assets in RIIO-ED2, and manage the safety, reliability, and environmental impact of our customers' supply. We explain how we do this by asset category:

1. **Network Asset Risk Metric (NARM) assets**
2. **Non-NARM assets**
3. **132kV network assets**
   132kV network assets comprise NARM and non-NARM assets; we are presenting these separately given their high value and importance.

Our long-term asset risk objectives and strategy

Our asset investment practices are underpinned by whole lifecycle asset management and Condition-Based Risk Management (CBRM). This allows us to operate an efficient regime to maintain the safety, resilience, and integrity of the system.

We engaged with our stakeholders to develop our Long-term Risk Strategy. Managing asset risk is complex and our stakeholders told us to focus on individual assets rather than absolute targets. This feedback led us to refine our Long-term Risk Strategy and approach to carry out optimised interventions on our poorest condition assets, prioritised by criticality, to manage the overall level of network risk, detailed in ***Annex 4A.4: Network Asset Risk Strategy***.

This means we will only intervene on poor condition assets in need of modernisation (regardless of age) and seek life extension through refurbishment or smart life extension where it is financially efficient, tested by cost benefit analysis (CBA). We will prioritise interventions based on our highest risk assets, and progress activities which most effectively manage long-term network risk. We will install assets with the capacity, functionality, and sustainability required to meet Net Zero and touch the network once.

This approach ensures we will intervene on assets at the right time and in the right way to reduce risk, and in some cases we need to carry out increased numbers of interventions compared to RIIO-ED1. Due to the combined effects of the age and condition of our network, we expect overall risk to increase as our lower risk assets deteriorate. We elaborate on this in the following section.

Our condition-led programme means some of our assets will be older than ever before in RIIO-ED2, whereas some will require intervention earlier than if we'd used an age-based approach. Overall, our stakeholder endorsed strategy supports the gradual migration of network risk to the right level. This is justified by CBA and enhanced by optimal intervention timing to efficiently invest in managing risk for our current and future customers.

In developing our plans, we considered our historical delivery rates and our forecast asset health & risk trajectories, this has resulted in asset replacement and refurbishment expenditure increasing in RIIO-ED2.

This is a result of the increased risk and asset specific deterioration we are managing entering RIIO-ED2, upward cost drivers associated with sustainable modern alternatives including SF_6 free switchgear and low-loss transformers, and general supply chain costs. We have offset these increases by applying RIIO-ED1 efficiencies, asset life extension programmes, and by embedding innovation.

*For more information see **Annex 4A.4: Network Asset Risk Strategy.***

Investment to modernise our asset infrastructure, including the use of sustainable asset alternatives

£584m

Network Asset Risk Metric (NARM) Assets

Over the course of RIIO-ED1, we have embedded the industry Common Network Asset Indices Methodology (CNAIM). This calculates long-term monetised asset risk consistently across our networks by using a common approach to establish asset health and criticality. This methodology is applied to a subset of our highest value and most critical assets, collectively known as NARM assets. In 2019, we were recognised by Ofgem for the consistency and quality of our asset data, and for our leading implementation of CNAIM.

Our RIIO-ED1 programme was designed to target our highest risk assets and reduce the level of deterioration by 26.1% on reported assets. This still means our assets will carry 21.8% higher risk entering RIIO-ED2 compared to the start of RIIO-ED1. We are on-track to meet our RIIO-ED1 risk targets – by 31 March 2021 (75% of the period) we had delivered 94% and 84% of our RIIO-ED1 targets in SP Distribution and SP Manweb respectively. In RIIO-ED1, we have focused on our overhead network, where our level of risk is above the national average due to a high number of poor condition assets. We are continuing our focus on poor condition assets in RIIO-ED2 and prioritising those with highest consequence of failure.

To support our RIIO-ED2 planning and decision making, we are further improving our CBRM software platform that operates CNAIM V2.1, collecting more asset condition data and further integrating it with our corporate asset register systems. We have also deployed an optimisation engine, which uses cloud-computing to iteratively evaluate the costs and benefits of different interventions across thousands of assets to identify the right intervention, on the right asset, at the right time. In RIIO-ED2 we will embed this functionality in our ENZ Platform (*Pg 43*).

We have co-developed our NARM Asset Strategy by engaging with expert stakeholders and asset managers across other industries, nationally and internationally, to inform our objectives and ambition. This included feedback to ensure asset criticality is used to prioritise our intervention plans and that CBAs underpin our programmes of work. The approach we have adopted to prioritise highest risk assets for optimal intervention was driven and endorsed by this engagement.

We will invest £355.7m in our NARM assets in RIIO-ED2; this is higher than RIIO-ED1 due to increased levels of risk and adoption of sustainable assets. Investment will reduce the rate of NARM deterioration from 2.7% per year in RIIO-ED1, to 1.1% per year in RIIO-ED2. Overall, the level of risk will increase by 5.7%, demonstrating our approach is not too conservative. This increase in risk is because, as we replace our poorest condition assets, we are managing a controlled deterioration of the Health Index (HI, scale 1-5) of our underlying asset base. This does not affect the criticality (C, scale 1-4) of our asset base i.e. HI2|C2 assets becoming HI3|C2 or HI4|C2. The dashboard below shows how long-term monetised risk will change with, and without, our proactive and optimised asset intervention programme.

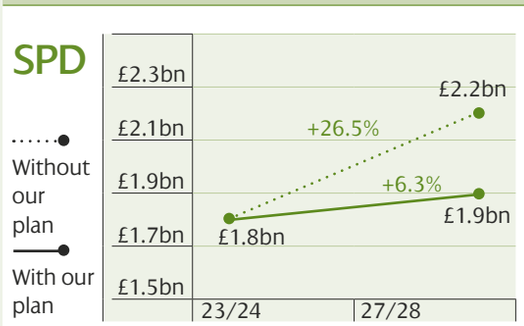
Some key NARM highlights in RIIO-ED2 include modernisation of our network through replacement of:

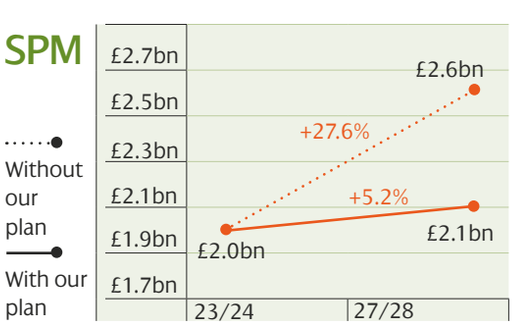
- Over 46,000 wood poles supporting LV, HV, and EHV overhead lines.
- Over 100 EHV and nearly 500 HV transformers with low loss design alternatives.
- 2,750 HV and 210 EHV switchgear devices (1,120 and >100 of which will use sustainable SF_6 alternatives).
- 58km of EHV cable, including our last remaining gas pressurised cable.
- Over 2,000 poor condition link boxes and nearly 2,000 LV pillars.

100% of our NARM asset plans are underpinned by Engineering Justification Papers (EJPs), which have been assured externally to confirm our interventions are necessary, justified, and efficient. These are supported by cost benefit analysis where necessary. This ensures the solutions we adopt are robustly justified and sets more challenging output targets than RIIO-ED1, with confidence these are in the long-term interests of our current and future customers.

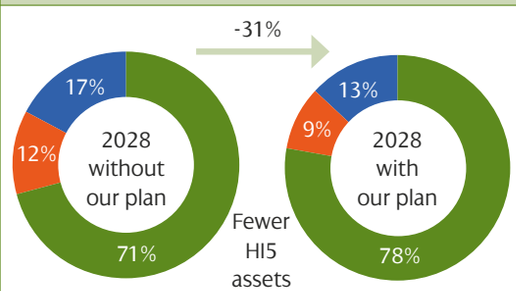
For more information on our asset health and criticality profiles, and our forecast risk with and without intervention, refer to ***Annex 4A.4: Network Asset Risk Strategy.***

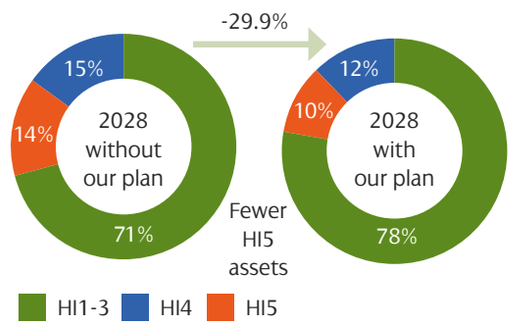
Monetised Long Term Risk Forecasts





Network Asset Risk Investment & Benefits





Relative Risk 2028

£151.4m
NARMS Investment

£359.3m
Monetised Risk Benefit

= **43p** per £ Risk

£204.4m
NARMS Investment

£454.2m
Monetised Risk Benefit

= **45p** per £ Risk

HV underground transformers

We have 82 HV/LV underground transformers on our SP Distribution network. These were mostly installed between the late 1950s and 1970s.

Because they are buried, it has not been practical to regularly inspect or maintain them. We have recently determined that they are in a severely deteriorated condition due to their prolonged contact with soil and moisture. This means they are at end-of-life and need to be replaced.

As the transformers are located in busy public and residential areas, if we do not intervene, they will continue to pose a public safety risk and large numbers of customers will lose supply when they fail. As they are oil filled, corrosion and leaks also carry an environmental impact.

In RIIO-ED2, we commit to investing £4.3m to replacing all of these units, 79 as part of our Non-load activity and 3 as part of Load related upgrades. This is £3.1m more than it would cost to replace standard ground mounted transformers, as we need to establish a new substation site for each (it's not possible to make a like-for-like swap).

Non-NARMs assets

We operate and maintain important assets which are not captured by CNAIM. We refer to these as non-NARM assets. These include ancillary systems such as batteries, pilot wires, and protection systems which are critical to network reliability and safety. For these asset categories, investment is driven by a range of factors, including:

- Asset failure and fault rates
- Remaining life, analysis of age, condition, and survival analysis
- Obsolescence, type issues, and defect data.

Non-NARM assets include our low voltage (LV) and high voltage (HV) underground cable assets. We typically have reduced visibility of the condition of these assets due to their location and the resulting difficulty in inspection and monitoring. In many cases these cables have been in service since the 1960s, and comprise different conductor types, insulation materials, and cable manufacturers. We will prioritise interventions based on historical fault rates, known type issues, and the likelihood of future failures using data analytics.

We will target cable interventions using the outputs of our CALISTA innovation project, which is developing models to predict remaining life through known cable parameters. Our approach ensures interventions are on our poorest condition sections of cable and helps maintain the integrity of the cable system.

We plan to invest £201.9m to refurbish and modernise our non-NARM assets in RIIO-ED2. This will further enhance the resilience and integrity of the network and maintain compliance with our engineering policies. This investment will also help us maintain network functionality as our customers transition to Net Zero.

We have produced Engineering Justification Papers (EJPs), with cost benefit analysis (CBA) where required, to support our interventions for these asset classes. These are detailed engineering documents setting out the background, needs case and analysis that justifies the proposed costs, volumes and timings of 100% of our planned asset interventions.

*For more information see **Annex 4A.23: EJP and CBA Index.***

Investing in our 132kV network

Our 132kV network supplies 1.5 million customers and connects over 1GW of generation. Our 132kV modernisation programme will maintain the safe, resilient, and reliable operation of the network through targeted refurbishment and replacement of poor condition assets.

Our RIIO-ED2 132kV plan is built on an asset-by-asset assessment, using engineering-science, condition reports, and detailed site surveys to fine-tune interventions, promoting refurbishment of assets and ancillary support systems, and adopting innovative alternatives wherever practicable.

We reviewed a range of options when assessing the 132kV network, including:

- targeted asset refurbishment
- targeted asset replacement, only replacing assets that require attention
- complete asset replacement with full site or circuit rebuilds.

We have adopted a combination of these options at specific sites and circuits to maximise the value to current and future customers. In total, we will invest £73.7m to address 132kV network assets with the highest risk and greatest probabilities of failure. We will prioritise these interventions by criticality of failure, and will:

- replace 11 transformers and refurbish three transformers
- replace 30 circuit breakers and associated non-active plant items
- replace around 92.5km of overhead line, with targeted ancillary equipment refurbishment
- replace 19km of fluid filled cables.

Our plans are built on asset condition and criticality drivers, complemented by rigorous cost benefit analyses to justify the expenditure and timings of our proposed interventions.

We use a range of innovative solutions to complement traditional intervention, including new oil regeneration technology for transformers. We are also reviewing opportunities for whole system solutions including working with National Grid Electricity Transmission on key overhead line and substation projects.

£73.7m

will be invested to address 132kV network assets with the highest risk and greatest probabilities of failure.

*Details of our 132kV asset intervention plan can be found in **Annex 4A.14: 132kV Plant and Circuits Strategy**. Our monetised risk forecasts for 132kV NARM assets (with and without intervention) are presented in **Annex 4A.4: Network Asset Risk Strategy.***

Improving the reliability and performance of our network for customers

We invest in the performance of our network to give our customers a reliable supply.

We measure reliability by the number of customers who experience a supply interruption, and the average duration of their interruption.

We have made improvements in these two metrics over the course of RIIO-ED1. On average, customers on our network now experience an interruption once every two and a half years, lasting an average duration of just 34 minutes.

In RIIO-ED2, our targets in this area are expected to become much more demanding. We believe we can deliver a further 19% reduction in the number of customers who experience an interruption, and a 19% reduction in the average duration of interruptions.

We will deliver this by reducing the likelihood of network faults through asset investments, and mitigating the impact of network faults through improved network design and wider use of automatic switching. Where supplies are lost due to network faults, we will restore supplies quickly and safely, with faster responses enabled by better data and network visibility.

Our commitments – network performance and reliability

16. We will improve the reliability of our supply to customers, ensuring that on average customers will be 19% less likely to experience an unplanned interruption, and average duration will reduce by 19%. We will do this over the duration of RIIO-ED2 by investing in new and proven technologies and by embedding innovation.

17. We will improve reliability for 7,857 of our 'Worst Served Customers' by reducing the number of interruptions by 33% through delivery of 22 dedicated circuit performance improvement schemes.

18. We will ensure that in an exceptional event, no customer should be off supply for more than 36 hours.

Reducing the likelihood and impact of network faults

In RIIO-ED2, we will invest to decrease the number of power cuts experienced by our customers by reducing:

1. **Avoidable faults on the network.** We will invest in the resilience of our network through targeted asset modernisation and additional monitoring, for example undertaking pre-fault analysis on the LV network. We will modernise the parts of our network vulnerable to severe weather to the highest national storm resilient standard (ETR 132), and continue our regime of proactive vegetation clearance and maintenance activities to make sure assets operate reliably.

2. **The number of customers affected by faults on the network.** We will install nearly 4,500 network controllable points, and use our ENZ Platform to manage the network *(Pg 43)*, to allow us to rapidly reconfigure the network during fault events. We will strategically target these interventions on circuits that will realise the greatest benefit.

Restoring supplies quickly and safely

Some network faults are inevitable. Our customers have told us that their priority is for us to restore their supplies quickly and safely. We will continue to reduce the average time spent off supply by:

- *Using post-fault flexibility services to support supply to customers before the network is repaired*
- *Digitalising the tools available to our operational staff, such as advanced LV network fault location technology*
- *Rolling-out our SINE Post Innovation Project (NIA_SPEN0012) on our HV network, to give us greater visibility of the location of HV faults*
- *Rolling-out intelligent automatic network reconfiguration tools such as Automatic Power Restoration Schemes (APRS) on our network management platforms, to allow the rapid reconfiguration of our network.*

Where interruptions lead to prolonged outages, we will support our customers, especially the most vulnerable and those on our Priority Service Register, by connecting local generation and providing essential welfare services.

Improving the service for our Worst Served Customers

Worst served customers are defined by Ofgem as customers who experience 12 higher voltage interruptions over three years, with a minimum of two interruptions per year.

Our Worst Served Customers programme targets network performance improvements for those customers who are poorly served by their existing network connection. These customers are typically connected to sections of network where it is uneconomical to make significant network resilience improvements due to low customer numbers.

Across our network, we forecast to have around 7,000 customers meeting this definition at the start of RIIO-ED2. The exact number of customers who meet this criteria changes year-on-year as the locations and number of faults change.

For 7,857 of our worst served customers, we will deliver a 33% reduction in the number of interruptions in the three years following completion, compared to the three previous to their most recent-qualifying year. We will do this at a circuit level through 22 schemes.

We have increased our ambition in this area in light of our ongoing stakeholder engagement and the clear signal this has sent for improved service for worst served customers.

We plan to invest £14.6m for these customers. This is an increase on what we have been able to deliver in RIIO-ED1 due to a change in the regulatory definition, and signals from our customers and stakeholders.

Guaranteed standards of supply

Guaranteed Standards of Performance (GSOPs) set the minimum level of service customers can expect from us. They cover a range of activities, including supply interruptions.

We invested significantly in RIIO-ED1 to improve the resiliency of our network, and this investment will continue in RIIO-ED2. However, there may still be rare occasions where our performance drops below the minimum expected level for some customers. We will compensate customers under these circumstances in line with Ofgem mandated payment levels. In the vast majority of cases, this compensation will be automatic and not require customers to contact us.

*For more information on restoring supplies see **Annex 4A.5: Network Performance Strategy***

Network Resilience

In this section, we set out how we will keep our network safe and resilient in RIIO-ED2, manage the environmental impact of our network assets, and increase asset resilience to climate change.

In RIIO-ED2 we will manage external threats to network reliability, the environmental impact of our network, and the safety risk it presents to customers and our staff. This will ensure the ongoing integrity, resilience, and safety of the network for our customers.

Network resilience is increasingly important to our customers as they become more reliant on a safe and secure supply of electricity. The previous sections outlined how we will improve network risk and reliability of supply, however we must also consider the changing environment surrounding our networks. We must invest to maintain legislative, regulatory, and policy compliance and in the resilience of the network to external threats, ranging from climate change to third party interference.

There are multiple forms of intervention we will deliver to maintain and increase our network resilience. Where possible, we will coordinate these interventions with other planned outages and interventions, to minimise cost and disruption to customers.

Investment in flood resilience, operational IT and telecoms, fire protection, earthing upgrades, oil pollution mitigation, and persistent organic pollutant asset changes are all materially higher than in RIIO-ED1 in response to the changing environments we face in RIIO-ED2.

We have worked with our supply chain, workforce planners and different disciplines of our organisation to ensure that these increasing volumes are deliverable in RIIO-ED2 and will provide lasting benefits for customers.

Our commitments – keeping our network safe and resilient

19. Building on our extensive RIIO-ED1 work, we will take a proactive approach to overhead line issues by adopting a risk based, digitalised inspection regime with the use of LiDAR (flying one third of our network per annum). In addition to this we will rectify all reported and confirmed overhead line clearance issues within 12 months of discovery.

20. We will continue to improve the flood resilience of our network by working with our regional environment agencies, and continue to target 100% compliance as flood maps and assessments evolve during RIIO-ED2.

You can find more detail about Network Resilience in:

Annex 4A.1 – *our Future System Strategy provides an overall view of our Engineering plan.*

Annex 4A.16 – *our Operational IT and Telecoms Strategy, summarises our approach to managing our telecoms and smart grid infrastructure as a DSO.*

Annex 4A.20 – *our Network Operating Costs Strategy, providing information on how our operating costs have been built up.*

Annex 4A.19 – *our Rising and Lateral Mains Strategy, providing an overview of our programme to manage these assets in RIIO-ED2.*

Annex 4A.18 – *our Legal and Safety (CV14) Strategy, summarising our activities reportable as Legal & Safety (CV14) under Ofgem guidance.*

Annex 4A.17 – *our Electricity System Restoration (Black Start) Strategy, providing an overview of our investment to ensure the network can recover from a national outage.*

Annex 4A.15 – *our Civils and Flooding Strategy, setting out how we will maintain the resilience of our civil assets and protect the network from flooding.*

Annex 4A.13 – *our OHL and Clearances Strategy, details our Overhead Line Modernisation Strategy and how we are maintaining ESQCR compliance.*

Annex 4A.7 – *our Climate Resilience Strategy, setting out climate risks and how we can adapt to these threats as we support the Net Zero transition.*

Annex 4A.8 – *our Losses Strategy, setting out our actions to manage the level of technical & non-technical losses as network utilisation increases.*

Annex 4A.23 – *our evidence that supports our proposals (EJPs, CBAs and BPDTs).*

Annex 5A.5 – our robust unit cost data that underpins our plans.

Investment in our network's underlying resilience, safety and sustainability.

£496m

*For more information on how we have assured the feasibility of delivering our proposed volume of activity, see **Annex 6.1: Delivering our RIIO-ED2 Business Plan**, and **Annex 4C.4: Net Zero Workforce Strategy.***

Operational information technology (IT) and the telecommunications network

Operational IT and telecoms consists of four components:

1. The telecommunications network, which communicates all data and control signals
2. Supervisory Control and Data Acquisition (SCADA) systems, which are the network monitoring and control system architectures
3. Smart systems and central data management, reported within our non-operational IT costs, such as the full network connectivity and loading model developed through our Network Constraint Early Warning Systems (NCEWS) and Network Analysis and View (NAVI) innovation project
4. Network automation and monitoring.

These integrated systems and infrastructure are vital for DSO baseline requirements and accommodating Net Zero decarbonisation: increased network monitoring; collating and sharing information with third parties; smart network technologies to manage a more dynamic and interactive energy system – these all depend on safe, resilient, and cyber secure operational IT and telecoms.

Our existing systems were designed for historical passive networks. While they have evolved in RIIO-ED1 to accommodate increasing levels of generation, the magnitude of the changes needed to achieve Net Zero goals in RIIO-ED2 and beyond means these systems need to undergo a more dramatic revolution.

Given this, we will materially increase our investment compared to RIIO-ED1 to £221.4m, to significantly expand these capabilities. This will enable:

- The deployment of LV monitoring at 14,102 sites, increasing coverage from 8% to 52% of large secondary substations. These help us more efficiently operate our network for our customers, by better knowing where and when to intervene, and enhance competition, by supporting our more targeted and effective use of flexibility services. The table below shows volumes required for the baseline scenario and high scenario. The additional high scenario volumes would be funded through an uncertainty mechanism, see *Pg 36*.

LV Monitors

	Baseline scenario	High scenario
SP Distribution	7.7k monitors *£15.5m*	16.5k monitors *£33.0m*
SP Manweb	6.4k monitors *£12.8m*	12.8k monitors *£25.6m*
SP Energy Networks total	14.1k monitors *£28.3m*	29.4k monitors *£58.9m*

- The analysis and sharing of data across the organisation and with third parties.
- The expansion of our world leading active fault level management innovation project, which will enable renewable generation to connect quicker and at lower cost.
- The continued use of RIIO-ED1 innovations such as NCEWS, which uses advanced machine learning to estimate the specification of missing cable assets and predict network behaviour. This has enabled our ENZ Platform (*Pg 43*) as BAU innovation in RIIO-ED2 and won the prestigious IET E&T Innovation of the Year prize in November 2019.

*For more information see **Annex 4A.16: Operational IT and Telecoms Strategy.***

Cyber Operational Technology Resilience

We must make sure that our operational IT and telecoms is cyber secure and meets industry recommendations for critical network infrastructure resilience.

Our Cyber Resilience OT Plan demonstrates the business alignment, needs case compared to the NSCS Cyber Assessment Framework, and costs of the proportionate cyber response required to achieve our commitments for RIIO-ED2.

Our plan is threat and risk informed, subject to both regular and event driven review, and owned at board level with responsibilities clear throughout our organisation. To develop it we have considered the RIIO-ED2 Cyber Resilience Guidelines and engaged with Ofgem.

Delivery of our plan will be through incremental improvements in operational technology cyber security across our infrastructure aligned to international standards such as IEC62443.

*For more information see **Annex 4A.29: Cyber Resilience OT Plan.***

Civils condition

Civils condition investment is about making sure we keep our civil assets and buildings in good condition, in turn preserving the condition of our electrical assets. This helps maintain safe and secure sites, which protects the public and our staff. It also contributes to the reliability and cost efficiency of our customers' supply (regulating temperature and humidity helps maintain the health of network assets – this is more achievable in good condition buildings).

In RIIO-ED2, we plan to invest £38.1m to maintain or replace our poorest-condition civil assets. This includes delivering long-term cost efficiency for our customers by improving a number of large legacy civil assets and buildings with high maintenance and management costs. Where possible, we will coordinate interventions with plant refurbishment and replacement programmes to minimise cost.

*For more information see **Annex 4A.15: Civils and Flooding Strategy.***

Flood resilience

Flood resilience is about improving our network's resilience to flooding. This makes the network safer, and gives customers a more reliable and cost effective supply. Flood risk is not static, and the flood risk maps we work to are regularly updated by the regional environmental agencies.

In RIIO-ED2, we will invest £9.6m to target full compliance with industry requirements for the protection of our grid and primary substations. We will do this by improving flood resilience at existing substations, and constructing any new substations to the required level of protection. In RIIO-ED1, we adopted a new type of flood barrier system which protected key individual items of plant, rather than the whole site. We will continue to use this method where it reduces costs for customers without impacting flood resilience.

We are materially increasing our investment in flood resilience compared to RIIO-ED1 for two reasons. We need to take account of the latest modelling and a change in the industry's flood resilience standards. Investment in RIIO-ED1 is low because we had already made significant investment in flood protection prior to RIIO-ED1.

*For more information see **Annex 4A.15: Civils and Flooding Strategy.***

Electricity System Restoration (Black Start)

Electricity System Restoration is the recovery from a total or widespread loss of power on the GB electricity network. Such an event is identified on the National Risk register, and would have a severe impact on our customers and the economy.

Our responsibility as a DNO is to build network resilience to this, as recommended by the UK government and electricity industry. Failure to do this would increase the risk of our customers being left without electricity for an extended period.

The primary way to provide this resilience is to make sure that all equipment the electricity system restoration depends upon is resilient to loss of power for several days. We achieve this by installing backup power sources for our protection and telecoms equipment. The number of days for which the network needs to be resilient is a UK government policy decision and we support the availability of price control a reopener in the event that the existing policy changes.

Our plan for RIIO-ED2 is to invest £6.5m to make the interventions needed to achieve full resilience for all core and critical substation locations by the end of RIIO-ED2. This is part of our wider strategy to achieve full network resilience by the end of RIIO-ED3. Any work will be aligned with other substation modernisation works wherever possible to reduce costs.

*For more information see **Annex 4A.17: Electricity System Restoration Strategy.***

Fault repair

Fault repair is the 24-hour a day service of locating and repairing network faults, to quickly and safely restore customer supplies. The importance of this service will grow as our customers become increasingly dependent on a reliable electricity supply as they transition to Net Zero.

During RIIO-ED1, we have experienced an overall increase in fault rates, notably on our underground cable network. This has largely been driven by a combination of factors including a known joint type defect on our 33kV cable network, general condition related deterioration, and increased loading on our LV network. In RIIO-ED2 we are planning a more proactive approach to underground cable investment, making optimum use of data to prioritise the interventions we make on circuits to provide the greatest benefits to customers in terms of performance and reliability. However, we are still forecasting an increase in the volume of faults on our network in RIIO-ED2.

We are offsetting the increase in fault rates by setting highly efficient fault repair costs; through competitive tendering and by using technology such as LV monitors to pin-point fault repairs.

To manage the customer impact of increasing fault rates, we will invest £241.6m in RIIO-ED2 in fault repair. This investment also covers the cost of providing temporary generation to make sure customers, especially our most vulnerable, remain on supply while repairs are underway. As a result of this investment, and in spite of increasing fault rates, we are targeting a reduction in the frequency and duration of network interruptions that our customers experience RIIO-ED2.

*For more information see **Annex 4A.20: Network Operating Costs Strategy.***

Inspection, repair, and maintenance

We inspect and maintain all our assets on a regular basis to:

1. Identify hazards or defects which could affect the safety, reliability, or environmental impact of our network.
2. Maintain the financial efficiency of the network through preventative maintenance to prolong asset life and avoid costly asset failures.
3. Comply with our legal requirements.

For RIIO-ED2 we will invest £114.4m to continue to deliver an inspection, repair, and maintenance programme. Compared to RIIO-ED1, we have introduced the following inspection changes:

1. **Inspection prioritisation.** We have reduced the frequency and scope of inspections for certain lower risk, higher reliability assets. We have done this where we can reduce customer bills without impacting the safety, reliability, or environmental impact of the network.
2. **Domestic asset inspections.** We are including a proactive inspection programme of our domestic cut out assets, leveraging the iDentify innovation project. We previously received information on the condition of these assets from meter readers who visited properties, but smart meters mean these visits will no longer happen.
3. **Oil sampling.** We have introduced additional enhanced oil sampling on our HV/LV transformer fleet, to improve our condition visibility on these assets, and align data collection with CNAIM.
4. **A close eye on transformers**. We will introduce real-time monitoring of transformers which are forecast to experience increases in utilisation. This monitoring means we can tailor specific strategies and solutions for timely and effective maintenance of our assets to prolong their life.

*For more information see **Annex 4A.20: Network Operating Costs Strategy.***

Tree cutting

If trees and other vegetation get too close to our overhead lines they can become a source of faults – for example, branches touching our power lines will cause that line to disconnect from the rest of the network and result in a loss of supply for customers connected to that line. We therefore have an ongoing programme to:

1. Inspect vegetation clearances
2. Cut back vegetation on two to three year cycle to maintain a safe clearance distance.

In RIIO-ED2 we will invest £82.0m, an increase on RIIO-ED1 rates reflecting faster growth rates and managing risks identified in our Climate Resilience Strategy. For inspection, in RIIO-ED1 we trialled the use of LiDAR mounted on the underside of a plane. LiDAR gives a three-dimensional representation of everything within a few metres of our overhead lines. From this we can identify vegetation clearance distances. This approach reduces inspection costs, targets our cutting, and resolves issues quicker and at lower cost than a site visit. Given the success of LiDAR, we will use it as business as usual during RIIO-ED2.

*For more information see **Annex 4A.20: Network Operating Costs Strategy.***

Network safety

Ensuring the safe operation of the network is our most important and deeply held responsibility.

Over RIIO-ED1 we have been at the forefront of delivering key public safety programmes to manage and reduce risk associated with the electricity network.

Looking forward to RIIO-ED2, the electricity network is being placed under greater pressure than ever before as our customers transition to Net Zero. We will keep our network safe by investing in smarter substation security measures, modernising rising and lateral mains, and maintaining our ongoing programme of resolving OHL clearances.

Our commitments – ensuring the safe operation of our network

21. We will improve fire safety at over 1,000 substations integrated in other buildings, through a prioritised, risk-based investment programme during RIIO-ED2.

22. We will deploy smarter security measures and access restrictions to 100% of our ground mounted substation sites over the course of RIIO-ED2, to reduce unauthorised access and improve traceability and management of our third-party contractors.

23. We will safeguard around 14,000 residents of flats and tenements each year over RIIO-ED2 by proactively managing the remaining risk associated with deterioration of Rising and Lateral LV Mains (regardless of asset ownership). We will do this through our risk-prioritised modernisation programme by upgrading poor condition assets where they are identified over RIIO-ED2.

24. We will improve public safety risk by replacing over 2,000 of our last remaining poorest condition underground link boxes, and modernising nearly 2,000 low voltage pillars in publicly accessible areas during RIIO-ED2.

Legal and Safety (CV14)

In RIIO-ED2 we will invest £40.7m to deliver a range of activities to improve the safety of the network and the reliability of our customers' supply. Including site security (next column), we will deliver:

Fire protection – we will improve safety by completing fire risk assessments for **all** our substations, and by continuing to invest in reducing fire risk at our highest risk substations, including those integrated within third party buildings. Interventions include fire detection, and separation at our higher voltage substations to reduce the risk of damage if a fire does occur.

We have an obligation to our customers to continue to mitigate the fire risk to and from our substations. We are materially increasing our investment in fire protection compared to RIIO-ED1, following recent analysis and to align with latest industry standards.

Asbestos management – we will continue to deliver our Asbestos Management Strategy, surveying our higher risk sites and containing or removing asbestos to ensure a safe working environment for our staff and contractors.

Earthing upgrades – we will continue to upgrade earthing at pole mounted substations, and at substations where needed to comply with the latest earthing standards.

We are materially increasing our investment in earthing upgrades compared to RIIO-ED1, driven by the latest industry earthing standards. These standards require different earthing arrangements on some of our assets. We will look to coordinate earthing interventions with other interventions, to minimise cost and disruption for our customers.

Safety recreational sites – at recreational sites where there is increased risk of contact with overhead lines (such as fishing sites and caravan parks), we will increase public awareness of the potential safety hazard by using signage. We are also investigating the use of LiDAR to classify land usage around our overhead network. We will relocate, insulate, or remove the overhead asset where needed.

Other network safety activities we will deliver in RIIO-ED2 are interventions to improve cables pits, replacing or installing fire blankets, and repairing or replacing assets due to metal theft incidents.

*For more information see **Annex 4A.18: Legal and Safety (CV14) Strategy.***

Site security

Site security centres on preventing unauthorised access to our substations, as it presents a safety risk to individuals. If those individuals steal or damage equipment, there can be cost, public safety, reliability, and environmental impacts.

In RIIO-ED1 we successfully trialled a smart lock system – a new system based on 'smart key' technology that can control access to substations for all personnel and contractors. This gave real-time visibility of who was accessing our substations. This had the secondary benefit of creating an audit trail for the time our contractors were spending to complete work.

Our RIIO-ED2 plan for site security is to install, maintain, and upgrade security assets to meet the appropriate standards based on the site risk rating. In total we are seeking to invest £15.4m to:

1. Refurbish or replace site security systems
2. Install new security systems where no systems are currently installed but are recommended to comply with the Electricity Safety Quality and Continuity Regulations (ESQCR)
3. Continue the roll-out of smart locks and the key management system to provide full network coverage in both licence areas.

Physical security refers to investment to enhance security at sites deemed to be Critical National Infrastructure (CNI) by the department for Business, Energy & Industrial Strategy (BEIS). We maintain enhanced security compliance through liaison with BEIS and by fulfilling our ScottishPower group security policies. We are not seeking any additional investment in RIIO-ED2 as our requirements have not changed. Our sites may be reclassified by BEIS during RIIO-ED2, which may trigger a physical security reopener.

*For more information see **Annex 4A.18: Legal and Safety (CV14) Strategy.***

Rising and lateral mains

Rising and lateral mains (RLMs) are the LV cables that supply customers in multi-occupancy buildings, either in multi-story (rising) or terraced (lateral) properties, including flats and tenement buildings.

RLMs are either located inside or attached to these properties, so their ongoing maintenance and modernisation is critical to the occupants' safety. Historical construction arrangements mean the ownership of these cables can be unclear, leading to concerns about their condition, deterioration, and level of risk. Many need urgent investment. The risks to customers from these assets increase as they continue to deteriorate, and as customer electricity demand increases with Net Zero.

In recognition of this public safety risk, and with the support of the Health and Safety Executive, during RIIO-ED1 we are modernising poor-condition RLMs where they are made aware to us. This has reduced the risk to over 98,000 customers to date. We are one of the few DNOs to do this in RIIO-ED1.

For RIIO-ED2 we will invest £61.1m and increase our leading role by pro-actively inspecting properties with RLMs that we have identified in accordance with our policy. We will do this regardless of RLM ownership, to support our ongoing and risk prioritised programme of modernisation for over 70,000 customers. This makes our customers safer and helps enable Net Zero.

*For more information see **Annex 4A.19: Rising and Lateral Mains Strategy.***

Overhead line (OHL) clearances

We have an obligation to comply with proximity and ground clearance requirements for overhead line assets, as per the ESQCR. This safeguards our staff and the public by reducing the risk of contact with overhead lines.

At the start of RIIO-ED1, we identified a significant volume of ground clearance compliance issues on our network. To date in RIIO-ED1, we have resolved over 149,000 of these issues and are delivering our commitments to the Health and Safety Executive to clear our backlog and achieve compliance.

As assets deteriorate, land use changes and conductors sag, over time the number of issues will increase. The discovery rate of these issues is more prevalent in our SP Manweb region compared to SP Distribution because:

- *The SP Manweb LV OHL network (excluding services) is approximately twice as long and LV networks are more susceptible to ground clearance issues*
- *It has approximately three times the number of OHL LV services*
- *The LV network is around twice as likely to be within 5m of roads, where clearance requirements are more stringent.*

We will invest £24.8m over RIIO-ED2 to maintain compliance with ESQCR legislation for safe OHL clearances, with another proportion of ground clearance issues resolved as part of our wider OHL modernisation programme. We will embed benefits from our LiDAR innovation project to identify and resolve non-compliances without costly inspections.

*For more information see **Annex 4A.13: OHL and ESQCR Strategy.***

Network Sustainability: *the environmental impact of our network*

We will invest £93.7m in RIIO-ED2 to reduce the environmental impact of our network.

*Further details are contained within **Annex 4C.3: Environmental Action Plan, Annex 4A.8: Losses Strategy,** and **Annex 4A.7: Climate Resilience Strategy.***

Persistent organic pollutant asset changes – we are materially increasing our investment in persistent organic pollutant asset changes compared to RIIO-ED1, due to new legislation which came into force in 2019. We will continue our programme to remove all oil filled assets with more than 50ppm polychlorinated biphenyl (PCB) by 2025. This programme is informed by the SP Energy Networks-led ENA statistical model that analyses all GB historical test data to determine probability of contamination. We forecast to replace over 8,620 pole mounted transformers during RIIO-ED2 as part of a £55.9m programme.

Due to the step-change in scale of activity in this area compared to RIIO-ED1, we have assessed our supply chain and are making provisions to scale up for delivery. We intend to utilise a similar approach and resourcing model that we applied to resolve the backlog of overhead clearances as part of a programme agreed with the Health & Safety Executive.

Volumes of PCB contaminated equipment remain uncertain across industry. New information continues to be collected to refine the volume, type and location of interventions but the uncertainty will remain until the programme is complete in 2025. Our proposal for a volume driver to manage this uncertainty is detailed in ***Annex 5B.1: Uncertainty Mechanisms***

Oil pollution mitigation – we will continue to bund 33kV & 132kV transformers that have no existing oil containment bund or oily water drainage system. We will prioritise high risk sites based on proximity to water courses and align intervention with wider asset modernisation programmes. We are increasing our investment in oil pollution mitigation compared to RIIO-ED1 and will keep costs efficient by using an innovative bunding solution for existing transformers.

Contaminated land clean-up – in combination with our oil pollution mitigation programme, we will clean up land contaminated by ageing and leaking plant.

Noise pollution – we will continue to act on noise complaints from our customers, using a range of interventions including plant repair or replacement, and noise barriers or enclosures.

Visual amenity – we will keep undergrounding our overhead network in designated Areas of Outstanding Natural Beauty, National Scenic Areas and National Parks. We are publishing a new policy to support engagement with our stakeholders on this topic and plan to increase levels of activity from RIIO-ED1.

SF_6 – see *Pg 114* and *Annex 4C.3: Environmental Action Plan*

Network losses

There are two categories of network losses:

1. **Technical losses –** these result from the laws of physics where they are an inherent result of power flowing through network assets. They can be managed but can't ever be eliminated.

2. **Non-technical losses –** these are units of energy transferred but not correctly accounted for due to errors in unmetered supplies, inaccurate billing estimations, and illegal abstraction.

Management of losses is complex because they are difficult to measure and influenced by factors outside of our control.

Technical losses will increase in RIIO-ED2 with Net Zero decarbonisation. The electrification of heat and transport, greater levels of decentralised renewable generation, and increased DSO operation will increase distribution network utilisation, leading to an increase in losses. To manage this increase, in RIIO-ED2 we will consider all reasonable measures which can be applied to reduce losses and adopt those measures which benefit customers.

To do this, we plan to invest £13.2m in asset modernisation over RIIO-ED2 to manage losses. This includes replacing 4 high-loss primary transformers and 795 high-loss secondary transformers with low-loss models.

In addition, we are also taking learning from UKPN RIIO-ED1 innovation and deploying a Mobile Asset Assessment Vehicle (MAAV) to identify LV contact voltages in urban areas.

We are also working with transmission operators and NGESO to take a holistic view of losses during the procurement of flexibility services.

We will continue our industry-leading activities in the area of revenue protection, identifying and reducing electricity theft and billing errors, and improving stakeholder and customer awareness.

We will coordinate our losses interventions with condition-based interventions and network reinforcement, to maximise the efficiency of our loss reduction activities.

In RIIO-ED2, we will increase our understanding of losses by combining new sources of data from LV monitoring at over 14,100 sites (increasing coverage from 8% to 52% of large secondary substations), with smart meter data and enhanced network modelling. This enables a better understanding of losses on the LV network and will inform interventions as part of our wider DSO Strategy.

For more information, see
Annex 4A.8: Losses Strategy.

Investing in asset modernisation over RIIO-ED2 to manage losses.

£13.2m

Climate Resilience Strategy

As a responsible network operator, we already consider the impact on our networks of a range of natural and climate factors such as flooding, storms, and vegetation growth. The magnitude and frequency of these risks are likely to change as the climate changes.

Our Climate Resilience Strategy sets out our assessment of the impact of climate risks on our networks over a range of plausible scenarios based on representative concentration pathways (RCPs). This method is aligned with the approach taken by the UK Climate Change Risk Assessment (UK CCRA) and considers outputs from the Paris Agreement and Committee on Climate Change evidence reports.

We are continuing our engagement with other parts of the energy sector. Our strategy builds on our engagement with stakeholders and other sector work, as well as UK-level assessments to ensure a coordinated and considered approach. We are also members of the newly established ENA Climate Change Resilience Working Group for all DNOs.

Our Climate Resilience Strategy has highlighted the increasing threat and prevalence of severe weather events. As a result we have refined our Severe Weather 1-in-20 forecasts to ensure we are able to restore and repair the network quickly if such an event occurs.

Our Climate Resilience Strategy includes recommendations for adaptation which factor into our proactive risk management strategies, including greater levels of flood resilience and proactive vegetation management to inform our prioritised interventions during RIIO-ED2. As this is a newly developed strategy, we are continuing to integrate climate adaption findings within our wider business policies, systems and processes.

For more information see
Annex 4A.7: Climate Resilience Strategy.

Supporting documents for this chapter

Annex 4A.28: *Connections Strategy*

Annex 5A.6: *Access Significant Code Review*

Annex 4B.3: *Community Energy Strategy*

Annex 4C.1: *IT and Digitalisation Strategy*

Annex 4C.4: *Net Zero Workforce Strategy*

Annex 5B.1: *Uncertainty Mechanisms*

Some highlights of our strategy

Investment: We will invest £20m in Digitalisation of Connections Services.

£20m in digitalisation

Engagement: 89% of our stakeholders agree that the energy system transition to Net Zero will place additional emphasis and importance on our new connections process *Pg 77*

89% of stakeholders agree

Innovation: Our ambitious Connections Strategy has been led by our customers but will be serviced by increased digitalisation *Pg 80*

CHAPTER 4 / PART A

Provide timely and efficient connections

Meeting the UK's ambitious climate change targets will depend on our ability to connect more low carbon technology to our networks and providing an exceptional service for all connections customers.

Our RIIO-ED2 Connections Strategy has been developed through customer and stakeholder engagement alongside extensive Distribution Future Energy Scenario analysis. As a result, we know the uptake of low carbon technologies will undoubtedly affect demand for a network connection.

In RIIO-ED2 we expect to manage:

- up to five times the amount of enquiries per annum
- up to three times the amount of quotations, and
- more than double the number of projects requiring physical work to ensure connections.

While the biggest increase in demand from our services comes from first time or one off customers looking to connect a low carbon technology, our strategy will reap wider benefits including economic growth through construction and regeneration within our communities and an emergence in storage connections across our network.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Our analysis indicates that there could be up to five times the number of customers who will contact us for a connection during RIIO-ED2 compared to current enquiry levels.

This signals a rate of change never seen before in the demand for connection services with the last three years of RIIO-ED2 predicted to see exponential increases in customers contacting us for a connection service.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

86.3%

Commercial:

82%

Our stakeholders' priorities

Throughout extensive engagement we have learned that the following elements are most important to our customers and stakeholders:

- Customers expect faster timescales for both the provision of a quote and the delivery of a connection. This includes meeting and aiming to exceed guaranteed standards of performance timescales.
- Stakeholders believe that making the connections process easier for inexperienced people is critical, citing a high standard of service personnel and operatives as key success factors
- Customers expressed a preference for having a single point of contact from the initial connections application stage – this was most important to larger customers with complex or high value projects.
- In line with the importance of data and digitalisation expressed by customers and stakeholders across the plan, connections customers want us to provide data including substation loading / spare capacity for connections, the frequency of power outages and any constraint related information.
- Stakeholders suggested that new connections service offerings need to undergo a digital revolution to realise RIIO-ED2 and Net Zero commitments for all customers.

How feedback shaped our plans

Customers' and stakeholders' influence on our RIIO-ED2 connections plans is clear. The specific feedback they provided, especially that gathered across a large sample of customer experiences throughout the RIIO-ED1 period, allowed us to pinpoint and address RIIO-ED2 priorities.

While all of the commitments we are putting forward ultimately aim to provide an enhanced connections experience, they address two key needs we identified:

- We will improve the connections process. Directly responding to our customers' and stakeholders' feedback we will implement measures to improve quotation and delivery timescales connections, as well as simplifying the overall connections process.
- We will also empower customers to make informed choices. Reflecting our customers' feedback we will make increasing amounts of connections related data available and offer increasing amounts of flexible connections where appropriate for customers needs.

Our customers' and stakeholders' impact goes beyond our initial response to their needs. Through several rounds of RIIO-ED2 engagement we tweaked and refined our commitments and our the strategy that sits behind these to ensure our plans fully addressed the wants and needs of our customers and stakeholders. This led us to amend the ambition of some commitments while setting out more clear timelines and deliverables for others. A prominent example is how stakeholder feedback led us to move away from offering capacity heatmaps updated every three months to offering more dynamic data on capacity and constraints analysis.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

Through our Incentive on Customer Engagement Initiatives, we have sought to improve customer satisfaction for Minor Connections Customers.

We have continually engaged with our Major Connections customers through the Incentive on Connections Engagement, This includes extensive customer satisfaction surveys to define our service improvements.

We have exceeded our performance targets for Time to Connect between 2016/17 and 2019/20.

Our Time to Quote performance has generally improved year on year with above average performance compared to other DNOs.

How we'll continue to deliver in RIIO-ED2:

To service increasing amounts of connections quotations and projects, we will be adopting a hybrid delivery model. This will allow for ahead of need investment to be supported by dynamic planning of customer projects in line with our DFES predictions.

Our Connections Strategy will deliver an efficient, customer focused process, increasing our ambition over and above baseline requirements. This will require preparing our supply chain, resourcing, processes and digital solutions.

Further in this chapter we signal how transformational digital change will revolutionise the efficiency and quality of our connections services for our stakeholders.

A £20m investment in digital solutions could result in a saving of £15m each year by the end of RIIO-ED2 in additional connection charges. Signalling significant efficiencies for our stakeholders.

£15m

What we mean by 'connections'

As a DNO we are responsible for ensuring properties, businesses, industry and generation are connected to the network with an installation to suit their needs.

Any customers who want a new connection, or to alter their existing connection, apply to us for this service. For instance this could be due to installation of an electric vehicle charger, the need to move position of an incoming supply or an increase in their capacity requirements.

We take pride in providing our customers with the connection service they require. This includes working with our customers to understand their requirements, producing quotation offers and, if the customer wishes to proceed with the required works, the delivery of the project.

Predicting Connections Opportunities

As part of our planning, we have engaged with our stakeholders and customers to help us understand the number of customers who will require a new or upgraded connection to our network between 2023 and 2028.

This has been informed by our local stakeholder priorities for both the uptake in Low Carbon Technologies and the levels of construction which will be undertaken within our communities. For RIIO-ED2 planning we have engaged with domestic customers at a level far surpassing any previous engagement for connections. We recognise there will be more domestic customers seeking a connection for the first time in RIIO-ED2. Our modelling process is set out below:

INPUTS

- Typical connections volumes in RIIO-ED1
- UK and licence specific Net Zero stakeholder aspirations
- UK and licence specific construction targets.
- Contracted Schemes.

VARIABLES

Areas within our strategy development, e.g:

- Extent to self service options to receive prices
- Enquiry to Quotation Rate
- Other factors such as levels of competition in the market, potential incentive impacts.

OUTPUTS

The expected number of connections schemes within each market segment. This has formed the basis for expected connections volumes.

Delivering Connections Opportunities

To service increasing amounts of connections quotations and projects, we will be adopting a hybrid delivery model. This will allow for ahead of need investment to be supported by dynamic planning of customer projects in line with our DFES predictions. Our Connections Strategy will deliver an efficient, customer focused process, increasing our ambition over and above baseline requirements. This will require preparing our supply chain, resourcing, processes and digital solutions. Further in this chapter we signal how transformational digital change will revolutionise the efficiency and quality of our connections services for our stakeholders.

In 2021, we commenced an end to end process review seeking opportunities to increase efficiencies and quality of our connections process which will set our priorities ahead of RIIO-ED2.

Understanding Customers Needs

We have ensured the proposals within our RIIO-ED2 Connections Strategy are led by our stakeholders.

In RIIO-ED1 we have regularly engaged through surveys; conferences; strategic stakeholder panels; bilateral meetings and complete account management activities for our connections customers. We also hold regular connections conferences; strategic stakeholder panels; bilateral meetings and complete account management activities for our connections customers.

The outputs and actions from this are captured and have been incorporated into the foundation of our plan. This is in addition to wider engagement with new and existing customers. Our customers have told us that they prioritise:

- **Information provision** – Customers would like clear, understandable information on the process of gaining a connection.
- **Quality of service** – Customers want to receive tailored, relevant communication they appreciate our guidance and support.
- **Timely connections** – Customers would like to receive information, quotations and project delivery efficiently and on time. Although we must ensure we meet our Guaranteed Standards of Performance within Connections, our customers have informed us these are often still too longer timescale to wait.

Servicing the Entire Market

All of our engagement has allowed us to recognise that the needs of our customers are diverse, therefore our service proposals in RIIO-ED2 are centred around individual customer priorities per market segment. This analysis has been aligned with our volume analysis, which has allowed us to create a profile of our expected customers, presented in the table overleaf.

We also are working with Ofgem on evaluating the levels of competition per market segment within major connections works ahead of RIIO-ED2.

Our Connections Strategy provides a full overview of our customer feedback and how we service the Guaranteed Standards of Performance for Connections. Please see ***Annex 4A.28.***

Number of Enquiries

Market Segment	Increase 2019 v 2028 forecast/ annum	Customer Type	Customer Needs
Minor Connections			
LVSSA	up to 6x	*Domestic customers wanting to make alterations to their existing supply.*	• *Simple and transparent connection process* • *Serviced by easy to use tools* • *Fast and easy identification of LCT connection requirements*
LVSSB	up to 3x	*Small industrial and commercial customers wanting to make alterations to their existing supply either.*	• *Simple and transparent connection process* • *Serviced by easy to use tools* • *For LCTs – simply identify existing fuse size and notify DNO instantly to determine any upgrade to fuses or wider network*
Major Connections			
Metered demand LV	up to 5x	*Large industrial and commercial users or small development sites.* *Multi plot housing or commercial developments.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Easy to use tools & information & faster quotations*
Distributed generation LV	up to 30x	*Low Voltage customers embedding generation to an existing supply.* *Customers establishing a new connection for standalone or embedded generation from the outset.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Connect & notify where appropriate* • *Fast quotations through deployment of intuitive or automated solutions and investment in self-service through our website*
Metered demand HV	up to 13x	*Commercial or industrial customer wishing to increase their capacity for electrification or expansion.* *A new customer developing a large housing or commercial site.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Access to capacity data and flexible connection options* • *Advice from specially trained connections staff*
Distributed generation HV and EHV	up to 6x	*Commercial or industrial customer embedding generation to an existing supply.* *Customers establishing a new connection of standalone distributed generation at scale.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Access to capacity data and flexible connection options* • *Advice from specially trained connections staff who can advise on implications and enduring costs of alternative solutions*
Metered demand HV & EHV	up to 2x	*Commercial or industrial customer wishing to increase capacity for electrification or expansion.* *New customers developing a significantly sized regeneration scheme such as housing or commercial. Could include electrified technology for heating / processes and significant amount of EV charging.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Access to capacity data and flexible connection options* • *Advice from specially trained connections staff who can advise on implications and enduring costs of alternative solutions*
Metered demand EHV and above	up to 2x	*Commercial or industrial customer wishing to increase capacity for electrification or expansion.* *New customers developing a significantly sized commercial or industrial site possibly with electrified technology for heating / processes and significant amounts of EV charging.*	• *Transparent information on connections processes and costs* • *Access to competition* • *Access to capacity data and flexible connection options* • *Advice from specially trained connections staff who can advise on implications and enduring costs of alternative solutions*
UMS Other *UMS LA* *UMS PFI*		*Street furniture providers working on behalf of local authorities or other utilities such as telecoms.*	• *Access to guidance on criteria for unmetered connections* • *A fast connection process from the point of application* • *An ease of payment with a robust process for the reconnection of any unmetered supplies when required*

Our Connections Strategy

Our Connections Strategy is customer led and supported by technology. Based on the stakeholder feedback we have received the three strategic focus areas of how we will deliver connections in RIIO-ED2 are:

Simplification – of processes, systems and communication with our customers.

Self-Service – support and empowering customers to support all or part of the connections journey.

Timely & Efficient Connections – measures to improve the speed of and efficiency of process.

The below infographic demonstrates the initiatives contained within our Connections Strategy. Within ***Annex 4A.28*** Connections Strategy you will read about the detailed targets and commitments set within these initiatives. These will support us in meeting and exceeding baseline standards for the Major Connections Incentive in RIIO-ED2 and improve our performance through Time to Connect.

Distribution System Operation & Connections

As our network becomes smarter, we want to expand our Connections offerings to align with our Distribution System Operator activities as referenced in ***Pg 56*** of our plan. For any customers connecting in areas of known constraints or if a new 'firm' connection imposes a new constraint, we will work with our customer to understand the most appropriate solution to meet their needs.

In RIIO-ED1 we implemented the Dunbar Active Network Management scheme which allowed the connection of distribution renewable generators before transmission reinforcement works could be carried out. This allowed for a faster connection process for these customers.

In RIIO-ED2 we will build on these concepts of a more dynamic system through the use of increased network monitoring and wider delivery of flexible connections.

Driving Improvement and Efficiency

Our Connections Strategy demonstrates what we believe to be the most efficient way to manage the expected future connections volumes whilst also delivering the standard of service our customers expect. The only other alternative to this strategy would be to be significantly increase the level of resources which currently maintain heavily manual processes.

Specific Factors

Our engagement has highlighted factors that relate specifically to ourselves as a DNO or our individual geographical areas. This strategy details our response to feedback from customers for both minor and major connections.

For example, within our most recent ICE plan in 2021 we have received feedback for improvements to the use of our system Radar. We appreciate that customers would welcome fundamental changes to this system and within our ICE actions we have established Radar working groups with a view of implementing improvements. Ahead of the start of RIIO-ED2 we plan to hold a consultation on the future of Radar and how a replacement could be incorporated into the wider digital and simpler solutions we have planned in RIIO-ED2.

Our commitments and deliverables in RIIO-ED2

25. We will offer 100% of customers a pre quotation consultation using either face to face or virtual technology, to achieve improved upfront communication with customers by 2025.

26. We will nominate a point of contact to all customers requesting 30 or more quotations per year, or who have a single project exceeding £1m in value, using dedicated account management to foster better relationships with repeat customers, by 2025.

27. We will offer 80% of HV and EHV customers the choice of a firm and a flexible connection where a known constraint exists to achieve more coordinated network planning by 2025.

28. We will quote within 70% of guaranteed standard timescales for Major Connections customers using our improved digital solutions. By 2028, 100% of customers to receive a budget offer at the point of enquiry.

29. We will make increasing amounts of connections related network information available in near real- time, including capacity and constraint analysis. This will use increased digital data sets by 2025.

30. We will improve connections delivery timescales by 2% year on year from the start of RIIO-ED2.

Our RIIO-ED2 Connections Strategy

Simplication

Transparency Upfront – Provide clear, revealing information tailored to individual needs, on-line.

Trackable Progress – Allow customers to track their connection online from enquiry through design, acceptance and delivery.

Process Rationalisation – Make our process(es) clear and easily understood. Including ICP & IDNO works.

Supporting Self Service – Offer additional support for customers during the roll-out of our new tools and information services.

Self Service

Intelligent Assessment – Provide tools to enable automated network assessment.

Immediate Assessment – Provide customers with an immediate assessment of their connection request.

Real-time Information – Make network information available, including capacity and constraint analysis.

Supporting Digitalised Self Service – Ongoing support for customers in using the digital suite of tools available.

Timely & Efficient Connections

Agile Delivery – Improve the speed of delivery through intelligent outsourcing and refined processes.

Timescales to Suit Customers – Work to customers timescales for the provision of an offer or connection complete.

Fast Flexibility – Provide technical and commercial alternatives to customers at HV & above in areas of known constraint.

Supporting an Evolving & Competitive Market. – Continuous, agile and iterative stakeholder engagement activities.

Minor Connections
(1-4 low voltage plots)

For customers who wish to connect a single premise or up to four plots, we are committed to delivering high levels of customer satisfaction and timely quotations and construction.

We want to improve the expected level of satisfaction for these customers to an average 9.4/10 in terms of Broader Measure of Customer Satisfaction scores. These are often first time or one-off customers. Our approach and commitments to serving the customer satisfaction for these customers is set out in our ***Annex 4B.2***

The Time to Connect Incentive encourages DNOs to quote and connect minor connections faster than we do now. We must ensure our speed of performance is maintained or improved through RIIO-ED2. Given the volume increases we expect for minor connections then we must ensure our performance is not compromised, but this will not be easy and will require significant changes in how we do things. To manage this smarter we have developed a Minor Connections Strategy which is contained within ***Annex 4A.28***. This sets out a customer led ambitious approach to offering automated and fixed price solutions upfront for simpler works. This will be teamed with more transparent customer support so that customers who are unfamiliar with the connections process are serviced to the level they need. We will always commit to servicing customers through the channel of their choice.

£20m out of our digitalisation *expenditure supports connections*

£20m

By 2028 yearly savings *through connections charges could be*

£15m

Through our LV Connections *Offer Accelerator Proposal, customers could save on their upfront labour costs to wait for a connection. We predict the saving per scheme for an LV Generation customer could be*

£380

Bespoke Incentive for Low Voltage Demand & Generation Customers – *LV Connections Offer Accelerator*

The Time to Connect Incentive has been positive in RIIO-ED1 for continually improving levels of service for Minor Connections Customers in terms of speed of quotation offer. However, it is recognised that some Low Voltage Generation connections (DGLV) and Low Voltage Demand connections (LVAL) customers often require works which are of similar scale and value of Minor Connections however are served by a more complex, far reaching incentive in Major Connections.

LV Demand & Generation are critical elements within the drive to Net Zero. Based on customer feedback, it is recognised that our customers would like faster quotations. We anticipate a significant increase in enquiries for DGLV and LVAL over the RIIO-ED2 period. Current Forecasts show more than an 800% increase on RIIO-ED1 enquiries for LVAL with a 1000% increase forecast for DGLV.

We do recognise some DGLV and LVAL schemes will be complex in nature however we believe we should make efforts to target faster timescales for issuing quotations for all customers. We recognise these works take place in competitive market segments, therefore offering improved timelines for independent connection providers as well as customers who come to us direct.

To achieve our ambition in this bespoke proposal we will again be relying on revolutionising our quotation preparation through digitally automated offers for simpler works and through enhanced digital design tools for both customers and staff to deliver faster quotations than today. We have set the targets for issue of quotations at a level better than our RIIO-ED1 performance rather than a target of Guaranteed Standard of Performance as we want this incentive to further improve on our operations to date

For instance, for a Full Works DGLV Offer, current guaranteed standards of performance are 45 working days for the production of an offer. In RIIO-ED1 our average performance was 26 days so therefore we are targeting 18 days in RIIO-ED2 through the delivery of this incentive. We directly surveyed customers who have recently received this service for their views on this proposal. 76% of those surveyed agreed that this initiative will deliver the improvements they would like to see in RIIO-ED2.

Based on a typical customer case study we expect that receiving faster quotations saves our connections stakeholders operating costs.

Further detail on the additional commitments we have set out as part of this bespoke incentive is found in: ***Annex 4A.28.***

Major Connections

We know that customers who are connecting larger or more complex projects will require more support information, and advice both upfront and throughout the process. Our approach and commitments to serving these customers includes increased network data transparency, easier to navigate processes and continuous engagement as we recognise the needs of these customers are likely to change. We also are committed to faster quotations for Major Connections Customers detailed in our Major Connections Strategy.

We appreciate that the nature of certain types of connections are complex and we will support these customers in designing network solutions which best suit them. To do this, our network designers require future-ready innovative design tools, supplemented by artificial intelligence, network data and real time analysis. Our designers will have industry leading electrical design knowledge delivered through a comprehensive suite of workforce initiatives including upskilling and recruitment. This will provide customers with the most economical solution for them, even providing alternative flexible arrangements to potentially break down any barriers. Future 'Net Zero Ready' skills are an important part of this with more detail found in ***Annex 4C.4***

We are committed to promoting competition for our customers so they have a choice of connections provider to suit their needs. In RIIO-ED2 we will use the Code of Practice to support the market, providing alternative connection providers with the opportunity to manage increased aspects of the work themselves. Ofgem's review of competition within the major connections market is ongoing at this time, however our Connections Strategy encompasses the measures we will put in place for all relevant market segments.

Impact of the Access and Forward-looking charges Significant Code Review (SCR)

If system costs are to be minimised, the electricity network will need to become more flexible to accommodate increased use of the network by distributed generation, heat and transport. Providing clearer signals to new and existing customers through distribution network charges (influencing where they connect and how and when then use the network) is a primary objective of Ofgem's Access SCR. We now have the 'minded-to' position of Ofgem's Access SCR which includes a reduction in upfront contributions by connection customer to the cost of network reinforcements and proposals for improved clarity of access rights for customers.

This minded-to position signals significant changes in how reinforcement charges are determined for customers connecting in constrained areas. Until a final decision on the Access SCR is available, plus other key considerations such as network charging reform, it is difficult to predict the outcome of the Access SCR reform in totality.

In accordance with Ofgem guidance we have not included the impact of Access SCR within our baseline allowance. Instead, contained within ***Annex 5A.6***, we have instead taken cognisance of the Access SCR decision through scenario based assessments of this reform.

This has resulted in a range of impacts, however in summary, we anticipate it will result in an increase in connection volumes and a shift in how reinforcement costs from connections are recovered. Therefore the output of our modelling has forecast between £278-£542m of additional connections driven investment to be socialised through use of system charges.

New Output Delivery Incentive: *Improving Service Standards for Major Connections Customers*

The baseline principles fully reflect the priorities for our customers, as well as our focus areas in providing connections to our customers.

Principle 1: Support connection stakeholders prior to application by providing accurate, comprehensive and user-friendly information

Principle 2: Deliver value for customers by ensuring simplicity and transparency through the applications process

Principle 3: Facilitate the delivery of timely and economical connections that meet customers' needs.

To serve these baseline expectations and the needs of our customers some of the commitments within our Major Connections Strategy include:

- Improving our pre-application offering by increasing the amount of open data and rationalising our processes.
- For customers receiving quotations, we will be implementing simple self service tools where appropriate, with a transparent connections portal to track the stages of a project. Our own staff will have better tools to service quotations faster with improved communication for customers.
- In the delivery and construction of a connection we will again make this process simpler and more efficient, incorporating flexibility where possible to realise connection quicker.

We are proposing to measure our performance against the baseline principles through:

- Reporting on effectiveness of stakeholder engagement
- Measuring customer satisfaction at pre-application, quotation and delivery stages targeting 9/10 by the end of RIIO-ED2.
- Quoting faster than Guaranteed Standard Timescales.
- Implementing measures to improve delivery timescales.

Our Detailed Strategy

Within our Connections Strategy you will read more detail about:

- Our RIIO-ED2 connection forecasts.
- Our Minor Connections Strategy, to meet the needs of increasing domestic and small commercial connections.
- Our Major Connections Strategy, for our commitments for larger connection customers.
- Our 'LV Connection Offer Accelerator' Proposal.

Further detail on the structure, metrics and commitments for this incentive is found in ***Annex 4A.28.***

Benchmarking our connections ambition against the baseline expectation

Ofgem have set out a number of principles and baseline expectations to ensure DNOs meet the needs of Major Connections Customers. In total there are 20 Baseline Expectations for Major Connections. Our Connections Strategy highlights how we are going to meet and exceed these baseline expectations.

We have carried out an assessment of all these baseline expectations against our strategy and initiatives we have planned over the course of RIIO-ED2 to determine where we meet Ofgem's high bar and where we exceed the baseline expectation. We have carried out an assessment of all these baseline expectations against our strategy and initiatives we have planned over the course of RIIO-ED2 to determine where we meet Ofgem's high bar and where we exceed the baseline expectation.

The below highlights number of baseline expectations which we believe meet Ofgem's requirements and the number where which we believe we show ambition to deliver further value for customers above baseline.

*Please refer to **Annex 4A.28: Major Connections Strategy** for detailed analysis.*

x9

*of Ofgem's baseline expectations are **confidently met** due to the initiatives we have put in place including:*

Agile Delivery

Improve the speed of delivery, this initiative includes; Connection queues managed holistically with promotion of customers who are ready earlier; calendars available upon payment to book in pre-vet and energisation date; Pre-vetting to take place within customer timescales or virtually.

Fast Flexibility

Provide technical and commercial alternatives to customers. This includes; continually upskilling staff in areas of flexibility especially where this will save customers time or money; Provide information to inform customers decision on adopting flexibility including our active network management platform.

x11

*of Ofgem's baseline **expectations are exceeded** due to our initiatives put in place including:*

Transparency Upfront

Provide clear, revealing information tailored to individual needs, on-line. This will include; a fully interactive website, online chat functions, real-time query analysis, sharing and use of open data to support future stakeholders.

Real-Time Information

Make increasing amounts of network data available dynamically including capacity and constraint analysis.

Process Rationalisation

Make our process(es) clear and easily understood, from domestic EV charger to windfarm. Including ICP and IDNO offered work.

Immediate Assessment

Provide customers with an immediate assessment of their connection request. This will include; Postcode look-up so network conditions in the area can be computationally assessed.

Supporting documents for this chapter

Annex 3.2a: *Stakeholder Engagement*

Annex 3.2b: *Consumer Research*

Annex 4B.1: *Vulnerability Strategy*

Annex 4B.2: *Customer Service*

Some highlights of our strategy

Customer satisfaction of 9.4/10 no matter the type of contact or service you receive from SPEN.

9.4 out of 10

Service tailored to customers needs, using their preferred language and channel at all times.

Supporting 40,000 customers in the drive to Net Zero by providing practical support to reduce energy usage.

40,000 customers

CHAPTER 4 / **PART B**

Deliver excellent satisfaction and enhanced services for all customers

Our outstanding levels of customer service will become even more important as we move forward towards Net Zero.

Our customer satisfaction levels have been consistently excellent throughout RIIO-ED1 and we must maintain these exceptionally high standards as our business evolves and the services we provide develop. In RIIO-ED2 we will build on our achievements to support our customers and communities throughout the energy transition.

Upgrading the network to enable the predicted uptake of new low carbon technologies has the potential to bring with it an element of disruption. The way our customers interact with us will evolve and as the grid is upgraded to make sure it is fit for purpose, consumer expectations are expected to increase.

We will, therefore, become more proactive to help our customers navigate the changes in an increasingly complex landscape. We are committed to increasing the breadth and depth of support we deliver to customers and striking the right balance in how we do this.

Our aim is to give customers choice and convenience, using digitalisation to make processes fast and simple, whilst at the same time delivering personal support tailored to their individual needs. This mix of empathy and efficiency will be critical to our success. Underpinning all of this will be our staff and we will embrace their passion to deliver brilliant service.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Our customers and stakeholders are at the heart of everything we do, therefore its vital that we build a plan that places both their current and future needs at its heart. We've engaged extensively over nearly two years to build up a detailed understanding of their needs, and these are reflected in the commitments we've made in this chapter.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

78.5%

Commercial:

85.7%

Our stakeholders' priorities

Brilliant service is particularly important to both our domestic and commercial customers – they believe that delivering excellent levels of satisfaction should be one of our top three priorities in the RIIO-ED2 period.

Extensive engagement led us to identify the following aspects of customer service as the most important to our customers and stakeholders.

Customers want a fast response from us, especially during power cuts. They expect us to answer almost immediately. While different groups of customers prefer to engage with us in different ways, all customers expect us to offer and be aware of, their preferred method of contact.

Proactive contact from us, both during power cuts and before planned interruptions is another key area of importance for customers, especially those in situations of vulnerability (a suggestion echoed by our stakeholders). Going further, customers shared clear expectations on the type of information they would like to receive from us, quoting expected restoration times (during power cuts) and the time when the power will go off (before planned interruptions) as critical.

Customers also expect us to deliver work promptly and in accordance to set timelines. While expectations varied across different types of work, it was important to all customer groups that safety issues were resolved right away.

Beyond the steps we can take to deliver excellent satisfaction, our customers told us it was important that we played a role in educating and helping them access low carbon technologies.

How feedback shaped our plans

The importance that our customers place on receiving excellent service, especially in restoring their power and communicating throughout a power cut is reflected in our commitment to deliver an industry-leading satisfaction score of 9.4/10.

We have also addressed the more detailed needs and preferences gathered from our customers. We have put forward ambitious commitments to shorten response times and timelines for the delivery of work, especially during powercuts, and to address safety issues. We are also proposing to offer the broadest range of communications channels yet and, for the first time, to register the preferred contact channel and language of any customer. Reflecting the importance of proactive contact, we are also proposing to reach out to all customers before a powercut and provide personalised support throughout a supply interruption to those who are in a situation of vulnerability.

Finally, reflecting the role that customers want us to play in helping them navigate the complexities of a low carbon world, we are proposing to introduce a range of advice services aimed at educating customers and facilitating their respective transitions to new technologies. Reacting to our expert stakeholder feedback that we should be careful to remain within our remit, we have ensured that the services we are proposing are done in conjunction with our network of expert partners. This ensures no duplication of efforts in the support we provide and allows us to intervene in areas where we are best placed to do so given our unique outlook on the needs of our customers and the electricity network.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- 1st ranked DNO in Ofgem's Broad Measure of Customer Service BMCS) in 2019/20 and Top 2 in 2018/19 & 2020/21. ✓
- Current RIIO-ED1 BMCS score of 9.23/10. ✓
- Benchmarked 1st against all UK service sectors in the Institute of Customer Service (ICS) Customer Service Index. ✓
- 1st in the World to achieve both the BSI Customer Service Kitemark and Vulnerability Standard. ✓

How we'll continue to deliver in RIIO-ED2:

- We've started to adapt our customer service organisation to ensure we are aligned to deliver on the commitments we've made. ↗
- We've already started working on developing our customer service IT portfolio to ensure we have solutions in place to cope efficiently with expected additional contact volumes whilst expanding our view of our customers. ↗
- We are investing in our people, identifying key influencers within our organisation that will be at the forefront of our drive to achieve excellence. ↗

Consistently brilliant service

Our aim is to provide the same level of service to all of our customers no matter what type of interaction they have with us. By delivering on our customer service commitments we will ensure we deliver this brilliant service and in the most cost effective way possible.

9.4/10

customer service for any service we provide to customers

Benchmarking and trends

Our ability to be agile and react quickly to changing trends and customer needs is essential if we are to deliver brilliant service. The COVID-19 pandemic has exposed organisations who have not responded well enough to their customers' changing needs and customer satisfaction across the UK has dropped to the lowest level since 2015. For organisations to survive they must all understand the needs of their customers and adapt their service, doing whatever it takes to serve their customers with care.

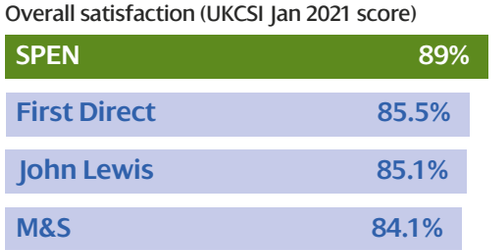
To ensure we deliver consistently high standards, we continuously review the service we deliver and benchmark ourselves against UK and global peers. This helps us to challenge our standards and also understand emerging trends to ensure we are able to deliver exceptional satisfaction for our customers.

Benchmarking our performance

MEASURED AGAINST BEST IN THE UK

We conduct an external benchmarking survey twice every year through the UK Institute of Customer Service (UKCSI) to understand how we compare against the best companies in the UK. This consistently places us in top position when compared with the Top 50 companies in the UK.

Overall satisfaction (UKCSI Jan 2021 score)



Scorecard	UKCSI	Utilities	SPEN
Experience	*77.7*	74.0	90.1
Customer Ethos	*76.2*	71.7	88.2
Emotional Connection	*76.1*	71.1	88.2
Ethics	*75.2*	70.6	87.0

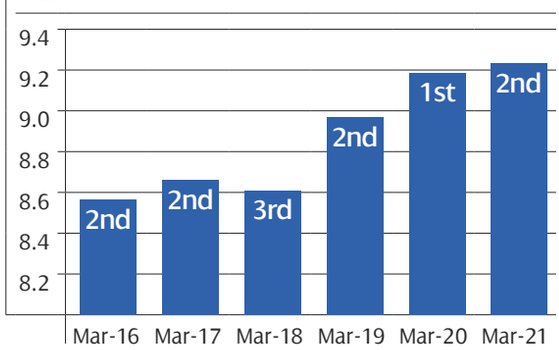
HIGH PERFORMING DNO

For 3 years in a row we have achieved the BSI certification for both the Customer Service Kitemark and the Inclusive Service Verification scheme. These stretching accreditations test our service and processes, ensuring we are always forward looking.

HIGH PERFORMING DNO

Since 2018/19 we have finished in the Top 2 highest scoring DNOs as measured by Ofgem's Broad Measure of Customer Satisfaction (BMCS) and finished as top DNO in 2019/20. Our satisfaction scores have consistently improved year on year across both our licence areas.

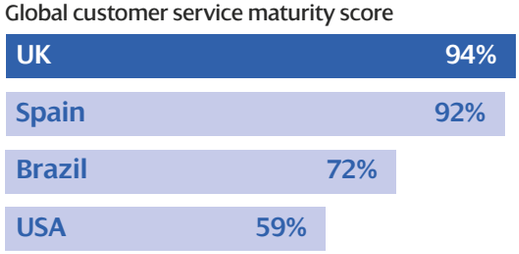
SPEN Customer Satisfaction



GLOBALLY LEADING

As part of Iberdrola, a leading global utility group, we also carry out in-depth benchmarking between network operators within our group. This international comparison again places our Customer Service outcomes as the leading benchmark in all countries.

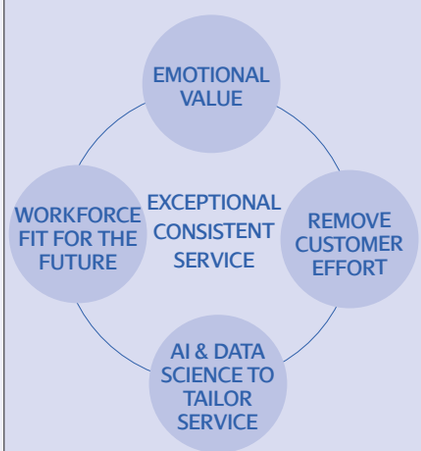
Global customer service maturity score



UNDERSTANDING TRENDS

- Understanding which interactions have the greatest emotional value for our customers will be essential to drive satisfaction in the future. Customers will expect communications based on the things that engage them most.
- Removing effort for customers, whether that is through technology or through proactive personal engagement, will be important to ensure they feel looked after and supported – but also to tailor services to their unique needs and preferences.
- Using AI and data science will be essential to understand behavioural change and stay ahead of expectations, particularly as customers adopt new technology. Whilst self-serve and automation will be expected, customers will also want empathetic and tailored service on the interactions that are important to them. Digital solutions can help support these outcomes.
- These emerging trends will also impact our workforce and how we deliver the solutions to our customers. To deliver enhanced services for our customers, our teams will need to be 'tech savvy' and able to solve problems to deliver tailored service with empathy, proactively.

Future focus

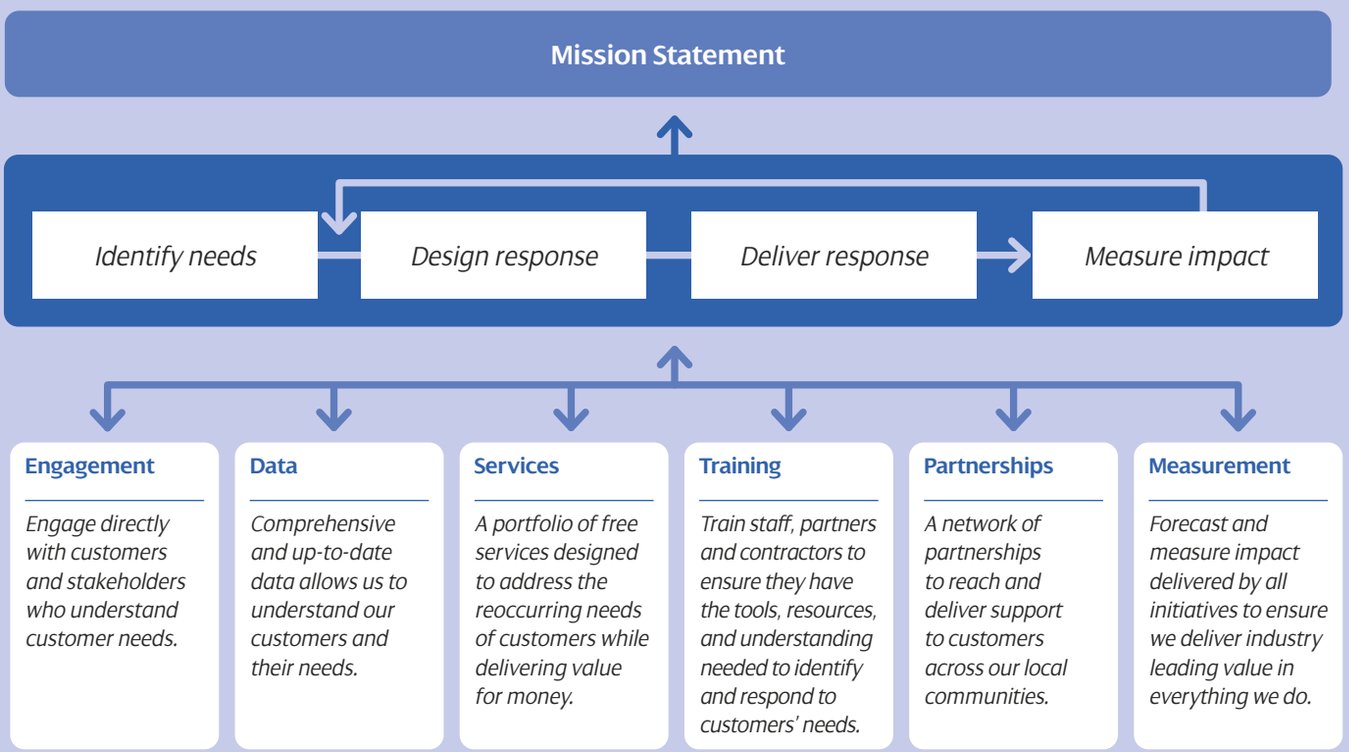


Our Mission Statement

Our customer service mission statement lays out our ultimate ambition, ensuring that we are facing in the same direction to achieve our commitments and ultimately our customers' needs. This ambition is detailed below along with our six 'action statements' which provide solid foundations for our strategy and are essential to delivering optimal outcomes for our customers.

"We will be a service leader in the UK, providing proactive and tailored service based on customers preferences and needs. By delivering focused support to our vulnerable and disadvantaged customers that is easy to access, we will help them save money, access the benefits of the low carbon transition, make use of technology, and receive support for wider social issues."

WE WILL DELIVER THIS MISSION THROUGH THE FOLLOWING ENABLERS:

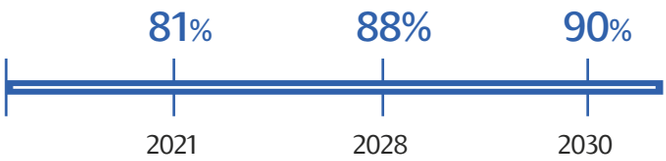


Focused on the right long-term outcomes

In creating our strategy we have asked ourselves what difference we are trying to make in the long term. Our overarching outcomes outline our vision and define the change that will happen as a result of our actions.

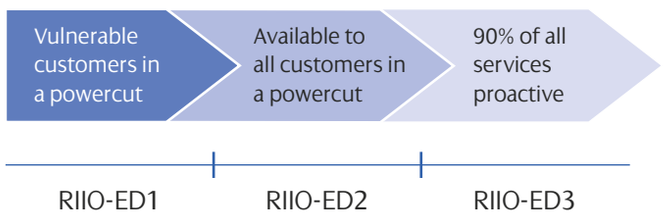
We have set ourselves a long term goal to be agents of change, developing new ways of working to enable direct benefits to be delivered to our customers, ensuring fairness and equal access as we transition to Net Zero.

LONG TERM OUTCOME 1
By 2030, 90% of all customers who rate the service we provide will score us 9/10 or higher.



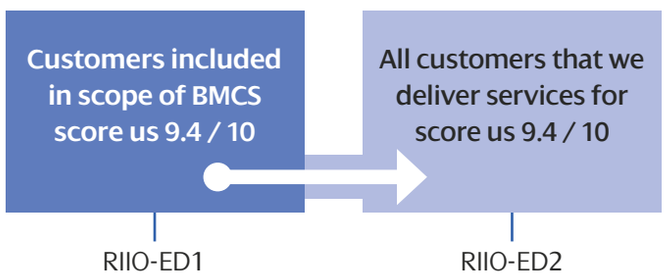
Delivering brilliant service
We've driven continual improvements and delivered leading performance in our Customer Satisfaction levels in RIIO-ED1. We recognise that satisfaction needs to be measured consistently across all customers and services and it is vital that we deliver exceptional service no matter the customer or type of contact we have.

LONG TERM OUTCOME 2
By 2033 90% of customers will be proactively served, receiving service tailored to their preferences and needs.



Proactively supporting customers needs
Reducing customer effort, and understanding what is important to our customers, will be the cornerstone of our strategy. Our long-term aim is to proactively deal with issues before they arise, reducing effort for our customers.

LONG TERM OUTCOME 3
Our excellent service is embedded in everything we do by 2028.



Supporting customers through the energy transition
By the end of RIIO-ED1 we will have delivered satisfaction levels for customers in scope of BMCS of 9.4/10. However we realise volumes will increase in areas such as new connections and low carbon technology enquiries and want to ensure we deliver this level of service across all of our customers no matter how they contact us.

90%

of customers will be proactively served, receiving service tailored to their preferences and needs by 2033

90%

of all customers who rate the service we provide will score us 9/10 or higher by 2030

Our excellent service is embedded in everything we do by 2028.

Our strategy and commitments

As we transition towards a Net Zero world, activity levels will increase significantly with the predicted uptake of new low carbon technologies, the introduction of which also has the potential to bring a level of disruption to customers as the network is upgraded to ensure it is fit for purpose.

At the same time, customer expectations will increase, especially relating to how interactions with organisations will change in a digital era.

Whilst our customer satisfaction levels have been consistently excellent throughout RIIO-ED1, we realise that our service offerings will change as our business evolves, and it is important that where we offer new services, these are also delivered to the same exceptionally high standards.

Whilst the long term outcomes provide a high level view of our ambition, we have also defined the focus areas around which our commitments are formed, ensuring a strong linkage back to benchmarking, emerging trends and engagement.

To achieve this mission, we will focus on four areas:

Exceptional customer satisfaction levels	1
Proactive, tailored contact model	2
Customer centric information and timelines	3
New support services	4

Any customer can receive support to become more energy efficient and reduce their carbon footprint

OUR AMBITION AT A GLANCE

In collaboration with our customers and stakeholders we have developed and refined a series of detailed commitments that show the actions we will take and the Service Levels we will meet during RIIO-ED2 to deliver on our long term outcomes, strategy and, ultimately, our mission statement for customers.

Customer Satisfaction

Delivering customer satisfaction levels of 9.4 out of 10 no matter what service or customer type.

9.4 out of 10

Channels and Response Times

Multi channel offering – Emergencies responded to in 10 seconds and for all non emergency contacts, the focus is on providing the customer what they need during the first 5 minutes of their interaction.

10 secs & 5 mins

Proactive Preferences

Customers offered their channel and language of choice for all contacts and can receive proactive contact from us.

Planned Interruptions

When we undertake planned work we will talk to customers face to face beforehand making sure all vulnerable and commercial customers are seen.

Complaints

90% of complaints answered in 1 day and 99% in 31 days to customers satisfaction.

90% in one day

Our Bespoke Output Delivery Incentive: Advice Services

We are proposing a bespoke incentive in RIIO-ED2 which goes above and beyond in providing great service for customers, helping them become more energy efficient and save money on their electricity bills.

Any customer will be able to register with us to receive a range of services aimed at helping to reduce household or business costs, drive efficiency and help them access the benefits of the low carbon transition. Working with partners, for all customers we will offer: a funding advice service, energy efficiency advice, energy charges support, independent help for tariff support, and access to an energy usage portal. In addition, for commercial customers we will offer an energy partner and planning service.

*Highlights from our commitments are shown above and full details can be found in **Annex 4B.2: Customer Service Strategy.***

Exceptional customer satisfaction levels 1

Customer expectations will continue to increase, especially when it comes to interactions with organisations in the fast-changing digital era. Customers expect information to be available when they require it, in the format that suits them best. To ensure we are fully equipped to deal with these heightened needs, we are looking to invest in digital solutions that not only make contacting us and finding information easy for customers, but also provide us with an efficient and powerful information source that can be used to tailor our interactions to specific customers' needs. In addition, we will continue to focus on ensuring our governance forums remain an effective mechanism for monitoring customer satisfaction, providing early sight of any issues to enable swift intervention, and providing a richness of data that can shape forward looking plans and strategies. As a result, we are committing to continue delivering the excellent levels of service customers have received from us during RIIO-ED1.

Whilst our customer satisfaction levels have been consistently excellent throughout RIIO-ED1 for customers in scope of BMCS, we realise that our service offerings will change as our business evolves. It is therefore important that we deliver new services to the same exceptionally high standards as our well established services and all customers receive the same level of service. For this reason, we are committed to achieving 9.4 out of 10 customer satisfaction by the end of RIIO-ED2 for all customers, no matter how they contact us.

We also understand that despite delivering industry-leading levels of customer satisfaction, there are times when our customers do not believe we have met these high standards. Whilst these cases are rare, it is vital that we identify the cause of dissatisfaction and respond in a timely and effective manner. That's why we will aim to close 90% of complaints to the customers satisfaction within one working day, and 99% within 31 days. We will also make sure the root cause of the complaint is addressed properly to prevent future recurrence. To further strengthen the support we provide to customers during these times, and based on customer feedback from our engagement program, where it is practical to do so, a customers complaint will be handled by a single point of contact.

Our commitments – delivering leading satisfaction:

31. For customers receiving any service from us, no matter the contact channel we will deliver satisfaction levels of 9.4 out of 10 by the end of RIIO-ED2.

32. 90% of complaints will be resolved in one working day and at least 99% in 31 days. We will also target zero repeat complaints in 12 months and for any complaint where the customer engages the Energy Ombudsman, we will ensure none of the findings are against us.

Proactive, tailored contact model 2

EVOLVING OUR CONTACT METHODS

We will continue to prioritise customers contacting us to report a power cut. In RIIO-ED1, we set a target of answering these calls in 10 seconds or less and making sure less than 1% of these calls were abandoned. While we are maintaining these service levels in RIIO-ED2, we understand that customers expect a wider range of channels be made available to them, whilst expecting the same quality of service no matter the channel. That's why we are committing to increasing the number of ways a customer can contact us to report a loss of supply or an emergency situation, giving customers the option to continue to contact us by phone, text us, use our online facilities, or contact us via social media. No matter the channel, the service levels and experience will be the same.

Whilst we will prioritise customers in times of greatest need, we also recognise that customers need to regularly get in touch with us for non-urgent matters, such as requesting a new connection, or obtaining their meter reference (known as MPAN). Whilst we will continue to answer these queries in a timely manner, our engagement with customers has prioritised quality of information provided during the initial contact as more important than speed of response. Therefore, in addition to offering a series of ways to contact us, including phone, text, online, email and social media, we will place a focus on providing a high-quality update to the customer during this initial interaction. As a minimum, customers will receive an acknowledgement of their request, a unique reference number and be provided with timescales associated with the resolution of their query within five minutes of making contact with us.

In addition to focusing on offering customers a wider channel offering, but with a consistent level of service, another principle that will underpin our customer contact strategy is that we will look to capture customers' preferred contact methods and language. This will cover those customers with sight and hearing loss or impairment, and those whose first language isn't English. We will then look to use these preferences during every interaction we have with our customers.

Whilst customers have told us they want a wide range of channel offerings and expect a consistent service no matter the channel, they also have a strong desire for proactive communication, especially should they experience an unplanned loss of supply. In RIIO-ED1 we committed to keeping our vulnerable customers updated during a fault, and in RIIO-ED2 we will continue to proactively contact our vulnerable customers to keep them informed, but also widen that service to all customers who wish to register for proactive updates.

9.4/10

satisfaction levels, no matter the type of service provided

Customer centric information and timelines 3

ENHANCED SUPPORT FOR VULNERABLE CUSTOMERS

We believe that vulnerable customers should not need to make contact with us during an unplanned interruption, and we will continue to provide proactive, timely contact to all customers registered on our PSR to ensure they remain updated with the latest information we have. We also want to provide additional reassurance for those customers who are most at risk during a power cut, specifically those who rely on electricity for medical equipment (such as those who use oxygen concentrators), or those who struggle with their mental health.

That is why we are committing to proactively contact these customers with a personalised telephone call whenever they experience a power cut, and speak to them face-to-face ahead of any planned disruption to their power supply to understand their specific needs and look to put contingency plans in place where possible.

Our commitments – evolving our contact methods:

33. When a customer contacts us to report a power cut or an emergency, we will respond in 10 seconds or less, regardless of the channel used. We will make sure less than 1% of telephone calls in this area are abandoned.

34. When a customer contacts us regarding a non-urgent matter, we will respond on average within five minutes, providing the customer with key information.

35. We will provide a service for customers to register their preferred method of contact and language and will use this during any contact with them throughout RIIO-ED2. We will promote this in our awareness campaigns every year.

36. Any customer will be able to register with us to receive proactive contact through their preferred method of communication when a power cut occurs. This will include updates throughout the power cut and notification when power is restored. We will contact at least 99% of those who have requested this using their preferred method.

Our commitments – enhanced support for vulnerable customers:

37. We will talk to customers face to face in advanced of a planned power cut and ensure we speak with 95% of those on our PSR or classed as high risk.

38. We will proactively contact all customers registered on our Priority Services Register when a power cut occurs via their preferred method of contact including updates throughout the power cut and notification when power is restored. For those customers in our high risk groups (e.g. medically dependent on electricity or struggle with mental health) we will proactively contact them with a personalised phone call to provide additional comfort.

*Our Vulnerability Strategy (**Annex 4B.1**) provides further details on the types of support that we will offer our customers during these times of need.*

IMPROVING THE QUALITY OF INFORMATION PROVIDED

To improve the quality of information we provide customers, we are investing in enhancing our systems to capture and process more information than ever before. We can then provide customers with timely, accurate information in simple formats. For example, when experiencing a power cut, we will make sure that customers are given key information not just through their preferred contact method, but in a personalised, accurate and relevant manner.

To facilitate the extensive network investment plans required to support our transition towards Net Zero, pre-arranged network upgrades will sometimes be necessary. Although we aim to minimise any disruption to customers, the nature of these upgrades mean that in order for our teams to work safely, some customers will experience a planned loss of supply. We will give customers as much notice as possible ahead of any unavoidable interruption and will provide them with a comprehensive update on the work being undertaken, why it is essential, what the disruption will mean to them, and how long the disruption will last.

Our commitments – Improve quality of information:

39. During an unplanned loss of supply, at least 99% of updates provided will include the following information: expected restoration times, resources attending (name), reason for the outage, location of the cause and support available for vulnerable customers.

40. During an unplanned loss of supply, at least 80% of customers will have their electricity supply restored within the restoration time initially stated.

41. All customers will be notified in writing at least 10 working days ahead of a planned outage, with at least 90% notified by preferred method of contact 48 hours before work starts. At least 99% of letters will include 5 key pieces of information our customers tell us are important.

DELIVERING TO CUSTOMERS' EXPECTATIONS

Another core part of our strategy is a shift towards customer driven timescales when carrying out work. We recognise through engagement with our customers that they want to dictate when work is conducted and that's why we are committing to delivering work to the customer's requested timelines.

Our commitments – service delivery timelines:

42. When customers ask us to carry out safety checks, we will make sure 99% or more are visited within three hours of the initial contact.

43. When customers ask us to support requirements such as new earthing, shrouding or maintenance work, we will deliver 90% of this work to the customers required date (subject to access and traffic management).

New support services 4

To respond effectively to the challenges customers will face during the next few years it's vital that we not only continue to deliver exceptional levels of service, but also widen the support we provide. All while maintaining the same high standards of performance.

We've segmented our customer base ***Annex 3.2b: Consumer Engagement*** which enables us to deliver tailored solutions to our customers, including our commercial customers, who require additional support navigating the challenges the Net Zero transition will bring.

One of the first activities we will undertake in RIIO-ED2 will be a power cut risk assessment exercise for our commercial customers. From this we will better understand the risks associated with a loss of supply (such as impact on business productivity or costs) and tailor the actions we take to support such customers where practical. These actions could simply be to keep customers informed throughout the duration of the outage or be focused on what support could be provided to mitigate the risk that such an event brings. Our proactive assessments and resulting action plans will allow us to respond quickly and effectively to these events.

Our customer and stakeholder engagement reinforces that all customers are looking for support to reduce costs and help them through the complex landscape of the low carbon transition. The feedback we received was strong not only for vulnerable customers but also for domestic and commercial customers.

We have therefore developed a set of services aimed at any customers who requires support to reduce their bills, be supported through the transition to Net Zero and plan for their future business activities. We will deliver these services by working with our key partners, ensuring we are not duplicating activities and delivering these at the most efficient cost.

We have proposed a bespoke ODI in this area (Advice Services ODI). This will be assessed once mid-period and again at the end of RIIO-ED2. This assessment will be on both volume of services delivered and the associated customer satisfaction

Our commitments – new services for customers:

44. Any customer will be able to register with us to receive a range of services aimed at helping to reduce household or business costs, drive efficiency and help them access the benefits of the low carbon transition. These services will be promoted through awareness campaigns and direct contact with customers. They will be delivered to 40,000 customers across the RIIO-ED2 period and deliver an NPV of £20m. There will be an SROI of £1.47 for every £1 spent.

45. We will undertake a power cut risk assessment for all commercial customers signing up to our advice services and our proactive contact service. We will review the risk assessment for these customers and record appropriate actions within three months of registration.

DELIVERING ON OUR COMMITMENTS

The level of satisfaction experienced by our customers today is high, however the world is changing and so are customer needs and expectations. To meet the future demands of customers and deliver on our commitments we will need to evolve our approach.

WE WILL NEED:

- A service culture that evolves with the landscape
- Data-driven decisions that shape our service
- Clear vision of the end goal through outcomes
- Technology that joins every aspect of our business
- Staff with new skills for the future

Our commitments and outcomes are based on extensive feedback from customers and stakeholders and have taken into account trends and best practice so we are confident in our direction. To deliver on this, we will ensure that our entire business is aligned behind our service vision, recruiting the right people with the right skills and developing our existing staff to tackle the new challenges.

A new standard needs to be set both in terms of the role technology plays in joining-up our business for the benefit of the customer and leveraging our data to an extent we have not seen before.

This is an exciting time for our business and for our customers and getting this right means we will deliver tailored service to customers based their preferences and behaviours proactively before they ask.

Providing support services to 40,000 customers

Supporting documents for this chapter

Annex 3.2a: *Stakeholder Engagement*

Annex 3.2b: *Consumer Research*

Annex 4B.1: *Vulnerability Strategy*

Annex 4B.2: *Customer Service*

Some highlights of our strategy

Supporting those customers most vulnerable to a loss of supply by increasing our PSR coverage to 80% of all applicable categories.

80% PSR coverage

Implementing innovative solutions that will reduce energy bills for 40,000 disadvantaged customers in, or at risk of, fuel poverty.

40,000 bills

Working with our partners to understand the main blockers customers face to a low carbon future, and providing practical support to 40,000 of them to overcome these barriers.

40,000 customers

CHAPTER 4 / PART B

Support vulnerable customers and communities to ensure no-one is left behind

We have a critical role to play in supporting customers and communities at risk of being left behind in the transition to Net Zero.

Providing support to our vulnerable customers is a core part of our service. Vulnerability is a complex and changing picture, and as we accelerate towards a low carbon future, it will become particularly important to support those customers and communities who are at risk of being left behind in the energy transition.

We will enhance our vital role in this area by broadening our view of vulnerability and enhancing the data we use. This will ensure we can target new and more specific support to those who need it most. This will be supported by coalitions and partnerships, centered around our vulnerable customers' needs.

The three primary areas of focus (vulnerability during a loss of supply; being in, or at risk of, fuel poverty and the risk of being left behind by the energy system transition) are front and centre in our Vulnerability Strategy, and our RIIO-ED2 mission statement is clear:

'We will be a service leader in the UK, providing proactive and tailored service based on customers preferences and needs. By delivering focused support to our vulnerable and disadvantaged customers that is easy to access, we will help save money, access the benefits of the low carbon transition, make use of technology, and receive support for wider social issues.'

To see a full mapping of our commitments against Ofgem's three primary areas of focus, please refer to ***Annex 4B.1***

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Vulnerability takes many forms and has many consequences for those impacted. Therefore its vital we fully understand the specific needs of both customers and stakeholders who have first hand experience of the challenges faced. By engaging extensively with these groups, we've been able to build a robust set of requirements that form the backbone of our Vulnerability Strategy.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

83.1%

Commercial:

78.6%

Our stakeholder's priorities

Customers and stakeholders believe that supporting customers in vulnerable situations and ensuring no-one is left behind should be a top three priority of ours during RIIO-ED2.

The feedback we gathered through extensive engagement with customers and expert stakeholders (including our CEG) pointed to two high-level areas of key importance: identifying and understanding the needs of those in these situations and addressing these needs effectively.

Focusing on the identification of vulnerable situations, our customers and stakeholders stressed the importance of having comprehensive and up-to-date data and invited us to consider a more encompassing definition of vulnerability that goes beyond the Priority Service Register to consider the specific needs of every individual, driven by their unique circumstances.

Customers and stakeholders pointed to two areas of focus: support during powercuts and meaningful actions in tackling wider 'societal' issues such as fuel poverty. Customers strongly believe that we have a 'duty of care' to those in vulnerable situations and expressed the importance of continuing to make special arrangements during power cuts to ensure detriment is kept to a minimum. Both customers and stakeholders also believe we have an important role to play in addressing issues like fuel poverty and in facilitating those who may be left behind in accessing the benefits of low carbon technologies and the future energy system.

Finally, collaboration with other parties inside and outside of the energy sector was seen as a key success factor to our ambitions within the vulnerability realm.

How feedback shaped our plans

Reflecting on our stakeholders' feedback we will continue to expand our focus on vulnerability beyond the Priority Service Register while making sure that it remains the backbone of our vulnerability programme. To do so, we have committed to introduce additional means to capture and update customer data, such as the capability to record specific needs and to systematically share PSR data with relevant partners to ensure customers only have to register once before accessing comprehensive support.

Reacting to the importance placed by both customers and stakeholders on the quality of support to customers in vulnerable situations, we have committed to deliver several ambitious initiatives. To further enhance our support during a powercut, we will synchronise our ever-growing portfolio of services (e.g. the provision of a generator) with newly acquired data on specific customer needs and ensure these are met. To fulfil the important role that customers and stakeholders believe we should play in addressing broader social issues, we have committed to deliver our most ambitious support package yet: helping 276,000 customers with advice and practical support that will aim to lift customers out of fuel poverty and remove barriers with respect to the uptake of low carbon technologies.

We understand that collaboration with a wide range of partners has a key role to play in delivering a comprehensive suite of services to our customers, therefore we've outlined our plans to establish a coalition of partners from across the spectrum of essential and support services. We'll also work with these organisations to share data and shape future policy, ensuring each customer receives support tailored to their individual circumstances.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- Delivered over £30m benefits to vulnerable customers. ✓
- Increased our Priority Services Register (PSR) by 741,815 households. ✓
- 1st in the world to achieve both the BSI CS Kitemark and Vulnerability Standard. ✓
- Increased our vulnerable customer satisfaction to 9.22/10 for those customers in scope of BMCS. ✓

How we'll continue to deliver in RIIO-ED2:

- By developing our coalition of partners framework to ensure we have appropriate coverage of partners across all key areas of vulnerability and an effective governance process in place to monitor performance. ↗
- Focusing on data quality, building solutions that make it easier for us to capture, share and update customer data. ↗
- Continue our extensive vulnerability training including into our supply chain. ↗

Supporting our customers when they need it most

We understand vulnerability takes many forms and applies in many different circumstances. Our services need to be adaptable to support specific customer needs, whether that be to those most at risk during a supply interruption, those in or at risk of fuel poverty who require practical support, or those looking for a helping hand through the energy transition.

£62.5m

of gross benefits delivered to our vulnerable customers

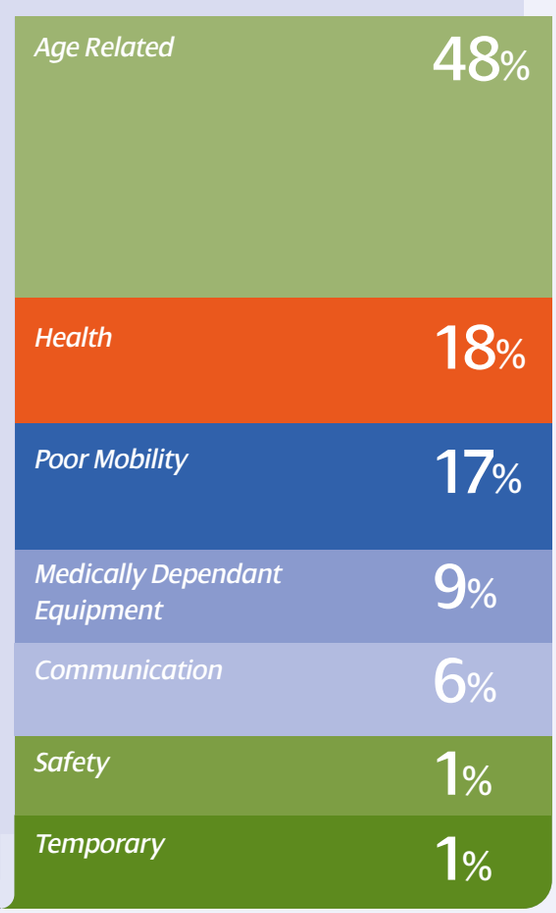
Defining vulnerability

Our Priority Services Register (PSR) records all of our vulnerable customers on one central system. This covers a wide range of vulnerabilities, from customers who rely on electricity to operate vital medical equipment (like oxygen concentrators or sleep apnoea masks), to customers with a long term disability or mobility need.

The size of this register has grown substantially over the course of RIIO-ED1. This is testament to the work we have done to better reach our customers and capture their needs, via direct contact with them or data shared across the utilities sector and with our partners.

We also recognise that the very definition of vulnerability is changing. We need to consider wider societal needs such as customers in fuel poverty and customers who are digitally excluded and may struggle to successfully adapt to a modern, digitalised world. How we plan to tackle these challenges, and how we will use this data, forms a key part of our Vulnerability Strategy.

OUR PSR – HIGH LEVEL BREAKDOWN



REFLECTING ON OUR APPROACH TO VULNERABILITY

We are committed to enhancing all that we do to understand and support our vulnerable customers and have benchmarked and reflected on our approach across the six key areas of our Vulnerability Strategy.

Engagement

We benchmark our engagement with customers and stakeholders globally and audit our Stakeholder Engagement externally via AccountAbility to achieve the Stakeholder Engagement Standard A1000. By implementing their recommendations we have continuously improved over the last 4 years and currently sit in the advanced level of the maturity ladder.

Data

To better understand our vulnerable customer data and gaps in our PSR, we benchmark ourselves against national data on all available PSR categories. Whilst not all customers wish to share their details with us, the more we close the gaps in our PSR the more we can support our customers.

We also looked for solutions where customers only need to register their details once to enable their data to be shared with multiple relevant data sharing partners. An example of this which we identified as best practice is the 'Tell Us Once' service which allows customers to register a bereavement once, enabling updates to multiple organisations as a result.

Services

Through our research and experience to date, we recognise many of the fuel poverty and wider support services are delivered in silos and require customers to interact with multiple organisations, duplicating effort and resources for all involved. We have found best practice initiatives are in the form of community cooperatives, where the initiative is owned and controlled by its members (which can be customers or trusted organisations representing customers), to meet a shared need.

Our research also highlights our customers need support in the transition to Net Zero. We have identified the barriers our vulnerable customers can face when accessing low carbon technology such as financial, knowledge and opportunity, therefore our future services need to address these.

Training

Our training utilised recommended and accredited off the shelf Customer Service training. However through benchmarking with other companies and vulnerability partners we recognised that to empower our staff to make a difference required the development of bespoke vulnerability training focusing on the specific needs of our customers. This is best achieved by working closely with vulnerability experts in a range of specialist fields and with vulnerable customers themselves. By adopting this approach we developed a suite of meaningful in house training modules.

Partnerships

In line with our research and experience on fuel poverty and wider support services, we find that efforts and resources are in most cases duplicated by the organisations delivering these services. Also customers are often unaware of their existence and the benefits they bring. In cases of best practice such as community cooperatives, the collaboration of partnering organisations results in reduced effort and resources, with a more proactive holistic approach at the most efficient cost.

Measurement

Ultimately the value we deliver to our customers is what makes the difference, so it is vital this is consistently measured across the industry. Along with WPD we led a review of how a common approach to measuring social value could be established. By taking into account the views of key stakeholders, DNO's and Ofgem, a framework was designed around three guiding principles; 1. Consistent, 2. Comparable, 3. Conservative.

Understanding future vulnerability trends

Whilst we have reflected on our current approach to vulnerability, its very definition is evolving in society and we recognise we must be on the front foot to support all of our vulnerable customers. To inform our actions and focus our outcomes, we commissioned a study on the future vulnerability trends to understand their impact on our approach to vulnerability and to inform our customer and stakeholder engagement. The study identified three industry trends and six socio-economic trends which have been considered in the formation of our strategy.

INDUSTRY TRENDS

Adopting new technologies and behaviours	Some customers may face barriers in their ability to adopt new technologies.
The increasing complexity of information	Those with multiple needs and the increased complexity of the landscape means some customers may need extra help to ensure they are not disadvantaged.
Digitalisation of Communication	Customers may be unable to access the benefits of the transition if they cannot adopt new technologies and the reduction in personal interactions due to digitalisation may mean customers are negatively impacted if support isn't provided.

SOCIO ECONOMIC TRENDS

Ageing population	Due to increased life expectancy an increase is expected in PSR registrations under the 'Pensionable Age' code. As well as a higher demand for PSR services and a higher share of vulnerability situations per customer.
Inability to engage with the energy market	The UK's energy market is characterised by very uneven levels of understanding and participation from different demographic groups which might increase with accelerated digitalisation of communication.
More disabled young people	Improved diagnosis and better survival rates will likely cause an increase in the number of young people with disabilities. This may lead to an increase in PSR registration volumes, and 'Priority 1' codes registrations along with those who have families with children under 5.
More homes, smaller households and dispersed families	The average number of people per household is expected to decrease which is likely to have two impacts on our consumer vulnerability approach; (1) increase in households registered in the PSR database and (2) vulnerable customers requiring additional support due to the lack of support from families and close neighbours.
Financial uncertainty and poverty	Fuel Poverty is set to increase as a result of a rise in poverty caused by financial uncertainty and slow economic growth further impacted by COVID-19.
More private renters	Although the rising trend of private renters is unlikely to directly impact the PSR codes, the decreasing average length of stay in properties will put pressure on the PSR data quality.

THE CHALLENGES WE MUST ADDRESS

- The energy transition will bring opportunities for many in terms of reduced costs, benefits to the environment and improvements in health and employment opportunities. However, some will face barriers to accessing these benefits and are therefore disadvantaged.
- Some customers may face challenges in communicating in a more self-serve digitalised way and without personal and tailored support will be left behind and unable to access the benefits available to wider society.
- We are aware that there are different levels of understanding, engagement and interest in energy across customer groups and attitude to energy can also be a barrier. We must therefore consider our approach to education and awareness in our RIIO-ED2 plan.
- Increases in certain vulnerability groups are forecast, including 1) elderly people due to an increase in life expectancy and 2) young disabled people due to better diagnosis and treatment of serious illnesses. This means there will be more support needed from us in circumstances such as power cuts.
- Whilst traditionally power cuts have impacted narrow aspects of people's lives, the transition to Net Zero means the impact will be felt in all aspects of life, with more customers relying on technology to go about their daily lives, particularly for transport, heating and devices to manage medical conditions.
- The makeup of households are changing with more dispersed families and social isolation which in itself brings greater demands on services such as the NHS and support organisations. This linked with the decrease in household tenure means that there is a greater importance to maintain a close relationship with customers to ensure we understand changes in circumstances, keep our systems updated and can support in the right way at the right time.
- The increase in poverty alongside general financial uncertainty further impacted by COVID-19 means some customers need more financial support. Whilst fuel poverty is decreasing due to the measures taken to improve energy efficiency in homes, this is not the case when costs for new low carbon technologies are taken into account and this will be a barrier for some in accessing the benefits of the future landscape.

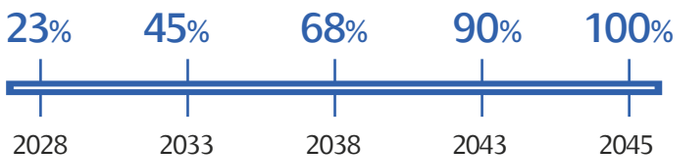
Focused on the right long-term outcomes

In creating our strategy we have asked ourselves what difference we are trying to make. Our overarching outcomes outline our vision and define the change that will happen as a result of our actions.

We have set ourselves a long term goal to be agents of change developing new ways of working to enable direct benefits to be delivered to our customers ensuring fairness and equal access as we transition to Net Zero.

LONG TERM OUTCOME 1

By 2045 we will deliver direct benefits to all Fuel Poor customers, removing barriers and reducing costs

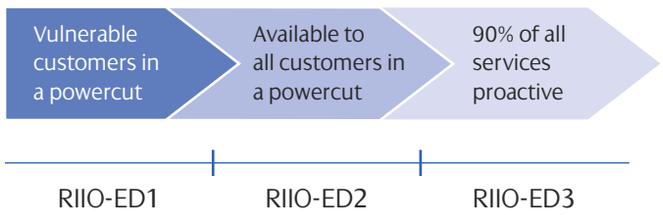


Supporting customers in fuel poverty

Improvements in Energy Efficiency Ratings planned up to 2035 will reduce Fuel Poverty across all UK nations. However that will still leave 19% of households in SPD and 16% in SPM in Fuel Poverty when using a common definition. This equates to 620,000 households across our two licence areas.

LONG TERM OUTCOME 2

By 2033 90% of customers will be proactively served, receiving service tailored to their preferences and needs.

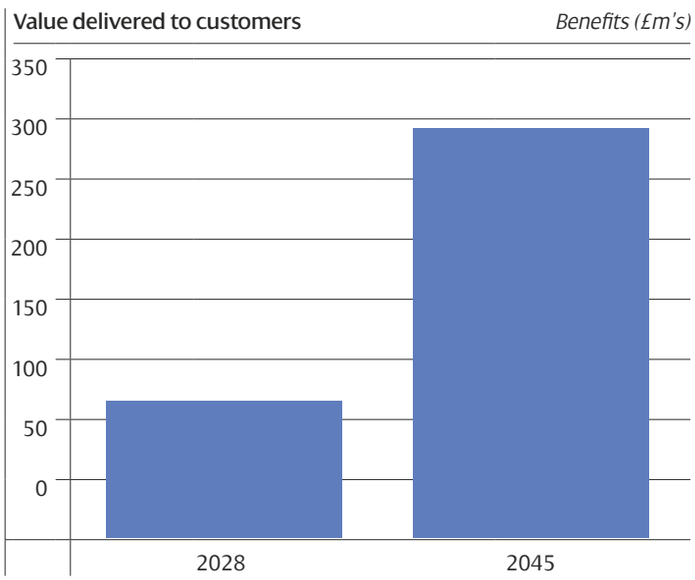


Proactively supporting customers needs

Reducing customer effort, and understanding what is important to our customers, will be the cornerstone of our strategy. Our long-term aim is to proactively deal with issues before they arise, reducing effort for our customers.

LONG TERM OUTCOME 3

By 2045 customers will receive £287m in benefits as a result of our single point of contact collaborative working



Supporting customers through the energy transition

By continuously expanding and refining our partnership coalition model customers will be able to access ever evolving services across organisations. This model will deliver services proactively and will continuously increase value whilst reducing duplication of effort. Customers will be able to access these services through a single contact.

£287m

in benefits will be received by our customers as a result of our single point of contact collaborative working by 2045

Our strategy and commitments

Customers in vulnerable situations need to be supported in ways that best fit their unique circumstances.

In setting our strategy we considered the ways in which we may cause customers increased detriment through situations such as power cuts and, as we transition to a low carbon future, we took steps to understand the new barriers customers may face ensuring our services aim to overcome any disadvantage they may have in accessing the benefits of this technology.

We are therefore committing to an ambitious set of actions throughout RIIO-ED2 to reach all those who need support, deliver services that take into account the challenges our customers tell us they have and consider future trends which continuously evolve the definition of vulnerability. Underpinning our plan is the drive to work collaboratively with many organisations through a coalition of partnerships, making the service we are able to offer our customers much broader, transforming the way vulnerable customers are supported.

Whilst the long term outcomes provide a high level view of our ambition, we have also defined the focus areas around which our commitments are formed.

These trends are summarised into 3 areas around which our actions are shaped

Reaching all customers who need support and going beyond traditional needs	1
High quality data and processes to ensure we are able to deliver effective services	2
Delivering services to customers to remove barriers and tackle current issues and future trends	3

Underpinning our actions in these three areas will simplify the complex energy landscape through outreach, awareness and education and use customer segmentation to tailor our communication.

OUR AMBITION AT A GLANCE

As with everything we do, we have worked with our customers and stakeholders to develop and refine our detailed vulnerability commitments. These outline the actions we will take and the service levels we will achieve to ultimately enable us to deliver our long term outcomes and mission statement for customers. These commitments will be tracked and reported annually as part of our formal RIIO-ED2 reporting.

Highlights from our commitments are shown below and full details can be found in ***Annex 4B.1: Vulnerability Strategy***

Addressing vulnerability during a loss of supply
We'll work with customers and other organisations to ensure the data we hold is accurate, enabling us to keep customers better informed and to tailor the support we offer during a power outage.

Supporting those in, or at risk of fuel poverty
We are developing a suite of solutions aimed at supporting customers in fuel poverty as well as a Consumer Value Proposition (CVP) to directly fund technological solutions aimed at reducing customers energy usage. We are also proposing to support the SMART metering rollout, targeting customers in the hardest to reach groups to ensure they benefit from what SMART metering brings.

Ensuring no-one left behind
We are building a coalition of partners that places customers at its heart, and enables us to identify their core needs as the energy system transitions and ensure these needs are addressed in an effective manner.

Underpinned by awareness and education
We need to engage extensively to educate our customers on not just the challenges that the road to Net Zero will bring, but also the support we can provide on this journey.

276,000 customers in vulnerable situations supported throughout RIIO-ED2

Reaching all customers who need support and going beyond traditional needs 1

Using nationally available data, we will benchmark our existing Priority Services Register (PSR) coverage against each of the common needs codes to identify specific codes, geographies, demographics where there is lower coverage, and focus our engagement efforts in these areas.

We also recognise that not all customers want to join our PSR even when eligible to do so, but we believe it is important that we set ambitious targets to reach all those who require support. That's why we are making a commitment to achieve a minimum of 80% coverage in every PSR needs code.

Furthermore, we understand that the traditional view of vulnerability is evolving in line with the changing energy landscape and vulnerability reaches far wider than the standard industry needs codes. That's why we are committed to not only increasing the coverage of our PSR, but will also capture wider forms of vulnerability including: Digitally excluded customers, and customers with few or no qualifications who our engagement shows would welcome additional support, particularly in the area of communication; as well as, those in, or at greatest risk of fuel poverty, those who are at greatest risk of being left behind in the move to Net Zero and our customer attitudinal segmentation.

Whilst focusing on broadening the scope of vulnerability, we also recognise the need for greater collaboration across all organisations who could provide support to customers in vulnerable situations. That's why we are committing to lead a coalition partnership model facilitating organisations working collaboratively, sharing data, sharing resources and sharing services so that whichever organisation a customer makes initial contact with they will have the option to choose which other organisations they would like to receive services from.

This wider view of our customers, combined with the work we are doing to establish our coalition of partners, will ensure we are best placed to identify, and deliver a wider range of services and support to our customers than ever before.

Our commitments – reaching all customers:

46. We will transition our partnership model to be proactive by creating a coalition of organisations with shared goals and data sharing governance to deliver holistic and efficient support.

47. We will lead the creation of a single vulnerability register, which our PSR will be part of, linking the organisations in our coalition partnership model. This "Register Once" service will make it easy for customers to register for vulnerability services with multiple organisations.

48. We will register 80% of customers across every common needs code for PSR registration by 2028 based on nationally available data.

49. We will widen our view of vulnerability, capturing needs broader than common utility codes, building these into our service offerings and coalition partnership model.

*See **Annex 4B.1 Chapter 9** for a detailed breakdown of the benefits delivered as a result of these commitments*

High quality data and processes to ensure we are able to deliver effective services 2

Capturing a wider range of data than ever before is a key enabler in ensuring we can offer the widest possible tailored support to our customers. But equally important is to ensure that we maintain the quality of such data.

We will look to embrace digital solutions to make it easier for customers to update their details as well as maximise information flows between organisations to ensure the customer details we hold are as up to date as possible. Where data reaches a certain age without being verified by either of these methods we will look to validate this data via a variety of means. This includes all front line operational processes in every interaction we have with customers, via a customer portal where customers can update their own records, through a dedicated customer data line where customers who prefer to speak to us can contact us directly and by maximising the shared data from our coalition partners.

We'll also look to harness the power of the data available to us to allow easy identification of those customers who need the most support in the adoption of Low Carbon Technologies. By utilising data science techniques and technologies we can process large volumes of data enabling us to quickly establish which customers would benefit most from our support.

We also recognise that the quality of service we offer our customers is a key differentiator, and whilst we will continue to commit to delivering exceptional customer satisfaction as outlined in our Customer Service Strategy, we will also look to benchmark our services externally every year to make sure we take every available opportunity to identify ways we can improve. Therefore we will:

- Achieve the BSI Kite Mark Standard annually
- Maintain accreditation to BS 18477: 2010 Inclusive service provision – identifying and responding to customers vulnerability in relation to electricity distribution
- Maintain BS 8477: 2014 and ISO 10002:2014 Customer Service and Complaints Management.
- Conduct benchmarking with the Institute of Customer Services and aim to achieve at least equivalent to top 5 ranking or higher each year.

Our commitments – high quality data and processes:

50. We will contact 100% of all our vulnerable customers every 2 years, achieving a minimum 60% fully validated data.

51. We will use data creatively to understand those customers likely to face barriers in accessing Low Carbon Technology (LCT) due to social factors and overlay this with technology data creating an LCT prioritisation ranking to enable us to best target our services.

52. We will benchmark our service externally every year to measure up against best practice, achieving relevant recognised international standards and score in Top 5 UK companies through ICS service benchmark.

*See **Annex 4B.1 Chapter 11** contains a detailed breakdown of the benefits that these commitments will deliver for our customers.*

Delivering services to customers to remove barriers and tackle current issues and future trends

3

Accurate data and high quality processes are the foundations of our strategy, and give us the launchpad to be able to support more customers than we've ever done. This will include continued support during a powercut, or any other interaction with us, but also proactive development of services that will bring direct benefit to customers.

We will work to ensure that customers registered on our PSR receive a first class service during times they require it most, be that during a supply interruption or when requesting work from us. However a key part of our strategy is not only servicing their traditional needs, but also providing a level of support for key issues that goes way above anything we have done previously.

FUEL POVERTY

We estimate that in our licence areas, 620,000 households are currently living in fuel poverty and we want to help make a positive difference to as many of these customers as possible. We recognise that there are 3 main contributing factors to households being in fuel poverty:

1. The cost people pay for energy

2. Household income

3. The energy efficiency of their home

We also recognise that this view of fuel poverty will change as we move towards decarbonisation and the adoption of LCT's, so this is also factored into our strategy describing how we will support those in, or at risk of, fuel poverty.

We are committing to help every fuel poor customer in our network areas by 2045, and in RIIO-ED2 will provide direct support to 40,000 fuel poor customers. The support we provide will be tailored to the specific needs of each customer, but will include tariff switching support, advice on energy efficiency measures, income maximisation support and debt advice.

SUPPORTING DISADVANTAGED CUSTOMERS – CVP

In addition to the specific measures outlined above to help customers tackle fuel poverty, we are also committing to supporting a further 40,000 disadvantaged customers, many of whom will be fuel poor, through the installation of innovative technological solutions aimed at reducing their energy bills. Our aim is to implement solutions that will deliver at least £100 per year of savings to the customer's energy bills.

LCT TRANSITION

We are also committed to ensuring that no customers are left behind in the energy system transition, and as a result we will support customers to access Low Carbon Technologies and the benefits they deliver. We will conduct a prioritisation assessment of all our customers, and look to prioritise 40,000 of those who face the greatest barriers and who otherwise would not be able to access these technologies. This support will take many forms, but will include: education and awareness on new technologies, what benefits these bring and help accessing grants and funding.

WIDER SUPPORT SERVICES

We have outlined our intentions to provide dedicated support to customers in or at risk of fuel poverty, those who are disadvantaged and those most likely to be left behind by the energy system transition. We will also continue to provide wider support services such as dementia support, fire safety support visits and befriending services. We will provide wider social support to 20,000 customers in RIIO-ED2 and will also ensure this support is delivered in a cost effective manner by ensuring we have sufficient coverage within our partnership coalition.

FACILITATING SMART METERING ROLLOUT TO HARD TO REACH CUSTOMERS – CVP

Whilst the UK Smart Metering rollout is the responsibility of energy suppliers, our extensive engagement with customers highlighted the specific barriers to uptake of meters which included: being unclear of the benefits they will deliver, concern over accuracy of bills, belief that bills will increase and problems switching suppliers.

We can play a key role in educating customers to the benefits SMART metering brings to all parties (customers, retailers and distributors) and help them overcome the key barriers through a program of education and support. We are targeting providing this support to 136,000 customers who are most at risk of being left behind by the SMART metering rollout.

SUPPORT SERVICES AT A GLANCE

In summary, the support services we are planning to provide in RIIO-ED2 are more comprehensive and will be delivered to more customers than ever before. A detailed breakdown of these values along with associated costs can be found in ***Annex 4B.1***

Service area	No. of customers	Gross Benefits
Fuel poverty	40,000	£28m
Disadvantaged customers (CVP)	40,000	£18m
LCT advice	40,000	£10m
Wider social support	20,000	£3.5m
Smart metering (CVP)	136,000	£3m
	276,000	**£62.5m**

In RIIO-ED1 we provided support services to 5000 customers p.a. awareness and outreach to 800,000 customers p.a. and powercut and communication support to 1,500,000 customers p.a.

Our commitments – delivering services:

53. We will support customers in a number of ways during a power cut and capture their individual needs through our contact channels with no less than 99% of needs being met.

54. We will deliver direct support services to 276,000 vulnerable and disadvantaged customers.

Our approach *– exceeding Ofgem's baseline expectations*

Ofgem have set out a number of principles and baseline expectations that they expect DNOs carry out over the course of RIIO-ED2 to ensure DNOs meet the needs of customers in vulnerable circumstances.

In total there are 13 Baseline Expectations for Customer Vulnerability.

Our Customer Vulnerability Strategy highlights how we are going to meet and exceed these baseline expectations. We have carried out an assessment of all these baseline expectations against our strategy and initiatives we have planned over the course of RIIO-ED2 to determine where we meet Ofgem's high bar and where we go above and beyond and exceed the baseline expectation.

The below highlights the number of baseline expectations which we believe meet Ofgem's requirements and the number where we are confident in not only meeting but going above and beyond and exceeding. In total we are confident that we will exceed the expectations of 10 Baseline Expectations. The below also provides a highlight of some of the initiatives from our Vulnerability Strategy that will help achieve this.

*Please refer to **Annex 4B.1: Customer Vulnerability** for detailed analysis.*

x3

of Ofgem's baseline expectations are confidently met due to the initiatives we have put in place including:

Using Data to best serve our customers

We will ensure that the data and information we hold on our vulnerable customers remains correct such that we can provide more tailored and prioritised services.

Developing an Organisational Culture

The work we do every day to address the situations of vulnerability that affect our customers is part of our culture - from our board to our front line staff and contractors we will all play a role in tackling vulnerability.

Evolving Our Contact Methods

We are increasing the number of ways a customer can contact us to report a loss of supply or an emergency situation.

Baseline standards met by the above: 1.5,4.1,4.2

x10

of Ofgem's baseline expectations are exceeded due to our initiatives put in place including:

Expanding our PSR

We will benchmark our existing Priority Services Register (PSR) coverage against each of the common needs codes targeting a minimum of 80% coverage.

Using Trends and Data Insights to Shape our Strategy

Our Vulnerability Support Plans have been developed on the basis of best practice, research, learnings and engagement with subject experts, partners and stakeholders.

"One Stop Shop" for Customers

Our network of partnerships continue to grow and strengthen, as we look to expand on the work we do together in support of our customers in vulnerable situations. We will establish a single vulnerability register, and fully leverage our coalition partner model.

Maximising Value

We've committed to delivering a wider range of support services than ever before, and remain focused on doing so in the most cost effective way possible.

Baseline standards exceeded by the above: 1.1 – 1.4, 2.1 – 2.2, 3.1 – 3.4.

Supporting documents for this chapter

Annex 4B.3: *Community Energy Strategy*

Annex 4B.4: *Distribution Net Zero Fund*

Annex 5C.5: *Output Delivery Incentives (ODIs)*

Annex 5C.7: *UIOLI/Clawback allowances*

Annex 4A.28: *Connections Strategy*

Annex 4.1: *Supporting a Just Transition*

Some highlights of our strategy

Develop a Community Energy Strategy to clearly show how we will embed community energy thinking across our business.

Deliver community energy awareness campaigns and educational outreach activities to raise knowledge and awareness.

Support more than 50 projects that would not proceed without our support and funding.

>50 projects

Boost for the low-carbon economy with the creation of 80 direct and 456 indirect jobs.

536 jobs

CHAPTER 4 / PART B

Work with our communities to facilitate the energy system transition

Putting the communities we serve at the heart of our plans means we maximise benefits for all and fulfil our promise to enable a just transition.

By supporting communities and community anchor organisations to deliver local energy schemes, we will increase local opportunities and benefits for our customers while maximising how efficiently we can run our networks.

This allows us to proactively facilitate real, community-led action against climate change as well as derive value from local job creation, community investment and trading, and energy bill efficiencies – not just for those directly involved in local schemes – but for all bill payers and the wider UK economy.

Community Energy

Given the criticality of the climate emergency, it is essential we apply a whole system approach and collaborate with our varied customers and stakeholders to deliver timely, practical and locally tailored solutions. We will help communities across England, Scotland and Wales embrace local solutions in a way that makes sense for local needs and network conditions while creating jobs and vibrant communities. We know that local, trusted groups will play an essential role in helping millions of individuals, including those in vulnerable circumstances, accept low carbon technology and smart devices into their homes and day-to-day lives at the rate and scale required to meet Net Zero targets. Local knowledge from community anchor organisations means we can tailor investment for rural areas through to inner city customers.

Net Zero Fund

As well as ring-fencing funds for community-led projects, our proposed Distribution Net Zero Fund is open to all of the towns, cities and local authorities we serve, ensuring the essential delivery of wider community impact projects. Our proposed fund aligns to our RIIO-ED2 Strategy, enabling a fair and just Net Zero transition to ensure that no one is left behind as we progress towards a greener society.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Our proposals have been shaped by collaboration and challenge from member-based organisations: Community Energy England, Scotland and Wales as well as feedback from our customers and stakeholders.

For our Net Zero Fund, we adopted a tailored and locally focused engagement approach so our customers and stakeholders could help shape our priorities.

Percentage of customers who support our plans in this area:

Household:

83.8%

Commercial:

76.9%

Our stakeholders' priorities

Community Energy

Customers and stakeholders believe we must cost effectively address the existing support gap to ensure communities and community anchor organisations can benefit from the transition of our networks. They felt it was most important to focus our support in these areas:

- *Communicate the role of community energy projects and importance of community anchor organisations for a just transition.*
- *Providing access to clear information on smart communities and energy efficiency.*
- *Involving local people to engage with householders especially hard-to-reach groups.*
- *Support communities to take part in flexibility markets.*
- *Providing funding for the community impact projects and ringfencing a proportion of funds for community-led projects.*

Net Zero Fund

With the size and scale of the UK's Net Zero ambitions and the central role that electricity networks will play in achieving this goal, our stakeholders firmly believe that we are well placed to offer a Net Zero Fund. Our stakeholders told us:

They welcome the funding – 97% of stakeholders welcomed the idea of the Distribution Net Zero Fund, with some stressing that funding is key for the success of community projects.

Keep it simple and flexible – stakeholders called for clear, flexible funding with a simple application process.

Would like to see more support for communities – there were also calls for us to raise our ambition by separating funding for community projects.

How feedback shaped our plans

Community Energy

By collaborating with community energy bodies and listening to our customers and stakeholders we have developed our commitments to maximise opportunities and benefits as well as cost savings and efficiencies for bill payers.

We will continue to work with community support organisations to address key barriers that relate to our role as a DNO and the opportunities presented by the smartening of our networks. We will offer impartial technical advice, optioneering and sign-posting and work in partnership with local organisations to deliver proactive awareness campaigns and outreach activities to let customers know how they can benefit from the changes coming.

We know from our stakeholders that more data is needed outside of the local projects already in existence to confirm the role of community energy at scale for policymakers. We will therefore report on the impacts of our investment as well as wider metrics.

Net Zero Fund

We have proposed the introduction of a £30m Distribution Net Zero Fund. This fund will fuel the decarbonisation ambitions of our local communities while delivering strong social value and boosting local economic growth. The proposed fund was co-developed with key stakeholders in all its aspects, from its priorities to the eligibility criteria. Responding to the unique barriers faced by communities, we will ring fence 25% of this fund for upfront support to kick-start community-led schemes.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

While we did not have formal proposals for community energy or distribution funding in RIIO-ED1, by constantly taking a proactive approach we have delivered for our customers and communities in a number of ways over the last few years and have a lot of practical experience to benchmark against and provide a head start for RIIO-ED2. For example our free, online Zero Carbon Communities Hub and our Transmission Green Economy Fund.

How we'll continue to deliver in RIIO-ED2:

To deliver real and meaningful change will require practical action and collaboration. We will develop a small team specifically focused on community energy with staff based in our central office and district teams. This ensures that local groups have a dedicated point of contact within SPEN strategically linked to key business areas.

Based on stakeholder feedback, we will deliver the Net Zero Fund in the same way as the Transmission Green Economy Fund, with several internal staff coordinating activities and an external independent administrator supporting the application process, due diligence, reporting, project liaison tasks, and ongoing monitoring.

£50.5m

Consumer benefit from our baseline and bespoke incentive proposals for community energy (Net Zero fund benefit not included)

£30m

Proposed Distribution Net Zero Fund.

Community Energy

DEFINING COMMUNITY ENERGY

Community Energy refers to the delivery of community-led renewable energy, demand reduction low-carbon transport or energy supply projects, whether wholly owned and/or controlled by communities or through partnership with commercial or public sector partners (Community Energy England).Community energy projects can include the local generation of renewable power or heat, collective purchasing or peer-to-peer trading of energy, energy efficiency improvements or low carbon community transport and EV charging (The Environmental Audit Committee). With democratic control, shared benefits and active participation at its core, community energy supports the major shifts in culture and infrastructure needed to reduce the impact of climate change and increase security of local energy supply (Community Energy England).

DEFINING COMMUNITY ANCHOR ORGANISATIONS

We use the term community anchor organisations to refer to the community groups (sometimes more than one, working in partnership) who support community energy projects. This term was first coined by the UK Home Office in 2004 and is further detailed by the Scottish Community Alliance who explain 'these organisations are typically well respected within the community and considered to offer a degree of local leadership on behalf of others when representing the interests of that community to external stakeholders'. You can find more examples and detail on the definition of community energy and community anchor organisations in our *Community Energy Annex: Annex 4B.3*

WHY IS COMMUNITY ENERGY SO ESSENTIAL?

To achieve Net Zero at the rate and scale required will rely on millions of individuals and local communities changing how they use electricity in their day-to-day lives. To use energy as efficiently as possible will mean adopting more 'smart' devices in our homes, increasing our use of personal or shared electric transport solutions, and generating electricity to be used on-site or traded locally. The rate and speed of behavioural change and technological uptake required could easily lead to more consumers being considered as living in vulnerable circumstances and more customers being left behind.

This is why we are so committed to supporting community anchor organisations and their community energy projects. Working alongside these groups to deliver community energy solutions will be fundamental to the roll out of local network innovation - such as network flexibility - and whole system solutions. Community anchor organisations also represent a unique source of local knowledge, sensitive to local needs and histories. Such information will be essential to our ability to facilitate a just transition as it allow us to continue to tailor our RIIO-ED2 and RIIO-ED3 investments in way that is responsive to social needs as well as network conditions. We believe it is only right we play a part in building the capacity of such groups by investing in developing local knowledge and awareness of changes coming to the energy system, supporting local groups to participate in local energy schemes that meet their needs and through creating green jobs and skilled, local workforces.

INVESTMENT IN COMMUNITY ENERGY IS ESSENTIAL TO THE GREEN RECOVERY

The COVID-19 pandemic highlights the need to strengthen community resilience and local economies. As well as increasing our ability to facilitate Net Zero, strategic support for community energy in RIIO-ED2 supports a just transition through the investment in and creation of regional jobs, skill development and green economic growth.

To ensure that, truly, no one is left behind, it is vital that we use our central position within the energy sector to cost-effectively raise awareness and educate our customers and stakeholders about what lies ahead in the transition to Net Zero so they are supported to engage with and benefit from their changing energy system.

DELIVERING ON OUR COMMITMENTS

We will take valuable learning from pioneering communities and community support organisations who have worked tirelessly over the last decade or so to prove local network solutions and innovative community energy business models.

We recognise the need to work with community anchor organisations to develop a strong degree of trust, consent and collaborative partnerships for the successful delivery of local energy solutions. We know it is also vital that projects are managed and communicated well so as not to result in negative experiences or connotations that may risk setting back or preventing future uptake of low carbon technology.

We are proud to have been building links and relationships with community anchor organisations and community energy advice groups through years of engagement activity and project delivery. We also benefit from shaping our business around our geographical districts across both our licence areas so that staff are close to the communities they serve, and communities can influence the delivery of projects in their area.

Beyond the communities themselves, we also understand the importance of building on our long-standing relationships with our wider stakeholders to create the bespoke technological solutions and business models needed to match local needs with local network conditions. We also intend to keep participating in policy and regulatory discussions that ensure a just energy transition and work with the ENA to help simplify the support available to communities no matter where they are in GB.

We have contracted Community Energy England, Community Energy Scotland and Community Energy Wales to advise and challenge our strategy.

Community groups are uniquely placed to act as sources of network generation, demand and flexibility.

Our community energy proposals for RIIO-ED2

When it comes to supporting community anchor organisations and more community energy projects, our customers and stakeholders have told us there is no time to waste.

That's why we've designed our proposals to cost-effectively support a minimum annual growth rate of projects (based on activities that we have more direct control over) but also be increased to meet any flux in demand (via our Output Delivery Incentive proposal) particularly if there are positive policy or regulatory mechanisms developed for the community sector during RIIO-ED2 and in response to our own increased, targeted activities in this area.

OUR TWO-STEP APPROACH

Community Energy is critical to ensuring we achieve Net Zero and a just transition however, given the current pace of change, it has not yet been formally considered as a core area of activity for DNOs. As such, Ofgem have not yet issued specific guidance on how we should operate in this area or draw down funding for our activities.

Given the urgency to act, we have proposed the commitments below to help address barriers facing community groups that relate to our role as a network operator. These commitments are designed to maximise local opportunities for all of our customers and stakeholders, including aggregators and developers who will need to support community groups, and increase the number of community energy projects across our licence areas. Importantly, they allow us to use our networks more resourcefully and deliver further bill efficiencies as well as environmental and green recovery benefits.

Our Zero Carbon Communities (ZCC) commitments

55. We will work in partnership with local support organisations to deliver community energy awareness campaigns at scale and educational outreach activities to raise knowledge and awareness of the changes coming to the energy sector and how individuals and their communities can participate and benefit. We will review our engagement, including who/how best to deliver information, throughout ED2 and remain flexible and innovative in our approach.

56. We will submit a Community Energy Strategy with our RIIO-ED2 business plan to clearly show how we will embed community energy thinking across our business and set our approach to leveraging resources to cost-effectively support community anchor organisations and their community energy projects across our licence areas. Our strategy will be independently reviewed every year to make sure we are learning as we go and adjusting to changes in the external environment.

57. Through dedicated Community Energy advisors (who will work with our Whole System advisors), we will offer technical advice and optioneering as well as sign-posting to impartial, local support organisations and local energy planning activities and hand-hold local groups in need of additional support through our connections process.

58. We will ring-fence ~25% of our proposed Distribution Net Zero Fund for community-led energy projects to increase upfront funding. Community groups will still be able to access other categories of the fund.

You can find full details of our community energy commitments, strategy and funding framework proposal in ***Annex 4B.3 and Annex 5C.7***

DELIVERING MORE: OUR PROPOSED OUTPUT DELIVERY INCENTIVE

Given our role as network operator, we will play a crucial role in facilitating increased demand for community energy projects, and need to do so in a timely and supportive way.

We are proposing a new Community Energy ODI to allow us to cost-effectively apply additional resource and activities to the commitments we have outlined so that we can help even more community anchor organisations with their community energy projects and increase benefits for our customers, stakeholders and wider society. Please note, this additional resource will not be applied to our proposed Distribution Net Zero Fund commitment which is considered separately in the next section of our business plan.

We believe that our baseline costs will allow us to support a 4%/annum growth rate in the community energy sector over RIIO-ED2 while we hope our ODI proposals will push us to support increased growth rate of up to 27%. Please refer to our ODI incentive annex for full details of how we plan to report on our contribution to the sector and improve current community energy data over RIIO-ED2.

The proposed bespoke ODI is a discretionary, reward only, ODI of up to 0.50% of base revenue. It will be assessed once mid-period and again at the end of RIIO-ED2. (i) evidence of CE Strategy delivery; (ii) case study evidence; and (iii) stakeholder satisfaction metrics. The CE bodies will play a key role in measuring our performance over RIIO-ED2.

Community energy schemes could provide up to ***2.2m homes*** *with* ***5.3GW of renewable energy by 2030*** *(WPI Report 2020)*

Our proposed Distribution Net Zero Fund

With growing momentum in the race to Net Zero, as a network provider we understand that we have a critical role to play – and crucially, we want to be part of a fair and just transition for all our customers and communities.

Network companies are a key enabler in the Net Zero transition by ensuring that our network investment can match ambitions and through facilitating low carbon projects we can bring benefits to our society and our electricity system as a whole. We are therefore proposing a Distribution Net Zero Fund to accelerate the delivery of low-carbon projects within our licence areas.

BUILDING ON THE SUCCESS OF THE TRANSMISSION GREEN ECONOMY FUND

In RIIO-T1, the Green Economy Fund was established by SP Transmission. The £20m fund was created in 2018 to support the Scottish Government's ambitious energy strategy and the UK's drive to a low-carbon economy.

In just over two years, the fund has supported 35 innovative projects, 58 full-time jobs (with another 647 jobs created indirectly), saved 637 tCO_2e per annum of carbon, facilitated 1,130 sessions to help educate communities on green energy and engaged with over 7,825 customers about energy issues. The fund has delivered positive environmental impacts, supporting the most vulnerable in our society and boosted local economic growth. The fund has made an incredible impact within our local communities, leaving an enduring legacy for years to come. (As our transmission business only operates within Central and Southern Scotland, we were only able to support Scottish based projects).

OUR DRIVE TO SUPPORT A JUST NET ZERO

We are therefore proposing the establishment of a fund for Ofgem to consider. This is a new ambitious activity for a Distribution Network Operator to undertake, and it is also something that our stakeholders fundamentally believe that we are best placed to deliver given our unique knowledge of the regional energy infrastructure, including constraints and anticipated demand, and understanding of what is required to achieve Net Zero. The fund also complements several of our business strategies, in particular, ensuring a just transition, a whole system approach *(**Annex 4A.26** ⊕)*, our community energy *(**Annex 4.1: Supporting a Just Transition** ⊕)* and vulnerability *(**Annex 4B.1** ⊕)* strategies.

The fund will focus on facilitating practical low carbon initiatives with tangible outcomes that will drive the green agenda, enabling low-carbon projects to proceed that can often find funding difficult to obtain. We are determined that the fund will primarily remove barriers that prevent our cities and communities participating in a low-carbon society. We will be able to support job creation, boosting the green economy, whilst removing the financial and knowledge barriers that typically exist for the introduction of low carbon technology, particularly for the most vulnerable in our society – helping ensure a just transition.

97% of stakeholders agree that a Low Carbon pot of funding, like the Transmission Green Economy Fund, should exist in the RIIO-ED2 plans.

97%

OUR PLANS AND PROPOSALS ASSOCIATED, SUPPORT THE FOLLOWING COMMITMENT

59. We will create a £30m Distribution Net Zero Fund which will support low-carbon projects within our licence area. The fund will be aligned to Scotland's, Wales and the UK's Net Zero aims whilst supporting our cities and local communities' decarbonisation ambitions. The fund will create positive environmental benefits, deliver strong social value, support the most vulnerable in our society, generate shared learnings and boost local economic growth.

EXAMPLES OF TRANSMISSION GREEN ECONOMY FUND PROJECTS

Warmworks, Dumfries,
Installation of domestic battery storage to social housing in off-gas network in Dumfries.

Saughton Park, Edinburgh,
Installation of micro-hydro scheme, making it the UK's first fully eco-powered greenspace.

Dumfries and Galloway College,
Green energy hub created with the inclusion of low-carbon technologies to be used as teaching aids.

You can find more information on these case studies at www.spenergynetworks.co.uk/GEF

£14.4m Net benefit for our communities generated by our distribution Net Zero fund

£14.4m

WHY IS A FUND NEEDED?

We are in a unique position to help enable the pace of change needed, given our central role in the energy sector, position within our cities and local communities, and our ability to distribute benefits through socialising any resultant innovation, learnings and consumer bill savings.

According to stakeholders, the biggest barrier is the lack of available funding options, suggesting there is nowhere near enough funding available to help communities develop their low-carbon project ideas. Where the funding does exist, there is often a lack of awareness around who is eligible to apply, confusion around where to find it, and complex application processes.

We have carried out extensive engagement with 1,200 stakeholders across Scotland, England and Wales with **97% of stakeholders**, agreeing that a Low Carbon pot of funding, like the Transmission Green Economy Fund, should exist in the RIIO-ED2 price control. We have also presented our proposals to our Customer Engagement Group and received their guidance and feedback on what we should consider and include when creating the fund.

We have also completed a consultation with our stakeholders to ensure that our proposals align with their expectations. Our stakeholders confirmed that our funding priorities were appropriate and should address the right areas and 100% of our respondents also believe that we should offer a Distribution Net Zero fund in RIIO-ED2.

OUR CUSTOMERS ARE WILLING TO PAY FOR A NET ZERO FUND

We have also presented our proposals to our customers and 70.2% of customers were willing to pay for the cost of this proposal in addition to the RIIO-ED2 bill. Only 7.4% were not willing to pay for the cost of this proposal. Many customers were positive about job creation and the environmental benefits. One customer stated 'climate crisis – just do it'.

RESPONDING TO OUR STAKEHOLDERS AND REMOVING BARRIERS TO FUNDING

The stakeholder feedback that we received regarding the Net Zero Fund has been used to refine the criteria, priorities and structure of the fund. The full details of the Net Zero Fund are outlined in *Annex 4B.4:* ⊕. We are proposing that this fund should be a Use it or Lose it (UIOLI) fund. With this approach Ofgem would assess our NZF expenditure at the end of RIIO-ED2 and determine if any should be clawed back and returned to customers together with any unused allowance. The full details of the UIOLI mechanism can be found within *Annex 5C.7: UIOLI / Clawback Allowances* ⊕

In direct response to stakeholder feedback, we will:

Align to local Net Zero priorities – through our research of local energy plans we identified a number of consistent themes which also aligns with the stakeholder feedback that we received. This has highlighted a number of themes that the fund should support: Transport, Heat, Communities and other low-carbon projects (including education projects).

Allocate funding across Net Zero themes – stakeholders and our Customer Engagement Group also indicated that they would like to see the fund split into separate funding pots and for that reason the fund will be allocated to each of these themes.

Make the fund straightforward and accessible – many of our stakeholders made comment that often they were not able to secure funding due to the size or type of their organisation. Therefore, the fund will be open to different types of organisations and only exclude individuals from making an application. The fund will be able to offer not only capital project funding but also support capacity, knowledge and feasibility costs.

Connect the dots with a whole system and partnership approach – several stakeholders stressed the importance of collaboration and partnerships, particularly with local authorities and the government. We will also work with other funding bodies to support projects get the funding they need.

Empower communities and support the vulnerable – support those who are most vulnerable in our society and make sure they are not left behind through the low-carbon transition. There were also calls for us to raise our ambition by separating funding for community projects and larger-scale projects, as well as creating a business-as-usual community energy model. A quarter of the funding pot will be reserved especially for community energy projects.

Be flexible and simple – stakeholders informed us that the fund should operate a clear and simple application process and be flexible in its funding approach. We also received praise on how the Transmission Green Economy fund operated and it became clear that the new Distribution Net Zero Fund should operate in a similar way.

Build for a sustainable future – our stakeholders believe we're in a unique position to help enable change. We can drive widespread change through our central role in the energy sector, position in our communities, and ability to distribute benefits through socialising innovation and passing savings onto consumer bills.

THE PROJECTED BENEFITS

At the end of our RIIO-ED2 Business Plan period, it is estimated that a fund of £30m could provide the following benefits:

Support **over 50 low carbon projects** that would not have been able to proceed without our intervention, by providing support and funding.

25% of the projects funded will be community projects, aligning to our Community Strategy.

Over 230 low carbon technologies installed, facilitating access to our cities and local communities.

Provide guidance, support and **tangible benefits to over 14,000 consumers and communities in vulnerable situations**, targeting those who are in fuel poverty by reducing their energy bills.

Boost the low carbon economy by **creating 80 direct and 970 indirect jobs.**

Reducing cities and communities' carbon by **5500 tCO_2 pa** cross the lifetime of the projects, resulting in better air quality and positive health benefits for our cities and communities.

(Figures are based on the Green Economy Fund Project lifetime figures published within the Green Economy Fund Final Report 2021)

Our stakeholders have confirmed that whilst more funding would be good, £30m funding is significant enough to make an impact.

The introduction of a fund will support the just transition to a Net Zero future for all, encouraging and supporting our communities to move forward and ultimately deliver the environmental and health benefits that a zero-carbon society will secure.

⊕ *The full priorities of the fund and the criteria of the fund can be found in* ***Annex 4B.4: Distribution Net Zero Fund.***

Supporting documents for this chapter

Annex 4C.3: *Environmental Action Plan*

Annex 2.1: *Innovation Strategy*

Annex 3.1l: *ED2 Triangulation Record – sustainability*

Annex 4A.7: *Climate Change Resilience Strategy*

Annex 4A.8: *Losses Strategy*

Annex 4A.23: *EJP and CBA Index*

Annex 4C.1: *IT and Digitalisation Strategy*

Annex 4C.4: *Net Zero Workforce Strategy*

Annex 5B.1: *Uncertainty Mechanisms*

Some highlights of our strategy

Delivering a sustainable network 1
Investing £156.20m in our EAP to deliver our ambitious environmental sustainability plans *Pg 110*

£156m invested in EAP

Decarbonising our network 2
Engaged with over 338 stakeholders to develop and shape our RIIO-ED2 environmental sustainability plans *Pg 112*

engaged 338 stakeholders

Reducing environmental impacts 3
Use innovative low carbon retrofit bunding solutions at 203 of our Primary and Grid transformers *Pg 117*

bunded 203 transformers

CHAPTER 4 / PART C

Deliver an environmentally sustainable network

Our role in meeting the UK's ambitious climate change targets is critical for a sustainable, Net Zero future and we will lead by example.

We must reduce our own environmental impacts, increase efficiency through innovation, adapt our world-class, resilient network to withstand the effects of climate change and deliver sustainable value for current and future customers.

At the very core of our plan is our Sustainable Business Strategy that outlines our stakeholder-led vision, drivers, goals and objectives for environmental and sustainability improvement right out to 2035 and beyond. It underpins all of our commitments for the RIIO-ED2 period.

Put simply, this strategy outlines our core vision to be a sustainable networks business that embeds sustainability in our decision making by working with our stakeholders to efficiently manage and develop our network in support of the low carbon transition.

Looking to our commitments in RIIO-ED2, our ambitious plan for environmental sustainability represents a significant step-change from what we currently deliver in RIIO-ED1. Please see Appendix E of ***Annex 4C.3: Environmental Action Plan*** for details on how we are meeting Ofgem's enhanced minimum requirements in this area.

We believe that our commitments shouldn't simply end at legal and regulatory compliance but that we should be leading the transition to a more sustainable network and society. And, that's exactly what we're doing.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Working closely with our stakeholders is a vital part of minimising our environmental impact and ensuring the sustainability of all our decisions. This is especially important because of the increasing pace of change in the sustainability agenda, which requires us to be open to new information and ideas and make balanced decisions in response.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

82%

Commercial:

84.7%

Our stakeholders' priorities

Customers, and especially stakeholders, shared a wealth of feedback on this topic throughout both the RIIO-ED2 engagement programme and our ongoing working groups. This engagement tells us that three broad areas are of most importance to customers and stakeholders: decarbonisation of our network and operations, our impact on the natural environment and pollution.

Decarbonisation is the primary area of focus for most stakeholders. They strongly support us to be highly ambitious in our decarbonisation efforts and believe that we should set an example for other businesses to follow. Stakeholders believe we should focus our efforts on decarbonising transport, especially our heavy vehicle fleet, our supply chain (through early engagement and a culture of carbon management instilled in our procurement processes) and our buildings. As a network operator, it is also critical that we manage and reduce network losses.

When it comes to our impact on the natural environment, stakeholders believe it is important for us to understand our natural assets and put forward activities that will protect and enhance biodiversity. In particular, our customers believe we should leave the natural environment in a better (or at least, the same) condition compared to how it was when we started operating within it.

Focusing on pollution, our stakeholders believe it is important for us to take a comprehensive view of the issue and consider actions to reduce the risk of pollution caused by network assets, the waste we generate and the noise and light pollution of our operations. Finally, in line with feedback gathered on other aspects of the plan, our stakeholders believe it is critical for us to work in collaboration with all stakeholders in achieving our sustainability ambitions.

How feedback shaped our plans

Our sustainability plans for the RIIO-ED2 period are influenced by both a large body of applicable laws and regulations and by extensive engagement, especially with expert stakeholders. The impact of their feedback is evident within our initial proposals as well as in how these evolved through subsequent rounds of engagement in recent months.

Our customers' and stakeholders' support for decarbonisation activities led us to introduce commitments such as a Net Zero Carbon target and the decarbonisation of our fleet by 2030. Further engagement on these and similar commitments strongly impacted our plans and led us to, for example, introduce a Scope 3 Science-Based Target, fast-track our Net Zero Carbon target to 2035 and propose an accelerated date for the decarbonisation of our fleet of 2028.

Addressing the importance placed by customers and stakeholders on protecting the natural environment, we first introduced a commitment to implement biodiversity and natural capital action plans across all projects. Further engagement on our focus in this area led us to enhance our ambition and the specificity of our targets – driven by stakeholders' feedback we set a quantified target for the biodiversity units and percentage of biodiversity enhancement we will deliver during RIIO-ED2.

Finally, we reflected our stakeholders' support for measures to reduce pollution, we committed to reduce the risk of oil pollution linked to some network assets, introduce pollution prevention plans for all projects and brought our existing Zero Waste target forward to 2040 from 2050. These are only some examples of how customer and stakeholder feedback shaped our sustainability plans, strategy and ambitions in the RIIO-ED2 period.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- Since 2013/14, the year of our baseline measurements, SPD and SPM have jointly achieved a 57% reduction in Scope 1 and 2, excluding losses
- We have kept SF_6 leakage within our target of 0.75%
- We have diverted 87% of our operational waste from landfill
- We have reduced fluid filled cables by 85%.

How we'll continue to deliver in RIIO-ED2:

- To deliver our Environmental Action Plan we will be investing £156.20m over the RIIO-ED2 period. These costs are embedded within ***Chapter 5 'Our Expenditure Plans'*** and see ***Annex 4C.3: Environmental Action Plan (EAP) Appendix A*** for full details of costs to deliver our environmental and sustainability plans
- Our plan is ambitious, and we are dependent on our supply chain to deliver core aspects of our plan. We are ensuring that our supply chains' standards and ambitions are reflective of our own. We are working now in collaboration with our supply chain to support them and bring them along on this journey with us, ensuring that smaller suppliers are not left behind
- During RIIO-ED2 we will create seven new roles to deliver our enhanced environmental sustainability requirements; 2 Environmental Specialist roles, 4 Supply Chain Management roles and 1 Carbon Specialist role. For further information on our workforce plans please see 'Build a Net Zero Workforce'. See ***Annex 4C.4: Net Zero Workforce Strategy***

By delivering the commitments set out in our EAP we will avoid 24,647tCO_2e of emissions (from our Scope 1 and 2), support our supply chain in achieving their own carbon emissions reductions and create 500 biodiversity units across our network.

avoided 24,647tCO_2e

Delivering a more sustainable network 1

Our Sustainable Business Strategy

This outlines our stakeholder-led vision, drivers, goals and objectives for environmental and sustainability improvements to 2040. These underpin our RIIO-ED2 commitments and go beyond legal compliance requirements.

Our sustainable business model underpins everything we do, making sure that we:

- Consider environmental, social and economic costs and benefits in decision-making
- Collaborate with stakeholders to achieve shared environmental goals
- Display transparency in decision-making processes and report our performance.

Our Vision

Our vision is to be a sustainable networks business. We'll embed the principles of sustainability in our decision-making. We'll work with our stakeholders to efficiently manage and develop our networks in support of the low carbon transition, and to achieve neutral or positive environmental and social impacts.

Our actions to become a sustainable network operator will drive our supply chain and support our customers and communities to become more sustainable. During RIIO-ED2 we will continue to drive industry-wide collaboration for the benefit of all customers and will keep engaging our environmental and sustainability stakeholders through our Sustainability Stakeholder Working Group.

Related Sustainability Drivers

Our sustainability drivers outline the six key impact areas we must address to deliver our vision of a sustainable networks business.

Sustainable Society

Water Efficiency and Protection

Carbon and Energy Reduction

Climate Change Resilience

Land and Biodiversity Improvement

Sustainable Resource Use

ACHIEVING THE SUSTAINABILITY STEP-CHANGE

We take a systematic approach to reducing our environmental impacts by using a documented Environmental Management System (EMS). At its core is the risk assessment process we use to decide how the environmental impacts of our activities are prioritised for action. This system has been externally certified for over a decade to ISO14001:2015 and is fully embedded in our business processes.

To help develop our RIIO-ED2 Investment Plan, we used Initial Environmental and Sustainability Reviews (IESRs). These provide an early assessment of potential environmental and sustainability issues and opportunities. An IESR is conducted for all relevant projects and scopes of work at the concept design stage and includes options analysis, please see ***Annex 4C.3***

All our Engineering Justification Papers (EJPs) and relevant Cost Benefit Analyses (CBA) for RIIO-ED2 were independently reviewed for environmental and sustainability content by expert external specialists, and scope of works revised to reflect any recommendations. Please see ***Annex 4A.23***

To help realise our sustainability aims, we will continue to embed further environmental considerations in our business processes in line with ISO14001 requirements for continuous improvement. We will improve the quality of environmental data collected and analysed at all stages of the asset lifecycle, investing in enhanced geospatial systems and formalising data sharing collaborations. Please see ***Annex 4C.1***

Our commitments and deliverables in RIIO-ED2

66. We will embed environmental sustainability considerations in our business processes whilst maintaining and continually improving our ISO14001 certified Environmental Management System. This will enable us to achieve 'beyond compliance' environmental performance and our sustainability goals.

67. We will continue to provide transparent reporting of our environmental and sustainability performance by publishing an annual report of our progress against all environmental and sustainability commitments – in line with metrics and a format developed in collaboration with the other DNOs.

68. We will improve the quality of environmental data collected and analysed at all stages of the asset lifecycle, investing in enhanced IT systems and formalising data sharing collaborations with key stakeholders.

69. We will continue to ensure that our staff, contractors and suppliers have the skills and knowledge to allow us and our supply chain to move beyond compliance and achieve our Sustainability Goals, by identifying and ensuring delivery of appropriate environmental training.

Supporting Deliverables

We will embed a process for Initial Environmental and Sustainability Reviews (IESRs) for all relevant projects, to identify potential environmental issues and opportunities at the earliest stage.	*By 2023*

You'll see how these align to the United Nations Sustainable Development Goals in ***Annex 4C.3***

SUPPLY CHAIN SUSTAINABILITY

Our strong relationship with our supply chain is critical to the success and sustainable delivery of our plans. Our suppliers provide a wide range of services throughout the whole lifecycle of assets, from design to decommissioning.

We will go beyond an expectation of safe, efficient and compliant works, collaborating with suppliers to: minimise environmental impacts; set and deliver enhanced environmental standards; and drive industry-wide environmental improvements.

We will continue to encourage suppliers to sign up to our free procurement platform, Go Supply, which includes a detailed assessment of sustainability credentials as part of registration. When strategic suppliers don't meet our minimum sustainability criteria, we will continue to collaboratively set up improvement plans – helping our suppliers gain the skills and knowledge to become compliant.

How we did in RIIO-ED1

During RIIO-ED1, we updated our standard contract terms, pre-qualification questionnaires and specifications. This requires suppliers and contractors to report on their environmental management standards every month. We also became a partner of the Supply Chain Sustainability School (SCSS) requiring all new contractors to sign up to the school and engage with sustainability training. This free service provides a wide range of educational resources to help our suppliers on their sustainability journey. We have also made the Supply Chain Sustainability School available to all our employees, achieving a Gold Award in recognition of our commitment to upskilling our colleagues and increasing environmental literacy across our supply chain.

Working with our suppliers and contractors throughout RIIO-ED1 has resulted in many solutions being piloted, such as the trial of the reuse of plastic buckets for jointing resin. This project has the potential to save over £29,000 each year from mixed recycling costs and save up to 220 tonnes of carbon dioxide equivalent (tCO_2e) annually.

80% of supply chain (by value) setting SBTs **80%**

Achieve RIIO-ED2 Scope 3 SBT reductions **37.8%**

Our commitments and deliverables in RIIO-ED2

70. We will further enhance environmental sustainability standards and performance metrics in our contracts by 2023 and will collaborate with our supply chain to target more than 80% of RIIO-ED2 suppliers (by value) meeting these standards.

Supporting Deliverables

We will increase consideration of environmental sustainability in our procurement processes in line with ISO20400 Sustainable Procurement Standard, including a carbon metric as a minimum.	*By 2023*
We will continue to be a Supply Chain Sustainability School Partner, requiring contractors and suppliers for all new contracts to become members and undertake relevant sustainability and environmental training.	*Throughout RIIO-ED2*
We will engage with suppliers early in the development of projects to enable them to propose environmental improvements at concept and design stages.	*By 2025*
We will engage with suppliers throughout the duration of their contracts to continue to reduce impacts and optimise benefits.	*Throughout RIIO-ED2*

Decarbonising our network and assets 2

The most effective way for us to mitigate climate change is by connecting low carbon technology to decarbonise society. While we do this, we must also reduce the carbon footprint of our business operations, and make sure our network is resilient to the effects of climate change.

Our targets for decarbonising our network are deliberately challenging. To achieve them, we will need transformation at every level of our business. To determine the most cost-efficient interventions, we identified the options available and considered the costs against the quantity of carbon reduction. This allowed us to achieve the carbon savings at the lowest cost to the customer.

Our strategic vision

We will be a carbon neutral company throughout our value and supply chains and will actively support our customers and local communities towards achieving this goal.

We will develop our network to mitigate impacts of climate change. The materials required for network construction and operation will come from sustainable sources.

Related Sustainability Drivers

Sustainable Society

Climate Change Resilience

Carbon and Energy Reduction

To achieve our RIIO-ED2
Scope 1 and 2 SBTs of 37.8% reduction

100% EVs (cars and vans)
15.2GWh saved

CARBON REDUCTION (CARBON FOOTPRINT)

We measure and report our business carbon footprint (BCF) each year. Our BCF can be classified into the following scopes, in alignment with the Greenhouse Gas (GHG) Protocol:

Scope 1 – direct emissions
Activities owned or controlled by our organisation that release emissions straight into the atmosphere

Examples: Fleet transport, SF_6 gas emissions and red diesel use.

Scope 2 – indirect emissions
Emissions being released into the atmosphere associated with our consumption of purchased electricity, heat and cooling.

Examples: Electricity losses, building and substation energy use.

Scope 3 – additional indirect emissions
All other indirect emissions within our value chain. These are a consequence of our actions and occur at sources we do not own or control but are not classed as Scope 2 emissions.

Examples: Business travel, emissions reported from our contractors' activities and emissions generated to produce built assets.

We have set our Science-Based Target (SBT) for Scopes 1, 2 and 3 carbon emission reductions aligned with a 1.5°C pathway. These will be validated in early 2022. Targets are considered 'science-based' if they align with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.

By setting Science-Based Targets across all scopes, we are extending our focus to include indirect carbon emissions from our supply chain in addition to our direct emissions reported within the BCF. Looking beyond these SBTs, we will be a Net Zero greenhouse gas networks business across Scopes 1, 2 and 3 by 2035, reviewing our approach annually as global Net Zero definitions evolve.

Furthermore, we will achieve neutrality across our controllable greenhouse gas emissions (Scope 1 and 2 excluding losses) from 2023, making the most ambitious reductions possible within technological and regulatory boundaries, reviewing our approach annually and removing or offsetting what cannot be reduced – in line with the PAS2060 specification for the demonstration of carbon neutrality. These ambitious carbon reduction targets are supported by our customers and stakeholders, who were consulted through carbon specific RIIO-ED2 workshops.

We will embed The Oxford Principles for Net Zero Aligned Carbon Offsetting within our offsetting strategy to ensure such offsetting is robust and credible. We will focus on carbon removal offsets where possible, advocating rewilding and nature-based solutions where practical to support holistic environmental improvements.

Throughout RIIO-ED2, we will adopt the principles of the PAS2080 Carbon Management in Infrastructure standard. We will work with our design teams and supply chain to identify carbon hotspots and reduce carbon by following the carbon reduction hierarchy: build nothing, build less, build clever, build efficiently. By embedding carbon management at all stages in the lifecycle of our projects, we will reduce carbon while maintaining value for money and supplier diversity.

How we did in RIIO-ED1

Since 2013/14, the year of our baseline measurements, SPD and SPM have jointly achieved a 57% reduction in Scope 1 and 2 BCF, excluding losses. In 2013, we set a target to reduce emissions by 15% by 2023. We hit that target in our 2015/16 reporting year and are on track to achieve our 2035 Science-Based Targets.

Electricity losses – energy lost or stolen from the network as it travels from source to user – is the largest category of our Scope 1 and 2 BCF. However, it's also the most heavily influenced by external factors beyond our control. Further details of these factors, and the action we are taking to reduce those aspects of losses that we can influence, can be found within the losses section of this chapter.

The graph below outlines the components of our Scope 1 and 2 BCF (excluding losses) and demonstrates how we have outperformed expectation in RIIO-ED1 and are on track to meet our SBTs for BCF(Scope 1 and 2 excluding losses) CO_2 reduction.

Our commitments and deliverables in RIIO-ED2

71. We will deliver efficient and economic actions to reduce our Scope 1, 2 & 3 business carbon footprint by 67.2% by 2035 from a 2018/19 baseline, in line with validated Science-Based Targets aligned to a 1.5˚c pathway.

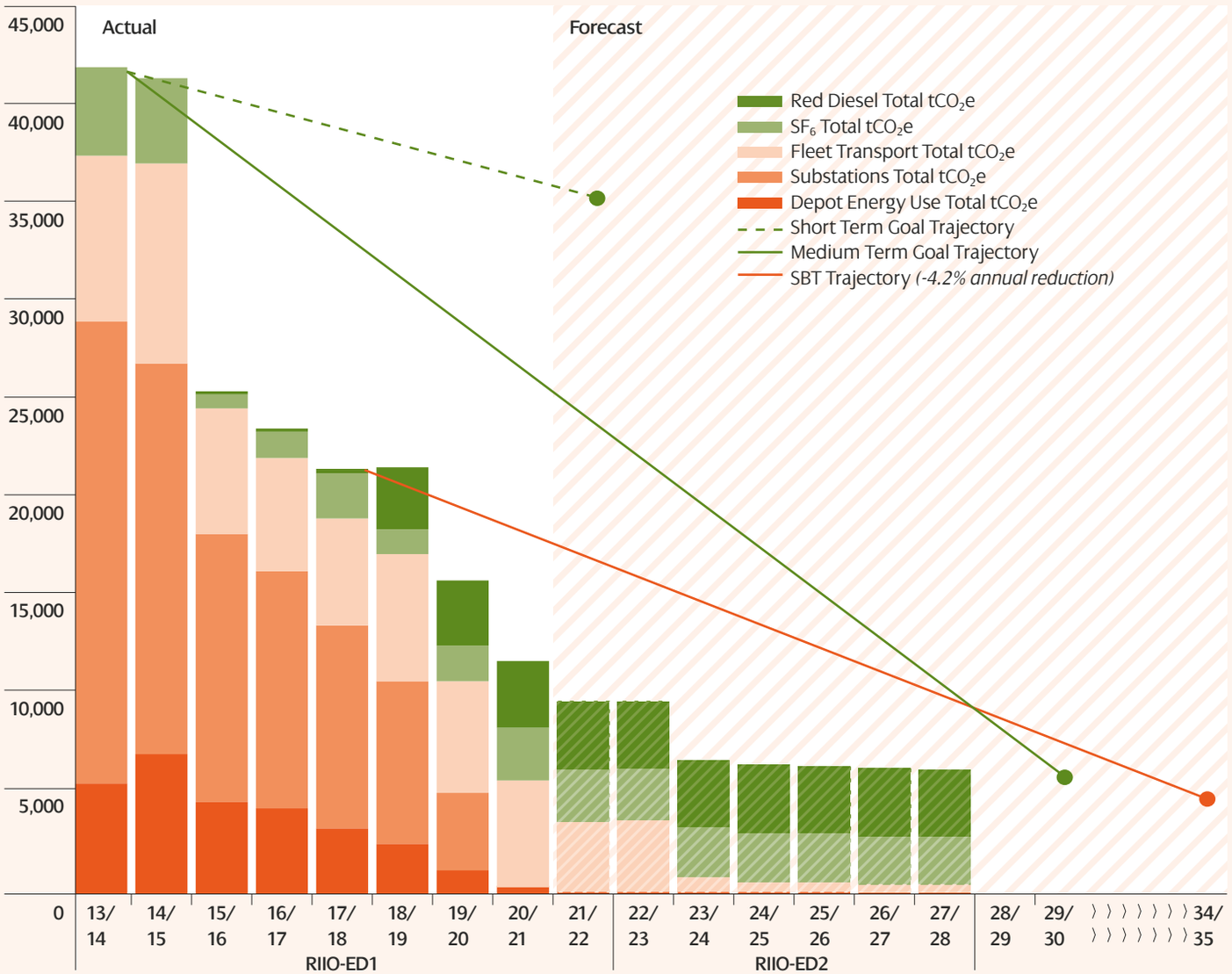
72. We will minimise our carbon footprint to achieve Net Zero Carbon by 2035.

73. We will achieve Carbon Neutrality by 2023 for our Scope 1 & 2 business carbon footprint excluding Losses.

Supporting Deliverables

We will align our offsetting approach to the Oxford Principles for Net Zero Aligned Carbon Offsetting, ensuring high probability of 'Additionality' and low probability of 'Reversibility', delivering additional environmental and social benefits where practical.	*Throughout RIIO-ED2*
We will identify metrics, and associated targets, for RIIO-ED2 to track the impact of implementing actions and the overall progress towards our carbon reduction targets.	*By 2023*
We will implement processes for carbon management in relevant business activities, aligned with PAS 2080 Carbon Management in Infrastructure.	*By 2025*

Distribution Business Carbon footprint RIIO-ED2 Forecast
(Scope 1 & 2 excluding losses tCO_2e)



Scope 1 emissions

TONNES OF CO_2 AVOIDED 17,883CO_2e

OPERATIONAL TRANSPORT

We are committed to decarbonising our fleet vehicles. In September 2019, our parent company Iberdrola signed up to The Climate Group's EV100 initiative. The agreement will see Iberdrola electrify the bulk of their vehicle fleet (subject to local market conditions) by the end of 2030. We will be at the forefront of this initiative. During RIIO-ED2 we aim to outperform this 2030 target and accelerate the electrification of our fleet to 2028 (the end of RIIO-ED2).

How we did in RIIO-ED1

The carbon impact from distribution operational transport has decreased by 15% and related fuel use has reduced by 14% since the start of RIIO-ED1.

Our commitments and deliverables in RIIO-ED2

74. We will decarbonise our operational fleet by 2030, replacing 100% (over 800) of our cars and vans with electric alternatives in line with the Iberdrola EV100 commitment and will seek to further accelerate this to 2028.

Supporting Deliverables

We will install electric vehicle charging infrastructure for our operational fleet at our sites.	*Throughout RIIO-ED2*
We will strive to lead the decarbonisation of fleet vehicles, working with suppliers and other fleet operators to pilot technically viable alternatives to drive technical advancements and early adoption.	*By 2023*

FUGITIVE EMISSIONS (SF_6 AND OTHER INSULATION AND INTERRUPTION GASES)

SF_6 is a colourless and odourless gas used for both insulation and arcinterruption in switchgear applications. It has exceptional insulating properties that allow safe, compact and low-cost switchgear solutions. Although it causes no detectable impact on the immediate environment, if released it is a highly potent greenhouse gas with a global warming potential of 23,500 times that of CO_2.

Switchgear filled with SF_6 is one of the dominant solutions offered to the industry for new switchgear applications and the replacement of legacy oil-filled switchgear. By installing modern SF_6 filled switchgear, we have been able to enhance the operational safety of our asset base, reduce ongoing plant maintenance costs and remove oil, and its associated environmental impacts, from the network.

We are continuing to work with industry and our supply chain to support the implementation of other SF_6 free solutions with a view to adopting suitable alternatives on our network wherever practicable, including tendering exclusively for non-SF_6 equipment where possible.

The challenges associated with the substitution of SF_6 switchgear with non-SF_6 filled alternatives vary by voltage level and application. We will prioritise works where we can achieve the greatest reduction in SF_6 volumes, to minimise the increase in our SF_6 Bank, for the lowest economic cost investment.

How we did in RIIO-ED1

SP Distribution comprises electricity networks below 132kV.
SP Manweb comprises networks up to and including 132kV. This results in SP Manweb managing larger equipment with higher amounts of SF_6 and therefore differs from SP Distribution in SF_6 Bank, how much SF_6 is leaked, and how these leaks are managed.

Since 2013, annual SF_6 leakage as a percentage of total volume has remained comparatively low, staying within target at 0.75% of total mass against a target of 0.85%. However, leakage needs to be significantly reduced in order to achieve our 2035 Science-Based Targets, despite the likely ongoing increase in volume of SF_6 on our network. To reduce leakage, we quickly repair or replace assets, targeting the leakiest first and drawing on expert support to utilise the latest approaches and technologies.

Despite a considerable amount of effort attempting to fix leaky assets, SP Distribution SF_6 leakage total increased to 2,722 tCO_2e in 2020/21. This was primarily as a result of improvement in the completeness of data collected, and we have included emissions from the small number of top-ups carried out in the reporting year.

Our commitments and deliverables in RIIO-ED2

75. We will reduce our SF_6 leakage by 10% over the RIIO-ED2 period compared to RIIO-ED1.

Supporting Deliverables

We will use alternatives to SF_6 insulating gas for all new circuit breakers, Ring Main Units and Gas Insulated Switchgear installations at all voltages, where there are technically feasible market-ready solutions.	*Throughout RIIO-ED2*
We will commit to reporting on total SF_6 Bank and leakage reduction rates using a common DNO methodology.	*By 2023*
We will continue to carefully manage our assets in line with our SF_6 Strategy to minimise SF_6 leakage, repair leaks quickly, and where this is not possible, replace the asset before its anticipated end of life.	*Throughout RIIO-ED2*
We will continue to require manufacturers to provide equipment with a SF_6 leakage rate that is half the international recognised standards, where technically viable.	*Throughout RIIO-ED2*
We will drive the development & adoption of SF_6-free technologies, collaborating with supply chain and industry peers and piloting new technologies where technically viable.	*Throughout RIIO-ED2*

FUEL CONSUMPTION (INCLUDING RED DIESEL, NATURAL GAS AND OTHER FUELS USED IN BUILDINGS AND OPERATIONS)

We are continually exploring ways to reduce fuel consumption. In 2018, piloted innovative battery powered generators were implemented into our fleet to reduce red diesel usage. These prototypes are technically viable and deliver many benefits to consumers and society, including improved air quality, reduced noise pollution and reduced carbon emissions.

In RIIO-ED2, we will work collaboratively with our supply chain to ensure that all generator contracts include a low carbon solution. We will also reduce the carbon impact of using natural gas in our buildings by improving the heating efficiency of our buildings.

How we did in RIIO-ED1

We've expanded our reporting of red diesel to include historical fuel use for hire generators, providing greater visibility of the carbon footprint of our fuel use, resulting in an increase in the total carbon impact of our generator fleet from 233 tCO_2e in 2015/16 to 3,471 tCO_2e in 2020/21.

Our commitments and deliverables in RIIO-ED2

76. We will analyse our generator use and set targets for reduction in carbon emissions to be achieved by end of RIIO-ED2.

Scope 2 emissions

TONNES OF CO_2 AVOIDED 6,764CO_2e

BUILDINGS ENERGY USAGE

The electricity that we use in our offices, depots and substations represents the largest portion of our Scope 2 emissions (excluding losses). It is imperative that we reduce these emissions and the electricity used. Since September 2019, we have purchased green electricity through a 100% UK-based renewable energy tariff backed by Power Purchase Agreements (PPA) for the majority of our buildings and substations. All energy used under this tariff has a carbon emissions factor of zero, significantly reducing the carbon footprint of the energy we use at our depots and substations. However, we must also reduce electricity consumption at these sites to free up renewable energy for others to use. We will do this by implementing energy efficiency measures including lighting and heating improvements. We have updated the specifications for our buildings so that when we intervene to replace or repair network assets, we will also bring our buildings up to meet these new improved standards.

How we did in RIIO-ED1

In line with the Greenhouse Gas (GHG) Protocol, the carbon emissions related to any electricity use not covered by the green tariff (unmetered sites, radio base stations and some small substations thereafter) has been calculated using the UK residual mix carbon factor.

The move to the green tariff has reduced our recorded emissions from buildings energy use in SPD from 6,029 tCO_2e in 2018/19 to 218 tCO_2e in 2020/21. In SPM it was reduced from 4,918 tCO_2e in 2018/19 to 42 tCO_2e in 2020/21.

Our commitments and deliverables in RIIO-ED2

77. We will continue to purchase green electricity through a 100% UK-based renewable energy tariff backed by Power Purchase Agreements (PPA) for all our buildings. Beyond this, we will reduce our buildings and substations energy consumption by a minimum of 15.2GWh (8%) over the RIIO-ED2 period.

Supporting Deliverables

We will reduce energy consumption by a total of 3.4GWh at 650 of our primary substations by applying our recently updated civil specifications (including improvements to heating, lighting and insulation).	*Throughout RIIO-ED2*
We will refurbish 8 of our strategic office and depot sites, implementing energy efficiency measures to achieve BREEAM ratings of 'excellent' for new build and 'very good' for refurbishments, to reduce consumption by 11.7GWh overs the RIIO-ED2 period.	*By 2023*
We will pilot and monitor renewable generation at substation and/or depot sites to offset building energy demand.	*Throughout RIIO-ED2*

NETWORK LOSSES

Our Losses Strategy is based upon our vision to consider all reasonable measures that can be applied to reduce losses and adopt those measures which provide benefit for customers. The source of network losses is detailed in ***Chapter 4A*** . Our Losses Strategy can be found in ***Annex 4A***

In RIIO-ED2 and beyond, we anticipate that for an efficient, Net Zero transition, distribution network losses will increase as a result of the electrification of heat and transport and the increase of low-carbon distributed generation. These additional losses could be considered 'green' or low-carbon losses, because they are derived from renewable generation. Therefore, whilst they still have a cost implication to the customer through energy charges, the societal cost of losses – primarily in terms of carbon impact – is changing.

How we did in RIIO-ED1

Since 2013, distribution network losses have averaged 6-7% of the total energy transmitted, and the carbon intensity of these losses has steadily decreased. Losses on the SPD and SPM networks have decreased in recent years, due to measures such as replacement of inefficient transformers, increasing cable sizes, and improvements against non technical losses.

We have reported on these developments annually, and updated our Losses Strategy periodically, to keep it relevant. Full details of our Losses Strategy, performance and initiatives to date can be found in pages 20 to 26 of our Distribution Environmental and Innovation Report and within our ***Annex 4A.8***

Our commitments and deliverables in RIIO-ED2

78. In RIIO-ED2, we will continue to implement our Losses Strategy to avoid an estimated 36GWh of network losses, thereby limiting losses to a lower level than would otherwise be the case.

Supporting Deliverables

We will continue to lead the Energy Networks Association Technical Losses Group to improve industry understanding of losses.	*Throughout RIIO-ED2*
We will continue to drive the development and understanding of losses by contributing to the evidence base on the proportion of losses that network companies can influence/control, collaborating with supply chain and industry peers and piloting new ideas such as the Mobile Asset Assessment Vehicle.	*Throughout RIIO-ED2*
We will continue to consider and minimise network losses throughout all design and connections activities.	*Throughout RIIO-ED2*
We will pro-actively target high-loss legacy assets for replacement with modern low-loss alternatives.	*By 2023*
We will report on the progress of implementing the Losses Strategy and associated performance measures.	*Throughout RIIO-ED2*
We will use a minimum underground mains cable size of 300mm^2 to further reduce losses, where it is cost effective and appropriate to do so.	*Throughout RIIO-ED2*
We will continue to use a minimum pole mounted transformer size of 25kVA to further reduce losses on our network.	*Throughout RIIO-ED2*

Scope 3 emissions

TONNES OF CO_2 AVOIDED 100,580CO_2e

BUSINESS TRANSPORT

As a combined result of travelling less, competitive rail pricing and increased staff awareness of carbon emissions from travel, we have reduced our business travel jointly by 40% since the start of RIIO-ED1. The COVID-19 pandemic has subsequently resulted in a change to our business practices and we have increased IT capabilities to allow for virtual meetings and remote working. We will apply these learnings before and during RIIO-ED2 to ensure we embed as many of these changed practices to reduce our business transport emissions further.

In March 2021, the ScottishPower Group brought in a new business travel policy that will see a reduction of 2,300 tCO_2e per year across the group. This policy outlines that only essential travel will be permitted, that we will travel by train instead of flying on domestic journeys and that we will fly economy on international flights of less than 8.5 hours duration.

How we did in RIIO-ED1

SP Manweb and SP Distribution business travel carbon footprint combined has steadily decreased by 29% throughout RIIO-ED1 from 2,417 tCO_2e in 2015/16 to 1724 tCO_2e in 2019/20. This overall reduction is a result of increased staff awareness of carbon emissions from travel, reduced travel, competitive rail pricing and more accurate apportionment between our licences. The COVID-19 pandemic resulted in a 51% reduction in business travel between 2019/20 and 2020/21 reporting years.

Our commitments and deliverables in RIIO-ED2

79. We will continue to implement our 2021 Business Travel Policy to reduce business travel emissions by at least 580 tCO_2e during RIIO-ED2.

CAPITAL CARBON

As energy is decarbonised, the carbon emitted as a result of the infrastructure we build and maintain will account for an increasing percentage of our carbon footprint. In order for us to reduce our carbon footprint in line with Scope 3 carbon reduction targets, we must embed whole life carbon management principles into our business processes and decision making. We must demonstrate leadership throughout our value chain to realise the required reductions and collaborate and share best practices with other client organisations to encourage industry best practice. Capital carbon refers to the emissions associated with the creation, refurbishment and end of life treatment of an asset (e.g. a substation or overhead line). It includes the 'embodied carbon' of materials and items of equipment used to create the asset.

Throughout RIIO-ED2, we will adopt the principles of the PAS2080 Carbon Management in Infrastructure standard and will quantify and set reduction targets for embodied carbon. We will work with our design teams and supply chain to identify carbon hotspots and reduce carbon by following the carbon reduction hierarchy: build nothing, build less, build clever, build efficiently.

During RIIO-ED1 we worked to increase the number of contractors reporting their emissions and targeted our top 20 contractors, by value, to obtain accurate data. This enhanced our understanding of the impacts of our supply chain, allowing us to identify methods to reduce contractor emissions.

As part of our work to improve the data received from our contractors, we enlisted the help of SmartWaste – an online environmental reporting tool designed to monitor and report on areas such as waste generation and carbon impacts. This online tool allows us to collect, store and report data on our contractors. All of our Overhead Line (OHL) and Cable contractors have been adding their data to SmartWaste since January 2021.

How we did in RIIO-ED1

Our recent Scope 3 carbon screening confirms that embodied carbon currently represents 39% of the total carbon impact of our network and operations.

Throughout RIIO-ED1, assessment and reduction of embodied carbon has been driven through standalone innovation projects. In 2020, we undertook a distribution specific carbon life cycle assessment for our LV Engine project. This Ofgem funded Network Innovation Competition (NIC) project aims to implement a globally innovative network trial of smart transformers that will connect Low Carbon Technologies (LCTs).

This project was key in developing our understanding of embodied carbon and demonstrated a best practice methodology for carbon management. The ambition for RIIO-ED2 is to move from a model where embodied carbon is quantified on a case by case basis, to a model where embodied carbon reduction is quantified and driven as standard.

Over the course of RIIO-ED1 we have increased the number of contractors providing us with their emissions data from seven in 2016 to 26 by the end of 2020. We require contractors to use SmartWaste and are supporting them as they begin this process of data sharing.

Our commitments and deliverables in RIIO-ED2

80. We will require strategic suppliers to set Science-Based Targets within 5 years, aiming for 80% of our supply chain by value.

Supporting Deliverables

We will create a new role in RIIO-ED2 to drive actual reduction in Scope 3 carbon emissions in our supply chain by 100k tCO_2e.	*By 2023*
We will introduce a measurement tool for embodied carbon and other capital carbon emissions to establish a baseline and set a target to reduce carbon on new projects during RIIO-ED2.	*By 2023*
We will work collaboratively with our stakeholders, including the other Distribution and Transmission Network Operators, throughout RIIO-ED2 with the aim of assessing and managing capital carbon on our projects, driving efficiencies throughout our supply chain, and sharing best practice.	*Throughout RIIO-ED2*
We will monitor and report on embodied carbon in new projects.	*Throughout RIIO-ED2*

Reducing our environmental impacts 3

As we deliver the low carbon transition and reduce our carbon impact, we must also consider wider environmental impacts. We need to prevent pollution, protect and enhance biodiversity, use resources sustainably, and encourage our suppliers to minimise their environmental impacts.

Our strategic vision

We will have a net positive impact on the environment and the communities in which we operate. The principles of a circular economy and efficient use of resources will be embedded in our business. The materials we use for network construction and operation will come from sustainable sources.

We will produce zero waste, with the components of all end-of-life assets being reused or recycled into new products.

We will protect and continually enhance the biodiversity around our assets and support national and local strategies. Our decision-making will incorporate the principles of Natural Capital Assessment to ensure that levels of natural assets are at least protected, if not enhanced.

Strategic objectives

98%

To divert 95% of waste from landfill by 2023, re-use or recycle 100% of waste by 2030 and achieve zero waste by 2040.

Related Sustainability Drivers

Sustainable Society

Water Efficiency and Protection

Sustainable Resource Use

Land & Biodiversity Improvement

To deliver biodiversity enhancement *across our RIIO-ED2 work programme to not only fully mitigate our impacts but enhance local biodiversity*

500 biodiversity units created

PREVENTING POLLUTION

We construct, operate and maintain infrastructure which is routed through, or next to, a wide range of culturally or environmentally sensitive landscapes and structures. We must minimise any negative effects our activities could have on the environment and communities as much as we reasonably can.

Priority impacts for preventing pollution

In line with the requirements of ISO14001, we continuously review our environmental risks and impacts and seek to prioritise and reduce them. This process has informed the development of our RIIO-ED2 programme of measures to prevent pollution. Priority areas we have identified include:

- Construction sites and substation drainage systems
- Emissions to air
- Fluid-filled cables
- Noise pollution
- Oil leaks
- Polychlorinated biphenyls (PCBs)
- Resource consumption and waste production
- Use of hazardous materials including creosote poles.

Much of our network was constructed several decades ago, before many of the environmental protections we now apply were in place. We are working to bring these older sites up to current standards. During the RIIO-ED2 period we will target zero environmental regulatory interventions and notifiable breaches.

To support the development of our RIIO-ED2 investment plan, we undertook a comprehensive programme of civil inspections to inform a condition-based asset risk assessment. This identified a number of bunds and drainage systems requiring refurbishment and upgrade.

How we did in RIIO-ED1

Over the RIIO-ED1 period we have achieved full reporting of environmental incidents, by staff and contractors, and reduced the number and severity of such incidents.

As a direct result of strategic repair and targeted asset replacement we have reduced fluid filled cable leaks by 85% since reporting year 2015/16. In 2020/21 reporting year we intervened at three sites in SP Manweb in relation to noise from our equipment. There were no interventions in SP Distribution.

Over the RIIO-ED1 period we have intervened at 136 sites – 66 SPM operational sites, 64 SPD Operational sites and 4 SP Distribution Non-Operational sites, as part of our oil mitigation schemes.

During RIIO-ED1, we have been working towards a gradual removal of contaminated equipment (containing more than 0.005% or 50ppm of PCBs) at end of life, without a hard deadline, and targeting equipment with fluid volumes greater than 5L. As per the EU and UK legislations that came into full force in 2019, any equipment that contains PCBs above the threshold or may contain such a level (where for example the asset is pre-1987 and cannot be tested due to its sealed nature) must now be removed from the network as soon as possible and no later than by the end of 2025 or must be confirmed to be PCB free via testing or changing the oil. We have therefore included this requirement in our RIIO-ED2 investment planning at a value of £55.88m.

During RIIO-ED1 we have led several innovation projects looking at alternatives to creosote wood poles. For further information on our innovation projects please see ***Annex 2.1***

Our commitments and deliverables in RIIO-ED2

81. We will continue to target zero environmental regulatory interventions and notifiable breaches.

82. We will implement Pollution Prevention Plans at 100% of our RIIO-ED2 132kV projects.

83. We will reduce the volume of fluid (oil) used to top up our pressurised cables by around 3,490 litres (10%) by replacing over 19.429km of our leakiest fluid filled cable.

84. We will eliminate PCBs from our network by the end of 2025, in line with legislation and the risk-based industry approach agreed with the environmental regulators.

85. We will use low carbon alternatives to concrete bunding for our RIIO-ED2 retrofit projects where technically feasible.

86. We will continue to proactively minimise the impacts of noise resulting from the construction, maintenance and operation of our electrical infrastructure and take timely action to rectify noise complaints from our plant and sites.

Supporting Deliverables

We will adopt new technologies, where appropriate, to support the ongoing proactive management of our fluid filled cables.	*Throughout RIIO-ED2*
We will continue to report on noise pollution incidents and actions taken to reduce them.	*Throughout RIIO-ED2*
We will report on volumes of PCB contaminated equipment on and removed from the network.	*Throughout RIIO-ED2*
We will upgrade existing or install new bunds at 203 of our Primary and Grid transformers as part of our RIIO-ED2 programme of oil mitigation measures, where adequate bunding is not in place.	*Throughout RIIO-ED2*
We will implement a programme to identify, risk assess and address high risk legacy land contamination.	*Throughout RIIO-ED2*
We will continue to collaborate with other DNOs and our supply chain to develop innovative alternatives to creosote wood poles.	*Throughout RIIO-ED2*

LAND AND BIODIVERSITY IMPROVEMENT

We mitigate biodiversity loss most significantly through our actions to maximise the utilisation of our network and connect low carbon generation for societal decarbonisation. This leads to benefits in terms of climate change mitigation, avoidance of additional land use and reductions in pollution.

While we do this, we also protect and enhance the ecosystems we operate within, mitigating the ecological impacts of construction by aiming for 'no net loss' and avoiding the introduction or spread of invasive non-native species.

Our aim in RIIO-ED2 is to deliver a Biodiversity and Natural Capital Action Plan for our network and, at the same time, develop, embed and trial a robust enhancement methodology. This will allow us to set realistic, cost-efficient targets for positive impact, and stay flexible enough to align our targets with existing and new UK, Welsh and Scottish legislation. We will protect levels of natural capital and biodiversity across our RIIO-ED2 work programme, seeking to deliver enhancements were appropriate and cost effective.

How we did in RIIO-ED1

Our routing and environmental impact assessment process considers a range of environmental factors – including biodiversity – alongside technical constraints and licence requirements. This process is under review, and we are embedding biodiversity measurements in advance of RIIO-ED2. We are proposing a bespoke allowance with clawback to fund the creation of 500 biodiversity units across our projects and programmes of work and the 10% enhancement of 25 hectares of our existing linear infrastructure and non-operational land.

Our commitments and deliverables in RIIO-ED2

87. We will deliver 10% enhancement of biodiversity on 25 hectares across our existing network, on our non-operational land and existing linear infrastructure through collaboration with landowners, communities and local wildlife groups

88. We will deliver 500 biodiversity units across our RIIO-ED2 work programme to not only fully mitigate our impacts but enhance local biodiversity.

Supporting Deliverables

We will implement a Biodiversity and Natural Capital Action Plan process to guide local operation implementation with the aim of increasing environmental value across our network.	*By 2023*
We will collaborate with stakeholders, including other DNOs, throughout RIIO-ED2 to develop and pilot robust methodologies and tools for delivering Biodiversity and Natural Capital assessment.	*Throughout RIIO-ED2*
We will engage with UK and devolved governments with the aim of influencing biodiversity and natural capital policy to facilitate delivery of our biodiversity and natural capital goals.	*Throughout RIIO-ED2*
We will identify, and subsequently monitor and annually report, metrics to track the levels of biodiversity and value of natural capital and ecosystem services on our sites and the achievement of our targets.	*Throughout RIIO-ED2*
We will form strategic partnerships with local ecological protection organisations to support our activities to improve habitats for wildlife and to support people's access to nature.	*By 2023*

ENHANCING VISUAL AMENITY

We have over 38,000km of overhead lines supported by over 607,000 poles and towers across our SPD and SPM operating areas. Some of these assets are located in or next to protected sites such as national parks, Areas of Outstanding Natural Beauty (AONB) and National Scenic Areas (NSA). We want to minimise the visual impact our overhead lines have on these sites.

How we did in RIIO-ED1

We examined the visual impact of our network in the landscape areas which are eligible for the RIIO-ED1 visual amenity incentive. We then collaborated with stakeholders to develop a range of visual amenity improvement initiatives. Using this fund, we focused on overhead lines that have the greatest level of impact in nationally designated and protected landscapes – and put them underground. Details of our visual amenity performance and initiatives to date are outlined on pages 9 and 10 of our Distribution Environmental and Innovation Report.

Our commitments and deliverables in RIIO-ED2

89. We will remove 35km of overhead lines in Areas of Outstanding Natural Beauty National Parks, and National scenic areas.

SUSTAINABLE RESOURCE USE AND WASTE REDUCTION

We are working to embed the principles of a circular economy and will follow an appropriate, recognised standard such as the BS8001 circular economy implementation framework.

In line with the waste hierarchy, 'reduce, re-use, recycle', we're placing additional focus on:

- Avoiding waste generation by designing out waste.
- Keeping materials in use at the highest value for as long as possible.
- Managing any remaining waste to maximise its re-use or segregation for recycling.

To achieve our sustainable resource use goals, it's vital we have effective sustainable procurement processes and collaborate effectively with our supply chain. By the end of RIIO-ED2 we will be diverting 98% of our waste from landfill, in line with achieving our 2030 target of 100% diversion by 2030. Waste targets are subject to ongoing stakeholder engagement as we better quantify the associated costs and benefits – particularly with regard to carbon impact of waste.

How we did in RIIO-ED1

During RIIO-ED1 we have diverted on average 87% of our operational waste from landfill. We are on track to meet our 2023 target of 95%.

We also introduced enhanced environmental requirements within our procurement processes. For further details of our performance on sustainable resource use and waste reduction, ***please see page 29 of our Distribution Environmental and Innovation Report.***

Our commitments and deliverables in RIIO-ED2

90. We will divert 100% of our waste from landfill by 2030, excluding compliance waste.

91. We will establish a baseline and targets for waste reduction per £1m of total annual expenditure, to be achieved by the end of RIIO-ED2 and 2030 in line with our zero waste to landfill date.

Supporting Deliverables

We will continue to collaborate with environmental/ waste regulators, other infrastructure companies and our supply chain to drive sustainable resource use and waste minimisation in order to meet our RIIO-ED2 and Sustainability Goals.	*Throughout RIIO-ED2*
We will implement metrics to measure the sustainability of our resource use, with the aim of establishing a baseline to enable target setting during RIIO-ED2.	*By 2023*
We will continue to report on actual waste to landfill, recycling and reuse as a percentage of total and we will commence reporting on all new waste and resource use metrics.	*Throughout RIIO-ED2*
We will set targets for recycled and reused materials as a % of total input materials to be achieved by end RIIO-ED2 and 2030.	*By 2023*
We will follow an appropriate, recognised standard such as BS8001 to embed circular economy principles where relevant throughout our business processes.	*Throughout RIIO-ED2*

*Please see page 29 of our **Distribution Environmental and Innovation Report.***

***Become a fully** circular and 'zero waste' business by 2040*

2040 zero waste

Supporting documents for this chapter

Annex 1.1: *Commitments*

Annex 3.1: *Co-creating our RIIO-ED2 Business Plan with our Stakeholders*

Annex 4C.1: *IT and Digitalisation Strategy*

Annex 4C.3: *Environmental Action Plan*

Annex 4C.4: *Net Zero Workforce Strategy*

Annex 6.1: *Delivering our Plan*

Some highlights of our strategy

Upskilling our workforce
By delivering our Net Zero workforce plans using just transition principles, we will recruit more than 1,100 new employees and upskill and develop our existing workforce. This will support our people in the transition to a digital and sustainable culture and will provide high quality jobs in our communities supporting cultural sustainability in our rural areas.

1,100 new employees

CHAPTER 4 / PART C

Build a Net Zero workforce

The future will present many challenges and we will need new skills, knowledge and capabilities to meet them.

To satisfy the future expectations of our customers and the communities we serve, we will maintain a diverse, inclusive, resilient and sustainable workforce who will evolve to meet changing technology, sustainability and portfolio requirements. They will become more agile and develop new skills through our trainee and development programmes and we will keep a relentless focus on their health and wellbeing.

We will need to maintain our long-term skills pipeline to address potential skill shortages in our industry amidst continuing high levels of retirement.

We've already kept our focus on being a responsible employer as we delivered our commitments and began to evolve our workforce for the future. We recruited and developed our workforce through our workforce renewal and trainee programmes during a period of unprecedented levels of retirement, brought forward by changes in pension legislation.

At the same time, we have started our journey to build sustainability and environmental awareness and a digital-ready workforce, while providing continuous opportunities for leadership and skills development for our people.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Listening to our stakeholders to understand what is important to them is vital to set our strategy for a Net Zero workforce. Our employees are our biggest stakeholders and engagement through surveys, employee led networks and our Trade Unions, with feedback from our communities and experts in this area have given us a clear direction for RIIO-ED2.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

85.5%

Commercial:

87.7%

What our customers and stakeholders have told us is important

Stakeholders shared the sentiment that we should be as ambitious as possible in building a diverse and resilient workforce and believed that upskilling existing employees is essential for us to achieve Net Zero ambitions and thrive in the digital age.

Stakeholders emphasised our responsibility to contribute to reducing the gender and minority gap within the engineering profession. While welcoming our plan to provide Diversity & Inclusion training to senior leadership, stakeholders also urged us to undertake further initiatives in the space such as partnering with institutions to make STEM subjects more appealing to minorities, developing a set of tangible measurables to monitor progress and adopting a grassroots approach to diversifying our workforce by engaging with community champions / voices.

Finally, safeguarding the physical and mental health of employees was viewed as one of the highest priorities. Stakeholders welcomed our efforts to support employee mental health (such as mental health campaigns) and pointed to a range of additional initiatives that could complement existing activities. Suggestions notably include enabling employees to shape initiatives, appointing health and wellbeing advocates and partnering with charities.

How feedback shaped our plans

Based on stakeholder feedback we added a number of additional actions to our commitments such as environmental and sustainability upskilling for our workforce and working with our stakeholders to extend the reach of our recruitment and improve our diversity.

On the subject of diversity and inclusion, we will be continuing to work with other DNOs to establish and report consistent metrics and have committed to improving our data to support this reporting.

On mental health and wellbeing, based on feedback on the importance of this area the commitment was set to meet the same standard of numbers of mental health first aiders as we have physical first aiders. We are also working with other DNOs to share best practice, progress made and actions being taken. We also amended the wording to reflect the company wide communication programme for mental health and wellbeing and to better explain our target for mental health first aiders.

Finally, based on stakeholder feedback we have developed an additional commitment focused on the cultural change required for achieving Net Zero. The commitment ensures that our workforce will be supported with respect to the cultural change required to successfully achieve the business' digitalisation and sustainability aims.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- We have successfully recruited over 600 trainees and grown our range of programmes from 5 to 15 to give a diverse range of disciplines and entry points.
- We have re-balanced our age profile and increased our gender diversity in STEM and senior management roles.
- We established a mental health & well-being steering group and trained 2% of our workforce as volunteer mental health first aiders.
- We have completed an average of 260 hours of training per employee during RIIO-ED1 to date.

How we'll continue to deliver in RIIO-ED2:

- We will underpin the delivery of our business plan with a diverse, sustainable and resilient workforce. Our commitments sign-post the cornerstones of our plan and build on our track record of delivery in RIIO-ED1.
- Our commitments are supported by individual action plans in the key areas of skills, attraction & recruitment, inclusion & diversity, health & well-being and digital & sustainable culture change.
- We will track our progress through metrics embedded in our commitments and in our plans.

By delivering our workforce plans using just transition principles, we will recruit more than 1,100 new employees and upskill and develop our existing workforce, supporting our people and providing high quality jobs in our communities.

1,100 new employees recruited incl. more than 400 new roles.

Our track record in RIIO-ED1

At the start of RIIO-ED1, we set out to maintain a skilled and effective workforce through a strategy that incorporated growing our own talent through trainee programmes to replace high levels of staff retirement. Our goal while doing this was to re-balance our age profile to reduce the median age and address the peak of staff nearing retirement, without creating a new peak that would become a problem in 30-40 years time.

This strategy was supported by an approach of recruiting locally and training centrally and a drive to broaden the appeal of our sector to attract new entrants. We also recognised that we needed to prepare for the changing skills need that would take place as we neared the end of RIIO-ED1 and moved into RIIO-ED2.

OUR WORKFORCE RESOURCING

Through our workforce planning during RIIO-ED1 to date we have successfully recruited over 600 trainees into our range of workforce renewal programmes, forming our core pipeline of highly skilled engineering, technical staff and achieving our goal of re-balancing our age profile, as can be seen in the graph below.

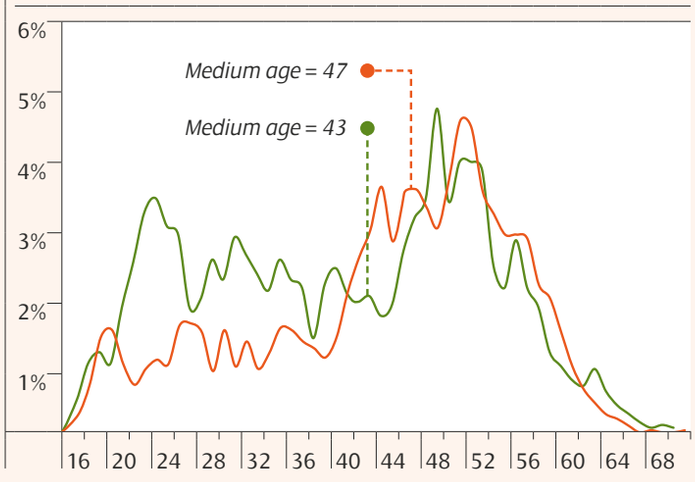
95% of our craft roles and 75% of our core engineering and technical roles were filled through our trainee pipeline. This was in the context of unprecedented levels of retirement amongst staff, brought forward by changes in pension legislation.

Our workforce renewal programmes are supported by a strong STEM and career guidance programme in schools and colleges. This feeds into our pre-employment programmes like our pre-apprenticeship, Year in Industry, vocational placements and scholarships.

We have also made good progress on our journey to build and sustain a digital-ready workforce through our programmes. We have undertaken a full review of our craft programmes, incorporating new training in data and digital skills, to reflect the digital advances we have made in our field technology used by our craftspeople. In addition to this we have maintained a multi-skilling approach during the final stages of training.

In line with our long term strategy on future skills, we have broadened our range of trainee programmes, introducing 10 new programmes during RIIO-ED1. These have included a range of digital disciplines and we have recruited our first cyber security and data science graduates and graduate apprentices.

Employee age profiles



RIIO-ED1: *39.5% over 50* **2021:** *34.4% over 50*

WE PROMOTE A RESULTS-ORIENTED CULTURE

At all levels there has been a clear link between the achievement of the business plan, individual contribution, annual salary increase and annual bonus. This is managed through objectives and review points and tracked through our performance management process in our HR systems.

In addition, we have a Share Incentive Plan which all of our employees are able to participate in. Share plans help employees feel part of the wider Iberdrola Group and highlight their responsibility to contribute to business success.

DEVELOPING FUTURE LEADERS

Leadership plays a critical role in shaping and delivering our future. During RIIO-ED1 we introduced our leadership journey map, from Leadership Fundamentals for new leaders, Advanced Leadership to support existing leaders to their full potential and Leadership Mastery for new senior leaders.

We launched SP Mentor Connect and a Connected Leaders Community in 2020 to drive personal development, support, innovation and implementation of best practice. Our high potential staff completed a leadership potential self-assessment in 2020 and now have personal development plans to nurture them as future leaders.

WORKFORCE HEALTH AND WELLBEING

Our ongoing objective through RIIO-ED1 into RIIO-ED2 is to promote and support the highest degree of health and wellbeing at work. We delivered this through RIIO-ED1 with structured plans informed through our staff engagement.

We have employee surveys which allow us to gather data from all or a cross section of our workforce. These can inform how we perform in areas like workforce engagement or allow us to respond to emerging or topical issues like COVID-19 or the risk of fatigue. During RIIO-ED1 they provided valuable insights into how our workforce were coping during COVID-19 lockdown, providing us with feedback on employee mental health and wellbeing, line manager support and communications. This feedback enabled us to provide targeted actions and is shaping our approach for our future hybrid working model.

During RIIO-ED1 in response to feedback from our workforce we established a mental health and well-being steering group. The steering group drives the promotion of good mental health and oversees initiatives and action plans to support it. We have provided access to material and resources on mental health, a confidential employee helpline and recruited and trained 2% of our workforce as volunteer mental health first aiders.

During RIIO-ED1 we delivered our Occupational Health plan and implemented an online Occupational Health Management process, developing a formal auditing strategy and occupational hygiene assessment and biomechanical monitoring.

UPSKILLING OUR EMPLOYEES

To date in RIIO-ED1, we have completed an average of 260 hours of training per employee covering operational, technical and development training.

In 2020 we introduced our first digital mentoring programme across Iberdrola and ScottishPower with nine participants from SPEN.

We have begun a substantial environmental training programme to ensure that all staff have the relevant knowledge to be able to competently manage environmental issues that they encounter in their daily work.

DIVERSITY AND INCLUSION

During RIIO-ED1 our goal was to embed a more inclusive culture. We developed our Strategy and action plan with a clear focus on three areas: Engagement & awareness; Inclusive Leadership; Policies & Approaches.

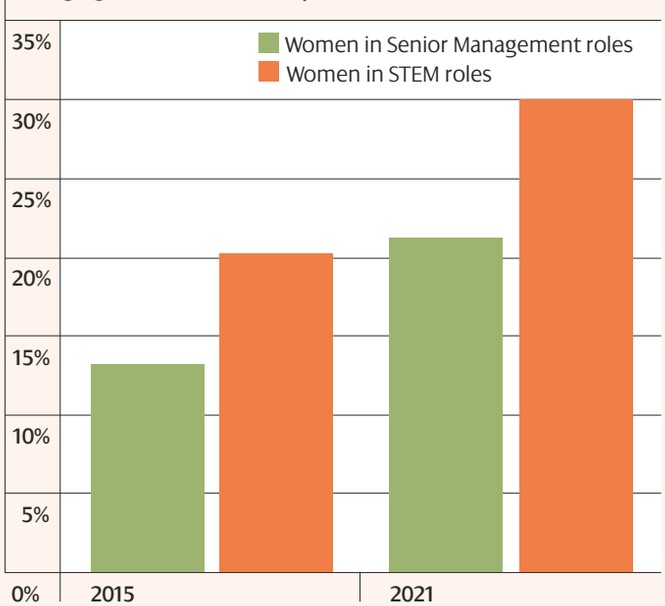
We launched Inclusion at ScottishPower – which includes a dedicated section of our careers site detailing our commitment to building an inclusive culture, employee-led networks, maternity coaching and have introduced our first Trans Policy.

We introduced mandatory unconscious bias training for all our recruiting managers and external auditing of our selection process, 16 of our recruiting managers have taken part in in-depth Inclusive Recruitment Workshops.

We have just delivered the fourth year of our award-winning Breaking Barriers partnership with commitment for a fifth year to support young people with learning disabilities to access university courses and supported work placements. We are also about to embark on our fifth year of our STEM Returners programme to help people returning to work after a lengthy career break, through a structured pathway. We are really pleased with the success of our social and pre-employment programmes and further details and case studies can be found in our ***Annex 4C.4.***

Our industry has historically struggled to attract women. We have worked hard during RIIO-ED1 through our action plan to increase the number of women in key STEM and senior management roles, and have increased this from 20% to 30% for STEM roles and from 13% to 21% women in senior management roles.

Changing our Gender Diversity



***Employee-led networks** that support our business wide diversity and inclusion*

VIBE Voice of Inclusion & Balanced Ethnicity
CNW Connected Women
iCAN Climate Action Network
IN-FUSE ScottishPower's LGBT+ Network
FUTURE CONNECTIONS
Space supporting parent and carer experiences

Our Strategy in RIIO-ED2

As we now prepare for RIIO-ED2, we have built on our previous track record and updated our strategy to reflect the challenges and opportunities we face in a period of unprecedented change in our journey to Net Zero.

Our strategic principles:

- We will use just transition principles to develop and grow our workforce for the future.
- Grow our own talent to be the modern workforce we need for our delivery plans.
- Inclusive recruitment from the communities we serve to build a diverse workforce.
- Attract new entrants into our industry through a wider range of channels and collaborative working.
- Safeguard the health and wellbeing of our people and support their needs as an inclusive employer.

We have used our updated Strategic Principles and our Stakeholder and Customer feedback to shape and inform our plans and commitments for RIIO-ED2. We have developed five Commitments in the areas of talent pipeline, skills, wellbeing, diversity and inclusion and our new sustainable and digital culture. These Commitments are underpinned by specific supporting actions and clear action plans.

HOW WE WILL MEASURE OUR PROGRESS

All of our action plans have appropriate metrics to measure our progress and delivery. We have adopted the common DNO metrics agreed through the cross DNO working group and added our own internal metrics to provide a comprehensive suite of measures for our plans.

Through EU skills, we are taking part in a cross industry pilot to measure workforce resilience in the areas of attraction, skills development and retention. We will continue to develop these metrics through EU skills to facilitate industry reporting and benchmarking. Through the ENA, we are also working to establish a Charter for Diversity, Equity and Inclusion.

As a result of the cross DNO working group we have committed to report annually on actions and progress in workforce satisfaction and Mental Health in the workplace and share best practice.

*Full details of our strategy, plans and past performance can be found in **Annex 4C.4.***

Our commitments for RIIO-ED2

RESOURCING

Our resourcing commitment

92. We will grow our own talent from the communities we serve through a blended approach of multiple inclusive trainee and up skilling programmes and direct recruitment, to achieve a safe, skilled workforce. We will do this on an annual basis throughout RIIO-ED2, by filling 90% of our roles for our field staff and 50% for our engineering and technical workforce using our trainee programmes.

To support this commitment, we will work with our skills and academic partners on their range and content of training programmes to enable place-based recruitment of our trainees. We will also employ just transition principles through our range of pre-employment and social programmes to support disadvantaged groups into the employment pipeline.

Our resourcing and skills review

In preparing for RIIO-ED2 we have completed a strategic skills and resources review to establish the future needs for our workforce and supply chain. We must ensure our workforce has the right number of people, with the right skills, in the right location and at the right cost.

Through a robust process of deliverability assessment, we forecasted our workforce needs to deliver our plans. Together with our retirement and attrition forecast, we identified a significant need to bring in new resources in traditional and new roles, showing us where and when to invest in staff development and recruitment. A summary of our additional resource requirements is given in the tables below. *Chapter 6: Delivering our RIIO-ED2 Business Plan* and *Annex 6.1* provide detail on our deliverability assessment.

SPEN Workforce (FTE)	Current	RIIO-ED2 Incremental	TOTAL
Management	41	0	41
Engineering & Technical	879	95	974
Field Based	964	92	1,056
Business & Administration	628	156	784
Specialist	90	41	131
Baseline Total	**2,602**	**384**	**2,986**
ODIs*		62	62
Total	**2,602**	**446**	**3,048**

Full time equivalent (FTE) excluding trainees
**Output delivery incentives (ODI) subject to receiving OFGEM approval for funding*

Promoting a results oriented culture

We will continue to promote a results-oriented culture at all levels so there is a clear link between the achievement of the business plan, individual contribution, annual salary increase and annual bonus. Our Directors have objectives clearly linked to delivery of the business plan covering a range of areas including health and safety, sustainability and customer service.

Employees participate in our performance management process, the outputs of which are related to pay and the annual incentive plan. Entitlement to a bonus is also linked to achievement of objectives set at a business and personal level. The company reports annually to Ofgem in a statement in the linkages between Directors pay and standards of performance in accordance with Section 4C of the Electricity Act 1989.

Our resourcing plans

To support our planned recruitment we have a detailed Attraction and Recruitment Plan, which you can read about in our *Annex 4C.4*

It is vital that we engage and attract new entrants in both the early careers entrants and for experienced workers. Therefore, we are creating inclusive social and pre-employment programmes and supporting STEM activities in schools and colleges, extending the reach of our recruitment and ensuring our approach makes us attractive to all.

To ensure that our reward offer remains relevant in the market, we conduct a benchmarking exercise annually, to consider the competitiveness of our total reward offer, subject to affordability, taking into consideration factors such as our experience in recruitment and retention, new skills requirements and skills availability in the market.

FUTURE SKILLS

We have analysed which future skills will be needed and changes to existing roles. We have identified critical capabilities and talent gaps, and created an action plan to close these gaps. Further detail can be found in *Annex 4C.4*

We identified five key future skills areas:

1. Data and digitalisation
2. Sustainability (environmental, social and economic)
3. Customer and commercial services
4. Whole system co-ordination (engineering)
5. Telecoms and networking

Our skills commitment

93. We will create opportunities for our staff to develop new skills through development, upskilling and training plans aligned to our digital transition and journey to Net Zero to achieve a workforce who are motivated and confident to embrace the challenges we face. We will do this through annual internally recruited trainee programmes and annual upskilling plans for our people.

To support this commitment, we will focus our efforts in three areas:

1. Maintaining core activities and current skills through our established upskilling, refresher and trainee programmes.
2. Build our leadership capabilities to support agile change management and lead the digital transformation through personal leadership development plans, in line with our leadership journey map.
3. Develop the Future Skills in the five key future skills areas, responding to the demand for technical expertise and skills.

Becoming a digital business requires leadership, solutions and targeted training. We'll measure digital skills across our business and deliver appropriate programmes to upskill staff and recruit new skills, by expanding our programmes in disciplines such as data science and cyber security. We will supplement this with external recruitment of specialist skills. We will support our people to make sure that nobody is left behind in our digital transformation, for example through our digital mentoring programme to share skills and provide support.

As part of the specification and design of any new system we will integrate training to ensure the successful upskilling of staff and adoption and utilisation of the system. Further detail on our strategy for digitalisation can be found in *Annex 4C.1*

We'll create opportunities for our staff to develop new skills in their current roles and in new areas. We'll use technology to improve training such as augmented reality and gamification. Technologies like knowledge-based AI assistants and adopting new digital ways of working will lead to gains in productivity.

DIVERSITY AND INCLUSION

Our diversity and inclusion commitment

94. We will continue our relentless drive to achieve a truly inclusive and diverse workforce through our improved policies, recruitment processes and by supporting and training our people leaders in D&I Legal training, inclusive recruitment and inclusive leadership by 2025. We will aspire to achieve D&I data collection rates of 60% or more for our existing workforce to support the measurement of our diversity improvements by 2025.

Our strategy for embedding a more inclusive culture is focused on three areas:

1. **Engagement and awareness** – telling the diversity and inclusion story through the eyes of our employees and customers to inspire an inclusive mindset.
2. **Inclusive leadership** – delivering tools and programmes that support leaders on self-awareness and understanding their role in building an inclusive culture.
3. **Policies and approaches** – formalising policies and approaches that build a more inclusive culture.

ScottishPower is committed to human and labour rights and to eliminating Modern Slavery that could in anyway be connected to our business. In accordance with the Modern Slavery Act 2015, we publish annually our own Modern Slavery Statement.

We will continue to enhance our inclusion policies including the introduction and communication of enhanced maternity and adoption and paternity leave by the start of RIIO-ED2 to improve candidate attraction and employee experience. We will also offer maternity and adoption leave returners a three month phase back at 100% pay and 80% duties as a day one entitlement.

We will enhance our data capture and reporting and by the end of 2024 we will transparently report on our applicants, new hires, internal promotions and attrition by diversity characteristic. By the end of 2025 we'll aspire to achieve D&I data collection rates of 60% or more for our existing workforce based on best practice and self-reporting. This will enable us to track demographic trends beyond age and gender and transparently report on pay gap data.

We will conduct an external audit by 2024 of our graduate and apprentice recruitment process with a view to maximising the diversity of applicants and new hires. By the end of 2024 we will also have inclusive recruitment practices applied to all our internal and external vacancies using techniques such as gender neutral adverts, balanced shortlisting and balanced interviewing. We will support these internal changes by working with our communities to extend the reach of our recruitment advertising.

From 2023 all new training material will use gender neutral language and all in house trainers will have received training on the use of gender neutral language.

We will support these changes with training and development for our people leaders: All of our people leaders will have completed D&I Legal training (33% current) by the end of 2024; all of our recruiting managers will have our attended inclusive recruitment workshop programme and all of our senior and high potential leaders will have completed inclusive leadership training by the end of 2025.

HEALTH AND WELLBEING

Our wellbeing commitment

95. We will continue our long-standing commitment to safeguard the physical and mental health and wellbeing of our people to achieve a resilient, engaged workforce. We will engage with staff and implement actions plans from their feedback through our LOOP survey every two years and specific topic PULSE surveys and we will increase the number of our mental health first aiders to a 1:25 standard by 2024.

To support this commitment, we will focus our efforts in three areas:

1. **Training** – increasing the number of mental health first aiders.
2. **Education** – educating staff in workplace hygiene hazards and control measures. Going beyond statutory requirements, we will promote fitness and health as a lifestyle choice.
3. **Monitoring and Surveillance** – carry out hygiene monitoring of hazards in the workplace and delivery of all our statutory health surveillance requirements through an annual programme of delivery that is measured and monitored.

The physical wellbeing of our employees is supported by our occupational health and hygiene plans with a focus on continuous improvement through our annual health and hygiene improvement plan.

We will continue to develop the strong support for the mental health of our workforce through our mental health steering group and will increase the number of our mental health first aiders to meet the established standard we have for first aiders. We will report on an annual basis our actions and progress we are making to improve mental health wellbeing in the workplace.

BUILD A NET ZERO CULTURE

Our Net Zero culture commitment

96. We will embed a digital and sustainable culture within our workforce to support our journey to Net Zero. We will do this through ensuring our current and future workforce benefits from new and enhanced capabilities, providing them with necessary skills for the future through RIIO-ED2.

We will deliver a digital cultural change programme during the period of RIIO-ED2 ensuring our people recognise the importance of data and digital skills.

We will expand our graduate programme and recruitment policies to focus on digital talent.

We will use digital technology such as knowledge-based AI assistants for our people and support our people in this transition by equipping them with the right digital skills.

We will ensure our sustainability culture is led by senior management and we will embed environmental responsibilities within line management roles and responsibilities to ensure environmental responsibilities and sustainability is embedded within our day to day business activities.

Supporting documents for this chapter

Annex 4C.1: *IT and Digitalisation Strategy*

Annex 4C.2: *Data Strategy*

Annex 4C.5: *Cyber Resilience IT Plan*

Some highlights of our strategy

Our IT, Digitalisation and Data plans underpin our wider RIIO-ED2 plan and commitments. We will build on our RIIO-ED1 investments to digitally transform our organisation, create efficiencies and enable us to respond to the challenges of the energy transition. This decade is crucial in meeting the UK's Net Zero targets, and our investment in digital and data solutions represents a significant contribution towards that. *Pg 128*

CHAPTER 4 / PART C

Embed digitalisation and unlock the value of data

Digital technology and data are at the heart of our plans to modernise the energy system and respond to our customers' and stakeholders' needs.

We recognise that we are at a pivotal point in the history of our energy system. Readying our network and our operation to meet our customers' decarbonisation ambitions requires a complex set of interrelated activities and new collaborations. Key to this is the data and digital ecosystem that will enable coordinated planning and delivery of these whole system solutions.

Our data and digitalisation strategies set out our approach to transforming our organisation into a digitalised energy network operator capable of delivering our wider RIIO-ED2 Business Plan.

Our plans enable us to work smarter and improve the services we provide to our customers and stakeholders. By investing in digital solutions, we will achieve efficiencies and develop our capabilities to respond to challenges such as increases in distributed energy resources and the electrification of industrial demand, transport and heat. We will manage vast increases in the volume and frequency of data collected from technologies such as remote sensors, Internet of Things (IoT) devices, wearable technology and drones, and generate evidence bases and automated solutions that ensure optimised decision making.

We will deploy new solutions, organisational structures and working practices to support our transformation. We will continue to drive the collaborative adoption of Ofgem's Data Best Practice Guidance and open up our data to enable new business models and markets. We will bring in new skills that will enable us to maximise the value of data and create a culture where data is treated as an asset in its own right.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Our customers and stakeholders are at the heart of our data and digitalisation plans. We have tested our approach and proposals listed within this document and shaped them through engagement. We also recognise that continuous engagement will be critical to the successful transformation of our energy system throughout RIIO-ED2 and beyond.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our plans in this area:

Household:

89.8%

Commercial:

84.4%

Our stakeholders' priorities

Our stakeholders view data and digitalisation as areas of key importance as we transition towards the network of the future. For example, as we strive to meet the demand of increased electrification, they consider that digitalisation aimed at enabling flexibility should be prioritised over building new network capacity. In general, they consider that emerging technologies designed to extract insights out of enhanced data can be highly beneficial to us and the energy system at large.

Stakeholders clearly supported the wider collection and sharing of data. They believed that gathering data from a wider range of sources, standardising data among DNOs, and making it available in a wide range of accessible formats, is critical.

We also sought our customers' views on gathering and using their data. Most supported and trusted us with handling their data and were supportive of this, particularly if it led to improved management of the network that would ultimately result in an enhanced service for them. Nonetheless, some customers did raise the issues of data privacy and security, citing that it was important for them to know that their data was safe and only used for intended purposes they had agreed to. To address these security issues, our expert stakeholders suggested the importance of mitigations such as data control and effective data governance.

How feedback shaped our plans

In reacting to the importance of data and digitalisation in the transition to the future energy system, we have introduced commitments that will see us enhance our approach to the capture, analysis and sharing of data. Specifically, in response to our stakeholders' feedback, we have created a data strategy which will enable us to manage an increased volume, velocity and breadth of data.

Further developing this commitment, we will build a digital representation of our energy system that will allow us to gather key insights into how best we tackle key challenges such as forecasting and modelling the impact of distributed energy resources or the uptake of low carbon technologies.

Reflecting the great importance of data privacy and security to both customers and stakeholders, we have committed ensuring our cyber resilience by operating a risk based approach to the management of vulnerabilities, continually reviewing and mitigating threats and coordinating our IT and OT cyber-security activities to protect our electrical networks and the sensitive data that we hold.

We will develop an ongoing programme of engagement activities to ensure our actions and plans continue to be aligned with our stakeholders' priorities. See ***Chapter 8*** for a summary of our future engagement strategy.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- We successfully implemented our Network Asset Management System.
- We have established our customer service platform for the future.
- We have introduced flexibility products to manage constraints.
- We have established our internal capabilities to support our digital transformation.
- We have developed our Energy Data Hub providing the basis for a data sharing platform for external stakeholders.

How we'll continue to deliver in RIIO-ED2:

Our investment in RIIO-ED1 has established the core software platforms and capabilities that form the basis of our RIIO-ED2 delivery. We have identified the additional capacity and skillsets, and are scaling up our arrangements with external suppliers as we approach 2023, ensuring that we have the resources to deliver our plan. We have begun our organisational transformation to put in place the structures and processes to manage the transition towards a data driven, digitalised organisation.

This investment will enable:

A digitalised organisation capable of delivering a just transition for our customers and stakeholders.

The context for energy system digitalisation

Our RIIO-ED2 Data and Digitalisation Strategies underpin our wider RIIO-ED2 plan and present our approach to transforming our organisation, preparing us to support the energy transition over the next decades. Our plans have been informed through engagement with our internal staff, external stakeholders and customers. They align with wider industry initiatives and the activities of the Energy Networks Association. And they describe our collaborative approach to supporting the development of a digital ecosystem for energy that will underpin the delivery of the UK's Net Zero targets.

Digitalisation and data is fundamental to the delivery of our Whole System Strategy. The frictionless exchange of energy data will enable innovative, collaborative and whole system based approaches to the decarbonisation of heat, transport and industrial demand.

What does it mean to us?

Digitalisation and the better use of data present a significant opportunity for us to drive modernisation and decarbonisation of our energy system. By collecting and analysing data and using technologies like digital twins, we will build a far more detailed understanding of our network's capacity to support the connection of low carbon technologies and facilitate decarbonisation of transport and heat through the use of flexibility services. We will have full visibility of our customers' decarbonisation journeys to ensure we enable a just transition where no-one is left behind. New digital technology and data will help us to make our own operations more efficient, which in turn will save our customers money on their bills. Furthermore, we believe that building a digital and sustainable business will help to drive better engagement and opportunities for our people.

Our Digitalisation Strategy and Action Plan (DSAP) is on our website and shows our current plan for RIIO-ED1 and RIIO-T2. We will update our DSAP to incorporate our RIIO-ED2 Data and Digitalisation plans and maintain this throughout RIIO-ED2 and beyond. *spenergynetworks.co.uk/digitalisation*

OUR DIGITALISATION AND DATA PLANS

Our plans for a digital transformation of our organisation and to maximise the value of data are detailed in our ***Annexes 4C.1 IT and Digitalisation Strategy*** and ***4C.2 Data Strategy***.

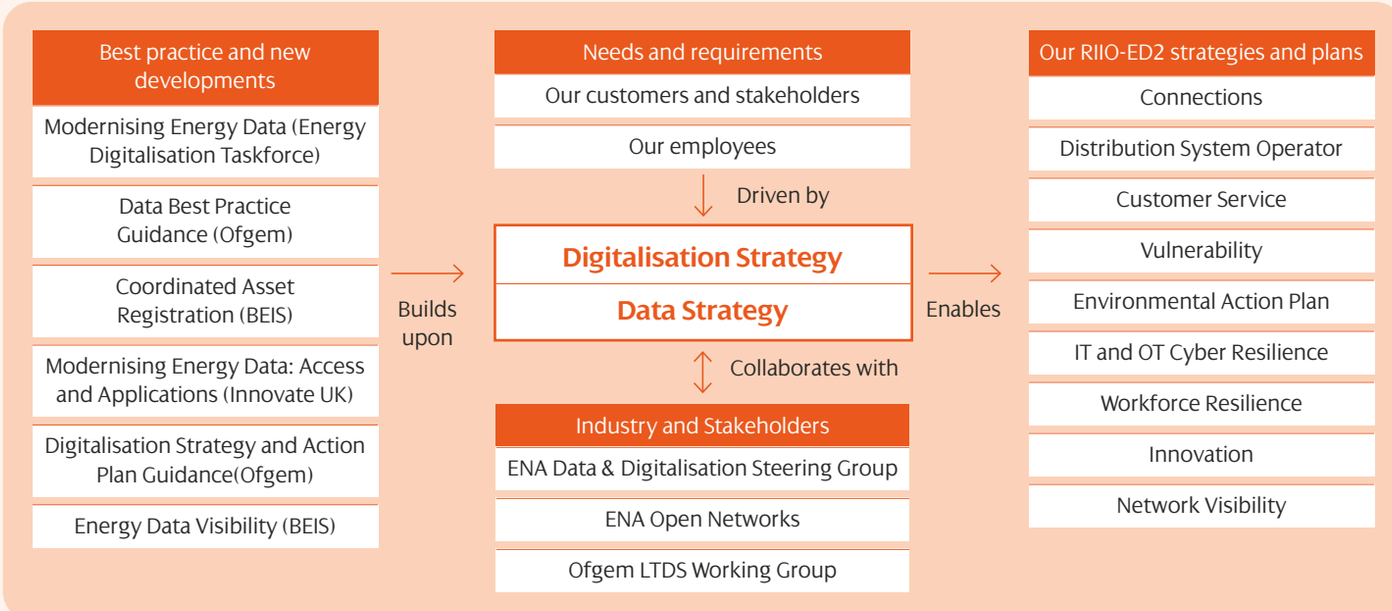
Our IT and Digitalisation Strategy describes:

- The business as usual activities necessary to maintain and evolve our existing non-operational IT and telecommunications estate. This includes hardware and software maintenance, support and upgrades, and changes required to 'run the business'. Examples of the latter are digital solutions to support the forecasted increase in connection requests and digital customer communication channels.
- Our proposals to transform our organisation digitally. These are the investments over and above that required to run our business and include examples such as the use of Artificial Intelligence, wearable technology and image analytics.

Our readiness and capability to transform

Our RIIO-ED1 programme is well underway and provides a foundation for our RIIO-ED2 plan. We have:

- Invested in our asset management systems. Our Network Asset Management System is the primary suite of business systems used in the day-to-day management of our assets. Our Condition Based Risk Management system drives our investment planning. Our implementation of Building Information Modelling for our large projects is underway. And we are piloting the use of technologies such as aerial LiDAR and drones for asset inspections.
- Developed a customer service platform for the future. Our online customer connections portal is live and provides the basis for the development of enhanced customer and stakeholder engagement platforms.
- Facilitated the development of flexibility products. We are operating flexibility products and trialling new and innovative ways to facilitate the ongoing development of flexibility markets.
- Piloted approaches to facilitate decarbonisation. We are developing pilot projects to understand how we can best support our customers in their decarbonisation journeys.
- Established our internal capabilities to support our digital transformation. We have invested in the capabilities we need for our digitalisation ambitions and are using these to deliver agile solutions that capture benefits early and incrementally.



Digitalisation and data

Our Digitalisation Strategy provides the solutions that will deliver our Data Strategy. Our Data Strategy establishes the framework to ensure that we carefully collect, manage, share and extract maximum value from data.

Together, these two strategies underpin the breadth of our RIIO-ED2 programme, providing the mechanisms to deliver our ambitions in alignment with the recommendations from the Energy Data Task Force's report on 'A Strategy for a Modern Digitalised Energy System'.

Based on our digital maturity assessment and our RIIO-ED2 Business Plan, we have developed an ambitious future vision to illustrate the role that digitalisation and data could play in improving services to our customers and stakeholders, and improving our business operations in RIIO-ED2 and beyond.

We have segregated our costs for our digitalisation activities to demonstrate our ambition over and above our 'business as usual' costs required to run the business. Further details can be found in our ***Annexes 4C.1 and 4C.2***

Our Cost Benefit Analysis for our data and digitalisation plans is in ***Annex 4A.23***

Area	Future digital vision for RIIO-ED2 and beyond	Benefits
Capital projects and asset management	• **Digital twin** used for network planning and 'what if' scenario modelling • **'In day' intelligence available** on project delivery status • **>75% of materials can be digitally tracked** through the supply chain	• **Avoided cost** of internal workforce increase • Further efficiency through scenario testing and optimised intervention planning
Field operations	• Dynamic scheduling of field work • Asset data capture simplified and **data quality improved** • Use of immersive digital methods for training (AR, VR) • **Image analytics** used to automate processing of inspection data collected by drones	• **Capability to manage significant increase** in connection requests expected in RIIO-ED2 • Enhanced capability to deliver increased volumes of work, particularly at Low Voltage
Network planning and control	• LV sensor **data used to predict outages and system stability issues** • **Reduced time** to locate and respond to faults • **AI used to monitor alarms and alerts** and automate interventions • **Operational digital twin** used for network management, training and 'what if' scenario planning	• Manage the expected 15% increase in peak demand • **Facilitate the connection** of up to**1.5 million** EVs by 2030 and up to **0.9 million** heat-pumps by 2030
Distribution system operations	• Network visibility and insights from wide-scale monitoring across our LV network • Near real time forecasting available, **using AI and machine learning** • Fully integrated flexibility platforms with **API based data exchange**	• Enable uptake and execution of flexibility services • Manage network constraints and **reduce costs** through active demand and generation management in **22 new Constraint Management Zones**
Customer and stakeholder management	• Self-service digital channels for connection requests • Faster responses to customer enquiries using AI • Improved support for vulnerable customers through new AI based services	• Responsive customer service that adapts to customers' circumstances • Choice of communication channels tailored to customers' specific needs and desires

Our approach to delivering digitalisation

We first published our Digitalisation Strategy in 2019 and updated it in 2020 and 2021, recognising the critical role that data and digitalisation will play in the decarbonisation of our energy system to meet the UK's increasingly ambitious Net Zero targets.

Our customers and stakeholders are at the centre of our digitalisation plans. We have tested our proposals and shaped them through engagement as part of our RIIO-ED2 Business Plan creation. And we recognise that ongoing engagement is critical for the successful digital transformation of our business. To ensure our investment in data and digitalisation delivers the outcomes our customers and stakeholders require, we have:

- proposed an agile delivery approach so that we can deliver outcomes early and incrementally.
- identified performance measures that will enable our progress to be tracked.
- launched a new digital platform for stakeholders to view and influence our activities.

OUR INVESTMENT PLAN

How we will deliver in RIIO-ED2

OPTIMISED ASSET AND NETWORK MANAGEMENT

Digital technology can significantly increase the productivity of our field operations and support better decision making when planning the work needed on our network, reducing costs for customers and lowering our carbon footprint.

What we will do:

- Development of digital twins to enable better decision making (a digital twin is virtual representation of a physical object or process that simulates relevant aspects of behaviour to enable forecasting, scenario modelling and optimisation).
- Deployment of advanced field technology such as wearables (i.e. smart technology that can be worn similar to a fitness tracker).
- Automation, fault location technology and predictive analytics to increase network resilience and accelerate our response to outages.
- Digitalise our inspection regime using aerial LiDAR and drone footage image processing technology, using the lessons we learn during our RIIO-ED1 pilot projects.
- Optimise and automate our processes for capital project delivery, enabling us to deliver a higher volume of work more efficiently.

Our strategy has six key building blocks underpinned by three enablers

Our digitalisation strategy facilitates the delivery of our RIIO-ED2 programme

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Using digital technologies to deliver enhanced customer service
Single view of the customer, digital channels, self-service solutions with intelligent support agents.

Optimised asset and network management
Autonomous operation, instrumentation, asset lifecycle management, digital twins, field-based solutions.

Developing options to manage peaks in Load
Active LV network, influencing behaviour beyond the meter, DSO, whole system.

Supporting the development of new business models and markets
Flexibility markets, development of an energy technology sector, driving focus on environmental initiatives.

Investing in the digital skills of our people
Embrace a digital culture, support workforce transition.

Improving mastery of our data
Data governance, data sharing, integrated reporting & analytics, artificial intelligence.

↑

Robustly governed
We will apply governance procedures to our digitalisation activities, ensuring we consider and mitigate risks and deliver maximum benefit to our stakeholders and customers. We will ensure deliverability of our plans from initiation to established operation, take agile approaches to realising benefits early and adopt a culture of continuous improvement through measurable indicators of success. We will seek opportunities to collaborate with others and drive for efficiency in everything we do.

Stakeholder driven
We will be transparent in delivering our activities, sharing updates and inviting and reacting to feedback received.

Cyber secure
We will ensure that we understand the risks and threats to our systems, data and information and protect these with proportionate measures.

SUPPORTING THE DEVELOPMENT OF NEW BUSINESS MODELS AND MARKETS

Reaching Net Zero will require alternatives to traditional working practices such as network reinforcement. By adopting an open, collaborative approach across the energy ecosystem we will harness innovation to lower costs for customers, accelerate the low carbon transition and take steps on our journey towards becoming a DSO.

What we will do:

- Development of flexibility markets and solutions.
- Active participation in cross industry initiatives to identify and develop whole system solutions.
- Building partnerships with other participants in the ecosystem such as academia, third party organisations and innovators.
- Sharing operational and market data with our customers, stakeholders and market participants through an online data portal.

Cyber Security

We recognise the value of data as an asset, but also the resultant risks that this can pose from an information and cyber-security perspective. We have developed a comprehensive Cyber Resilience IT Plan to support the delivery of our data and digitalisation strategies, ensuring that we apply appropriate and proportionate measures to the management of our electronic estate.

In developing our Cyber Resilience IT Plan we have considered the RIIO-2 Cyber Resilience Guidelines and engaged with Ofgem.

In RIIO-ED2 we are committing to:

97. We will operate a risk-based approach to the management of vulnerabilities and threats to the cyber-security and resilience of our IT and OT estate and data. We will continually assess our current position, review the threat landscape and create action plans to apply proportionate technical and organisational mitigation steps. This will be a stepped increase from RIIO-ED1 as cyber threats evolve.

DEVELOPING OPTIONS TO MANAGE PEAKS IN LOAD

The rise of distributed energy resources, and the electrification of transport and heat will result in a significant increase of load on our low voltage network. We need to manage this load increase using a combination of traditional engineering and new digital solutions to reduce costs for customers and enable the low carbon transition.

What we will do:

- Deployment of advanced digital monitoring and control equipment on our low voltage network including 14,000 monitors across 50% of our local substations.
- Development of 10 constraint management zones in SPD and 12 in SPM enabled by data and digital solutions.
- New technology to enable new choices for our customers 'behind the meter' to support the low carbon transition enabling us to deliver a higher volume of work more efficiently.

USING DIGITAL TECHNOLOGIES TO DELIVER ENHANCED CUSTOMER SERVICE

Data can improve our decision making, operations and customer services. Sharing data with others will lead to better whole system solutions and innovative ways of working.

What we will do:

- We will build a single view of our customers and our interactions with them across different services.
- Open new digital channels and develop self-service options for key customer journeys to give our customers more choice.
- Implement a customer data portal, customer data line and build on our strong governance of our vulnerable customer data.
- Develop a suite of digital tools capable of supporting the anticipated significant increase in the volume of connection enquiries.
- Supplement our workforce with virtual support agents, taking care to ensure that all of our new services and channels are tailored for our vulnerable customer base.
- Our digital customer service will be fully integrated with non-digital solutions, ensuring that the digitally disengaged are not left behind.
- We will use technology such as machine learning, artificial intelligence, virtual / augmented reality, robotic process automation, drones.

In RIIO-ED2 we are committing to:

98. We will create a new Digital environment to meet our customers', stakeholders' and business' future plans and strategies. We will build a Digital representation of our energy system and operation. Metrics will be published in line with our Digitalisation Strategy and Action Plan.

99. We will track, measure and publish our progress via the Digitalisation Strategy and Action Plan (DSAP). The Digitalisation Strategy will be refreshed and published at least every 2 years, and the Action Plan at least every 6-months.

IMPROVING MASTERY OF OUR DATA

Data can improve our decision making, operations and customer services. Sharing data with others will lead to better whole system solutions and innovative ways of working.

What we will do:

- We will introduce enhanced data governance across each of our business areas.
- Deploy fully integrated reporting and analytics capabilities using a new big data platform.
- Utilise enhanced data capture to maximise the value of our digital twins.
- Implement solutions to comply with the principles from the Data Best Practice Guidance, enabling open data sharing.

Maximising the value of data

Our vision is to put data at the heart of our operation, creating a solid and insightful base for our decision-making, operations and performance improvement as we deliver our RIIO-ED2 ambitions.

RIIO-ED2 will see a dramatic increase in the volume, velocity and breadth of data required to operate a modern digitalised energy system. Good quality, reliable data will enable us to respond to the challenges of Net Zero, facilitate the connection of high volumes of low carbon technologies, and integrate solutions across the wider energy system. Our Data Strategy provides the framework to allow us to maximise the value of data throughout our organisation and the wider energy system.

Our Data Strategy is customer and stakeholder led and includes our approach to implementing the Data Best Practice Guidance (DBPG) including how we will open up access to the energy system data we hold. Our strategy describes how we will understand and respond to the data needs of our customers and stakeholders whilst continuing to protect and secure the information assets appropriately.

INTELLIGENT DATA CAPTURE

Automating data capture will improve data quality by improving accuracy, frequency, and completeness. Using technology to support enhanced data capture will enable our employees to focus on more complex activities, and result in higher quality data captured at lower cost.

What we will do:

- We will deploy technologies such as sensors, IoT devices, drones, GPS-enabled devices, LiDAR scanners, wearable technology, smart tags, smart meters, social media analytics and voice recognition.
- We will use edge computing (processing data closer to source, reducing information lag) to process high volumes of data generated by these technologies, enable validation at the point of capture and facilitate real-time analysis.
- We will provide innovative mechanisms to support manual data capture such as context-sensitive data entry and photo capture, voice commands, autofill and scanning. Our people will find it easy to record detailed data on their work – increasing our efficiency and productivity for the benefit of our customers.
- Data from all our business activities will be fed into our core systems of record, ensuring that we have high quality, timely, consistent, integrated, relevant, complete, and accurate data.

Our data strategy has three key building blocks underpinned by three enablers

Our data strategy enables us to maximise the value of data

↑

Digital twins and decisioning
Develop a data ecosystem for representing, understanding, simulating, forecasting and autonomous decision making

Intelligent data capture
Enabling effective data capture (internal and external) covering a variety of data types and domains including the use of edge computing for near real-time analysis

Reporting and analytics
Trustworthy, descriptive, self-service reporting and analytics solutions which support data driven business decision making.

↑

Data as an asset and service
Quality data is accessible at the point of need enabling new business models and propositions to flourish; with effective data interoperability including high volume, repeatable requests as a fundamental part of our high functioning energy ecosystem. Full compliance with the data best practice requirements and the implementation of a "presumed open" approach to energy data.

People and culture
People are able to operate effectively in a data driven business, critical data skills are available at the right level to run and change the business.

Data governance and risk
Data principles and practices underpin a high performing energy business of the future, with data at its core, and robust risk management capabilities to protect against the existing and emerging challenges of operating a digitised energy system at scale.

DIGITAL TWINS AND DECISIONING

Reaching Net Zero will require alternatives to traditional working practices such as network reinforcement. By adopting an open, collaborative approach across the ecosystem we will harness innovation to lower costs for customers, accelerate the low carbon transition and take steps on our journey towards becoming a DSO.

What we will do:

- We have already started work on our 'Smart Data Integration Fabric' project to build a trusted, multi-purpose and reusable digital master model of our network and develop new approaches for fault location and constraint identification.
- We have also developed our platform based on our integrated network model which we will develop further, complemented by additional real time datasets.
- We will continue to develop these platforms and identify new pilot use cases to iterate our digital twin capability, working with partners where necessary.

In RIIO-ED2 we are committing to:

100. We will treat data as an asset and make data more accessible for more people (internally and externally) so that we can deliver more value for our customers and stakeholders. We will make our data presumed open by applying the principles from Ofgem's Data Best Practice Guidance.

We will create a data strategy which enables us to manage an increased volume, velocity and breadth of data, supports the move towards active management of the LV Network, facilitates the creation and operation of new models and markets, drives maximum value from the data we master in combination with new external datasets, and enables a collaborative approach to energy data sharing with external parties.

In order to achieve this we will look at new technology to capture and analyse the data, this will include IoT, edge computing, mobility solutions, machine learning, AI, big data platforms and data analytics tools. We will collaborate with Ofgem, the ENA and other external organisations through the sharing and exchange of data, proactively evolving our data strategy in line with the requirements of external stakeholders.

DATA AS AN ASSET AND SERVICE

We recognise the value of data as an asset in the delivery of our RIIO-ED2 programme, providing the mechanisms for us to forecast outcomes, establish targets, monitor progress and respond to evolving challenges. This approach will also enable us to ensure our plans are deliverable see ***Chapter 6***

What we will do:

- Our business chairs the ENA's Data and Digitalisation Steering Group and we will continue to demonstrate leadership in our approach to implementing the DBPG.
- We will enhance sharing of data, supporting our customers and stakeholders on their path to Net Zero. Our Energy Data Hub provides a solid foundation for the development and implementation of digital solutions that will deliver on our commitment to achieve compliance with the DBPG principles in RIIO-ED2.
- We will continually assess our use of data throughout our organisation and processes to ensure we are maximising the value derived from it.

REPORTING AND ANALYTICS

To achieve our data vision, we will create an integrated reporting and analytics solution. This will enable us to generate insights across a range of data domains covering all aspects of our operations.

What we will do:

- We will enhance our capabilities to analyse data and create insight that will drive efficiency in our business.
- We will deploy the reporting and analytical tools that will enable data to be integrated and served to our workforce using visualisations appropriate to their tasks. Data will become the evidence base upon which all our decisions are taken, enabling us to optimise our efficiency, measure our progress and monitor our delivery.
- We will improve our customer reporting capability to enable us to provide better levels of customer service, including for vulnerable customers and the digitally disengaged.

DATA GOVERNANCE AND RISK

We have many data domains across our business. Some, like data about our assets, are well established and have effective governance processes. Others are evolving, such as data about the operation of the low voltage network and environmental metrics, and these also need sufficient risk controls in place.

What we will do:

- We will implement policies to establish discipline around the management of data during its lifecycle and across our operations.
- We will ensure we have the appropriate mechanisms to manage data and information security, privacy, quality, retention and availability, particularly in the context of opening up access to energy data.
- We will develop enhanced approaches for continuous improvement of data, including monitoring, measuring and data quality interventions.
- Our governance approach will include oversight of our implementation of the DBPG. In particular, we will establish our data triage process to ensure that risks associated with data sharing are carefully considered and mitigated. We will ensure that our customers and stakeholders are fully engaged in our open data implementation. Our digital customer service will be fully integrated with non-digital solutions, ensuring that the digitally disengaged are not left behind.

Data best practice

We have mapped our Data Strategy to the DBPG which we recognise will enable the full benefits of energy data to be unlocked for consumers. Whilst we have pockets of good data management in our organisation (notably around the management of asset related data), we recognise that we have work to do to achieve full compliance with the DBPG principles and have created our plan to do this during RIIO-2. Our assessment of our current maturity against the DBPG is shown in ***Annex 4C.2***

How we will deliver our plan: *Our digital roadmap*

We know that we have a significant programme of work ahead of us to deliver our digitalisation and data vision. We have developed an iterative roadmap that sets out the stepping stones for each of our products and services between now and 2028. We will not wait until RIIO-ED2 starts to begin delivering our plans and we have identified several enablers that we will start work on immediately to deliver value sooner for our customers, stakeholders and our people.

DIGITAL SKILLS AND CULTURE

Our RIIO-ED2 plans set out ambitious targets that will transform our organisation and enable us to play our part in the development of a modern digitalised energy system for the UK. We recognise that delivering this will require significant changes to our business structures, our processes, our culture and our skillsets. We have therefore appointed a Business Transformation Director who will be responsible for building on our existing capabilities and ensuring that we have the resources to deliver our plan. Our approach will enable us to introduce new capabilities and create exciting opportunities that will ensure we maximise the benefits of becoming a digitalised, data driven organisation.

THE BENEFITS OF INVESTING IN DIGITALISATION AND DATA

Our cost benefit analysis demonstrates the savings that can be achieved through efficiencies brought about by our investment in digitalisation and data. Digitalisation is integrated across our RIIO-ED2 Business Plan and supports delivery of many of our business plan commitments. We have identified several key benefits that can be unlocked through data and digitalisation:

Deploy technology-enabled solutions, such as online monitoring and active network management to enable Net Zero.

Share network data so that we can manage the network more efficiently and work more closely with the communities we serve.

Use digital technology to manage our network in a smarter, more sustainable way.

Improve our customer service by giving our customers more choice including new channels, new self-service options for interacting with us and supporting our most vulnerable customers.

Enable expansion of our recruitment programmes to focus on new disciplines such as data science and cyber security and ensure we employ just transition principles to equip our own people with new skills to accelerate our digital transformation, increasing the opportunity for diversity within our workforce while supporting high quality jobs in our communities.

Our roadmap for delivery

	2021 – 2022	2023 – 2024	2024 – 2026	2026 – 2028
Optimised network and asset management	• Simplified data capture	• GIS data hub • Integrated project design & lifecycle	• Intelligent work scheduling and planning • Digital field worker • Asset digital twin • 4D GIS	• Supply chain digitalisation • Connected assets • Asset analytics • Autonomous inspection (robots, drones)
Investing in the digital skills of our people	• Digital culture change and skills 1	• New digital talent pipelines	• Digital culture change and skills 2	• New digital training approach (AR, VR)
Improving the mastery of our data	• Data operating model	• Data quality improvements • Reporting & analytics platform	• RRP transformation	• Self-serve and on demand analytics • Predictive and cognitive analytics
Developing options to manage peak load	• LV readiness	• LV network monitoring	• DSO platforms and integration • Operational digital twin	• Network planning digital twin • DSO enhancements
Using digital technologies to deliver enhanced customer service	• Connections enablers • New CRM platform	• E2E connections journey	• Digitalisation of Land Rights • Full single customer view • New AI vulnerable customer services	• Predictive customer service
Supporting the development of new business models & markets	• Open data triage	• Customer flexibility and constraint heatmaps	• Sustainable operations • Open data enhancements	• Energy technology ecosystem • Carbon accounting

Digital enablers (2021 – 2022)
Digital foundation (2023 – 2024)
Digital operations (2024 – 2026)
Digital core (2026 – 2028)

CHAPTER 5

Our expenditure, incentives and finance

In order to deliver on our commitments to customers, we must make full use of the regulatory framework available to us, ensuring that we have sufficient funding to deliver on our priorities in an efficient manner, and agreeing a level of flexibility in the framework to enable us to adapt and react to any changes in our customers' and stakeholders' needs.

IN THIS CHAPTER

PART A: Our expenditure plans
We outline our expenditure plans, how we have tested our plans for efficiency, and the changes in our programmes between RIIO-ED1 and RIIO-ED2. *Pg 136*

PART B: Managing uncertainty
We set out how we will remain agile and able to react to the rate of change forecast for the UK in the transition to Net Zero. Our ability to manage uncertainty will play an important role in meeting the emerging needs of our customers and stakeholder. *Pg 149*

PART C: Embracing the regulatory framework
We provide an overview of our incentive mechanisms, and how we will go further through our CVPs and ODIs to deliver enhanced benefits to our customers and stakeholders. *Pg 155*

PART D: Financing our plan
We provide a summary of our financial metrics, including our assumptions on Cost of Equity, Cost of Debt, Notional Gearing and Efficiency, as well as an overall financeability assessment. *Pg 160*

Supporting documents for this chapter

Annex 5A.1: *Non Operational Capex*

Annex 5A.2: *Business Plan Data Tables*

Annex 5A.3: *Cost Assessment*

Annex 5A.4: *Indirect Costs*

Highlights of this chapter

Our expenditure required to meet the needs of our customers and stakeholders, and secure the future of our network as we transition to Net Zero.

Our expenditure is outlined across the regulatory cost categories, and references our strategy and delivery plans which are detailed throughout our plan. ***Pg 137***

How our expenditure will differ to RIIO-ED1, and the key drivers of investment, including facilitating Net Zero, enabling the DSO transition, digitalisation, and compliance with new legislation. ***Pg 138***

How we have tested our plan for efficiency by internally replicating Ofgem's approach to cost assessment, and by using industry experts to challenge ourselves and validate our findings. ***Pg 148***

CHAPTER 5 / PART A

Our RIIO-ED2 expenditure plans

Our £3.3bn expenditure plan represents a significant investment to ensure we deliver the services and commitments that our customers value. This covers investment in our network assets, workforce and systems, as well as the costs of our day-to-day operations. In preparing this plan, we have extensively challenged and evidenced our plans to ensure that we are as efficient as possible and, ultimately, that our customers receive value for money.

RIIO-ED2 will require significant investment in our network assets to ensure they are capable of supporting the level of connections which are forecast in the UK, to facilitate our transition to Distribution System Operator (DSO), and to improve our digitalisation platforms which we need to monitor our network of the future and to provide the service levels expected by our customers.

We must also invest in developing our people to make sure they have the tools and support needed to optimise our network design and operation, so we can fully realise the benefits of decarbonisation.

We will invest in enhanced automation techniques to deliver efficiently. Training and deployment for these will need to be completed quickly, so we can continue providing customers with the industry-leading service we have demonstrated during RIIO-ED1.

The scale of the change required during RIIO-ED2 brings with it an increased level of uncertainty, which stems from how quick the transition to Net Zero can and will be achieved. We outline in our ***Chapter 5B*** on 'Managing Uncertainty', how the price control framework should enable us to adapt during the price control period.

OUR EXPENDITURE

We are proposing to spend £3.3bn on our networks during RIIO-ED2, £1.61bn in SPD, and £1.66bn in SPM.

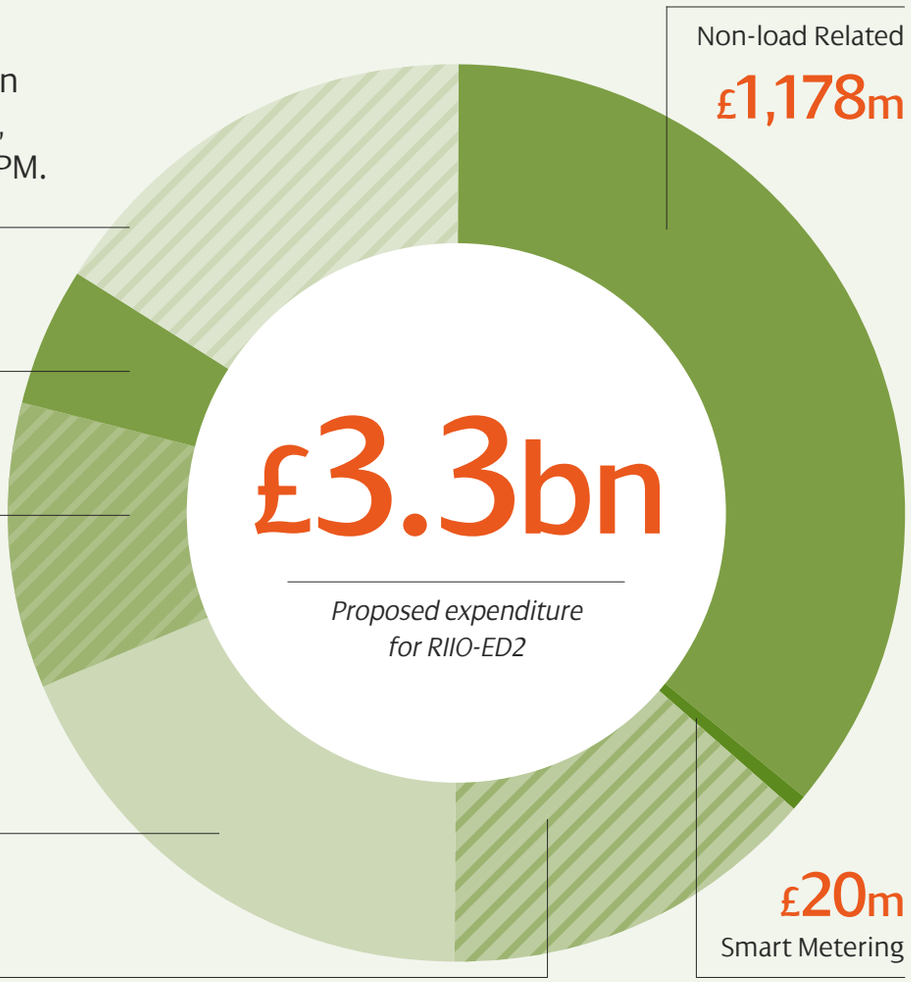
Network Operating Costs
£526m

Non Operational Capex
£164m

Business Support
£331m

£607m
Closely Associated Indirects

£444m
Load Related



The majority of our forecast is in our Direct Investment programme which comprises Load and Non-load expenditure. Our Closely Associated Indirect costs support the delivery of our Load and Non-load programmes, as well as our customer service and control activities.

Our Network operating costs enable us to inspect, maintain and operate our network assets, as well as repond to faults and incidents on our network.

We have embedded £66m of efficiency within our plans, predominantly in our Load and Non-load activities, and have then included a further £48m of Ongoing efficiency.

We have tested our expenditure for efficiency, and through our cost assessment approach, both our SPD and SPM plans represent 5% efficiency against historical benchmarks.

Comparison to RIIO-ED1

We have applied learnings from RIIO-ED1 to ensure that our plans deliver in the most cost effective manner for our customers. We maintain a focus on efficiency both in how we plan our investments and how we deliver them, and will continue to deliver industry leading unit costs.

- *We will invest £445m in our Load related programme during RIIO-ED2, an increase of £43m per annum compared to RIIO-ED1 driven by the need to increase capacity of our network to meet Net Zero ambition.*
- *The majority of our Non-load activities are in line with RIIO-ED1, however we will need to invest more in our environmental activities as we seek to meet legislation and continue to deliver sustainability ambitions, increasing our expenditure by £14m per annum on average.*
- *And finally, in line with our strategy to transition to Distribution System Operator, we require a significant investment in our IT and Telecoms networks, predominantly in control and monitoring, where we will invest £221m, an increase of £34m per annum on average.*

RIIO-ED2 Forecast Totex *£m, 20/21 prices*

	SPEN	SPD	SPM
Load related expenditure	444.5	261.4	183.1
Non-load related expenditure	1,177.9	533.5	644.5
Network Operating Costs	525.6	238.4	287.2
Closely Associated Indirect Costs	606.6	306.2	300.4
Business Support Costs	331.4	171.9	159.5
Non Operational Capex	164.3	86.1	78.2
Smart Meters (Capex and Opex)	20.2	12.0	8.2
Totex within price control	**3,270.4**	**1,609.3**	**1,661.1**

TOTEX – NET WITHIN PRICE CONTROL

(£m, 20/21 prices)

	Business plan data table code	SPEN (SPD and SPM Total) RIIO-ED2 Total *SPD Expenditure*	RIIO-ED2 Total *SPM Expenditure*	RIIO-ED2 *5 year total*	SPD and SPM breakdown RIIO-ED2 *Annual Ave*	RIIO-ED1 *Annual Ave*
Connections	C2	38.2	25.3	63.6	12.7	3.1
Primary Reinforcement	CV1	56.4	50.6	107.0	21.4	25.1
Secondary Reinforcement	CV2	132.3	88.3	220.6	44.1	8.2
Fault Level Reinforcement	CV3	13.8	17.3	31.1	6.2	7.4
NTCC (New Transmission Capacity Charges)	CV4	20.7	1.6	22.2	4.4	1.6
TOTAL Load related expenditure	–	**261.4**	**183.1**	**444.5**	**88.9**	**45.4**
Diversions	CV5	18.7	38.3	57.0	11.4	7.7
Asset Replacement	CV7	232.8	285.4	518.2	103.6	86.1
Asset Refurbishment	CV8 & 9	23.4	42.4	65.8	13.2	11.7
Civil Works Condition Driven	CV10	18.5	19.6	38.1	7.6	10.6
Operational IT&T	CV11	104.5	116.9	221.4	44.3	10.4
Electricity System Restoration	CV12	2.5	3.9	6.5	1.3	0.6
BT21CN	CV13	0.0	0.0	0.0	0.0	3.0
Legal and Safety	CV14	17.7	23.0	40.7	8.1	5.2
QoS and North of Scotland Resilience	CV15	12.3	14.1	26.4	5.3	3.2
Flood Mitigation	CV16	5.3	4.3	9.6	1.9	0.2
Rising and Lateral Mains	CV17	34.1	27.1	61.1	12.2	12.4
Overhead Line Clearances	CV18	9.8	15.0	24.8	5.0	20.6
Worst Served Customers	CV19	6.0	8.7	14.6	2.9	0.0
Visual Amenity	CV20	1.9	2.7	4.6	0.9	1.1
Losses	CV21	10.0	3.3	13.2	2.6	1.5
Environmental Reporting	CV22	36.0	39.9	75.9	15.2	1.6
TOTAL Non-load related expenditure	–	**533.5**	**644.5**	**1,177.9**	**235.6**	**175.8**
Faults, Severe Weather & ONIs	CV26, 27, 28	152.1	154.5	306.6	61.3	54.9
Tree Cutting	CV29	23.8	58.2	82.0	16.4	14.6
Inspections, Repairs & Maintenance	CV30, 31	49.4	64.9	114.4	22.9	19.7
NOCs other (incl. Substation Electricity)	CV32, 33	13.1	9.5	22.6	4.5	4.0
TOTAL Network Operating Costs	–	238.4	287.2	525.6	105.1	93.2
Closely Associated Indirects Costs	various	306.2	300.4	606.6	121.3	111.8
Business Support Costs	various	171.9	159.5	331.4	66.3	67.7
Non Operational Capex	various	86.1	78.2	164.3	32.9	12.4
Smart Meter Intervention DNO	various	12.0	8.2	20.2	4.0	4.1
TOTEX WITHIN PRICE CONTROL		**1,609.3**	**1,661.1**	**3,270.4**	**654.1**	**510.3**

Note: All costs outlined in this chapter are Net totex after non price control allocation, and reconcile to S1 Total Costs within price control excluding other costs within price control.

Load Related Expenditure

Our Load related expenditure ensures that our network has the capacity to meet the long-term requirements of our customers. This expenditure covers interventions on the network to provide additional capacity to meet growing demand, or to facilitate the connection of new customers in an area of limited capacity.

Our Load related expenditure detailed here is a summary of the costs associated with the activity to Develop the Network of the Future, which you can read about in detail in ***Chapter 4A***

Load related expenditure falls into five categories, across five business plan data tables:

- **C2** – Connections within the price control (1)
- **CV1** – Primary reinforcement (2)
- **CV2** – Secondary reinforcement (3)
- **CV3** – Fault level reinforcement (4)
- **CV4** – New transmission capacity charge (5)

Load related expenditure is 14% of our overall Totex forecast, which is an increase from 9% during RIIO-ED1.

An overview of how we have tested the efficiency of our Load related programme is included in our ***Annex 5A.3: Cost Assessment*** and associated Engineering Justification Papers.

Our Load related programme will invest **£445m** during RIIO-ED2 over the **5 year period**. This equates to **£89m per annum.**

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	261	52	23
SPM	183	37	23
SPEN	444	89	46

**Business plan data tables C2 and CV1, 2, 3 and 4.*

This area of expenditure will change the way we invest in our network, increasing focus on flexible solutions and moving away from conventional reinforcements. To determine the most efficient, co-ordinated, and economic interventions, we will continue to challenge our plans and make sure that flexible and innovative solutions are considered for all network interventions.

Connections within the price control (1)

Connections activity is predominantly customer funded, however there are occasions when a new connection needs us to reinforce our network. In these cases, the customer will fund the connection and a proportion of network reinforcement will be funded through the price control. We have based our customer funded connection activity on our Distribution Future Energy Scenarios (DFES). £64m of our forecast expenditure relates to connections inside the price control. Given the significant increase in the forecast connections activity overall, there will be an increase in the need to reinforce the associated network.

Primary and secondary reinforcement (2) (3)

£107m of our Load related expenditure relates to primary reinforcement, and a further £221m relates to secondary reinforcement, driven by our DFES which forecasts significant customer demand and generation growth as the UK transitions to Net Zero. While we will seek to use flexibility to create the additional network capacity needed, there will also be a requirement for conventional interventions in many areas due to a lack of mature flexible options. Our primary and secondary reinforcement expenditure is forecast to increase significantly as a result.

Fault level reinforcement (4)

£31m of our Load related expenditure relates to fault level reinforcement. The primary objective of fault level reinforcement is to alleviate the potential for fault level issues on the network, predominantly associated with switchgear. Increasing volumes of renewable generation will lead to an increase in fault level. ***Chapter 4A*** details how we will:

- deliver a balance of industry-leading innovation and conventional options to manage fault level
- focus on roll-out of fault level monitoring in constrained areas
- use active network management to facilitate new generation
- upgrade equipment to manage fault level at various sites across our network.

New transmission capacity charges (5)

Our distribution networks are connected to the transmission network through transmission connection points. Sometimes when we reinforce our distribution network, we require reinforcement of the transmission network too. This expenditure is essentially capacity charges paid to the transmission operator for access to the transmission network. During RIIO-ED2, we forecast an increase to £4m a year on average, as the increased level of capacity required on the distribution system necessitates increases in the transmission system.

During RIIO-ED2 expenditure in our Load related programme is forecast to be

£444m

Non-load related expenditure

Non-load related expenditure is necessary to maintain the health, reliability and safety of our network. Expenditure is incurred across a broad spectrum of investment programmes, to ensure the underlying resilience and integrity of network assets and infrastructure, or driven by legislative requirements or industry guidance.

Non-load related also includes expenditure to enable the transition to Distribution System Operator and to manage the environmental impact of our network, two areas where we forecast an increase betwee n RIIO-ED1 and RIIO-ED2. Full details of the activities we will deliver are outlined in detail in ***Chapter 4A***

Non-load related expenditure falls into several categories which include asset replacement and refurbishment, civil works, operational IT and telecoms. There are also several legal, safety and environmental categories.

Costs and Volumes associated with our Non-load activities are included in Business Plan Data Tables CV5 to CV22.

Non-load related expenditure is 36% of our overall expenditure included in our RIIO-ED2 business plan, an increase of 2% from RIIO-ED1. As the majority of our Non-load related activities are predicated on long term asset management, the majority of the expenditure is in line with RIIO-ED1, with the main exceptions being to facilitate the transition to DSO, or in areas where we are required to react to emerging legislation, industry standards or guidance such as environmental requirements.

An overview of how we have tested the efficiency of our Non-load related programme is included in our ***Annex 5A.3: Cost Assessment*** and associated Engineering Justification papers.

As our customers become increasingly dependent on electricity, we must invest in the health, reliability, and safety of our network by continuing to lead the way in asset management.

Through our Non-load related expenditure, we will invest £1,178m in:

Asset Modernisation: replacing assets where their condition requires intervention or they have come to the end of their operational life. (1)

Network Resilience: ensuring resilience by improving visibility of our network, reducing threats from flooding and improving our civil infrastructure. (2)

Network Safety: ensuring the protection of our workforce and our customers by making our network safer. (3)

Network Sustainability: prioritising environmentally friendly solutions, and protecting the environment from the impacts of our network. (4)

Network Diversions and Service Improvements: adapting our network in response to surrounding developments, and improving the service to our customers. (5)

Asset Modernisation (1)

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	256	51	42
SPM	328	66	56
SPEN	584	117	98

**Business plan data tables CV7, 8 and 9.*

Our asset investment practices are underpinned by whole lifecycle asset management and Condition-Based Risk Management (CBRM).

This means we will only intervene on poor condition assets in need of modernisation (regardless of age) and seek life extension through refurbishment or smart life extension where it is financially efficient, tested by cost benefit analysis (CBA). We will prioritise interventions based on our highest risk assets, and progress activities which most effectively manage long-term network risk.

Full details of the activities we will deliver are outlined in ***Chapter 4A***

Network resilience (2)

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	131	26	9
SPM	145	29	13
SPEN	276	55	22

**Business plan data tables CV10, 11, 12 and 16.*

We will invest £38m to keep our civil assets and buildings in good condition, which protects the public and our staff and contributes to maintaining the health of our assets. In RIIO-ED2 we will prioritise our poorest-condition civil assets, generating efficiencies in our maintenance costs by reducing the number of legacy assets and buildings, and coordinating our interventions with our refurbishment and replacement programmes.

We forecast operational IT and telecoms expenditure to increase significantly during RIIO-ED2, as we seek to facilitate our transition to DSO by ensuring that the monitoring and controls on our network are suitable for the levels of flexibility the future network will demand. We forecast that our expenditure will increase significantly compared with RIIO-ED1, and that we will spend £221m investing in upgrades and maintenance of our operational IT and telecoms network.

We will invest £6.5m in Electricity System Restoration activities. As a DNO, we have a responsibility to build a network which is resilient to a total or widespread loss of power on the GB electricity network. During RIIO-ED2, we will achieve full resilience for all core and critical substation locations as part of our wider strategy to achieve full network resilience by the end of RIIO-ED3.

We will invest £10m to improve our networks resilience to flooding. Our plans will ensure alignment with the latest flood defence standards, recognising the findings from our Climate Resilience Strategy (***Annex 4A.7***) that these risks are increasing over time. We will seek to align interventions with wider substation modernisation works to reduce disruption and costs.

Network safety 3

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	62	12	19
SPM	65	13	19
SPEN	127	25	38

**Business plan data tables CV14, 17 and 18.*

In RIIO-ED2, 11% of our Non-load expenditure will address network safety – we will invest £127m to deliver a range of activities to improve the safety of the network and manage security risks.

During RIIO-ED1, we invested on average £21m per annum to ensure our overhead lines assets comply with proximity to ground clearance requirements. This safeguards our staff and the public by reducing the risk of inadvertent contact. We have resolved over 149,000 of these issues to date – continuing to deliver on our commitment to the Health and Safety Executive. We are committed to continue this obligation in RIIO-ED2 and will continue annual inspections to maintain compliance as our assets deteriorate. As our RIIO-ED1 programme in this area has cleared a backlog, we are forecasting a reduction to £25m over the RIIO-ED2 period.

Rising and lateral mains (RLMs) are the LV cables that supply customers in multi-occupancy buildings, either in multi-storey (rising) or terraced (lateral) properties. During RIIO-ED1, and with the support of the Health and Safety Executive, we have taken an active role in recognising and addressing a key public safety risk by modernising poor-condition RLMs. For RIIO-ED2 we will invest £61m proactively inspecting and modernising properties with poor condition RLMs that we have identified.

We also undertake various inspection and prevention activities. This includes mitigation of fire risk, resolution of shallow cables, delivery of our asbestos management strategy and managing safety through our recreational sites and earthing programmes.

Network sustainability 4

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	48	10	2
SPM	46	9	2
SPEN	94	19	4

**Business plan data tables CV20, 21 and 22.*

We have taken significant steps during RIIO-ED1 to reduce the environmental impact of our assets and improve the environmental resilience of our network. We intend to build on this during RIIO-ED2, and forecast increased expenditure in environmental protection.

We will invest:

- **£20m** in our environmental management – continuing our contaminated land and oil pollution programme and bunding at 33kV and 132kV transformer assets.
- **£56m** in persistent organic pollutant asset changes – European legislation requires us to remove all oil-filled assets with more than 50ppm Polychlorinated Biphenyl (PCB) by 2025.
- **£5m** in visual amenity – we will continue our programme to underground overhead lines in designated Areas of Outstanding Natural Beauty and National Scenic Areas.
- **£13m** in reducing technical and non-technical network losses – technical losses will increase due to electrification of heat and transport and greater levels of decentralised renewable generation. We will invest to manage losses by replacing high-loss primary and secondary transformers with low-loss models.

Network diversions and service improvements 5

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	37	7	4
SPM	61	12	7
SPEN	98	20	11

**Business plan data table CV5, 15 and 19.*

During RIIO-ED2, we will undertake £26m of proactive investments to improve the quality of supply which our customers experience across our network. This will include upgrades to our network which will reduce the duration and frequency of interruptions experienced by our customers, and reduce the overall fault rate of our network.

We will also invest in improvements to the network which supplies our worst served customers. These customers experience an increased rate of interruptions on average. We will spend £15m to improve the quality of supply for these customers.

We also plan to spend £57m to undertake diversionary works where our assets need to be relocated due to changes in surrounding land-use or customer requirements.

During RIIO-ED2 expenditure in Non-load related programmes will be

£1,178m

Network Operating Costs

As the world decarbonises, our customers will become increasingly dependent on electricity. It is therefore crucial that we react quickly to any faults on our network to restore power, and ensure that we inspect and maintain our asset base to ensure exceptional ongoing reliability and availability.

Network Operating Costs are organised into the following categories: Faults, Inspections, Repair and Maintenance, Trees and Other minor expenditure such as Dismantlement and Substation Electricity.

Network Operating Costs are 16% of the overall expenditure included in our RIIO-ED2 Business Plan, and are forecast to increase by 2% from RIIO-ED1 on an average annual basis.

Where we have identified increases in our Network Operating Costs, we have sought to offset these with innovative solutions, or efficiencies, in line with our RIIO-ED1 approach.

An overview of how we have tested the efficiency of our Network Operating Costs programme is included in our ***Annex 5A.3: Cost Assessment*** and associated Engineering Justification Papers.

Our Network Operating Costs categories are further explained below:

Fault repair 1
Management of network faults, providing generators and support to customers, including the most vulnerable.

Inspections, repair and maintenance 2
Undertaking our extensive inspections, maintenance and repair programmes, intervening where required before a fault occurs.

Tree cutting 3
Completing our tree cutting programme, which protects our OHL network from trees growing or falling onto lines.

Other minor areas of expenditure 4
including Substation Electricity and the Dismantlement of network assets which are no longer in service.

The activities which we will undertake as part of our Network Operating Costs are detailed in ***Annex 4A.2***

Our Network Operating Costs

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	238	48	42
SPM	287	57	51
SPEN	526	105	93

**Business plan data tables CV26, 27, 28, 29, 30, 31, 32, and 33.*

Fault repair 1

Faults expenditure makes up 58% of our total Network Operating Costs. Expenditure on fault repair is associated with our 24-hour service of locating and repairing network faults quickly and safely. Although we have experienced upwards pressure on faults costs from fault rates, salary and contract costs, we have made improvements to minimise the impact by deploying new technologies to improve our ability to locate and repair faults, and optimising our workforce planning and scheduling to efficiently deliver network repairs.

Inspection, repair and maintenance 2

We inspect and maintain all of our assets regularly to identify hazards or defects which could affect the safety, reliability, or environmental impact of our network. In selected cases, we have reduced the frequency and scope of inspections for lower risk, higher reliability by employing enhanced data collection techniques and new technologies.

Tree cutting 3

In RIIO-ED2, we will invest £82m in our vegetation management programmes. To maintain a safe clearance distance, these programmes seek to proactively cut back vegetation on a three-year cycle, and inspect trees that are in close proximity to our network. We have seen an increased rate of vegetation growth during RIIO-ED1. If trees and other vegetation get too close to our OHL, they can become a source of faults. To minimise the impact of the higher costs associated with increasing activities, we have developed and deployed innovative technology to survey our asset base e.g. LiDAR.

Other minor areas of expenditure 4

Other minor areas of expenditure, which make up only 4% of Network operating costs, include activities and costs such as substation electricity, dismantlement of network assets no longer in service. This area is forecast to remain broadly in line with RIIO-ED1.

During RIIO-ED2 expenditure in network operating costs is forecast to be

£526m

Indirect expenditure

Ofgem describe indirect costs as the activities that don't generally involve physical contact with system assets yet play an integral role in the delivery of our direct activities. To achieve our business plan commitments, our frontline staff and contractors rely on an extensive, efficient network of support staff and specialist service providers.

Closely Associated Indirects (CAIs)
which include core indirect activities such as design, project management, planning and operation management, as well as wayleaves, operational training, and vehicles and transport.

Business Support Costs
which include core indirect activities such as human resources, non operational training, finance and regulation, CEO, IT and telecoms, and property management.

During RIIO-ED1, we undertook a significant restructure to align our delivery within a district model, optimising the direct investment on our network with a local, coordinated approach to customer service and network management. As part of this restructure, we evaluated and ensured that our support staff and specialist service providers were correctly sized and efficiently structured in order to ensure that the front line staff and contractors were able to deliver our outputs.

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	478	96	90
SPM	460	92	89
SPEN	938	188	179

**Business plan data tables C9,10, 35, 11, 12, 13 and 14.*

During RIIO-ED2, we are forecasting a significant increase in our Load and Non-load activities, which will necessitate increased levels of support from our indirect functions. In order to deliver our RIIO-ED2 plan, we intend to fully utilise automation and digitalisation to ensure an efficient approach, building on our extensive programme in RIIO-ED1, and will continue to challenge ourselves to look for efficiencies in this area.

*A full breakdown of the activities associated with our Non Operational capex is outlined in our **Annex 5A.1** and **Annex 4C.1***

Closely associated indirect costs

Closely Associated Indirects are activities that are directly involved in co-ordinating and supporting the operational aspects of the network operator. These can be split broadly into two types – engineering related activities, and general operational support. Engineering activities include project management and delivery, engineering design and planning of the network, and management of the network on a day to day basis. General operational support includes stores, logistics, vehicle management, and operational IT, as well as health, safety and training functions.

Due to their nature and the delivery model outlined in ***Chapter 6 Delivering Our Plan***, closely associated indirects are linked to the level of activity being undertaken and so can flex depending upon the volume of work that is being undertaken over a price control period. Despite the increase in our Load and Non-load programmes, we are using increased automation and innovation to ensure that we can deliver a significant increase in our Direct work activity, whilst ensuring we can manage an efficient indirect organisation.

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	306	61	55
SPM	300	60	56
SPEN	607	121	111

**Business plan data tables C9, 10, CV35 and C11.*

Engineering and design activities

This includes expenditure on our network design, engineering management and project management functions, all of which are fundamental to the stewardship of our asset management and system performance activities, the planning and execution of our extensive direct work programme, and the assurance that all work activity is delivered on time and with the expected level of efficiencies which have been set out in our plans.

During RIIO-ED2, there will be a need for enhanced design, engineering and project management activities as we navigate the changing landscape of our networks, as we push our installed asset base beyond original design capability and seek to incorporate flexible, Net Zero technologies and operate as a DSO.

During RIIO-ED2 our expenditure in closely associated indirect costs is forecast to be

£607m

Customer service and operational activities

Within SP Energy Networks, we operate two network operational control centres to manage our networks, one at ScottishPower House in Glasgow and one at our Prenton offices. We operate our customer service call centers 24 hours a day, 7 days a week. Our call centre staff are available to our customers 365 days a year and are responsible for handling inbound calls about incidents on our network and dispatching the necessary response staff.

As we move towards the deployment of DSO, and the use of flexibility increases across our network, it will be the role of our control centre staff to manage and deploy these active network management tools, to ensure that the network continues to meet the needs of our consumers, and to maintain the exceptional levels of service seen during RIIO-ED1. You can read more about our Customer Service and Vulnerability strategy in ***Chapter 4B***.

Operational Training

During RIIO-ED2 we will spend £89m in developing our future workforce. We have made significant progress during RIIO-ED1 when it comes to developing our future workforce. Our operational training expenditure for RIIO-ED2 is set to marginally increase so that we can:

- continue with our workforce resilience programme
- develop the skills needed to deliver on the network of the future
- replace staff expected to retire over the next ten years
- Invest in a programme of diversity and leadership training for our leaders of the future.

How we will promote an inclusive, skilled and community based workforce is outlined in ***Chapter 4A***

Vehicles and mobile plant

To manage, operate, maintain and build our network, we rely on an extensive fleet of vehicles and mobile plant. This expenditure covers the lease costs of this fleet, and is forecast to be marginally higher than RIIO-ED1 expenditure due to the move to a decarbonised fleet of electric vehicles. In our Non Operational capex expenditure, we outline how we will decarbonise our vehicles, transitioning to electric vehicles during RIIO-ED2, and you can read more about our plans in ***Annex 5.1: Non Operational Capex***, and ***Annex 5.4: Indirect Costs***.

Business support costs

Business support costs include activities provided centrally that our front line staff and contractors rely on. Forecasts of business support costs are more predictable than other parts of the plan, as they are usually fixed. These costs may be centralised within SP Energy Networks, within ScottishPower, or within the wider Iberdrola Group. The costs fall into the following categories; human resources, non-operational training, finance and regulation, CEO, IT and telecoms, and property management.

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	172	34	34
SPM	160	32	33
SPEN	**331**	**66**	**68**

[1]Business plan data tables C12, 13, 14.

IT and telecoms

Business support costs for IT and telecoms are predominantly associated with operating and maintaining our IT infrastructure. This covers servers, data telephony networks, PCs and laptops, and printers. Due to the increasing reliance on IT and telecoms for activities such as DSO, as well as the increasing requirements for data and digitalisation, this expenditure is forecast to increase during RIIO-ED2. You can read more about our plans to embed digitalisation and utilise data to deliver benefits to our customers and stakeholders in ***Chapter 4A***

Property management

SP Energy Networks operates offices for almost 3,000 employees across our three network areas. Property management expenditure is associated with rent, security, general repair and routine maintenance, and cleaning and catering costs of our property portfolio. Our expenditure in Business support – Property is closely linked to our investment plans in our Non Operational Capex – Property. As part of our RIIO-ED2 strategy we are focusing on significantly reducing the energy consumption across our property portfolio, e.g. by improving the thermal insulation of our buildings, and to reduce the overall carbon footprint of our estate.

During RIIO-ED2 our expenditure in business support costs is forecast to be

£331m

*You can read more about our plans in **Annex 5.1** and **Annex 5.4***

Non Operational Capex

This section provides an overview of our expenditure related to investments in non-network assets, including IT and telecoms, vehicles, property and small tools and equipment. The transition to Net Zero will require short-term increases in our expenditure as we replace our current fleet with electric vehicles, improve our digitalisation platforms, and reduce the carbon footprint of our property portfolio. Although our non-operational expenditure will increase, our investments will be more efficient in the long run.

Non-operational expenditure makes up 5% of the overall Totex included in our RIIO-ED2 Business Plan. It is forecast to increase compared to RIIO-ED1 levels. Predominantly driven by our Data & Digitalisation Strategy, which increases our IT and telecoms expenditure in the short term.

During RIIO-ED2, non-operational capex will include investment in:

Upgrade or replacement of our IT systems, system enhancements and improvements in our automation capability, and replacement of assets reaching the end of life. (1)

Upgrade or replacement of our fleet of vehicles, including the roll-out of electric vehicles, as well as the procurement and maintenance of small plant – such as generators. (2)

Our non-operational property, including both our district depots and our corporate offices, consolidating our portfolio and reducing our carbon footprint. (3)

Small tools and equipment, plant items required to complete our direct work activities. (4)

During RIIO-ED2 expenditure in Non Operational Capex is forecast to be

£164m

Investing in Non Operational Capex

£m, 20/21 prices	RIIO-ED2 *total*	RIIO-ED2 *annual average*	RIIO-ED1 *annual average*
SPD	86	17	6
SPM	78	16	6
SPEN	164	33	12

** Business plan data tables C4, C5, C6 and C7.*

IT and telecoms (1)

Our RIIO-ED2 IT and telecoms investment is a continuation of our RIIO-ED1 strategy to place the digitalisation of our processes and systems at the core of what we do. We need to enhance our digital platforms to deliver our activities, meet our commitments to customers and stakeholders, and realise our DSO and flexibility ambitions. RIIO-ED2 also places greater focus on improving the way we capture, analyse and share data.

Vehicles (2)

In line with the ScottishPower group strategy to decarbonise our fleet of operational vehicles, and to electrify our fleet under 3.5 tonnes in the next 10 years. This means that all vehicles within our fleet must be replaced during RIIO-ED2 to keep the size and type of vehicles consistent. While electrification of the fleet will reduce fuel consumption, there will be an increase in the cost of charging. This is why our maintenance and fuel expenditure are forecast to remain static over the course of RIIO-ED2. Our electrification strategy will also require us to install electric charging infrastructure across our depots, included under our property investment. In addition, we need to maintain a small number of specialist vehicles we own – including generators, trailers, test vans, and trucks.

Property (3)

Our property expenditure consists of investment and maintenance of our non-operational sites, including district depots and corporate offices. Investment and maintenance expenditure is incurred on a site-by-site basis, and determined using maintenance records, statutory and industry guidelines, and requirements to replace plant and machinery at these sites. This expenditure is closely linked to our Non Operational Capex investment, where we are focusing on significantly reducing the energy consumption across our property portfolio to improve the thermal insulation of our buildings and reduce the overall carbon footprint of our estate, in line with our strategy to achieve Net Zero.

Small tools and equipment (4)

Our activities requires the use of small tools and equipment, predominantly used to commission assets that have been replaced, refurbished or repaired. This includes equipment for testing, to enable working safely on the network and to help locate faults on the network.

Network Innovation Allowance (NIA)

Without NIA and other dedicated innovation stimuli, we would not have innovations such as active network management and real time fault level monitoring in place – both of which have delivered significant savings to customers. NIA will play a key role in the energy system transition and consumer vulnerability innovation.

We believe continued investment of the NIA is needed for innovation that does not fall within our Totex incentives. This could include everything from early research and development that will not provide any payback within the regulatory period, to solutions that benefit the wider industry more than us.

The wider community benefits directly from at least 75% of our NIA funding. So far in RIIO-ED1, over £12m has been shared with SMEs, local communities and academia partners as a result of our open, transparent and inclusive approach. We regularly collaborate with UK and International partners via our leading role in the Energy Innovation Centre. We benefit from their know-how and resources, as for every £1 we invested, we have leveraged almost £2 additional funding – ultimately creating more value for our customers.

OUR AMBITION

Listening to our stakeholders

We engaged with our stakeholders on our RIIO-ED2 plan.

They told us:

- Not to adopt a siloed approach to the Energy System Transition (EST) and Consumer Vulnerability (CV) themes. Instead, both areas of focus should be considered when considering the impact of most innovation activities.
- To develop a clear thread between innovation projects to provide long-term benefits.
- To be more ambitious with our innovation programme in RIIO-ED2 than we were in RIIO-ED1.

We agree with our stakeholders' ambition – innovation is more important than ever if we are going to efficiently facilitate Net Zero and maintain a safe, reliable network for our customers. That is why we commit to keeping innovation at the core of everything we do in RIIO-ED2.

A greener energy system, for less

To highlight the extent of innovation we need to undertake in RIIO-ED2 and our whole system approach, we have spotlighted some key innovation areas within our Innovation Strategy (***Annex 2.1***): consumer vulnerability, hydrogen, electrification of transport, electrification of heat, and power electronics & Low Voltage Direct Current (LVDC).

When delivering innovation in RIIO-ED2, we will undertake a Consumer Vulnerability impact statement for all Totex funded DRIVE innovation campaigns and innovation stimulus funded projects. This will help us deliver a just transition to Net Zero.

A full breakdown of the activities associated with our network Innovation allowance is outlined in ***Annex: 2.1***

Developing our strategy

Based on our expertise, coordination with other distribution network operators (DNOs) and customer requirements, we identified focus areas within Ofgem's high-level innovation themes of EST and CV. We developed a strategy around these focus areas and aligned it with our wider Future System Strategy (***Annex 4A.1***).

The EST includes adapting to the decentralisation of generation, and the uptake of Low Carbon Technologies. Network modernisation, digitalisation, DSO, whole energy systems and sustainability are the focus areas where we are best positioned for delivering innovation that will enable the EST.

ENABLING THIS AMBITION

What we propose to do with respect to NIA in RIIO-ED2

£35m total allowance

This should be awarded as an ex-ante allowance at the start of RIIO-ED2. This will provide us with the certainty and flexibility to invest in the right innovations at the right time, to maximise impact. While this represents an almost two-fold increase on RIIO-ED1 investment levels, we believe it is proportional to the activity we will be delivering in RIIO-ED2, the challenges posed by Net Zero, and our clearer, open and more flexible approach to innovation.

There is potential for innovation to grow beyond our current forecast. We support the availability of a reopener (as proposed by Ofgem) to increase NIA funding allowance in the event that upfront NIA allowances are fully utilised.

To lead from experience

The NIA commitment is supported by our track record in efficiency and new learnings. For example, we will lead and share the learnings on power electronic technology at the national level, representing a £400m a year sector with national importance.

No siloes

We will avoid the adoption of a siloed approach to the EST and CV themes by undertaking a CV impact assessment for all EST projects. We also plan to dedicate £4.3m of NIA to specific CV issues, in addition to the remaining £30.7m for EST.

Careful Totex spend management

As NIA will primarily be targeted at projects with a low to middle Technology Readiness Level, we propose to maintain the level of our compulsory contribution from Totex spend at 10%.

Future-proof spending

We anticipate a £4 return for every £1 NIA invested as we look to RIIO-ED3 and beyond.

We anticipate:

£4 return for every £1 NIA invested as we look to RIIO-ED3 and beyond.

SPM Company Specific Factors

SPM has a unique 'meshed' design that is unlike other distribution networks in Great Britain, and it comes with both additional costs and benefits. Transitioning to a typical radial design is not feasible and would result in significantly higher costs for customers in both the short and long term. Our strategy ensures we continue to deliver a safe, reliable and sustainable network in the context of this unique design under which we aim to maintain the benefits of our network in the most efficient manner.

UNDERSTANDING THE NETWORK'S DESIGN

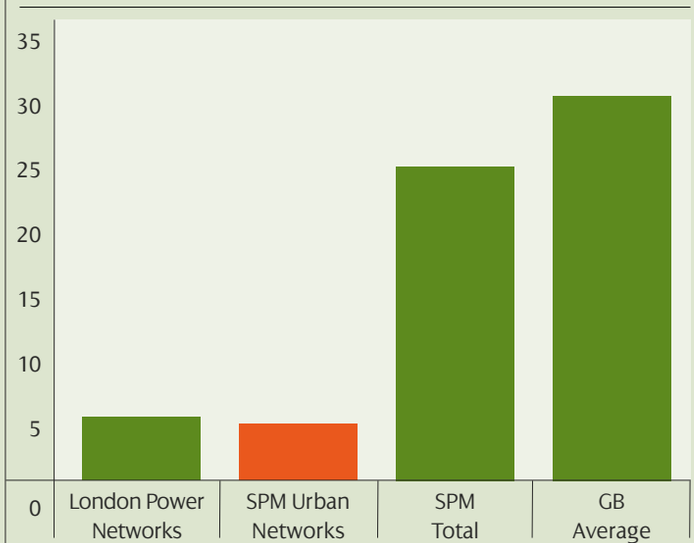
The majority of the SPM network is an interconnected or 'meshed' design. This means power can flow through multiple routes to the point of use. By comparison, most distribution networks in Great Britain have a traditional radial design, where power typically has only one possible path.

This interconnected design was inherited by us when the electricity supply industry was privatised. Its primary advantage is that it gives our customers a highly reliable electricity supply – our urban customers have on average the most reliable supply in GB. An outage due to a HV network fault is experienced only once every 45 years, and customers do not lose supplies in over 92% of 33kV network faults.

Other benefits are that this design is inherently adaptable and scalable, it can accommodate low carbon technology growth well. These advantages are becoming increasingly valuable to our customers as they decarbonise to Net Zero and become more dependent on a reliable supply.

However, once interconnected capacity is saturated, reinforcement of the network is more expensive than for radial networks. This is because interconnected networks have more assets per customer to replace. Some of these assets are exclusive to SPM's unique network, and some are more expensive than those on a comparable radial network. As a result, it costs more to operate, maintain, and modernise compared to all other DNOs. These additional costs form the basis of the SPM Company Specific Factor (CSF) adjustment.

Figure 1: Average annual customer interruptions per 100 customers (2016-2020)



Source: NAFIRS QoS HV Disaggregation Reporting Pack

COMPANY SPECIFIC FACTOR COSTS

88% of domestic and commercial customers say that security of supply is very important and indicate a low appetite to accept any reduction in performance. Given this, our strategy for RIIO-ED2 is to maintain the benefits that the legacy interconnected network provides, whilst minimising the ongoing costs to customers of its upkeep and ongoing management.

The incremental costs to do this over RIIO-ED2 are £116.8m. This represents 7% of SPM's RIIO-ED2 Totex. We have calculated the CSF value using a methodology based on established principles accepted in RIIO-ED1. These have been refined in line with the recommendations made in Ofgem's final determination, and refreshed with up-to-date information and assumptions.

AN EFFICIENT APPROACH

The alternative to maintaining the meshed network would be to completely 'rewire' our network to a radial design. This would more than double the distribution component of customers' bills over the next 40 years and reduce the reliability of their supply. Providing a lower quality service at a higher cost is not in our customers' best interests.

Our approach preserves the unique benefits to customers and makes efficient and innovative interventions to minimise incremental costs through RIIO-ED2 and future price review periods.

For more information see our SPM Company Specific Factors Strategy ***Annex 4A.25***

Cost Assessment

We are acutely aware of the financial pressures on our customers, particularly in the current economic climate. Our plans have been developed ensuring that we balance the needs of our stakeholders and customers whilst ensuring efficiency of our proposals. We have sought to assess our plan as it developed to ensure it is fair, and represents value for money, and delivers on the needs of our customers and stakeholders.

We have taken a structured and iterative approach to the development and benchmarking of our expenditure plans. Our final Business Plan expenditure has been developed through five iterations of review, assessment, and feedback. The results from the benchmarking analysis have been used to continuously challenge the level of efficiency embedded in our plans and to ensure our submission represents optimal value for our customers and stakeholder.

Completion date	Milestone
September 2020	First Iteration of Totex, Benchmarking Assessment, and internal feedback
November 2020	Second Iteration of Totex, Benchmarking Assessment, and internal feedback
January 2021	Third Iteration of Totex, Benchmarking Assessment, and internal feedback
April 2021	Fourth Iteration of Totex, Benchmarking Assessment, and internal feedback
September 2021	Fifth and final iteration of Totex, Benchmarking, Assessment and internal feedback

We have completed a rigorous bottom up review of each component of expenditure within our plan. This is to ensure chosen solutions are thoroughly challenged, clear, and transparent, to enable us to understand the complete spectrum of efficiency from our benchmarking analysis.

The RIIO-ED2 Cost Assessment methodology is still not clear. This means that we are not fully aware of how Ofgem will assess the efficiency of our plans once they have been submitted. Ofgem have indicated that they will build on the foundation set in RIIO-ED1, acknowledging that there are elements of this framework which require development. Ofgem have confirmed the following "toolkit" of methodologies will be used:

- Quantitative econometric benchmarking using regression techniques
- Quantitative activity level modelling including ratio analysis and Unit Cost benchmarking
- Qualitative project level expert review.

As part of developing our RIIO-ED2 Business Plan, we have benchmarked our expenditure, prior to submission in the following way;

- we have replicated the suite of benchmarking models used in RIIO-ED1. This has required the build of 42 different models, all of which are linked to the Business Plan Data Tables.
- we have tested different model specifications and techniques to ensure efficiency from a variety of methods.
- we have used historical median benchmarks to test our plan against and have also included a further upper quartile efficiency adjustment as per RIIO-ED1.
- we have completed over 100 Cost Benefit analysis papers (CBA), and over 130 Engineering Justification Papers (EJP) to select and justify the optimum and most efficient solution.
- we have completed independent external assurance of our benchmarking models and results.

OFGEMS HIGH LOW CONFIDENCE FRAMEWORK

In addition to undertaking Cost Assessment, Ofgem's Cost Confidence Assessment looks at the confidence in the needs case, confidence in costs, and the efficiency of the solution. We have developed a framework to classify costs as high or low confidence, and based on this assessment, have put actions in place to improve overall confidence in our plan. This has resulted in us either continuing with confidence that, that the costs and volumes in our plan can be justified robustly, or we have proposed that a Price Control Deliverable (PCD), or Uncertainty Mechanism is introduced to manage areas of lower confidence.

We have used the framework above, to understand our level of confidence in the costs and associated evidence base. Each element of our plan has been assigned an indicator as follows;

Indicator	Description
Green	High confidence – all evidence exists and is robust.
Amber	Evidence does not yet exist, but confident actions can improve confidence.
Red	Low confidence cost area. Propose alternative funding mechanism.

OUR EFFICIENT BUSINESS PLAN

By applying our cost assessment methodology in the process of developing our Totex, we have developed a plan which is 5% efficienct at both a SP Energy Networks level, and an individual SPD and SPM level when tested against historical benchmarks. We have externally validated these findings with NERA.

Our Business Plan is accompanied by a supporting ***Annex 5A.3: Cost Assessment*** ⊕. This annex provides a step by step process of how we have tested and iterated our plans to ensure that they are efficient.

Our cost assessment methodology demonstrates that our plan is 5% efficient against industry benchmark.

*More detail on how we manage uncertainty can be found in **Annex 5B.1: Uncertainty Mechanisms.***

We have grouped the areas of uncertainty we face into six main categories. Five of these are common across all DNOs, but where there are uncertainties that are company specific, the regulatory framework allow us to propose our own 'bespoke' mechanisms.

Energy system uncertainties for Net Zero, *Pg 150*

Resilience requirement uncertainties, *Pg 151*

Policy and legislative uncertainty *Pg 151*

Uncertain activities driven by other third parties, *Pg 152*

Financial uncertainties *Pg 152*

Bespoke uncertainties *Pg 153*

CHAPTER 5 / PART B

Managing uncertainty

As we have outlined throughout our plan, the rate of change and the level of ambition required to deliver the transition to Net Zero is greater than ever before. Due to the scale of change, there is uncertainty across several aspects of our plan, and we are able to adapt to this uncertainty within the regulatory framework.

We have considered the trade-off of including expenditure in our baseline plan or through uncertainty mechanisms, in order to ensure customers are not committed to funding works which may not be required.

Depending on the pace of change in the drive to Net Zero we forecast we could request an additional £243.3m under Net Zero strategic investment uncertainty mechanisms

£243.3m

A focus on uncertainty and Net Zero

We must make sure our networks have sufficient capacity during RIIO-ED2 to allow our customers to connect their low carbon technologies safely, and to let us support the Net Zero ambitions of our wider stakeholders. We know that a significant shift will be required, but the pace of change and number of stakeholders involved means that it is impossible to accurately predict the scale of need for the period 2023-2028.

It would not be in our customers' interests to include requests for funding in our baseline plans where we do not believe we have sufficient evidence to justify. However, we do believe that more evidence of need will materialise during the RIIO-ED2 period.

A key characteristic of this network investment is that it is more efficient to anticipate the need for it and undertake it in advance rather than wait for the need to materialise by which time the required investment is likely to cost more, be less efficient and be more intrusive to our customers. To accommodate this risk we will continue to work with Ofgem and other Distribution Network Operators (DNOs) to develop uncertainty mechanisms to enable anticipatory or strategic investment in a timely and efficient manner whilst minimising risk of unutilised and potentially stranded network investment. These mechanisms will not be finalised until after our plans are submitted.

UNCERTAINTY MECHANISMS

Some aspects of our activities are less predictable than others, and our engagement has helped us understand the different types of uncertainties we face.

Areas of uncertainty are wide and varied, including the introduction of new Government policy requirements, or situations where the volume of our work is driven by third parties. We use uncertainty mechanisms to manage these aspects and Ofgem has recognised the increased uncertainty DNOs will be exposed to in RIIO-ED2 by introducing more uncertainty mechanisms.

There are five types of mechanism

These mechanisms give us the opportunity to react to uncertainties during the price control period and, give Ofgem the ability to increase or decrease our allowances in response to changes during the price control period. Uncertainty mechanisms protect customers from paying too much if an activity is no longer needed. They also help us make sure we can request additional funding for critical activity that arises during the period.

Reopeners

These allow for us to propose an adjustment to allowances to deal with an uncertainty that could not have been anticipated at the start of the price review. They can be used to deal with uncertainties across many areas.

Volume drivers

These are used when the unit cost is stable, but the volume of activity is uncertain. They automatically adjust the revenue we recover to meet the costs that can reasonably be expected when a defined volume of activity is delivered.

Pass-through items

These adjust allowances for costs we have limited control over, where Ofgem considers the full costs to be recoverable.

Indexation

For certain costs where we have limited control – but have recognised indices available to track them – our allowances are adjusted.

Use it or Lose it (UIOLI)

UIOLI allowances can also be categorised as Uncertainty Mechanisms. We have listed our UIOLIs in the Embracing the regulatory framework section.

UNCERTAINTY CATEGORY #1

Energy system uncertainties for Net Zero

Our networks must have sufficient capacity to allow our customers to connect their low carbon technologies safely, and to support the Net Zero ambitions of our stakeholders.

Strategic Investment, Reopener

Why we need a mechanism

The electrification of transport and heat are key components of the drive to Net Zero. We know that network investment will be required to facilitate both, however there is uncertainty on the scale and pace required. Ofgem is currently developing uncertainty mechanisms to enable DNOs to undertake this anticipatory or strategic investment in a timely and efficient manner as a when a need arises.

When and how the mechanisms will be used

We cannot split out how much of our Totex forecast relates to Net Zero alone as our investment plans look across all forecast growth together before deciding on investment needs. The strategic investment uncertainty mechanisms will enable costs to adjust above or below our baseline expenditure levels set out in our plans, as required during RIIO-ED2. Depending on the pace of change in the drive to Net Zero we forecast we could request an additional £243.3m under these uncertainty mechanisms based on our current view of our higher scenarios. We consider there to be a high likelihood that these uncertainty mechanisms will be used to increase investment in RIIO-ED2.

Although not yet confirmed by Ofgem, we anticipate that there will be three key uncertainty mechanisms in this area: two separate volume drivers to deal with uncertainty in high volume, lower-cost services and capacity requirements at the lower voltage level, and a re-opener for uncertain low volume, higher costs activities required on higher voltage of the network.

Net Zero, Reopener

Why we need a mechanism

There are options around alternative pathways which could be taken in the journey towards Net Zero. Some technologies, like hydrogen, could be used to a greater or lesser degrees than others, determined by technological advances, and decisions yet to be made by policymakers. New policies, like those which may emerge following the recent Climate Change Committee Independent Assessment of UK Climate Risk report to Government, could mean that all DNOs experience significant unforeseen changes to their assumptions within their plans. We would expect this reopener allows cost or output adjustments as a result of these type of unforeseen changes.

When and how the mechanism will be used

The mechanism can be triggered any time following a relevant change of circumstances related to Net Zero that materially impact costs or outputs. Ofgem has not yet made a decision on the precise scope and will consult as part of Draft Determinations.

Scope for Reform

Energy efficiency is widely acknowledged as a critical factor in realising the country's Net Zero targets. In this context, we believe that the scope of the Net Zero reopener should be expanded to ensure that if DNOs are faced with any new requirements around delivering energy efficiency then they can request the appropriate funding.

UNCERTAINTY CATEGORY #2

Resilience requirement uncertainties

We must make sure our network remains secure and resilient, so we can continue to deliver an excellent quality of supply to our customers. This means we need to comply with the latest resilience requirements.

Electricity System Restoration, Reopener

Why we need a mechanism

We must meet requirements to restore electricity supplies in the event of partial or total shutdown of the electricity network. The UK government is currently reviewing mandatory electricity restoration resilience standards with a view to increasing requirements that could lead to additional costs for DNOs. A reopener would allow DNOs to submit applications for additional costs if new standards are implemented after final plan submission.

When and how the mechanism will be used

The details of how the reopener will operate is yet to be confirmed. We currently have £6.5m in our plan for expenditure in this area.

Cyber Resilience and Security, Reopener

Why we need a mechanism

Cyber Resilience and security is a key risk to all organisations around the world. For DNOs cyber risks could impact communication systems, customer databases, email servers or applications. Changes in technology and the nature of cyber security threats mean that cyber resilience requirements are always evolving. Applicable cyber resilience requirements are determined by the National Cyber Security Centre (NCSC), and it is difficult to anticipate future changes. In addition cyber criminals are always evolving their abilities.

When and how the mechanism will be used

There are separate reopeners for cyber resilience-related OT and IT expenditure. We believe there should be reopener windows at the start and mid point of RIIO-ED2 and we set out our rationale for this in ***Annex 5B.1***. We currently have £12.3m (cyber OT) and £7.7m (cyber IT) in our plan.

The outcome of Ofgem's Access and Forward Looking Charges Significant Code Review (SCR) is not yet known. An Uncertainty Mechanism is needed because under our 'best view' assessment there could be a circa £326m increase in connections driven reinforcement charges.

£326m

UNCERTAINTY CATEGORY #3

Legislative, policy and resilience uncertainty

External changes from government, regulatory bodies, or other authorities could require us to change our plans at a later date. We are unable to forecast the impact on our plan prior to creating our business plan.

Environmental Legislation, Reopener

Why we need a mechanism

DNOs have no control over the determination of environmental legislation and regulations. Under Ofgem's current proposals, the reopener would allow DNOs to recover efficient costs associated with changes in environmental standards that impact what we need to do within our Environmental Action Plans (EAP).

When and how the mechanism will be used

Ofgem has not made a decision and will consult as part of Draft Determinations.

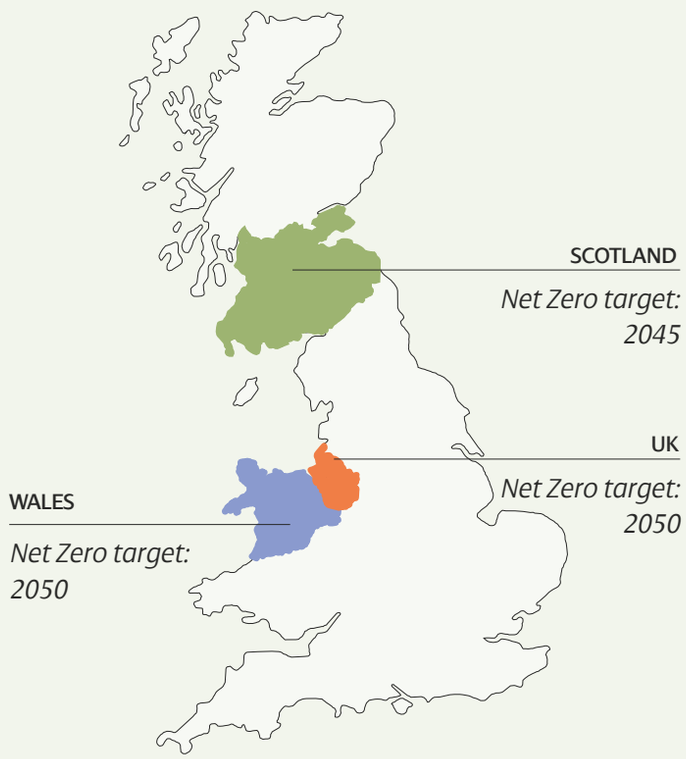
Scope for Reform

It is important that this reopener also captures the impacts from changing environmental standards that extend beyond EAP activities.

For example, work driven by the Environment Agency (EA) has indicated that more emphasis should be placed on Technical Guidance to the Waste Regulations to ensure the correct levels of testing and disposal of hazardous waste is carried out during excavations by utilities.

The new Technical Guidance is not yet available, but it is expected to be implemented from 2023 and it is likely to change DNO costs and volumes in this area.

We are the only DNO to operate across three government territories within the UK.



UNCERTAINTY CATEGORY #4

Third-party uncertainty

The activities of third parties can sometimes determine the work we have to complete and the costs we incur. As such, we are unable to forecast the full extent of our costs ahead of our business plan submission.

Streetworks, Reopener

Why we need a mechanism

The way in which Highway Authorities use and introduce new permit and lane rental schemes is outside the control of DNOs. These schemes charge DNOs for activities that involve work on public highways. This reopener allows DNOs to request funding for costs related to future schemes which are difficult to anticipate.

When and how the mechanism will be used

Ofgem will consult on the details of this reopener at Draft Determination. We currently have £23.3m in our plan in this area. In RIIO-ED1, we were awarded £8.2m of costs during the reopener window.

Smart Meter Interventions, Volume Driver

Why we need a mechanism

Energy suppliers install smart meters as part of the Smart Meter Implementation Programme (SMIP). Some smart meter fittings require DNOs to undertake certain works or interventions. The workload is driven by energy suppliers, hence it is difficult for us to forecast.

When and how the mechanism will be used

The agreed unit costs have yet to be decided by Ofgem. Our plan contains a forecast of £20.1m expenditure in this area and on an annual basis we will report on and be remunerated for the number of jobs undertaken based on agreed unit cost.

*We estimate that our proposed PCB uncertainty mechanism will **minimise the volume risk in this area by 30%**, and protect our customers from paying more than is needed.*

30%

Rail Electrification, Reopener

Why we need a mechanism

Rail electrification projects may require DNOs to carry out network diversions and/or upgrades to accommodate increased demand. These projects are subject to changing external factors which make it difficult to include costs within plans. This reopener enables DNOs to recover costs that materialise during the price control period.

When and how the mechanism will be used

Ofgem will consult on details of this reopener at Draft Determination.

Coordinated Adjustment Mechanism (CAM), Reopener

Why we need a mechanism

By working with other network companies, our whole system approach can identify when it would be more efficient for certain activity to be undertaken by a different network company, rather than us (or vice versa).

A whole system approach ensures that the party best placed to deliver a more efficient solution can do so, and the CAM is designed to support this even where the original price control funding for that activity is allocated to another network company.

When and how the mechanism will be used

There will be an annual reopener window at which we can propose outputs and costs to be reassigned, if the other licensee involved agrees. If the application is accepted by Ofgem, each licensee will have its' price control settlement adjusted.

Scope for Reform

The current design of the CAM does not allow for a transfer of funds in partnerships between organisations within the electricity sector and outside of it. To fully enable whole system solutions involving non-licensed, non-network organisations, then Ofgem must seek to develop a separate funding mechanism.

UNCERTAINTY CATEGORY #5

Financial uncertainty

There are various financial mechanisms which can impact our costs during the price control period. These are outlined below.

Indexation

Why we need a mechanism

There are certain macro-economic factors that impose material costs on DNOs, and these can vary in value day to day. It is difficult for us to accurately forecast these factors and associated costs, so they are instead calculated with reference to an established financial index. Factors that will be indexed in RIIO-ED2 are: Inflation, Cost of debt, Cost of equity and Real Price Effects (RPEs).

When and how the mechanism will be used

Indices are applied annually so adjustments can be made throughout the RIIO-ED2 period.

Tax Reopener

Why we need a mechanism

Our forecast for tax expenditure in our baseline plan assumes efficient tax costs based on present legislation and accounting standards. This reopener allows for an application to adjust our allowances if legislation or accounting standards change. In addition, the reopener allows Ofgem to revise tax allowances should they materially change from the underlying liabilities.

When and how the mechanism will be used

The reopener can be triggered at any time during RIIO-ED2 where changes in tax legislation or accounting rules cause a material increase or decrease in tax costs and/or our tax allowances materially change from our liabilities.

Pass-through Costs

Why we need a mechanism

The regulatory framework allows for certain categories of costs that all DNOs must incur to be recovered in full, if we are able to provide justification to Ofgem. In RIIO-ED2, the following costs will be treated as pass-through, similar to how they were treated in RIIO-ED1: *Business rates, Ofgem licence fee, Transmission connection charges, Supplier of last resort (SoLR) cost claims, Pensions adjustment, Ring fence costs, Digital Communications Company (DCC) fixed costs, Smart meter IT costs.*

When and how the mechanism will be used

We automatically recover justified pass-through costs throughout RIIO-ED2 period.

BESPOKE UNCERTAINTY

Our proposed bespoke uncertainty mechanisms

Most of the mechanisms are common across all DNOs, but the regulatory frameworks allows us to propose additional 'bespoke' uncertainty mechanisms. Our proposals below could be applied to all DNOs.

*More detail on how we manage uncertainty can be found in **Annex 5B.1: Uncertainty Mechanisms.***

PCBs

In 2019, new European environmental legislation came into force which requires us to remove all oil filled assets with more than 50ppm PCBs by 2025.

During RIIO-ED1 we have led extensive analysis and investigation work across the industry to understand what compliance with this legislation means for our asset base. We have developed an industry-wide statistical model via the ENA that leverages data from all GB DNOs to support a targeted and coordinated approach towards PCBs management.

We estimate that 3,423 pole mounted transformers (PMTs) need to be replaced in SPD and 5,197 in SPM. We have also included provisions for associated pole replacement, overhead line protection upgrade, oil testing of ground mounted transformers and replacement of known PCB contaminated capacitor bank. This amounts to total RIIO-ED2 expenditures of £23.5m for SPD and £32.4m for SPM.

The statistical model which has been used to generate these figures will continue to be updated beyond our final plan submissions as a significant volume of asset inspection and testing upon disposal are ongoing nationally; this will amend the volumes of PMTs that are flagged as needing replaced. We estimate that the real volumes that need replaced could vary by up to +/- 30% against the volume able to be forecast for final plan submission.

We therefore believe that the best way of minimising risk to consumers is to propose a volume driver to manage this volume risk and adjust our RIIO-ED2 allowances for the actual numbers of PMTs and poles we replace to mitigate potential PCB contamination.

EV Charge Point Provider of Last Resort

A new distribution licence condition was put in place at the beginning of 2021 to reflect the EU's Clean Energy Package. Under the new regulations, DNOs will be prohibited from owning, developing, managing or operating EV charge points.

However, DNOs, subject to Ofgem approval can act as a "Provider of Last Resort" (PoLR), where no other party other than the DNO is able to "own, develop, manage or operate" an EV Charge Point, or could not do so at reasonable cost and to acceptable timescales, following a failed tender exercise.

The current regulatory framework does not allow any costs incurred in discharging the PoLR obligation. At present we think DNOs will be required to discharge this obligation on a limited basis in RIIO-ED2. Therefore, we are proposing a pass-through mechanism to ensure consumers only pay for associated costs as and when the PoLR obligation is discharged.

Severe Weather 1 in 20

All DNOs are currently permitted to propose expenditure to mitigate network resilience and customer service impacts, in relation to specifically defined severe weather events.

When originally defined, these events were expected to be exceptional in nature, occurring once every twenty years. Since this time there is now international consensus that climate change is having growing effect on the volatility of weather patterns which means weather conditions are likely to be more extreme and their occurrence is now more difficult than ever to predict for RIIO-ED2.

At present these costs are included in baseline cost allowances subject to the Totex Incentive Mechanism (TIM). Given the increasing unpredictability and likelihood of these events, we believe there is risk that costs are incurred above or below baseline allowances and provision should be made to adjust SW 1 in 20 allowances at the end of RIIO-ED2 when such events occur, thereby reducing risks and costs to customers of over-allowances in this area.

Digitalisation

Digitalisation is an umbrella term capturing various initiatives and developments aimed at transforming an organisation to one where digital solutions and data underpin the business operation.

Our RIIO-ED2 plan identifies our ambition to transform our organisation to one capable of delivering the opportunities and benefits that digitalisation enables.

This is a fast moving area and digitalisation requirements are driven in part by DNOs but also in response to external stakeholders. An uncertainty mechanism is needed to enable DNOs to respond flexibly to digitalisation requirements that arise from changes to requirements endorsed by Ofgem/BEIS.

Significant Code Review

Ofgem's ongoing Access and Forward-Looking Charges Significant Code Review (SCR) could introduce substantial reforms to the arrangements and costs for accessing and using our network.

Until a final decision is available, plus other key considerations such as network charging reform, it is difficult to predict the outcome of the Access SCR reform in totality.

Therefore under our 'best view' assessment there could be a circa £326m increase in connections driven reinforcement charges. We believe an appropriate uncertainty mechanism is needed to manage this risk.

Distributed Re-start

The electricity system operator (ESO) and DNOs are currently trialling distributed re-start from Distributed Energy Resources (DER) as part of the wider statutory energy system restoration requirements.

If proven, procurement of distributed restart from DER by the ESO and DNOs would be rolled out nationally. To facilitate this DNOs may be required to undertake enabling works at DER sites e.g. install comms infrastructure. Our plan does not include any such enabling works and therefore the funding of the rollout would require a separate agreement with Ofgem.

Ongoing efficiency and Real Price Effects (RPEs)

Over the course of the RIIO-ED2 price control period, the costs of delivering our services are expected to evolve due to external economic forces, namely the changes in the prices of our inputs relative to general price inflation, referred to as Real Price Effects (RPEs), and the improvements in industry-wide productivity, referred to as 'Ongoing Efficiency' (OE).

Real Price Effects

For RIIO-ED2, Ofgem has proposed to set RPE allowances based on an indexation approach, whereby DNOs' upfront RPE allowances are updated annually based on the outturn movements of the chosen benchmark input price indices.

In their report commissioned by the ENA, NERA have undertaken such an exercise, setting out their recommendations for the selected benchmark input price indices to be used in the context of an RPEs allowance that is to be indexed over the RIIO-ED2 price control. NERA subsequently produced an addendum to their original report, making two revisions to their original recommendations. Both reports are attached to our Business Plan in ***Annex 5D.4: Real Price Effects***

Based on NERA's work, we recommend that adjustments be applied to the benchmark indices to correct for the persistent "wedge" seen in the annual growth rates in the benchmark indices relative to DNOs' unit costs for certain cost categories i.e. the indices typically grow by less than input costs each year. Not applying these adjustments would severely risk the indexed RPE allowance undercompensating us for the rise in our input prices.

The importance of this approach has been elevated by the current accelerated cost inflation for raw materials and services, principally due to the severe disruptions across global supply chains – transport costs, especially by sea, have increased by up to 40% compared to the same period in 2020. We are already experiencing the impact of these effects – which are anticipated to persist – where, for example, the surging fluctuations in commodity prices (particularly metals) have led to the practice of 'fixed pricing' with our contractors no longer being attainable in many cases, with contractors now instead offering variable pricing contracts tied to indexing. Not addressing this risk would exacerbate the materiality of the misalignment between RPE allowances and actuals, severely harming our ability to efficiently deliver on our outputs over the RIIO-ED2 period.

In any case, the RPEs indices don't directly track what we actually experience in reality, so this is already a risk to DNOs.

Ongoing Efficiency

Our costs of delivery will also be affected by the productivity improvements we can realistically achieve over the price control period. OE relates to the productivity improvements that even the most efficient companies in the sector can achieve over time as a result of adopting new technologies or working practices. This is in addition to efficiency which has already been incorporated into our plans as they developed. We have undertaken a detailed assessment of historical estimates, macroeconomic factors, DNO unmeasured efficiency gains, and requirements to deliver new outputs.

In developing our plans, we have included £66m of embedded efficiency in our direct programme of work, which will be delivered through unit cost efficiencies and delivery synergies. In addition, we have included £87m of efficiencies from adopting innovative technologies which have been demonstrated in RIIO-ED1. In addition to our embedded efficiency ambitions, we are committing ourselves to a further stretch through the application of an ongoing efficiency improvement target of 0.5% p.a. This equates to an additional £48m of efficiencies which we must identify and deliver during RIIO-ED2. This means that, in total, c£201m of efficiencies are included within our RIIO-ED2 business plan.

*Further detail can be found in A**nnex 5D.5: Ongoing Efficiency, Annex 5D.4: Real Price Effects** and **Annex 5A.2: Business Plan Data Tables.***

*Please refer to **Annex 5C.4** for a list of all of our outputs, UMs, CVPs and their associated costs.*

This chapter summarises four key forms of regulatory mechanism and how we are using them in RIIO-ED2.

Output Delivery Incentives (ODIs), ***Pg 156***

Consumer Value Propositions (CVPs), ***Pg 158***

Price Control Deliverables (PCDs), ***Pg 159***

Use it or Lose it (UIOLI) allowances and allowances with claw-back conditions, ***Pg 159***

CHAPTER 5 / **PART C**

Embracing the regulatory framework

As we face the challenges and opportunities of Net Zero, we must build on the foundations of the regulatory framework established under RIIO-ED1, whilst ensuring it has the flexibility to allow us to make the most effective decisions based on the needs of our customers and stakeholders.

We will continue to work within the framework and utilise the regulatory mechanisms in ways that ensure we deliver for our customers and stakeholders.

We will also continue to engage with the regulator, industry and stakeholders through working groups to further develop the regulatory framework to support Net Zero ambitions.

There are many complex and varied regulatory mechanisms, all of which play a vital role in how and what we will be able to deliver during RIIO-ED2. These mechanisms touch most areas of our plan and this chapter summarises the key elements and how they fit together to reinforce the ambition of our plan.

These mechanisms include a series of Licence Obligations (LOs), which set specific minimum standards of performance. Some of these remain unchanged from RIIO-ED1, with new ones to reflect the evolving needs of our customers. We will continue to meet all LOs, as we have in RIIO-ED1.

REGULATORY MECHANISM #1

Output Delivery Incentives

Our proposed RIIO-ED2 incentives package is designed to improve performance in the areas our customers and stakeholders value the most.

Throughout RIIO-ED1, the RIIO framework has encouraged Distribution Network Operators (DNOs) to make a step change in their performance levels. As we move into RIIO-ED2, the pace of change is increasing, and we are making commitments to meet or exceed targets that take us further than ever before.

Output Delivery Incentives (ODIs) are a key regulatory tool within the RIIO framework. They are designed to encourage DNOs to deliver their outputs and drive performance improvements that provide value for money for current and future consumers. Ofgem has designed a suite of incentives that apply to all DNOs, called common ODIs.

We can also propose bespoke ODIs in our plan. This gives us the opportunity to ensure the output and incentive arrangements reflect the individual characteristics of our network to drive improvements that are valued by our customers and stakeholders.

Financial rewards have been set where data exists to demonstrate that the cost of an incentive is not greater than the value of benefits to consumers. Financial penalties can also be set where Ofgem requires a minimum standard of performance, and where failure would lead to consumer detriment. Reputational only incentives are suitable for output areas that are valued by stakeholders, but where there is a lack of data. They are also useful where it is difficult to measure the consumer benefit.

A summary of our common ODIs is provided in the table below. Full details can be found in ***Annex 5C.5***

Our common ODIs

The following table sets out the common ODIs that are in place for RIIO-ED2 including the continuation of existing incentives from RIIO-ED1 and new incentives that are under development for the RIIO-ED2 period.

	Incentive & Purpose	Metric	Max reward / penalty determined as
Existing Incentives from RIIO-ED1	*Broad Measure Customer Satisfaction (survey):* incentivises service improvements for customers who get in touch to request a connection, experience an interruption to their electricity supply, or have a general request.	Customer satisfaction score	+/- 1% base revenue
	Broad Measure Customer Satisfaction (complaints): incentivises us to ensure we have robust processes to address customer concerns.	Complaints score	- 0.5% base revenue
	Time to Connect: incentivises us to invest in measures to connect customers quicker.	Time to Quote and Time to Connect	+/- 0.4% base revenue
	Interruptions Incentive Scheme: incentivises us to invest in and operate the networks in a way which reduces the frequency and duration of power cuts.	Customer Interruptions and Customer Minutes Lost	Discussions ongoing with Ofgem
	Network Asset Risk Metric: incentivises our asset expenditure to be linked to network risk reduction.	Long term risk reduction target	TBC by Ofgem
New Incentives for RIIO-ED2	*Strategy Delivery Incentive – Major Connection:* incentivises us to improve standards of service for major connection services.	Quantitative and qualitative assessment, all details in ***Annex 5C.5***	TBC by Ofgem
	Strategy Delivery Incentive – Distribution System Operator: incentivises us to meet and exceed the baseline standard for DSO through the delivery of our DSO Strategy.	Quantitative and qualitative assessment, all details in ***Annex 5C.5***	TBC by Ofgem
	Strategy Delivery Incentive – Customer Vulnerability: incentivises the support and protection of customers in vulnerable situations.	Quantitative and qualitative assessment, all details in ***Annex 5C.5***	+/- 0.5% base revenue
	Environmental Action Plan and Annual Environmental Report: ensures we have robust plans to minimise the environmental impacts that can result from our network activities.	Measured across ten metrics, all detailed in ***Annex 5C.5***	Reputational only
	Environmental Scorecard: incentivises us to meet and exceed the stretching commitments in our Environmental Action Plan.	TBC by Ofgem after plans submitted	TBC by Ofgem

Interruptions Incentive Scheme (IIS)

Network reliability performance is measured by the Interruptions Incentive Scheme (IIS). Ofgem uses this to set targets for the level of Customer Interruptions (CI) and Customer Minutes Lost (CML) arising from planned and unplanned outages on the electricity network.

Our customer engagement has re-affirmed that network reliability remains amongst our customers' top priorities. As society becomes increasingly reliant on electricity to power electric vehicles and heat pumps, and to connect greater levels of renewable generation, the criticality of network reliability will continue to increase. The reliability of our network is fundamental to enabling our customers' transition to Net Zero.

Since its design in the early 2000's, the IIS has worked well to drive improvements in network reliability for customers across GB – since 2010, unplanned interruptions on our network have reduced by 15%-20% in frequency and 25%-40% in duration. However, as network performance across GB has improved, the methodology used by Ofgem for setting targets has broadly remained the same and no longer reflects DNOs' ability to make continued improvements. The result is that it has potential to create unobtainable targets in RIIO-ED2.

We believe the methodology should be reviewed to align with the changes in reliability realised over the last two decades. In doing this we want to ensure the methodology:

- Sets targets for all DNOs based on their performance relative to the performance of the most reliable DNOs.
- Incentivises improvements for all DNOs – everyone should be improving compared to their own past performance.
- Sets targets for the best-performing DNOs which reflects their diminished ability to make continued improvements.

We also want to work with Ofgem to make sure the methodology is simplified, and to bring the approach used for setting unplanned CML targets in-line with all other components of the methodology.

We are planning ambitious levels of investment in RIIO-ED2 to continue to improve system reliability through new and proven technologies, and by embedding innovation. We want to make sure network reliability targets stretch us to deliver these improvements and do not unfairly penalise performance improvements.

We believe our CVP and bespoke ODI proposals have the potential to generate over £162m in gross benefits to our customers and stakeholders.

£162m

Bespoke ODIs

In the RIIO-ED2 framework, Ofgem has introduced the opportunity for DNOs to propose outputs and incentives that are bespoke to them, and are developed in collaboration with our stakeholders and our Customer Engagement Group (CEG). This allows companies to submit proposals for incentives that reflect the specific preferences and needs of their customers and stakeholders.

As part of our RIIO-ED2 Business Plan we are proposing the following three bespoke ODIs in our plan:

1. LV Connections Offer Accelerator
2. Community Energy
3. Advice Services

For all of our proposed bespoke ODIs, we have listened to our customers and stakeholders and believe these are important areas where they require us to do more. Our current proposals are supported by stakeholder engagement and we have worked with our CEG to test the value and benefits of these incentives to ensure enduring value to our customers.

Throughout the development of these bespoke ODIs we have gone through a robust assessment exercise where we have tested our proposals against Ofgem's criteria for bespoke outputs and we are confident that our three bespoke ODIs meet the requirements set out in Ofgem's business plan guidance. For all our proposals we have outlined the needs case, defined the incentive mechanism and targets, along with supporting evidence and an assessment of the costs and benefits for each of our proposals.

Our bespoke ODIs *For further details see **Annex 5C.5***

Incentive and Purpose	Metric	Estimated max reward per annum
1. LV Connections Offer Accelerator: incentivises improvement in the speed in which quotes are issued for low voltage customers that are not in scope for TTC/TTQ incentive. This is explained in more detail in *Chapter 4A*	Time to Quote for LVAL and DGLV customers	£2.1m (0.25% Base Revenue)
2. Community Energy: incentivises us to undertake activities that encourage and facilitate community-led renewable energy, energy demand reduction and energy supply projects. This is explained in more detail in *Chapter 4B*	Stakeholder satisfaction and independent evaluation of case studies and strategy delivery	£4.2m (0.5% Base Revenue)
3. Advice Services: incentivises us to provide a range of advice services that help our customers to reduce household or business costs, drive efficiency and help them access the benefits of the low carbon transition. This is explained in more detail in *Chapter 4B*	Customer satisfaction score and volume/ value of work delivered	£2.1m (0.25% Base Revenue)

REGULATORY MECHANISM #2

Consumer Value Propositions

We have developed four Consumer Value Proposition (CVP) proposals to deliver greater value for consumers.

Ofgem has introduced the Business Plan Incentive, a four-stage assessment, to ensure the quality of business plan submissions. CVPs are introduced in Stage 2 of this framework as one way of encouraging and rewarding ambitious plans. These proposals deliver additional benefits to consumers by going above and beyond minimum requirements and functions in one of the five priority areas identified below. These priority areas have been set by Ofgem.

- Services to vulnerable consumers.
- Services to major connection customers.
- The Environmental Action Plan (EAP).
- Distribution System Operator (DSO) activities.
- Whole system approaches.

The CVPs we propose are a subset of the most ambitious and impactful commitments offered within the business plan and are based on clear stakeholder and customer feedback. A bespoke, 10 stage, 'CVP Test' drove the selection of our CVP proposals to ensure we only propose those that are clearly supported by stakeholders and best demonstrate our value proposition to customers in RIIO-ED2. We developed the bespoke test following analysis of both regulatory guidance documents and Ofgem's decisions on CVP proposals in the RIIO-T2 and GD2 processes. Our draft plan indicated that we would develop a CVP in relation to our Scope 3 carbon emissions Science Based Targets. Whilst we have included this valuable proposal in our plan, it did not meet all of our CVP test criteria and is not being proposed as a CVP. See ***Annex 4C.3***

The CVP proposals that emerged from our 'CVP Test' have been quantified using the Social Return on Investment (SROI) method. We have been at the forefront of industry efforts to standardise the use of this method to quantify the total economic value. Further details are in ***Annex 5C.2***

Our CVPs

The table below summarises our four proposed CVPs. We have outlined gross benefit of each CVP, alongside our proposed CVP award (on the assumption that we will share 50% of the net benefits with our customers).

CVP Item	CVP Description	Benefits
CVP1: Direct LCT vulnerable support **Priority area:** *Services to vulnerable consumers*	This involves two major initiatives aimed at ensuring that vulnerable customers are not left behind in the energy system transition. *1. Funding technology to reduce energy demand which will reduce bills for 40,000 of our most disadvantaged customers, and reduce emissions.* *2. Increasing the uptake of smart meters across harder to reach customer groups.*	Gross Benefit: £20.1m Potential CVP award: £3.7m
CVP2: EV Optioneering **Priority area:** *Whole system approaches*	This involves carrying out EV optioneering works for 37 local authorities. This will identify the optimal placement of EV charging infrastructure, savings on connections and avoided reinforcement costs, accelerating the EV infrastructure roll out and facilitating the uptake of electric vehicles.	Gross Benefit: £15.8m Potential CVP award: £5.6m
CVP3: Network Loss Reduction and Safety Enhancement **Priority area:** *The Environmental Action Plan*	This involves procurement of a Mobile Asset Assessment Vehicle (MAAV) to detect stray and contact voltages that result from faults on our network and on connected third party equipment. Earlier detection of faults will help reduce losses, improve network performance, and improve customer safety.	Gross Benefit: £10.8m Potential CVP award: £1.2m
CVP4: Advanced Fault Level Management **Priority area:** *Services to major connection customers*	This involves roll out of technology to enable more generation onto our network without the need for costly investment in the network or deferring the need for it. We are proposing to roll this technology to certain sites where the network is close to the safe fault level limit.	Gross Benefit: £36.1m Potential CVP award: £10m

Costs associated with the CVP1, CVP2 and CVP3 are also being requested as allowances with clawback conditions, as outlined on ***Pg 159***

REGULATORY MECHANISM #3

Price Control Deliverables

The use of Price Control Deliverables (PCDs) in the RIIO-ED2 framework is another useful way of ensuring that we deliver value for our customers, stakeholders, and wider industry.

Ofgem define PCDs as outputs that are directly funded through the price control and where the funding provided is not transferrable to a different output or project. The use of a PCD ensures the conditions attached to the funding are clear up-front and that the funding can only be used for the specific elements contained within the scope of the PCD. This ensures we retain our focus on delivering what matters most to our customers.

In addition to a number of common PCDs which apply to all DNOs, we have developed one bespoke PCD for RIIO-ED2. The following tables summarise our PCDs, with further details in ***Annex 5C.6***

Our common PCDs

Output name	Value
Network Asset Risk Metric: this will enable us to manage the level of asset risk across our network.	£355.7m
Cyber Resilience IT: this will enable management of risks associated with the security of our information technology (IT) network.	£7.7m
Cyber Resilience OT: this will enable management of cyber threats to operational technology like SCADA and control communication systems.	£12.3m
Worst Served Customers: this will enable us to reduce the number of interruptions experienced by those customers who experience an unusually poor service.	£14.6m

Our bespoke PCDs

Output name
Land Rights: this will enable the settlement of valid outstanding Injurious Affection (IA) claims from the RIIO-ED1 period in a cost-effective manner.

REGULATORY MECHANISM #4

Use it or Lose it (UIOLI) allowances and allowances with clawback conditions

There are some areas where we know that our customers and stakeholders value activities, but we are unable to set out the detail of the specific activities at the start of the price control period or circumstances may change during the period.

By attaching the costs of these to either Use it or lose it (UIOLI) allowances or allowances with clawback conditions, we ensure that our customers will only pay for the activities that are needed. DNOs can only access a UIOLI allowance if the expenditure meets the conditions set.

Alternatively, 100% of an allowance could be given to us at the start of the price control period, but with clawback conditions attached to ensure that a percentage of this is returned if we do not meet the agreed conditions surrounding the use of the allowance.

Our common UIOLI allowances

Output name	Value
Network Innovation Allowance: This allows us to fund research, development and demonstration projects relating to support for vulnerable customers and the energy system transition.	£35.0m
Visual Amenity: This allows us to improve visual amenity in protected landscapes such as Areas of Outstanding Natural Beauty and National Scenic Areas.	£4.6m

We are also proposing five bespoke allowances with clawback conditions, three of which are related to our CVP proposals outlined on ***Pg 158***

Our bespoke allowances with clawback conditions

Output name	Value
Direct LCT vulnerable support: These are the costs associate with CVP1 overleaf.	£14.7m
EV Optioneering: These are the costs associate with CVP2 overleaf.	£5.3m
Network Loss Reduction and Safety Enhancement: These are the costs associated with CVP3 overleaf.	£10.1m
Net Zero Fund: will facilitate innovative low-carbon projects as well as those using proven technology. It will focus on practical initiatives, brought to us by our communities and supporting Net Zero aims. We have outlined in full our proposal for our Net Zero fund in ***Chapter 4B***.	£30.0m
Biodiversity enhancement: We are proposing to enhance biodiversity across our networks on projects and programmes by 500 biodiversity units over the RIIO-ED2 period.	£8.0m

Full details on our proposals can be found in ***Annex 5C.7***

*We present additional detailed analysis of our Finance in **Annex 5D.1***

In this chapter, we'll outline each of the following areas in more detail to show how we reached our financing conclusions.

Cost of Debt
Pg 164

Cost of Equity
Pg 164

Notional Gearing
Pg 165

Financeability
Pg 167

Efficiency and Financeability
Pg 171

CHAPTER 5 / **PART D**

Financing our plan efficiently

This chapter considers the overall financing arrangements within our plan, an overview of our revenue and then an insight into how we have approached the financing of our plan.

In this chapter, we provide an accessible summary of this detail. We have performed a full review of all financial information requested in Ofgem guidance and Challenge Group correspondence. The analysis within this chapter complies with Ofgem guidance, and we provide our alternative views and analysis in ***Annex 5D.1***

This chapter also addresses questions on appropriate cash flow levels, and appropriate shareholder remuneration. We also explain our plan assumptions on capitalisation and regulatory depreciation, and how we adopted Ofgem's financial policies on the treatment of taxation and pension costs.

68% of customers agree with SPEN's alternative cost of equity proposals

68%

Co-creating our RIIO-ED2 plans with our customers and stakeholders

Purpose of stakeholder engagement for this chapter
Stakeholder engagement for financing our plan must account for the views of consumers, networks and wider stakeholders – to ensure all our funding decisions are efficient and always consider the potential impact on consumer bills. It is the network owner's responsibility to demonstrate that their financing plan is 'efficient', requiring no greater cash flow than is necessary to be 'financeable'. We have regulatory and licence requirements to ensure our network is adequately funded so that it remains safe, secure and reliable. Equally we must ensure longer-term network investment funded through shareholder investment is sustainable. By this we mean making sure investors' rate of return on their investment in our network is set at a level that takes account of the inherent risk associated with investing in the GB electricity sector at present. To achieve this we use our dedicated investor engagement team to understand the rate of return investors require, and better understand the concerns of investors at a global scale including the impacts of issues such as: nationalisation, Scottish independence, structural changes to the electricity industry, Brexit, commodity and security of supply risks and, importantly, changes to funding proposed by the regulator.

How and why we have engaged with our stakeholders
Using workshops and consumer research surveys we engaged with consumers and consumer representatives about our investment plans for RIIO-ED2 in respect to their priorities. This allows those stakeholders who are less familiar with how we are financed to better understand when and why we invest, and to have their say in these decisions.

Engaging with consumers and consumer representatives, we worked to explain the key attributes of the distribution network. Over the period to December 2021, we have used various interviews and online tools to establish the 'willingness-to-pay' of GB bill payers for delivering in these areas. Also,we have conducted a consumer and business acceptability survey to outline each aspect of our plan and the associated bill impact.

SPEN commissioned an independent research organisation Taylor McKenzie to engage and collaborate with customers and stakeholders on its RIIO-ED2 plans. In total 16,000 customers have been involved in the project. Recognised scientific methodologies were used to measure consumer preferences including Choice Modelling and Choice Based Conjoint. During phase four of this engagement programme the acceptability of the overall bill impact was tested.

We also engaged with investors and the regulator via meetings and conferences and have taken into account relevant guidance and publications from financial market experts. There has been substantial investor comment and feedback on relevant recent events relating to the energy networks RIIO-2 price controls for electricity transmission, gas transmission and gas distribution. From these events, which led to all the companies involved (4 GDNs and 4 TOs) referring their allowed return on equity and other areas of their final determinations to the CMA for review, we have been able to infer broad shareholder disagreement with Ofgem's levels of return, proposed under RIIO-2.

We were also able to share the methodology and high-level calculations behind the financing of our plan with our Customer Engagement Group.

What our stakeholders have told us is important to them
In advance of our plan submission in December 2021 we tested our cost of equity proposal, as detailed in ***Annex 5D.1*** with customers. The result of this testing was 68% of customers surveyed agreed with SPEN's proposed cost of equity (detailed in ***Annex 5D.1***). Agreement was 61% from customers in fuel poverty.

A number of global utility investors have expressed concerns that Ofgem's proposed cost of capital does not accurately reflect the true risks which investors continue to take when financing electricity network operators in GB. Ofgem's working assumption of the cost of equity for RIIO-ED2 is 4.65% (CPIH)[1]. Our investors also informed us that they continuously review areas of investment opportunity and challenge, taking into account a number of different considerations. For example, the stability of the geographical area within which they invest remains a key factor, especially when those investments are recovered over a long period, such as 45 years, for our proposed RIIO-ED2 investment.

How stakeholder feedback has shaped our plans
Based on the feedback we have gathered from stakeholders and expert evidence, we offer an evidenced alternative recommendation to Ofgem's draft cost of equity. This reflects a fair return for our investors that is founded on economic evidence, the external environment and regulatory precedent.

Based on Ofgem's proposals our shareholders' return will go from 6% (RPI) cost of equity in RIIO-ED1 down to around 3.65% on an RPI basis. This is a reduction in the return to shareholders of around forty percent. On a like-for-like basis it is a very significant reduction and is a historical low for returns in the electricity distribution sector.

This has damaged investor confidence, at a time when we need an environment which positively attracts investment into the electricity distribution sector.

Why these changes are important
The transition to Net Zero carbon will require significant, sustainable investment in electricity infrastructure over the next five to ten years. The funding of the transition relies on the long-term investment made possible by shareholders. Through our extensive engagement programme we understand Ofgem's current draft cost of equity may disrupt the efficient financing of GB's networks businesses. It puts at risk network companies' ability to raise new finance, which is essential to fund the necessary investment to deliver the outputs that consumers, network users and customers require and to facilitate the transition to a low carbon economy. The consequences of not delivering these investments on time will be significant for consumers. An appreciation of the wider sector is required as, for example, if we cannot deliver the energy from windfarms to consumers, the constraint (compensation) payments to generators will materially increase, which are ultimately funded by the consumer.

There is also a much more significant cost. If this renewable energy is not delivered then the risk of supply incidents increases. Power cuts can have widespread economic costs. As the economy is further electrified that impact will become greater. As an example, most transport in our areas is either diesel or petrol based, but further electrification of rail and the deployment of electric vehicles will change that. This means that the impact of power cuts in the future will be even greater. There are also estimates that the cost of a power cut across Scotland would be around £1 billion per day.

1. RIIO-ED2 Sector Specific Methodology Decision: Annex 3 Finance 11 March 2021

Our revenues

Our average revenues explained

We have two strands of revenue. First, we have revenue directly associated with past capital investment. This is referred to as regulated asset value (RAV) revenue and includes depreciation and return.

Second, we have revenue related to the day-to-day running of the network (not RAV-associated). This revenue pays for a wide range of items, including network maintenance, taxes (such as corporation tax), business rates and established deficit pension funding.

The financial inputs

Parameters	Ofgem's SSMD mandated assumptions
Cost of equity	4.65%*
Cost of debt	2.09%
Notional Gearing	60%
Financeability adjustment	None
Capitalisation rate	Natural rate
Dividend yield	3.00%
Credit rating	Baa1
Other policies	Per Ofgem

**Cost of equity adjusted to 4.40% for Base Revenue reflecting 0.25% expected outperformance as per Table 1 in the SSMD.*

Based on our current assumptions, we will not need to implement any further financeability adjustments. However, this could change if our input assumptions have to be altered during the business plan process.

Set by Ofgem, recovered through suppliers

Our revenues are set by Ofgem. They are based on proposed investments and commitments we agree with Ofgem through the business plan process. We recover our revenues through charges to energy retailers which, in turn, are collected through electricity bills.

Our revenues are a combination of elements:
Fixed – based on us delivering agreed outputs in the future
Variable – due to uncertainty about the future, such as the amount of connected generation
Incentives and adjustments from previous years – and price controls.

SP Distribution

Our average RIIO-ED2 baseline revenues will remain broadly flat with that of RIIO-ED1. However, throughout RIIO-ED2, our annual revenues will have decreased by £99m$^{20/21}$ (21%), primarily caused by a both a historical financeability adjustment and our agreed established pension deficit funding coming to an end.

In DPCR5, Scottish DNOs faced a cliff face drop in revenue following the full depreciation of assets held at privatisation. To mitigate volatility, financeability concerns and pressure put upon energy retailers and end consumers, Ofgem agreed to accelerate future revenues over 15 years to 2025/26 which leads to another cliff face to the magnitude of £35m$^{20/21}$. All non-Scottish DNOs faced their cliff face adjustments in RIIO-ED1, however the impact was masked by revenue profiling.

Our Pension Deficit Funding agreed with the Governments Actuary Department (GAD) in the 2020 Reasonableness review, will end in 2025/26, causing a further reduction of £35m$^{20/21}$ to our allowed revenues. Both aspects are partially offset with a reduction of the capitalisation rate, resulting in annual RIIO-ED2 baseline revenues remaining broadly the same as RIIO-ED1.

SP Manweb

Our average RIIO-ED2 baseline revenues will increase by 17% from RIIO-ED1, primarily caused by a reduction in the average capitalisation rate and the increased level of investment.

SP Manweb's Pension Deficit Funding agreed with the Governments Actuary Department (GAD) in the 2020 Reasonableness review will end in 2027/28 and will reduce annual allowed revenues in RIIO-ED3 by £35m$^{20/21}$ and customer bills by £11$^{20/21}$.

Allowed Baseline Revenues

Regulatory, £m (2020/21 Prices)

SP Distribution	23/24	24/25	25/26	26/27	27/28	Total	Averages RIIO-ED2	Averages RIIO-ED1	Variance
Depreciation	169	168	132	132	131	**732**	146	172	*-26*
Return	63	64	65	66	67	**325**	65	64	*1*
Revenue associated with RAV	**232**	**232**	**197**	**198**	**197**	**1,057**	**211**	**237**	***-25***
Fast Pot	99	98	97	95	95	**484**	97	48	49
Non-Controllable Opex	67	67	66	68	68	**337**	67	71	*-3*
Equity Issuance Costs	5	0	0	0	0	**5**	1	0	1
Tax allowance	26	21	6	4	1	**58**	12	9	2
Pension Deficit Funding	30	30	0	0	0	**60**	12	33	*-21*
Other	7	5	5	6	6	**29**	6	5	1
Revenue not associated with RAV	**234**	**221**	**175**	**172**	**170**	**973**	**195**	**166**	**29**
Allowed Baseline Revenues	**466**	**453**	**372**	**370**	**368**	**2,029**	**406**	**402**	**4**
SP Manweb									
Depreciation	159	158	156	155	149	**776**	155	166	*-11*
Return	71	72	73	73	73	**362**	72	68	4
Revenue associated with RAV	**229**	**230**	**229**	**228**	**222**	**1,138**	**228**	**235**	***-7***
Fast Pot	105	106	108	107	108	**534**	107	53	53
Non-Controllable Opex	44	44	44	45	45	**223**	45	44	1
Equity Issuance Costs	5	0	0	0	0	**5**	1	1	0
Tax allowance	17	15	12	10	7	**59**	12	3	9
Pension Deficit Funding	31	32	32	32	33	**160**	32	32	0
Other	5	5	5	5	6	**27**	5	*-1*	6
Revenue not associated with RAV	**208**	**202**	**201**	**199**	**198**	**1,008**	**201**	**132**	**70**
Allowed Baseline Revenues	**438**	**432**	**430**	**427**	**420**	**2,146**	**429**	**366**	**63**

The figures above are calculated using the working assumptions (Inflation etc.), published by Ofgem in the Sector Specific Methodology Decision document – March 2021.
Cost of equity adjusted to 4.40% for Base Revenue with 0.25% earned through assumed out-performance as per SSMD March 2021.

Cost of Capital

As required by Ofgem's Business Plan Guidance, we have submitted a business plan which incorporates Ofgem's working assumption for the Cost of Capital and addresses financeability on the basis of Ofgem's key assumptions.

However, we disagree with a number of aspects of Ofgem's approach in their assessment of the Cost of Capital for RIIO-ED2 which we do not believe has been based on all the available evidence and has been set at a level which may disrupt the efficient financing of the UK's electricity distribution networks sector, limiting the sector's ability to support the country's transition to Net Zero. We explain, in detail, why we disagree with Ofgem's assumptions and present our alternative proposal for the Cost of Capital allowance in ***Annex 5D.1: Finance***

Establishing Cost of Equity

Cost of equity (CoE) represents the return shareholders require for providing their capital to a company, proportionate to the risk faced by the company. It is the minimum return we need to attract and retain equity financing in our business, so that we're able to fund our investments. It is more important now than ever before to attract the sufficient investment to support GB's transition to Net Zero.

In contrast to the cost of debt, the CoE cannot be directly observed. Regulators routinely set a forward-looking allowance for the CoE using asset pricing models. Ofgem have relied primarily on the application of the Capital Asset Pricing Model (CAPM) framework for setting the CoE for the RIIO-ED2 price control, with forward-looking sources of evidence, used as cross-checks to the CAPM implied range. The CoE cannot be assessed based on a company's financeability. This is a cross-check to ensure the fair return delivers a financeable plan.

Under the CAPM framework, the return required by equity investors consists of the return on a risk-free investment (i.e. the risk-free rate (RFR)) and a risk premium that reflects the risk involved in a particular equity investment. This is estimated as the product of the risk premium on the equity market as a whole (i.e. equity risk premium (ERP)) and the equity beta, a measure of the riskiness of a particular equity investment relative to the equity market. By construction, the ERP is calculated as the residual between the total market return (TMR), which is the expected return on the market portfolio, and the RFR.

In their March 2021 Sector Specific Methodology Decision (SSMD) Finance Annex publication, Ofgem laid out their decision on the methodology for estimating the forward-looking real CoE for the RIIO-ED2 price controls. Ofgem use the mid-point of this range to arrive at their underlying cost of equity estimate of 4.65% (real, CPIH) for a notional gearing of 60% set under market conditions at that time.

Unprecedented by any other regulator, Ofgem apply a downwards 25bps adjustment to the underlying CoE estimate in reaching their allowed Return on Equity working assumption of 4.40% (real, CPIH). The 'Outperformance Wedge' (OW) adjustment is based on Ofgem's view that investors expect network companies to outperform the cost and output targets set at the price control, with the solution being a downwards adjustment to companies' CoE starting points.

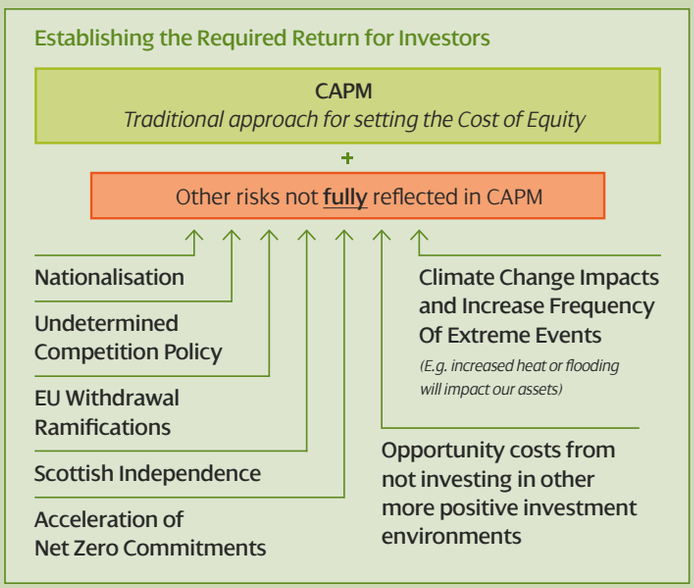
SP Energy Networks' transmission licensee, SP Transmission plc (SPT), appealed Ofgem's decisions on the CoE and its implementation of the OW in the RIIO-T2 Final Determination to the CMA as part of its RIIO-T2 appeals. The CMA published their final determination on the RIIO-2 appeals on 28 October 2021. On the CoE, the CMA were not persuaded that Ofgem had erred in its decision. This outcome is heavily influenced by the legal framework in the energy sector, whereby the CMA's role is to determine whether Ofgem was 'wrong' in its decision.

This framework requires the CMA to consider the level of 'margin of appreciation' (or regulatory discretion) afforded to Ofgem when exercising its judgments. The wide 'margin of appreciation' afforded by the CMA explains why they determined Ofgem were not wrong on their CoE estimate, despite the CMA's agreement with our estimation methodology position in certain areas e.g the CMA recognises that there is evidence that ILG includes a convenience premium, which lends support to the use of highly rated corporate bonds, along with ILGs, to improve the RFR estimate.

On the OW, the CMA upheld SPT and the other appellants' appeal that Ofgem was wrong to implement this adjustment mechanism. The CMA agreed with our arguments around the significant errors made in Ofgem's analysis, its inappropriateness as a mechanism in addressing any concerns around over information asymmetry and the real risk that its implementation would undermine performance improvements incentives.

Ofgem should recognise the CMA's determination that Ofgem was wrong to introduce the OW and remove the adjustment in its entirety from the RIIO-ED2 price control framework.

There are several additional risk factors which are not fully captured within the CAPM framework, but which are ultimately priced in by long-term investors in their required returns when investing in the GB electricity distribution sector, as presented in the table below. Many of these risks are long-term, and will continue to persist and increase well beyond the RIIO-ED2 period. For further detail see ***Annex 5D.1***



Establishing Cost of Debt

Electricity network companies need revenue to service their long-term embedded and expected new debts, and this needs to reflect the actual costs of financing this efficiently incurred debt.

In their SSMD Finance Annex publication, Ofgem base their working assumption on a 17-year trailing average of the iBoxx GBP Utilities 10+ index, less the OBR's 5-year expectation of CPI inflation, plus a 25bps allowance for additional borrowing costs. Ofgem's move to using the iBoxx Utilities index rather than the RIIO-1 indices is in line with their decision for the RIIO-T/G2 price controls. Ofgem's working assumption results in an average Cost of Debt for RIIO-ED2 of 2.09% (real, CPIH).

We support the recalibration of the debt allowance mechanism for RIIO-ED2 to adhere to Ofgem's new index selection for RIIO-ED2. Following companies submitted borrowing requirements in their business plan submissions, the appropriate debt calibration for the ED sector can be assessed.

Notional gearing and return on regulatory equity (RoRE)

Over the following pages we assess notional gearing in the context of the financial benefits and penalties available to the network companies in RIIO-ED2 from outperforming or underperforming the price control assumptions. Notional gearing represents the assumed percentage of net debt to RAV for the notional company. This in turn impacts the percentage of RAV that attracts debt and equity allowances. Setting notional gearing is complex, bringing together many issues and interactions. The diagram below illustrates the key inputs involved and their relationship.

SPD and SPM RIIO-ED1 and RIIO-ED2 comparison

	RIIO-ED2	RIIO-ED1
Notional Gearing	60%	65%

1. Cash flow volatility

Cash flow volatility is affected by: Scale of investment, Capitalisation rate, Profile of expenditure, Totex incentive rate (1-Sharing Factor), Other incentive mechanisms and rates, Uncertainty mechanisms. Scale and profile of expenditure is largely determined externally by the requirement to meet present and anticipated outputs – to deliver a secure and efficient network.

The RIIO-ED2 uncertainty mechanisms and incentive characteristics are yet to be finalised. We have not departed from the overall framework set out by Ofgem and have not sought to adjust cash flow risk.

In line with guidance we have proposed a decrease from the current RIIO-ED1 capitalisation rate of 80% to a rate of 72% [SPD] and 70% [SPM] for RIIO-ED2. This capitalisation rate more closely aligns with the mix of capital and operational expenditure that will be delivered in the RIIO-ED2 period – it also aligns with the working assumptions provided as part of the Ofgem RIIO-ED2 sector specific methodology decision (SSMD).

2. Cost of equity

The extent to which the cost of equity can be flexed is externally limited by the minimum expected return required by the market to secure investment. This cost of equity is dependent on the systematic (non-diversifiable) risk as reflected (under CAPM) in the asset beta. Further detail is available in the CoE section on the previous page.

3. Notional gearing

In this section we introduce a central base scenario for gearing of 60%, as set out in Ofgem's sector specific methodology decision along with two alternatives of ±5% (i.e. 55% and 65% gearing). It therefore remains to ensure that, given the above externally determined factors, the idiosyncratic risk for a notional average network business at a given level of gearing will, when exposed to the full range of RIIO-ED2 incentives and external risk, lead neither to excessive returns for shareholders nor to financial distress. The current proposal of 60% gearing for RIIO-ED2 sectors represents a 5% decrease from RIIO-ED1.

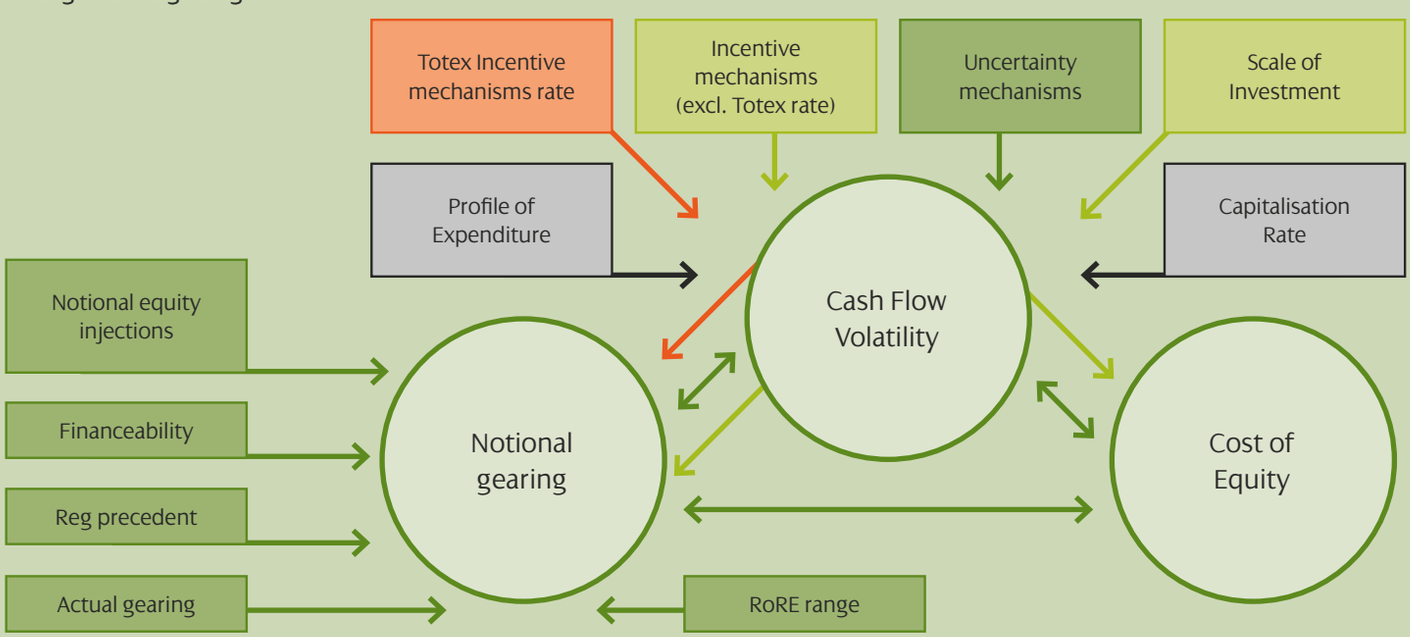
Ofgem has suggested adopting sector-specific notional gearing if it would enable the maintenance of appropriate credit metrics under a wide range of market conditions. We explore this further in our financeability and risk assessments. Taking these factors into account, 60% gearing with a ±5% variation is the base scenario we have used to carry out our detailed overall financeability testing.

Having identified a starting range for our gearing assessment, we then introduce a range of plausible outperformance or under-performance outcomes aligning with the RoRE ±2% scenarios provided in the price control financial model.

This allows us to stress-test our proposed level of notional gearing by examining the overall range of returns to which SPD and SPM will be exposed. In line with the SSMD on regulatory adjustment mechanisms (RAMs), we aim to calibrate the RoRE within the 300bps range as a maximum, with returns around the level of the Cost of Debt index at the minimum.

We further validate our conclusion on notional gearing by simulating the external risks to cash flows and the resulting impact on business financeability (by Monte Carlo, using Moody's credit rating methodology). This further credit rating testing is described fully in the Financeability assessment section on *Pg 169*

Setting notional gearing



4. Return on Regulatory Equity (RoRE)

At this stage we conduct RoRE analysis. This estimates the financial benefits and penalties available to the notional network company in RIIO-ED2 from outperforming or under performing the price control assumptions.

In accordance with Ofgem's Sector Specific Methodology Decision for RIIO-ED2 and the RIIO principle, the overall financial package should ensure a fair return to shareholders (as measured by the return on the notional proportion of the RAV that is financed by equity), with a minimum return around the cost of debt.

The RoRE calculation is forward-looking. We use RIIO-ED2 average RAV values and average allowed revenue determined by Ofgem's Business Plan Financial Model (BPFM) in our calculation.

We recognise the draft nature of the incentive assumptions due to the ongoing price control refinements and therefore represent an overall incentive package of ±2% RoRE as per the BPFM scenarios. We expect that these inputs will be revised as we approach the draft and final determinations in 2022.

The assumptions underlying our RoRE analysis are summarised below:

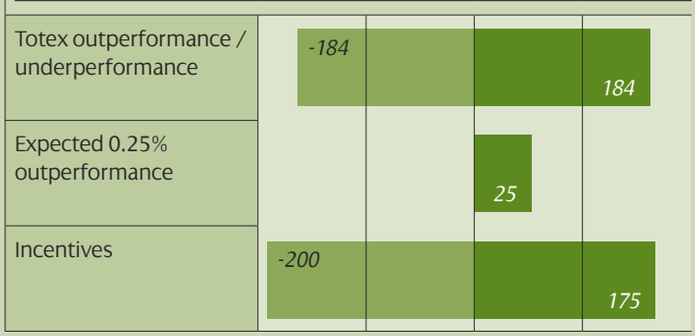
RoRE Analysis – *Assumptions made for RIIO-ED2*

Input	SPD	SPM	Source
Base Revenue (Annual Average)	406	429	Calculated by BPFM (20/21 prices)
Equity RAV (Annual Average)	898	996	Calculated by BPFM (20/21 prices)
Gearing	60%	60%	Per Ofgem SSMD (March 21)
Sharing Factor	50%	50%	Provided by Ofgem in PCFM
Totex (Annual Average)	344	355	Calculated by BPFM (20/21 prices)
BP Incentive	± 2% Totex		Per Ofgem SSMD (March 21)
Totex Uncertainty	± 10%		Per Ofgem SSMD (March 21)
Incentives	± 2% RoRE		Per Ofgem SSMD (March 21)

In line with the Sector Specific Methodology Decision document, the BP incentive value is removed from the calculation of the RoRE.

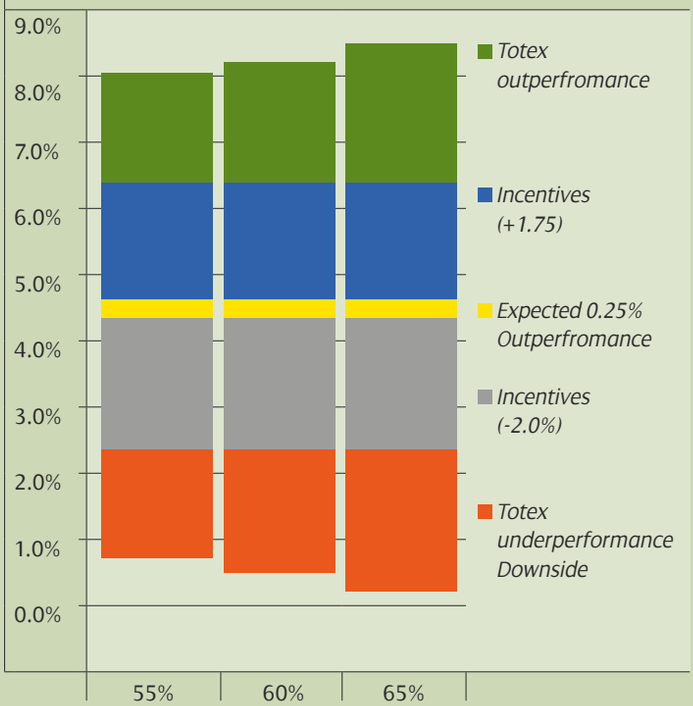
We show the relative impact of the most material RIIO-ED2 risks as basis points of RoRE in the Tornado chart below:

Revenue Risk Factors – *60% gearing*



Combined, these individual risks determine the overall range of feasible RoRE performance in RIIO-ED2. We present this as a 'layer cake' below, showing a range of gearing.

RIIO-ED2 RoRE
Change with Gearing



Our view

Our key conclusion is that the range of feasible RoRE at 60% gearing extends from a maximum of 8.2%, down to a minimum of 0.6%. This compares with an average Cost of Debt at 2.09% in RIIO-E2. These values exclude the Business Plan incentive as per Ofgem's working assumptions.

Our analysis indicates that the draft price control RoRE range is below the 300bps set via the RAMs methodology. This represents a substantial decrease in the total RoRE achievable when compared with the RIIO-ED1 period.

We've carried out analysis to find out if the draft gearing assumptions are set at an optimal level, alongside the effect of varying the gearing up or down in 5% increments.

The impact of these changes in gearing is shown in the table below:

RoRE range comparison

Gearing	Outperformance RoRE	Downside Cover
55%	8.0%	0.8%
60%	8.2%	0.6%
65%	8.5%	0.3%

At 65% gearing the modelled downside of 0.3% is a considerable risk to shareholders. If these parameters were to be implemented a lower gearing should also be implemented to calibrate the downside cover closer to the CoD.

Future analysis is required after the incentive package is agreed which should allow the possibility of reasonable returns without excessive downside risk and at the lowest overall cost to consumers.

Financeability – *key assumptions and headline proposals*

We conclude that we require a CoE that enables us to attract and retain sufficient equity finance to provide the necessary investment to maintain network reliability and absorb the forecast expenditure volatility, as we facilitate the transition to a low-carbon economy.

As per the SSMD, for our financial modelling, we assume that the cost of debt is 2.09% which is the average value of the iBoxx 17 year trailing average. However, the allowed Cost of Debt (CoD) is set in real terms and our debt is primarily nominal (that is the coupon includes an inflation component). Our financeability analysis indicates that this mis-match contributes to declining financial ratios.

To support the process of assessing financeability, we have various engaged economic consultants including NERA. Within this section we present our financial plan based on Ofgem's assumptions, shown in the Financial Parameters table below. Our plan results in an investment-grade credit rating on Moody's rating scale which is consistent with the range that underpins Ofgem's CoD index. The current assumptions provide a credit rating that is weaker by one notch when compared with RIIO-ED1.

We consider further external risks which, if they were to materialise, would also result in a lower rating and represent material downside risk. With regard to the impact of its decisions on existing and future consumers, as well as financeability, Ofgem will have to consider a range of evidence and perform cross checks, for example, by looking at proxies of rating agencies' assessments.

Financial Parameters

Inputs	Ofgem's SSMD mandated assumptions
Cost of equity (real)	4.65%*
Cost of debt (real)	2.09%
Notional Gearing	60%
Vanilla WACC	3.11%
Asset lives	45 years
Capitalisation rate	Natural rate
Additional Income (BP Incentive)	N/A
Equity injection threshold	5.0%
Dividend % of notional equity	3.0%

**Cost of equity adjusted to 4.40% for Base Revenue reflecting 0.25%expected outperformance as per Table 1 in the SSMD.*

Target credit rating

We have assessed the credit ratings for SP Distribution and SP Manweb on both a notional and actual basis against our target overall rating of A3 to Baa1 before risk. This makes sure our financeability criteria are fully consistent with credit quality underpinning the allowed cost of debt index. This is also consistent with our licence obligation to maintain an investment-grade credit rating.

Failure to ensure alignment with the index would lead to greater costs to the consumer; if the notional company was only to achieve a Baa rating then the index should be changed to ensure the CoD matches the rating for each company. This would increase the CoD assumed for the notional company and increase the annual revenues that each company would collect to ensure that the higher cost of debt is recovered. There are also further issues with allowing the rating to slip into the Baa range, with higher costs to the businesses in relation to weakening credit ratios. This again would make it more expensive for all DNOs to raise debt to finance required investment which is not in the consumers' interest. Finally, a lower rating for the notional company on a base case would lead to less headroom to deal with external shocks that are outwith the companies' control (for example Macro Economic changes). These changes could lead to a significant weakening of the financial health of the network operator and lead to greater risk of problems in delivery of the proposed RIIO-ED2 outputs that are of great benefit to the general consumer. These scenarios are examined later in the chapter.

As explained in our Financeability assessment section, we have taken into account the full range of credit rating factors, not just credit metrics. This means that the scores for individual sub factors may be outside A3 or Baa1, and could fall outside the wider investment grade range of A1 to Baa3 (A to BBB range in S&P ratings).

To clarify, this means that we are not currently targeting an A3/Baa1 rating for all Credit ratios, but we are targeting ratios that will allow us to score an overall rating of A3/Baa1. This is explained in more detail on *Pg 169*

Ofgem's economic model assesses an individual standalone company, and Ofgem has a statutory duty to have regard for the need to ensure that licensees can finance their licensed activities – meaning they are allowed sufficient cash flows to pay interest and dividends to the providers of finance. Financeable also means that a company needs to be able to raise the required financing in the financial markets in order to deliver its licence commitments and expected expenditure resulting from the RIIO-2 price control settlement.

SP Distribution and SP Manweb are competing in the financial markets with other electricity and gas network companies. To compete on equal terms, it is important that our implied credit ratings as part of the final proposals are no worse than the implied credit ratings afforded to other networks in the previous RIIO price control settlements, which were set using a similar cost of debt index.

Based on Moody's rating methodology for regulated electric and gas networks, the RIIO-ED1 price control resulted in an implied 8-year rating of A3 – this is explained in the RIIO Regulatory precedent section. Therefore, the RIIO-2 final proposals for electricity distribution need to achieve a comparable credit rating.

One of the main impacts within the move to the RIIO-ED2 methodology was Ofgem's decision to transition the measure of inflation from the Retail Price Index (RPI) to the Consumer Price Index (CPI/CPIH). This move has been deemed appropriate due to RPI no longer representing the official measure of inflation in the UK.

In theory, any change in the inflation index used for price setting purposes should be revenue-neutral, as long as the same inflation index is used to calculate the real cost of capital and to index the RAV over time, the choice of inflation index has no impact on the net present value of revenues charged to customers.

However, the inflation index determines the balance between the amounts recovered within the period versus those deferred into the future. As a result, it affects the profile of bills over time – referred to as intergenerational fairness. This impact will be of significant interest to a wide variety of stakeholders, and it is of vital importance that they understand the full impact of the move to CPIH and are fully briefed on its NPV neutral nature.

Ensuring efficient financing costs

– *Price Control Financial Model ('static') analysis*

In this section we present our financing plan based on the draft assumptions and primary analysis; we refer to this as our 'static' analysis. This is in contrast to our 'probabilistic' risk assessment, presented later in this section, which applies the Monte Carlo model to analyse the likely impact of external risks to our financeability ratios. As part of the compliant plan, we have used the Business Plan Financial Model issued by Ofgem on 15th November 2021. This model has not been subject to full diligence and audit. In this section we also generate and test our regulatory credit ratios. 'Static' refers to the fact that we introduce a number of financing components and assumptions, then test the outcomes to ensure that an efficient, financeable plan can be demonstrated using Ofgem's Business Plan Financial Model (BPFM). We will submit the BPFM along-side our business plan submission in line with Ofgem's guidelines.

We have explained our allowed return financing components in this section. You can find further explanation of our other assumptions and policies in our Financeability assessment section.

Our overriding objective has been to deliver an efficiently financeable plan that will offer an adequate return to investors at the lowest possible cost to customers. This results in the following credit rating based on Moody's 2017 rating methodology for regulated electric and gas networks.

Credit Rating

	SPD	SPM
Moody's notional credit rating	Baa1	Baa1

The key ratios forming these results are detailed under our Key credit ratios section in the comparison of credit ratios to RIIO-ED1.

For the 'static' analysis that informed the credit rating above we have assumed Business Plan Incentive additional income of zero.

It's possible that Ofgem's view of the efficiency of our Totex proposals may result in a penalty with a resultant risk to our financeability. This would be in addition to the penalty applying under the Totex incentive mechanism if we have to spend in excess of the allowance in order to deliver our outputs and, importantly, make sure we meet our licence obligations around continuity of supply.

Capitalisation rate

The average capitalisation rates of 72% [SP Distribution] and 70% [SP Manweb] in our business plan are reductions from historic levels of 80% in RIIO-ED1. They are in line with expected statutory capex over the RIIO-ED2 period, reflecting the natural rate as requested in Ofgem's Finance SSMD. You can find total expenditure and capitalisation section on ***Pg 174***

Asset lives and depreciation

We believe the overall package should be calibrated to enable an efficient financing plan which maintains an investment grade credit rating, without employing additional financial levers. This basis may need to be reviewed after the draft determination. You can read more about asset lives and depreciation in our Evolution of the Regulatory Asset Value (RAV) section on ***Pg 174***

RIIO Regulatory precedent

As mentioned in our analysis of the target credit rating, the RIIO price control proposals for regulated electric and gas network companies result in an implied rating of Baa1/A3 based on Moody's rating methodology.

In the next section, we set out how we have followed Moody's rating methodology for SP Distribution and SP Manweb.

Implied Credit Ratings

In our assessment of the implied credit ratings, we have mainly assumed that the qualitative factors are the same as those that we applied in RIIO-ED1. These qualitative factors have a weighting of 50% and contribute broadly the same score for all companies to the overall credit rating score.

The remaining factors that influence the final rating score are the five key credit metrics used in Moody's methodology. Together these have a weighting of 50% and could have a significant impact on the overall score.

Financeability assessment

In the main we have followed Moody's rating methodology for regulated electric and gas networks. This approach considers credit metrics and qualitative factors, for example business risk and regulatory environment. Moody's stated objective is for users of this methodology to be able to estimate a company's rating within two alpha-numeric notches.

Moody's analysis focuses on four key rating factors:

- Regulatory environment and asset ownership model
- Efficiency and execution risk
- Stability of business model and financial structure
- Key credit metrics

A fifth factor focuses on structural considerations of debt. This is assessed on features that contribute to the likelihood of default such as complexity and creditor influence. Together, these qualitative features act as an overlay against any score that may be derived from the first four factors. We do not expect this factor would have a material impact on the overall credit score derived from our analysis.

Each factor is made up of a number of sub-factors, to each of which Moody's assigns a weighting.

First, we set out our assessment of sub-factors as shown in the table below. Our assessment of the key credit metrics is set out later in this section, following on from our financial modelling.

In arriving at our Moody's notional credit rating score, we have maintained the non-credit metric ratio factors at the same level as our RIIO-ED1 assumptions. This is in line with the updated methodology published in 2017. Recent events may influence a reduction in the future assessment of these qualitative factors to the detriment of the stated scores below. We will continue to monitor the credit rating agencies' guidance and will update our analysis if required.

The tables below summarise our assessment:

Rating Factors for SP Distribution and SP Manweb

Rating Factors	Aaa	Aa	A	Baa	Ba	B
Factor 1: *Regulatory Environment and Asset Ownership Model (40%)*						
a) Stability and Predictability of Regulatory Regime	X					
b) Asset Ownership Model		X				
c) Cost and Investment Recovery			X			
d) Revenue Risk		X				
Factor 2: *Financial Policy (10%)*						
a) Financial Policy and Behaviours				X		

N.B. The values for the key credit metrics that comprise Factor 4 are calculated as part of the financeability assessment later in this section.

Key credit ratios – Factor 3

Credit metric ratios account for 50% of rating agencies' rating assessment, and so have a significant impact on the overall rating. It is worth noting that Ofgem have introduced a weighted average when calculating a 3-year average assessment of each ratio.

We ran two metric tests, one notional and one actual, when developing our plan, with results detailed below.

Notional company with Ofgem's draft assumptions (CoE at 4.65%)
Key Credit Metrics

SP Distribution	Weighting	RIIO-ED2 Avg	RIIO-ED2 Rating	RIIO-ED1 Avg	RIIO-ED1 Rating
Capex to RAV	10.0%	11.5%	Baa	9.6%	Baa
Adjusted Interest Cover	10.0%	1.36	Ba	1.37	Ba
Net Debt / RAV	12.5%	62.9%	Baa	63.3%	Baa
FFO / Net Debt	12.5%	11.9%	Ba	15.3%	Baa
RCF / Net Debt	5.0%	9.5%	Baa	12.6%	Baa
Overall Rating		7.85	Baa1	7.32	A3

RIIO-ED2 Period	23/24	24/25	25/26	26/27	27/28
Capex to RAV	12.0%	12.6%	11.5%	11.0%	10.7%
Adjusted Interest Cover Ratio	1.37	1.37	1.36	1.36	1.36
Net Debt to Closing RAV	60.3%	61.4%	62.9%	64.2%	65.5%
FFO / Net Debt	15.3%	14.3%	10.7%	10.0%	9.3%
RCF / Net Debt	12.7%	11.8%	8.4%	7.7%	7.0%

SP Manweb	Weighting	RIIO-ED2 Avg	RIIO-ED2 Rating	RIIO-ED1 Avg	RIIO-ED1 Rating
Capex to RAV	10.0%	10.4%	Baa	10.1%	Baa
Adjusted Interest Cover	10.0%	1.36	Ba	1.29	Ba
Net Debt / RAV	12.5%	62.6%	Baa	66.0%	Baa
FFO / Net Debt	12.5%	11.3%	Baa	13.0%	Baa
RCF / Net Debt	5.0%	8.9%	Baa	10.4%	Baa
Overall Rating		7.85	Baa1	7.32	A3

RIIO-ED2 Period	23/24	24/25	25/26	26/27	27/28
Capex to RAV	10.8%	11.6%	10.9%	9.5%	9.1%
Adjusted Interest Cover Ratio	1.32	1.36	1.36	1.37	1.39
Net Debt to Closing RAV	60.5%	61.8%	62.9%	63.6%	64.2%
FFO / Net Debt	12.7%	12.0%	11.3%	10.7%	10.0%
RCF / Net Debt	10.2%	9.6%	8.9%	8.3%	7.6%

The RIIO-ED2 notional company, calculated using Ofgem's draft assumptions, produces an overall rating of Baa1 for both SP Distribution and SP Manweb. The overall grades are one notch lower than the notional company at RIIO-ED1, driven by the weakening of both FFO/net debt and RCF/net debt ratios. Both remain above the investment grade rating floor of 11% and 7% respectively on average, however FFO/Net Debt weakens below investment grade in individual and 3-year average periods. The impact of the strength of these metrics in relation to external shocks will be examined as part of our risk assessment analysis in the Efficiency and financeability section.

It should be noted that the values in the table above assume that 25% of debt is index linked (ILD). This has the effect of strengthening the Adjusted Interest Cover Ratio (AICR) and consequently the overall rating. If the assumption, in line with SP Distribution and SP Manweb's actual debt portfolio, was that none of the notional companies' debt was index linked, the AICR would further weaken outside of investment grade to 1.20x and 1.19x respectively.

A further consideration is required in regard to the long term financeability of both SP Distribution and SP Manweb based on the working assumptions provided by Ofgem. The move to CPIH for example may provide a boost to short term metrics but will weaken any long-term outlook based on the reduction in the growth of the RAV in future periods. Ofgem has stated the long-term outlook should be addressed at a future price control.

Both notional companies require equity injections at the start of RIIO-ED2 to account for the proposed reduction in gearing from 65% to 60%. However, this assumes the returns are adequate to incentivise the investment of additional capital by shareholders at this point.

Conclusion

In summary, we demonstrate when using Ofgem's cost of capital working assumptions, including a notional gearing of 60%, our plan is financeable on both a notional and actual capital structure basis.

Actual company with Ofgem's draft assumptions (CoE at 4.65%)
Key Credit Metrics

SP Distribution	Weighting	RIIO-ED2 Avg	RIIO-ED2 Rating
Capex to RAV	10.0%	11.5%	Baa
Adjusted Interest Cover	10.0%	2.16	A
Net Debt / RAV	12.5%	62.1%	Baa
FFO / Net Debt	12.5%	13.0%	Baa
RCF / Net Debt	5.0%	11.1%	Baa
Overall Rating		6.66	A3

RIIO-ED2 Period	23/24	24/25	25/26	26/27	27/28
Capex to RAV	12.0%	12.6%	11.5%	11.0%	10.7%
Adjusted Interest Cover Ratio	2.11	1.96	1.91	2.48	2.33
Net Debt to Closing RAV	62.4%	61.2%	61.9%	62.3%	62.6%
FFO / Net Debt	15.9%	15.2%	11.7%	11.5%	10.7%
RCF / Net Debt	14.0%	13.2%	9.7%	9.6%	8.8%

SP Manweb	Weighting	RIIO-ED2 Avg	RIIO-ED2 Rating
Capex to RAV	10.0%	10.4%	Baa
Adjusted Interest Cover	10.0%	2.07	A
Net Debt / RAV	12.5%	61.4%	Baa
FFO / Net Debt	12.5%	12.5%	Baa
RCF / Net Debt	5.0%	10.5%	Baa
Overall Rating		6.66	A3

RIIO-ED2 Period	23/24	24/25	25/26	26/27	27/28
Capex to RAV	10.8%	11.6%	10.9%	9.5%	9.1%
Adjusted Interest Cover Ratio	1.91	2.43	2.02	1.90	2.12
Net Debt to Closing RAV	63.5%	62.1%	61.3%	60.6%	59.7%
FFO / Net Debt	12.8%	13.7%	12.4%	11.9%	11.6%
RCF / Net Debt	11.0%	11.8%	10.5%	9.9%	9.5%

Efficiency and financeability

We have worked with NERA to develop a financeability risk model. The model is based on Ofgem's Price Control Financial Model and helps support our assertion that our proposed financing package is not just efficient, but robust.

We attach a paper describing NERA's modelling methodology contained within ***Annex 5D.6***

We have used the model to assess if the suggested financeability scenario delivers an efficient, robust financeable plan. To do this, our model uses the Monte Carlo method to simulate the individual and aggregate credit metrics over the full range of plausible outcomes. The model does this for every individual risk we have identified.

The model considers the risk to cash flows from external risks only – where possible, we have identified the plausible distribution of outcomes for an average network business. In conjunction with our RoRE analysis, this should make sure the business is sufficiently and securely funded, so that the normal operation of RIIO-2 incentives is unlikely to lead to financial distress when coupled with adverse shocks from external risks.

For us, a robust plan is one that makes sure the expected overall credit rating for a notional average distribution business will be solidly within the A to Baa (Moody's) range of credit rating. ('Overall' means we include non-financial ratio components.)

Under any realistic combination of adverse external outcomes, there should only be a small probability that this rating might drop to a level inconsistent with the allowed Cost of Debt. More specifically, we target an overall credit rating of A3 or Baa1. This is also consistent with SP Distribution and SP Manweb's license obligations to maintain an investment grade credit rating.

Initial assumptions

Before conducting our financeability testing, we have considered each of the components of the allowed return. This provides us with the opening parameters for our risk and financeability testing that we established earlier.

We have followed Ofgem's guidance for RIIO-2 regarding SSMD when we calculated the notional inputs.

Risk assessment

	Inputs
Cost of equity	4.65%
Cost of debt	2.09%
Gearing	60%
Dividend Yield	3.00%
Asset Lives	45 years
Capitalisation Rates [SPD / SPM]	72% / 70%

Each unique combination of these inputs constitutes a single scenario. For each scenario, a network business will be exposed to a range of financial risks. Some of these risks will be external to the business, and some will arise from regulatory mechanisms specific to the price control. For example, incentives, output mechanisms and residual risk may be only partly mitigated by uncertainty mechanisms.

Our financeability assessment

We test the robustness of our financial plan only against external risks not directly within our control. The external risks we consider are:

Risk	Modelling approach
Totex Uncertainty	±10% of base assumption for 10-90th percentile applying a triangular distribution.
Non-controllable Opex Uncertainty	±10% of base assumption for 10-90th percentile applying a triangular distribution.
CPIH Uncertainty	Simulated based on OBR forecast uncertainty ranges.
Taxation	Actual and allowed tax modelled bottom-up.
Cost of Debt Indexation	Based on modelled uncertainty in the real RFR given historical variation and relationship between RFR and debt spread. We use Ofgem's trailing average approach.
Cost of Equity Indexation	Based on modelled uncertainty in the real RFR given historical variation and Ofgem base Cost of Equity parameters.
Sharing Factor (Consumer Share)	50%
Dividend Yield	3.00%
Equity Issuance	None
Base Cost of Equity	4.65%
Incentive Uncertainty	±2% (max/min) of RoRE based on triangular distribution (calibrated such that RoRE max/min is ±300bps together with Totex uncertainty assuming a triangular distribution).
Totex Capitalisation Rate	72% [SPD] / 70% [SPM]
Proportion of inflation-linked debt	25%

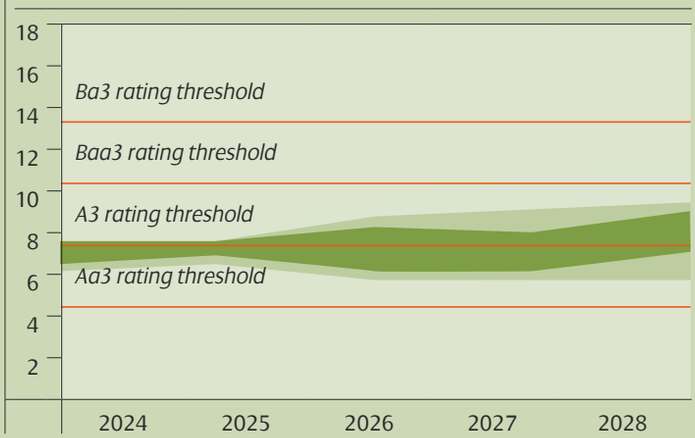
We simulate a set of outcomes using Monte Carlo. For each iteration of the Monte Carlo Model we calculate the credit metrics and use these to derive an overall credit rating using Moody's' methodology (as described in the Financeability assessment section).

Moody's methodology applies significantly greater weights to components of the overall calculation. These are closer to the low rating end than to components at A or above, so the distribution of rating outcomes is strongly asymmetric.

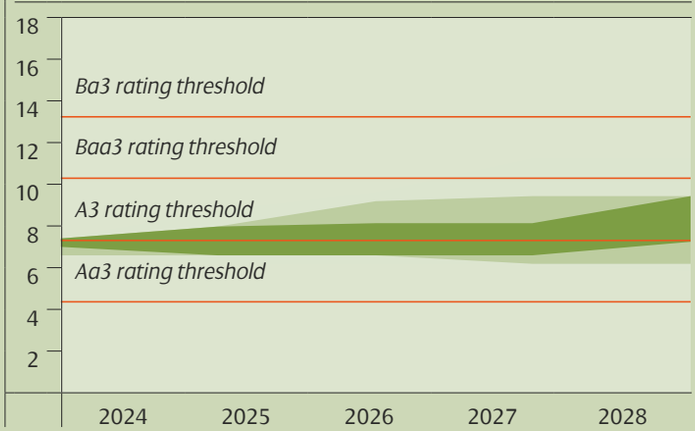
Risk Assessment Results – notional basis

The distribution of credit rating outcomes, for SPD and SPM, generated by simulation is shown as a fan chart below:

SPD credit rating including external risk



SPM credit rating including external risk



Using Ofgem's methodology, at the median position shown as a dark line, we are forecasting we will maintain an investment grade-credit rating consistent with the allowed cost of debt. However, based on external risks as indicated in the graph above, our modelling predicts that there is realistic prospect that the overall rating has the potential to decline to a sub investment grade level. This indicates that the current parameters may lead to an outcome, at a low probability, which would see a rating for SP Distribution and SP Manweb that is inconsistent with the CoD index as explained in the sections above.

We have also undertaken this analysis using our proposed CoE, with the results showing a compliant investment grade after all external risks are modelled. For us, this demonstrates a robust plan where the expected overall credit rating for a notional average distribution business will be solidly within the A to Baa (Moody's) range of credit rating after all adverse shocks from external risks are considered. Further analysis is contained within the Financeability section of ***Annex 5D.1***

Ofgem Deterministic analysis

We have also undertaken the prescribed deterministic analysis of financeability for the notional company to demonstrate the movement in our credit ratios and the overall credit rating per Moody's methodology set out earlier. The sixteen scenarios used are listed in the table below:

Notional company with Ofgem's draft assumptions
SP Distribution

Key Credit Metrics	Capex to RAV (%)	AICR (x)	Net Debt to Closing RAV (%)	FFO/ Net Debt (%)	RCF/ Net Debt (%)	Overall Rating
Static Values	11.5%	1.36	62.9%	11.9%	9.5%	Baa1
Interest Rate +1%	11.5%	1.39	62.6%	12.1%	9.7%	Baa1
Interest Rate -1%	11.5%	1.34	63.1%	11.7%	9.3%	Baa1
CPIH +1%	11.5%	1.39	61.6%	12.2%	9.5%	Baa1
CPIH -1%	11.5%	1.36	63.0%	11.8%	9.7%	Baa1
High CPIH inflation divergence +0.5%	11.5%	1.35	63.4%	11.8%	9.5%	Baa1
Low CPIH inflation divergence -0.5%	11.5%	1.37	62.4%	12.0%	9.5%	Baa1
High RPI inflation divergence +0.5%	11.5%	1.37	62.7%	11.9%	9.5%	Baa1
Low RPI inflation divergence -0.5%	11.5%	1.36	63.0%	11.9%	9.5%	Baa1
Totex 10% outperformance	10.5%	1.53	59.9%	13.1%	10.6%	A3
Totex 10% underperformance	12.6%	1.26	63.5%	11.3%	8.9%	Baa2
No RoRE outperformance	11.5%	1.31	63.1%	11.7%	9.3%	Baa1
RoRE (through incentives) +2%	11.5%	1.77	60.6%	13.7%	11.2%	A3
RoRE (through incentives) -2%	11.5%	1.01	63.2%	10.6%	8.2%	Baa2
Proportion of inflation linked debt +5%	11.5%	1.40	62.9%	12.0%	9.5%	A3
Proportion of inflation linked debt -5%	11.5%	1.33	62.9%	11.8%	9.5%	Baa1

Notional company with Ofgem's draft assumptions
SP Manweb

Key Credit Metrics	Capex to RAV (%)	AICR (x)	Net Debt to Closing RAV (%)	FFO/ Net Debt (%)	RCF/ Net Debt (%)	Overall Rating
Static Values	10.4%	1.36	62.6%	11.3%	8.9%	Baa1
Interest Rate +1%	10.4%	1.38	62.3%	11.5%	9.1%	Baa1
Interest Rate -1%	10.4%	1.34	62.9%	11.1%	8.8%	Baa1
CPIH +1%	10.4%	1.39	61.3%	11.6%	9.0%	A3
CPIH -1%	10.4%	1.35	62.8%	11.3%	9.1%	Baa1
High CPIH inflation divergence +0.5%	10.4%	1.35	63.1%	11.2%	9.0%	Baa1
Low CPIH inflation divergence -0.5%	10.4%	1.37	62.1%	11.5%	8.9%	Baa1
High RPI inflation divergence +0.5%	10.4%	1.36	62.5%	11.4%	9.0%	Baa1
Low RPI inflation divergence -0.5%	10.4%	1.36	62.7%	11.3%	8.9%	Baa1
Totex 10% outperformance	9.4%	1.52	59.8%	12.5%	10.0%	A3
Totex 10% underperformance	11.3%	1.26	63.1%	10.8%	8.4%	Baa1
No RoRE outperformance	10.4%	1.31	62.9%	11.1%	8.7%	Baa1
RoRE (through incentives) +2%	10.4%	1.77	60.3%	13.2%	10.7%	A3
RoRE (through incentives) -2%	10.4%	1.01	62.9%	10.1%	7.7%	Baa2
Proportion of inflation linked debt +5%	10.4%	1.40	62.6%	11.4%	8.9%	Baa1
Proportion of inflation linked debt -5%	10.4%	1.32	62.6%	11.3%	8.9%	Baa1

Our analysis indicates that after testing against these potential scenarios, the overall ratings for SP Distribution and SP Manweb remain consistent with the base case static view of Baa1 in most cases. However, that does not mean that these scenarios do not impact the individual ratios and the strength of the overall rating. As explained in the previous section, none of the individual ratios above achieve a rating of A3 or above in our base scenario.

SPD and SPM Deterministic analysis findings:

Interest rate scenario: The impact on revenues (especially return and tax) and movements in Net debt (interest payments due) is as a result of interest rate movements. On a notional basis, a move of 1% downward would result in a lower CoD index, and associated revenue allowance, slightly weakening all ratios. The converse is true for the High Interest rate scenario.

CPIH scenario; measures the impact to a company's net debt and cash flows based on movements in the inflation rate (Primarily the Interest and tax payments). The AICR ratio remains at Ba for both CPIH inflation divergence scenarios which is below investment grade levels.

RPI-CPIH Wedge: This has a similar impact to the CPIH scenarios above. It tests the impact of a divergence in the RPI-CPIH inflation rates by flexing the CPIH rate against a constant RPI rate. Therefore, an increase in the divergence of 0.5% would be the same as decreasing the CPIH rate by 0.5%.

Totex Scenario: 10% totex underperformance produces a concerning Baa2 in SPD, and a marginal Baa1 in SPM, further evidencing the significant lack of headroom provided in the SSMD working assumptions. For Totex outperformance, all ratios improve versus the base case as expected, due to the additional revenue provided via the sharing factor mechanism.

RoRE Scenario: Of equal concern to the scenario above, for 2% underperformance, the reduction in revenues lowers the AICR and FFO ratings to below investment grade metric levels and overall Baa2, before externals risks are considered. The calibration of incentives will need to reflect notional financeability considerations to ensure the RoRE is at least above the cost of debt on downside scenarios. We see a large spread in the ratios under these two scenarios with all ratios improving under the 2% outperformance scenario.

ILD Scenario: Finally, the index-linked debt scenario measures the impact of a movement of 5% on the base assumption of 25% of company debt of which the interest related payment is linked to inflation. The AICR weakens with any decrease in the proportion of inflation linked debt. We do not believe this scenario is relevant for SP Distribution or SP Manweb as we currently do not have any inflation linked debt and are not forecasting that this will change.

Evolution of the Regulatory Asset Value (RAV)

Below we set out our business plan assumptions which inform the evolution of the RAV. In all cases our assumptions are consistent with RIIO principles, and fully adhere to Ofgem's strategy decisions. The forecast RAV table below reflects the impact of the forecast total expenditure, regulatory capitalisation assumption, and regulatory asset lives amortisation assumption which are explained below.

Growth in the RAV through RIIO-ED1 is evident, SP Distribution increasing from £1.8bn to £2.0bn – an increase of 8% compared to the forecast increase over RIIO-ED2 of 26% to £2.5bn. SP Manweb increased by 21% from £1.8bn to £2.2bn in RIIO-ED1 compared to the forecast increase over RIIO-ED2 of 21% to £2.7bn.

RIIO-ED1 forecast RAV and forecast RIIO-ED2 RAV
£m (2020/21 Prices)

	RIIO-ED1		RIIO-ED2				
SP Distribution	Yr1*	Yr8	Yr1	Yr2	Yr3	Yr4	Yr5
Closing RAV	1,830	1,971	2,038	2,127	2,239	2,352	2,474
RAV Growth		**8%**					**26%**
SP Manweb							
Closing RAV	1,834	2,210	2,290	2,399	2,504	2,587	2,673
RAV Growth		**21%**					**21%**

**ED1 Yr1 represents Opening RAV*

Total expenditure and capitalisation

Our total expenditure (Totex) comprises of the categories prescribed by Ofgem. These are mainly prime direct expenditure on Load and Non-load activities, non-operational capex, operating costs and indirect costs. Totex does not include business rates, Transmission connection charges or established pension deficit funding. Within our business plan, on average 72% of SP Distribution's and 70% of SP Manweb's totex is allocated to the RAV and is spread over several years known as depreciation to reflect the long-term value of network assets. These capitalisation rates are a reduction from 80% in RIIO-ED1 and are consistent with Ofgem's RIIO-ED2 guidance to reflect our forecast annual statutory capitalisation in accordance with our expenditure projections.

In the longer term, a notional capitalisation rate which differs from the actual capitalisation policy can lead to an accounting mis-match. As a result, we prefer not to use the capitalisation rate as a financeability lever.

Asset lives and depreciation

Consistent with Ofgem guidance, our base assumption is to model regulatory depreciation using average economic asset lives of 45 years for new assets with straight line depreciation. Assets existing at 31 March 2015 continue to be depreciated over 20 years, consistent with Ofgem's decision as set out in the March 2011 RIIO-1 Strategy. During the RIIO-1 period, asset lives increase linearly from 20 years in 2014/14 to 45 years in 2022/23. This policy continues to broadly reflect the underlying statutory calculated economical asset lives. We will continue to monitor and review this assumption through the price control as the composition of totex potentially changes.

Our plan does not seek to adjust asset lives as a source of financeability adjustments. This preserves the intended equitable inter-generational amortisation of the RAV.

Shareholder Remuneration

We aim to enhance shareholder remuneration by leading the sustainable creation of social, economic and environmental value for consumers, network users and wider stakeholders, including our shareholders and communities, in the areas we do business and for the country as a whole.

We aim to equitably compensate all groups that contribute to the success of our work. To this end, we consider our contribution to social return, employment and wealth for society when we're making investment decisions.

Our dividend policy is based on the principle all parties must share in success. This means consumers benefiting from lower bills and better services, while investors earn a reasonable return.

We are of the view that a dividend yield of 4.0% on the equity proportion of the RAV is more appropriate. This is lower than our assumption at DPCR5 and RIIO-ED1, which was 5%.

Comparative dividend yield

Company	**Inputs**
National Grid	5.1%
SSE	4.9%
Pennon	4.75%*
Severn Trent	3.6%
United Utilities	4.1%
Average	**4.4%**

**adjusted for special dividend*

Observed dividend yields for UK networks companies are higher than our assumption. Adjusting for Pennon's special dividend, the average is 4.4%.

We believe our dividend assumption of 4.0% is sustainable, and compatible with the maintenance of our financial strength. We propose that it's also prudent when compared to companies with a similar business profile.

In determining SP Distribution and SP Manweb's dividend policies, we have taken into consideration Ofgem's proposal of 3.0% for a notional company, that is the basis of the modelling in this section. However, we consider this to be materially below the level investors expect from the sector.

Financial Policies

Pensions

Our business plans fully reflect Ofgem's pensions methodology as set out in various documents and consultations since 2009.

Our pension costs are calculated on the basis of the decisions set out in section 8 of the RIIO-2 Sector Specific Methodology Decision, ***Finance Annex*** *(11 March 2021)*

Established deficit

For both the ScottishPower Pension Scheme (SPPS) and the Manweb Group of the Electricity Supply Pension Scheme (Manweb Scheme) a roll-forward valuation to 31 March 2019 has been produced from the previous formal triennial valuation dated 31 March 2018 reflecting the requirements set out in the Decision on Ofgem's policy for funding Pension Scheme Established Deficits (7 April 2017).

We have used the method set out in the Pension Deficit Allocation Methodology (PDAM) to determine the split of liabilities and assets between pre (Established) and post (Incremental) cut-off date of 31 March 2010.

SP Distribution's funding allowance of the regulatory portion of the established deficit reflects a -0.7% discount rate spread evenly over 6 years from 1 April 2019.

SP Manweb's funding allowance of the regulatory portion of the established deficit reflects a -0.9% discount rate spread evenly over 8.8 years from 1 April 2019.

The pension principles are subject to ongoing review by Ofgem to make sure they continue to meet the interests of current and future consumers.

Established Deficit Annual allowance	SPPS	Manweb
Regulatory fraction	57.4%	80.0%
SP Distribution Annual allowance 6 years from 1 April 2019 at discount rate of -0.7% £m$^{20/21}$	£29.7m	
SP Manweb Annual allowance 8.8 years from 1 April 2019 at discount rate of -0.9% £m$^{20/21}$		£31.0m

Incremental deficit

The incremental deficit is included in totex and is benchmarked as part of total totex. Consistent with the calculation of the established deficit, this has been calculated based on a roll forward of the 31 March 2018 triennial valuation to 31 March 2019.

Incremental Deficit Annual Payment	SPPS	Manweb
Incremental Deficit payments for 20/21 £m$^{20/21}$	£4.8m	£4.7m

Pension scheme administration costs and Pension Protection Fund (PPF) levy costs

These costs are reflected in our plan but are relatively small in value. Details will be provided in ***Annex 5D.1***

Ongoing future service costs – Defined benefit and contribution schemes

Our defined benefit pension schemes closed to new members in 2006. The contribution rates for future service accrual for 2020/21 (based on the 31 March 2019 triennial valuation) are shown below:

Defined benefit scheme
Excluding expenses (%)

	SPPS	Manweb
Pension and death benefits	56.0%	53.4%
Employee	5.0%	5.5%
Employer	51.0%	47.9%

Defined benefit schemes employer contribution rates
Excluding expenses (%)

	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28
SPPS	51%	51%	58%	58%	58%	63%	63%	63%
Manweb	48%	48%	54%	54%	54%	59%	59%	59%

Defined contribution scheme employer contribution rates
Excluding expenses (%)

	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28
Average	10%	10%	10%	10%	10%	10%	10%	10%

Tax transparency and beyond

The Ofgem policy decisions affecting taxation are in the main modelled automatically in the Price Control Financial Model. Our business plans fully reflect all policies that are well established and understood. Further detail on taxation payments is provided in ***Annex 5D.1***

We feel very strongly that it's important for us to not simply respect the letter of the UK's tax laws, but to be completely transparent in how we are taxed.

The two main tenets of our tax policy are:

- Respect legislation – we stay strictly within the boundaries of law
- No artificial structures – we take a conservative and prudent approach to planning.

Our ultimate parent company, Iberdrola S.A, has published a full report on tax transparency and the company's commitment to society.

CHAPTER 6

Delivering our RIIO-ED2 Business Plan

As we look forward to a future that brings substantial change for our networks, we are doing everything we can to ensure that our business, and our people, are ready to deliver our RIIO-ED2 Business Plan.

This means ensuring that we are preparing our workforce with the skills they will need to meet the demands of the future, and working closely with our supply chain partners to ensure they are ready and able to deliver what our customers and stakeholders need.

We have already demonstrated during RIIO-ED1 that we can set out and deliver a comprehensive business plan which meets the needs of our customers and stakeholders, and we will go further in RIIO-ED2 on this journey.

IN THIS CHAPTER

We outline how we have been preparing our network, business and supply chain to ensure our plan will be delivered efficiently. We detail how we will manage uncertainties and risks, as we seek to grow our workforce and increase our out-sourcing. *Pg 179*

We outline our plans to keep health and safety at the forefront of everything we do, through our culture, compliance activities, staff support, engagement and education. *Pg 183*

We outline how we will move from our plan through Business Readiness to Business As Usual by sharing our Business Transformation plans. *Pg 184*

A proven delivery capability

Building on our RIIO-ED1 experience

During RIIO-ED1 we have driven efficiency and innovation in our processes and across our programmes, working collaboratively with our supply chain partners to make sure we deliver what we said we would.

We focused on the long-term asset management of our network, ensuring that our network is ready to meet the growing demands of our customers.

We have built a strong track record of delivery, achieving industry leading performance in key areas including delivery of safety critical activities under our tree cutting programme and upgrade of low voltage internal wiring (Rising and Lateral Mains) in multi occupancy premises.

During RIIO-ED1 we have used our strategic planning and delivery approach to achieve and accelerate delivery.

For example, our Overhead Line Modernisation programme was ahead of forecast at the end of 2020/21. This strategy was to maximise early benefits to customers by ensuring our network storm resilience was strengthened early in the period. We worked closely with our supply chain to ensure the step change in capacity required from the start of RIIO-ED1 was achievable and we continue to plan and coordinate in this way as we prepare for RIIO-ED2.

This strategic approach to planning and supply-chain management will be critical to responding to RIIO-ED2 priorities, volumes and uncertainties.

Adapting in exceptional circumstances

Despite the impact of COVID-19, we've continued to deliver our RIIO-ED1 programmes, de-scoping less critical works and rapidly adapting our working practices to make sure that essential faults, connections and investment works were completed.

In addition, we implemented targeted risk management and ongoing assessment for strategic sites such as permanent and temporary hospitals and vaccine manufacture or storage locations.

We reacted quickly to the emergence of an issue with premature failure of a type of cable joint installed during 2002 to 2010 that can fault during sustained periods of high temperature. This resulted in us experiencing higher than usual 33kV underground cable faults during the summer months, which caused increased risk to customer supplies. We mobilised a proactive programme to remove this risk through strategic interventions.

An issue with low voltage link boxes also arose, with an accelerated fault rate of 1,045% from previous years. We successfully applied for £23m of additional allowance through the re-opener mechanism and worked with our supply chain to secure the materials and services required. We also implemented an accelerated inspection programme, and installed protection blankets and smart temperature sensors to manage public safety risk. We are now well on track to deliver this programme removing the emergent risk from our network.

GETTING CLOSER TO OUR COMMUNITIES

During DPCR-5 we moved from delivering through a functional structure to a District structure.

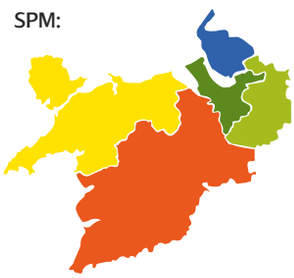
SPD was divided into 6 Districts and SPM into 5 Districts, with centralised support functions. Each District is led by a District General Manager responsible for all distribution activities in their geographic area – resourced with staff from the local area.

Being part of the local community has reinforced our culture of being close to our customers and stakeholders and provides our staff with clear, long term ownership of their network activities and customer outcomes.

This structure has served us well throughout RIIO-ED1 and will evolve further to meet the RIIO-ED2 challenges and opportunities.

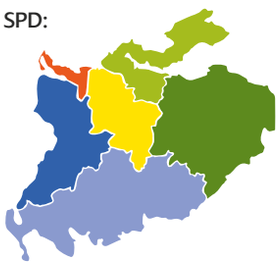
Our districts and base locations

SPM:



- **Merseyside** – *Liverpool*
- **Wirral** – *Prenton*
- **Mid-Cheshire** – *Middlewich*
- **North Wales** – *Llandudno junction*
- **Dee Valley, Oswestry & Mid-Wales** – *Wrexham*

SPD:



- **Central & Fife** – *Bonnybridge & Glenrothes*
- **Glasgow & Clyde North** – *Glasgow*
- **Lanarkshire** – *Cambuslang*
- **Edinburgh & Borders** – *Telferton*
- **Ayrshire & Clyde South** – *Kilmarnock*
- **Dumfries & Stranraer** – *Dumfries/Stranraer*

Developing our workforce

We've developed a highly skilled workforce capable of planning, designing and delivering complex programmes of work. We have a mature supply chain approach which is continually refreshed to encourage innovation and competition. This gives us a high level of confidence that we are entering RIIO-ED2 with strong foundations.

The delivery environment for RIIO-ED2

Our RIIO-ED2 and longer-term ambitions

We are making significant changes to our business to meet the ambitious commitments set out in our business plan and to support the transition to Net Zero.

We are doing this in a way that allows our customers and stakeholders to meet their aspirations, while continuing to maintain our core infrastructure to high standards of safety and performance.

We are confident that we'll meet this challenge. As set out throughout this business plan, we are putting in place new digital-enabled approaches to planning and intervention, and to increase the productivity of our workforce. We are already mobilising the necessary recruitment and upskilling programmes for our future workforce. We are also working closely with our supply chain to plan how we deliver together in RIIO-ED2. These activities will be overseen by our Business Transformation directorate.

Preparing now for the energy transition

To prepare our networks for Net Zero, we are already starting the process to undertake proactive, targeted investment programmes, transforming our approach to delivering customer connections to meet significantly increased volumes. We are investing heavily in operational IT and telecoms as we transition to DSO, and we are increasing our environmental activities to deliver our Environmental Action Plan (EAP).

How we will respond to the changes that RIIO-ED2 will bring:

Delivery challenge	Scale	Our efficient and effective delivery approach
Net Zero Preparing our LV Networks for Net Zero will require a significant increase in interventions.	Increasing uptake of Low Carbon Technology necessitates a step change in the volume of network interventions, particularly on the LV network, including 65x more LV looped service interventions and 9x LV mains cable interventions compared with RIIO-ED1. **65x LV looped service interventions**	We're working with our internal mains and cable laying contract partners now to develop suitable partnerships to support this activity. These partners have a proven record for delivering this type of work and have the ability to scale up their models to meet the increases in this area. We are also proactively stimulating the market to drive maximum competition as we approach full contract let in May 2022 to take us into RIIO-ED2 successfully.
Connection enquiries We are transforming our customer connections processes.	Our analysis indicates that in RIIO-ED2 we could receive up to **three times** the number of customers contacting us for a connection; most significantly by first time customers looking to connect Low Carbon Technology. **3x connections**	Under our current operating model this would equate to an increase of around 100 FTE. This is, however, a process that is relatively straight forward and repetitive which is ideally suited for customer self-service and digitalisation. By introducing fixed price quotations, self-service and digitalisation the aim is to maintain existing resource levels through implementing a digitalised end to end connections journey with self-service options. Close governance around the digital transformation road map is in place with decision points agreed to ensure success.
PCBs Pole Mounted Transformers containing oil contaminated with PCB need to be removed by end of December 2025	We've modelled the numbers of transformers that need to be changed: SPD 3,423 and SPM 5,197. **8,620 transformers**	Our plan to deliver this large, increased work programme is to offset it with the decrease we will experience in our ESQCR programme, as the backlog of defects have been cleared in RIIO-ED1. The majority of both programmes were/will be delivered by our Overhead Line framework contractors. We have reviewed the planned delivery across geographical locations and volumes against the ESQCR programme to gauge parity for our supply chain and workforce. This has confirmed that we have a deliverable plan.

The scale of change required

We recognise the need to carry out extensive preparatory work ahead of RIIO-ED2 in order to deliver on our business plan commitments. We are managing the impact through digitalisation, sustainable supply chain management, and recruitment and development of local skills and talent.

In preparation for RIIO-ED2, we have:

- Created a detailed model to assess the deliverability of our business plan including outputs, supply chain, enabling technology and organisational readiness.
- Tested our plan against internal and external factors.
- Identified the interventions required
- Developed and implemented business readiness plans.
- Created a dedicated Business Transformation directorate to deliver our readiness and measure progress.

Getting Our People Ready for RIIO-ED2

Our workforce will need to evolve and adapt to new ways of working as we embrace the challenges and opportunities of RIIO-ED2.

We will experience significant changes in demand on our central functions – particularly in planning, design, DSO, and digital. We are expanding on our capabilities and evolving our processes to continue to meet demand.

Embedding change with our people and culture is vital. We use the Prosci® change management approach including the Prosci ADKAR® Model, which focuses on managing the people side of change to make sure individuals understand how they are impacted and what they need to do to get ready.

Recruitment, training, upskilling and retirements are key areas that are being managed to support the delivery of our commitments. We have engaged throughout our planning and plan submission process with our Trade Union representatives on our RIIO-ED2 plans.

*For more information on building a Net Zero workforce, please refer to **Chapter 4C.***

Engaging and evolving our supply chain

60% of our work in RIIO-ED1 has been delivered by a wide range of contractors and specialists. For RIIO-ED2 we have engaged extensively with our supply chain and the wider market and identified key actions we are taking now to collaborate and deliver our plan.

All contracts placed since 2020 provide for future requirements including supporting our commitments as well as adapting to forecast changes such as increased connections and load activities.

New contracts include risk management strategies to help us manage uncertainty without significant risk to efficiency, delivery and sustainability. Examples of these strategies include contract length options, alternative pricing strategies, and appropriate stocking strategies for equipment and materials. We work closely with our supply chain – providing advanced indication of needs, allowing them to respond to changes in demand. We are also pursuing alternative solutions such as joint recruitment and training ventures where we have identified a potential resource constraint in the marketplace.

We are also working with our supply chain to improve workforce diversity to better align with our aspirations to represent the communities which we serve together.

OUR OPTIMAL APPROACH TO DELIVERY

By embedding new digital approaches, innovation and process redesign we will limit the increase in our internal workforce required to deliver our ambitious RIIO-ED2 activities to 18% (446 FTE). Without efficiency initiatives, the required increase would be 30% (739 FTE).

Our forecast FTE includes the increase required to deliver our common ODIs, bespoke ODIs, PCDs and CVPs.

This includes 62 FTE to support our additional proposed activities which will not be required if these activities are not funded.

*A list of common and bespoke ODIs, PCDs and CVPs can be found in **Chapter 5C** and **Annex 6.1: Delivering our RIIO-ED2 Business Plan***

Enhancing delivery through digitalisation

We have a clear strategy to adapt our skills and capabilities, so we can fully embrace new technologies and deliver our plan efficiently. We have made good progress in digitalising our network, systems and processes in RIIO-ED1. However a more ambitious programme is required in RIIO-ED2.

We recognise the value of data as an asset and how this can be used to drive a coordinated and optimised approach to delivery. To support delivery of our digital systems we are actively pursuing recruitment, training and upskilling. This process has already commenced, starting with our Centre of Excellence and IT support staff to make sure they can support the wider business users. In addition, a skills gap review of our digital capability has been completed to assess our ability to embrace our solutions for future success. This forms the basis of our "digital roadmap" for RIIO-ED2.

Delivering our DSO Plan

To deliver our Distribution System Operator (DSO) plan and the 3 key DSO roles of planning and network development, network operation and market development, we are making six investments in RIIO-ED2. These investments will provide new functionality to deliver our role as DSO.

To deliver this investment we have:

1. Tested the capacity of our supply chain for LV monitor deployment and Operational IT and Telecoms activities.
2. Developed a mixed delivery model of supply chain and internal resourcing – with focus on up-skilling our direct workforce.
3. Implemented a training plan to ensure we meet our data / digital driven ambitions.

*For more information on how we will Develop the Network of the Future, please refer to **Chapter 4A.***

Delivery of uncertainty and risks

Managing delivery uncertainty

Our planning is based on our robust DFES scenarios and a full evaluation of the strategies and initiatives we will deliver in RIIO-ED2. A large proportion of our RIIO-ED2 delivery plan is relatively predictable.

However, there remains areas of uncertainty which we will need to monitor, assess and be ready to respond to, such as:

- Should the uptake of low carbon technologies such as EVs and heat pumps not materialise in the way we forecast, we will need to reprioritise or reprofile our programmes accordingly.
- Changes to policy, legislation or regulation that could impact our plans and obligations.
- Wider political and economical uncertainties, such as supply chain impact from Brexit.
- Third party uncertainty, such as the way in which Highway Authorities use and introduce new permit and lane rental schemes.

We have demonstrated our ability to adapt and flex our delivery model during RIIO-ED1, and have developed our planned approach for RIIO-ED2.

Our approach has three elements:

1. Dynamic planning – Our delivery plans are continuously reviewed allowing adjustment as required. This is informed by continuous monitoring and analysis of programme progress, operational data and wider insight in areas such as policy and technology. Enhancing our analytical capabilities to drive this process is a key part of our digitalisation and workforce plans.

2. Flexible resourcing and contracting – Our resourcing plan is agile and can be flexed up or down to meet changing demand. The contracts we have placed with our supply chain are not commercially tied to volumes and the supply chain understand the uncertainties we face and, through close collaboration and joint planning can respond when necessary.

3. Organisational adaptiveness – Our mature business change approach will allow us to identify where we need to change our ways of working to meet any changes in priorities or demand. As we prepare for RIIO-ED2 we are evolving our organisation to be more adaptive. This includes embedding learnings from our response to COVID-19, building greater flexibility into our systems and continuing to create a culture and working practices that support adaptiveness.

Risk management

Risks to delivery of our plans are managed using a robust Risk Management Framework which forms an integral part of our programme and wider business governance processes.

We've grouped and identified risks in 4 areas:

Assets – As leaders in asset management, we have robust processes to manage asset risk. In the unlikely event that a systemic issue (such as a type defect) arises, we are prepared to respond rapidly mitigating the impact through our delivery processes and programme replanning.

People – People risks include challenges in recruiting the number of staff with the required skills in a highly competitive environment. Addressing this risk is a core aspect of our Net Zero Workforce Strategy.

Supply chain – Supply chain risk comes from the uncertainty in volumes, industry changes and enhanced environmental commitments. Working closely with our supply chain, initiatives have been developed to minimise the impact of cost pressures and resource constraints. These include joint planning, contract standardisation, and use of new technology.

Digitalisation and Technology – There is a significant increase in our digitalisation programme. Implementing this programme will be key to meeting our RIIO-ED2 commitments, and we are using an agile approach to manage this programme and associated delivery risks effectively.

*In assessing deliverability of our RIIO-ED2 plan, we have undertaken a full risk analysis. Details can be found in **Annex 6.1 Delivering our RIIO-ED2 Business Plan.***

Efficiency through continuous improvement

We've listened to what our customers and stakeholders have told us in RIIO-ED1 to inform our plans for RIIO-ED2. We are proactively building on RIIO-ED1 innovation to deliver smarter interventions, realising substantial savings for our customers.

We have a strong focus on continuous improvement of our processes and across our work programmes. This includes working collaboratively with our supply chain partners to identify opportunities to improve how we work together.

We will continue to engage with our customers and stakeholders throughout RIIO-ED2 and will use their feedback to identify and drive opportunities for greater efficiency, better customer service and sustainability improvements.

As part of a global business, we also take opportunities to work with other parts of our group to share best practice and challenge and strengthen our approaches.

Minimising disruption

There will always be an element of disruption caused by planned work on our electricity system. Our plans are delivered in an optimised manner to reduce the disruption to our customers and stakeholders caused by roads and highways excavations or closures, and power outages.

Planning work in advance of need and optimising delivery, for example by unlooping the services for entire streets rather than individual properties, allows us to deliver the volumes efficiently. In addition, we will work closely with the Road Authorities to minimise disruption. Excavating on the same street on numerous occasions is disruptive and inefficient and therefore early engagement with stakeholders to share plans is essential to the plan being deliverable. Working together in a collaborative way with the stakeholders is an essential part of our plan.

Much of our plan requires us to safely de-energise and disconnect live equipment on the network to replace, maintain, or install assets. When we do this, we may reduce the capability and reliability of the network or in certain instances (i.e. on the LV network) interrupt the supply to customers. We plan our work in great detail to minimise any effect on the network or risk of customer interruption.

The predicted uptake of Low Carbon Technology will have a major impact on the LV network, likely requiring a proportionate increase in the number of outages that will affect customers. Coordinated outage planning, on both the HV and the LV networks, will be used to minimise the impact on customers. The aim of the planning process will be ensuring that no customer will be off supply for planned works more than once per year and customers are kept fully informed of any proposed works.

Land and planning

A key part of ensuring our network is maintained effectively as we progress our RIIO-ED2 plans is to make sure that the appropriate land rights are in place to enable the required access for our needs and the needs of our customers.

This includes reviewing our plans and growth areas against our in house and out sourced resources for Land and Planning activities to ensure we have the appropriate land rights agreements in place.

We anticipate a significant increase in volumes in RIIO-ED2 driven by two factors:

- The requirement for securing additional land rights associated with the need for additional cable and substations due to LCT connections
- An anticipated increase in requests for diversion of existing network apparatus based on RIIO-ED1 trends and modelling forecasts into RIIO-ED2.

We currently have contract frameworks in place for RIIO-ED2 to support this increase in work volumes, but we will also need to increase our workforce in this area to ensure we can deliver the expected volumes. That process is currently underway as an early action prior to the commencement of RIIO-ED2.

Our approach to deliver our RIIO-ED2 plan is to complete design work ahead of expected need and identify and secure sites based on our forecast modelling prior to the start of RIIO-ED2. This is a lengthy process, but will allow us to complete the necessary legal processes in time to deliver our plans, and has already started.

In parallel we are working with our Local Authorities to ensure we avoid any bottlenecks in their processes and ensure a smooth delivery profile. We will also be commencing advance engagement with our local communities to ensure the impact is as minimal as possible.

Competition: a continued commitment

We have a responsibility to develop and maintain an economic, efficient and coordinated distribution network. We use market-driven competition to do this, for the benefit of consumers.

1. Native Competition and New Markets

Native competition already takes place under RIIO-ED1 arrangements. It refers to those competitions run by network companies within the price control framework under the Totex Incentive Mechanism. We actively support competition in distribution, where it delivers value for consumers, with 83% of our regulated distribution construction activities already delivered by the market.

Our flexible delivery strategy is based around a disaggregated contracts model. This has significantly increased tender competition and driven efficiencies across our distribution networks. We have worked with approximately 2,000 different suppliers during RIIO-ED1. Accredited with our ISO 9001 Procurement Policy and Procedures status since 2013, we are confident that our existing procurement and monitoring practices reflect the Best Practice Principles that Ofgem has set out for the other RIIO-ED2 sectors.

We will continue to be ambitious in using native competition through our disaggregated contracts model to drive efficiencies, ensuring our programmes of work are procured as competitively as possible, and offers best value for consumers.

We remain committed to embracing and facilitating competitive markets, where we believe this is appropriate, to deliver outcomes for our customers at the lowest possible cost.

- Our DSO Strategy (***Annex 4A.3***), commits to competitively test reinforcement requirements through flexibility markets.
- Our Whole System Strategy (***Annex 4A.26***) explains how we work with others to ensure customers' needs are met in the most efficient and coordinated way.

2. Competition in Connections

Within our licence areas hundreds of connections are completed each year by third party providers, i.e. Independent Connection Providers (ICPs) and licenced Independent Distribution Network Operators (IDNOs). The opportunities to compete with DNOs is even greater than before, given the increases in connection activity we are predicting, driven by increased uptake of low carbon technologies.

We continue to support the Competition in Connections Code of Practice (CoP) so third party competitors are less reliant on DNOs for the completion of their work. In RIIO-ED2 we want to ensure ICPs and IDNOs are able to complete increasing aspects of the connections process themselves. Empowering third parties with greater autonomy in this process will speed up the process and provide customer benefit. We believe this will be delivered by our ambitious strategy which outlines the investment we intend to make into intuitive digitalised design tools and also through increased transparency of data.

The development of competition in connections has led certain construction activities, such as house building, to use multi-utility providers. These networks are often then adopted by IDNOs. In RIIO-ED2 this will be a positive step to future competition within our licence areas.

*More information on Competition in Connections can be found in **Annex 4A.28: Connections Strategy.***

3. New forms of competition for RIIO-ED2

For RIIO-ED2, Ofgem has stated its intention to introduce two new forms of competition:

Early competition – Ofgem describes this as a competition run prior to the project design process to reveal the best idea to meet a system need. In April 2021, the ESO presented an Early Competition Plan to Ofgem, including a detailed model for Early Competition in the Transmission sector[1]. Ofgem are currently deciding whether to introduce Early Competition into RIIO-ED2 following on from their consultation which closed in September 2021.

Late competition – Ofgem describes this as competition for the delivery of a project to optimise financing, construction and operation costs. BEIS' consultation on competition in onshore electricity networks closed in October 2021[2].

Before Ofgem or the Government decide to introduce early or late competition into distribution networks we would expect them to undertake stakeholder-wide engagement to develop an early or late competition model that is suitable for distribution networks. This exercise must include comprehensive cost benefit analysis (CBA) and Impact Assessment (IA) work to assess whether any proposed early or late competition model delivers additional benefits to consumers, compared to the status quo RIIO framework.

A replication of either the early or late competition proposals for transmission networks is not directly transferable to distribution networks as the transmission and distribution networks are fundamentally different. For example, the size and value of projects are much smaller in distribution, with investments tending to be more integrated into the existing network. Also, distribution is much more customer facing than transmission.

Early and late competition in RIIO-ED2

In line with Ofgem's Business Plan Guidance requirements, we have reviewed our RIIO-ED2 projects to assess those which are eligible for early competition (greater than £50m and contestable) and late competition (new, separable and greater than £100m) in both of our licence areas.

In making our assessments for late competition, we have also applied re-packaging and bundling rules to packages of work with a common needs case, for example condition driven programmes of similar assets have been aggregated. These activities share a common Engineering Justification Paper despite being delivered across diverse locations, timescales, and with site-specific planning requirements.

Following this detailed exercise, we have concluded that none of our projects, including our re-packaged and bundled projects, meet the early or late competition criteria.

During RIIO-ED1 we have worked with approximately **2,000 suppliers**

1. www.ofgem.gov.uk/publications/consultation-our-views-early-competition-onshore-electricity-transmission-networks
2. www.gov.uk/government/consultations/competition-in-onshore-electricity-networks

Health and safety

Our track record

Our leading and lagging health and safety performance indicators measure how we're doing. Leading indicators include a wide-ranging internal operational audit programme, near-miss trend analysis and evaluation, and an occupational health screening programme.

Our headline performance indicator is Total Recordable Injury Rate (TRIR). This is calculated by combining the actual number of defined recordable incidents and total work hours of all employees within a defined employee group. We then multiply the total number of recordable incidents by 100,000 – then divide that number by the total number of person-hours worked in a given period.

At the start of our TRIR for employees was 0.26 and contractors was 0.79. Over the RIIO-ED1 period, staff TRIR has reduced by over 60% and contractor TRIR has reduced by over 30%. We already have very low levels of employee and contractor accidents; however, we can always do better, and will work hard to reduce our TRIR during RIIO-ED2. Other lagging indicators include recording and subsequent investigations of Near Misses, Lost Time Accidents, Medical Treatment Incidents and First Aid Incidents.

We report our health and safety performance to our CEO, executive team and workforce. When accidents and incidents do happen, we thoroughly investigate them and analyse the causes.

Health and Safety at the forefront of everything we do

This section outlines our plans across seven key areas of health safety:

1. Our health and safety culture
2. Compliance with health and safety legislation
3. Keeping our staff and contractors safe
4. Guarding physical and mental health
5. Educating the public
6. Engaging with the regulator and the industry
7. Engaging with our people

Our heath and safety culture

Health and safety is led from the top and is driven by the business

Health and safety is always on our agenda and is woven into every decision we make. Every year we update our health and safety operating plan to reflect our goals and objectives. This plan is endorsed by the CEO and executive management team, then shared across the business. We review the plan regularly to make sure we deliver the improvements we've promised.

We also:

- Hold weekly and monthly meetings solely to review health and safety performance.
- Routinely publish communications on incidents and lessons learned by the business and the wider industry.
- Follow internal processes to identify improvements in training or processes, then create new initiatives to deliver these gains.

Ultimately, we cannot compromise the safety of our staff. We have submitted a business plan which incorporates the funding we need to ensure the health and safety of our staff.

A consistent health and safety message

Health and safety matters. This is the simple, memorable message we use across all communications and employee work clothing. It's important for this to be visible across the organisation, underpinning our commitment to health and safety.

We deliver regular communications on performance, changes to processes and procedures, health and safety team briefs, and technical updates related to our assets.

We also hold health and safety stand-down sessions. Here, senior management brief staff on relevant and topical health and safety issues. We deliver a minimum of three stand-downs a year and we share them with our contract partners.

Health and safety responsibility

Our line managers are responsible for day-to-day health and safety management. They get support and guidance from a professional team that includes qualified health and safety managers, as well as engineers providing compliance auditing. The health and safety team also includes occupational health professionals who manage statutory health surveillance activities and health and wellbeing initiatives.

Compliance with legislation

Our health and safety management system is audited by independent experts and certified to the new ISO 45001 standard. We consider certification as a minimum requirement – we go far beyond basic compliance in our efforts to reduce potential harm in our activities and will continue to do so.

During RIIO-ED2 we will implement a detailed audit and inspection programme to evaluate our compliance with legislative requirements and we will strive to achieve zero regulatory enforcement notices from the UK Health and Safety Executive.

All our major construction activities comply with the Construction Design and Management Regulations (CDM) 2015. Even when the project is not notifiable to the UK Health and Safety Executive (HSE) under CDM, we use the regulations as a benchmark for good practice.

Over 2m people ***reached*** *with our latest public safety campaign*

2m people reached

Keeping our staff and contractors safe

We will continue to develop our health and safety culture. We will do this through visible leadership and making sure line managers take responsibility for health and safety. This underpins the four foundations of how we make sure staff and contractors are kept safe:

1. We assess risk

We continually assess risk when work is being planned and carried out, and always highlight any shortcomings after an audit or incident.

We have introduced Activity (or role-based) Risk Control assessment. These assessments identify hazards associated with various job roles, as well as control measures including training and education.

2. We make sure staff are trained

Only trained and authorised staff can work on our network. We review training needs every year, with the majority of training delivered by internal and external trainers at our two training centres. Trained staff are then formally issued with authorisation certificates by our authorisations team.

3. We operate under clear safety rules

We operate under our 4th Edition (Electrical and Mechanical) Safety Rules – these set safe procedures for staff working on our system. We also deliver comprehensive training programmes at our in-house training centres, guaranteeing the competence of our staff.

4. We carefully select contractors

When we select contractors, we carry out a thorough analysis of their health and safety management systems and performance. All equipment used in our activities is certified and maintained to the manufacturers' recommendations.

An operational compliance team audits the activity of our staff and contractors to a defined annual programme, testing the risk reduction controls implemented during our operations. Any lessons we learn from these audits we share with the wider business and, where appropriate, integrate into our training programmes.

Guarding physical and mental health

Mental and physical wellbeing are equally important and our commitments are detailed in the Net Zero Workforce, *Chapter 4C*

Educating the public

We invest heavily in educating the public about the potential risk of interacting with the electrical network.

To help us identify areas for intervention and education. We also participate in the Electricity Networks Association Public Safety Committee as well as monitoring and analysing data from our reporting of events as required by the Electricity Safety, Quality and Continuity Regulations.

We support safety education centres in our areas of operation and provide teachers with educational programmes – such as the educational website Powerwise – to raise awareness in schools.

Our staff take part in safety events in the communities where they live. We also work with the agricultural community to provide information on maintaining clearance between farming activities and the electricity network.

Engaging with regulator and the industry

As a member of the Energy Networks Association (ENA) we engage with other Distribution Network Operators on various working groups to develop, share and adopt industry best practices.

We also engage directly with the UK Health and Safety Executive to review our own activities and develop safer working methods in the industry, all with the aim to further manage potential risk.

Through our strong partnerships we will continue to develop our health and safety initiatives and share learnings with our peers to better the safety in our industry.

Engaging with our people

We recognise that the behaviours of our people will ensure an engrained safety culture. We will continue to support the role that Safety and Workplace Representatives carry out and consult with them to improve outcomes. We will encourage our people to put forward ideas to better our safety initiatives, and participate in our annual staff survey. We always score highly in the Health and Safety section of our survey and develop an action plan based on feedback. To further embed good safety behaviours, we promote the visiting of worksites to observe safe working practices and carrying out behavioural based safety interventions. Our supervisory staff also attend coaching safety training, and an electronic behavioural based awareness training course is available for all staff.

Business Transformation

To support our plans as we evolve from RIIO-ED1 to RIIO-ED2 we have a Business Transformation directorate in place to integrate the RIIO-ED2 readiness tasks into an overall business change effort across multi-disciplines.

The plans have assessed all current strategic change, delivery strategy and governance to define the overall roadmap for delivery.

The deployment of our over-arching resource, supply chain and digital plans will be governed and executed through this process, ensuring correct prioritisation and stakeholder management.

This will enable the business to maintain a clear line of sight between our plan, through readiness to business as usual, whilst retaining the principal of operational led ownership. This will also include implementing appropriate governance and reporting metrics required for our new Business As Usual to deliver our plan.

The Transformation operating model and governance model is in place to set us up for success. The outputs are aligned to our Regulatory objectives and reporting and will continue to be refined appropriately as we progress through our plan submission, draft determination and final determination from Ofgem.

Completed 64 dedicated workshops with our supply chain on delivering our plan

64 workshops

Creating more than

400 new roles

CHAPTER 7

Assuring our RIIO-ED2 Business Plan

As we look forward to a future that brings substantial change for our networks, we are doing everything we can to make sure our plan is robust, well-researched and benchmarked.

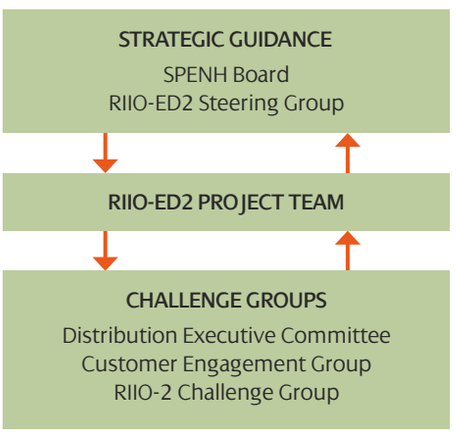
An open approach, built on trust, is necessary to maintain the reputation we have with our consumers, network users and wider stakeholders. We have taken steps to achieve this transparency and make sure our ambitious business plan is accurate, incorporates the recommendations of industry experts, and builds on our learnings from RIIO-ED1.

This all comes together under our assurance and governance framework. It sits at the heart of the process we used to develop our business plan – and has the full support of our board.

HOW WE DO IT

Our assurance and governance framework gives us the certainty we need in our business plan, through:

- *a proven, established approach*
- *robust challenge from internal and external experts*
- *continued engagement from our board*
- *strong, accurate evidence to justify every decision.*



For more information on: Our RIIO-ED2 Challenge Group Draft Business Plan Feedback, see ***Annex 1.2****, Co-creating our RIIO-ED2 Business Plan with our Stakeholders, see* ***Annex 3.1****, Assurance, see* ***Annex 7.1.***

Governance

Strategic guidance

Board of Directors of ScottishPower Energy Networks Holdings Limited (SPENH board)

The SPENH board has overall responsibility for the long-term strategy and direction of our RIIO-ED2 Business Plan. The board works to make sure the company continues to operate responsibly and ethically, while delivering success for consumers, stakeholders and network users.

The board comprises of six directors – two of which are independent.

Sra Elena León Muñoz	*Chair*	Non-Executive
Mr Frank Mitchell	*CEO*	Executive
Ms Alison McGregor	*Member*	Independent, Non-Executive
Professor Dame Lesley Anne Glover	*Member*	Independent, Non-Executive
Sr Jose Ignacio Sánchez-Galán	*Member*	Non-Executive
Sra Monica Grau Domene	*Member*	Non-Executive

Our business plan was developed on the basis of robust models and analysis, and shaped by our extensive stakeholder engagement. The SPENH board, including our Sufficiently Independent Directors (SIDs), was fully engaged throughout this development process.

The board received regular updates on RIIO-ED2 throughout our development process through formal board meetings. We also held four RIIO-ED2 assurance workshops with our board which allowed them the opportunity to challenge our RIIO-ED2 project workstream leads on all areas of business plan development. The board met with a key external assurance provider at one of these workshops – giving the opportunity to understand in detail the level of challenge and review that has been applied.

The chair of our Customer Engagement Group (CEG), John Howard, met with the board on three occasions. The board are satisfied that the challenges made by the CEG have been addressed by the RIIO-ED2 project team.

This strong level of engagement with the board members gives them confidence that our business plan is underpinned by a comprehensive assurance framework, and provides opportunity for them to test our submission for accuracy, efficiency and ambition. We have published a Board Assurance Statement along with our final business plan which sets out how our board, including our SIDs, is satisfied that our plan and associated costs are accurate, efficient and ambitious.

RIIO-ED2 Steering Group

Providing strategic direction and governance to the project team's work, the RIIO-ED2 Steering Group helps shape our business plan outputs and build a plan that is consistent with our vision.

As part of our commitment to robust and consistent governance, the group runs to a set agenda, with action logs and minutes of meetings captured. Chaired by Frank Mitchell, the CEO of SP Energy Networks, this group was created for RIIO-ED2. All the key areas of focus from our business plan submission are represented.

Challenging the business plan

Robust challenge keeps our business plan firmly rooted in our corporate values. It also makes sure we deliver what stakeholders tell us matters most to them.

Challenge comes from three key groups: the Distribution Executive Committee (DEC),the Customer Engagement Group (CEG) and Ofgem's RIIO-2 Challenge Group (CG).

Distribution Executive Committee

The Distribution Executive Committee meets monthly and comprises a sub-section of the SP Energy Networks Executive team. The committee was set up specifically for RIIO-ED2. Its remit is to review, challenge and provide endorsement of key project decisions. The committee also deals with escalated decisions and creates a channel of communication between the project team, the SPENH board and the RIIO-ED2 Steering Group.

An example of this working is when the committee challenged the project team on the deliverability of the business plan. The committee recognised the criticality of ensuring that we have carefully considered all key aspects needed to deliver our plan efficiently and against the constraints that can affect it. The outcome of this challenge resulted in two experienced senior managers from our distribution business being appointed to our RIIO-ED2 project team full time, strengthening our focus on this critical aspect of our planning.

Further internal challenge

Challenge is also provided by internal working groups in different subject areas. For example, our RIIO-ED2 Future System Strategy workstream hold a monthly steering group with our director of Network Planning and Regulation and senior leaders and experts involved in running and supporting our distribution business. This steering group supports and challenges the development of our investment plans and makes sure all decisions are fully considered and robust. This strong level of challenge is applied to all areas of our submission.

Sra Elena León Muñoz
Non-Executive Chair, SPENH Board

"As chair of the board, it is essential to me that our RIIO-ED2 Business Plan submission fulfils the company's future vision to "work with the communities we serve to enable a just transition to our Net Zero future" – the level of rigour, challenge and scrutiny applied across all areas of the submission provides me with confidence that this vision will be met."

Customer Engagement Group

Our independent Customer Engagement Group (CEG) played a fundamental role in the development of our business plan, bringing new perspectives and providing robust, constructive challenge to our decision-making.

The group's primary purpose is to provide expert challenge on whether our business plan addresses the needs and preferences of current and future customers and stakeholders. As such, the CEG has developed a close working relationship with our RIIO-ED2 project team so it can scrutinise our proposals at every stage of development.

The CEG meets with us on a monthly basis in order to regularly challenge our emerging thinking across all aspects of the RIIO-ED2 Business Plan. Since its establishment in January 2020, the CEG has met a total of 97 times, via 37 formal monthly meetings and 60 specialised sub-group meetings, with over 200 formal meeting hours. They have heard from over 40 members of staff, including six directors and our CEO, and submitted 149 formal challenges and 502 questions and items of feedback. They have also heard from a range of external organisations who have helped the group gain a better understanding of particularly complex or technical issues, allowing for more thorough scrutiny of our proposals.

The following table shows examples of where the CEG has challenged us and what we've changed as a result.

Feedback	Action
The CEG recommended that SPEN included community energy groups in its engagement on customer service.	*Local Energy Scotland, Community Energy Wales and Community Energy England were added to our stakeholder list for Customer Service workshops.*
Further engagement with business and industry, potentially through Local Enterprise Partnerships (LEPs) or trade bodies on sustainability was recommended.	*Additional Local Enterprise Partnerships and trade bodies were invited to our sustainability workshops.*
Increase the diversity of stakeholders attending stakeholder workshops.	*We broadened the scope of some of our RIIO-ED2 engagement workshops, covering more topics with a greater diversity of stakeholders.*
The just transition is a critically important issue for the energy industry as a whole and SPEN should ensure it contributes effectively.	*We facilitated a workshop between the CEG and a member of the Just Transition Commission and continued to engage the CEG on embedding a Just Transition Commission throughout our business plan.*

Since its establishment in January 2020, the CEG has met a total of

97 times

RIIO-2 Challenge Group

Independent scrutiny has been provided by the RIIO-2 Challenge Group (CG), which is responsible for reviewing the RIIO-2 plans of all Electricity, Gas, Transmission and Distribution companies.

Our RIIO-ED2 team has met with the Challenge Group on four separate occasions in advance of our final submission. Firstly, we met with them as an introductory session. Secondly, we met with them to discuss our RIIO-ED1 track record and to discuss our RIIO-ED1 achievements. Thirdly we provided them with an overview of our RIIO-ED2 plan ambition, in which we outlined our priorities and sought feedback on the commitments which we propose to deliver during RIIO-ED2. Then, at our fourth meeting we welcomed the opportunity to discuss their feedback on our RIIO-ED2 draft submission.

These sessions were attended by representatives from our senior management and executive team with all agreed follow up actions progressed. We have addressed their challenges for our final submission and submitted an annex which provides a cross reference between our submission contents and the feedback and challenges received.

Ms Alison McGregor
Independent Non-Executive Member, SPENH Board

"It is essential to me that our business plan submission is underpinned by a robust assurance framework. I have been very impressed with the approach taken to assurance by the RIIO-ED2 project team, providing me with confidence that we have achieved a robust and deliverable plan which has been subject to challenge and scrutiny by several independent specialists across all areas of the submission."

*Refer to **Annex 1.2: RIIO-2 Challenge Group Draft Business Plan Feedback** which provides a cross reference between our submission contents and the feedback and challenges received from the RIIO-2 Challenge Group on our draft business plan.*

*More information on how we've engaged with our CEG and how we have changed our plans as a result in **Annex 3.1: Co-creating our RIIO-ED2 Business Plan with our stakeholders***

Assurance

Assurance framework

Our business plan must be accurate, well justified and compliant with all regulatory requirements – this is vital to earn the trust of our consumers, network users and wider stakeholders. Our robust assurance framework means every part of our plan is thoroughly reviewed.

Ofgem's Data Assurance Guidance

Our existing assurance framework ensures we adhere to Ofgem's Data Assurance Guidance (DAG) with the aim of reducing the risk of any inaccurate reporting.

DAG sets out the following steps for every submission made to Ofgem:

- a risk assessment following a defined risk assessment methodology, and the preparation of a method statement explaining how the submission is prepared
- a second person check, and a senior manager review for every submission before we send it to Ofgem
- the determination and completion of any additional assurance activities for those submissions assessed as high or critical risk, prior to submission, from a pre-defined list
- an annual report on the results of the risk assessment and assurance activities, providing confidence in the accuracy of content.

INTEGRATED MANAGEMENT SYSTEM

Our Integrated Management System (IMS) consists of five international standards:

- Asset Management ISO55001
- Quality Management ISO9001
- Environmental Management ISO14001
- Health and Safety Management OHSAS ISO45001
- Business Continuity ISO22301

The IMS allows us to organise and manage our operations to achieve our business goals and objectives – while at the same time making sure we support the environment, our people, our customers and network integrity. Our IMS drives best practice approaches which strengthen our business plan and how it will be delivered.

We have our compliance with the standards audited every three years – our latest was in 2021. The external auditor noted in their report: *'well defined planning and delivery processes from top level planning to local delivery, comprehensive data gathering and progressive use of new techniques for asset reliability monitoring and measuring'*. In 2021 we also successfully added Business Continuity ISO22301 to the portfolio.

An alternative way to assess risk

To make our assurance process even more rigorous, we have developed a holistic approach to assessing risk, adding a strategic view of business impact by using our Enterprise Risk Reporting methodology. Combining this with Ofgem's existing DAG methodology lets us consider risks from a range of perspectives.

The Enterprise Risk Reporting methodology considers risks to our business associated with the investment options and how these impact on a variety of factors, including health and safety, operational performance, environment and stakeholder reputation. The DAG methodology considers the risks of providing inaccurate or incomplete data submissions – and how these impact on customers, competition, financial and comparative efficiency.

The risk assessment was carried out by our internal Assurance team, which is independent of the RIIO-ED2 project. This independence gave us confidence that the assurance would be targeted at the correct areas.

To carry out the risk assessments, our business plan was broken down into several key components – we refer to them as building blocks. Each building block was risk assessed using both methodologies.

The assurance activities were deployed based on risk score – the higher the score the more extensive the assurance. Where there was a disparity between the DAG and Enterprise Risk Reporting methodology score, the level of assurance applied was based on the highest score, to provide the greatest coverage across the plan.

Professor Dame Lesley Anne Glover
Independent Non-Executive Member, SPENH Board

"Our ongoing engagement with the RIIO-ED2 project team provides me with confidence that our innovative business plan has been built to deliver on the needs of our customers and stakeholders, and allows us to take a leading role in delivering a sustainable Net Zero carbon future."

Three lines assurance model

FIRST LINE

Risk assessments and method statements are followed by a second person and then a senior manager review – this is the minimum standard set out in Ofgem's DAG.

We applied this approach to all sections of the business plan, regardless of risk score. We used it across data tables, narrative and annexes.

SECOND LINE

Some parts of the plan attained a risk score of High or Critical, so we applied additional assurance activities to these areas:

- challenge from internal or external experts
- challenge from our internal Assurance team
- challenge and sign-off by our directorate, CEO and Sufficiently Independent Directors via our board – applied to all content.

Internal and external experts

We used internal experts across various teams in our organisation. These experts are independent of the RIIO-ED2 project team. They provided challenge across a number of areas, including development of our Consumer Vulnerability Strategy and our Load Related Expenditure Strategy, and making sure our proposals can be delivered from a systems, resource and supply chain perspective.

All our investment proposals were challenged through our System Review Group (SRG). The SRG, which is independent from the RIIO-ED2 project team, is a long-established internal forum of engineering experts. The group held weekly extraordinary meetings to review the content of investment proposals – approving the concept and design from a technical and engineering perspective.

Industry experts from outside our business also challenged our plan – their independence, and expertise in their field, gives us confidence that we have fully considered all options, and that our submission is well substantiated, cohesive and viable. For example, we used independent expert S&C Electric who have extensive engineering capability across distribution networks internationally, and an in-depth knowledge of the RIIO framework, to challenge our engineering justification papers, giving us confidence they are robust. Another example is our use of Mott McDonald, environmental and sustainability specialists who were lead technical authors of the PAS2080 Carbon Management in Infrastructure Standard, to ensure that all Ofgem minimum requirements and environmental baseline standards are embedded in our Environmental Action Plan.

We do not limit our additional assurance activities to only high and critical risks. As an example, for a medium rated risk, we asked an independent consultant to review SPEN's RIIO-ED2 stakeholder engagement approach and the extent to which customer and stakeholder feedback is reflected in SPEN's commitments – giving us confidence that we have a robust process in place.

The RIIO-ED2 project team reviewed and tracked all recommendations and challenges raised by our internal and external experts, making sure they were addressed.

*A full list of all industry experts can be found in **Annex 7.1: Assurance**, in addition to their final reports.*

Internal Assurance Team

We also worked closely with our internal Assurance team – they have provided guidance on our approach from the outset. In addition to the independent risk assessment of our assurance framework building blocks, they sample checked our data tables, based on risk, to verify the accuracy of the content and delivery against internal timetables with robust follow up on all recommendations. They also reviewed the second person and senior manager challenges on the data tables and method statement content to ensure they met the required standard.

Review and sign-off

We applied various additional layers of sign-off, aligned to those in the DAG to ensure a rigorous review process for our submission. We engaged the relevant directors, CEO and the full board – including our SIDs – to review, challenge, and sign-off all sections of the plan using formal certificates and board minutes. This gives us full, clear accountability.

THIRD LINE

Fully independent from SP Energy Networks, ScottishPower has a well-established Internal Audit team. The annual audit plan focuses on the main risks of the business – including regulatory risk – and is approved by the ScottishPower Energy Networks Holdings Limited Audit and Compliance Committee. Internal audit experts carry out audits related to our RIIO-ED2 Business Plan assurance.

ASSURANCE OF THE PLAN AS A WHOLE

We have engaged extensively on our full business plan with a number of key stakeholder organisations, to challenge whether we are meeting the needs of those they represent. This engagement has included BEIS, the Scottish and Welsh Governments, Liverpool Metropolitan Region, Citizens Advice, and in excess of 400 other organisations who have responded to our consultations or attended our workshops and events. They reviewed our proposals and challenged us on how the business plan will allow them to realise their policy commitments.

Another vital factor is providing the information Ofgem requested in a clear, concise and accessible format. We have worked with PA Consulting to provide an independent quality review and challenge of our submission, including against Ofgem's requirements and expectations. This company was selected due to their extensive experience in energy regulation and their engineering and operational expertise.

As we said at the beginning of this chapter, trust is vital to any business plan. That's why we've worked to make sure our assurance framework satisfies the expectations of our consumers, network users and wider stakeholders. Trust and transparency underpins everything.

IN THIS CHAPTER

We describe how we will build upon our strong track record of engagement to lead the way for our customers and stakeholders on the journey to Net Zero. We will continue to engage on the topics that matter most to them and directly embed their feedback within our investment decisions and activities. *Pg 191*

We demonstrate how our plan and supporting documentation aligns to the Ofgem Business Plan Guidance minimum requirements. *Pg 200*

CHAPTER 8

Moving forward together

The direction ahead is clear. As we enable the path to Net Zero through our RIIO-ED2 plan, we will continue to work closely with our customers and stakeholders. By developing a shared vision, we can deliver a just transition to our Net Zero future.

Supporting documents for this chapter

Annex 8.1: *Future Stakeholder Engagement Strategy*

Some highlights of our strategy

Maintaining an in-depth understanding of key stakeholder and customer priorities to directly influence and shape the decisions we make, in line with their needs and preferences.

Understanding our customers and stakeholders

Prioritising high value, low cost initiatives to maximise the overall consumer benefit delivered through our initiatives, using our innovative Social Return on Investment (SROI) methodology.

Defined Social Return on Investment

CHAPTER 8 / **PART A**

Continuing to engage with customers and stakeholders

Engagement with our customers and stakeholders is central to everything we do and has been essential to building our RIIO-ED2 Business Plan.

Throughout RIIO-ED2, we will build upon our strong track record of stakeholder engagement as we enable the path to Net Zero. We will continue to engage on the topics that matter most to them and directly embed their feedback within our decisions to deliver positive outcomes.

Achieving Net Zero will require big changes in how we operate as a business and how we live our lives. It's crucial we adopt the best approaches to engage with our stakeholders in a meaningful way to facilitate such change.

As our energy landscape changes at pace, the nature of our stakeholder engagement will need to swiftly adapt to meet new challenges. We will adopt our robust principles-based approach to engagement to develop our priorities for the future, ensuring every decision we make is based on extensive engagement and by the value we deliver back to society.

LISTENING TO OUR CUSTOMERS AND STAKEHOLDERS

Our robust engagement throughout the business planning process has supported the development and co-creation of our stakeholder engagement performance commitments for RIIO-ED2.

This engagement has informed our level of ambition to create robust commitments which are well evidenced and exceed Ofgem's minimum requirements.

Our commitments were tested during Phase 3 of our engagement. We further strengthened and refined our plans using additional feedback during Phase 4.

Percentage of customers who support our commitments:

Household:

83.8%

Commercial:

76.9%

Our stakeholders' priorities

Stakeholders have told us that continuous and meaningful engagement is vital, considering the lack of clarity on what the future of energy would look like, such as how decarbonisation will affect the industry and what new technologies will emerge.

Across all of our engagement with stakeholders, it was consistently highlighted that we should provide value for money services that they supported us in tracking Social Return on Investment (SROI) performance.

Stakeholders also added that RIIO-ED2 will also be a period where there will be huge changes with the widespread take-up of heat pumps and EV chargers, so engagement with stakeholders on these specific issues will be vital.

It was highlighted how important it is for us to be reactive to stakeholder needs and flexible in how we engage, as well as the importance of quick and focused conversations to maximise the quality of feedback.

Finally, it was highlighted that executive-level engagement is usually seen as particularly useful as it is often seen as key to influencing wider decision making within the industry. Stakeholders also urged us to make sure engagements are as meaningful and efficient as possible.

How feedback shaped our plans

Our engagement has informed our level of ambition to create stretching commitments, exceeding Ofgem's minimum requirements and outperforming our RIIO-ED1 baseline performance in stakeholder engagement.

As an example, our stakeholders felt an online community platform would provide an opportunity for topic-specific threads for detailed comment and discussion, as well as creating a virtual space where people from different areas of interest, perspectives and skillsets could interact – especially in the light of COVID-19. This feedback directly shaped our ambition and commitment to deliver a fit-for-purpose online tool that will support future engagement.

We have included a specific commitment which will measure our performance against a Global Stakeholder Engagement Benchmark, in direct response to customer feedback that this is a core expectation and something we should be doing.

Finally, shaping our commitment to executive-level engagement – we directly responded to stakeholder feedback to make this a clear consideration for our RIIO-ED2 plans.

DELIVERING THIS PLAN

Our RIIO-ED1 track record:

- World-leading in stakeholder engagement, scoring 81% in the AccountAbility audit against the AA1000 global standard for stakeholder engagement.
- High scoring DNO in the Ofgem Stakeholder Engagement and Consumer Vulnerability incentive (SECV), scoring second out of all the DNOs in the 2019/20 and 2020/21 incentives.
- First DNO to consistently apply a Social Return on Investment tool within the business, providing a level of insight into the social value of our activities.
- Winner of the Community Engagement Award at the 2020 Planet Mark Awards.

How we'll continue to deliver in RIIO-ED2:

- Our stakeholder engagement team support the delivery of our stakeholder engagement activities company-wide, covering our districts in England, Wales and Scotland, allowing us to operate dynamically to react to changing customer and stakeholder priorities across our whole network area.
- This delivery model will continue to support the business in delivering key stakeholder engagement activity throughout RIIO-ED2, recognising the impact of increased engagement required to support customers and stakeholders as we transition to Net Zero.

Making sure the voices of a diverse and broad range of stakeholders are heard in the future of our organisation through our robust approach to stakeholder engagement.

An engagement strategy for our stakeholders

We first implemented a dedicated Stakeholder Engagement Strategy in 2013 and since then we have made significant changes through our drive for continuous improvement.

The improvements we have made to our Stakeholder Engagement Strategy have allowed us to build a robust approach to engagement for RIIO-ED2 and beyond. Throughout RIIO-ED1, stakeholder engagement has been fully embedded across the whole business. However, as we move to shorter price control periods, our engagement with stakeholders must adapt to ensure we remain at the forefront of industry changes.

With a pivotal role to play in how the UK achieves our Net Zero ambitions, and recognising industry uncertainties, we must drive a continual, ongoing engagement strategy, focused on key topics which are important to our stakeholders.

From our engagement throughout RIIO-ED1, we know how important it is to engage early and work in collaboration with relevant stakeholders in the planning process. For example, with local authorities and project delivery boards.

As the only DNO to serve communities across England, Wales and Scotland, we have a key role to play in supporting regional and national ambitions for Net Zero. We will continue to work closely with devolved and local government and wider industry stakeholders to support and deliver pioneering projects which will play a vital role in the energy system transition.

***World-leading in stakeholder engagement**, scoring 81% in the AccountAbility audit against the AA1000 global standard for stakeholder engagement in 2021.*

81% in AccountAbility

Our track record

Our industry leading performance in stakeholder engagement throughout RIIO-ED1 has allowed us to take full account of our customer and stakeholder views in developing our future plans, in the most fair and efficient way. Over this period, we have significantly transformed the way we conduct engagement – shifting from tactical, project specific engagement to broad, tailored and relevant engagement to deliver real business change based on stakeholder need. Building on this strong track record, we identified best practice methods for stakeholder engagement through lessons learned in RIIO-ED1 to take forward into RIIO-ED2. This will continue to support the delivery of meaningful engagement to deliver positive outcomes for our customers and stakeholders. We have engaged extensively on best practice methods through engagement with industry peers and key stakeholders, identifying the positive impact delivered throughout RIIO-ED1 to drive forward within our strategy for RIIO-ED2.

These best practices constitute the tools and processes which underpin all of our engagement.

Through exploring engagement best practice, it's vital to recognise our strengths and improve any areas of challenge. For example, in RIIO-ED1 we implemented a separate online community site for domestic customer feedback. This engagement method did not yield high engagement and was less inclusive for customers who may be digitally excluded. In RIIO-ED2, we will specifically target our online community platform to engage with stakeholder organisations only as a more suitable format for engaging with our stakeholder community. Throughout RIIO-ED2, we will continue to explore effective ways to engage with customers to generate quality feedback such as traditional research methods with well-established databases, best suited to their needs. The expected impacts will drive greater stakeholder and customer participation through targeting each segment via the most appropriate engagement method.

*Full details of how these best practice learnings have delivered positive outcomes throughout RIIO-ED1, which will be used to inform our approach in RIIO-ED2, can be found within **Annex 8.1 Future Stakeholder Engagement Strategy.***

Embedded engagement in RIIO-ED2

Engagement best practice	Year	Impact
Stakeholder engagement external assurance and accreditation	<2015	*Quantitative assessment to identify strengths and gaps of engagement practices*
Stakeholder prioritisation research	<2015	*Integrated stakeholder needs and preferences into business planning*
Strategic Stakeholder Panels	2015	*Strengthening stakeholder voice, senior-level buy-in*
Stakeholder management database	2016	*Targeted engagement stakeholder segmentation*
Strategic stakeholder mapping approach	2016	*Stakeholder segmentation by knowledge and levels of interest/influence* *Embedding inclusivity in engagement, extending our reach*
Stakeholder Online Community	2017	*Platform embedded to facilitate two-way dialogue – cost and time efficiencies for stakeholders and the business*
Social Return on Investment tool	2018	*Solution established to prioritise initiatives with a positive social value*
Independent external group	2020	*Independent external challenge on our plans, delivering better outcomes for customers and stakeholders*
Hybrid engagement model	2020	*Broad and inclusive engagement, value for money*
Hard to reach drivers	2020	*Key hard to reach drivers identified, embedding engagement inclusivity within our approach*

Co-creating our Stakeholder Engagement Strategy

We undertook extensive research and engagement to co-create our Stakeholder Engagement Strategy and commitments. We engaged with over **140** stakeholders across more than **120** organisations on our engagement strategy to co-create a robust framework for stakeholder engagement in RIIO-ED2 – facilitating the change required to deliver a business in direct alignment with their needs.

We adopted a variety of best practice engagement methods such as cross-sector insight sharing to leverage areas of best practice. This allowed us to make sure our approach is well justified and representative of the views of a broad and inclusive range of stakeholders and consumer representative organisations as well as leveraging best practice methods employed in other industries.

We will continue to engage with industry peers and consumer representative organisations to share learnings and leverage key areas of best practice in stakeholder engagement and embed this within the evolution of our approach.

Continuous consultation on business priorities

Over the past two years, we engaged with more than 19,000 customers and stakeholders in our largest ever engagement programme to get their views on what our priorities should be as a business. This enabled us to gain a comprehensive understanding of the priorities of our customers and stakeholders for today and the future.

We recognise stakeholder and customer priorities may change and evolve over time in line with the changing industry landscape. We are therefore committed to making sure our customers and stakeholders have the opportunity to set the agenda and influence our business priorities and strategic decisions.

Throughout RIIO-ED2, we will test our priorities with customers and stakeholders on an enduring basis to make sure our strategic direction is continually informed by their needs and preferences. We will do this through ongoing engagement, such as qualitative and quantitative surveys, to ensure our business priorities remain aligned to the needs of our stakeholders.

*Further details on our stakeholder engagement and business consultation can be found within **Annex 8.1 Future Stakeholder Engagement Strategy.***

Stakeholder	Stakeholders said	We did
Customer Engagement Group (CEG)	*Broaden engagement reach through engagement with industry peers to uncover areas of best practice in stakeholder engagement.*	*Bilateral sessions with every GDN, Anglian Water and participated in stakeholder best practice working groups to leverage insight and adopt this within our approach for RIIO-ED2.*
Industry Players – gas, water and Transmission Operators (TOs)	*Uncover the challenges and opportunities of regionality e.g. forming collaborative partnerships with other stakeholders focused on engagement to reduce stakeholder fatigue and keep stakeholders informed of future industry changes.*	*Leveraged key insight from Northern Gas Networks on best practice approaches to engaging hard to reach groups – an area highlighted as best practice by the RIIO-2 Challenge Group. This feedback informed the creation of our new hard to reach framework – see **Pg 197** for further detail.*
Strategic Stakeholder Panels – England, Wales and Scotland	*Panel members praised our approach to stakeholder engagement however it was acknowledged more could be done to engage with hard to reach groups.* *Geographical remoteness and digital poverty were cited as obstacles to engagement – stakeholders suggested a number of methods we should employ such as taking an active role in strategic partnerships to reach different stakeholder groups.* *Strategic panel members supported tracking Social Return on Investment performance and invited us to set targets.*	*Created seven new drivers within our 'hard-to-reach' framework, including regionality and partnerships to promote inclusive and diverse engagement.* *Committed to delivering positive social value through our stakeholder activities throughout RIIO-ED2.*
Distribution Network Operators (DNOs)	*Through best practice working groups, stakeholders discussed adopting a hybrid model of engagement due to the benefits of online engagement for time-poor stakeholders or third-party representatives who face engagement barriers relating to funding/resource.*	*Embedded a hybrid engagement model for RIIO-ED2 using a combination of digital technology to complement traditional engagement methods in a post-COVID environment.*
AccountAbility – AA1000 stakeholder engagement standard	*Through our annual healthcheck audit of our stakeholder strategy, governance and activities, AccountAbility recommended we adopt an educational role to engage with stakeholders who lack awareness in Net Zero and identify factors that may impede stakeholders' ability to engage.*	*Created 'lack of awareness' driver within our 'hard-to-reach' framework – highlighting our role in the decarbonisation agenda and encouraging consumers to move away from a reliance on fossil fuels.*
Consumer representative organisations	*Bilaterals with the Council of Ethnic Minority Voluntary Sector Organisations (CEMVO), a strategic partner of the Scottish Government Equality Unit suggested we develop commitments around our hard to reach drivers.*	*Created an inclusive approach to stakeholder mapping and targeting throughout RIIO-ED2 with key commitments to drive engagement inclusivity, tailored to specific stakeholder segments.*
RIIO-ED2 Engagement Workshop	*Re-testing priorities with stakeholders on an annual basis was warmly received, with stakeholders recognising responsive and reactive measures to take into account stakeholder opinions and needs due to the changing energy landscape.*	*Committed to testing our business priorities with customers and stakeholders on an enduring basis throughout RIIO-ED2, aligning our business strategy accordingly to remain responsive to stakeholder needs.*

Our strategic approach to stakeholder engagement in RIIO-ED2

Our Stakeholder Engagement Strategy comes from a combination of industry best-practice, stakeholder and customer feedback, and our own experience delivering high-quality engagement throughout RIIO-ED1.

Our strategy is driven by our CEO and Executive Team and supported by the Central Stakeholder Engagement Team. It sits across our entire organisation, regardless of the engagement topic. It also shows our commitment to the AccountAbility AA1000 principles of materiality, inclusivity, responsiveness and impact.

Our strategy is comprised of four components:

Our mission statement
this sets our ambition for the engagement. **1**

Our principles of engagement
explains how we engage and what we want to be known for. **2**

Approach to engagement
the process we follow to start, deliver and close our engagement activities. **3**

Supporting tools and processes
these underpin our approach and ultimately deliver engagement activities aligned with our principles. **4**

Our strategy is driven by our CEO and Executive Team and sits across our entire business, regardless of the topic of engagement.

Our mission statement 1

Our mission statement defines our engagement. This ambition builds on our current strengths, while focusing on what will make future engagement valuable and effective for our customers.

"Our engagement places our stakeholders and customers at the centre of everything we do. With a tailored and locally focused approach, we will prioritise their needs and preferences in a consistent manner across our business. We will deliver safe, reliable services, sustainable value, and a better future, quicker."

Our principles of engagement 2

We have defined five principles that will drive our engagement efforts and underpin delivery of our mission statement. These principles are derived from how we currently operate, and how we want to operate in the future, allowing us to be responsive to stakeholder needs and look to better our approach.

INCLUSIVE
We engage all customers and stakeholders impacted through our work, with a specific focus to ensure those who may be hard to reach are given a voice.

AUTHENTIC
Our engagement works to understand the significant issues affecting our customers and stakeholders, before acting on them in a meaningful way.

TAILORED
The approach we take ensures that each engagement is planned and delivered in the most appropriate way for the specific purpose and stakeholders in question.

VALUE-FOR-MONEY
An inherent focus to prioritise high value/low cost activities, striving to maximise the overall customer benefit.

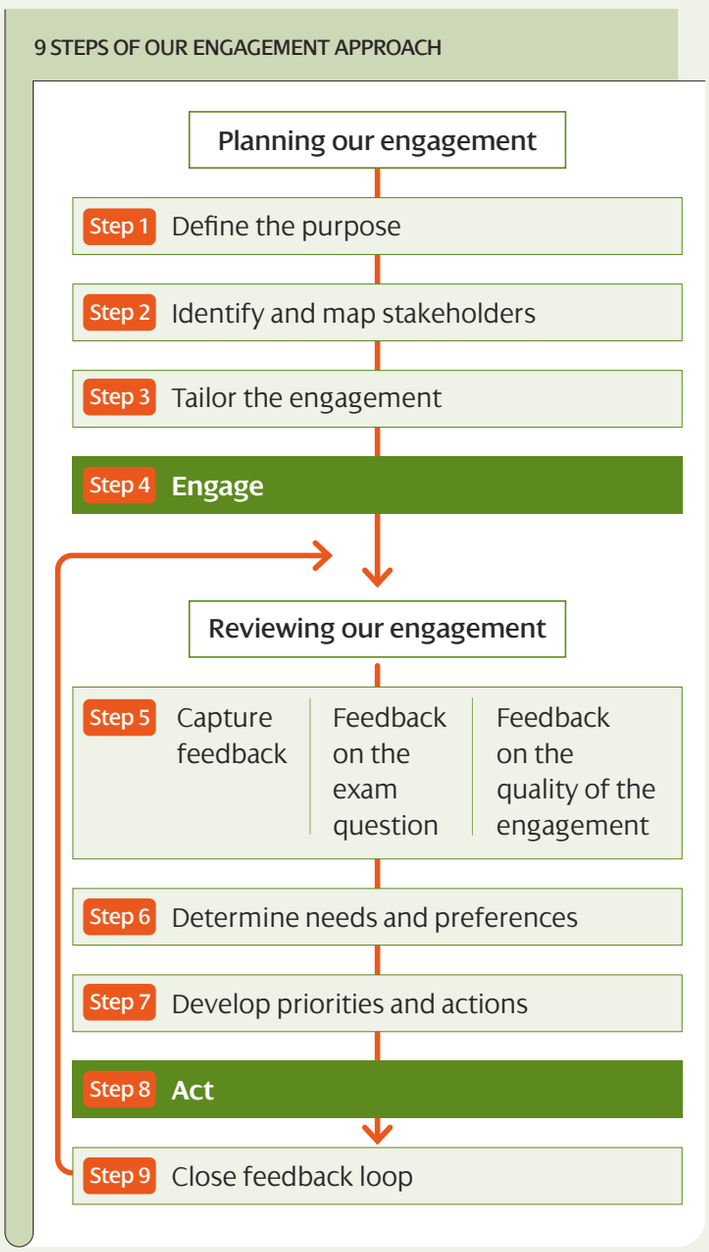
INNOVATIVE
We aim to better our approach each year, looking for new and innovative methods to improve how we engage with our customers and stakeholders to best deliver against their needs.

*Further detail on our principles in action. can be found within **Annex 8.1 Future Stakeholder Engagement Strategy.***

Approach to engagement 3

With our mission statement setting out our ambition, and our principles defining the characteristics of our activities, our nine-step approach to engagement provides a roadmap of how we plan, review and close engagement activities.

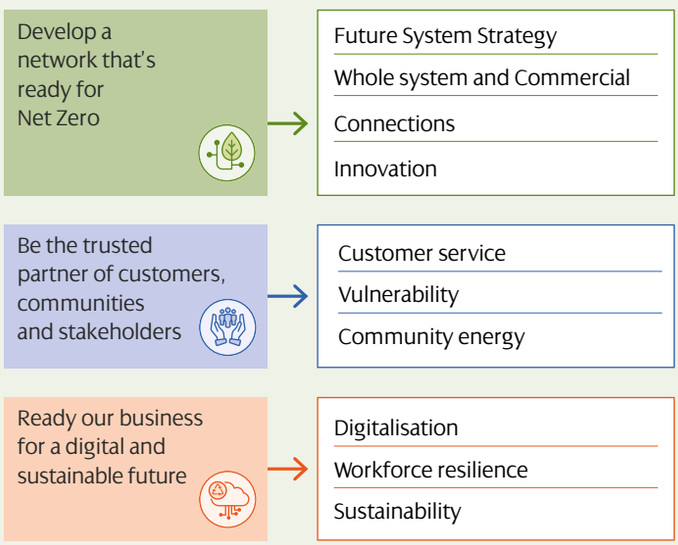
All teams across the business follow the same key steps when planning, reviewing and closing their engagements. This drives consistency and helps us understand the needs and preferences of our stakeholders and customers. As a result, the business decisions we make on the back of their feedback add real value, both socially and financially.



AUTHENTIC ENGAGEMENT

Engagement planning starts with a clear purpose. It's important all of our engagement aligns with the areas our customers and stakeholders have told us to focus on.

Based on best practice methods learned in RIIO-ED1, we have developed stronger links between engagement activities and business objectives. For example, we have re-aligned our strategic topics of engagement with our strategic pillars established through extensive consultation on our business priorities. This will help us clearly define the purpose of our engagements before planning:



Each topic is owned by a member of our executive team who has accountability for the engagement plan. A senior manager is responsible for the delivery of each engagement plan. In turn, our central stakeholder engagement team co-ordinates these plans. This makes sure engagement runs through all levels of the organisation, demonstrating senior level buy-in to engagement from board room to operational level.

Our approach provides a central view of engagement, ensuring we minimise duplication, reduce instances of stakeholder fatigue through better targeting our engagement and identifying gaps early in the planning process.

Our strategic engagement topics are directly aligned to our overarching strategic objectives. This approach allows us to remain responsive to stakeholder needs and ensures our engagement works to understand the significant issues affecting our customers and stakeholders, before acting on them in a meaningful way. Our strategic engagement topics will be reviewed on an ongoing basis to ensure they are fit for purpose in delivering against stakeholder and customer priorities.

INCLUSIVE ENGAGEMENT

With a clear purpose defined, we then identify key stakeholders who are best placed to provide informed feedback that can help us achieve our objective.

To do this, we conduct a robust stakeholder mapping exercise which ensures breadth and inclusivity, highlighting any gaps in our engagement. We use Tractivity, an industry-leading system, which has over 6,500 stakeholders registered. Tractivity helps us identify stakeholders' specialist expertise and knowledge levels. We then segment that list further by stakeholder categories, levels of knowledge and interest on a topic, and geography. As our network and stakeholder needs evolve at pace, we will continuously update our definition of stakeholders to ensure it remains relevant and in line with industry changes. Our robust mapping approach takes into account not only the changing energy landscape but also accounts for the stakeholder landscape, which could change dramatically. As detailed within ***Annex 8.1,*** we have embedded an innovative approach to horizon scanning within our stakeholder mapping process to target new and emerging stakeholder groups throughout RIIO-ED2.

Identifying and mapping hard-to-reach stakeholders

Throughout RIIO-ED2, we will continue to make it a priority to extend our engagement reach and make sure those who are typically harder to reach are given a voice. Building on our engagement learnings from RIIO-ED1, and adopting best practice from industry peers, we have formalised our approach to targeting and engaging hard to reach stakeholders into an overarching framework.

Extensive engagement with our Strategic Stakeholder Panels and hard-to-reach representative organisations, such as CEMVO, British Youth Council and Good Things Foundation, have guided and shaped the creation of our 'hard-to-reach' drivers and associated commitment to embed inclusivity in our engagement. This helps us to ensure that all voices are heard as we move towards Net Zero.

For further detail on our hard to reach framework in action.
See Annex 8.1: Future Stakeholder Engagement Strategy.

OUR FRAMEWORK FOR ENGAGING HARD-TO-REACH STAKEHOLDERS

Key drivers	What we'll do	How we'll do it
Partnerships	Utilise our strong links with stakeholders who represent the voice of hard to reach groups and use their channels to extend our reach.	Continue to collaborate with stakeholder organisations through collaborative partnerships to deliver mutually beneficial goals.
Inclusivity	Embed inclusivity and diversity in our engagement and engage with consumer representative organisations to review our stakeholder mapping and close any gaps.	Conduct a gap analysis of our engagement to ensure inclusivity and combat engagement isolation. Utilise our strong network of partnerships to ensure our engagement is inclusive to understand a diverse range of issues affecting our stakeholders.
Language & Health	Work with stakeholder partners to identify customers whose health and language acts as a barrier to engagement.	Provide translation services for our communications where appropriate, including print and digital. In line with our vulnerability strategy, we will continue to collaborate with partner organisations through our Nexus of Partnerships to identify and engage with customers whose health and language acts as a barrier to engagement.
Barriers to technology	Offer additional engagement methods to those who may be digitally excluded.	Conduct face-to-face and telephone research and engagement, where required, to ensure no customers or stakeholders face digital exclusion.
Lack of awareness	Commit to educating and informing stakeholders on Net Zero and our role as a network operator.	Use our formal channels and engagement opportunities to educate our customers and stakeholders on our business, making sure everyone has a voice, regardless of knowledge.
Regionality	As the only DNO to operate across England, Wales and Scotland, we commit to promoting breadth in our engagement to embed regional views within our plans.	Tailor engagement to assess changing demands on local grids at both a national and local level to understand and overcome specific geographical factors affecting our stakeholders.
Future Customers	We will make sure our engagement is inclusive of the views of future consumers to inform our approach throughout RIIO-ED2 and be representative of this stakeholder group.	Adopt tailored mechanisms suitable for this audience and work with organisations who represent this stakeholder group to make sure their views are embedded within our decision making throughout RIIO-ED2 and beyond.

TAILORED ENGAGEMENT

We recognise the importance of engaging stakeholders via the right means in accordance with their levels of knowledge, interest and influence on a particular topic. This element of our strategy helps us decide on the most appropriate channels we can employ to best target our stakeholders.

We will build a hybrid approach to engagement in RIIO-ED2, through a combination of in-person and digital approaches, to appropriately tailor our engagement to the broadest range of stakeholders - from national policy makers to local level engagement. Feedback from industry peers and our Strategic Stakeholder Panel have supported the co-creation of our business and future engagement plans.

REPORTING

We have a comprehensive monthly reporting process to share details of engagement activity with our CEO and executive team, resulting in successful buy-in. We share summarised reports externally to report back to stakeholders on the actions we have taken and how their feedback has directly informed decisions at all levels of our organisation. Our comprehensive reporting process ensures stakeholder views are captured and incorporated into the day to day operation of our business and to continually inform our decision making.

ENGAGEMENT STRATEGY IN ACTION

Engagement objective

In RIIO-ED1, we partnered with the house developer CALA Homes to monitor electricity demand at selected location, to understand the impact of modern properties on energy use. These learnings were shared with other developers and Homes for Scotland group. Through continuous engagement and building on our trusted partnership, we responded to feedback and developed a calculator tool for stakeholders to independently and accurately quantify electricity demand requirements for low carbon technologies.

What stakeholders told us

Stakeholders highlighted the challenge of forecasting capacity required for low carbon technologies and how this is a significant pain-point, causing cost and timing overruns for much-needed housing developments.

The outcome

- Stakeholders are now able to access a single calculation source, regardless of geography, to conduct their own capacity requirement checks, which assists in the connections process.
- This will allow them to incorporate higher levels of low carbon technologies and greener solutions to achieve their own sustainable targets and push towards Net Zero.
- We are working with the Energy Networks Association to embed this tool across all DNOs, benefiting the whole of GB.

This example illustrates the benefits realised through proactive engagement, listening to our stakeholders, and delivering new service solutions to meet their needs.

*For further details on approach to tailoring our engagement, **See Annex 8.1: Future Stakeholder Engagement Strategy**.*

Supporting tools and processes 4

To support efficient delivery of our Stakeholder Engagement Strategy, we will take forward a variety of supporting tools and processes in RIIO-ED2 as a direct result of learnings and best practice from RIIO-ED1. Some examples of our industry-leading tools and processes include:

Tractivity stakeholder database, event planner and survey tool. Used for engagement planning, gap analysis, stakeholder segmentation and mapping. With over 6,500 stakeholders on our database, we carry out an annual data cleanse to maintain relevant and quality stakeholder data and ensure better targeting of our communications. Our enhanced approach to stakeholder mapping through Tractivity was identified as a key strength in the 2021 AccountAbility audit. Throughout RIIO-ED2, we will continue to conduct annual updates of stakeholder data across every topic area to ensure our stakeholder mapping is relevant, up-to-date and any stakeholder gaps identified.

Stakeholder Online Community. Used to gather qualitative feedback from a database of over 260 stakeholders. Throughout RIIO-ED2, we will continue to grow our online community as a platform for instant and pro-active engagement between formal engagement events. Feedback from supply chain stakeholders provided support for this method of engagement throughout RIIO-ED2. To ensure we deliver against this stakeholder need, we have created an ambitious performance commitment to continue to embed digital technologies within our future stakeholder engagement strategy.

Strategic topic engagement plans; driven by directors, senior managers and central engagement teams aligning to our strategic priority areas.

Social Return On Investment (SROI) measurement tool for use before, during and after a project/initiative has been undertaken – aligning to our 'value for money' principle.

DELIVERING VALUE TO OUR CUSTOMERS

Everything we do is funded by our customers, that's why it's crucial we find credible ways of delivering maximum value for the least cost – a key pillar within our Stakeholder Engagement Strategy.

We were the first DNO to consistently apply a Social Return on Investment (SROI) methodology – providing a level of insight into the value of our activities like never before. In the last year, we have progressed the development of our tool even further to improve the robustness of our assessments. We have taken a leading role to standardise our methodology across all DNOs to establish a common and standardised approach to measuring social value after extensive engagement with key industry stakeholders such as Ofgem and Citizens Advice.

The outcome of this joint approach is for network operators to be able to compare the benefits of projects in a fair and standardised format with the ultimate aim to maximise the value of benefits of our projects and initiatives to customers all over the UK.

Our SROI tool is an intuitive system that allows users to compare multiple projects in a step-by-step approach. By using this tool, we can justify the decisions we make based on stakeholder feedback to:

- Quantify and forecast the costs and benefits of projects over time.
- Demonstrate the net benefit created for customers by every pound we spend on a service.
- Prioritise projects with a greater SROI.
- Justify projects with a positive social return on investment.

Our SROI methodology is a central tool embedded across our entire organisation and is essential in assessing the value of our activities, informing our decision making at all stages of a project. The use of the tool has played a key role in influencing our activity throughout RIIO-ED1 as well as key proposals presented within our RIIO-ED2 Business Plan. We have presented an example of our SROI tool in action below, with further commentary contained within ***Annex 8.1***.

SROI in action

In the example below, we have calculated the Social Return on Investment for our iDentify project. This uses Artificial Intelligence (AI) recognition technology to crowd-source information on our assets in customers' properties, which improves customer service, asset data records, and investment planning accuracy.

Reporting figures after 1 year

Total cost	£222,143
Total gross present value	£1,690,734
Net present value	£1,468,591
SROI (for every £1 spent)	£6.61

ONGOING ROLE FOR AN INDEPENDENT EXTERNAL GROUP

Our independent Customer Engagement Group (CEG) has provided expert challenge and input on our RIIO-ED2 Business Plan to make sure it effectively addresses the needs and preferences of our customers and stakeholders.

We intend to maintain a similar level of external scrutiny and challenge throughout the RIIO-ED2 price control period. We believe an informed, external group, operationally independent from us can:

- influence business decision making and activities
- make sure commitments are delivered
- provide an advisory role using their wealth of industry knowledge to support the successful delivery of our plan.

We intend to conduct a review of the most suitable format and membership for this independent group before the RIIO-ED2 period begins. This will make sure the group is as diverse as possible to ensure it's representative of customers and stakeholders from varying regions across England, Wales and Scotland. We will assess the format and frequency of meetings, adjusting accordingly as the group formalises its new remit.

OUR AMBITIOUS SET OF PERFORMANCE COMMITMENTS FOR STAKEHOLDER ENGAGEMENT

Our robust engagement throughout the business planning process has supported the development and co-creation of our stakeholder engagement performance commitments for RIIO-ED2. This engagement has informed our level of ambition to create stretching commitments and exceed Ofgem's minimum requirements.

For further details our baseline RIIO-ED1 performance to demonstrate how are commitments are stretching and exceed Ofgem's minimum requirements, ***See Annex 8.1: Future Stakeholder Engagement Strategy****.*

In RIIO-ED2 we are committing to:

61. We will deliver industry leading stakeholder engagement through the principles of inclusivity, materiality, responsiveness and impact. To validate this and help inform our continuous improvement we will seek achievement of the AA1000SE industry standard for stakeholder engagement. We will aim to reach the highest categorisation phase possible on the AccountAbility maturity ladder following a robust evidence check and senior manager interviews – demonstrating our commitment to industry leading engagement practices.

Ofgem requirement: *Best practice and benchmarking*
Strategic and proportionate.

62. We will re-test our priorities with customers and stakeholders on an annual basis and present results to our independent external group every year along with our action plans. Our plans will be inclusive ensuring our engagement covers all stakeholder and customer groups.

Ofgem requirement: *Responsive to needs and inclusive.*

63. We will launch a fit-for-purpose online tool, which gives our stakeholders easy access to a collaboration and engagement platform where they can engage with relevant content and influence our decision making. We will ensure better targeting of stakeholder communications, increasing active participation rates by 20% by the end of RIIO-ED2.

Ofgem requirement: *Ambitious and transparent.*

64. By embedding an annual programme of engagement across each of our strategic topic areas, we'll give stakeholders the chance to influence our decisions and assess the delivery of our plans. At an executive level, we will hold director-led strategic stakeholder engagement events demonstrating senior-level buy in and engagement with our stakeholders. We will measure the effectiveness of our engagement through impact delivered and stakeholder satisfaction.

Ofgem requirement: *Embedded culture*
Senior-level buy-in.

65. We will report annually on our latest engagement performance through transparent stakeholder reporting, including Social Return on Investment generated by our stakeholder initiatives. We will commit to achieving a positive social value for every £1 spent on a project or initiative over a 5-year period.

Ofgem requirement: *Valued outcomes.*

MEASUREMENT OF OUR PERFORMANCE COMMITMENTS

We will provide evidence of the delivery of our performance commitments and associated impact, through regular reporting, and stakeholder events. Throughout RIIO-ED2, our independent external group will hold us accountable to the successful delivery of our performance commitments and associated outcomes. Within ***Annex 8.1*** we have provided further detail on how we will measure progress against our ambitious performance commitments and the associated benefits that we seek to deliver.

CHAPTER 8/ **PART B**

How our plan aligns to Ofgem's Guidance for RIIO-ED2

Ofgem published the final version of their RIIO-ED2 business plan guidance in September 2021, which sets out the information they expect to see in companies' business plans for RIIO-ED2 and how they will assess those plans.

The table below outlines how our plan aligns to Ofgem's guidance; and indicates where you can find the relevant information within our core business plan and the supporting annexes.

Ofgem guidance for RIIO-ED2:

		Where to find that topic:	Supporting Annexes:
An open and transparent approach to our business plan	Track record and Business Plan commitment	Chapters: *1, 2, 7*	*1.2, 2.2, 7.1*
	Giving consumers a stronger voice	Chapters: *3, 8*	*3.1, 8.1*
Delivering value for money services for customers	Proposals for bespoke outputs	Chapter: *5C*	*5C.2, 5C.4, 5C.5, 5C.6*
	Meeting the needs of consumers and network users		
	– Vulnerability Strategy	Chapter: *4B*	*4B.1*
	– Major Connections Strategy	Chapter: *4A*	*4A.28*
	Maintaining a safe and resilient network		
	– Asset resilience	Chapter: *4A*	*4A.4*
	– Workforce resilience	Chapter: *4C*	*4C.4*
	– Cyber resilience	Chapters: *4A, 4C*	*4A.29, 4C.5*
	– Physical security	Chapter: *4A*	*4A.18*
	– Climate resilience	Chapter: *4A*	*4A.7*
	Delivering an environmentally sustainable network	Chapter: *4C*	*4C.3*
A smart, flexible energy system	Modernising Energy Data		
	– Digitalisation Strategy and Action Plan	Chapter: *4C*	*4C.1*
	– Data Best Practice	Chapter: *4C*	*4C.2*
	DSO Transition	Chapter: *4A*	*4A.3*
	Enabling whole system solutions	Chapter: *4A*	*4A.26*
	Innovation		
	– Innovation within BAU activities	Chapter: *2*	*2.1*
	– Network Innovation allowance (NIA)	Chapter: *5A*	*2.1*
Keeping Consumer bills low	Forecasts and scenarios	Chapter: *4A*	*4A.2*
	Cost information	Chapter: *5A*	*5A.3*
	Business Plan Data Templates	Chapter: *5A*	*5A.2*
	Cost Benefit Analysis	Chapter: *4A*	*4A.23*
	Engineering Justification Papers	Chapter: *4A*	*4A.23*
	Access and Forward-looking charges Significant Code Review	Chapter: *4A*	*5A.6*
	Managing uncertainty		
	– Uncertainty mechanisms	Chapter: *5B*	*5B.1*
	– Real Price Effects (RPEs)	Chapter: *5B*	*5D.4*
	– Ongoing efficiency	Chapter: *5B*	*5D.5*
	Competition	Chapter: *6*	*N/A*
Financial information	Financial information	Chapter: *5D*	*5D.1*

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