Business Plan Commitments

Delivering on our promises to the communities we serve

To 31 March 2017

electricity north west

Bringing energy to your door

Welcome

Our performance against our commitments to you

In the first two years of our current price control, which runs from 2015-2023, we have continued to focus on meeting our commitments to our customers and performance remains positive. Customers are benefiting from the highest ever levels of reliability and increasing resilience to the network thanks to our use of automation, interconnection and robust inspection, maintenance and tree cutting programmes. Our ongoing focus on costs and innovation is generating significant savings which we are sharing with customers by lowering prices.

"We aim to deliver sustained long-term improvement in performance through better and smarter ways of working that both improve the reliability and resilience of the network and reduce costs to our customers."

Our performance

We continue to be an industry leader in network reliability and have focused on the primary customer measure of customer interruptions (CIs), through continued investment in the network and the deployment of further automation. The absolute level of customer minutes lost (CMLs) is impacted by the mix of overhead and underground network and a particular challenge for us to locate and resolve faults in the concentrated areas of underground network in the region. Network reliability is an area in which we have decided to make additional significant investment, incremental to our original business plan, to improve further the reliability and resilience of the network.

While finding efficiencies to lower costs to customers is important, efficiencies are reinvested selectively to meet the needs of our customers. Following the floods in December 2015 caused by storms Desmond and Eva affecting most of our region, we have increased the level of investment in flood defences beyond our original business plan. This investment has included the installation of a number of measures at key sites to provide an interim increase in resilience, pending the completion of permanent works, which are currently in build. We've also committed to make additional investment in link box safety, an example of the use of an innovative low cost solution, developed through shareholder investment, which means that we can intervene to reduce further the safety risk associated with our assets.

Customer satisfaction levels have improved and the incentive mechanism is now in positive territory and close to the performance of comparable companies. Analysis of areas of poor performance and the implementation of corrective actions has led to an improving trend, with performance in the final quarter being closer to targeted levels. We will continue to understand the drivers of performance and implement the required corrective actions to drive sustained long-term improvements.

Future outlook

The number of connected electrical appliances our customers are using is increasing, along with their expectation of our service and the channels they use to communicate with us. The growth of embedded generation and storage continues as we see the cost of the underlying technology fall. An increasing number of customers are seeking more control and a holistic energy solution, rather than a simple grid connection. All of this is contributing to the continuing trend of a decentralised energy system. At the same time, the decarbonisation of transport is gathering pace with take-up of electric vehicles significantly increasing the future demand for electricity.

Keeping our commitments relevant

Our business plan commitments were agreed in 2014. Since then our industry has evolved at pace; from new technologies and the influence of the low carbon economy to changes in regulation and legislative change.

It is important to ensure our commitments remain relevant. At our June stakeholder engagement forum, during the strategic advisory panel, we took the opportunity to share our progress, talk through where we are performing well, explain areas of challenge where we have plans in place to improve, and to discuss some of the commitments in more detail.

On the back of this discussion we have agreed an additional commitment to improve public safety, specifically to manage the risk of link box failures. We also agreed to update the measurements, targets and completion dates for seven of the original commitments to ensure they remain relevant. Further detail in relation to these changes is included throughout the report.

Peter Emery
Chief Executive Officer

Performance snapshot

Our network

Number of customers **2.4m**

Overhead lines
12,600km

Underground cables
44,300km

Submarine cables
25km

Total network length **56,925km**

TOTEX

£195m
Total expenditure*

£225m
RIIO-ED1 allowance*

87%
of allowance
(before adjustment for delayed expenditure)

£85 Our part of a typical household bill*

*The price base for all values is 2012/13

How we're performing

Reliability

CI **35.9**
Customer interruptions
(Including exceptional events)

CML **35.0**
Customer minutes lost
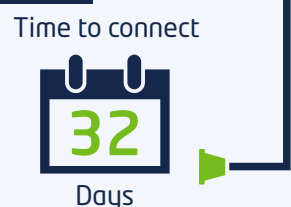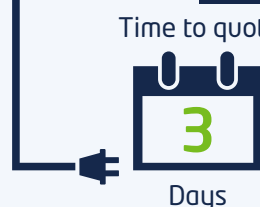(Including exceptional events)

CI **31.8**
Customer interruptions
(Excluding exceptional events)

CML **33.0**
Customer minutes lost
(Excluding exceptional events)

Subject to agreement with Ofgem for the exceptional events

Connections

Time to quote
3 Days

Time to connect
32 Days

Our customer commitments

Customer satisfaction

83%

Social obligations

Stakeholder engagement

Scored **6.4** Pass

Incentive on connections engagement (ICE)

Penalties incurred under the ICE scheme

NONE

Operating responsibilities

Safety

Licensee safety performance and compliance with Health and Safety Executive (HSE) legislation

Network safety

ESQCR compliance

Lost time incidents

7

Carbon emissions

21,012 tCO₂e

Undergrounding for visual amenity

11.2km

www.enwl.co.uk/innovation

Overview of progress

Some of our commitments are linked to specific investments we plan to deliver; others are commitments to meet certain standards or levels of service. In some cases we have an annual target; in others we are working towards the target over time. This can make categorising progress subjective; we have used four measures which are explained below. More detailed explanations of performance for each commitment are included throughout the rest of this document.

✔ Met target   ✖ Missed target   ● On track   ● Behind schedule

Safety

#1. Site security	●	P7
#2. Safe climbing	●	P7
#3. Asbestos management	●	P8

Social

#4. Enhanced Priority Service Register service	✖	P9
#5. Improve services for vulnerable and Priority Service Register customers – services	●	P9
#6. Improve services for vulnerable and Priority Service Register customers – staff training	●	P10
#7. Improve services for vulnerable and Priority Service Register customers – support	●	P10
#8. Responsible organisation	●	P11
#9. Resilient supplies to vulnerable locations	✖	P11
#10. Mitigate fuel poverty	●	P12

Reliability

#11. Improve overall reliability	✔	★	P13
#12. Improve overall availability	✔	★	P13
#13. Complete flood protection programme to all major sites	●		P15
#14. Network health – overall risk index	✔	★	P17
#15. Network health – fault rate	✔	★	P17
#16. Strategic site security	●		P18
#17. Ensure all major substations have appropriate backup battery capacity	●		P18
#18. Re-configure the network, where appropriate, to ensure redundancy in event of major incident	●		P19
#19. Improve performance for worst-served customers (WSC)	●		P19
#20. Ensure that the loading risk of the network is appropriately managed – overloaded substations	✔		P20
#21. Ensure that the loading risk of the network is appropriately managed – larger transformers	●		P20
#22. Ensure that network constraints to the connection of distributed generation are removed	●		P21

Customer

#23. Customer survey – composite score	✖	P23
#24. Complaints – 1 day	✖	P23
#25. Complaints – 5 days	✖	P23
#26. Stakeholder engagement	✔	P25
#27. Guaranteed Standards	✔	P25
#28. Storms	✔	P26

Connections

#29. Connection quotation – single domestic connections	✔	★	P27
#30. Connection quotation – up to four domestic connections	✔	★	P27
#31. Connection quotation – all other connections	✔	★	P27
#32. Connection completion – single domestic connections	✖		P28
#33. Connection completion – up to four domestic connections	✔	★	P28
#34. Connection completion – all other connections below Extra High Voltage	✔		P28
#35. Engagement – Incentive on connections engagement	✔		P29
#36. Guaranteed Standards of performance	✖		P29

Environment

#37. Reduce carbon footprint	✔	★	P31
#38. Reduce losses	●		P33
#39. Reduce oil lost from cables	✔		P33
#40. Undergrounding overhead lines	●		P34

New

#41. Management of the risk of link box failures	New for 2017/18	P5

Note, the numbering system above has been updated from the 2016 report

★ Performance significantly better than target

New

Safety focus – link boxes

Disruptive failures of underground link boxes, which are where we connect underground cables, are rare, but there has been an increase in failures reported across the UK over the last five years. When such failures do occur, they can result in high energy faults and possible ejection of the link box lid from the chamber. Their location in public areas poses a public safety risk if not appropriately managed. We've developed an innovative solution which cost effectively mitigates this risk.

Low voltage (LV) underground cable networks are often connected together at strategic locations through means of underground link boxes. The link box provides network operators with the ability to operate switches which can reconfigure the LV network to ensure supplies are maintained to customers during faults or repairs. Link boxes further facilitate the connection of temporary generation.

We have developed a range of interventions to mitigate the risk associated with link box failures. These include the development of a new type of fire blanket that provides a better level of blast mitigation than the type currently deployed and which is also easier to install, remove when access is required, has increased durability and which can be installed at a lower cost.

This innovative development will enable us to put additional measures in place to mitigate the safety risk of link box failures and to do this without an increase in customer bills.

Our original plan included the replacement of 1,752 link boxes in the worst condition (9% of the total population), and the inspection of 15,971 others.

We have combined our innovative blast mitigation solution with footfall modelling to develop a revised strategy for our current price control (RIIO-ED1) which will ensure that every link box receives an appropriate intervention within the RIIO-ED1 period, whether full replacement, fitting of blast mitigation measures, or inspection and maintenance as appropriate.

Keeping our commitments relevant

Following discussion at our stakeholder engagement forum in June, we have agreed to include an additional commitment for this important area of public safety.

Aim

Management of the risk of link box failures

Outcome

We'll put in place additional measures to mitigate the potential risk of link box failures

Measurement	Target	Completion date
Inspect & intervene, to make safe all our link boxes	Over 18,000 inspections & interventions where required	2023

Addressing specific challenges with LV underground link box failure

We have developed a solution which provides additional safety protection
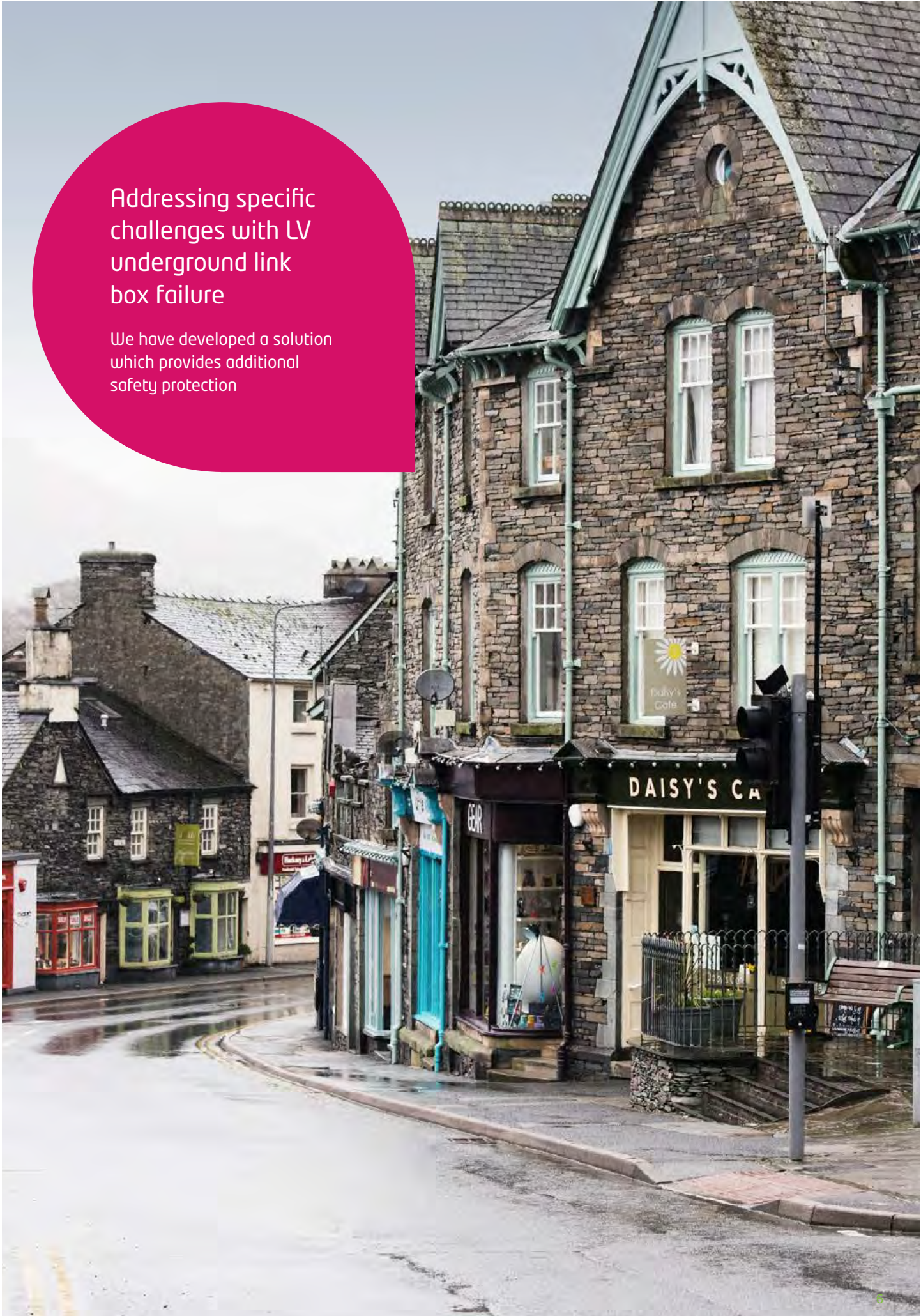
#1. Site security

We'll protect our major substations and overhead lines from metal theft and vandalism

Background

Metal theft and vandalism pose a risk to the reliability of our network and the safety of our employees. Due to the geographic dispersion of our network it's not practical to protect every site, so we identify high risk sites and install the additional security measures that are required.

Measurement	Target	Completion date
Number of sites with additional measures installed	800	2023

Performance ⬤

In 2016/17 we installed security enhancements across 628 of our sites. The majority of the enhancements were made up of the metal marking of our assets. Other work included installing security doors, higher gates and fencing, electric fencing and CCTV.

The total number of sites with additional security measures installed is now 712.

Throughout the duration of RIIO-ED1 we expect to deliver security enhancements at over 800 sites.

2016	2017	Cumulative	Overall target (2023)
84	628	712	800
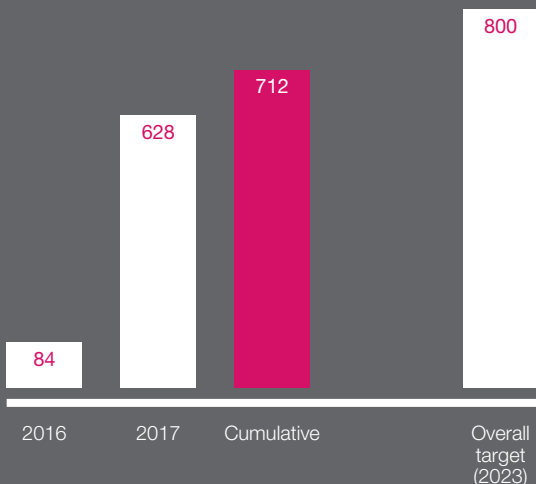
#2. Safe climbing

We'll improve operational safety for climbing and working at height on our steel towers

Background

Steel towers support our 132kV overhead lines and stand around 27m tall – the equivalent of six double decker buses stacked one on top of the other. Our employees work on these towers all year round in all weather conditions.

We are installing 'latchway' systems on all of our steel towers. These are permanently fixed to the structure and enable safer climbing through the provision of additional fall arrest protection.

Measurement	Target	Completion date
Number of towers with latchway installed	1,600	2023

Performance ⬤

In 2016/17 229 latchway systems were installed, bringing the total to date to 530.

The programme is 33% complete and ahead of the run rate required to meet the target.

2016	2017	Cumulative	Overall target (2023)
301	229	530	1,600
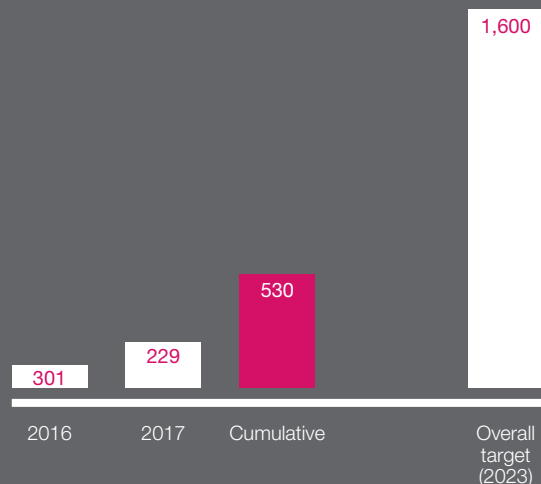
#3. Asbestos management

We'll make sure asbestos in our substations
is safely managed

Background

The majority or our network assets were installed in the
1950s and 1960s. At that time, the dangers of asbestos
were not understood and this material was used widely
in construction and insulation, including use in our
substations.

Measurement	Target	Completion date
Number of substations remediated	9,073	2023

Performance ⬤

In 2016/17 we completed 174 remediations, bringing the
total in RIIO-ED1 to 520. The scope of remediation work
required has been less than originally envisaged, i.e. less
or no remediation has been required.

The total number of inspections completed to date in
RIIO-ED1 (including the required remediations) is 5,323,
36% of the required 14,671 inspections needed to cover
our entire substation population.
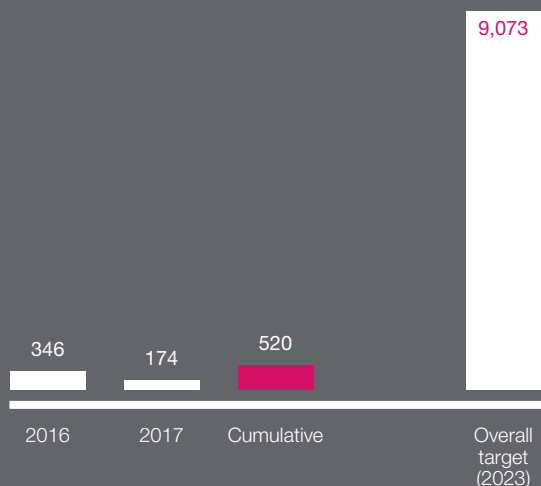
Keeping our commitments relevant

Following discussion at our stakeholder engagement
forum in June, it was agreed that reporting against the
number of remediations doesn't provide an accurate
representation of progress or of risk management.

It was agreed that progress is better monitored
against the number of inspections completed and
the completion of any required remedial work. From
2017/18 the reporting for this commitment will be
against the below.

Measurement	Target	Completion date
Inspect & remediate, to make safe all of our substations	14,671 inspections & sites made safe where required	2023

By the end of RIIO-ED1 we expect to service our entire
substation population and to complete any required
remedial work. This is likely to be complete earlier
than 2023.

Any cost savings from the reduced scope will be shared
with customers. The RIIO incentive mechanisms ensure
our customers share the benefits of our success as
these are realised.

Bar chart:
- 2016: 346
- 2017: 174
- Cumulative: 520
- Overall target (2023): 9,073

Customers in need of additional support

We maintain a Priority Service Register (PSR) to identify those customers who are most dependent on our services. This allows us to develop tailored support to assist customers, for example those who are medically dependant on electricity.

The services we can provide are only as good as the data we hold. Our data analysis allows us to determine how many PSR customers we have, what their circumstances are and where they reside. We combine this with feedback from stakeholders to ensure that what we do reflects genuine need.

This allows us to prioritise assistance to those who need it most, offering a more dedicated approach to the management of fault and planned interruption activities. This approach also allows us to run targeted campaigns using varying communication methods and to contact our hard to reach customers.

#4. We'll keep an up-to-date and accurate PSR ✖

- Over the course of 2016/17 we contacted 77,158 customers on our PSR, to update their details. These contacts included using email drops, issuing newsletters and updating details through our contact centre calls. Whilst this is short of our target, we are steadily increasing our contact rate.

- In-line with stakeholder feedback, our focus is on making contact with our priority service customers, those who will be most affected by a power cut, through phone calls, and to communicate with others through text messages and email. Overall we made 179,243 proactive calls to priority service customers during the year.

- At the end of 2016/17 we had 348,863 customers signed-up to our PSR.

We have improved the way we collect, store and integrate our priority service customer information. We can now record multiple and transient vulnerabilities and provide staff with a clear structure as to how to log all contacts. This enables us to see a precise road map of the customer journey; who was contacted by whom, about what, and when.

We don't limit registration to those types of vulnerability identified through the regulatory requirements and we encourage anyone who needs this extra level of protection to register. We train our colleagues to inform customers about the register at every interaction: our new connection customers now get a welcome leaflet that requests them to register any PSR customers at the address. We partner with third party organisations such as the Citizens Advice Bureau, attend local events and run internal campaigns to promote awareness of the PSR.

#5. We'll improve our services to provide better support to PSR customers ●

In 2016/17 we created a customer welfare team of six advisors to provide dedicated support to customers in vulnerable situations.

We have also worked together with both the Royal Association for Deaf people (RAD) and the Royal National Institute of Blind people (RNIB) to help make our literature more accessible to all of our communities. This work included the production of sign language videos to assist our customers with hearing difficulties (our data analysis demonstrated that we served 42,509 customers with hearing or speech difficulties and 29,798 visually impaired customers).

Other improvements have involved changes to communication channels and business operations:

- A telephone greeting system to let PSR customers know they have been recognised as such and that their call is being transferred to a member of the appropriate team as a high priority.

- We started proactively communicating information for bad weather and advanced notice of imminent storms to our priority service customers

- We provide 10 days' notice for planned supply interruptions and now contact PSR customers to inform them of planned works.

348,863
customers signed-up to our PSR

179,243
proactive calls made to priority service customers

#6. We'll improve our colleagues capabilities to provide better support to PSR customers ⬤

Our colleagues come into contact with our customers in a number of different ways; they are uniquely placed to help deliver support.

All new colleagues now get vulnerability training as a standard element of their training. This enables them both to identify signs of vulnerability and to advise customers how we can offer additional help and support.

We have also embedded a process of training all contact centre colleagues, plus human resources and recruitment teams, to ensure that they are briefed to take overflow calls if necessary.

With one in four people affected by mental health issues, we worked with Mind and Alzheimer's UK to educate our call centre team.

Our colleagues have ongoing training with the Samaritans to help them pick up tones in a customer's voice that would lead them to enquire whether they want to receive any additional support.

#7. We'll improve our support services during interruptions for PSR customers ⬤

Some of our customers are more dependent on electricity than others and are therefore more severely affected by planned or unplanned interruptions.

We sent more than 250 welfare packs to customers during severe weather and we now have dedicated customer champion colleagues at each of our 14 depots to ensure the efficiency of delivery of these packs.

Our welfare packs and temporary power supplies aid customers during a power cut and allow them to function as well as possible until the power returns. Items included in our welfare packs are flasks, thermal mugs, blankets, gloves, hats, glow torches and analogue phones.

We also provide our Priority Service customers with welfare support through our partners. This help includes British Red Cross visits and oxygen equipment from Air Liquide.

We have introduced a generator policy for those planned supply interruptions which affect those PSR customers who are medically dependant on electricity (10% of our PSR).

Aim	Outcome	Measurement	Target	Completion date
Enhanced Priority Service Register service	We'll keep an up-to-date and accurate PSR	Up-to-date and accurate information	To contact every PSR customer every two years	Ongoing
Improve services for vulnerable and Priority Service Register Customers	We'll improve our services to provide better support to PSR customers	Better targeted services using data that will become available over the course of RIIO-ED1	Enhancements identified by stakeholder engagement	Ongoing
	We'll improve our colleagues capabilities to provide better support to PSR customers	Enhanced training for all customer-facing front-line people	Improved identification of and advice to vulnerable customers	Ongoing
	We'll improve our support services during interruptions for PSR customers	Welfare package support and temporary power supplies	Deliver services during planned or unplanned power interruptions	2015-2023

SOCIAL

#8. Responsible Organisation

We'll develop an effective Corporate Social Responsibility (CSR) strategy

Background

We are working with Business in the Community (BITC) and using its approach to develop an effective CSR strategy, tailored for the needs of customers and communities in the North West.

As a national charity dedicated to transforming business and communities, BITC can objectively assess our approach based on best practice. BITC provides robust feedback and guidance on our CSR initiatives which allows us to maximise the positive impact the initiatives have.

Measurement	Target	Completion date
Business In The Community Index	Gold – 90%	2018

Performance ⬤

We have entered the Corporate Responsibility Index for the past five years and have managed to increase our score from 54% to 85% over that period. This demonstrates the great inroads made by the business, so far, in our aim to impact positively the communities in which we work.

The 6% improvement in 2017 is attributed to our strong community and environmental performance, and developments in our supply chain management.

2016	2017	Overall target (2018)
79%	85%	90%
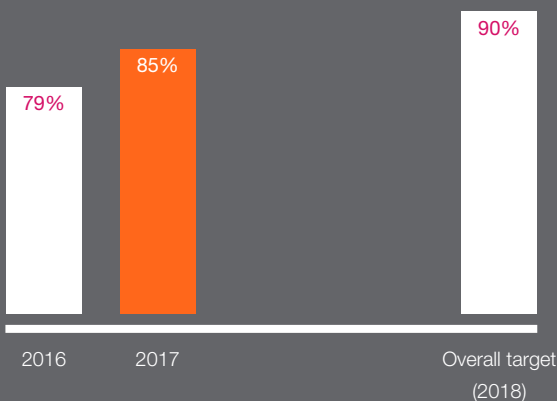
#9. Resilient supplies to vulnerable locations

We'll improve network reliability in areas where there are high concentrations of vulnerable customers

Background

There are 56 hospitals connected to our high voltage (HV) network and we have identified 87 distribution substations, each providing power to 50 or more vulnerable customers.

We plan to fit remote control and automation equipment to all of them to reduce the risk of prolonged supply outages.

Measurement	Target	Completion date
Upgrade network reliability for 56 hospitals and 87 distribution substations	Complete network automation investment	2017

Performance ✖

In 2016/17, seven hospitals and 69 distribution substations have been brought up to the required level of resilience, bringing the total in RIIO-ED1 to 52 hospitals and 69 distribution substations. We have worked with our stakeholders to minimise the disruption this work has caused.

Between April 17 and September 17 work has been completed at two hospitals and ten distribution substations. This leaves two hospitals and eight distribution substations where work is still required. We're looking to progress this as quickly as possible, subject to agreement with customers where planned interruptions are required.

Legend: ☐ Hospitals   ☐ Distribution substations

2016	2017	Cumulative	Overall target (2017)
45	7 / 69	52 / 69	56 / 87
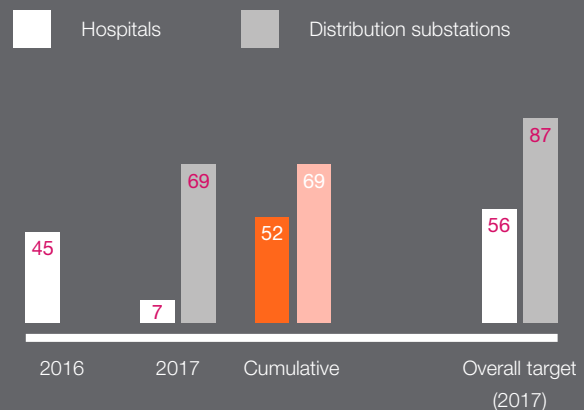
#10. Mitigate fuel poverty

We'll reduce our prices

Background

Fuel poverty is affecting an increasing percentage of the population. We aim to keep RIIO-ED1 prices lower than that of the previous price control (DPCR5) to help work against this growing issue.
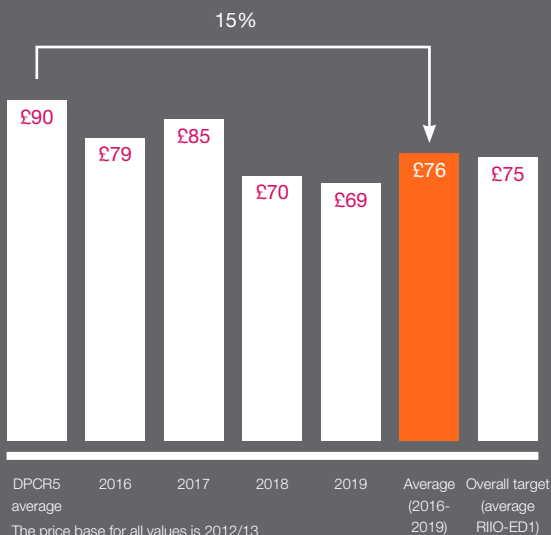
The RIIO incentive mechanisms ensure our customers share the benefits of our performance. The efficiencies that we generate will result in lower prices in RIIO-ED1 and beyond.

Measurement	Target	Completion date
Reduce average RIIO-ED1 prices compared to DPCR5	16%	2015-2023

Performance ⬤

For a standard domestic customer, our average RIIO-ED1 prices to date are 15% lower than the DPCR5 average. The average is based on prices which have been set, including 2015/16 through to 2018/19 (prices are set two years in advance).

Our prices for 2018/19 are 23% lower than the DPCR5 average. We expect to deliver this commitment through the prices we will set for the remainder of RIIO-ED1 (2019/20 to 2022/23).

15%

£90	DPCR5 average
£79	2016
£85	2017
£70	2018
£69	2019
£76	Average (2016-2019)
£75	Overall target (average RIIO-ED1)

The price base for all values is 2012/13

We'll reduce our prices by 16% compared to the previous price control

We'll improve network reliability in areas where there are high concentrations of vulnerable customers

Improving network reliability and availability

2016/17 was our best year ever for reliability and our second best year ever for availability, marginally behind 2015/16. The number of interruptions our customers experience is 31% lower than 2012 and the time our customers are without power in the event of an interruption is also 31% lower. Our target in each area of a 20% improvement from 2012 by 2019 has already been met.

To drive improvement in this area we have made substantial investment in the installation of remote control equipment and network automation: our Automatic Restoration System (ARS). This enables us to complete switching operations, and power restoration, without a site visit being required. It can also automatically reconfigure the network to switch to alternative supplies without the intervention of a control engineer. All these activities help us to minimise the numbers of customers affected by a fault and, for those who are affected, it helps us to restore their power faster. The recent focus has been to improve the day-to-day operation of ARS and our operational response.

This is an area where we have decided to make significant investments, additional to our original business plan, to improve further network performance for our customers

#11. Customer interruptions ✔

#12. Customer minutes lost ✔
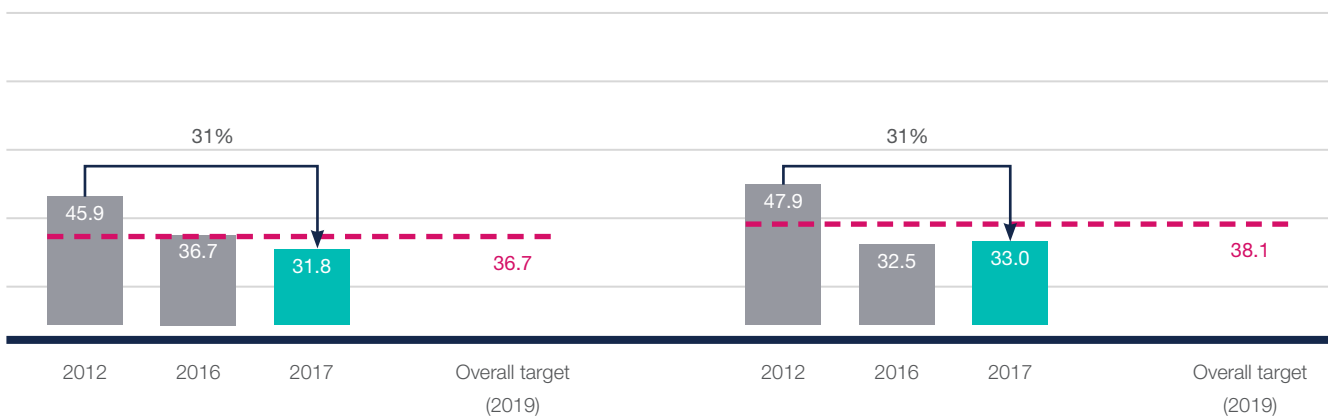
Customer interruptions represent the number of interruptions our customers experience, measured through interruptions per 100 customers. It is calculated by taking the number of customers affected, divided by the total number of customers connected to the network, multiplied by 100. It is adjusted to exclude exceptional events.

Customer minutes lost represent the average time customers are without power per year, in the event of an interruption, measured through customer minutes lost per connected customers. It is calculated by taking the sum of the customer minutes lost for all restoration stages of all incidents, excluding exceptional events, and dividing by the number of connected customers as at 30 September each year.

The recent focus has been to improve the day-to-day operation of ARS and our operational response

#13. Tackling flood risk •

In December 2015 our region was hit by extreme weather with Storms Desmond and Eva generating the wettest December for the North West since records began in 1910. Flood water breached defences which were installed to withstand one in 100 year floods.

To protect our customers and our network, we are now planning to spend monies on flood defences in excess of the original business plan. In some cases this will improve the level of resilience to one in 1000 year flood forecast levels. Extensive additional works are being completed at Lancaster, Carlisle and Rochdale. Substantial work has already been carried out, which includes:

- Protecting vulnerable elements – elevation of buildings and equipment above the predicted flood level

- Enhanced interconnection to allow switching of supplies

- Improving our ability to respond – additional flood pumps, CCTV flood monitoring system

The significantly increased cost of this is partly being offset by the innovative use of lower cost options at a number of sites. These were identified from a strategic review of our flood interventions and proposed solutions on a site by site basis. This review assessed whether potential electrical solutions, i.e. interconnection to allow restoration of supplies in the event of flood, would be more effective than additional physical defences.

Investment in flooding is now forecast to be £12.0m, higher than our original business plan of £10.7m (price base is 2012/13)

Rebuilding Lancaster grid transformer with improved flood defences

In 2016/17 some of our resources were allocated to a high priority programme of winter preparedness. This involved the installation of a number of measures at key sites to provide an interim increase in resilience, pending the completion of permanent works.

Following the strategic review, the work at four of the sites has now been completed with eight others at various levels of completion; the scope of work varies from additional physical defences to enhanced interconnection of the at risk site. We are targeting the completion of 24 sites by the end of 2017/18.
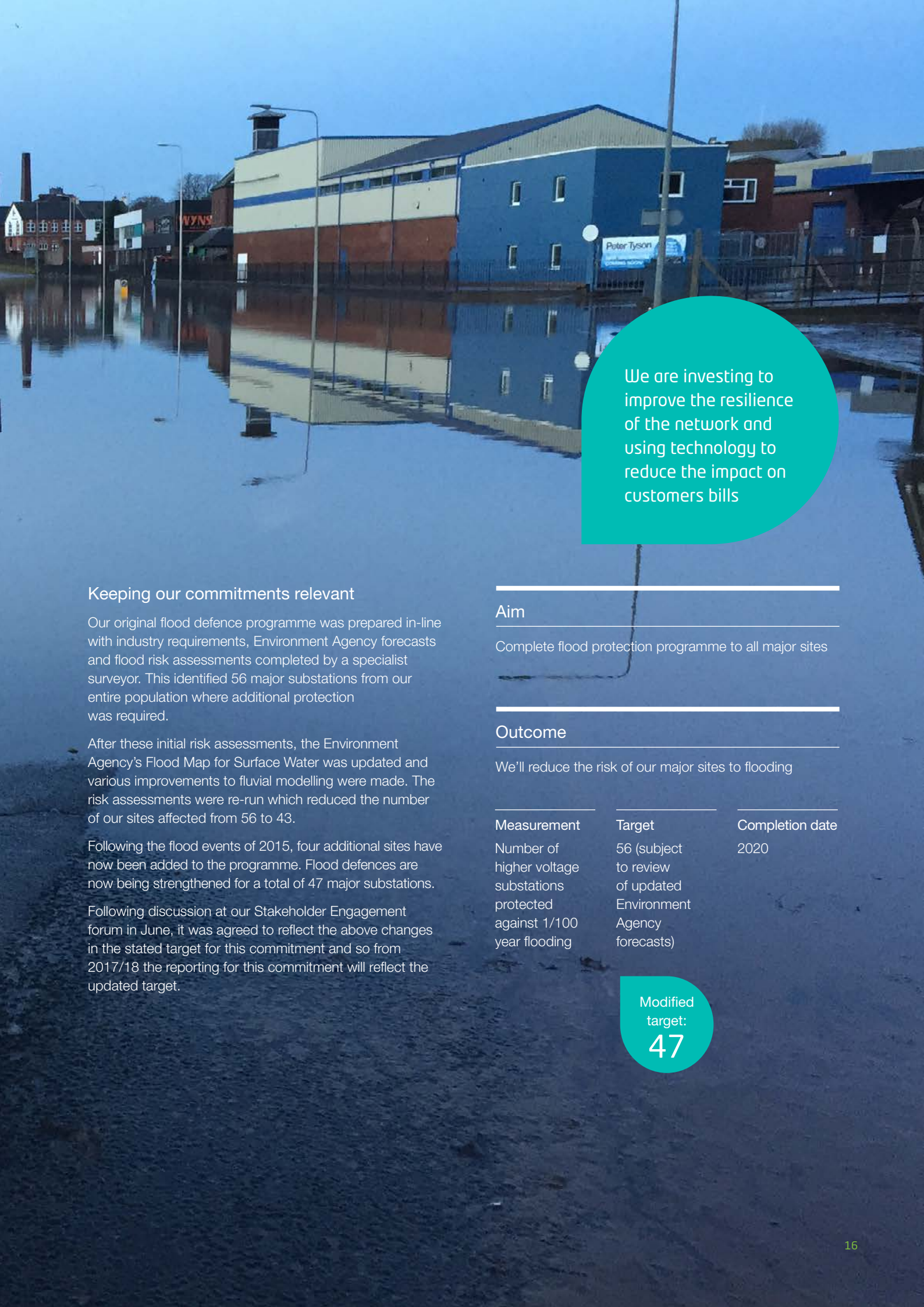
We are investing to improve the resilience of the network and using technology to reduce the impact on customers bills

Keeping our commitments relevant

Our original flood defence programme was prepared in-line with industry requirements, Environment Agency forecasts and flood risk assessments completed by a specialist surveyor. This identified 56 major substations from our entire population where additional protection was required.

After these initial risk assessments, the Environment Agency's Flood Map for Surface Water was updated and various improvements to fluvial modelling were made. The risk assessments were re-run which reduced the number of our sites affected from 56 to 43.

Following the flood events of 2015, four additional sites have now been added to the programme. Flood defences are now being strengthened for a total of 47 major substations.

Following discussion at our Stakeholder Engagement forum in June, it was agreed to reflect the above changes in the stated target for this commitment and so from 2017/18 the reporting for this commitment will reflect the updated target.

Aim

Complete flood protection programme to all major sites

Outcome

We'll reduce the risk of our major sites to flooding

Measurement	Target	Completion date
Number of higher voltage substations protected against 1/100 year flooding	56 (subject to review of updated Environment Agency forecasts)	2020

Modified target:

47

#14. Network health – overall risk index

We'll ensure that the overall asset risk of the network does not deteriorate significantly

Background

It is our responsibility to our customers to ensure that we both replace and renew our existing assets, to ensure the overall asset risk of the network does not deteriorate significantly.

On an asset by asset basis our approach is to inspect the condition of the asset to estimate the probability of it failing and to assess the consequence should that asset fail. We are then able to prioritise our investment based on the assets that are more likely to fail and those that will have the greater impact on customers.

Measurement	Target	Completion date
Overall risk index	Maintain within 3% of 2015 position	2023

Performance ✔

When we originally established the target for this commitment as part of our business plan submission, we used our legacy approach to measuring asset risk.

Since 2013, we have worked with Ofgem to develop a standardised method for risk calculation across the industry. This led to the introduction of a Common Network Asset Indices Methodology (CNAIM) in 2016. We subsequently re-stated our proposed targets to Ofgem using the new methodology.

In May 2017, Ofgem confirmed our new target as a reduction in risk (compared to not investing in the network) of 11.5 million "risk points" based on the same investment programme that underpinned our original target.

We have made excellent progress towards the re-stated target and are currently ahead of where we need to be after the first two years. So far we have delivered 32% of the 11.5 million risk points over the first two years (25%) of the price control period.

We propose to adjust this output measure to match the way that Ofgem will report on our performance going forward and we will again engage next year with our stakeholders in this regard.

#15. Network health – fault rate

We'll ensure the overall fault rate of the network doesn't deteriorate significantly from the 2011 – 2013 average
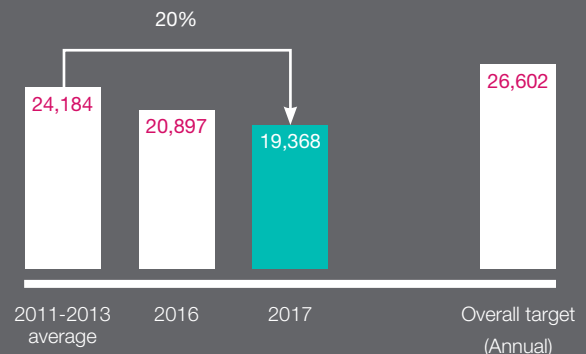
Background

For some of our equipment, particularly buried assets such as cables, it is difficult to measure their condition accurately. For these assets, we are using the rate of faults to measure our network health. We calculate this fault rate as the number of faults we experience each year divided by the amount of equipment we have.

The fault rate method we use allocates weightings to each different type of fault to allow us to create an overall picture of how we have performed.

Measurement	Target	Completion date
Fault rate	Maintain within 10% of 2013 average	On-going

Performance ✔

In 2016/17, the annual fault rate (excluding exceptional events) was 20% lower than the 2011 – 2013 average. It was 7% better than 2015/16 with notable improvements in both high voltage and low voltage underground cables.

20%

2011-2013 average	2016	2017	Overall target (Annual)
24,184	20,897	19,368	26,602

#16. Strategic site security

We'll comply with security guidelines for Critical National Infrastructure (CNI)

Background

Critical National Infrastructure is that element of national infrastructure, where loss or compromise would result in a major detrimental impact on essential services, with severe consequences.

The Centre for the Protection of National Infrastructure (CPNI) provide guidance to us in relation to which parts of our infrastructure fall into this category.

Measurement	Target	Completion date
Number of sites with protection to approved CPNI standard	2	2018

Performance ◉

At final determination for this RIIO-ED1 price control period, it was confirmed that the original two sites did not meet the CNI criteria.

CPNI has since reviewed its standards which determine the CNI criteria and the level of protection required. We're currently working with our stakeholders to understand which parts of our infrastructure meet the CNI criteria and, where they do, the level of protection required.

Keeping our commitments relevant

Following discussion at our stakeholder engagement forum in June, it was agreed that the target and completion date needs to be updated once the scope of work is known.

Measurement	Target	Completion date
Number of sites with protection to approved CPNI standard	TBC	TBC

#17. Ensure all major substations have appropriate backup battery capacity

We'll ensure our network has 72 hour resilience to restart should the electricity system go down

Background

Black Start is the procedure to restart all or part of the electricity system in the event of a complete shutdown. National Grid controls this and, if required, would sequentially re-start generators and parts of the transmission and distribution networks until the whole system was live once again.

Our role in this is to ensure our network has sufficient battery backup so that communications systems will work in the event of a complete mains power failure.

Measurement	Target	Completion date
Number of substations with 72 hour backup capability	517	2023

Performance ◉

This programme is currently in the design phase and the selection of relevant technologies is progressing. The solution is likely to be a combination of two elements which will help to minimise cost. In addition to the installation of 72 hour batteries, we will fit additional equipment to existing batteries in order to increase their capacity.

We will use 2017/18 for the proof of concept stage and will then subsequently commence rollout of the programme

Keeping our commitments relevant

During the design phase, all of our major substations have been assessed. This revised the scope of the work to a reduced number of 287 sites. This is because some of the sites can retain a standard battery – they don't need to retain communications capability as they can effectively be 'jump-started' once the key sites are live again. This enables us to deliver the same capability to support Black Start with an accelerated completion date of December 2020. Any cost savings will be shared with customers.

Following discussion at our Stakeholder Engagement forum in June, it was agreed to reflect the above. From 2017/18 the reporting for this commitment will be against the below.

Measurement	Target	Completion date
As above	287	December 2020

#18. Re-configure the network, where appropriate, to ensure redundancy in event of major incident

We'll modify the network, where appropriate, to ensure it isn't overly dependent on a single physical structure
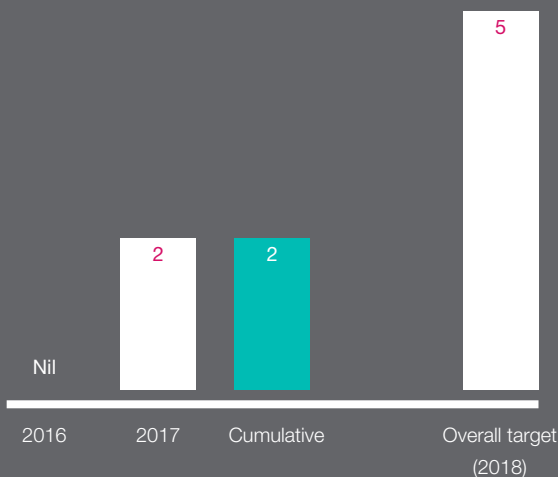
Background

There are a small number of locations where strategically important electricity cables are vulnerable to malicious damage because they are installed in or on a single cable bridge.

Measurement	Target	Completion date
Number of sites completed	5	2018

Performance ●

We have completed work at two sites in the year.

This type of work requires lengthy negotiation to gain rights of way agreements to lay the new cables required. We are working to secure the necessary third party agreements at an efficient cost. As this process is ongoing, until these consents are obtained, the completion date remains at risk.

2016	2017	Cumulative	Overall target (2018)
Nil	2	2	5

#19. Improve performance for worst-served customers (WSC)

We'll reduce, and eventually eliminate worst-served customers

Background

A WSC is defined by Ofgem as a customer who has experienced 12 or more High Voltage interruptions in the last three years, with a minimum of three interruptions per year.

Analysis of WSC has helped shape our investment programme. The solutions considered for improving performance are varied and include application of additional remote control and implementation of network automation among other solutions.

Measurement	Target	Completion date
Reduce the number of customers qualifying as worst-served	No WSC over 12 events	2023

Performance ●

The number of customers qualifying as worst-served at the end of 2016/17 is now only 46.

As there are only 46 WSC, there are projects in progress to target circuits that have served customers who have been categorised as WSC in previous years.
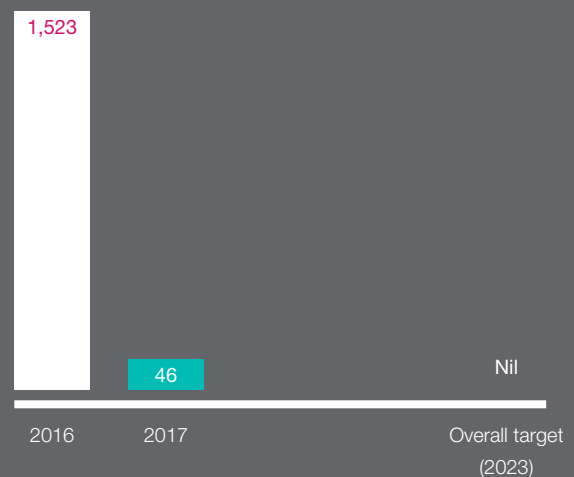
2016	2017	Overall target (2023)
1,523	46	Nil

#20. Ensure that the loading risk of the network is appropriately managed – overloaded substations

We'll manage the loading risk of our network

Background

If demand exceeds capacity for an extended period of time, there is an increased safety risk and a greater vulnerability to faults or an extended loss of supply for customers supplied by such equipment.

We measure asset loading using a load index on our higher voltage substations. This compares the maximum demand on a substation to its capacity. We balance utilisation with an appropriate amount of spare capacity to accommodate short-term increases in demand.

Measurement	Target	Completion date
Proportion of customers connected via overloaded substations	<5%	Ongoing

Performance ✔

In 2016/17, of our 353 primary substations, only three were running above their firm capacity, affecting approximately 13,912 customers out of our total customer base of 2.4 million.

The actual needs and requirements of the network depend on future load growth, which is uncertain and difficult to predict. Our investment programme is based on an annual review of forecasted maximum demand compared to the capacity for substations and demand groups.
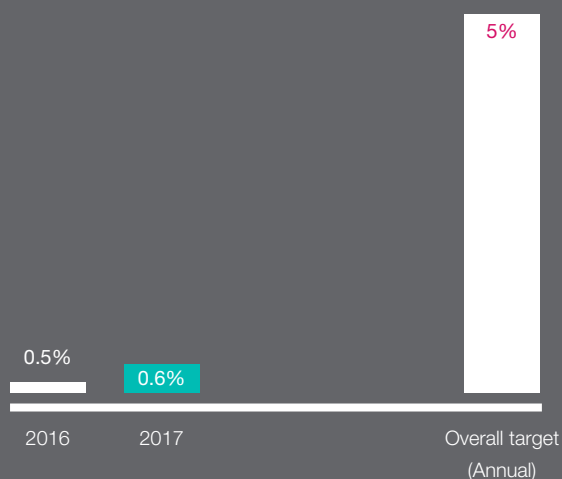
5%

0.5%

0.6%

| 2016 | 2017 | Overall target (Annual) |

#21. Ensure that the loading risk of the network is appropriately managed – larger transformers

We'll manage the loading risk of our network

Background

Where new connections are added to the network, we may need to reinforce the network in order that it can cope with the additional demand. Furthermore, we need to reinforce the network where the load from existing connections increases to the extent that assets become overloaded. New substations, larger transformers and additional interconnection are standard traditional reinforcement interventions to address current and forecast capacity shortfalls.

Measurement	Target	Completion date
Install larger capacity transformers and/or additional interconnection at our major substations	20	2023

Performance ◯

Where there has been a requirement for a larger transformer, we have avoided this costly work by entering into demand side response (DSR) contracts with major customers fed from the site. These contracts allow us to restrict their electricity supply during high demand in return for a payment, which is substantially lower than the avoided reinforcement cost.

Keeping our commitments relevant

Our current forecast for load growth doesn't justify intervention at present at most of our sites. Key drivers of this forecast include modest economic growth accompanied by energy efficiency, along with the uptake of electric vehicles and heat pumps being slower than originally forecast.

We will continue to review this position and any associated cost savings will be shared with customers. Following discussion at our stakeholder engagement forum in June, it was agreed that reporting from 2017/18 for this commitment will be against the below.

Measurement	Target	Completion date
As above	Where required, in line with policy	2023

#22. Ensure that network constraints to the connection of distributed generation are removed

We'll remove network constraints that prevent the connection of distributed generation

Background

The equipment that forms the electricity distribution network has to be able to cope with the large amounts of electrical energy that flow when faults occur. The amount of energy that would flow in a particular part of the network under worst case conditions is known as the fault level. We have designed our network to limit the fault energy to be as low as possible in order to maintain safety margins, but this can constrain our ability to connect new sources of electrical energy such as distributed generation, as well as the widespread adoption of low carbon technologies, in a particular area.

Measurement	Target	Completion date
Replace switchgear at locations where its current rating is likely to prevent the extensive connection of distributed generation	295	2023

Performance ◯

The traditional solution is to replace older switchgear with higher-rated equivalents and this was the basis of the 295 target. So far in RIIO-ED1, we have completed ten switchgear replacements. All of these were completed in 2016/17.

In 2016/17 we continued deliberately to defer further replacements whilst trials of a solution to achieve the same outcome at a lower cost to customers have continued. Our Low Carbon Networks Fund (LCNF) project, Respond, aims to deliver an intelligent approach to managing fault current – the instantaneous surge of energy which occurs under fault conditions. If proven successful, the deployment of this project could generate cost efficiencies within the fault level programme and remove this barrier to swift distributed generation connection.

We continue to look at other solutions to modify existing equipment to enhance fault levels in a more cost effective way.

We'll remove network constraints that prevent the connection of distributed generation

Customer service

Although customer satisfaction is short of the original target, we have made a significant improvement year-on-year using the monthly feedback cycle to understand the drivers of performance and to work with our partners to identify initiatives to improve performance. In 2017/18 we will continue to implement the required corrective actions to drive sustained long-term improvements.

Customer satisfaction

Our composite score incorporates levels of customer satisfaction for connections quotations and delivery, as well as for customers affected by interruptions and general enquires.

We have improved performance against the previous year in all three areas, the most significant improvements made being for connections customers.

Connections:

- Rationalised our contact points with customers in order to simplify the journey and improve consistency of approach

- Enhanced management information to provide local accountability (personalised customer satisfaction statistics for each of our planners) has helped to identify areas for development and support as well as increasing motivation to improve performance

- Training to support our planners with the more challenging customer conversations

Interruptions:

- Implementation of our golden rules of interruptions (which are the key factors to providing a great service)

- Re-design of our planned service interruption cards (which notify the customer of the details around a pending planned interruption)
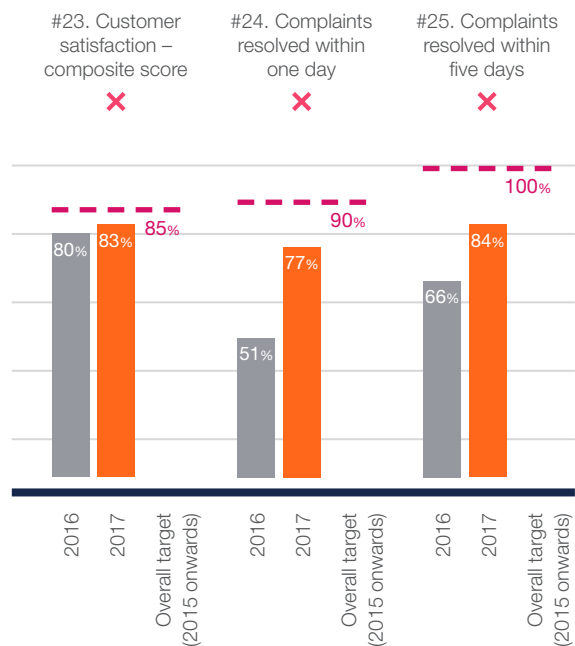
General enquiries:

- An improved process for 24 hour resolution of enquiries

Complaints

Complaints are received from our customers for a variety of reasons, ranging from faults to substation vegetation.

We have improved performance against the previous year for both one day and five day resolutions.

- This has been achieved by improving management information, using it to drive accountability for each complaint and to ensure each complaint passes efficiently between departments

- We have also increased the visibility of older complaints by trialling an automatic text messaging service to notify the colleagues assigned to it and to drive an escalation when it reaches certain millstones

- Workshops across the business are currently being held to understand how performance can be further improved

#23. Customer satisfaction – composite score ✗

#24. Complaints resolved within one day ✗

#25. Complaints resolved within five days ✗

- 2016: 80%, 2017: 83%, Overall target (2015 onwards): 85%
- 2016: 51%, 2017: 77%, Overall target (2015 onwards): 90%
- 2016: 66%, 2017: 84%, Overall target (2015 onwards): 100%

Keeping our commitments relevant

Complaint resolution timelines have been affected by changes in regulations, whereby complaints can now only be closed once all actions have been resolved. Previously, customers were given dates by when all actions would be resolved and, if they were agreeable, the complaint would be closed. Often, this was before all actions had been resolved. The targets were agreed before this change.

Complaints resolved in less than one day: we have improved our performance from 51% to 76% through improving our underlying processes, which we continue to do. However, it's unlikely that this approach will help us to improve enough to achieve the target of 90% against the new method of measurement. To do this it's likely significant investment would be required, which would not be efficient for customers.

At our stakeholder engagement forum in June we discussed this and agreed that the target should reflect an achievable improvement based on a cost effective approach but also reflect an ambition to outperform.

Complaints resolved in less than five days: as with the complaints resolved in less than one day, the new calculation also affects this measure. We also discussed this with our stakeholders along with the fact that the more difficult complaints aren't currently reflected in this measure. Therefore, we agreed that from 2017/18 the reporting for this commitment will reflect the modifications set out below:

Aim

Complaints – one day

Aim

Complaints – five days

Outcome

We'll resolve 90% of our complaints within one day ➡ We'll resolve 80% of our complaints within one day

Measurement	Target	Completion date
Resolved within one day	90%	2015 onwards
⬇	⬇	⬇
Resolved within one day	80% (further review if target achieved)	2018 onwards

Outcome

We'll resolve all of our complaints within five days ➡ On average we'll close all of our complaints within four days

Measurement	Target	Completion date
Resolved within five days	100%	2015 onwards
⬇	⬇	⬇
Average days to close	Average < four days (further review if target achieved)	2018 onwards

#26. Stakeholder engagement

We'll continuously improve our stakeholder engagement

Background

Stakeholder engagement is a cornerstone of our business and we will continue to make sure we respond to our stakeholders' changing needs.

In order to measure how we are progressing, we will use Ofgem's evaluation of our annual stakeholder engagement submission.

Measurement	Target	Completion date
Ofgem's evaluation of annual stakeholder engagement submission	Pass part one submission	2015 onwards

Performance ✔

We successfully passed part one of the submission in 2016/17 as we demonstrated strong governance around our stakeholder engagement processes.

Our target is to pass part one again next year. We plan to develop an action plan based on the feedback, initially focusing on developing a robust mechanism to measure the outcomes and benefits of our stakeholder engagement programme and developing referral networks for our priority service customers.

#27. Guaranteed Standards

We'll pay out the required Guaranteed Standard payments

Background

Guaranteed Standard payments compensate customers where our performance doesn't adhere to regulatory standards.

Measurement	Target	Completion date
Due compensation	100%	2015 onwards

Performance ✔

We have paid out all Guaranteed Standard payments due and will continue to proactively contact any customers who may be eligible for compensation. Payments to customers on the PSR will be made automatically, as our processes will ensure that we are aware if, and for how long, they have been interrupted.

In addition to these Guaranteed Standards payments we made 438 goodwill payments, totalling £14,448. These payments were not required as part of our Guaranteed Standards.

#28. Storms

We'll pay out Guaranteed Standard payments, even in storms

Background

This is incremental to regulatory standards and based on work we did with a stakeholder panel in 2013, reflecting our experiences in the winter storms of December 2013 and February 2014.

As agreed with our stakeholder panel, a degree of discretion is retained to ensure customers, who ultimately fund these payments, are protected from the impacts of significant payments in the event of an extreme event.

Measurement	Target	Completion date
Pay out guaranteed standards after 18 hours, even in storms	100%	2014-15 onwards

Performance ✔

There were no storm events in the year that required guaranteed standards compensation.

We'll continuously improve our stakeholder engagement

We'll resolve 80% of our complaints within one day

Connections

Connecting customers efficiently and economically is an important part of our business and a crucial service for our customers. It is a service that facilitates economic growth and allows us to support delivery of our stakeholder priorities.

New demand connections

such as supply to a newly built house, housing site or commercial premise
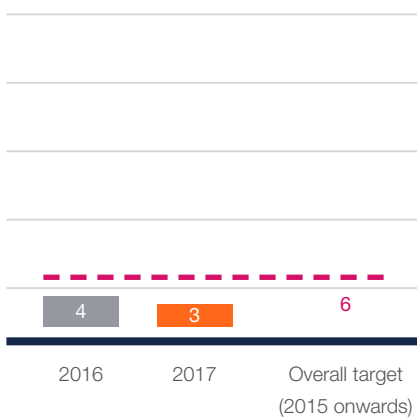
Distributed generation connections

such as wind farms

Unmetered connections

such as local authority street lights
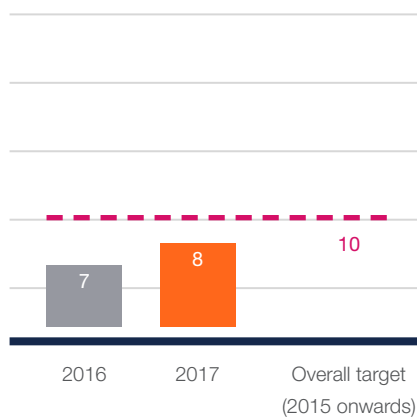
Connection quotations

We recognise the importance of serving our customers quickly and are pleased to have outperformed all our commitments in this area.

The charts below show how many working days, on average, it takes us to provide a quotation to our customers following their initial application.
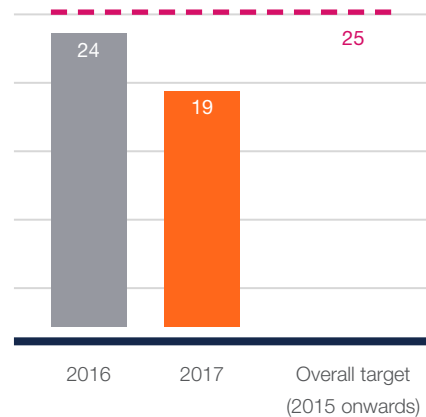
#29. Single domestic connection ✓

2016	2017	Overall target (2015 onwards)
4	3	6

#30. Up to four domestic connections ✓

2016	2017	Overall target (2015 onwards)
7	8	10

#31. All other connections ✓

2016	2017	Overall target (2015 onwards)
24	19	25

Number of quotes

2,000

Single domestic connections

Number of quotes

2,191

Up to four domestic connections

Number of quotes

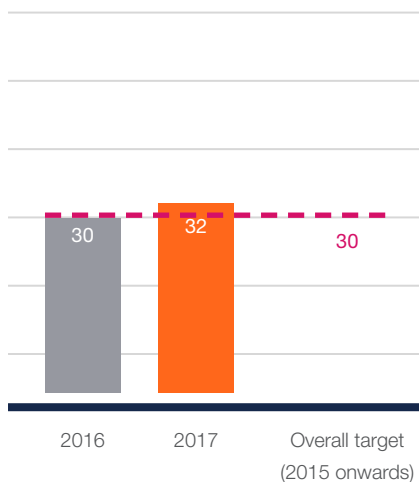**8,013**

All other connections

Completion of connections

We work hard to meet the needs of each customer particularly in terms of delivery timescales, and have outperformed two of our three commitments in this area.
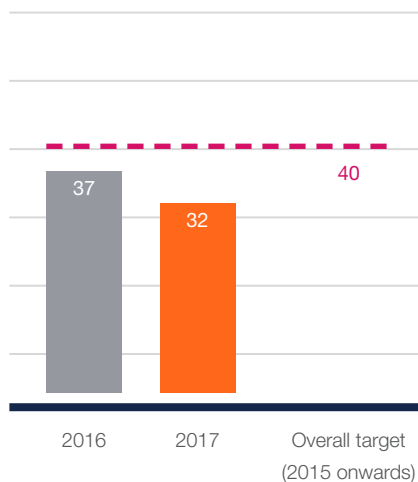
Improvements have been made to our processes so that we better understand customer delivery timescales and have improved customer confidence in our ability to meet them. In addition, we have identified a number of actions to reduce the time it takes to complete connections, including customer communication and work bank management.

The charts below show how many working days, on average, it takes us to provide a complete connection after agreeing terms with the customer.
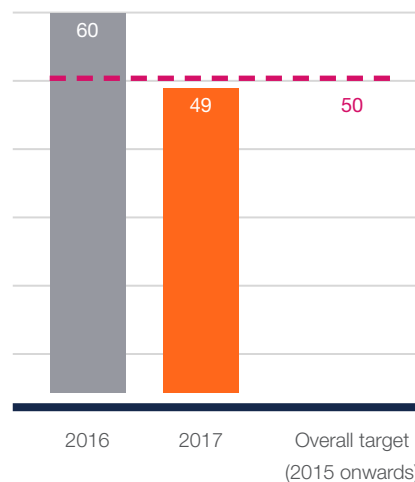
#32. Single domestic connection ✗

2016	2017	Overall target (2015 onwards)
30	32	30

#33. Up to four domestic connections ✓

2016	2017	Overall target (2015 onwards)
37	32	40

#34. All other connections below extra high voltage (EHV)* ✓

2016	2017	Overall target (2015 onwards)
60	49	50

*From when the customer is ready

Number of connections
634
Single domestic connections

Number of connections
625
Up to four domestic connections

Number of connections
640
All other connections below EHV

#35. Engagement – Incentive on connections engagement

We'll continuously improve our stakeholder engagement for connections customers.

Background

The Incentive on Connections Engagement is a penalty only incentive that requires us to engage with our stakeholders and make commitments to address their issues and deliver against those commitments. It is assessed annually by Ofgem.

Measurement	Target	Completion date
Incentive on Connections Engagement	No penalty	2015 onwards

Performance ✔

We have continued to engage with our connections customers and stakeholders and have developed and agreed actions that will improve the service we provide. Last year we developed a more robust stakeholder engagement strategy and governance which was independently verified by Accountability, industry leaders in their field.

We have worked hard to deliver this commitment and we are pleased to report a result of 'no penalty' for 2016/17.

#36. Guaranteed Standards of performance

We'll meet the regulatory standards of performance

Background

There are a number of guaranteed standards of performance that cover our providing quotes, contacting customers, commencing and completing work on site. If we fail to meet these standards we pay the customer affected.

Measurement	Target	Completion date
Guaranteed Standards of performance	100%	2015 onwards

Performance ✖

Guaranteed Standards of Performance has been an important focus during the year. We were disappointed in the number of standard failures last year and have made improvements this year. We are focused on making further improvements in this area, in the coming year.

98.4% (2016) | 99.1% (2017) | 100% (Overall target (Annual))
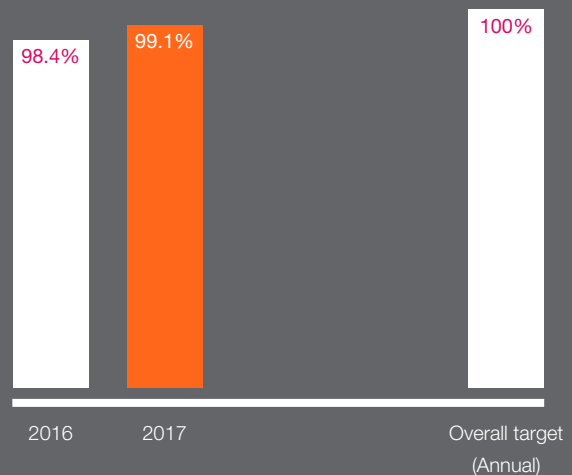
We'll continuously improve our stakeholder engagement for connection customers
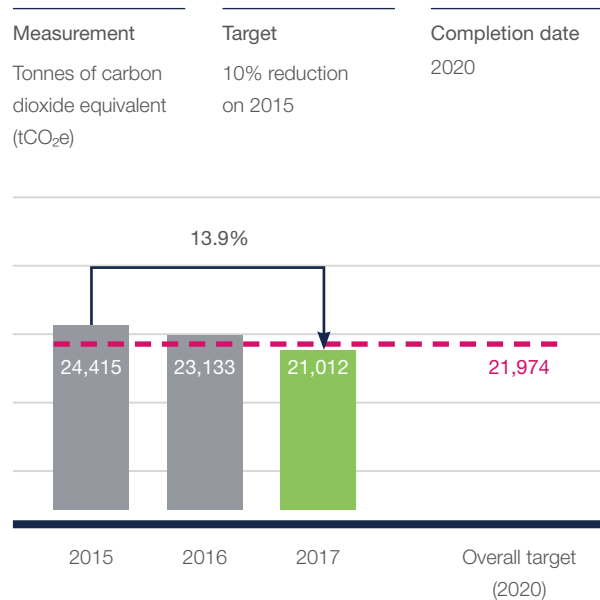
#37. Reducing our carbon footprint ✓

We're pleased to have achieved a 13.9% reduction in our carbon emissions compared to 2014/15, achieving our business plan commitment early. The main contributors to this outperformance are the reduced use of electricity to power our buildings and less fuel being used in our vehicles.
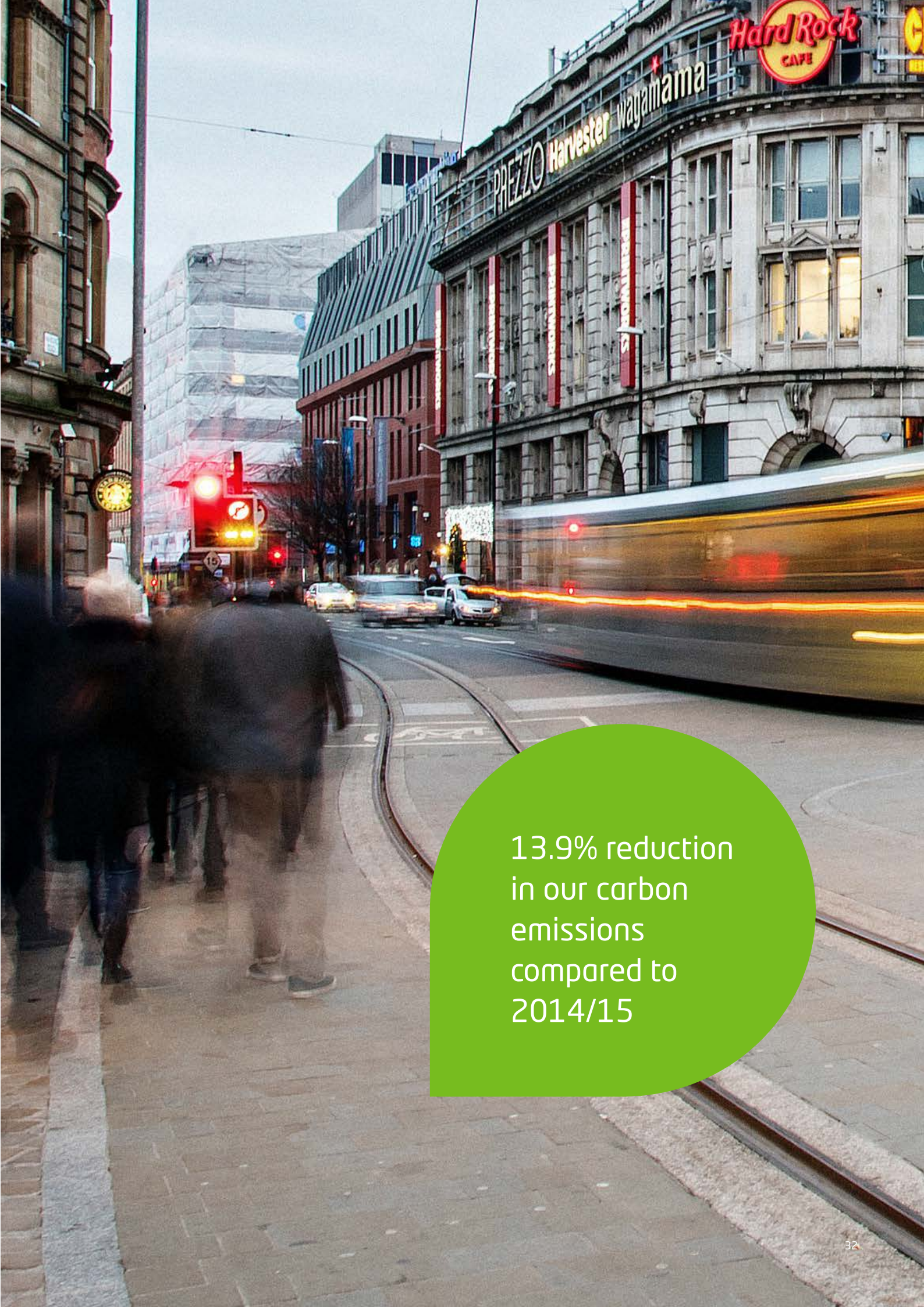
The carbon footprint is a measure of the impact of our business on the environment through our emissions of greenhouse gases.

We continue to realise the benefits from our investment in fuel efficiency including reduced vehicle weights, installation of engine rev limiters and educating our drivers on the most efficient manner in which to use our fleet.

Further investment in the refurbishment of our buildings took place in 2016/17 including the installation of more energy efficient equipment. This investment, alongside continued promotion of energy reduction behaviour with our colleagues, is driving down the electricity used to power our buildings.

The amount of emissions from unplanned events decreased significantly in 2016/17. The Desmond/Eva storms in December 2015 meant higher generator usage, and consequentially higher emissions from diesel consumption in 2015/16. Our carbon emissions are sensitive to these events and such fluctuations are to be expected going forward.

Measurement	Target	Completion date
Tonnes of carbon dioxide equivalent (tCO_2e)	10% reduction on 2015	2020

13.9%

2015	2016	2017	Overall target (2020)
24,415	23,133	21,012	21,974

13.9% reduction in our carbon emissions compared to 2014/15

#38. Reduce losses

We'll reduce electrical losses resulting from the operation of our network

Background

We lose some of the electricity we distribute as it flows through our network. Whilst we can't eliminate these electrical losses entirely, we can take steps to reduce them.

This is achieved by installing more efficient equipment on our network to replace older, less efficient equivalents.

This commitment is based on a programme that will replace some of our transformers with lower loss models.

Measurement	Target	Completion date
Annual Gigawatt hours (GWh) saved	11	2021

Performance ⬤

In 2016/17 93 transformers were replaced with lower loss models. This takes the total replaced to date in RIIO-ED1 to 152, which will create an annual saving of 3.0 GWh.

2016	2017	Cumulative	Overall target (2021)
1.2	1.8	3	11
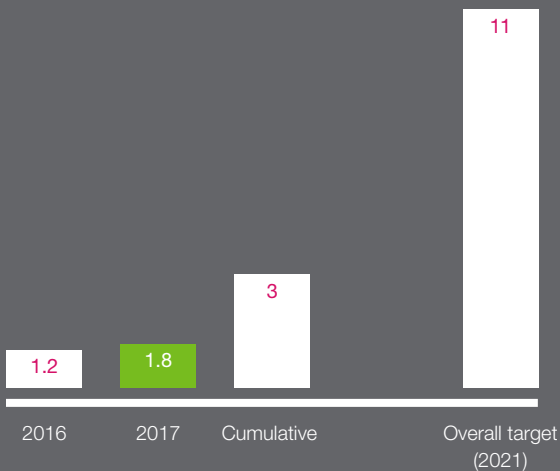
#39. Reduce oil lost from cables

We'll reduce the amount of fluid lost from cables

Background

Fluid filled cables have been used since the 1960s. The fluid acts as an electrical insulator and leaks from fluid filled cables can occur and whilst only a small percentage develop leaks. It can present an environmental risk particularly if it is adjacent to a water course. The use of modern replacement fluid mitigates this risk.

We currently have approximately 526km of legacy fluid filled cable on our network. We're addressing fluid leakage from fluid filled cables by replacing them with alternative modern oil free cabling. Where we do have leaks, we replace the fluid with biodegradable fluid.

Measurement	Target	Completion date
Litres lost	<30,000 litres/annum	2023

Performance ✔

In 2016/17 we replaced 10.6km of oil filled cable. Work included removing 5.1km of cable from Chadderton Grid to Langley and 2.2km from Rochdale to Spotland. Overall leakage of oil from underground cables in the year was 21,096 litres.

In 2017/18 we have encountered issues with a cable in Lancaster. We intend to resolve this issue as quickly as possible to minimise further impact. However the event will affect this year's performance. In the meantime, we continue to use biodegradable fluid to maintain the electrical insulation of this cable.

2016	2017	Overall target (2023)
31,220	21,096	<30,000
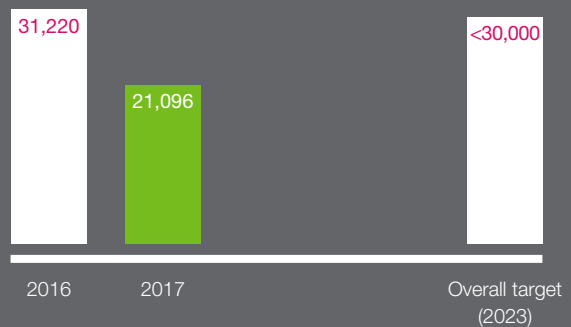
#40. Undergrounding overhead lines

We'll remove overhead lines in National Parks and Areas of Outstanding Natural Beauty

Background

There are three National Parks and four areas of Outstanding Natural Beauty in our region and the overhead lines that run through them can be visually intrusive.

We are working with the relevant authorities and other stakeholders who identify and prioritise potential undergrounding schemes.

Measurement	Target	Completion date
km removed	80km	2023

Performance ●

We continue to work with the National Parks and Areas of Outstanding Natural Beauty and now have visibility of their priorities for the remainder of the price control period. We are in the process of assessing these priorities to ensure the work can be completed.

In 2016/17 we removed 11.2km of overhead lines through the completion of three schemes, including work at Priory Farm in Hornby and Greenbank Spur in Farleton.

This brings our total progress in the first two years of the price control to 15km, which equates to 19% of the 80km target. Although this leaves us slightly behind target in terms of run rate (25%), the work we have done to plan the workbank for the remaining six years forms the basis for our 'on track' performance rating.

80km

3.8km   11.2km   15km

2016   2017   Cumulative   Overall target (2023)
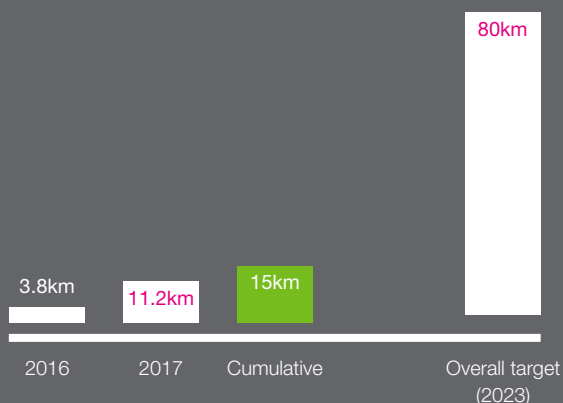
Overhead line removal from Middle Lees near Whitewell in the Forest of Bowland (Area of Outstanding Natural Beauty)
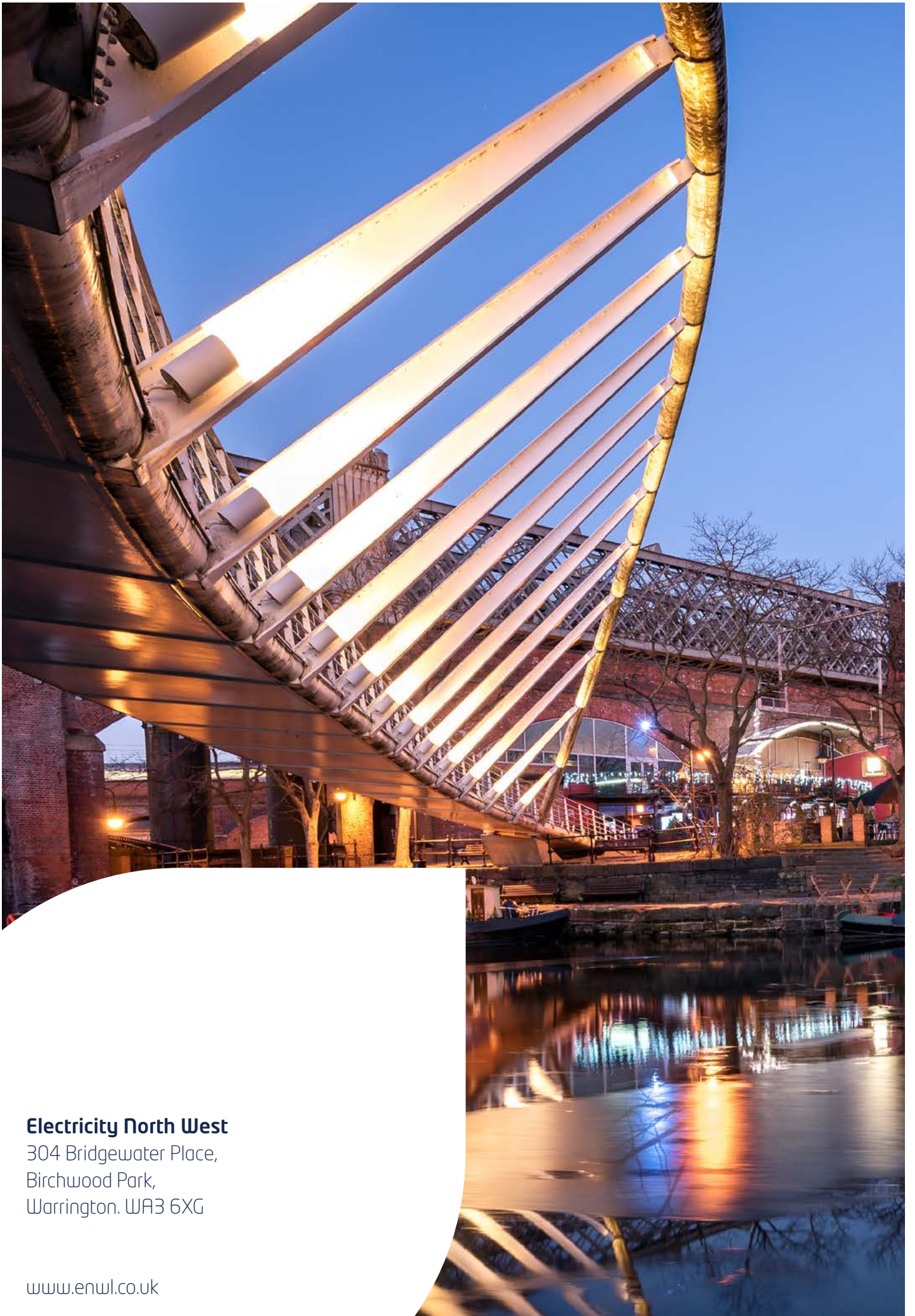

Before

After

In 2016/17 we removed 11.2km of overhead lines through the completion of three schemes

Electricity North West
304 Bridgewater Place,
Birchwood Park,
Warrington. WA3 6XG

www.enwl.co.uk