

# *Delivering* **on our promises**







**Stakeholder Annual Report**  
**2016-17**






# Our performance in the year<sup>1</sup>

This is our performance snapshot for the year. In providing it, our aim is to respond to the requests from our stakeholders for greater transparency and simplicity in how all network companies report their performance.

Network 	Performance			Actual 2016-17	Trend <sup>2</sup>		
	Number of customers			3.9m	▲		
	Total DNO network length			95,598km	▲		
Reliability & Availability  36.3 Minutes Target achieved for average minutes lost	Performance			Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
	Customer interruptions <sup>4</sup>	Northeast	Inc. exceptional events	54.6			▲
			Exc. exceptional events	50.3	58.9	✔ Achieved	▲
		Yorkshire	Inc. exceptional events	47.4			▲
			Exc. exceptional events	47.4	65.7	✔ Achieved	▲
	Customer minutes lost <sup>4</sup>	Northeast	Inc. exceptional events	39.3			▲
			Exc. exceptional events	37.6	53.7	✔ Achieved	▲
		Yorkshire	Inc. exceptional events	35.0			▲
			Exc. exceptional events	35.0	56.3	✔ Achieved	▲
	IIS – Incentive performance reward/(penalty) <sup>5</sup>		£m	Reward £23.1m			
			£/customer bill	Bill Impact £2.72			
Customer Satisfaction  Our customers scored us 8.6/10	Performance			Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
	Overall Broad Measure of Customer Satisfaction <i>score out of ten (rank out of six)<sup>6</sup></i>			8.63 (4th)	8.2	✔ Achieved	▲
	BMCS – Incentive performance reward/(penalty) <sup>7</sup>		£m	Reward £3.1m			
		£/customer bill	Bill Impact £0.37				
Connections  5.5 days Target achieved for time-to-quote days	Performance			Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
	Time-to-quote (days) <sup>8</sup>			5.5	8.2	✔ Achieved	▲
	Time-to-connect (days) <sup>8</sup>			48.5	42.1	✘ Missed	▼
	Incentive performance reward/(penalty) – connections lead time		£m	Reward £1.0m			
			£/customer bill	Bill Impact £0.12			
Social Obligations  Stakeholder Engagement and Consumer Vulnerability (SECV) score out of ten (rank out of six)	Performance			Actual 2016-17			
	Stakeholder Engagement and Consumer Vulnerability (SECV) <i>score out of ten (rank out of six)</i>			6.5 (3rd)			
	SECV – Incentive reward		£m	Reward £1.4m			
			£/customer bill	Bill Impact £0.16			
Financials  £377.1 million Overall total expenditure for 2016-17	Performance			Northeast	Yorkshire	Overall	
	Unrestricted domestic tariff charge			£89.71	£73.77		
	Total expenditure	£m		£174.1m	£202.9m	£377.1m	
		% of cost allowances		98%	90%	93%	
		% of allowed revenue		66%	60%	63%	
	Dividends paid <sup>9</sup>			£21.8m	£28.7m	£50.5m	
	Gearing <sup>10</sup>			49.3%	48.4%	61.8%	
	Credit rating <sup>11</sup>			A3/A/A-	A3/A/A-	Baa1/A/BBB+	
	RORE (vs Ofgem assumption of 6%) <sup>12</sup>			8.6%	8.5%	8.5%	

### Innovation




In 2016-17, we successfully launched 6 new projects to help us deploy smart grids and address issues of affordability and environmental protection.

### Safety



We achieved our Occupational Safety and Health Administration (OSHA) accident rate target (0.34 against a target of 0.36) but narrowly missed our RIDDOR target (0.20 against 0.1). We also maintained compliance with the Health and Safety Executive (HSE) legislation.

### Environmental Impact



Protecting the environment remains a priority for us. We achieved our oil/fluid loss targets in the year and were ahead of target on undergrounding overhead lines in areas of natural beauty. Whilst we also achieved our Northern Powergrid carbon footprint reduction targets, our total footprint (including that of our contractors) missed target due to fuel used for mobile generators to keep our customers on supply. We are exploring solutions that will enable us to meet both our customer service and environmental targets.

Notes:

1 All financial figures are in 2012-13 prices and refer to Northern Powergrid overall unless otherwise stated. The performance of each licensee is shown in the Annex to this report.

2 Trend ▲ getting better ▼ getting worse since 2015-16.

3 Ofgem target (see sections in the main body of the report for performance against our own targets).

4 Unweighted figures. Indicative figures as at July 2017, final figures still to be confirmed by Ofgem.

5 Excluding guaranteed standards payments.

6 Broad Measure of Customer Satisfaction (BMCS) rank indicative only based on monthly data. Final ranking to be confirmed by Ofgem.

7 Does not include SECV reward.

8 LVSSA (single minor connections).

9 Dividends paid figure for Northeast, Yorkshire and Overall relate to dividends from the licensee companies in the year.

10 Gearing figures for Northeast and Yorkshire relate to gearing of the licensee companies. Overall gearing relates to the Northern Powergrid group and

includes debt over and above the licensee companies that was utilised to fund the distribution business.

11 Credit ratings for Northeast and Yorkshire relate to scores for three credit rating agencies (Moody's/Standard and Poor's/Fitch) for the licensee companies. Overall relates to Northern Powergrid Holdings Company.

12 In setting the price control Ofgem assumed a base RORE of 6% with the opportunity for companies to exceed or fall below this depending upon performance.

# Hello and welcome



In our 2015-2023 business plan we promised to deliver more for less for our customers. As we reflect on 2016-17, the second year of that period, I'm pleased to report that we're delivering on our promises with our key outputs continuing to improve across the board and expenditure remaining inside the tough cost allowances that Ofgem set.

Our business plan commitments included delivering 20% shorter and 8% fewer power cuts, reducing the time it takes to connect new customers by 30%, achieving 50% lower accident rates, reducing oil leakage by 15% and our carbon footprint by 10%, all while reducing our price to customers. We're on track to achieve all of these headline commitments, and in a number of cases, we're already setting our sights on going further for our customers than originally planned.

We know we still have some improving to do to achieve all of our targets but the overall direction of travel is unambiguously positive. Through engagement with our stakeholders we continue to refine our plans to meet their needs both now and in the future.

Whatever targets and objectives we set for ourselves, operating safely will always be more important than any of them. It was another good year for us in this regard, meeting our headline accident rate target and achieving a best-ever outcome on driver safety. We also expanded our public safety awareness campaigns in the communities in our regions.

One of our most notable successes in the year was in the area of power cuts. We not only beat our targets for the number and duration of power cuts, but we delivered a set of results that would be good enough to meet the targets that Ofgem set for us for 2023. We recognise that the weather was kind to us last year and remain committed to improving our underlying performance over the coming years.

We were pleased to see our customer satisfaction take another step forward in the year, building on the improvements we made in the prior year. But we still owe our customers more in this area and we are determined to continue with our improvement journey to give our customers service levels that are second to none.

A priority that has become more prominent since we wrote our business plan is cyber security. In recognition of that we are making investments to increase the protections we have from this increasing threat.

There is no doubt that one of our most significant strategic priorities relates to the shift to a lower carbon economy. For us, that means steadily transitioning our network (and the operations of our business) to one that is more sophisticated than it is today. The expectation that power network operators need to become system operators is a central part of the pathway that leads to a lower carbon economy. That is not just talk – it is something that is starting to happen right now.

Our business plan included a smart grid proposal that will see us modernise our network capabilities to support this transition and we are in full swing delivering these upgrades. Alongside this, while the energy suppliers work their way through the smart meter roll-out, our own preparations to be ready at our end remain on track. We will play our full part in realising the benefits that smart meters will bring for our customers.

We are proud to be a part of the business community in the north of England. We take our responsibilities for the communities we serve very seriously, given that the services we provide are an everyday essential to the people in our region and they underpin regional growth and prosperity. To that end we are committed to playing our part in supporting the Northern Powerhouse agenda.

Doing all that cost effectively is the essence of success for us – and for our customers. I'm pleased to reflect on another year in which we've operated within the reduced cost targets that were set for us, while improving outcomes for our customers. There's still a long way to go in the period but we've made a very strong start and are well positioned to deliver strong outcomes for our customers both now and in the future as the energy landscape evolves.

“We were pleased to see our customer satisfaction take another step forward in the year, building on the improvements we made in the prior year.”

Phil Jones  
Chief Executive





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the network

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# Proud to be running the network

*"We are proud of the vital role that Northern Powergrid plays in the infrastructure of the North of England."*

Phil Jones  
CEO

## What we do

Northern Powergrid is responsible for the electricity distribution network that keeps the lights on for 8 million customers across the North East, Yorkshire and northern Lincolnshire.

We distribute power to 3.9 million homes and businesses through our network of more than 63,000 substations, some 60,000 miles of overhead lines and underground cables, spanning 9,650 square miles.

Our dedicated team of 2,600 employees operate 24 hours a day, 365 days a year – no matter what the circumstances – to maintain a safe, reliable and efficient electricity supply.

Our customers pay their energy supplier for the electricity they use. A small proportion of the money they pay as part of their electricity bill comes to us to cover the cost of keeping the network running safely, reliably and efficiently.

## This report

Back in 2014, we published our business plan for 2015-2023. This plan set out what we aim to achieve in this eight-year period for which our regulator, Ofgem, has set what we are allowed to earn. You can access our plan at [www.yourpowergridplan.com](http://www.yourpowergridplan.com)

We produce a number of annual reports that explain more about particular parts of our business. You can access more information on Environment and Innovation, Connections Engagement and Stakeholder Engagement and Consumer Vulnerability by visiting [www.northernpowergrid.com/yourpowergrid](http://www.northernpowergrid.com/yourpowergrid)

We are two years into the eight-year period covered by our plan and we are pleased to report positive progress is being made across our business – from our engineering and customer service teams through to innovative projects to change the future of energy distribution and protect the environment. In this report, as well as providing you with an update on how we're doing against our business plan commitments, we'll also let you know what we're planning to do next to further improve our performance.

## Our region

We are proud of the vital role that Northern Powergrid plays in the infrastructure of the North of England. We play an active role in securing the future of energy in the North; as part of Business North and through our sponsorship of the Northern Energy Taskforce, we help to provide a unified voice for the business community supporting the development of the regional growth agenda.

We're also supporting our region through Infrastructure North, a regional utility partnership with Northern Gas Networks, Yorkshire Water and Northumbrian Water. Our work includes best practice sharing, joint social programmes to support our vulnerable customers and communities, and exploring joint innovation projects to help our networks become more efficient.

## Our customers

We're committed to looking after our customers and you'll read in this report about what we're doing to improve customer service, how we're supporting our local communities, and how we're looking after our vulnerable customers when they need us the most.

## Our nine operating zones



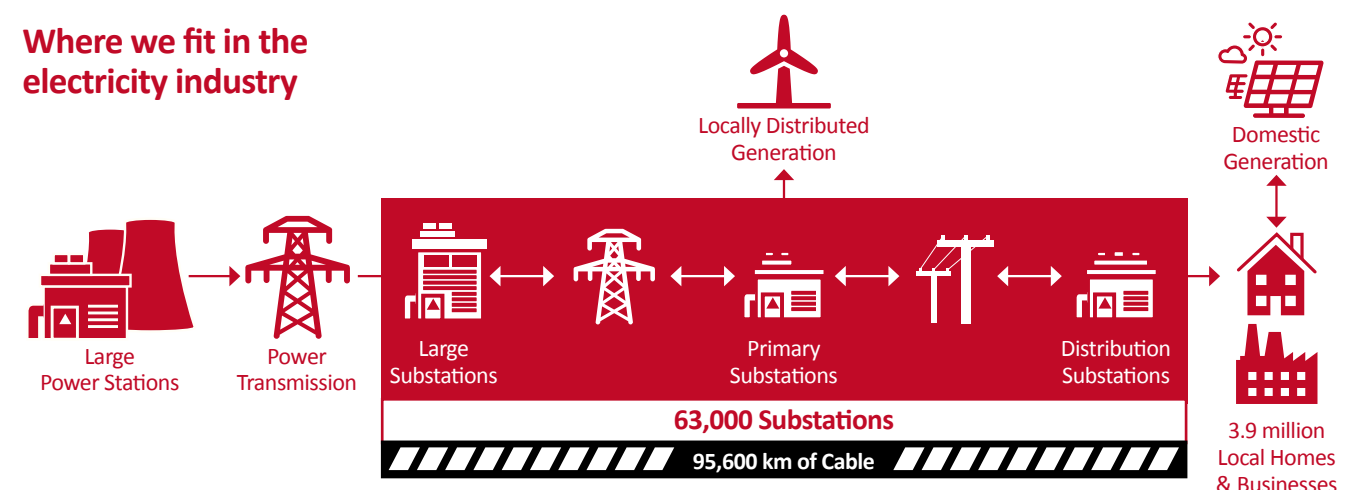
## Northern Powergrid facts



**63,000**  
We have a network of over 63,000 substations.

**24/7**  
We are working 24 hours a day, 365 days a year.

## Where we fit in the electricity industry





# Running a safe and secure network

“We are absolutely committed to improving our safety performance for the benefit of all our stakeholders.”

Geoff Earl  
Director of Safety,  
Health and Environment

We’re on track to achieve our target of halving our accident rate by 2023 thanks to another year of improvement in our safety practices that positions us as one of the safest businesses in our sector.

**Our commitments**  
Our aim to reduce the number and severity of accidents is at the forefront of everything we do as an organisation; that includes how we invest our money and how our employees approach their working day. This year we remained among the leading performers in our sector by achieving our headline accident rate target and continuing to raise awareness in our communities of the danger that electricity can bring when not handled correctly. We also supported the smart meter roll-out by investing time in training those who are installing smart meters on our network so that it can be done both quickly and safely.

**How we’ve done in 2016-17**  
It’s been another strong year on safety. Internally, we met our headline safety goal which is measured by our Occupational Safety and Health Administration (OSHA) rate although we narrowly missed our RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations) rate target. To meet the OSHA target, we managed our longest ever accident-free period of 198 days – that means all 2,600 of our employees stayed accident free for more than six months.

It was a record-breaking year for our employees on the roads too – only 22 preventable vehicle accidents were reported from a fleet that covers over 21 million miles every year. We’re aiming to bring this down even further next year following investments in driver training and telematics systems in all our fleet vehicles.

This year our community awareness programme included our ‘Look up – It’s live’ campaign, which targeted the agricultural and haulage communities as both are relatively high-risk groups in terms of accidental overhead line strikes. We reached out to more than 240,000 people at agricultural shows to deliver our safety message – as well as providing guidance and coaching to young farmers at agricultural colleges.

We managed to speak face to face to almost 30,000 children in the year about staying safe around the electricity distribution network as part of our schools safety programme. Although this fell short of our ambitious annual target of 40,000 children, we’re planning to extend the programme further next year. Our popular interactive website Fusebox also allows us to reach even more children with safety messages.

We partnered with the Police, Fire Brigade and drugs awareness teams to deliver the Crucial Crew programme which invites 10- and 11-year-olds to take part in an interactive exercise to learn about the potential dangers of playing close to substations and overhead lines.

**Looking ahead**  
We will continue to focus on improving safety and raising safety awareness among our employees by targeting an increase in hazard and near miss reporting, while extending our community awareness campaigns. We will also focus on cyber safety to keep our networks secure, extend our agricultural awareness campaigns to road hauliers and address urban safety.

## Our business plan

Remain a leading safety performer, meeting all requirements and halving our accident rate by 2023.	Increase awareness in our communities of the dangers of electricity if not handled properly.	Promptly resolve any network safety issues arising from the smart meter roll-out.
✓ On Track	✓ On Track	✓ On Track
Keep safety as a central driver of investment decisions and appraisals.	Reduce the impact of metal theft, including improving substation security.	
✓ On Track	✓ On Track	

Our performance measures	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
OSHA rate*	0.25	0.34	0.36	✓ Achieved	0.31	0.22	▼
RIDDOR rate*	0.16	0.20	<0.10	✗ Missed	<0.10	<0.10	▼
School-age pupils reached by our school safety programme	31,195	28,246	40,000	✗ Missed	40,000	40,000	▼
High voltage overhead line contacts by HGVs, construction vehicles and farm machinery	18	37	<20	✗ Missed	<20	<20	▼
Electrical safety promotion at agricultural shows (days)	8	8	8	✓ Achieved	8	8	▲
Electrical safety promotion at road haulage events	0	4	4	✓ Achieved	4	4	▲
Electrical safety awareness at agricultural college student induction events	0	3	3	✓ Achieved	4	6	▲

\*For more information, please refer to the glossary.

814 vehicles

with telematics systems installed.

30,000 children

we spoke to about staying safe around the electricity distribution network.

198 days

We managed our longest ever accident-free period of 198 days.

240,000 people

visiting agricultural shows where we delivered our safety messages.

2,600 employees

stayed accident free for more than six months, that's all our employees!

22

Number of preventable accident reports from a fleet that covers over 21 million miles every year. That's 1 in every 840,000 miles.

Training

We've given training to smart meter technicians who need access to our equipment.



# Overhead line safety campaign

## ‘Look up – It’s live’

280,000 people

reached by our campaign.

For the second year running, we delivered our ‘Look up – It’s live’ campaign to promote our safety messages to the rural community ahead of the harvest season, traditionally a time that presents a high risk of striking overhead cables.

Our co-ordinated campaign included Northern Powergrid representatives taking the safety message to eight major agricultural days throughout our region, backed up by targeted press releases and social media activity. Our campaign reached 280,000 people, including face-to-face engagement with young farmers, teaching them how to stay safe around overhead lines. Looking forward we are expanding our campaign with hauliers; we’ve already presented at the annual Road Haulage Association conference where we spoke about safety around our assets.



# Reducing our visual impact

## in beautiful areas

+£2m

Additional investment.

100km

Committed to undergrounding 100km by 2023.

Overhead lines have a visual impact on the environment and affect local wildlife. We work with stakeholders from National Parks and Areas of Outstanding Beauty (together known as Designated Areas) to move overhead electricity lines underground in some of the most beautiful areas of our region.

Our design, wayleaves and delivery engineering teams, together with representatives from the Designated Areas, form a project steering group to help make informed decisions about which areas to prioritise. In 2015-16 we were able to move 16.9km of our lines in Designated Areas underground – more than any other network operator. In 2016-17 we undergrounded a further 13.0km, taking us to 29.9km in the period to date, 5.5km ahead of target. We had committed to moving 100km of overhead line underground by the end of the regulatory period in 2023, but we’re running ahead of schedule and we now expect to underground an extra 20km, investing a further £2m. Looking ahead, we are also sponsoring our first annual National Parks Conference, themed ‘National Parks for the Future’, to help us understand how our undergrounding work fits in with the work of the National Parks and to engage further with our stakeholders and customers.





# Committed to keeping the lights on

“The smart network should make power supply more reliable for our customers.”

Mark Drye  
Director of Asset Management

Power cuts are unpleasant and inconvenient, so we’re making our network more reliable, and our response to power cuts when they do occur faster, to cut down the amount of time our customers are without power.

**Our commitments**  
We committed to reducing power cuts by 8% and reducing the amount of time power is off during a cut by 20%. For the second year running, we’re pleased to report our lowest level of customer interruptions and, when customers did suffer a power cut, power was off for the shortest time.

**How we’ve done in 2016-17**  
To reduce the impact of power cuts for our customers, we’re making our network more reliable. Against our headline target of 8% fewer power cuts and 20% shorter power cuts by 2023, we delivered 27% fewer power cuts and 19% shorter power cuts during the year.

To achieve this we prioritised investment in areas that cause our customers the most problems and deployed smart grid technology solutions.

To reduce the duration of power cuts that occur, we also continue to invest in automatic power restoration technology and fault detection equipment that can be operated remotely so no time is lost waiting for an engineer to be dispatched.

A smarter network should make power supply even more reliable. During the year we worked with energy suppliers to get ready for the introduction of smart meters, focusing on a safe roll-out, and putting the mechanism in place which will allow us to communicate with the meters and best utilise the data they provide us with.

We committed in our plan to increase the resilience of our network to flooding which we know is a key concern for our

stakeholders. We delivered flood defences at 46 sites in the year, beating our annual target of 42. Although we delivered less than we targeted last year, due to having to re-let our delivery contracts, our programme is accelerating and we are expecting to exceed our business plan target of defending 141 sites in the period.

We took part in exercises in the year based around national emergency planning to better support our customers in the future. We met with Hull City, Leeds and Calderdale councils to help shape their flood risk infrastructure plans and with Local Resilience Forums to support improvements in emergency planning. When a real emergency hit in the shape of Storm Doris, in 2017, our employees were shortlisted for an award for their work during the storm.

To make sure that our customers are informed about what we’re doing, we have shared a map of our planned investments, produced a pack mapping local projects with key contacts and issued tailored investment newsletters and guidance leaflets. We also held a community week where we put on a number of events to discuss upcoming work on our network.

**Looking ahead**  
We will continue to manage and invest in our network so it continues to deliver the performance levels to meet or beat our targets. We will also continue to install automatic power restoration and remote control technology, further enhance our resilience to floods and continue to work with suppliers and meter operators to facilitate the safe roll-out of smart meters.

## Our business plan commitments

Restore electricity within 12 hours – and if we don’t, make enhanced and automatic payments to all customers (with extra for our vulnerable customers).	Planned power cuts to leave customers without power for less time, particularly during winter.	Use smart meter alarm information to improve network performance and the information we provide to customers.
✓ Delivered	✓ On Track	✓ On Track
Achieve 8% fewer unplanned power cuts by 2023.	Reduce the average length of unplanned power cuts by 20% by 2023.	Increase the resilience of the network to flooding.
✓ On Track	✓ On Track	✓ On Track
	Maintain the underlying health of the asset base and report on it annually.	
	✓ On Track	

Our performance measures	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Unplanned customer minutes lost – Northeast*	43.3	37.6	53.7	✓ Achieved	52.7	47.9	▲
Unplanned customer minutes lost – Yorkshire*	38.0	35.0	56.3	✓ Achieved	55.2	49.9	▲
Unplanned customer interruptions – Northeast*	55.4	50.3	58.9	✓ Achieved	58.6	57.1	▲
Unplanned customer interruptions – Yorkshire*	51.2	47.4	65.7	✓ Achieved	64.7	60.0	▲
Planned customer minutes lost – Northeast*	6.8	7.4	10.4	✓ Achieved	9.2	9.2	▼
Planned customer minutes lost – Yorkshire*	4.0	3.0	5.3	✓ Achieved	5.0	5.0	▲
Planned customer interruptions – Northeast*	3.0	3.0	3.8	✓ Achieved	3.6	3.6	▲
Planned customer interruptions – Yorkshire*	1.5	1.2	1.8	✓ Achieved	1.8	1.7	▲
Cumulative number of permanent flood defences installed	9	55	82	✓ Achieved	113	141	▲

\*Excluding exceptional events. Targets set by Ofgem. 2016-17 actual based on Ofgem’s indicative figures as at July 2017, final figures still to be confirmed by Ofgem.



**20%**

We committed to reduce the amount of time power is off during a cut by 20%.

**Community**

We held a community week of advice and events to discuss upcoming work on our network with customers.

**8%**

We committed to reduce power cuts by 8%.

**46 sites**

with flood defence upgrades, beating our annual target.

**Recognised**

Our employees were shortlisted for an award for their work during Storm Doris.

**Reliable**

To reduce the impact of power cuts, we’re making our networks more reliable.

**141 sites**

targeted for flood defence improvement in the ED1 period.

**<12 hours**

Any customer that experiences a power cut exceeding 12 hours receives a payment that is more than our annual domestic bill.



# Focused on improving customer service

“We’ve upskilled our colleagues and enhanced our Customer Relationship Management IT system to help deliver improved customer service.”

Neil Applebee  
Head of Shared Services

## We’re delighted that we’ve made significant improvements in our customer satisfaction scores since the start of the period.

### Our commitments

We’re proud of the improvements we’ve made this year and we continue to work towards our goal of becoming one of the leading companies in our sector in customer satisfaction. This year we’ve been investing in our people and improving our processes so that we can provide better information faster and resolve complaints more promptly. We have also invested in our IT systems, improving our customer relationship management system and our online services.

### How we’ve done in 2016-17

Customers are rating our customer service higher. This follows our commitment to put customers in charge of how they communicate with us. We’ve enhanced our training to enable our people to have high quality conversations with customers (focusing on being polite, friendly and helpful) and introduced a new scheme to reward contact centre employees that do this consistently.

We used customer satisfaction survey feedback and research into the needs and priorities of our customers to improve the support we offer our customers during power cuts. As a result, we have enhanced our priority services and our customers are noticing the difference – our power cut customer satisfaction ratings have gone up.

It’s not just how we talk to customers that’s changed – we are now able to reach more customers following the successful launch of our Knowledge is Power campaign, which helped us improve our contact data for customers

we were struggling to reach. The campaign was seen by 1.4 million people online and via social media and we sent letters to the 237,000 households whose details we were missing from our records.

We also used digital tools to respond to 85,000 power cut enquiries made on our improved online power cut map in the year, provided customer messages during major incidents and reached 23,000 people through our Browsealoud website tool which supports customers with reading difficulties.

Customers are also seeing the benefits of improvements to our IT systems and processes. We’ve upgraded our customer relationship management IT system including how we process goodwill, guaranteed standards and refund payments. Our new automated process issues payments within one day meaning customers get the money when they need it most. We are also resolving complaints faster.

### Looking ahead

We will continue to improve our customer service levels as we seek to close the gap to the leaders in our sector. Our ambitious aim is to be one of the best companies by the end of 2018. To do this we will provide a fully-integrated service across all communication channels and launch a new live web chat service. We will also continue to focus on improving the speed of complaint resolution. In support of the smart meter roll-out we will increase contact centre resourcing to handle the increase in smart meter defect calls and use new smart meter data to improve our services.

## Our business plan commitments

Use web-based technology to upgrade our process for general enquires and minor engineering works.

✓ Delivered

Make customer service more reliable, better communicated and backed by slicker processes. Be faster, at no extra cost.

✓ On Track

Make it easier for our customers to keep in touch – via internet, mobile, meetings, phone, email, social media, or text.

✓ On Track

Provide better information to customers experiencing power cuts through voice or digital communication channels.

✓ On Track

Use technology to enable our contact centre to move from being largely reactive to mostly proactive.

✓ On Track

Continue to improve the quality and speed of our complaint resolution.

✓ On Track

### Our performance measures

	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Customer satisfaction: Overall	83.7%	86.3%	83.0%	✓ Achieved	84.0%	>85.0%	▲
Customer satisfaction: Power cuts	86.9%	87.7%	82.0%	✓ Achieved	84.0%	>85.0%	▲
Customer satisfaction: General enquiries	88.6%	88.9%	82.0%	✓ Achieved	84.0%	>85.0%	▼
Percentage of unplanned power cuts contacts answered	97.0%	98.5%	99.5%	✗ Missed	99.5%	99.5%	▲
Percentage of unplanned power cut calls answered within 20 secs	89.1%	90.9%	90.0%	✓ Achieved	90.0%	90.0%	▲
Complaints resolved within 1 day	52.0%	65.2%	60.0%	✓ Achieved	80.0%	80.0%	▲
Complaints resolved within 31 days	91.0%	91.1%	95.0%	✗ Missed	95.0%	95.0%	▲



57.4%

of customer email addresses held.



23,000 customers

reached using our Browsealoud website tool.



1.4m people

saw our Knowledge is Power campaign online.



13%

Percentage point increase in complaints handled within one day (Day +1).



86.3%

Our overall customer satisfaction score.



52.1%

of customer mobile numbers held.



237,000 households

received letters for our Knowledge is Power campaign.



62.7%

of customer landline numbers held.





# Ground-breaking batteries in Barnsley

40

We funded the installation of Moixa Smart Batteries into 40 homes in Barnsley.

50-80%

Potential energy bill savings for residents.

This year we teamed up with Moixa and Energise Barnsley to run a ground-breaking trial to demonstrate how clusters of home batteries can increase capacity on the network so that more homes can install solar panels.

We funded the installation of Moixa Smart Batteries into 40 homes in Barnsley that linked to a virtual power plant to show how we can reduce peak solar input onto the electricity network where there is low local demand from households. Energise Barnsley estimates that residents are already saving 50% on their energy bills by using solar panels and they believe this could rise to 80% with the batteries. If the £250,000 trial is successful, we believe it could save network operators millions by reducing the need to upgrade infrastructure.

# Connecting with our customers

Live Q&A

Via social media.

Twice a year we host our Connections Customer Forum which gives our customers the opportunity to meet our connections team face to face and give us feedback about the services they are receiving and any issues they're facing.

At the last meeting, customers told us they would like us to look into some new and innovative ways to engage and communicate with them and we're pleased to say we have done just that. We're starting to run live Q&A sessions via social media where customers can ask questions of our connections experts. Customers can also sit down with our engineers every month to discuss current or planned projects and we are looking into new ways to engage with customers including running more subject-specific workshops.





# Caring for the most vulnerable



“Our core, long-standing goal has always been to help those that are, or feel, the most vulnerable at the time of a planned or unplanned power cut. Our social pillars approach enables us to stay focused on this goal while also looking at the wider social issues affecting our customers and communities.”

Patrick Erwin  
Policy and Markets Director

This year we’ve gained a better understanding of customer vulnerability in our region, helping us to improve our services and tailor our communications to better respond to the needs of our customers.

Our commitments

We have made good progress in the year developing our strategic partnerships with organisations to help us develop and promote our priority services register and identify ways to improve our services. We’ve developed new partnerships as well as expanding our established services; our Citizens Advice affordability services now reach the most vulnerable right across our region. We have continued to invest in training and developing our staff and have reviewed the use of our customer support vehicles to ensure that our provision is responsive to our customers’ needs. Our work looking at energy usage and electrical safety in high-rise tower blocks has also made progress.

How we’ve done in 2016-17

Our revised Consumer Vulnerability Strategy sets out our five areas of focus: expanding our understanding of vulnerability, improving our services, increasing access to the hard to reach, developing our people and developing our partnerships. We worked with Experian in the year to gain a better understanding of the types and causes of customer vulnerability and to identify the most socially deprived areas in our region – or Community Investment Areas (CIAs). This has helped us to prioritise our partnerships and support in areas that have the most vulnerable households.

We know that long duration power cuts are one of the biggest challenges for our vulnerable customers. We have used research, partnerships and community engagement to help us improve how and when we deploy our services for our vulnerable customers and to train our front-line colleagues in how to offer enhanced and tailored support. We also launched a new

Powergrid Care section on our website that provides tailored resources for key vulnerable groups.

We have continued to refresh our Priority Service Register in the year, adding 236,000 new households and removing 380,000 out-of-date records. This gives our service teams more accurate information to make sure we provide additional support to our customers that need us the most.

We delivered training to our customer-facing teams in the year around excellent customer service and ran a ‘Make Every Contact Count’ campaign to encourage our staff to respond flexibly and confidently to the complex needs of our customers, particularly our vulnerable customers.

Our progress in this area has been recognised. We achieved the BSI 18477 standard for Inclusive Service Provision and Action on Hearing Loss ‘Louder than Words’ accreditation which recognises excellent levels of service for customers with hearing loss. Ofgem graded our work as ‘Excellent’ in three out of five categories in the 2016-17 Stakeholder and Customer Vulnerability reward scheme and awarded us third place, up from the fifth position we achieved last year.

Looking ahead

We’ll continue to drive improvements across the five priorities we outlined in our Consumer Vulnerability Strategy including delivering consumer vulnerability training to all of our staff and strengthening our referral network across all vulnerable groups. We will also use our data sources and customer feedback to better target and tailor our services.

## Our business plan commitments

Route calls from Priority Service Customers directly to contact centre advisors, bypassing automated messaging.	Explore the possibility, with Northern Gas Networks, of upgrading to electrical connections in high-rise tower blocks for safety reasons.	In conjunction with local authorities, identify socially deprived areas and prioritise our support towards them during a power cut.
✓ Delivered	✓ On Track	✓ On Track
Promote and raise awareness of our Priority Services Register to other organisations.	Enhance our training for front-line staff providing additional support for Priority Service Customers.	Introduce friends and family register and ‘good neighbour’ scheme to support vulnerable customers.
✓ On Track	✓ On Track	✓ On Track
Provide more customer support vehicles along with more services in them.	Build partnerships with organisations to help us deliver our social programme.	With others, explore the feasibility of community-level aggregated-demand response in return for a community rebate.
✓ On Track	✓ On Track	✓ On Track

Our performance measures	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Stakeholder engagement and consumer vulnerability score	6.5	6.5	7.5	✗ Missed	–	8.5	–

236,000 new records added to our Priority Services Register

1,180 colleagues trained to make every contact count.



380,000 out-of-date records removed from our Priority Services Register.

71% of Priority Services Register customers restored within 3 hours.

3rd place In Ofgem’s Stakeholder Engagement and Consumer Vulnerability reward scheme.

£662,552 Total benefit to customers from our partnerships this year.

Achieved the BSI 18477 standard for Inclusive Service Provision.

Powergrid Care services launched on our website.



# Connecting our customers



“It’s reassuring to have such an open and two-way dialogue with our Distribution Network Operator and our relationship is better for it. We hope this continues for many years to come.”

Ian Moore  
Street Lighting PFI Manager  
at Leeds City Council

We continue to work hard to understand the needs of our connections customers and are delighted to have achieved a 4.7 percentage point increase in our customer satisfaction score for small works connections in the year.

### Our commitments

In our business plan we committed to transforming our connections business to improve the services we provide to customers. This year we’ve continued to focus on improving the experience for our customers by expanding the services that we offer and reducing the time it takes to provide a connection to our network. We’ve made good progress but more is needed to meet our challenging targets.

### How we’ve done in 2016-17

To make sure we’re delivering the right connections services for our customers, we spoke to them about their requirements. We found out that they were finding the connections process difficult to navigate so we fundamentally redesigned our process to assign all customers with a single point of contact to guide them through the application and delivery process.

Also, our new fast-track application service makes it easier and quicker for customers to turn a budget estimate into a firm quotation and customers can also now take part in face-to-face meetings and practical workshops to discuss issues with our experts.

Another way we’re helping customers to get connected is by addressing areas of our network that have constrained capacity. We have continued to offer quotations on our first replicable Active Management System in Driffield, East Yorkshire which has allowed us to reduce the cost of connecting to the network for our customers. We can now use this technology in other affected areas. We’ve also proactively engaged with our customers to release unused capacity making it available to other customers and

we introduced new ways to speed up slow-moving projects to release as much capacity as possible.

Our dedicated connections input services team also worked with Independent Connections Providers (ICPs) to improve services for our customers and ensure quality of installation onto the network. Almost 80% of ICPs active in our region are benefiting from having to do fewer quality assurance inspections as we are confident in the quality of their installations, backed up by monitoring from Lloyds Register Energy.

We designed pilots to extend the services that ICPs can offer customers and trained their employees so that they can learn from our processes and carry out more input services themselves. We worked with ICPs to produce faster quotes for sites where we had already issued a quotation, introduced internal service level agreements to speed up the provision of input services to ICPs and published a standard template for them to use for connections so there’s a consistent approach to design and construction.

Following our work in this area, Ofgem confirmed that there would be no penalty for Northern Powergrid under the (penalty only) Incentive on Connections Engagement ICE mechanism.

### Looking ahead

Alongside continuing to actively engage with our connections customers and stakeholders to improve our services, our two key priorities are embedding our new processes to make sure customers enjoy the full benefits of the changes we have made and exploring ways to improve our medium and large works connections services.

## Our business plan commitments

Provide more flexible quotations, including online self-service and faster quotes.

✓ On Track

Introduce a web-based system to help customers understand the capacity on our network and the likely cost of connection.

✓ Delivered

Implement a tailored service for large projects, including ‘account management’ where needed or requested.

✓ On Track

Reduce end-to-end connection timescales for small works by more than 30%.

⬅ Behind

Provide a better service for non-contestable elements of work – regularly publishing key indicators.

✓ Delivered

Better payment terms – customers will not need to pay as far in advance.

✓ Delivered

### Our performance measures

	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Customer satisfaction rating for connections quotations	79.3%	84.6%	>85%	✗ Missed	>85%	>85%	▲
Customer satisfaction rating for connections delivery	82.7%	84.3%	>85%	✗ Missed	>85%	>85%	▲
Average time-to-quote – single minor connections (LVSSA)	5.9	5.5	8.2*	✓ Achieved	8.2*	8.2*	▲
Average time to quote – two to four minor connections (LVSSB)	9.1	8.8	11.7*	✓ Achieved	11.7*	11.7*	▲
Average time-to-connect single minor connections	42.2	48.5	42.1*	✗ Missed	42.1*	42.1*	▼
Average time-to-connect – two to four minor connections	47.6	56.6	52.7*	✗ Missed	52.7*	52.7*	▼
Connections quotations standard success rate	99.9%	99.8%	>99.8%	✓ Achieved	>99.8%	>99.8%	▼
Connections delivery standard success rate	100.0%	99.8%	>99.9%	✗ Missed	>99.9%	>99.9%	▼

\*Ofgem targets



80%

Almost 80% of ICPs active in our region are benefiting from lower levels of quality assurance inspections.



Training

We trained employees of ICPs so they can learn from our processes and carry out more input services themselves.



84.5%

Overall Customer Satisfaction rating for small works connections.



One

We now assign all connections customers with a single point of contact.



99.8%

Connections quotations standard success rate.



48.5 days

Average time-to-connect single minor connections.



+4.7%

The increase in our customer satisfaction score is one of the biggest improvements in the industry.



99.8%

Connections delivery standard success rate.





# A powerful partnership to roll out 105

**42%**  
More than 42% of our calls  
now come via 105.

As one of the lead network operators in the project to roll out 105 – the national power cut number – we’re pleased with the progress that has been made since its launch in September 2016.

The project, which was the first of its kind, brought together all electricity network operators with Northern Powergrid leading cross-sector groups for procurement, telecommunications and consumer awareness. Playing such a key role in the delivery allowed our team to contribute to the strength of collaborative work across the network operators. This partnership approach enabled the successful delivery of the project and an important new service for our customers and others across Great Britain.

# Safety, planning and innovation

**600**  
Last year, we authorised just  
over 600 meter operator  
installers to work safely on  
our equipment.

**400**  
Trainees were accredited at our  
own training facilities.

Safety, planning and innovation underpin our approach to collaborating with energy suppliers and meter operators in order to make sure the UK’s smart meter roll-out runs as smoothly as possible in our region.

Last year, we authorised just over 600 meter operator installers to work safely on our equipment, over 400 of them having been accredited at our own training facilities.

When meter installers encounter an issue meaning installation of a smart meter cannot go ahead on the initial visit, we’ve ensured that we’ve got the manpower in place to resolve the defect as soon as possible.

We want to give our customers a great experience if they encounter Northern Powergrid in the installation process so we have developed a new, industry-leading web-based appointments system that allows installers to book an appointment at our customers’ convenience so the defect can be resolved. Suppliers are already showing a keen interest in using this online facility.

The smart meter roll-out represents a seismic development in the UK energy industry and we are ensuring we are at the forefront of supporting the transition.





# Financing and resourcing our business

“We are a major employer in our region with 2,600 employees and we’re on track to meet our commitment to hire up to 1,000 new recruits over the 2015-2023 period.”

Tom Fielden  
Finance Director

## We know energy bills are a significant issue for our customers so we’re working hard to deliver top quality service for the lowest possible cost.

### Our commitments

We reduced our prices by 14% in 2015 at the start of the eight-year ED1 regulatory period, exceeding our commitment to reduce them by 10%. As our charges make up around 16% of domestic customers’ bills, this amounts to 25p per day for their electricity service – in return for a 24/7 service and a 12-hour power restoration guaranteed standard.

Thanks to the stakeholder engagement that helped shape our business plan, we’re pleased to report that we’re delivering innovation, improving our services and creating job opportunities in our region while staying within our budgets.

### How we’ve done in 2016-17

In our business plan, we committed to deliver more for less. To deliver this, it means keeping tight control of our costs and carrying out cost reduction exercises. The current energy market is making this more challenging – we’re moving to a low carbon economy and what customers want from their energy is changing – so it’s important that we continue to innovate while keeping prices low and service levels high.

Northern Powergrid is part of Berkshire Hathaway Energy Holdings Company which is part of Berkshire Hathaway Inc. The way we finance our business is guided by Berkshire Hathaway’s long-term approach to its investments – to reinvest profits into improving services for customers.

This reinvestment puts us in a strong position to develop and improve our network and respond to customer needs.

Alongside our owners reinvesting profits in improving the services we provide to our customers, we have the strongest credit ratings of the wires-only businesses in our sector which means we are able to achieve competitive rates on financing to fund our £4bn investment programme.

We are a major employer in our region with 2,600 employees and we’re on track to meet our commitment to hire up to 1,000 new recruits over the 2015-2023 period.

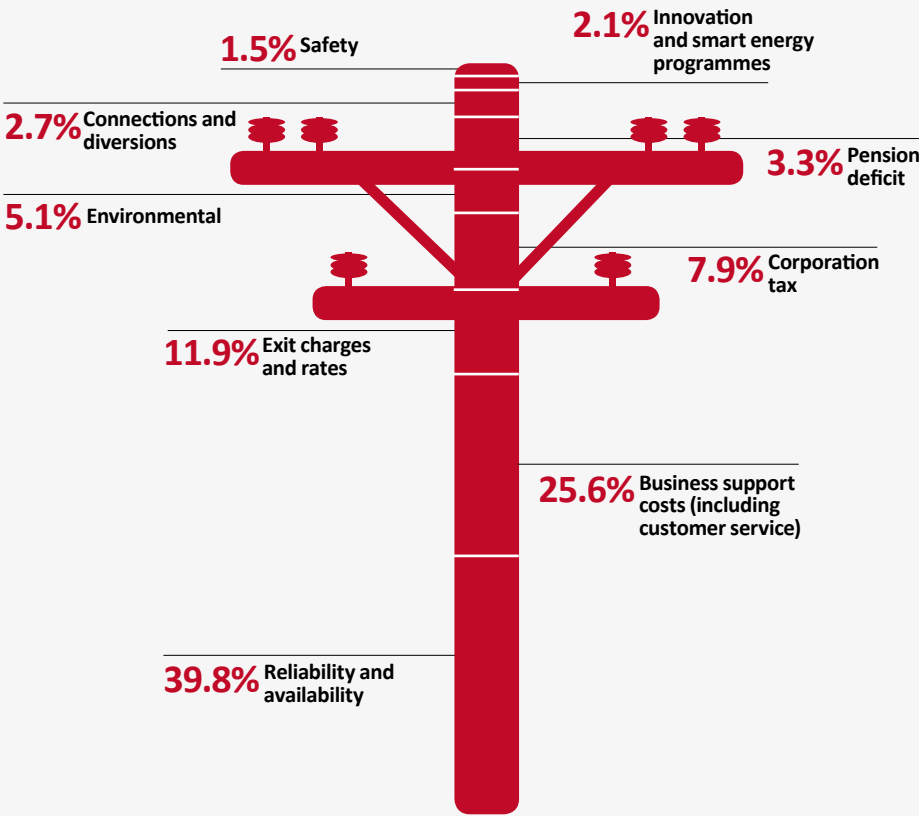
As part of our commitment to renewing our skilled workforce, we’ve recruited engineering trainees and craft apprentices so we can continue to deliver quality services in the future. During 2016-17, 73 engineering and craft trainees graduated from our training programmes and 71 new hires joined our programmes. 31 new external hires also joined the company, bringing our total new recruits to 102 in the year.

### Looking ahead

Sound financial management underpins our ability to offer more for less and we will continue to make sure that every investment delivers value for our customers. We aim to achieve our regulatory and internal targets, continue to invest in our network to keep improving performance and flexibility for the future and maintain tight control over discretionary expenditure to retain our position as one of the most efficient electricity distribution network operators.

## Sound financial management underpins our ability to offer more for less and we will continue to make sure that every investment delivers value for our customers.

Here is a breakdown of our costs for 2016-17



### Our business plan commitments

We will deliver an immediate 10% price reduction at the start of the period.

✓ Delivered

We expect to create 1,000 job opportunities in the organisation during the ED1 period.

✓ On Track

<b>102 new recruits</b> in the year.	<b>2,600 employees</b>	<b>14%</b> How much we reduced our prices in 2015.
<b>1,000 new recruits</b> targeted by 2023.	<b>£4bn</b> Investment programme financed at competitive rates.	<b>16%</b> Amount our charges make up of a domestic bill.

	<b>£57.4m</b> VAT paid.
	<b>£23.3m</b> PAYE income tax paid by our employees.



# Rolling out our smart energy programmes

“This year we have laid strong foundations for our smart meter and smart grid upgrade programmes – setting up new benefits for our customers.”

Jim Cardwell  
Head of Trading and Innovation

## The transition to smarter forms of energy continues at pace and we are supporting our customers with the preparations for smart meters and accommodating more flexible uses of electricity.

**Our commitments**  
Our actions to generate benefits for customers from smart meters and the roll-out of enabling smart grid technology are supporting the transition to a more efficient, affordable and low carbon flow of energy. This will benefit customers and encourage more electric vehicles, renewable generation and energy storage.

**How we’ve done in 2016-17**  
The energy system is changing. Customers are increasingly choosing low carbon technologies and we are supporting them by freeing up capacity and introducing more active network control to offer an alternative to installing more or bigger cables and transformers.

There was a significant downturn in the market for small-scale electricity generation such as solar panels at the start of 2016 because of a cutback in government subsidies. Take-up of electric heating and electric vehicles is also lower than expected although we are seeing signs of an upturn in requirements for electric vehicle charging points to serve future demand.

We have continued to build our smart grid infrastructure in the year having created a new smart grid implementation unit which is delivering our £83m smart grid investment programme upgrading our control and communications infrastructure. We created an additional 18MW of generation capacity in the year through customers agreeing to release unused capacity and we also released a further 765MW for roof-top solar panels by reducing voltages at 85 of our primary substations. During 2016-17, we started work on the connection of 152MVA

of generation on constrained connections agreements across four schemes in Yorkshire.

The deployment of our new replicable Active Network Management flexible connection solution is running to plan with four customers having accepted connection offers in the Driffield area (East Yorkshire) with completion likely in 2018. For existing customers we continued our network automation programme by rolling out automatic power restoration technology at a further 41 primary substations in the year, enabling us to reconfigure the network more quickly when there is a fault.

Although the national smart meter programme has experienced delays, we’ve been busy getting our business ready for its launch. We’ve achieved the required industry milestones to prepare our systems to receive smart meter data and started to change our processes so customers will get the benefit from the technology in our operational response and more efficient network planning. We expect to ‘go live’ with the central Data Communications Company (DCC), the company delivering the UK’s smart meter reading network, by the end of 2017 and from that point we’ll be ready to receive data from new smart meters being installed.

We have delivered good performance for resolution of any defects found on our network at the time of meter installation by energy suppliers. We have also recently implemented a new online portal for suppliers to arrange follow-up meetings directly with customers which is receiving very positive feedback from users.

## Our business plan commitments

Invest £83m in smart grid enabling technology that, as a minimum, pays for itself by 2031 – the more likely result will be a much larger saving, possibly as high as £400m-£500m.	Establish a dedicated team of technical staff to perform timely modifications to our equipment when they are needed to enable the smart meter installation to proceed.	Trial the potential for combining smart grids and smart meter data to provide additional information services.
✓ On Track	✓ On Track	✓ On Track
Invest £52m in smart grid network reinforcement that pays back by 2023 through avoiding £86m of traditional reinforcement – a net saving of £34m compared with traditional reinforcement methods.	Provide opportunities for customers to participate in demand-side response to reduce the cost of running the network.	Modify our trading and customer service systems to realise benefits from the new smart meter data.
✓ On Track	✓ On Track	✓ On Track
	Use smart meter data to optimise network investment and reduce losses.	
	✓ On Track	

Our performance measures	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Smart meter intervention performance	n/a	86%*	90%	✗ Missed	90%	90%	–

\* Our intervention target is based on achieving an agreed level of service on an expected defect rate of 2% of all smart meter installations. We have received twice as many defect reports than forecast but only narrowly missed our target by 4 percentage points.

+£10m

Customer savings through flexible connections (2016-17 prices).

319,000 smart meters

installed by energy suppliers.

16,778 smart meter

defects resolved within target timeframes.

41 primary substations

upgraded with automatic power restoration technology in the year.

458MW

Amount of renewable generation connected in the year.

700MW

of generation capacity on Active Network Management.

£83m

Smart grid enablers investment programme (2012-13 prices).

18MW

Generation capacity recovered through customers releasing unused capacity.

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# Protecting the environment by minimising our impact

“We are absolutely committed to improving our environmental performance for the benefit of all our stakeholders.”

Geoff Earl  
Director of Safety,  
Health and Environment

We’re on track to achieve the environmental targets we set in our business plan and our use of emerging technology means we’re confident we can achieve more than expected during the 2015-2023 period.

### Our commitments

In our business plan we set ourselves some challenging environmental targets and we’re pleased to report that we’ve made good progress. We reduced our internal carbon footprint and the amount of oil leakage to ground as well as continuing to deliver our programme of undergrounding overhead lines in our region’s countryside. We narrowly missed our annual targets for reducing SF<sub>6</sub> gas lost to the atmosphere and replacing fluid-filled cables, however we have invested in new technologies that will enable us to exceed our business plan targets.

### How we’ve done in 2016-17

We committed to reducing oil leakage to ground by 15%. Thanks to new leak-tracing technology and a dedicated focus on leaking fluid-filled cables we are performing significantly ahead of this target and are now aiming for a 60% reduction. Although our fluid-filled cable replacement programme is slightly behind schedule at this stage, we expect to catch up and meet our commitment to replace 134km by 2023.

Although our own carbon footprint continued to fall, when we take into account the carbon emissions of our service providers, our combined carbon footprint increased in the year, primarily due to the use of mobile generators to keep homes and businesses running during power cuts. Generators need fuel to run which adds to our carbon footprint, so we are looking at alternative power sources such as battery technology to maintain services to our customers in a more environmentally friendly way.

We kept 99% of the 2,760 tonnes of waste we generated in 2016 away from landfill. We’re pleased with this achievement and we are confident that this will be even higher next year as we look to expand our recycling programmes.

We’ve been working with stakeholders representing the National Parks and Areas of Outstanding Natural Beauty to put cables underground in some of the most beautiful areas in our region. We’re on track to meet our commitment to underground 100km of overhead lines earlier than expected and we now aim to remove 20km more than we initially planned in the period with an additional investment of £2m. We’ve already placed 29.9km of line underground in the first two years of the eight-year regulatory period, 5.5km more than planned.

Over the last two years, we have invested in larger electricity cables in order to reduce energy losses. In 2016-17 this led to a saving of 1,766MWh. Using larger cables to deliver electricity will help us save up to 10,500MWh by 2023, enough electricity to power 700 homes for a year.

Last year, over 1,100 of our employees completed our bespoke environmental awareness training which covers all aspects of our approach to respecting the environment. The remainder of our workforce will complete the training by the end of 2019.

### Looking ahead

We will continue to deliver our environmental protection programme, in particular we will trial state of the art ‘self-healing’ cables to help us go further on our oil leakage to ground targets and reduce our business carbon footprint by trialling alternative sources of mobile generation.

## Our business plan commitments

Deliver faster and higher quality street works reinstatement when we dig up the street.

✓ On Track

Maintain SF<sub>6</sub> losses as the volume of gas in our switchgear assets increases.

✗ Behind

Stretch target: reduce SF<sub>6</sub> losses targets by 10%.

Reduce our business carbon footprint by 10% by 2023.

✓ On Track

Replace 134km of fluid-filled cables and use perfluorocarbon tracers (PFTs) to quickly replace leaks.

✗ Behind

Continue to operate a full revenue protection service.

✗ Withdrawn

Reduce oil/fluid leakage to ground by 15% by 2023.

✓ On Track

Stretch target: reduce oil/fluid leakage to ground by 60%

Underground around 100km of overhead line in Areas of Outstanding Beauty (AONBs).

✓ On Track

Stretch target: underground an additional 20km of overhead line in AONBs

Make sure reduction of electrical losses is explicitly factored into investment decisions for a wider range of assets.

✓ On Track

### Our performance measures

	2015-16 actual	2016-17 actual	2016-17 target	Status	2017-18 target	ED1 target	Trend
Carbon footprint excl contractors (tonnes)	25,115	23,286	24,135	✓ Achieved	–	–	▲
Carbon footprint inc contractors (tonnes)	48,761	63,966	59,104	✗ Missed	59,500	53,730	▼
SF <sub>6</sub> lost to atmosphere (kg)	108	114	112	✗ Missed	100	100	▼
Oil loss from all sources (litres)	31,753	36,791	52,104	✓ Achieved	51,435	45,258	▼
Cumulative km fluid-filled cables replaced to reduce oil loss	20.4	39.9	51.0	✗ Missed	73.6	133.6	▼
Cumulative km overhead lines undergrounded in protected landscape	16.9	29.9	24.4	✓ Achieved	36.6	97.9	▲
Street works inspection compliance (%)	94%	93%	>90%	✓ Achieved	>90%	>90%	▼
Number of Environment Agency reportable incidents each year	9	10	28	✓ Achieved	32	22	▼



60%

Stretch target reduction in oil/fluid leaks from our underground cables by 2023.



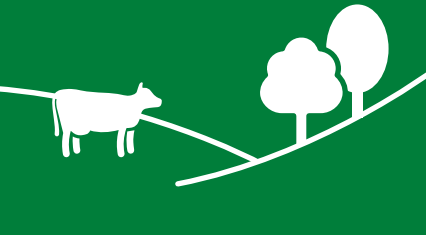
+20km

Stretch target to underground an additional 20km of overhead line in protected landscapes.



13km

of overhead line undergrounded across National Parks and Areas of Outstanding Beauty in 2016-17.



19.5km

Fluid-filled cables replaced during 2016-17.



10%

Target reduction in business carbon footprint by 2023.



10.5GWh saving by 2023

Using larger cables to transport electricity. This is enough to power 700 homes for a year.



# Innovating on our network trailing self-healing cables

*“This innovation could save millions of pounds each year and have significant environmental benefits.”*

**Geoff Earl**, Director of Safety, Health and Environment

**This year we’ve been working with another network operator, UK Power Networks, to trial an innovative way of dealing with damaged cables.**

All UK electricity operators use a relatively small amount of fluid-filled cables on their distribution networks, which can become damaged and start to leak over time. Working with Gnosys Global, we’re trialling the use of self-repairing polymers and resins, which react when they come into contact with air, plugging the gap in the cable and stopping fluid from leaking out. Laboratory tests of this new technology have been successful and the next stage is to trial the fluid for use on our network.

# Perfect partnership with Citizens Advice

<b>888</b> Customers supported	<b>20</b> Trained team members	<b>£140,000+</b> Saved for our customers so far
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**We’ve been working in partnership with Citizens Advice to bring our ‘Energy Advice unplugged’ service to customers in Newcastle since 2014. April 2016 saw us broaden the project to include Citizens Advice, Leeds.**

Our funding provided training for 20 outreach workers to go out into the community to host energy clinics in community centres, libraries and doctors’ surgeries, to talk to customers who struggle to access services. People visiting the clinic benefited from a confidential assessment of their needs, advice and help on trust fund applications and getting the most out of their income. They were also provided with information about how to switch energy supplier. The outreach workers also addressed wider health, affordability and other social issues, and added customers to our Priority Services Register. The service has already supported 888 customers and saved them more than £140,000.



# Innovation to drive long-term customer benefit

*“We have focused this year on mobilising projects that consider the operation of the whole electricity system and the interplay with the transport sector.”*

Jim Cardwell  
Head of Trading and Innovation

**It’s been an exciting year at Northern Powergrid with innovation happening right across the business in the areas of flexibility, affordability, the environment, smart grids and smart meters.**

## Our priorities

The four areas of focus for our innovation activity are smart grids, smart meters, digitally-enabled services and affordability. All the innovation work we do will benefit our customers – either in the short term through better customer service or efficiency, or in the longer term with more flexibility in the grid so we can introduce more renewable energy sources, safely and securely, at an affordable cost. In each area we consider how innovation can support vulnerable customers as well as our broader customer base.

## How we’ve done in 2016-17

In 2016-17, we have been able to bring our customers £14m of benefits through our innovation activity, all of which are designed to help get our business ready to play an active role in the smarter and more flexible energy system of the future.

Developing smart grids and maximising the benefits of smart meters are two of our key focus areas. We started six smart grid projects this year and we’re using what we’ve learned to help us prepare as we transition to the role of Distribution System Operator. You can read more about the transition to a smarter more flexible energy system on the next page.

Our digital innovation activity has included investing in state-of-the-art technology and using what we learned from our ground-breaking Customer-Led Network Revolution smart grid demonstration project to create more capacity for connecting renewable energy sources. We’ve also improved services for customers affected by power cuts and our ability to forecast electricity use.

Our innovation work to reduce costs for our customers includes our Distribution Storage project and Solar Study project in Barnsley, which is demonstrating how using home batteries and solar panels can save money for tenants in social housing.

Working on innovation projects can also be a good way to develop new relationships and share expertise with partners in our region. This year, for example, we’ve been working with Nissan to understand how electric vehicles can be efficiently deployed across our network and how vehicle owners can deliver more value from their vehicles – for example using the cars to support networks through ‘Vehicle to Grid’ technologies.

## Looking ahead

We will continue to use our innovation projects to benefit our customers and prepare for a smarter and more flexible energy system. We will prepare for the transition to a Distribution System Operator role, explore new projects with partners including Northern Gas Networks and Nissan to grow our expertise and explore opportunities for customers following our connection to the national smart meter system.

## Moving towards the new role of Distribution System Operator – DSO

### What is a DSO?

A DSO will go beyond a Distribution Network Operator’s (DNO) current responsibilities, taking on new responsibilities.

The new responsibilities consist of helping maximise the efficiency of the energy system, and acting as a neutral facilitator of an open and accessible market for new types of energy services. The DSO operates at a regional level, in collaboration with the System Operator (SO) whose role includes balancing the national electricity grid on a second-by-second basis.

### Why do we need it?

**The move to DSO will deliver a safe and secure power infrastructure for our customers in the future.**

- The generation mix is evolving towards intermittent renewables (e.g. solar and wind) connected locally along with inflexible central generation (e.g. nuclear).
- Load is likely to increase with electric vehicle charging and electric heat.
- Analysis published by government has shown, over a wide range of scenarios, that building flexibility into the system is the optimum way to develop the electricity system – limiting network upgrades and enabling more renewable generation.
- Flexibility offers us ‘option value’. It can help defer or avoid expensive capital projects.
- Cost savings are estimated to be in the range of £17bn to £40bn for UK customers by 2050.

### What does it do?

**It opens up a future where we run a much more active network than we do today.**

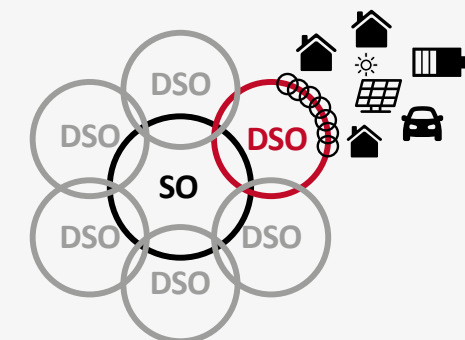
- We will routinely use commercial agreements and request customers to turn up or turn down their electricity demand, storage or generation.
- We will have a more autonomous, self-healing network where data drives more decisions and control systems are more sophisticated.
- It will increase the potential for customers to maximise their electricity income or minimise their bills through buying and selling power to secure the best price.

### How are we getting there?

**The energy industry is putting a lot of thought into how to successfully manage the transition.**

For us, this means:

- Scoping the future to develop tangible propositions for our customers.
- Building new capabilities, through low-regrets investments, to better position us for future requirements.
- Getting on with it and learning through deploying new technology and commercial propositions.



**Six new innovation projects**  
started.



**£14m**

Benefits we have delivered to our customers through innovation in 2016-17.



**£1.4m**

Investment in innovation projects in the year.



**10 innovative solutions**

rolled out as business as usual in the year.



*“We do not see innovation as limited to a specific department of our business at Northern Powergrid. It is a capability, a culture.”*

Iain Miller  
Head of Innovation



# Working near our assets

*“We provide help and advice to customers who need it when they are working near our assets”*

Nick Gill  
Operations Director

**There are times when people need our help to work near or around our assets when undertaking their own projects. This ranges from individuals working on their homes to companies making big investments in new infrastructure.**

#### Typically these situations include requests:

- for physical covers for overhead lines (shrouding)
- to physically move our assets (either temporarily or permanently)
- to share one of our wood poles (e.g. for a telephone line)
- for safety advice about working near our assets, including where our underground cables are
- to temporarily switch off the power while work is undertaken near our assets.

#### Our objective

When giving help and advice for work taking place near our assets we aim to meet all our statutory duties and to give excellent customer service.

#### Our performance

Those who need to work near our assets rated us for four major service lines: cable plans; disconnections; diversions; and shrouding.

The chart below shows that our customers give us 9/10 ratings, on average, for cable plans and shrouding, which we deliver quickly and responsively. Our customers give us lower ratings for diversions, which are more complex services, with longer lead-times. Although our scores exceed the Ofgem target of 8.2/10, we continue to focus on our work in this area to improve our customer satisfaction levels. Customer feedback tells us that the improvements we have made in our connections processes, including our communication methods, could improve our performance levels in diversions – this is something we are looking into.

#### Improving our service

We surpassed our goal of 9.3/10 in customer satisfaction for our shrouding services and continue to improve in the other categories, including earthing installation, service equipment defects replacement and substation maintenance. We set ourselves the goal of reducing the time taken to deliver our services within 28 days, which has helped to improve our performance, and we will continue to target reductions in these timescales next year.

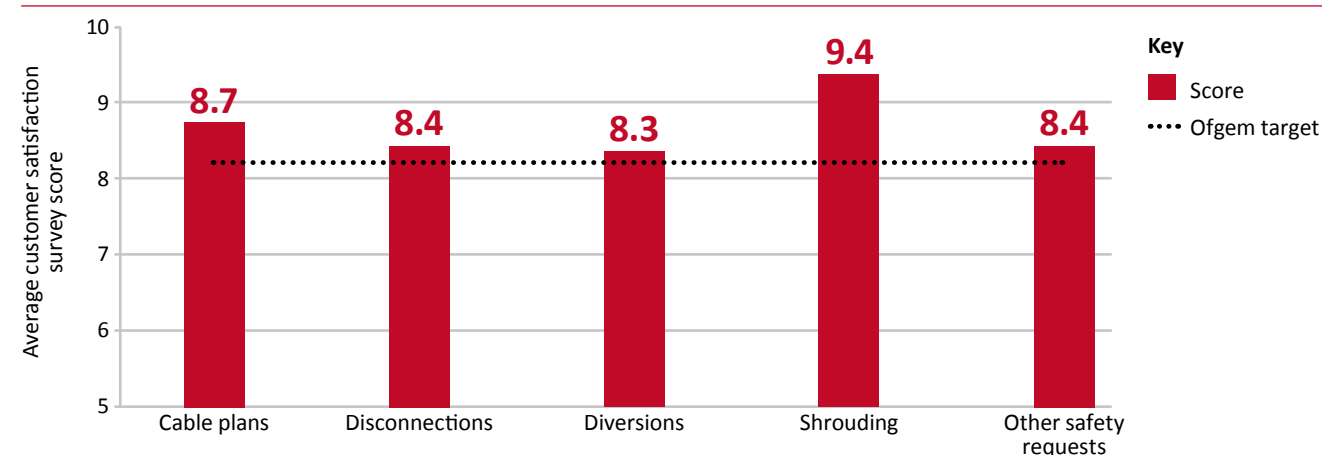
We also set ourselves the goal to improve our diversions and disconnections processes and although we’re making progress in these areas we still have work to do in the rest of 2017 and in 2018.

We have increased the number of categories covered by our web-based services to enable our customers to interact more effectively with us. This has been successful in the cut-out replacement category where our customers can now book their own appointment date to suit them.

#### Looking ahead

We are looking at future developments in this area including free installation of earthing to domestic customers along with the ability to book appointments online. We are also pursuing improvements in our communications leading up to an appointment and after completion of the works, further tightening of lead-times for key services and implementation of standard pricing and web-based disconnection services.

## How our customers scored us (out of 10)



# Performance Annex

## Page 34

Our performance Northeast

## Page 35

Our performance Yorkshire

## Page 36

Our performance measures explained

## Page 38

Our commitments in full



# Our performance

## Northeast

Network	Performance		Actual 2016-17	Trend <sup>2</sup>
	Number of customers		1.6m	▲
	Total DNO network length		41,503km	▲

Reliability & Availability	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>37.6</div><div>Minutes</div><div>Target achieved for average minutes lost</div></div>	Customer interruptions <sup>4</sup>	Incl. exceptional events	54.6			▲
		Excl. exceptional events	50.3	58.9	Achieved	▲
	Customer minutes lost <sup>4</sup>	Incl. exceptional events	39.3			▲
		Excl. exceptional events	37.6	53.7	Achieved	▲
	IIS – Incentive performance reward/(penalty) <sup>5</sup>	£m	£9.6m			
		£/customer bill	£2.85			

Customer Satisfaction	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>Our customers scored us 8.7/10</div></div>	Overall Broad Measure of Customer Satisfaction	out of ten (rank out of fourteen) <sup>6</sup>	8.68 (8th)	8.20	Achieved	▲
	BMCS – Incentive performance reward/(penalty) <sup>7</sup>	£m	£1.5m			
		£/customer bill	£0.43			

Connections	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>5.6</div><div>days</div><div>Target achieved for time-to-quote days</div></div>	Time-to-quote (days) <sup>8</sup>		5.6	8.2	Achieved	▲
	Time-to-connect (days) <sup>8</sup>		50.6	42.1	Missed	▼
	Incentive performance reward/(penalty) – connections lead time	£m	£0.40m			
		£/customer bill	£0.12			
	Incentive on Connections Engagement (ICE) (penalty)	£m	Nil			
		£/customer bill	Nil			

Social Obligations	Performance		Actual 2016-17
<div><div></div><div></div></div>	Stakeholder Engagement and Consumer Vulnerability (SECV) score out of ten (rank out of six)		6.5 (3rd)
	SECV – Incentive reward	£m	£0.6m
		£/customer bill	£0.16

Financials	Performance		Total
<div><div></div><div>£174.1</div><div>million</div><div>Overall total expenditure for 2016-17</div></div>	Unrestricted domestic tariff charge		£89.71
	Total expenditure	£m	£174.1m
		% of cost allowances	98%
		% of allowed revenue	66%
	Dividends paid <sup>9</sup>		£21.8m
	Gearing <sup>10</sup>		49.3%
	Credit rating <sup>11</sup>		A3/A-
	RORE (vs Ofgem assumption of 6%) <sup>12</sup>		8.6%

Notes:

1 All financial figures are in 2012-13 prices and refer to Northern Powergrid overall unless otherwise stated. The performance of each licensee is shown in the Annex to this report.

2 Trend ▲ getting better ▼ getting worse since 2015-16.

3 Ofgem target (see sections in the main body of the report for performance against our own targets).

4 Unweighted figures. Indicative figures as at July 2017, final figures still to be confirmed by Ofgem.

5 Excluding guaranteed standards payments.

6 Broad Measure of Customer Satisfaction (BMCS) rank indicative only based on monthly data. Final ranking to be confirmed by Ofgem.

7 Does not include SECV reward.

8 LVSSA (single minor connections).

9 Dividends paid figure for Northeast, Yorkshire and Overall relate to dividends from the licensee companies in the year.

10 Gearing figures for Northeast and Yorkshire relate to gearing of the licensee companies. Overall gearing relates to the Northern Powergrid group and

includes debt over and above the licensee companies that was utilised to fund the distribution business.

11 Credit ratings for Northeast and Yorkshire relate to scores for three credit rating agencies (Moody's/Standard and Poor's/Fitch) for the licensee companies. Overall relates to Northern Powergrid Holdings Company.

12 In setting the price control Ofgem assumed a base RORE of 6% with the opportunity for companies to exceed or fall below this depending upon performance.

# Our performance

## Yorkshire<sup>1</sup>

Network	Performance		Actual 2016-17	Trend <sup>2</sup>
	Number of customers		2.3m	▲
	Total DNO network length		54,095km	▲

Reliability & Availability	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>35.0</div><div>Minutes</div><div>Target achieved for average minutes lost</div></div>	Customer interruptions <sup>4</sup>	Incl. exceptional events	47.4			▲
		Excl. exceptional events	47.4	65.7	Achieved	▲
	Customer minutes lost <sup>4</sup>	Incl. exceptional events	35.0			▲
		Excl. exceptional events	35.0	56.3	Achieved	▲
	IIS – Incentive performance reward/(penalty) <sup>5</sup>	£m	£13.5m			
		£/customer bill	£2.62			

Customer Satisfaction	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>Our customers scored us 8.6/10</div></div>	Overall Broad Measure of Customer Satisfaction	out of ten (rank out of fourteen) <sup>6</sup>	8.59 (12th)	8.20	Achieved	▲
	BMCS – Incentive performance reward/(penalty) <sup>7</sup>	£m	£1.6m			
		£/customer bill	£0.32			

Connections	Performance		Actual 2016-17	Target 2016-17 <sup>3</sup>	Status	Trend <sup>2</sup>
<div><div></div><div>5.4</div><div>days</div><div>Target achieved for time-to-quote days</div></div>	Time-to-quote (days) <sup>8</sup>		5.4	8.2	Achieved	▲
	Time-to-connect (days) <sup>8</sup>		47.3	42.1	Missed	▼
	Incentive performance reward/(penalty) – connections lead time	£m	£0.60m			
		£/customer bill	£0.12			
	Incentive on Connections Engagement (ICE) (penalty)	£m	Nil			
		£/customer bill	Nil			

Social Obligations	Performance		Actual 2016-17
<div><div></div><div></div></div>	Stakeholder Engagement and Consumer Vulnerability (SECV) score out of ten (rank out of six)		6.5 (3rd)
	SECV – Incentive reward	£m	£0.80m
		£/customer bill	£0.16

Financials	Performance		Total
<div><div></div><div>£202.9</div><div>million</div><div>Overall total expenditure for 2016-17</div></div>	Unrestricted domestic tariff charge		£73.77
	Total expenditure	£m	£202.9m
		% of cost allowances	90%
		% of allowed revenue	60%
	Dividends paid <sup>9</sup>		£28.7m
	Gearing <sup>10</sup>		48.4%
	Credit rating <sup>11</sup>		A3/A-
	RORE (vs Ofgem assumption of 6%) <sup>12</sup>		8.5%

Notes:

1 All financial figures are in 2012-13 prices and refer to Northern Powergrid overall unless otherwise stated. The performance of each licensee is shown in the Annex to this report.

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4 Unweighted figures. Indicative figures as at July 2017, final figures still to be confirmed by Ofgem.

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12 In setting the price control Ofgem assumed a base RORE of 6% with the opportunity for companies to exceed or fall below this depending upon performance.



# Our performance measures explained

Our performance snapshots on the inside front cover and on pages 34 and 35, set out one-page summaries of our key measures of performance in the year.

Based on engagement with our stakeholders we have gone further than the minimum requirements in our disclosure and presentation of information to rise to the challenge of greater transparency in our performance reporting. For example, in addition to reporting our actual performance against targets, we have included our relative ranking position among the other British distribution network operators, our performance trends, the financial incentive rewards/penalties we have earned/incurred along with the impact of those incentives on an average domestic customer bill.

We hope you find what we’ve done useful. Below is a glossary explaining the meaning of each of the measures included in our performance snapshots.

Number of customers			Number of customers electricity is distributed to in Northern Powergrid’s licensee areas: Northeast and Yorkshire.
Total DNO network length			The total kilometres of overhead lines, underground lines and subsea cables used to distribute electricity to Northern Powergrid customers in its two licensee areas: Northeast and Yorkshire.
Customer interruptions	Including exceptional events	The number of customers whose supplies have been interrupted per 100 customers per year over all incidents where an interruption of supply lasts for three minutes or longer, excluding reinterruptions to the supply of customers previously interrupted during the same incident, including any interruptions caused by exceptional events. An exceptional event is an event which is beyond the reasonable control of the licensee but does not include weather conditions which are reasonably expected to occur.	
	Excluding exceptional events	As above, but excluding any interruptions caused by exceptional events.	
Customer minutes lost	Including exceptional events	The duration of interruptions to supply (or the average customer minutes lost per customer per year) where an interruption of supply lasts for three minutes or longer. It includes any interruptions caused by exceptional events.	
	Excluding exceptional events	As above, but excluding any interruptions caused by exceptional events.	
IIS – Incentive performance reward/(penalty)	£	Electricity distribution companies are incentivised on the number and duration of network supply interruptions versus a target derived from benchmark industry performance. This figure represents the financial reward/(penalty) earned or measured on network interruptions in Ofgem’s Interruption Incentive Scheme (IIS).	
	£/domestic customer bill	How much the above incentive reward (or penalty) will add to (or take off) the bill for an average domestic consumer in 2018-19.	
Overall Broad Measure of Customer Satisfaction Score			Northern Powergrid’s Broad Measure of Customer Satisfaction (BMCS) score and rank on Ofgem’s customer satisfaction measure. It is based on a customer satisfaction survey and is designed to drive improvements in the quality of the overall customer experience by capturing and measuring customers’ experiences of contact with their electricity distribution company.
BMCS – Incentive performance reward/(penalty)	£	Value of the Ofgem Broad Measure of Customer Satisfaction (BMCS) reward/(penalty), a financial incentive on customer satisfaction, excluding stakeholder engagement rewards.	
	£/domestic customer bill	How much the above incentive reward (or penalty) will add to (or take off) the bill for an average domestic consumer in 2018-19.	
Time-to-quote (days)			The average number of days from a connection application being received to a connection quote being issued for single low-voltage minor connections (LVSSA).
Time-to-connect (days)			The average number of days from acceptance of a connection quote by a connectee to the completion of the necessary electrical works, to the point it would be possible to energise (subject to installation of an appropriate meter), for single low-voltage minor connections (LVSSA).
Incentive performance reward/(penalty) – connections lead time	£	Value of the time to connect financial incentive for single low-voltage minor connections (LVSSA) and two to four minor connections (LVSSB).	
	£/domestic customer bill	How much the above incentive reward (or penalty) will add to (or take off) the bill for an average domestic consumer in 2018-19.	

Incentive on Connections Engagement (ICE) penalty (if applicable)	£	Value of the Ofgem ICE penalty: a connections engagement financial incentive for major connections customers (metered demand connections, metered distributed generation and unmetered connections).
	£/domestic customer bill	How much the above incentive penalty will take off the bill for an average domestic consumer in 2018-19.
Stakeholder Engagement and Consumer Vulnerability (SECV)		Northern Powergrid’s Stakeholder Engagement and Consumer Vulnerability (SECV) score and rank as part of Ofgem’s customer satisfaction measure.
Incentive reward (SECV)	£	Value of the Ofgem SECV reward, a stakeholder engagement financial incentive.
	£/domestic customer bill	How much the above incentive reward will add to the bill for an average domestic consumer in 2018-19.
Unrestricted domestic tariff charge (for a typical domestic customer)		The distribution element of the bill for an average domestic consumer in 2016-17, excluding the cost of a special rebate given by some electricity distribution companies in 2014 and 2015 (in accordance with the government 2013 Autumn statement) to help reduce energy bills. The average domestic consumer is assumed to use 3,100kWh per annum. The calculation assumes 365 days in a year.
Total expenditure	£	This is Ofgem’s regulatory total expenditure (or ‘totex’) measure, which includes many of the costs incurred by electricity distribution companies, but excludes costs over which companies have no control, and which also nets off proceeds from the sale of assets. This measure is used as the basis for calculating how much the company has spent on operating and investing in its distribution business, and companies are incentivised to minimise it while at the same time delivering all the required outputs.
	% of cost allowances	How much the company has spent of its totex allowances for the year. If the percentage is lower, a company has either been successful in reducing how much it costs to deliver its outputs, or has not delivered some of its outputs (which would lead to a reduction in its future allowed revenues).
	% of allowed revenue	How much of its allowed revenues a company used to fund its totex expenditure, before covering other day-to-day costs that are excluded from totex and repayments of previous investments.
Dividends paid		Dividends paid in the year.
Gearing		A ratio measuring the extent to which a company is financed through borrowing. Ofgem calculates gearing as the percentage of net debt relative to the Regulatory Asset Value (RAV).
Credit rating		An evaluation of a potential borrower’s ability to repay debt. Credit ratings are calculated from financial records including and current assets and liabilities. There are three major credit rating agencies (Standard & Poor’s, Fitch and Moody’s) who use broadly similar credit rating scales, with D being the lowest rating (highest risk) and AAA being the highest rating (lowest risk). The companies regulated by Ofgem typically have a credit rating of BBB, BBB+, A- or A.
Actual Return On Regulatory Equity – RORE (vs Ofgem assumption of 6%)		The return on regulated equity (RORE) measures how much a company has earned on previous investments in its regulatory assets (RAV) that have been funded by shareholders in the regulatory settlement. This starts with the base return which Ofgem allowed, to reflect the cost of equity in capital markets, and is adjusted for the value earned via any incentive schemes to reflect performance, and any difference between how much the company’s debt finance cost compared to Ofgem’s assumption. Ofgem’s calculation of this figure assumes a notional gearing of 65% (which is above our actual gearing level). It is stated in real terms, i.e. before inflation is added.
OSHA rate		In the USA the Occupational Safety and Health Administration (OSHA) accident rate records reportable work-related accidents including major incidents leading to absence from work and also less severe injuries where employees may experience restricted work duties or have prescription drugs issued as treatment or therapy. The OSHA rate is presented as reportable cases per 200,000 man hours. See <a href="http://www.osha.gov">www.osha.gov</a>
RIDDOR rate		A UK accident rate that measures the number of accidents that are reportable under the UK’s Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR). These accidents are reportable to the HSE and include fatal, major injury and lost-time accidents resulting in over seven days absence from work. See <a href="http://www.hse.gov.uk/riddor/index">http://www.hse.gov.uk/riddor/index</a>



# An update on our commitments in full

Commitments	Commentary	Status
Remain a leading safety performer, meeting all requirements and halving our accident rate by 2023	We achieved our headline OSHA accident rate target for 2016-17 (0.34 against our target of 0.36) and while we narrowly missed our RIDDOR accident rate target (0.2 against our target of 0.1) we outperformed our internal target for preventable vehicles accidents in the year, incurring 22 accidents against our target of 24. Through continued focus on our safety culture, leveraging our employee safety champions programme, we are confident of maintaining our performance trajectory and achieving our eight-year RIIO-ED1 targets. More information on OSHA and RIDDOR rates can be found in the glossary.	✔ On Track
Reduce the impact of metal theft, including improving substation security	Levels of metal theft from our network remain low due in part to the low price of copper but also the work we have done with scrap metal dealers and the police. We continually review our approach to improve our ability to mitigate and respond to theft and have a team that focuses on reviewing and reinforcing substation sites that we consider vulnerable. We have made good progress in improving the resilience of these sites, reducing the number that we would classify as vulnerable, and will continue this work throughout the period.	✔ On Track
Increase awareness in our communities of the dangers of electricity if not handled properly	<p>Our programme to raise awareness of the dangers of electricity expands every year. We engage with young people through our diverse school safety awareness programme for primary and secondary schools including our ‘Crucial Crew’ programme in partnership with the Police, Fire Brigade and Drugs awareness teams and engaged 30,000 young people in 2016-17. We also operate our Fusebox website that offers an online interactive resource for children to access our safety messages.</p> <p>Alongside our schools programme we run agricultural campaigns including exhibiting at the major agricultural shows in the region attended by over 240,000 visitors, we deliver electrical safety presentations at student induction days at major agricultural training colleges in the region and we also run our ‘Look Up – It’s live’ social media campaigns during harvest season (receiving 60,000 views in 2016-17). In addition, we presented to members of both the Fleet Transport Association and the Road Haulage Association at their regional conferences in the year on the dangers associated with the movement of large vehicles near overhead lines.</p>	✔ On Track
Promptly resolve any network safety issues arising from the smart meter roll-out	<p>The rollout of millions of smart meters to customers by energy suppliers in our region presents a safety risk if the installation is not done properly. To mitigate this risk, we only permit operatives on behalf of energy suppliers to install smart meters on our network if they have gone through a training and competency assessment. 600 meter operator staff who are or will be installing smart meters have attended our courses since the start of 2016, of which 86 have had to go back for retraining. We believe that establishing these high standards will reduce the number of safety issues with the roll-out of smart meters when the programme ramps up in earnest.</p> <p>We have well established processes in place for responding to issues identified with meter installations and any problems identified to date have been investigated and resolved promptly. At the end of September 2017, in conjunction with energy suppliers, we launched an industry leading web-based appointments system to help customers avoid repeat visits by allowing meter operators to co-ordinate their return visits to customer premises at the same time that our service providers are there doing work resolving meter defects. This new service is already receiving very positive feedback from users of the system.</p>	✔ On Track
Keep safety as a central driver of investment decisions and appraisals	<p>We take safety very seriously and it remains a central driver of our decision making processes whether we are operating, extending, maintaining, repairing or replacing the network. Our asset investment policy is underpinned by the principles of developing safe, efficient, coordinated and economical electricity systems that sustainably serve the needs of our stakeholders. We ensure that we comply with all legal, regulatory and environmental requirements without compromising the safety of our employees, customers or the public.</p> <p>Last year as part of our safety and health improvement activity we replaced over 35,000 service cut-outs, a 15% increase on the previous year, removing 1,123 units that did not comply with (ESQCR) safety standards. We also corrected all known high-voltage overhead line ground clearance issues and continued to address low voltage service line non-conformance in a programme that will be completed in 2017-18.</p>	✔ On Track
Reliability	Commentary	Status
Restore electricity within 12 hours - and if we don't, make enhanced and automatic payments to all customers (with extra for our vulnerable customers)	<p>We moved to the 12-hour power restoration guaranteed standard and implemented our automatic payment policy at the start of the RIIO-ED1 period. In the event of a failure against the guaranteed standard we make enhanced payments above the mandated amount (of £75) paying £100 (an additional £25) to our customers or £200 (an additional £125) for vulnerable customers.</p> <p>We are making good progress against the 12-hour restoration standard, reducing the number of customers experiencing greater than 12-hour power cuts by 28% in 2016-17. We will continue with our strategic and targeted investments in the network to support our performance improvement in this area over the eight-year period.</p>	✔ Delivered

Reliability continued	Commentary	Status
Achieve 8% fewer unplanned power cuts by 2023	We have delivered further network performance improvements during the year and we are on track to significantly exceed our commitment by 2023. Our asset replacement programmes, investment in automatic fault restoration technologies and some favourable weather conditions in the year saw us exceed our ED1 period end target of 8% fewer unplanned power cuts by 9 percentage points in Northeast and 24 percentage points in Yorkshire. Our intention is to consolidate this level of service and continue to build on it in the remainder of the eight-year period.	✔ On Track
Planned power cuts to leave customers without power for less time, particularly during winter.	Planned power cuts are only scheduled for (the eight) daylight hours, and during the worst winter months, planned to last for no longer than 4.5 hours. In 2016-17, 97% of planned power cuts lasted no longer than eight hours and in the winter months we achieved our 4.5 hour target 83% of the time. We will continue to pursue further improvements against these targets in the remainder of the period.	✔ On Track
Reduce the average length of unplanned power cuts by 20% by 2023	Through investment in automatic fault restoration technology, remote control and increased deployment of temporary generation alongside leveraging our nine-zone operating structure we have significantly improved performance year-on-year and continue to make good progress towards our 2023 target. In 2016-17 we almost delivered a performance level in line with our ED1 period end target of a 20% reduction in the average length of power cuts, achieving an overall reduction of 18.6%, exceeding the 20% target in the Northeast by 7.1 percentage points, with performance in Yorkshire only 7.6 percentage points below the 20% target level.	✔ On Track
Increase the resilience of the network to flooding	We exceeded our annual flood defence target by 10% in 2016-17, installing defences at 46 sites against our target of 42 (20 sites in Northeast and 26 in Yorkshire). So far in the RIIO-ED1 period we have completed upgrades at 55 sites which remains behind our cumulative target of 82 due to the slow start to our programme in 2015-16 as we awarded new contracts for the work. We remain on track however to deliver our commitment for the eight-year period and are aiming to have completed our targeted 141 sites by the halfway stage in the period.	✔ On Track
Use smart meter alarm information to improve network performance and the information we provide to customers	The national smart meter programme has experienced significant delays since the start of the period with the central IT infrastructure not yet in place to allow us to receive smart meter data. Our own internal smart meter systems have been approved and are ready to receive the new smart meter data which we expect to start flowing by the end of 2017, at which point we can begin to use the information to improve our services for customers as the roll-out of smart meters ramps up.	✔ On Track
Maintain the underlying health of the asset base and report on it annually	Our investment plans target ageing and highly-loaded assets in order to reduce the risk of failure. We remain on track to deliver our business plan targets for the eight year RIIO-ED1 period being broadly in line with Ofgem’s asset health and criticality index measure for the period to date (only 1.1 percentage points behind our phased target) with a significant amount of work in progress soon to be commissioned.	✔ On Track
Ensure adequate network capacity for customers wanting to connect	We continue to progress well against this commitment, reviewing the peak demand across all of our major substations and calculating future electricity demands to ensure that we have sufficient capacity to cater for new connections. We also use this information to tell us where we need to invest to increase capacity in the future, which is essential as the adoption of low carbon technologies increases. Through engaging our customers, and with their agreement, we have released 28MVA of demand capacity (up by 2 MVA in the year) and 18MVA of generation capacity (an increase of 15MVA in the year).	✔ On Track
Target network improvements for our worst-served customers	We have continued to focus investment on targeting improvements to our 880 worst-performing circuits. We remain on track to deploy automatic fault restoration technology and increased penetration of remote switching points to our worst-performing circuits.	✔ On Track
Customer satisfaction	Commentary	Status
Use web-based technology to upgrade our process for general enquires and minor engineering works	We invested in our systems to provide online self-service for 33 general enquiries services in 2015-16. These services included functionality enabling booking of appointments, paying for services directly on our website, accessing safety information and reporting problems either with equipment at customer properties or on our network, such as vandalism or trees near overhead lines. This web-based technology has made it simpler and quicker for our customers to access our services and we continue to develop and expand the range of services offered.	✔ Delivered
Continue to improve the quality and speed of our complaint resolution	We have achieved year-on-year improvements in Day+1 and Day+31 complaint resolution since the start of the RIIO-ED1 period but still have some distance to travel to achieve our stretching targets for the period. In 2016-17 we resolved 65% of complaints within Day+1 (ahead of our target of 60% and the Ofgem target of 50%), a 13 percentage point improvement on the prior year, and 91% within Day+31 (marginally adrift of our 95% target but ahead of the Ofgem target of 90%). We have invested in our systems to further increase the speed of the complaint resolution services for our customers and will continue to pursue our targets in the remainder of the period.	✔ On Track



# An update on our commitments in full (continued)

Customer satisfaction continued	Commentary	Status
<b>Provide better information to customers experiencing power cuts through voice or digital communication channels</b>	<p>We have introduced a new Quality Framework in our Contact Centre to make sure that our team deliver consistently high quality customer conversations through voice and non-voice channels. We have improved our ability to answer more calls and answer them quicker by increasing our call handling capacity during the year. We have also introduced real time scheduling for staffing our Contact Centre to make sure that we can respond quickly to what is happening on our network, making sure we have our teams available when our customers need them.</p> <p>Since the start of the period we have made improvements to our automated telephony platform (Interactive Voice Response), providing clear and simple navigation to incident updates by postcode area so that customers are given the most up-to-date and relevant information as quickly as possible. In addition to this we proactively text our customers to inform them about issues with their electricity supply and provide updates on restoration works, including estimated times of restoration. We also maintain a live interactive power cut map that gives updates on where the power is off, whether it’s a planned job or an unplanned power cut and what time we aim to have the power back on.</p>	✔ On Track
<b>Use technology to enable our contact centre to move from being largely reactive to mostly proactive</b>	<p>In the year the mix of inbound and outbound contacts in our contact centre continued to move towards a more proactive outbound service. We narrowly missed our 2016-17 target of 13% inbound and 87% outbound contact with 13.5% of contacts being inbound and 86.5% outbound. We have continued to consolidate our customer data sources into one central data repository throughout the year to ensure we have a single and correct source of customer data. In parallel we have increased the number of mobile phone numbers that we hold for our customers, enabling us to provide proactive information on the status of works and updates on power cuts via text messages rather than customers having to call us. We also use a variety of social media channels including Facebook, Twitter and Instagram to communicate the information our customers need on a mass scale.</p>	✔ On Track
<b>Make customer service more reliable, better communicated and backed by slicker processes. Be faster, at no extra cost</b>	<p>We improved both our speed of answer for inbound customer phone calls and the number of calls we answered during 2016-17, answering 90.9% within 5 rings, an improvement of 2 percentage points in the year. We have improved the consistency of our communication across all our customer contact channels (including web, IVR, social media and voice) and up-skilled our people to have consistently high-quality customer conversations through introducing a quality framework in our Contact Centre. All of these initiatives combined have together enhanced the quality of our services at the same time as keeping costs down for customers, reflecting our commitment to do ‘more for less’.</p>	✔ On Track
<b>Make it easier for our customers to keep in touch - via internet, mobile, meetings, phone, email, social media, or text</b>	<p>We know that people keep in touch with each other in different ways and our aim is to make it as easy as we can for our customers to contact us in whatever way they prefer. In addition to our 24-hour contact centre, we operate our social media channels and mobile phone services, and we are planning to pilot live web chat as a new communication channel during 2018. We were heavily involved in the development of the national (105) power cut number that automatically directs customers to their network provider. 105 has made it even easier and quicker to get in touch us with more than 42% of our calls now coming via that entry route.</p>	✔ On Track
Social obligations	Commentary	Status
<b>Enhance our training for front-line staff providing additional support for Priority Service Customers</b>	<p>We further enhanced our training programmes for front-line staff in 2016-17 providing 30 of our contact centre team with British Red Cross training and 20 of the team with deaf awareness training alongside engaging 1,180 of our staff in a front-line ‘Making Every Contact Count’ customer service campaign. Building on our commitment in this area, employee groups with the highest levels of customer interaction (approximately 700 team members) will receive face-to-face consumer vulnerability training in 2018, with all Northern Powergrid employees completing online training over the next three years.</p>	✔ On Track
<b>Route calls from Priority Service Customers directly to contact centre advisors, bypassing automated messaging</b>	<p>Since 2016 all of the calls we receive from customers on our priority services register bypass our automated messaging service and go directly through to a member of our contact centre team so that we can respond to their specific needs as quickly as possible.</p>	✔ Delivered
<b>Introduce friends and family register and ‘good neighbour’ scheme to support vulnerable customers</b>	<p>We have improved our online and paper-based priority services register application processes so that people who need to add a friend or relative can do so. We continue to develop our approach to ensure that adding people to the priority services register is as easy as possible including the on-going development of a ‘good neighbour’ scheme.</p>	✔ On Track

Social obligations continued	Commentary	Status
<b>Build partnerships with organisations to help us deliver our social programme</b>	<p>We have expanded our projects with charities, community groups and other third sector organisations to deliver more support for vulnerable customers. In 2016-17 we ran our Green Doctor fuel poverty assistance project offering energy affordability advice and measures to over 350 homes and turned our Green Investment Energy Heroes pilot into an enduring programme teaching pupils and their wider school community about the benefits of renewable energy and energy efficient strategies. We also expanded our Citizens Advice partnership to cover both Leeds and Newcastle. We have strong and active partnerships with other utilities in our region recognising that we often have shared customers with similar vulnerabilities and needs.</p>	✔ On Track
<b>Promote and raise awareness of our Priority Services Register to other organisations</b>	<p>Through our partnerships with third sector organisations, campaigns and promotions we have raised awareness of our PSR across our region resulting in 235,989 new registrations in the year. These partnerships have also helped us get closer to some of our hard to reach communities where we have previously struggled as well as helped us to identify the most vulnerable communities in our region and tailor our PSR campaigns accordingly.</p>	✔ On Track
<b>Provide more customer support vehicles along with more services in them</b>	<p>Since we wrote our business plan we have added three new customer support vehicles to our fleet, taking our total to five. In 2015-16 the two original vehicles were upgraded to bring their specification into line with the new vehicles. In 2016-17 we used our customer support vehicles to provide assistance to 6,588 customers during power cut situations and attended agricultural shows throughout our region (with a potential customer reach of 240,000) to raise awareness of Northern Powergrid and the services we provide.</p>	✔ On Track
<b>In conjunction with local authorities, identify socially-deprived areas and prioritise our support towards them during a power cut</b>	<p>During 2016-17 we significantly enhanced the data we hold on social deprivation across our region. This is used to inform our approach to engaging with customers so that our services and interactions are better tailored to their specific needs. The data also shapes our priority service partnerships and promotions as well as helping to prioritise our services, for example the use of our customer support vehicles and mobile generators. We also work with Local Resilience Forums, who interact with a large number of vulnerable customers on a daily basis, to promote our Priority Services Register.</p>	✔ On Track
<b>With others, explore the feasibility of community-level aggregated-demand response in return for a community rebate</b>	<p>Through our Activating Community Engagement (ACE) innovation project, we are engaging customers in solutions to reduce their electricity usage during periods of high demand on the network through a mobile app that rewards them for their response. Since 2016 over 700 customers have joined the project and this number is increasing towards our target to have 1,200 customers involved by the end of the 2017. While the focus of the project is on energy reductions at peak times, we have also seen consumers reduce their overall electricity usage as they learn which appliances consume the most electricity. The project has so far paid out almost £3,000 to community groups and £1,000 worth of prizes to over 30 winning households.</p>	✔ On Track
<b>Explore the possibility, with Northern Gas Networks, of upgrading to electrical connections in high-rise tower blocks for safety reasons</b>	<p>Our primary safety intervention in this area is our £7.2m investment programme running throughout the RII0-ED1 period to refurbish our assets within 125 multi-occupancy high-rise properties in our regions. We are currently working with local councils to identify the properties that require work – to date we have identified 50 properties that will require some form of intervention with work due to commence in 2018.</p> <p>Further, in collaboration with partners including Northern Gas Networks, Newcastle City Council and Newcastle University we have researched the sustainability of urban high-rise living at five tower blocks in Newcastle to consider the factors to be considered as we seek to improve the residents’ comfort levels, energy costs and carbon emissions. The report identified the feasibility of specific interventions such as energy efficiency and new low carbon technologies as well as general considerations in order to implement improvements successfully. Importantly, our engagement with the people impacted was highlighted as a benefit as well as the selection of the most appropriate technical options for improvements to their electricity, gas and water utility services.</p>	✔ On Track
<b>Explore solutions to connect rural communities to the network</b>	<p>We are currently developing a ‘MicroResilience’ innovation project to investigate the use of micro grids that can operate in sync with our network or on a standalone basis, as conditions dictate, such as when high voltage supplies are unavailable. This new technology has the potential to enable us to continue supplying power to rural communities even when overhead lines are damaged, for example during storms. It may also allow us to establish supplies to the few truly remote communities in our regions where there is no mains supply at all at present, reduce connection costs for low voltage demand and generation connected in rural areas, improve voltage control and reduce electrical losses.</p>	✔ On Track



# An update on our commitments in full (continued)

Connections	Commentary	Status
<b>Better payment terms – customers will not need to pay as far in advance</b>	In 2015-16, in line with customer feedback, we implemented a payment process that allows small works connections customers to pay for connections work up to 12 days before the works begin.	✔ <b>Delivered</b>
<b>Provide a better service for non-contestable elements of work – regularly publishing key indicators</b>	In 2015 we established our Connections Input Services team to serve ICPs and IDNOs and have implemented new streamlined processes for our customers. During 2016-17 we outperformed five out of the eight guaranteed standards (and delivered in line with the remaining three) set out in our licence for responding to point of connection requests, providing quotations, responding to submission of connection designs and completing final works. In addition, as a direct response to stakeholder feedback, we regularly publish key performance metrics for our range of input services on our website.	✔ <b>Delivered</b>
<b>Introduce a web-based system to help customers understand the capacity on our network and the likely cost of connection</b>	Our website includes interactive generation and demand heat maps that detail what capacity is available on our network, a description of any network constraints that would affect connections and our guide prices and payment period for typical jobs. During 2016-17 we further improved the provision and accuracy of the information we make available to customers with monthly updates to our availability heat maps and our contracted capacity register.	✔ <b>Delivered</b>
<b>Provide more flexible quotations, including online self-service and faster quotes</b>	We continued to develop our online services to provide customers with more information on pricing, timescales and capacity. This, along with our guided online process allows customers to complete much more of their connections application themselves including specifying their requirements upfront. Our new fast track connections process also makes it easier and quicker for customers to turn a budget estimate into a firm quote.  We have significantly improved our service alterations process for our customers, giving them the option to obtain a quote online or request a pre-quote site visit ahead of receiving a connection quote. We have also increased the flexibility and reduced the cost of connecting to our network in constrained areas by deploying Active Network Management (ANM). We first deployed an ANM scheme to avoid most of the costs associated with large amounts of generation capacity in the last price control period and have now developed a replicable scheme that we are deploying for the first time in Driffield, East Yorkshire.	✔ <b>On Track</b>
<b>Reduce end-to-end connection timescales for small works by more than 30%</b>	We are performing beyond Ofgem’s incentive target for time to quote, but remain behind target for time to connect largely as a result of long-standing jobs where customers have not confirmed a work date or are not in a position to receive the work. While we are currently behind the targets we set in our plan, we remain confident that we will achieve the 30% reduction in connections timescales by the end of the period. We do however know that lead times aren’t everything for our customers – having taken on board extensive customer feedback, we reshaped our small works connections services during 2016-17 to provide a single point of contact for customers throughout the duration of their job with us and the option of a face-to-face site visit to discuss their requirements. The new process has continued to bed in during 2017 and is receiving positive feedback for the support it is providing to customers, resulting in an increase of 4.7 percentage points in our customer satisfaction score for connections (to 84.5%) in 2016-17.	⬅ <b>Behind – Recoverable</b>
<b>Implement a tailored service for large projects, including ‘account management’ where needed or requested</b>	In 2016-17, in response to customer feedback, we rolled out a single point of contact model to connections customers for large projects to guide them through the application and delivery process, allowing customers to liaise with a dedicated individual.	✔ <b>On Track</b>
Finance	Commentary	Status
<b>We will deliver an immediate 10% price reduction at the start of the period</b>	We delivered a 14% price reduction to domestic customers in April 2015, the start of the RIIO-ED1 period. The underlying base revenues that we are allowed to earn remain flat (excluding the effects of price inflation) but our prices will move during the period according to the way that the regulatory price control mechanism works and a number of other factors such as annual expenditure, performance against Ofgem’s incentive mechanisms, changes in charging methodologies for the industry, allowed cost of capital and lengthening of the period over which we recover our investment (from 20 years to 45 years).	✔ <b>Delivered</b>
<b>We expect to create 1,000 job opportunities in the organisation during the ED1 period</b>	During the year we created 102 job opportunities, these were split between recruitment of technical engineering trainees through our workforce renewal programme (71) and new hires in other positions throughout our organisation (31). This takes our total recruitment since April 2015 to 257 (with 172 through our workforce renewal programme) against our eight-year target to have created 1,000 jobs in our regions.	✔ <b>On Track</b>

Smart grids and innovation	Commentary	Status
<b>Invest £52m in smart grid network reinforcement that pays back by 2023 through avoiding £86m of traditional reinforcement – a net saving of £34m compared with traditional reinforcement methods</b>	Our investment in smart grid enabling infrastructure is a key pillar of our innovation programme, modernising our network with new control and instrumentation capabilities to deal with the current and future uptake of new low carbon technologies. We delayed commencement of this work in the initial part of the RIIO-ED1 period to establish key specifications for the equipment, however our dedicated smart grids unit is now starting to build its activity levels and delivering smart upgrades onto the network.  In parallel, requirements for reinforcement in the RIIO-ED1 period to date have been below forecast due to the slower uptake of low carbon technologies. For example, reinforcement for rooftop solar installations has been limited in recent years with installers favouring projects requiring no network upgrades in order to meet tight timescales arising from the Government’s cliff-edge reduction in subsidies.	✔ <b>On Track</b>
<b>Provide opportunities for customers to participate in demand-side response to reduce the cost of running the network</b>	We continue to review our reinforcement plans to ensure that, when the need arises, we can approach the market for flexibility solutions including Demand Side Response (DSR), storage and generation. We are developing the technical applications and commercial frameworks required to take these solutions from trials into reality including collaboration with other parties in the energy system.  Looking ahead we expect that residential customers will play an increasingly important role in providing flexibility within the next decade. We are currently engaged in an innovation project exploring the potential for domestic customers to participate in DSR using gaming and rewards (via a mobile app). This project, called Activating Community Engagement (ACE), will publish its findings in 2018.	✔ <b>On Track</b>
<b>Establish a dedicated team of technical staff to perform timely modifications to our equipment when they are needed to enable the smart meter installation to proceed</b>	Our service providers resolve defects on our behalf identified during the smart meter roll-out. In order to ensure that this arrangement delivers a high quality of service for our customers, we meet regularly with our providers to agree improvements to our processes for managing defects, reporting and resolving safety issues.  At the end of September 2017, in conjunction with energy suppliers, we launched an industry-leading web-based appointments system to help customers avoid repeat visits by allowing meter operators to co-ordinate their return visits to customer premises at the same time that our service providers are there doing work resolving meter defects. This new service is already receiving very positive feedback from users of the system.	✔ <b>On Track</b>
<b>Modify our trading and customer service systems to realise benefits from the new smart meter data</b>	As the national programme to put the central IT infrastructure for smart meters in place has been delayed, no smart meter data has become available for us to use. We have identified what we need to do to with the new data when we start to receive it, which we expect to be from the end of 2017, at which point we can begin to realise benefits for our customers.	✔ <b>On Track</b>
<b>Invest £83m in smartgrid enabling technology that, as a minimum, pays for itself by 2031 – the more likely result will be a much larger saving, possibly as high as £400m-£500m</b>	Our dedicated smart grid unit is starting to build the activity levels of our investment programme following a period of establishing key specifications for the new smart grid technology. Our investment will continue to ramp up as we begin to place contracts for the various pieces of equipment required. We are upgrading the control units in our substations to make the network compatible with modern digital communications along with establishing the communication network from our control centres to those new units.	✔ <b>On Track</b>
<b>Use smart meter data to optimise network investment and reduce losses</b>	As set out above, there is no smart meter data available for us to use at this point due to the delays in implementation of the national IT infrastructure, however we have identified what we need to do to utilise the new smart meter data when we start to receive it which we expect to be by the end of 2017.	✔ <b>On Track</b>
<b>Trial the potential for combining smart grids and smart meter data to provide additional information services</b>	We continue to review the expected functionality and benefits offered by smart meter data and we are looking at a number of different ways it could be used. As part of our innovation portfolio, we are developing project trials to test our ideas and expect to have the projects scoped during 2018 and running during 2019 ready for the anticipated ramp-up in the smart meter roll-out.	✔ <b>On Track</b>



# An update on our commitments in full (continued)

Environment	Commentary	Status
Reduce our business carbon footprint by 10% by 2023	<p>Building on our 12% business carbon footprint (BCF) reduction in 2015-16, our own (i.e. Northern Powergrid) BCF continued to reduce in 2016-17 (by 5.9% to 23,286 tonnes) in line with plan, however our total BCF (i.e. including the BCF of activities performed by our contractors) increased in the year, exceeding our target, as a result of fuel used by our mobile generator providers to meet the 12-hour restoration guaranteed standard. We are continuing to explore solutions such as the use of battery powered units (where possible) to enable us to meet both our customer service and environmental targets and remain confident of achieving our business plan target by the end of the period.</p> <p>In support of our BCF targets we reduced fuel use in 2016-17 by nearly 100,000 litres driving 30,000 fewer general business miles and 70,000 fewer fleet vehicle miles. We also reduced air travel by almost 33% and train travel by 25% along with reducing our consumption of gas and electricity by 12% and 2% respectively in our buildings.</p>	✔ On Track
Maintain SF <sub>6</sub> losses as the volume of gas in our switchgear assets increases	<p>We narrowly missed our SF<sub>6</sub> gas leakage target for 2016-17, however we are now deploying state of the art thermal imaging technology to accurately pinpoint leaks and target equipment for repair or replacement, which will enable us to deliver greater improvements in this area. Our plan is set to take a more aggressive approach to containing SF<sub>6</sub> and we have set a stretch target for 2017-18 to reduce the amount of leakage from 112kg to 100kg (a 10% reduction) and maintain that level throughout the period, outperforming our original RIIO-ED1 target.</p> <p><b>STRETCH TARGET – 2017-18 TARGET REDUCTION OF 10% (EXCEEDING ED1 TARGET).</b></p>	⬅ Behind – Recoverable
Reduce oil/fluid leakage to ground by 15% by 2023	<p>We are already performing at a level significantly beyond that required to achieve our original 15% RIIO-ED1 commitment for oil/fluid leakage with performance levels in 2016-17 equivalent to a 53% reduction to date. This significant improvement has been driven by our cable replacement programme, deployment of new technology such as perfluorocarbon (PFT) leak detection and dedicated management focus on leaking fluid-filled cable circuits. We have set a stretch target for the end of ED1 to deliver a 60% reduction compared to the original baseline in our business plan.</p> <p><b>STRETCH TARGET – REDUCE OIL/FLUID LEAKAGE TO GROUND BY 60% (RELATIVE TO OUR ORIGINAL BASELINE IN OUR BUSINESS PLAN).</b></p>	✔ On Track
Replace 134km of fluid-filled cables and use perfluorocarbon tracers (PFTs) to quickly replace leaks	<p>The combination of fluid filled cable replacement and faster detection and repair of leaks means we are already significantly outperforming our oil/fluid loss targets for the period and further reducing our environmental impact. The length of fluid filled cables replaced in the RIIO-ED1 to date is marginally behind our original phased profile due to balancing customer requirements with outages to complete the required work however we have plans in place to replace the targeted cable circuit sections and expect to exceed our original target by 10% by the end of the period (replacing 147.5km compared to the original target of 134km).</p>	⬅ Behind – Recoverable
Underground around 100km of overhead line in Areas of Outstanding Beauty (AONBs)	<p>We are making good progress against our commitment in the area of visual amenity which was to underground 100km of overhead line in Areas of Outstanding Beauty (AONBs) across our regions. Since the start of the RIIO-ED1 period (April 2015) we have undergrounded 29.9km of cable, 5.5km (22%) more than the targets we set in our plan. As a result of our continuing engagement with our stakeholders, we have adjusted our plan to spend an additional £2.0m in this area (offsetting underspend from the previous regulatory period) to deliver an additional 20km during the RIIO-ED1 period.</p> <p><b>STRETCH TARGET – UNDERGROUND AN ADDITIONAL 20KM (120KM IN TOTAL).</b></p>	✔ On Track
Deliver faster and higher quality street works reinstatement when we dig up the street	<p>We achieved our annual target for 2016-17 in relation to local authority street works inspections (93% against our target of 90%) although we came in marginally below the 94% we achieved in 2015-16. Through continued focus on working with our employees and our service providers, we remain confident of maintaining our performance levels and achieving our eight-year RIIO-ED1 targets.</p>	✔ On Track
Make sure reduction of electrical losses is explicitly factored into investment decisions for a wider range of assets	<p>At the start of the period we changed our policies around how we design our network and purchase our equipment to explicitly factor losses into our decisions. Our design engineers review the merits of each investment project and the types of equipment that we install to take account of electrical losses in the solutions that they design. For example we install oversized conductors and transformers (where required) along with low-loss transformers to reduce losses. In 2016-17 this overall approach led to a saving of 798 MWh, taking us to 1,766MWh saved in the RIIO-ED1 period to date. We expect to deliver a saving of 10,500MWh by 2023.</p>	✔ On Track
Continue to operate a full revenue protection service	<p>In 2015 we informed our stakeholders that we intended to cease providing a revenue protection service for energy suppliers following the decision from our key service provider in our region to withdraw from this activity. This meant it was no longer practical for us to provide this optional service cost-effectively for suppliers and as we received no objections, we stopped providing the service in April 2016.</p>	✖ Withdrawn

# Contact us about our plans

We believe that our customers and stakeholders are the best judges of our performance. We always want to hear your views and opinions on the services we provide and your ideas for what more we could be doing. If you would like to provide us with feedback, you can contact us in a number of ways:

By email

[yourpowergrid@nothernpowergrid](mailto:yourpowergrid@nothernpowergrid)

On twitter

@nothernpowergrid

(for power cut information and advice)

@powergridnews

(for information about the company and the work we do in communities)

Via our online community

[nothernpowergrid.explainonline.co.uk](http://nothernpowergrid.explainonline.co.uk)

Online at:

[www.nothernpowergrid.com](http://www.nothernpowergrid.com)

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