Regulatory Financial Performance Report

Northern Powergrid (Northeast) plc
Northern Powergrid (Yorkshire) plc

2019/20

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Note

1. *All financial figures within this document are rounded to 1 decimal place and quoted in 2012/13 prices (unless otherwise stated). As such, there may be variances in total figures due to rounding.*
2. *This report is version 1.1 (August-2020); we had previously overstated our Business Carbon Footprint for 2019/20.*

1. EXECUTIVE SUMMARY

a. CEO foreword

Still on track to fulfil our promise of delivering more for less

The 'more for less' promise we made to our customers back in 2013 remains our focus for the 2015-23 period. I am pleased to report that in 2019/20 we made solid progress towards delivering substantially improved outputs across the board for lower like-for-like spend. In many cases we will go further than the commitments we made in our plan.

Our cost forecast remains in line with the allowances we were set for the period. In return, we expect to deliver around 110% of our output targets. Our expenditure in the period to-date continues to track close to a straight line profile. The total spent so far represents 96% of allowances, which were slightly front-end profiled.

Rising to the challenge of the COVID-19 pandemic

The last few weeks of 2019/20 period saw the COVID-19 pandemic create unprecedented peacetime disruption on our nation. The short overlap with the reporting period means it had little impact on the numbers reported, but it warrants a mention. The pandemic has been a stern test of our resilience and I am extremely proud of the way our team responded to maintain great service levels for our customers at a time when they needed us the most. We are already working through the manageable backlog of behind-the-scenes work it created, much of which we expect to complete in 2020/21. Some, particularly the more complex work, is being re-phased over the rest of the period.

Our customers are already seeing the benefits of our ED1 output improvements in day-to-day service levels…

Our output performance improvements are significant. We have delivered 31% shorter and 28% fewer power cuts for our customers since the time we wrote our business plan, and since the start of the period in 2015, overall customer satisfaction has improved by 6.7 percentage points – over 89% and still climbing. That is backed by a host of service enhancements for our vulnerable customers. We ranked 4th in the industry on customer satisfaction in 2019/20 and we are continuing to push for further improvements in the remainder of the period.

I am particularly proud to be able to say that from May 2019 to the end of the period covered here, none of our employees suffered a recordable accident; a run that has since exceeded a whole year. That performance reinforced our position as a leader in safety standards as we registered the fewest recordable accidents in the industry in 2019.

Our strategic investments in resilience continue to feature prominently in our plans. We are nearing completion of our stakeholder-led flood defence programme that will see 275 of our sites made more resilient to flooding. The programme proved its worth to our customers in 2019/20 during the significant flooding in South Yorkshire. Cyber security remains high on our risk register and the £15.8m we have invested in the period so far continues to build our defences against this growing threat.

…whilst we invest and build capabilities to pave the way to decarbonisation

Decarbonisation is already at the heart of our plan. We are deploying innovative solutions and developing our operations to establish the distribution system operation (DSO) capabilities that will be needed for the low carbon transition. That includes our £83m smart grid enablers programme, testing the market for flexibility services and deploying active network management to get more connected to the network. Expect to hear much more about this in the near future as we lay out our thinking for the 2023-28 period.

A committed, long-term, sustainable investor

The long-term outlook of our investor gives us the financial stability that our stakeholders deserve. In this period, we expect to deliver a return to our shareholder of around 7.2%[1]. This is at the lower end of the range of regulated network company returns and we believe that this is a fair return for strong performance. With green investment critical to economic recovery in our regions and beyond, our regulator needs to find the confidence to set a price control for 2023-28 that encourages on-going investment and efficiency.

We are proud to provide our critical service for our customers whilst being at the heart of the decarbonisation transition in our regions. We will work hard to deliver even more for our customers right to the end of the period.

Phil Jones
Chief Executive

1 - Return on Regulatory Equity based on notional gearing (i.e. 65% debt, 35% equity) and including holding company debt

b. ED1 business plan delivery and strategic priorities

Key Strategic Priorities	ED1			Key initiatives
	Target	2019/20	Forecast	
COSTS & OUTPUTS: Efficiently deliver our £3bn ED1 investment programme				
Total Costs – ED1 to date *(Variance to allowances)*	£3,043m (0%)	-£75.4m (-3.8%)	£3,043m (0%)	• ED1 cost efficiency programme
Outputs – ED1 to date *(Variance to target)*	100%	66.8% (+4.3%)	100 - 110%	
SAFETY & SECURITY: Reduce our accident rate by 50% and enhance our cyber security defences				
OSHA accident rate[1]	0.22 (-50%)	0.14 (-67%)	0.09 (-79%)	• Safety engagement, training and audits • Vehicle telematics to improve driver safety • Cyber security investment (£25.6m) in ED1 including delivering NIS-D requirements
CUSTOMER SERVICE: Improve customer satisfaction to become a leader in the industry				
Overall BMCS	85%	89.0% (+6.7pp)	92.0% (+9.7pp)	• Customer Relationship Management technology across core service lines, • Proactive communication and web services
Day+1 complaint resolution	85%	84.7% (+30.9pp)	88.0% (+34.2pp)	
CONNECTIONS: Improve connections customer satisfaction, whilst reducing routine lead times by 30%				
Connections BMCS	85%	88.4% (+9.7pp)	91.2% (+12.5pp)	• Face-to-face services • Quotations-on-site for small works connections • Autodesign self-service for connection budget estimates • Flexible connections
Small works lead time (LVSSA & LVSSB only)	-30%[2]	52.8 days (-27.1%)	38.0 days[2] (-47.5%)	
ICE penalty	Nil	Nil[3]	Nil	
RELIABILITY AND AVAILABILITY: Increased network resilience, 20% shorter and 8% fewer unplanned power cuts				
Customer minutes lost[4]	-20%	40.6 (-30.6%)	-40%	• Regional operational delivery teams • Network automation and remote control • Trialling fault prediction technology • Flood defence investment programme
Customer interruptions[4]	-8%	48.1 (-27.9%)	-30%	
Flood defence upgrades	156	187	212[5]	
ENVIRONMENTAL PROTECTION: Minimise our impact on the environment				
Oil/fluid lost to ground	-15%	33,810 (-36.5%)	28,325 (-46.8%)	• Fluid filled cable replacement • Roll-out of innovative solutions such as thermal imaging for SF_6 and self-healing cables
Carbon Footprint	-10%	33,365 (-44.1%)	30,600 (-48.7%)	
SOCIAL OBLIGATIONS: Extend our range of differentiated services for PSR customers				
SECV rank	8.00 (2nd)	6.71 (3rd)[6]	8.00 (2nd)	• Partnerships that support the most vulnerable in our region • Enhanced use of data to provide tailored services
SMART & SUSTAINABLE NETWORKS: Transition to DSO and support the national smart meter roll-out				
Renewable generation connected	*No target set*	2.9GW	4.3GW[7]	• Distribution Future Energy Scenarios (DFES) • £83.4m smart grid enabling investment • Market testing for flexibility services • Active Network Management rollout

KEY RISKS & UNCERTAINTIES

Risk	Description	Risk Mitigation
CYBER	**Successful cyber-attack on our IT or OT network**	• £25.6m investment in cyber security defences • NIS-D risk treatment plan implementation
PANDEMIC	**Failure to safeguard staff and contractor health and support priority processes in the event of a major pandemic**	• Adjustments to operations • Robust business continuity planning
NETWORK RESILIENCE	**Widespread loss of network from weather, asset failure or physical attack**	• Physical security upgrades • Targeted network investment • Major incident management plans

Figure 1.1 *Northern Powergrid ED1 commitments performance*

1 - Reduction relative to business plan baseline – 2013 calendar year
2 - Reflects wider ED1 business plan commitment to reduce routine end to end connection lead times. 2019/20 actuals relate to LVSSA and B lead times only
3 - 2018/19 performance: 2019/20 determination expected in Q4 2020
4 - Unplanned, excluding exceptional events - reduction is relative to business plan baseline, 2012/13
5 - Surveys have revealed defences at an additional 63 sites already meet required flood defence standards
6 - of 6 DNOs
7 - Reflects accepted schemes. Final connection dates are subject to change

2. KEY FINANCIAL PERFORMANCE MEASURES

a. Explaining our financials

Our overall Return on Regulatory Equity (RoRE) forecast for the ED1 period is 7.2% based on Ofgem's notional gearing calculation[8] (6.7% based on actual gearing) which we believe is a fair and reasonable return on equity for a company expecting to over-deliver on its business plan

Northern Powergrid RoRE	Notes[9]	Notional gearing		Actual gearing	
		ED1 to date	ED1 forecast	ED1 to date	ED1 forecast
Allowed Equity Return	1	6.0%	6.0%	5.3%	5.4%
Totex outperformance	2	(0.5)%	(0.0)%	(0.5)%	(0.0)%
IQI Penalty	3	(0.2)%	(0.1)%	(0.1)%	(0.1)%
Broad Measure of Customer Service	4	0.4%	0.5%	0.3%	0.4%
Interruptions-related quality of service	5	1.8%	1.8%	1.6%	1.7%
Incentive on Connections Engagement	6	-	-	-	-
Time to Connect Incentive	7	0.1%	0.1%	0.0%	0.1%
Losses Discretionary Reward scheme	8	0.0%	0.0%	0.0%	0.0%
Network Innovation unrecoverable expenditure	9	(0.0)%	(0.0)%	(0.0)%	(0.0)%
Penalties and fines	10	(0.0)%	(0.0)%	(0.0)%	(0.0)%
RoRE - Operational performance		**7.5%**	**8.2%**	**6.6%**	**7.4%**
Debt performance	11	(1.2)%	(0.9)%	(0.9)%	(0.7)%
Tax performance	12	0.1%	(0.0)%	0.1%	(0.0)%
RoRE - including financing and tax		**6.4%**	**7.2%**	**5.8%**	**6.7%**
RoRE - Excluding holdco debt[10]		**6.7%**	**7.4%**	**5.2%**	**5.6%**
Northeast		*7.3%*	*8.0%*	*5.5%*	*6.1%*
Yorkshire		*6.2%*	*6.9%*	*4.9%*	*5.3%*

Figure 2.1: *Northern Powergrid RoRE summary table*

RoRE measures how much a company has earned on its investment in regulatory assets that have been funded by shareholders. This starts with the base return that Ofgem allows to reflect the cost of equity in capital markets, and is adjusted for the value earned from any incentive schemes to reflect performance, and any difference between the company's debt finance costs and Ofgem's assumption. In setting the base return, Ofgem assumes notional gearing of 65%, (i.e. 65% of regulatory assets are funded by debt and 35% by equity) however a company's actual gearing level will be different to this, which impacts shareholder returns.

Our forecast RoRE for the ED1 period is 6.7% and for the ED1 period to date it is 5.8%, taking into account our actual level of gearing (i.e. debt to equity ratio) and debt held by our holding company, Northern Powergrid Holdings Company (holdco), outside of our two regulatory licensees (Northeast and Yorkshire). When Ofgem views our regulatory returns it uses the 65% notional assumption for gearing. On this basis, our forecast RoRE for the ED1 period (including holdco debt) is 7.2%. This is 1.2% above the 6.0% base return set by Ofgem for the ED1 period.

The main contribution to this outperformance is incentive revenue from the interruptions quality of service incentive (IIS), generating a 1.8% return. In addition, we forecast that we will achieve around 69% of the available Broad Measure of Customer Service (BMCS) reward generating a return of 0.5%. The outperformance is offset by a -0.9% underperformance on debt financing as the debt we took out many years ago at prevailing rates at that time is more costly than Ofgem allows.

As our actual level of gearing is 62% on average for ED1 (lower than Ofgem's 65% notional assumption), this reduces equity returns as our shareholder has contributed more equity than the notional calculation assumes. This means that while the financial rewards remain the same in absolute terms, as percentage of our investment, the return reduces.

8 - Including holding company debt
9 - See section 2b for detail
10 - Including financing and tax

This accounts for the 0.5% difference between the 7.2% ED1 forecast using Ofgem's notional gearing (including holdco debt) and the actual RoRE figure of 6.7% using actual gearing (including holdco debt).

Excluding holdco debt, the gearing of our two licensees is around 50%. When viewed in isolation, our forecast RoRE for our Northeast and Yorkshire licensees is 6.1% and 5.3% respectively based on actual gearing.

There has been significant scrutiny on network company returns in recent years. Our returns remain at the lower end of the range of UK network companies and we continue to see our outcome as fair and appropriate for a company delivering significantly improved outputs for customers against a challenging price control settlement.

b. Step-by-step breakdown of our RoRE

RoRE Components	Comments
1. Allowed Equity Return	*Ofgem's allowed base cost of equity is 6.0%, assuming notional gearing of 65%.* The allowed equity return falls to 5.4% when our actual gearing of 62% is taken into account as our shareholders have invested a greater amount of equity than Ofgem's assumed 35% i.e. they receive a lower rate of return (Ofgem's assumed cost of debt) on the additional equity[11].
2. Totex outperformance	*The Totex Incentive Mechanism (TIM) incentivises DNOs to outperform their total cost allowances, sharing any under/overspend with investors and customers through adjusted network charges* Our expenditure in ED1 to-date is £1,921m, 4% (£75.4m) below our phased cost allowances. Our forecast shows no RoRE impact, as we expect this variance to unwind by the end of the price control period and for our expenditure to be in line with Ofgem's allowances for the period as a whole.
3. Information Quality Incentive (IQI)	*The IQI is a mechanism that provides a company with a reward or penalty depending on how close its forecast is to Ofgem's view of efficient costs.* We incurred an annual penalty averaging £1.3m over the ED1 period, as our totex forecast exceeded Ofgem's view of efficient costs. This has a negative RoRE impact of 0.1%.
4. Broad Measure of Customer Service (BMCS)	*BMCS incentivises DNOs to improve customer satisfaction, deal with complaints quickly and effectively and engage with stakeholders to inform how they run their business.* We forecast to earn approximately 69% of the available rewards under the BMCS incentive by delivering improvements in customer satisfaction, complaints and stakeholder engagement. For the ED1 period to-date, our average annual earnings from this incentive has been £4.6m. Our forecast average annual earnings for the ED1 period as a whole is £5.6m taking into account projected performance improvements.
5. Interruptions-related quality of service	*The Interruption Incentive Scheme (IIS) incentivises each DNO to improve performance against their targets for the number of customers interrupted per 100 customers (CI) and the number of customer minutes lost (CML).* We have delivered significant network improvements in the ED1 period to-date, reducing the number of unplanned customer interruptions and minutes lost by 27.9% and 30.6% compared to our ED1 Business plan baseline. This is our primary source of RoRE, earning an annual average of £20.9m against this incentive mechanism in the ED1 period to-date, with our forecast annual average earnings at £21.6m for the ED1 period as a whole.
6. Incentive on Connections Engagement (ICE)	*ICE is a penalty-only mechanism to ensure DNOs continuously improve services for major/large connections customers.* We have received no penalties against this mechanism in ED1 to date and we have forecast no penalties for the remainder of the period.

11 - Adjusting the RoRE calculation from notional to actual gearing also impacts other line items as the same monetary value is divided by a greater amount of equity investment

7.	**Time To Connect (TTC) Incentive**	*TTC incentivises DNOs to reduce connection times for minor/small connections customers.* We expect to improve the time taken to deliver connections to our customers during the ED1 period. In the period to date, our average annual earnings under the Time to Connect incentive has been £0.6m. Ofgem has tightened incentive targets for the second half of ED1. Our forecast average annual earnings for the ED1 period as a whole is £0.8m taking into account projected performance improvements.
8.	**Losses Discretionary Reward (LDR) scheme**	*LDR is a discretionary reward to incentivise DNOs to take additional actions to better understand and manage electricity losses on their network.* The incentive has a minimal impact on our RoRE. We received £0.3m from the first tranche of this reward scheme. No DNOs received a reward in the second tranche of the scheme and we have not included any forecast returns for the third tranche.
9.	**Network Innovation unrecoverable expenditure**	*The Network Innovation Allowance (NIA) is a set allowance received by each DNO to fund smaller technical, commercial or operational innovation projects.* 10% of network innovation expenditure is DNO funded and therefore not recovered from customers. This has a small impact on RoRE.
10.	**Penalties and fines**	*These are the penalty payments we incur if we fail against the Guaranteed Standards of Performance (GSoP).* This line item takes into account the small impact on RoRE of payments we make to customers in respect of GSoP failures. In 2019/20, we made payments totalling £0.5m to customers under GSoP.
11.	**Debt performance**	*Debt performance (at notional gearing) shows the difference between our actual cost of debt (on a real basis) and Ofgem's allowed cost of debt.* Over the ED1 period, this has a negative impact on RoRE of -0.9%. The underperformance of -1.2% in ED1 to-date is driven by the impact of low inflation (as measured by RPI) in 2015/16 and some historical debt with a relatively high-coupon (i.e. interest rate) that matures during the ED1 period to be replaced with lower-coupon debt. Debt performance slightly improves when viewed at actual gearing, reflecting the impact of increased equity funding and therefore lower actual debt on which interest is paid. This improvement is however more than offset by the increased equity portion being funded at Ofgem's allowed cost of debt (which is lower than Ofgem's allowed cost of equity).
12.	**Tax performance**	*Tax performance shows the difference between our actual tax costs and Ofgem's allowed tax cost.* The RoRE impact of forecast tax performance is negligible over the ED1 period. The positive impact of 0.1% in ED1 to-date is mainly attributable to the dead-band which licensees are allowed to retain when there are changes in tax legislation, including the rate of Corporation Tax.

Figure 2.2: *Explaining our RoRE components*

c. RoRE - excluding holdco debt

In this section we show our RoRE results on a licensee basis and provide explanation where there is a difference in performance between the licensees. The RFPR tables published alongside this report are on a licensee basis and do not include holdco debt. The tables below present the ED1 forecast for RoRE from the RFPR tables.

On a notional gearing basis, there is no difference to the NPg operational RoRE as set out above. The main difference in performance between the two licensees is performance on IIS. . The difference in RoRE including finance and tax to the figures shown in section 2a and 2b is due to the exclusion of holdco debt. The licensees also have different historical debt books and this is reflected in their differing debt performance.

RoRE based on notional gearing

Notional Gearing	NPgN	NPgY	NPg
Allowed Equity Return	6.0%	6.0%	**6.0%**
Totex Outperformance	0.0%	(0.0)%	**(0.0)%**
IQI Reward	(0.1)%	(0.1)%	**(0.1)%**
Broad Measure of Customer Satisfaction	0.5%	0.5%	**0.5%**
Interruptions-related quality of service	1.7%	2.0%	**1.8%**
Incentive on connections engagement	-	-	**-**
Time to Connect Incentive	0.1%	0.1%	**0.1%**
Losses discretionary reward scheme	0.0%	0.0%	**0.0%**
Network Innovation	(0.0)%	(0.0)%	**(0.0)%**
Penalties and Fines	(0.1)%	(0.0)%	**(0.0)%**
RoRE – Operational Performance	**8.0%**	**8.3%**	**8.2%**
Debt performance – at notional gearing	0.1%	(1.3)%	**(0.7)%**
Tax performance – at notional gearing	(0.0)%	(0.0)%	**(0.0)%**
RoRE – Including financing and tax	**8.0%**	**6.9%**	**7.4%**

Figure 2.3: *Eight-year RoRE (notional gearing, excluding holdco debt)*

When we include actual debt in the licensees (rather than notional), the gearing of our two licensees falls to around 50%. When viewed in isolation, our forecast RoRE for our Northeast and Yorkshire licensees is 6.1% and 5.3% respectively based on actual gearing. The difference in debt performance between the licensees again reflects the historical debt books.

RoRE based on actual gearing

Actual Gearing (%)	NPgN	NPgY	NPg
Allowed Equity Return	4.3%	4.1%	**4.2%**
Totex Outperformance	0.0%	(0.0)%	**(0.0)%**
IQI Reward	(0.1)%	(0.1)%	**(0.1)%**
Broad Measure of Customer Satisfaction	0.3%	0.3%	**0.3%**
Interruptions-related quality of service	1.2%	1.3%	**1.3%**
Incentive on connections engagement	-	-	**-**
Time to Connect Incentive	0.0%	0.0%	**0.0%**
Losses discretionary reward scheme	0.0%	0.0%	**0.0%**
Network Innovation	(0.0)%	(0.0)%	**(0.0)%**
Penalties and Fines	(0.0)%	(0.0)%	**(0.0)%**
RoRE – Operational Performance	**5.8%**	**5.6%**	**5.7%**
Debt performance – at notional gearing	0.4%	(0.3)%	**(0.0)%**
Tax performance – at notional gearing	(0.0)%	(0.0)%	**(0.0)%**
RoRE – Including financing and tax	**6.1%**	**5.3%**	**5.6%**

Figure 2.4: *Eight-year RoRE (actual gearing, excluding holdco debt)*

d. Overview of our costs and outputs

Our headline ED1 business plan commitment was to deliver more for less for our customers. This means keeping a tight grip on our costs while continuing to invest in the health of our network, improving services to customers and innovating for the future

Controlling our costs to stay inside Ofgem's tough cost allowances…

Our business plan commitment to deliver 'more for less' meant we had to make significant performance improvements in the RIIO-ED1 period at new levels of cost efficiency. The cost reductions imposed by Ofgem in its price control settlement for ED1 increased the scale of that challenge. For that reason we took time to challenge the engineering content of our plan and to let key service contracts to deliver efficiencies. This has meant that we have been operating to a revised plan that includes £210m of cost reductions over the period. Whilst our cost efficiency plans are well established, risks remain around execution and we continually update our plans to reflect cost pressures, delivery of efficiencies and changes in stakeholder requirements.

After five years of the eight year period, our total expenditure is tracking fractionally behind the profile of allowances (96%) with the primary difference attributable to timing. Our investment programme was slightly front-end loaded in our plan and is now tracking a straight line profile through the period. We forecast that our expenditure will be in line with allowances for the ED1 period as a whole (see Figure 2.5).

…while investing in improving the health of our network

We not only intend to deliver the targeted improvement in network health that we committed to in our ED1 business plan, we expect to outperform it.

We are currently 4.3 percentage points ahead of our ED1 annual profile based on our final target for network asset secondary deliverables (i.e. network outputs) and expect to outperform our target by up to 10% by the end of the period (see Figure 2.6).

More detail of our cost performance is included in the next section and our output performance is described in section 3.

Figure 2.5: *Total expenditure Vs Ofgem cost allowances (Totex)*

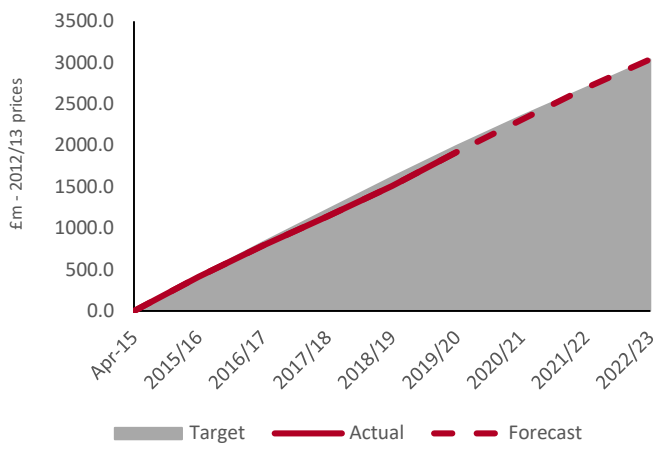
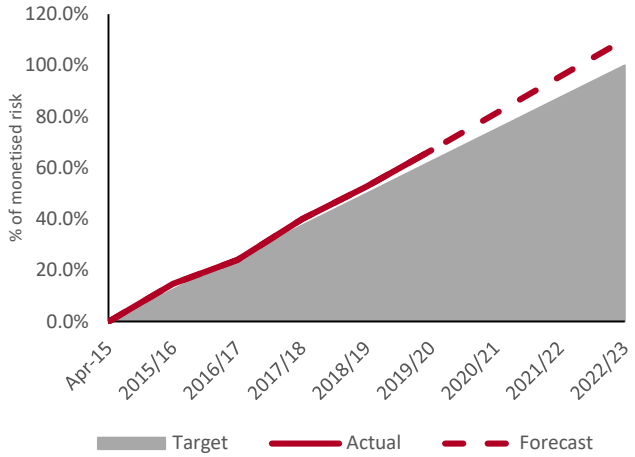


Figure 2.6: *Network Output delivery Vs Ofgem targets (Asset Health and criticality index)*



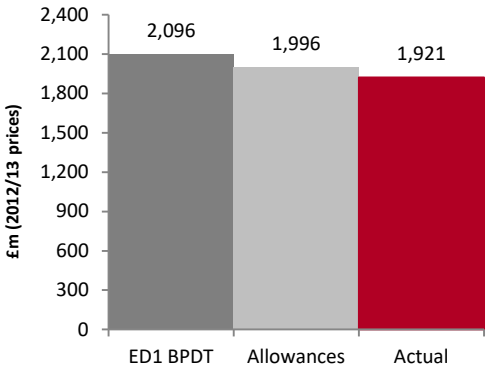
e. Totex performance summary

ED1 to-date

ED1 expenditure to-date is 4% below allowances but in-line with a flat-lined phased profile for the period

Our total expenditure in ED1-to-date is £1,921m, 4% (£75.4m) below our phased allowances of £1,996m, all of which is forecast to unwind by the end of the price control period resulting in spend in line with allowances.

Figure 2.7: *ED1 expenditure to-date*



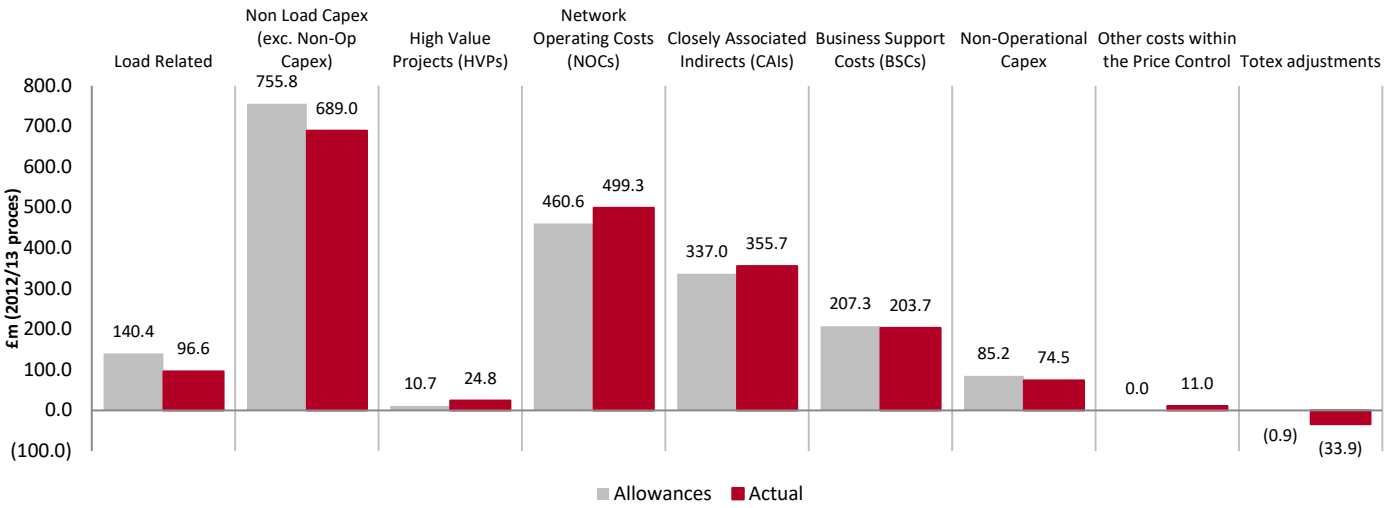
Whilst our ED1 allowances (based on the profile of our original ED1 business plan forecast) were front-end loaded, our actual expenditure is tracking on a straight-line profile over the eight-year period due to re-phasing of activity for cost reengineering work required at the start of the period. Our actual expenditure to-date is 63% of total ED1 allowances, behind the profile of Ofgem allowances (66%), but in line with a straight-line annual profile after five years of the eight-year period.

At cost sub-category level, the majority of the variance to allowances is driven by underspend in load and non-load related capex, most notably non-load related capex in Yorkshire, due to re-profiling of activity to later years in the period. The larger re-phasing in Yorkshire is due to the deferral of HV primary and EHV/132kV plant projects until later in the ED1 period to allow for re-design and tender activity. For the second consecutive year we have seen this underspend in the period to-date unwind. For example, in Yorkshire non-load related expenditure was 23% below allowances after the first four years of the period and is now 14% below allowances after five years.

We have seen lower than anticipated smart meter installations at this stage of the smart roll-out programme but we are experiencing much higher intervention rates. In the period to-date the intervention rate is 3.4%, significantly higher than Ofgem's assumption of 2%, the impact of which is seen in our network operating costs.

In ED1 to-date, we have generated 8% of efficiency savings, 5%[12] being the savings we needed to make from our ED1 business plan forecast to meet allowances and a further 3% of efficiency savings (shown in Figure 2.9) relative to allowances on a blended total expenditure basis.

Figure 2.8: *Cumulative ED1 to-date actuals and allowances by cost category*



The other significant driver in the variance for the period to-date is re-phasing (6%) that is expected to unwind by the end of the period. Whilst COVID-19 had only a minimal impact on output delivery in the regulatory year 2019/20, it has had a greater impact on delivery in 2020/21 and will give rise to more significant re-phasing in next year's report. We expect our efficiency savings (relative to allowances) to grow as we progress through the period, realising the cost

12 - 6.5% efficiencies required from our plan to allowances for the ED1 period as a whole; 5% in ED1 to-date due to profiling of our plan allowances

efficiency plans we have established as part of our cost re-engineering work in ED1 and offsetting investment in service enhancement and response to external factors.

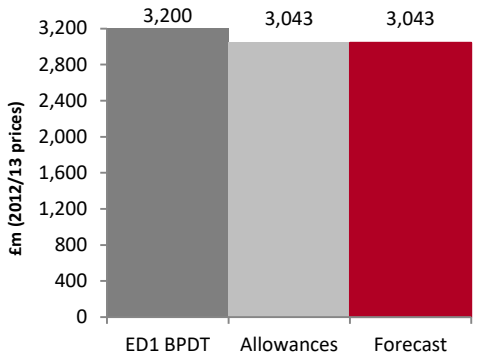
TOTEX	Unit	Efficiency	Service Enhancements	External Factors	Provision in the Price control settlement	Re-phasing of timing of work	Other	Total
Northeast	£m	(27.0)	32.1	(1.7)	20.6	(35.7)	2.4	**(9.3)**
	%	*(3%)*	*4%*	*(0%)*	*2%*	*(4%)*	*0%*	***(1%)***
Yorkshire	£m	(29.2)	18.2	(7.5)	20.7	(83.4)	15.2	**(66.1)**
	%	*(3%)*	*2%*	*(1%)*	*2%*	*(7%)*	*1%*	***(6%)***
NPg Total	**£m**	**(56.2)**	**50.3**	**(9.2)**	**41.2**	**(119.1)**	**17.6**	**(75.4)**
	%	***(3%)***	***3%***	***(0%)***	***2%***	***(6%)***	***1%***	***(4%)***

Figure 2.9: *Cost driver allocation for Totex variance to allowance in the ED1 period-to-date*

ED1 forecast

ED1 forecast expenditure remains in line with allowances

Figure 2.10: *ED1 forecast*

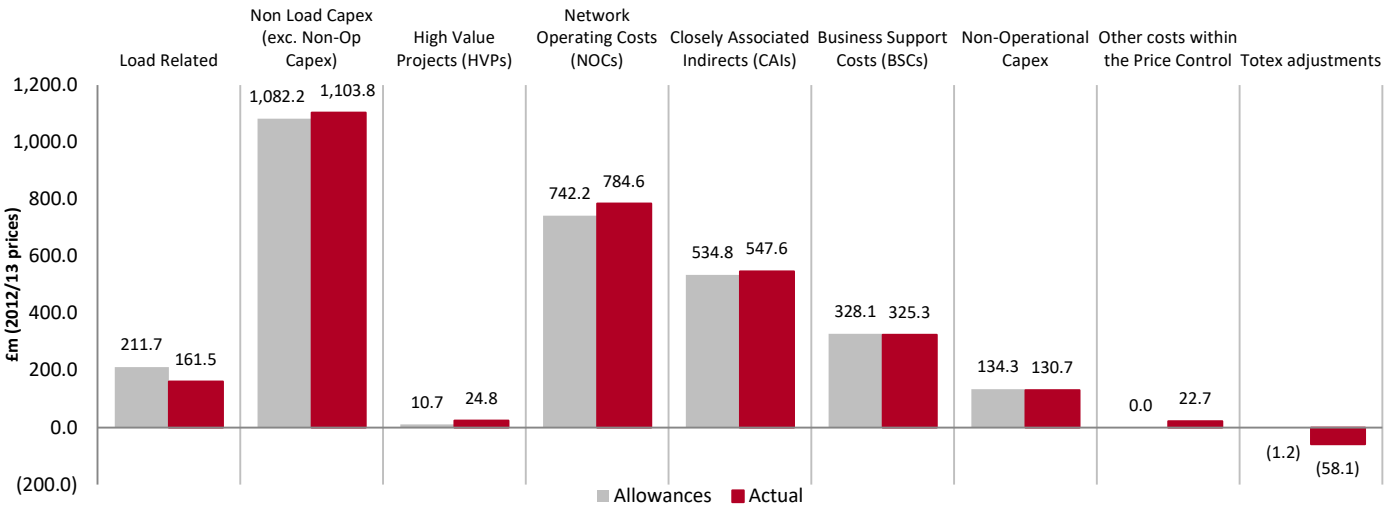


Our ED1 base totex allowances were £2,990m against our original business plan submission of £3,200m. In this report we have updated allowances to account for costs we expect Ofgem to allow through uncertainty mechanisms in the areas of visual amenity, smart meters, streetworks and physical security, bringing total allowances to £3,043m.

During the early part of the ED1 period we undertook a significant cost re-engineering exercise in light of Ofgem's challenging final determination to ensure that we could deliver the outputs we committed to our stakeholders in our ED1 business plan at the lower level of allowed costs. This cost re-engineering work, which included re-negotiating key service contracts, has meant we are operating to a revised plan that includes £210m of cost savings over the period (i.e. 6.5% efficiencies relative to our original ED1 business plan).

Whilst our cost efficiency plans are well established, risks still remain around benefit realisation. We therefore continually update our plans to reflect cost pressures, delivery of efficiencies and changes in stakeholder requirements.

Figure 2.11: *Forecast ED1 outturn against allowances by cost category*



For the period as a whole, we expect our expenditure to be above allowances on network operating costs (£42.4m; 6%) and closely associated indirects (£12.7m; 2%) offset by under spending against allowances in network investment (-£14.6m, -2%), non-op capex (-£3.6m; -3%) and business support costs (-£2.8m; -1%). We were not allowed our ED1 business plan forecast for fault costs in Ofgem's final determination and whilst our cost reduction programme will see us outperform our original submission, we do not expect to be able to operate within allowances for network operating costs. We were awarded more than our ED1 business plan forecast for business support costs where we were the most efficient company in Ofgem's disaggregated cost assessment and as such expect to outperform the allowances we were set.

At the time of writing our ED1 business plan we knew that unforeseen cost pressures would materialise during the longer eight-year price control period. For instance, we have seen pension costs increase (circa £16m more than allowances over the plan period) and the response required to increasing cyber security threats will increase our IT costs by £25.6m.

As reported last year, cost pressure has arisen from changes to the EU's Persistent Organic Pollution (POPs) Regulation. We are able to absorb some, but not all, of this activity within the envelope of our existing ED1 programme of work. We will need to spend at least an additional £2.9m in ED1 that was not included in our business plan to comply with the regulation.

The smart meter roll-out continues to face delays, and more latterly has been severely impacted by COVID-19. It is uncertain at this stage what the enduring impact on the supplier-led programme will be against the revised targets for the programme in 2024. Despite these delays, volumes of service termination defects are exceeding our forecasts relating to both smart and traditional installations. Traditional installations continue at material volumes and are resulting in upward cost pressure as associated defect resolution is not subject to the smart meter cost recovery mechanism. In 2019/20 new meter installation volumes were 28% lower than the prior year (365,000 meters) of which 87% were smart meters. Over the same period the defect rate increased to 3.6% (up from 3.5% in 2018/19) with the unit cost of our interventions increasing due to changes in working practices to make cut-out replacement work safer for operatives.

Overall, evidence in ED1 to-date strongly supports the view that we will deliver both a more resilient network and outputs to our customers that exceed those originally envisaged in our ED1 business plan. As part of our plan, we expect to accommodate an additional investment of £6.4m in flood defence work upgrading a further 56 sites (in line with the outcome of the National Flood Resilience Review and updated flood map analysis) beyond the 156 sites we set out as part of our original commitment, invest an additional £2.1m beyond our visual amenity allowance cap and a further £50m on 72km of EHV cables, removing fluid and gas filled cable risk from our network. We will also invest £2.3m on improving the safety of our link box population by installing fire suppression blankets at locations with significant foot traffic. We will keep our forecast under review to ensure we deliver the best outcome for our customers.

3. KEY OPERATIONAL PERFORMANCE MEASURES

a. Primary output summary

Output	DNO	RAG[13]	DNO Group RAG[1]	Comments
Safety	**Northeast**	●	●	• Performance in 2019/20 represented a 67% reduction in our OSHA accident rate since we set our business plan targets and saw us move ahead of our business plan target to halve our OSHA rate by 2023. • No HSE enforcement notices for either licensee.
	Yorkshire	●		
Reliability & Availability	**Northeast**	●	●	• Unplanned CI and CML have reduced by 28% and 31% respectively so far in ED1, relative to our business plan baseline. • In 2019/20 we met all four Ofgem reliability and availability targets - Customer Interruptions (CI) and Customer Minutes Lost (CML) in Northeast and Yorkshire. • We upgraded flood defences at an additional 25 sites in the year, taking our ED1 total to 187.
	Yorkshire	●		
Environment	**Northeast**	●	●	• Another strong year of performance across all of our key environmental measures – we met or exceeded all of the targets we set in our business plan. • We are pursuing more stretching targets that go beyond our original plan following engagement with our stakeholders.
	Yorkshire	●		
Connections	**Northeast**	●	●	• Connections BMCS performance in 2019/20 represented a 9.7 percentage point improvement since the start of ED1. • For time to quote we missed both LVSSA and LVSSB lead time targets for both licensees; however, our offer of a site visit and quote-on-site service is providing customers with a more personal service that has supported improved satisfaction. • For time to connect, we hit both lead time targets for Yorkshire, however we missed both for Northeast. • Zero ICE penalty in ED1 to date. For 2019/20, we delivered all 13 actions in our plan.
	Yorkshire	●		
Customer Satisfaction	**Northeast**	●	●	• Overall customer satisfaction improved by 2.2 percentage points in the year, ranking 4th (out of 6). • Overall satisfaction has improved by 6.7pp since the start of ED1. • Complaints resolution continued to improve in the year, with a further 4.6pp improvement in Day+1 resolution to 84.7%.
	Yorkshire	●		
Social Obligations	**Northeast**	●	●	• Achieved a provisional SECV score of 6.71, ranking 3rd in the 2019/20 incentive against our DNO peers. • Stakeholders continued to inform the delivery of our plan with a broad range of engagement activities in the year. • We merged our Community Partnering Fund with Northern Gas Network, doubling the annual fund to £100k and supporting 27 community organisations in ED1 to date. • Our fuel poverty programme has seen a 280% increase in energy saving services installed in customers' homes and delivered £1.7m in financial benefits.
	Yorkshire	●		

Figure 3.1: *Northern Powergrid output performance*

13 - For details of RAG assessment, see Annex 1: Output Performance Assessment

b. Safety

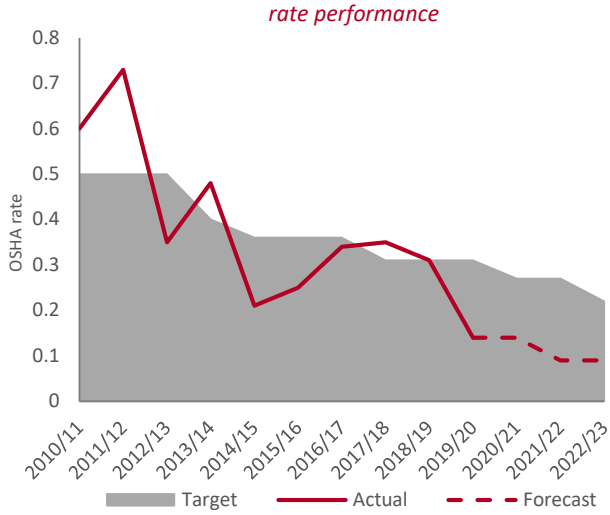
Measure	DNO	2019/20			Comments
		Target[1]	Actual	RAG	
HSE compliance	**NPg**[2]	✓	✓	●	Full HSE compliance in the year
OSHA[3] **Rate**	**NPg**[2]	**0.31**[4]	**0.14**	●	Three reportable incidents in the year
RIDDOR[5] **Rate**	**NPg**[2]	**0.10**[4]	**0.00**	●	Zero reportable incidents in the year

Figure 3.2: *Northern Powergrid Safety performance*

We achieved a full year (between June-19 and May-20) without an OSHA recordable accident and our 2019/20 performance reflects a 67% reduction in our accident rate[6] since we set our business plan

- Our performance in 2019/20 represents a best ever for both OSHA and RIDDOR accident rate measures, setting a new standard and continuing on our long-term improvement trajectory.
- We incurred only three incidents in the year, all minor and none electrical in nature, equating to an OSHA rate of 0.14, and zero RIDDOR accidents – the best performance in the industry in 2019. Performance for both measures were ahead of in-year and end of ED1 targets.
- Our performance represents a 67% reduction in OSHA accidents since we set out business plan targets and sees us move ahead of the ED1 commitment to halve the incident rate by 2023[6].

Figure 3.3: *Northern Powergrid OSHA incident rate performance*



- Our focus on the driving standards of our workforce continues. During the year we incurred only 36 preventable vehicle accidents (PVAs), a reduction of 4 from prior year. These accidents were incurred across a fleet covering 17.8 million miles, traversing difficult terrain, and at times, in testing conditions. We are using technologies such as vehicle telematics, on board reversing cameras and driver safety assistance packages to reduce driving risks.
- Our broad range of community engagement activities continued to grow in the year, raising public awareness of the dangers of electricity, including targeted campaigns for agriculture and road haulage as well as continuing to invest in our schools programme.
- We are targeting a 10% reduction in third party strikes to our overhead lines, specifically from farm machinery and road haulage vehicles by the end of ED1. We will raise awareness by engaging with the Farmers Union, Road Haulage Association and continue to support national programmes such as 'Look Up It's Live'.

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Our key safety targets are agreed and reported at a group level to our shareholder
3 - The Operational Safety and Health Administrators (OSHA) is a US based measure of reportable work-related accidents (per 200,000man hours). It includes major incidents leading to absence and less severe injuries leading to restricted duties or the prescription of drugs as treatment or therapy. See www.OSHA.gov
4 - Northern Powergrid target
5 - The major accident rate measures the number of accidents we have that are reported under the UK's Reporting of Injuries, Disease and Dangerous Occurrences Regulations 2013 (RIDDOR). These accidents are reportable to the Health and Safety Executive (HSE) and include fatal, major injury and lost-time accidents resulting in over seven days' absence from work. See www.hse.gov.uk/riddor/index.html
6 - OSHA rate: Baseline of target set in our business plan was 2013 calendar year performance.

c. Reliability & Availability

Measure	DNO	2019/20			Comments
		Target[1]	Actual	RAG	
Customer Interruptions[2] (CI)	**NPg**	**62.7**	**49.2**	●	Unplanned Customer interruptions have reduced by 27.9%[3] compared to our ED1 business plan baseline
	Northeast	60.7	47.0	●	
	Yorkshire	64.1	50.8	●	
Customer Minutes Lost[2] (CML)	**NPg**	**56.7**	**42.9**	●	Unplanned Customer minutes lost have reduced by 30.6%[3] compared to our ED1 business plan baseline
	Northeast	57.0	44.1	●	
	Yorkshire	56.4	42.1	●	
Cumulative health index[4] (% of monetised risk)	**NPg**	**62.5%**[5]	**66.8%**	●	4.3 percentage points ahead of straight line profile for the ED1 period to date at NPg level
	Northeast	62.5%[5]	75.1%	●	
	Yorkshire	62.5%[5]	57.5%	●	
Non-connections GSoP failures[6] (Count)	**NPg**	**3,0487**	**3,613**	●	We improved our GSoP failures by 21% in the year. A number of storms in Q1 2020 that did not meet 'severe weather' thresholds impacted our Yorkshire license.
	Northeast	2,002[7]	1,776	●	
	Yorkshire	1,046[7]	1,837	●	
Non-connections GSoP (Payments, £)	**NPg**	**N/A**	**£353,919**	**N/A**	
	Northeast	N/A	£183,989	N/A	
	Yorkshire	N/A	£169,930	N/A	

Figure 3.4: *Northern Powergrid Reliability & Availability Performance*

We hit all Ofgem reliability and availability targets in the year and remain firmly on track to deliver our business plan commitments to reduce the number of power cuts by 8% and shorten their duration by 20%

- Our network performed well through tough periods of weather in the year. February 2020 was the wettest on record in the UK and brought with it numerous storms with Storms Ciara, Dennis and Jorge alone impacting over 86,000 customers with ca. 200 HV faults.
- Despite the harsh conditions, overall our reliability and availability performance in the period to date has been strong. Our performance in the ED1 period to-date represents a 27.9% reduction in unplanned customer interruptions and a 30.6% unplanned customer minutes lost compared to the target reduction of 8% and 20% committed in our ED1 business plan.
- We are pleased to say we delivered strong network performance during the COVID-19 lockdown period.
- We are progressing well against our overall ED1 plan for improving the health of our network. We are ahead of straight-line profile in the Northeast and marginally behind in Yorkshire. By the end of the period we expect to outperform our target by up to 10%. Reprioritisation of work in response to COVID-19 will create re-phasing of output delivery over the remaining years in ED1.
- Our flood defence programme remains on track and continues to be an area of high priority for our stakeholders. We have upgraded defences at 187 sites, investing £31.3m in ED1 to date, and we have expanded our original programme from 156 to 275 sites protected in line with ETR 138.

Figure 3.5: *CI/CML Outperformance vs. Ofgem targets (in year and ED1 average)*

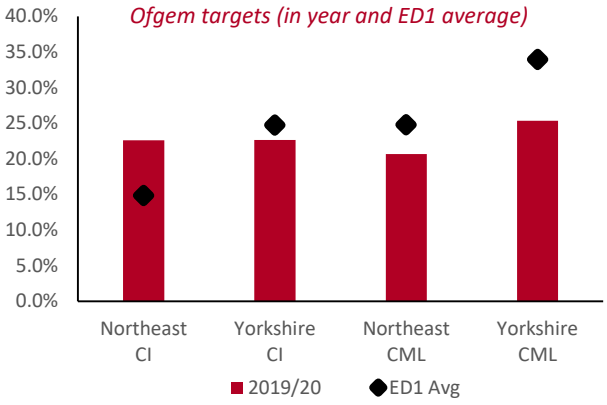
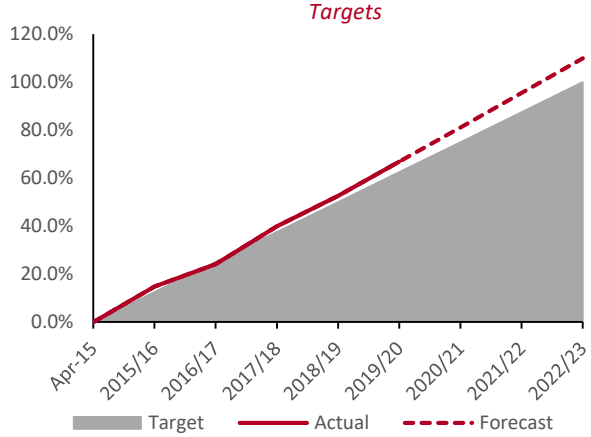


Figure 3.6: *Cumulative Network Outputs vs. Targets*



1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Planned and Unplanned, excluding exceptional events
3 - Reduction relative to our ED1 business plan baseline, 2012/13
4 - Cumulative health index for ED1 period
5 - Annual targets were not set. This is an illustrative target reflective of 12.5% for each year of ED1
6 - Guaranteed Standards Payments (GSoP) reflects the number of failures after exemptions
7 - Northern Powergrid target

d. Environment

Measure	DNO	2019/20			Comments
		Target[1]	Actual	RAG	
Business Carbon Footprint[2] (tCO_2e)	**NPg**	**56,869**	**33,365**	●	44% reduction compared to our ED1 business plan baseline[3] – ahead of our 10% target
	Northeast	26,346	15,893	●	
	Yorkshire	30,523	17,472	●	
SF_6 emissions (kg)	**NPg**	**112**	**63**	●	34% reduction in ED1 to date
	Northeast	36	15	●	
	Yorkshire	76	48	●	
Oil Leakage (Litres)	**NPg**	**48,681**	**33,810**	●	37% reduction compared to our ED1 business plan baseline[4] – ahead of our 15% target
	Northeast	15,927	9,543	●	
	Yorkshire	32,754	24,267	●	
Undergrounding in AONBs (km, cumulative ED1)	**NPg**	**61.1**	**68.7**	●	13.6km undergrounded in 2019/20. We are on track to meet our stretch target of 120km in ED1
	Northeast	39.4	38.4	●	
	Yorkshire	21.7	30.3	●	

Table 3.7: *Northern Powergrid Environmental Performance*

Another solid year of environmental performance keeps us on track to exceed our business plan targets

- We have reduced our Business Carbon Footprint (BCF) by 44%[3], exceeding our business plan commitment of a 10% reduction in ED1. We continue to innovate across the business, to reduce our BCF, including investigating new insulating mediums in the equipment we purchase, reducing fleet and business mileage and starting to introduce electric vehicles into our fleet.
- SF_6 emissions are a significant contributor to carbon footprint and we are pleased to have reduced our emissions by 34% in ED1 to date. This is driven in part by the use of innovative thermal imaging technology to detect leaking switchgear.
- We achieved our business plan target for oil leakage in the year with performance marking a 37%[4] reduction, exceeding our business plan commitment of a 15% reduction in ED1. Our performance in this area is reflective of a combination of cable replacement, installing oil containment bunds at substations sites and use PFT[5] technology to locate leaks. We are also trialling self-healing cable fluid additives.
- Our programme to underground overhead lines in National Parks and Areas of Outstanding Natural Beauty (AONB) continues to make good progress. We undergrounded 13.6km of overhead lines in the year, remaining on track to deliver our original ED1 programme two years earlier than planned and deliver on our expanded business plan commitment to underground 120km (an additional 20km) by 2023.

Figure 3.8: *Business Carbon footprint (Including contractors)*

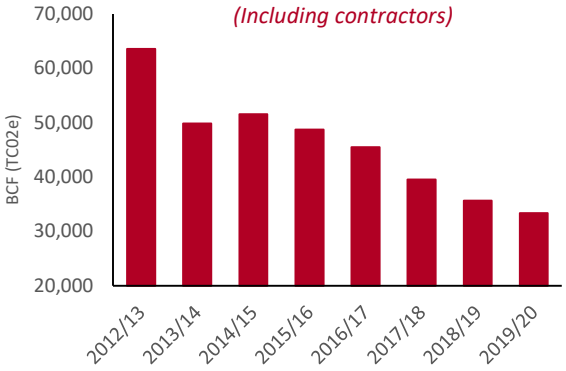
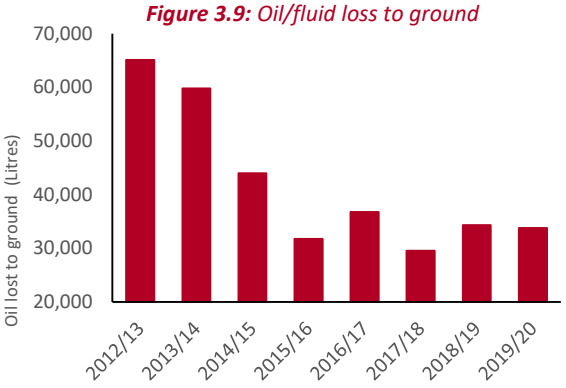


Figure 3.9: *Oil/fluid loss to ground*



1 - Northern Powergrid ED1 business plan targets. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Excluding losses and inclusive of our contractors
3 - ED1 business plan baseline of 59,700 TC02e. 2015/16 Forecast position
4 - ED1 business plan baseline of 53, 425 litres. 2015/16 Forecast position
5 - Perfluorocarbon tracers (PFT) are an additive put into fluid filled cables so we can detect leaks by 'sniffing' the specific chemical structure of the tracer in the ground above the leak

e. Connections

Measure	DNO	2019/20 Target[1]	2019/20 Actual	2019/20 RAG	Comments
Time to quote: LVSSA (Days)	**NPg**	**4.8**	**7.3**	●	Time to quote targets missed in both licensees impacted by high volumes of customers requesting site visits
	Northeast	**4.8**	7.6	●	
	Yorkshire	**4.8**	7.1	●	
Time to quote: LVSSB (Days)	**NPg**	**7.8**	**14.1**	●	
	Northeast	**7.8**	14.3	●	
	Yorkshire	**7.8**	13.9	●	
Time to connect: LVSSA (Days)	**NPg**	**39.3**	**38.8**	●	Continued year-on-year reductions in time to connect. We hit the revised Ofgem targets in Yorkshire but narrowly missed in Northeast
	Northeast	**39.3**	40.5	●	
	Yorkshire	**39.3**	37.8	●	
Time to connect: LVSSB (Days)	**NPg**	**47.9**	**46.9**	●	
	Northeast	**47.9**	50.7	●	
	Yorkshire	**47.9**	44.9	●	
ICE Penalty (£)	**NPg**	**£0**	**TBC**	N/A	Zero penalty under ICE in ED1 to date
GSoP failures (Count)	**NPg**	**110**[2]	**460**	●	We achieved the Ofgem target of 2% for the number of connections guaranteed standards failures in 2019/20, however we missed our internal volume target as a result of issues encountered in embedding new systems.
	Northeast	45	237	●	
	Yorkshire	65	223	●	
GSoP failures (% of cases)	**NPg**	**2%**	**1.1%**	●	
	Northeast	2%	1.4%	●	
	Yorkshire	2%	0.9%	●	
GSoP failures (£)	**NPg**	N/A	**59,417**	N/A	
	Northeast	N/A	23,778	N/A	
	Yorkshire	N/A	35,639	N/A	

Figure 3.10: *Northern Powergrid Connections Performance*

We have improved small works connections customer satisfaction by 9.7 percentage points in ED1 so far

- **For small works connections**, our performance in 2019/20 continued our strong improvement trajectory moving up to 4th place, with satisfaction up 3.5 percentage points in the year.
- Connections lead time targets tightened for the second half of ED1 (41% and 33% for quotations and 7% and 9% for delivery). We missed Ofgem's time to quote targets due to high volumes of site visits being provided to customers enabling a more personal service. Satisfaction with our quotation service improved, thanks in part to our new quote on-site service launched in August 2019.
- For delivery, our performance improved due to implementation of a new regional operating model for our local teams. We achieved both of the revised Ofgem targets for the Yorkshire license and narrowly missed these for the Northeast.
- **For our medium and large connections customers**, we delivered all 13 actions in our 2019/20 Incentive on Connections Engagement (ICE) plan, including creating a new guide on our website that explains how to apply for different types of EV charging projects and making improvements to our connections surgeries to improve the customer experience. We have 17 actions in our plan for 2020/21 in response to stakeholder feedback.

Fig 3.11: *Time-to-quote performance*

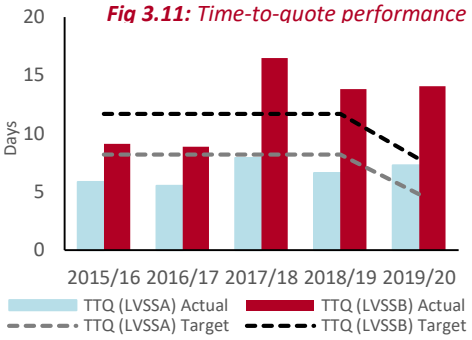
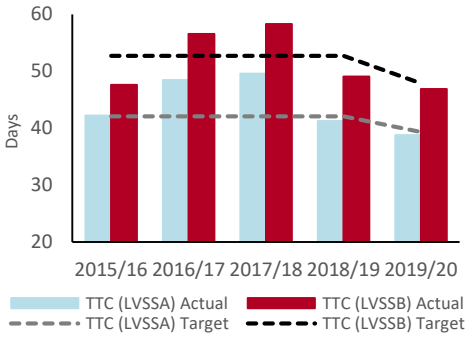


Fig 3.12: *Time-to-connect performance*



- In 2019/20, we implemented Autodesign, a web-based, self-service design tool that provides customers looking to connect EV chargers access to high-quality designs, in real-time, and at a lower cost. As well as improving the speed of connections estimates and the service we provide to customers, it is also improving the quality and uniformity of our designs and saving costs.
- The independent connections input services team we established at the start of the ED1 period continues to improve our non-contestable services. In the year we implemented a new end to end process that enables suitably accredited ICPs to undertake overhead street lighting transfers as contestable works.

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Northern Powergrid target

f. Customer Satisfaction

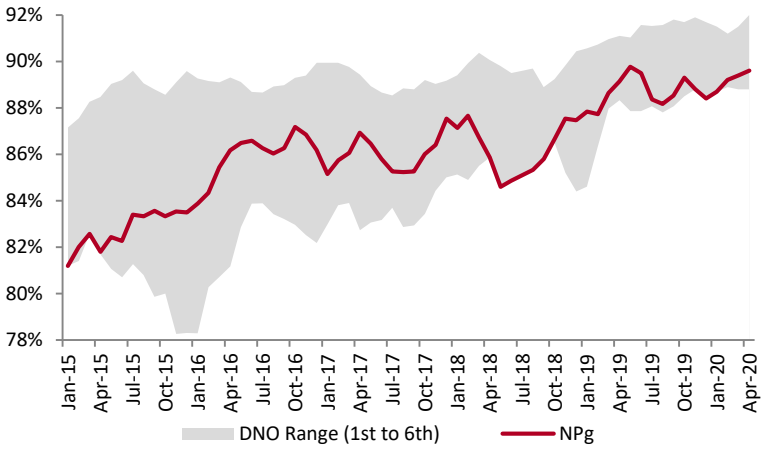
Measure	DNO	2019/20			Comments
		Target[1]	Actual	RAG	
Interruptions survey	**NPg**	**8.20**	**8.90**	●	4.7 percentage point improvement since the start of ED1
	Northeast	8.20	8.93	●	
	Yorkshire	8.20	8.87	●	
Connections survey	**NPg**	**8.20**	**8.84**	●	9.7 percentage point improvement since the start of ED1
	Northeast	8.20	8.97	●	
	Yorkshire	8.20	8.74	●	
General enquiries survey	**NPg**	**8.20**	**9.05**	●	5.0 percentage point improvement since the start of ED1
	Northeast	8.20	9.29	●	
	Yorkshire	8.20	8.82	●	
Overall survey	**NPg**	**8.20**	**8.90**	●	6.7 percentage point improvement since the start of ED1
	Northeast	8.20	9.02	●	
	Yorkshire	8.20	8.80	●	
Complaints metric	**NPg**	**8.33**	**2.39**	●	68% improvement (5.17 reduction) compared to 2015/16 performance
	Northeast	8.33	2.73	●	
	Yorkshire	8.33	2.14	●	

Figure 3.13: *Northern Powergrid Customer Satisfaction Performance*

Since the start of ED1 we have delivered a 6.7 percentage point[2] improvement in overall customer satisfaction

- In 2019/20 we improved our overall customer satisfaction performance, achieving an overall score of 8.90.
- In the year, the spread of satisfaction scores in the industry tightened once again, with only 3.1 percentage points (pp) separating 1st and 6th position in the industry. Our improved performance ranked 4th in the industry with a gap of 1.7pp to 3rd place.
- Whilst we are pleased with the performance improvements we have achieved to date, (the second most improved of all DNO groups in ED1 so far); our aim is to rank amongst the leaders in the industry. We are targeting further significant improvements in the remainder of the period, improving consistency across all measures, with particular focus on leveraging technology solutions and connections services.

Figure 3.14: *Overall Customer satisfaction (Rolling quarter)*



- In the year, we extended our use of web chat and expanded our use of technology to provide a more personalised service to our connections customers. We also expanded our range of self-service options for customers who need access to our records, providing a quicker, more accessible service.
- Our Customer Relationship Management (CRM) system continues to enable our colleagues to provide great customer service. In the year, we upgraded this to include planned power cuts and implemented CRM Go, app-technology that allows us to provide 'on the day' updates to our customers. We are further extending our CRM system to cover our remaining general enquiries service lines and utilising CRM Go to support improvements in customer communications across other service lines.
- We also continued our focus on training and development and in 2019/20 refreshed our Customer First Training. This training is being rolled out to all colleagues to embed our customer-first culture, further supporting our robust quality and training framework to ensure that our customers benefit from high-quality interactions when they need to contact us.
- Our complaint handling continued to improve. Day+1 resolution now at 84.7% (+ 4.6pp in the year), representing a 30.9pp improvement for ED1 to date. We also received no repeat complaints or adverse ombudsman decisions in the year. We're now setting our sights on a stretch target of 88% by the end of the period.

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - based on score out of 100%

g. Social Obligations

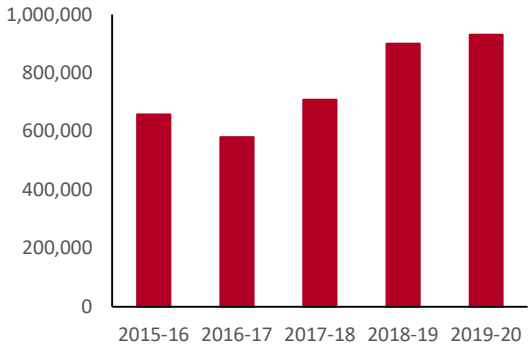
Measure	DNO[1]	2019/20			Comments
		Target[2]	Actual	RAG	
Stakeholder Engagement and Consumer Vulnerability score	**NPg**	**8.50**	**6.71**	●	Provisional 3rd place ranking for 2019/20
Supporting Measures					
Power cuts Customer satisfaction (PSR)	**NPg**	**8.20**	**8.97**	●	We are delivering against our own standards for those who need extra support during power cuts – this is reflected in our improving PSR satisfaction scores
Power cuts *Restoration within 6 hours*	**NPg**	**95%**	**95.4%**	●	
Power cuts *Restoration within 9 hours*	**NPg**	**95%**	**98.0%**	●	
School pupils engaged through safety education	**NPg**	**40,000**	**59,364**	●	Our schools programme continues to grow – we are now targeting 50,000 pupils per year

Figure 3.15: *Northern Powergrid Social Obligations Performance*

Our focus in 2019/20 has been on offering more support to customers in fuel poverty as well as integrating our social legacy programme in deprived areas where we are improving network infrastructure

- We achieved a provisional score of 6.71 in the 2019/20 Stakeholder Engagement and Consumer Vulnerability (SECV) Incentive, achieving 3rd place against our DNO peers.
- We continue to refresh our priority service register (PSR) to ensure our records are accurate. A total of 228,000 PSR records have been cleansed and improvements to our central management systems now enables colleague to cleanse PSR records via every interaction.
- We currently have 936,000 customers on our register and we have worked hard to gain more insight into PSR communication needs, challenges and barriers to inclusion.

Figure 3.16: *Count of PSR customers*



- In the year, we completed a strategic PSR campaign to identify, target and recruit individuals with additional health and mental health needs who are underrepresented due to either the nature of their vulnerability or additional needs.
- We re-assessed our fuel poverty provisions via in depth research to better target our engagement in communities that experience high volumes of fuel poverty. Our flagship fuel poverty programme has seen a 280% increase in energy saving services installed in customers' homes and delivered £1.7m in financial benefits.
- We have increased our Community Partnering Fund by merging with NGN and have now funded over 27 community organisations with over 120 applying for funding across both rounds in 2019/20.
- Through extensive research and engagement we have developed a seven point plan to ensure a socially inclusive transition to Distribution System Operator (DSO) making sure that no-one is left behind.

1 - Our social obligations targets are agreed and reported at a group level
2 - Northern Powergrid target. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment

h. Innovation

	Awarded to date in ED1 (£m)[1]	Spent to date in ED1 (£m)	Number of projects[2]
Network Innovation Allowance (NIA)	18.7	13.5	34
Network Innovation Competition (NIC)	-	-	1
Low Carbon Network (LCN) Fund	-	-	-

Figure 3.17: *Innovation Performance*

Our vision is to be at the forefront of innovative technology, solutions and thinking in the energy sector; using our innovation activity to provide our customers with world-class, affordable services

Innovation is vital to respond to external changes and new demands, improve services for our customers and respond to emerging risks. Our ultimate objectives of reducing costs and improving services for customers have focused around four core innovation priorities in ED1:

- developing a smarter and more flexible power grid;
- delivering benefits from smart meters;
- continuing to enhance our web-based and digital-enabled services; and
- to address issues of affordability.

As we look towards ED2, our innovation programme is increasingly focusing on solutions that facilitate a *just decarbonisation* transition towards net zero. Our innovation activity underpins our company-wide objectives to:

- *Lead the drive towards decarbonisation*
- *Delight our customers with outstanding service*
- *Ensure world-class levels of safety and security*
- *Operate a highly reliable and resilient network*
- *Provide remarkable value for money*
- *Be a force for good throughout our region and beyond*

We have continued to invest in developing our innovation partnerships to keep us at the forefront on innovative thinking. We have strong relationships with Russell Group academic research institutions, such as Newcastle University, as well as businesses such as our resilience orientated work with Smarter Grid Solutions, and customer interest groups such as National Energy Action. We also work closely with other companies in the Berkshire Hathaway Energy group to share our ideas, collaborate to develop innovative solutions, accessing international best practice.

Another strong year of innovation in 2019/20 reflects our commitment to finding new solutions for our customers

Following on from two years of 100% investment, in 2019/20 we invested 95% of our £3.7m Network Innovation Allowance (NIA) across our innovation portfolio consisting of 34 NIA projects. In addition to our NIA investment, we have three externally funded projects[3] in progress and we jointly bid a successful collaborative Network Innovation Competition project '*Reliability as a Service'* which is being led by SSEN. We also self-fund a range of innovation activities in our business, for example projects to reduce network losses and rolling-out machine learning.

Decarbonisation and the transition to DSO are increasingly shaping our innovation portfolio

Our innovation portfolio is influenced by changes in customer requirements, societal expectations, technology and the evolution of the sector as a whole. Most notably, our innovation portfolio is increasing its focus on techniques to support reliable, low carbon, distribution system operation.

Our £83.4m flagship ED1 smart grid programme is creating new capabilities on our network. Building on these capabilities and the potential of smart meters, in 2019/20 we authorised a project[4] to understand if smart meter voltage data can be used to dynamically shift voltage and minimise customers' energy use in the long term. This could result in 5% energy reduction if successful delivering a meaningful contribution to decarbonising energy use.

In parallel, our Customer Led Distribution System (CLDS) innovation project is delivering whole system insights into the interaction between network services and wider energy markets, in particular where the value in flexibility lies between the electricity retail and electricity networks sectors. We are also pursuing other projects that underpin various aspects of technical functionality behind future commercial offerings, notably MicroResilience, SilentPower, Vehicle to Grid, and ResilientHomes[5].

1 - This reflects the maximum available allowance
2 - NIA funded projects in ED1 to date - a brief description of our key projects can be found in the 'Innovation Activity in Primary Output areas' section, pages 12-13
3 - *e4Future* with Innovate UK *Gendrive* with United Kingdom Research and Innovation and *Barnsley Domestic DSR* with Department for Business, Energy and Industrial Strategy
4 - Boston Spa Energy Efficiency Trial (BEET)
5 - More information can be found on our innovation webpage: https://www.northernpowergrid.com/innovation

Innovation Activity in Primary Output areas

The benefits of innovation can be seen across our primary output areas. Some of our key projects are set out below:

Safety

- **Vehicle Telematics** continues to improve driver safety in our fleet helping us incur only 36 accidents across a fleet covering over 17.8 million miles in 2019/20.
- Inexpensive **fault current measurement** of wooden poles has been developed to address electrical safety issues associated with broken insulators on overhead lines. We have had interest from outside the UK with regard to this device as it is seen as one of the potential mitigations for the wildfire risk in the USA.
- Our **Centralock** project (NIA funded, £88k total project investment), which both registers and controls authorised access and prevents unauthorised access to substations has now entered the field trial stage.

Reliability & Availability

- In addition to our network automation programmes of APRS[6] and LV smart fuses, our **Foresight** fault prediction project (NIA funded, £4m total project investment) represents a revolution in LV cable fault management. So far, the project has made hundreds of thousands of pre-fault identifications prior to them becoming permanent faults. We are learning more about how to use this equipment and our understanding of cable behaviour is improving. Our ultimate aim is to use this technology to target network repairs before faults occur.
- We are using **unmanned aircraft systems** to carry out inspections of our overhead line assets to drive cost efficiencies.
- We have invested £15.8m in ED1 to date in advanced **cyber security** infrastructure.
- Our **MicroResilience** project (NIA funded, £2.7m total project investment) will allow us to keep customers on supply even after faults have taken out higher voltage circuits. Work has now started on site and in the manufacture of the power electronics plant that will be needed to deliver this project.

Environment

- Use of **Perfluorocarbon tracer** (PFT) additives has sped up cable oil leak detection, contributing to a 37% reduction in oil/fluid loss since we wrote our ED1 business plan.
- **Self-healing cable additive** that solidifies leaking cable fluid, reducing leakage even further, has completed its NIA funded development (a series of collaborative Innovation Funding Incentive (IFI) and NIA funded projects, circa £750k total project investment) and is now in business as usual field trials.
- In collaboration with other DNOs, we explored a **new alternative to traditional wood poles** which is not creosote reliant and of a consistent size and strength, allowing multiple poles to be made from one tree, reducing environmental impact.
- Our **distributed storage and solar study** (NIA funded, £275k total project investment) is created an understanding of how PV generation and behind the meter storage can reduce costs for customers and their carbon footprint, which is being taken forward as a commercial proposition in the energy retailer market.

Customer Satisfaction

- The first of our mobile battery generators from the **SilentPower** project (NIA funded, £420k total project investment) has proven useful during the COVID-19 pandemic, getting customers back on more quickly than a traditional diesel generator and in places where a diesel would not have been appropriate.
- Our **Estimated Time to Restoration (ETR)** project is combining historical power cut data with weather, traffic, time, location and resourcing information via a machine-learning tool to forecast more accurate ETRs for customers. Consideration is being given as to whether contextual data (e.g. traffic reports or weather reports) could be worked into the next generation of this tool to further refine the ETRs.
- Our **Customer Relationship Management (CRM)** system is transforming our customer interactions from reactive, inbound contacts to largely proactive and outbound across a range of integrated communication channels. We are seeing our customer service scores steadily rising to new highs, achieving 89% in 2019/20.
- Our expanded range of **web-based services** such as SafeDig (access to online network records), is allowing our customers to self-serve, accessing more information whilst saving time and cost.

6 - Automated Power Restoration System

Connections

- **Voltage reductions** enabled by learnings from our Customer Led Network Revolution (CLNR) project[7] have released over 3GW of capacity for multiple small scale generators to connect to our local network.
- Our **Autodesign** project (NIA funded, £1.1m total project investment) has created a web-based, self-service design tool that is live for our customers, providing those looking connect EV chargers access to high-quality designs, in real-time, at a lower cost. This initiative was enabled by our previous investment in integrated vectorised network and asset records.

Social Obligations

- Design work and customer engagement on our **Resilient Homes** project, a key initiative for vulnerable customers, is now complete and roll out has begun. The project utilises a domestic battery solution for ensuring that medically electrically dependent customers remain on supply if a fault occurs on the network. A successful outcome may have positive implications more widely for vulnerable and electrically dependent customers, in particular associated commercial offerings that a third party might develop from our work.

7 - Completed in 2014

ANNEX A1(a): NORTHERN POWERGRID PERFORMANCE

NPg			Unit	2018/19 Actual	2019/20 Actual	2019/20 Target[1]	RAG	2022/23 Forecast	Trend [2]
Revenue (and key financial metrics)									
Total annual revenue			£m	£568.1m	**£572.8m**	N/A	N/A	£623.1m	N/A
Customer bill [3]			£	£65.66	**£67.26**	N/A	N/A	£72.95	N/A
RoRE [4]			%	7.8%	**7.2%**	N/A	N/A	N/A	N/A
RAV	Opening balance		£m	£2,742m	**£2,770m**	N/A	N/A	N/A	N/A
	Closing value		£m	£2,770m	**£2,807m**	N/A	N/A	N/A	N/A
Totex	Allowance		£m	£391.7m	**£379.6m**	N/A	N/A	£3,043m[5]	N/A
	Actual		£m	£368.4m	**£408.1m**	N/A	N/A	£3,043m[5]	N/A
	Difference		£m	(-£23.2m)	**£28.4m**	N/A	N/A	£0.0m[5]	N/A
			%	(-5.9%)	**7.5%**	N/A	N/A	0.0%[5]	N/A
Incentives[6]									
IIS			£m	£19.3m	**£19.1m**	£23.5m	N/A	£23.2m	▼
TTC			£m	£0.7m	**£0.1m**	£2.0m	N/A	£1.2m	▼
ICE *(penalty only)*			£m	£0.0m	**TBC**[7]	£0.0m	N/A	£0.0m	—
BMCS			£m	£4.9m	**£5.9m**	£7.8m	N/A	£7.6m	▲
Total			£m	£24.9m	**£25.2m**	£33.3m	N/A	£31.9m	▲
Innovation									
NIA Expenditure			£m	£3.7m	**£3.5m**	£3.7m	●	£3.7m	▼
NIC Expenditure			£m	£0.0m	**£0.0m**	£0.0m	N/A	£0.0m	—
Primary Outputs									
Safety	HSE Compliance		Hit/miss	✓	✓	✓	●	✓	—
Environmental	Oil Leakage		Litres	34,314	**33,810**	48,681[8]	●	28,325	▲
	Business Carbon Footprint [9]		tC02e	35,673	**33,365**	56,869[8]	●	30,600	▲
	SF_6 emissions		kg	65	**63**	112[8]	●	50	▲
Customer service	Overall survey		Score	8.68	**8.90**	8.20	●	9.20	▲
	Interruptions survey		Score	8.81	**8.90**	8.20	●	9.18	▲
	Connections survey		Score	8.49	**8.84**	8.20	●	9.12	▲
	General enquiries survey		Score	8.93	**9.05**	8.20	●	9.42	▲
	Complaints metric		Score	3.08	**2.39**	8.33	●	1.80	▲
Connections	Time to quote (LVSSA)		Days	6.6	**7.3**	4.8	●	6.0	▼
	Time to quote (LVSSB)		Days	13.8	**14.1**	7.8	●	6.0	▼
	Time to connect (LVSSA)		Days	41.3	**38.8**	39.3	●	32.0	▲
	Time to connect (LVSSB)		Days	49.1	**46.9**	47.9	●	32.0	▲
Reliability	Customer interruptions	Northeast	CI	54.3	**47.0**	60.7	●	47.7	▲
		Yorkshire	CI	49.3	**50.8**	64.1	●	43.4	▼
	Length of interruptions	Northeast	CML	47.6	**44.1**	57.0	●	33.6	▲
		Yorkshire	CML	38.8	**42.1**	56.4	●	31.7	▼
Social obligations	SECV		Score	7.01	**6.71**	8.00[8]	—	8.00	▼
Secondary Deliverables									
Asset health and criticality index	**HI** Score		Points	10.5m	**13.3m**	12.5m[10]	●	20.0 - 22.0m	▲
	HI % of monetary risk target		%	52.6%	**66.8%**	62.5%	●	100 - 110%	▲
	LI Risk Score		Points	6.8m	**TBC**[11]	N/A	—	6.9m	—

Figure A1.1 *Northern Powergrid performance overview*

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Based on 2019/20 performance compared to prior year. ▲Trending positively; ▼Trending Negatively; — No/negligible movement
3 - Based on average domestic consumption of 2,900kWh - https://www.ofgem.gov.uk/electricity/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values
4 - RoRE forecast for the ED1 period based on notional gearing and including holding company debt
5 - Cumulative ED1 Period forecast (2015-2023)
6 - Incentive targets reflect maximum rewards against the relevant Ofgem Incentive mechanism
7 - ICE determination expected in Q4 2020
8 - Northern Powergrid target
9 - Business Carbon Footprint including contractors
10 - Annual targets were not set; this figure is illustrative based on an equal 12.5% of the 2023 target being delivered each year
11 - 2019/20 actual performance not reported until September 30, 2020

ANNEX A1(b): LICENSEE PERFORMANCE (NORTHEAST)

Northeast		Unit	2018/19 Actual	2019/20 Actual	2019/20 Target[1]	RAG	2022/23 Forecast	Trend [2]
Revenue (and key financial metrics)								
Total annual revenue		£m	£242.7m	**£248.9m**	N/A	N/A	£276.0m	N/A
Customer bill[3]		£	£71.86	**£74.36**	N/A	N/A	£81.04	N/A
RoRE[4]		%	8.5%	**8.0%**	N/A	N/A	N/A	N/A
RAV	Opening balance	£m	£1,184m	**£1,193m**	N/A	N/A	N/A	N/A
	Closing value	£m	£1,193m	**£1,207m**	N/A	N/A	N/A	N/A
Totex	Allowance	£m	£165.5m	**£164.7m**	N/A	N/A	£1,301m[5]	N/A
	Actual	£m	£161.5m	**£181.3m**	N/A	N/A	£1,301m[5]	N/A
	Difference	£m	(-£4.0m)	**£16.6m**	N/A	N/A	£0.0m[5]	N/A
		%	(-2.4%)	**10.1%**	N/A	N/A	0.0%[5]	N/A
Incentives[6]								
IIS		£m	£5.8m	**£7.6m**	£10.0m	N/A	£9.7m	▲
TTC		£m	£0.3m	**£0.0m**	£0.8m	N/A	£0.5m	▼
ICE *(penalty only)*		£m	£0.0m	**TBC[7]**	£0.0m	N/A	£0.0m	—
BMCS		£m	£2.2m	**£2.6m**	£3.3m	N/A	£3.2m	▲
Total		£m	£8.3m	**£10.2m**	£14.1m	N/A	£13.3m	▲
Innovation								
NIA Expenditure		£m	£1.6m	**£1.5m**	£1.6m	●	£1.6m	▼
NIC Expenditure		£m	£0.0m	**£0.0m**	£0.0m	N/A	£0.0m	—
Primary Outputs								
Safety	HSE Compliance	Hit/miss	✓	✓	✓	●	✓	—
Environmental	Oil Leakage	Litres	16,343	**9,543**	15,927[8]	●	11,550	▲
	Business Carbon Footprint[9]	tC02e	15,826	**15,893**	26,346[8]	●	14,800	—
	SF_6 emissions	kg	18	**15**	36[8]	●	12	▲
Customer service	Overall survey	Score	8.74	**9.02**	8.20	●	9.20	▲
	Interruptions survey	Score	8.84	**8.93**	8.20	●	9.18	▲
	Connections survey	Score	8.55	**8.97**	8.20	●	9.12	▲
	General enquiries survey	Score	9.07	**9.29**	8.20	●	9.42	▲
	Complaints metric	Score	3.53	**2.73**	8.33	●	1.80	▲
Connections	Time to quote (LVSSA)	Days	6.3	**7.6**	4.8	●	6.0	▼
	Time to quote (LVSSB)	Days	11.4	**14.3**	7.8	●	6.0	▼
	Time to connect (LVSSA)	Days	41.2	**40.5**	39.3	●	32.0	▲
	Time to connect (LVSSB)	Days	50.8	**50.7**	47.9	●	32.0	—
Reliability	Customer Interruptions	CI	54.3	**47.0**	60.7	●	47.7	▲
	Length of Interruptions	CML	47.6	**44.1**	57.0	●	33.6	▲
Social obligations	SECV	Score	7.01	**6.71**	8.00[8]	●	8.00	▼
Secondary Deliverables								
Asset health and criticality index	**HI** Score	Points	6.3m	**7.9m**	5.3m[10]	●	10.6-11.6m	▲
	HI % of monetary risk target	%	59.6%	**74.9%**	62.5%	●	100-110%	▲
	LI Risk Score	Points	2.5m	**TBC**[11]	N/A	-	2.5m	—

Figure A1.2: *Northern Powergrid (Northeast) performance overview*

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Based on 2019/20 performance compared to prior year. ▲Trending positively; ▼Trending Negatively; — No/negligible movement
3- Based on average domestic consumption of 2,900kWh - https://www.ofgem.gov.uk/electricity/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values
4 - RoRE forecast for the ED1 period based on notional gearing and excluding holding company debt
5 - Cumulative ED1 Period forecast (2015-2023)
6 - Incentive targets reflect maximum rewards against the relevant Ofgem Incentive mechanism
7 - ICE determination expected in Q4 2020
8 - Northern Powergrid target
9 - Business Carbon Footprint including contractors
10 - Annual targets were not set; this figure is illustrative based on an equal 12.5% of the 2023 target being delivered each year.
11 - 2019/20 actual performance not reported until September 30, 2020

ANNEX A1(c): LICENSEE PERFORMANCE (YORKSHIRE)

Yorkshire		Unit	2018/19 Actual	2019/20 Actual	2019/20 Target[1]	RAG	2022/23 Forecast	Trend[2]
Revenue (and key financial metrics)								
Total annual revenue		£m	£325.4m	**£323.9m**	N/A	N/A	£347.1m	N/A
Customer bill[3]		£	£61.28	**£62.24**	N/A	N/A	£67.20	N/A
RoRE[4]		%	7.7%	**6.9%**	N/A	N/A	N/A	N/A
RAV	Opening balance	£m	£1,558m	**£1,578m**	N/A	N/A	N/A	N/A
	Closing value	£m	£1,578m	**£1,600m**	N/A	N/A	N/A	N/A
Totex	Allowance	£m	£226.2m	**£214.9m**	N/A	N/A	£1,742m[5]	N/A
	Actual	£m	£206.9m	**£226.7m**	N/A	N/A	£1,742m[5]	N/A
	Difference	£m	(-£19.2m)	**£11.8m**	N/A	N/A	£0.0m[5]	N/A
		%	(-8.5%)	**5.5%**	N/A	N/A	0.0%[5]	N/A
Incentives[6]								
IIS		£m	£13.5m	**£11.6m**	£13.5m	N/A	£13.5m	▼
TTC		£m	0.4m	**£0.1m**	£1.2m	N/A	£0.7m	▼
ICE *(penalty only)*		£m	£0.0m	**TBC[7]**	£0.0m	N/A	£0.0m	—
BMCS		£m	£2.7m	**£3.3m**	£4.5m	N/A	£4.4m	▲
Total		£m	£16.5m	**£15.0m**	£19.2m	N/A	£18.6m	▼
Innovation								
NIA Expenditure		£m	£2.1m	**£2.0m**	£2.1m	●	£2.1m	▼
NIC Expenditure		£m	£0.0m	**£0.0m**	£0.0m	N/A	£0.0m	—
Primary Outputs								
Safety	HSE Compliance	Hit/miss	✓	✓	✓	●	✓	—
Environmental	Oil Leakage	Litres	21,393	**24,267**	32,754[8]	●	16,775	▼
	Business Carbon Footprint[9]	tC02e	19,847	**17,472**	30,523[8]	●	15,800	▲
	SF_6 emissions	kg	47	**48**	76[8]	●	38	—
Customer service	Overall survey	Score	8.62	**8.80**	8.20	●	9.20	▲
	Interruptions survey	Score	8.79	**8.87**	8.20	●	9.18	▲
	Connections survey	Score	8.44	**8.74**	8.20	●	9.12	▲
	General enquiries survey	Score	8.80	**8.82**	8.20	●	9.42	▲
	Complaints metric	Score	2.66	**2.14**	8.33	●	1.80	▲
Connections	Time to quote (LVSSA)	Days	6.8	**7.1**	4.8	●	6.0	▼
	Time to quote (LVSSB)	Days	15.1	**13.9**	7.8	●	6.0	▼
	Time to connect (LVSSA)	Days	41.4	**37.8**	39.3	●	32.0	▲
	Time to connect (LVSSB)	Days	48.0	**44.9**	47.9	●	32.0	▲
Reliability	Customer Interruptions	CI	49.3	**50.8**	64.1	●	43.4	▼
	Length of Interruptions	CML	38.8	**42.1**	56.4	●	31.7	▼
Social obligations	SECV	Score	7.01	**6.71**	8.00[8]	●	8.00	▼
Secondary Deliverables								
Asset health and criticality index	**HI** Score	Points	4.2m	**5.4m**	5.9m[10]	●	9.4-10.3m	▲
	HI % of monetary risk target	%	44.7%	**57.5%**	62.5%	●	100-110%	—
	LI Risk Score	Points	4.3m	**TBC**[11]	N/A	-	4.4m	—

Figure A1.3 *Northern Powergrid (Yorkshire) performance overview*

1 - Ofgem targets unless otherwise stated. For details of target setting, forecasting and RAG assessment, see Annex 1: Output Performance Assessment
2 - Based on 2019/20 performance compared to prior year. ▲Trending positively; ▼Trending Negatively; — No/negligible movement
3- Based on average domestic consumption of 2,900kWh - https://www.ofgem.gov.uk/electricity/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values
4 - RoRE forecast for the ED1 period based on notional gearing and excluding holding company debt
5 - Cumulative ED1 Period forecast (2015-2023)
6 - Incentive targets reflect maximum rewards against the relevant Ofgem Incentive mechanism
7 - ICE determination expected in Q4 2020
8 - Northern Powergrid target
9 - Business Carbon Footprint including contractors
10 - Annual targets were not set; this figure is illustrative based on an equal 12.5% of the 2023 target being delivered each year.
11 - 2019/20 actual performance not reported until September 30, 2020

ANNEX A2: OUTPUT PERFORMANCE ASSESSMENT

Approach to target setting and forecasting for outputs

We seek to achieve continuous improvement through our target setting, moving the performance of the business forward to best-ever levels.

The 2019/20 targets set out in this report include a combination of:

- Ofgem incentive targets where stipulated in RIGs guidance and/or RAG rating guidance; and
- Northern Powergrid targets where Ofgem has not indicated the basis for targets.

We have included footnotes on the outputs tables throughout the document to identify the basis of the targets applied for each measure.

In addition, on pages 21-23 of the report, we have included our 2022/23 forecast for key output measures indicating our targeted out-turn position by the end of the ED1 price control period.

RAG rating guidance/approach

The tables over the page set out the RAG rating approach applied in Section 3 of the document (Key operational performance measures).

They include Ofgem's RAG guidance used in its ED1 Annual Reports along with Northern Powergrid's RAG approach for measures where no guidance has been set by Ofgem.

OFGEM RAG GUIDANCE				
Measure	**Green**	**Amber**	**Red**	**Overall RAG (for Section 3a)**
Average duration of interruptions (CML)	Actual performance is lower than or equal to the regulatory target	Actual performance is higher than target but lower than or equal to 105% of regulatory target	Actual performance is higher than 105% of regulatory target	For DNOs' overall Reliability and availability RAG status: Both green = Green overall Both red = Red overall Any other combination – Amber overall
Number of interruptions (CI)	Actual performance is lower than or equal to the regulatory target	Actual performance is higher than target but lower than or equal to 105% of regulatory target	Actual performance is higher than 105% of regulatory target	
Complaints	Performance is lower than or equal to regulatory target of 8.33 (score <=8.33)	Performance is higher than regulatory target, but lower than or equal to 105% of regulatory target (8.33 < score < =8.75)	Performance is higher than 105% of regulatory target (score > 8.75)	Weight performance as follows: 50% connections; 30% interruptions; and 20% general enquiries. For DNOs' overall Customer satisfaction RAG status: Both green = Green overall Both red = Red overall Any other combination – Amber overall
Customer Satisfaction Survey	Performance is higher than or equal to regulatory target (>=8.2)	Performance is lower than regulatory target, but higher than or equal to 95% of regulated target (7.79 <= score < 8.2)	Performance is lower than 95% of regulated target (<7.79)	
Fluid Filled cables (top up as a percentage of oil in service)	None – will build a picture of annual performance over price control *(see next page for Northern Powergrid's approach)*			
SF_6 (emissions as percentage of SF_6 bank)	None – will build a picture of annual performance over price control *(see next page for Northern Powergrid's approach)*			
BCF (excluding losses) (as a % of network length and customer numbers)	None – will build a picture of annual performance over price control *(see next page for Northern Powergrid's approach)*			
Time to Quote and Time to Connect	Actual time is lower than or meeting regulatory target in all 4 of the categories	Actual time is higher than 105% of regulatory target for no more than 2 categories	Actual time is higher than 105% of regulatory target for 3 or 4 categories	For DNOs' overall Connections RAG status: All five green = Green overall Three or more red = Red overall Any other combination = Amber overall
Connection GSoPs	0% to <=2% of total connections standards missed	>2% and <=5% of total standards missed	>5% of total standards missed	

Figure A2.1: *Ofgem RAG guidance/approach*

NORTHERN POWERGRID RAG APPROACH					
Measure		**Green**	**Amber**	**Red**	**Overall RAG (for Section 3a)**
INNOVATION					
NIA expenditure		NIA expenditure is >=90% of allowance	NIA expenditure is >=75% but <90% of allowance	NIA expenditure is <75% of allowance	
SAFETY					
HSE compliance		No HSE compliance failures or prohibition notices	No material HSE compliance failures and only minor non-conformances e.g. minor prohibition notice(s)	1 or more material compliance failures or major non-conformances	Overall RAG status for safety based on RAG status for Ofgem's headline measure of HSE compliance (see left)
OSHA		Performance is equal to or less than Northern Powergrid internal target	Performance is >100% but <=110% of Northern Powergrid internal target[12]	Performance is >110% of Northern Powergrid internal target	
RIDDOR					
RELIABILITY & AVAILABILITY					
Non-connections GSOP (no of failures)		Performance is equal to or less than Northern Powergrid internal target	Performance is >100% but <=105% of Northern Powergrid internal target	Performance is >105% of Northern Powergrid internal target	
ENVIRONMENT					
Oil Leakage		Performance is equal to or less than Northern Powergrid internal target	Performance is >100% but <=105% of Northern Powergrid internal target	Performance is >105% of Northern Powergrid internal target	Overall RAG status for environment based on oil leakage, business carbon footprint and SF6 emissions: All three green = Green overall Two or more red = Red overall Any other combination = Amber overall
Business Carbon Footprint					
SF6 emissions					
Undergrounding in protected landscape (km)		Performance is equal to or higher than Northern Powergrid internal target	Performance is <100% but >=95% of Northern Powergrid internal target	Performance is <95% of Northern Powergrid internal target	
SOCIAL OBLIGATIONS					
SECV score		Rank is 1st or 2nd *(against our DNO peers)*	Rank is 3rd or 4th *(against our DNO peers)*	Rank is 5th or 6th *(against our DNO peers)*	Overall RAG status for social obligations based on SECV score (ranking): 1st or 2nd = Green 3rd or 4th = Amber 5th or 6th = Red
PSR Powercuts	BMCS	Performance is equal to or less than Northern Powergrid internal target	Performance is >100% but <=105% of Northern Powergrid internal target	Performance is >105% of Northern Powergrid internal target	
	< 6 hours				
	< 9 hours				
School pupils engaged through safety education					
SECONDARY DELIVERABLES					
Outputs HI		Performance is >=100% of phased ED1 straight-line profile	Performance is <100% but >=95% of phased ED1 straight-line profile	Performance is <95% of phased ED1 straight-line profile	

Figure A2.2: *Northern Powergrid RAG approach for measures where no guidance is set by Ofgem*

12 - Amber RAG range set at 10% given small number of absolute incidents that contribute to target

4. OVERVIEW OF REGULATORY PERFORMANCE

We are required by Ofgem's Regulatory Instructions and Guidance to include narrative on a table by table basis. Much of this requirement is covered by our narrative in sections 2, 3 and data within Annex A of this report; therefore we have cross-referenced wherever possible but include further detail in some areas. We have also referenced the relevant table in the RFPR template (published alongside this report) where supporting values can be found.

RoRE (Table R1): See section 2a-2c

Revenue (Table R2)

On average for the ED1 period to date, 95% of our allowed Network Revenue is base revenue. Incentive mechanism revenues account for the majority of the remainder for both licensees in the years 2017/18 to 2019/20, with the correction factor being more significant in 2015/16 and 2016/17, as it includes the recovery of energy supplier temporary rebates given in DPCR5.

Table R2 of the RFPR shows the impact of incentives earned in DPCR5 on revenues collected in the ED1 period. Incentives earned are generally allowed into revenue with a 2-year lag, therefore incentive revenue adjustments reported in this table in 2015/16 and 2016/17 mainly relate to incentive performance in DPCR5. The DPCR4 residual distribution losses incentive also affected Northeast allowed revenues in 2015/16 and 2016/17 and Yorkshire allowed revenues in all ED1 years to 2017/18. This DPCR4 incentive will not affect allowed revenue in future ED1 years.

For further information on 2019/20 incentive revenues earned, see annex A1(a – c).

Totex performance (Table R4): See section 2d-2e

Northeast

In the ED1 period to date we have underspent against allowances by £9.3m (after taking into account expected allowance updates affecting those years, which are not yet reflected in the price control financial model (PCFM). We attribute £35.7m of this underspend to rephasing or timing differences which we expect to unwind over the ED1 period, offset by additional costs of £26.4m.

After making an enduring value adjustment to remove the effect of the rephasing/timing differences, the £26.4m additional cost shows as an underperformance against the totex incentive mechanism (TIM) for the period to date, which translates into an average RoRE impact of -0.7% at notional gearing and -0.5% at actual gearing.

Our forecast expectation is to spend in line with allowances over the ED1 period. We forecast that our efficiency savings and the impact of external factors will cover the additional costs incurred to date and fund service enhancements such as additional EHV cable replacement, cyber security and flood defence work.

After taking into account enduring value adjustments, the profile of our TIM performance varies on a year-by-year basis over the period, reflecting the differing timing of efficiency savings, external factors (such as reinforcement requirements) and service enhancements.

Yorkshire

In the ED1 period to date we have underspent against allowances by £66.0m (after taking into account expected allowance updates affecting those years, which are not yet reflected in the PCFM). We attribute £83.4m of this underspend to re-phasing or timing differences which we expect to unwind over the ED1 period, offset by additional costs of £17.4m. These additional costs include £14.0m expenditure on our Doncaster high value project, the majority of which is covered by allowances awarded in DPCR5.

After making an enduring value adjustment to remove the effect of the re-phasing/timing differences, the £17.4m additional cost shows as a TIM underperformance for the period to date, equating to an average RoRE impact of -0.4% at notional gearing and -0.2% at actual gearing.

Our forecast expectation is to spend in line with allowances over the ED1 period. We forecast that our efficiency savings and the impact of external factors will cover the additional costs incurred to date and fund service enhancements such as additional EHV cable replacement, cyber security and flood defence work.

After taking into account enduring value adjustments, the profile of our TIM performance varies on a year-by-year basis over the period, reflecting the differing timing of efficiency savings, external factors (such as reinforcement requirements) and service enhancements. 2015/16 shows the most significant underperformance, due to expenditure on our Doncaster high value project for which allowances were provided in DPCR5.

Output incentive performance (Table R5): ***See Annex A, 1a-1c***

Innovation (Table R6): ***See section 3h***

Only the NIA section of Table R6 has an impact on RoRE, albeit an immaterial one, being the unfunded element net of Corporation Tax.

Financing (Table R7)

Northeast

Although the nominal cost of debt has been relatively stable in the ED1 period to date, there is significant volatility in the real cost of debt. Actual inflation was low in 2015/16 (1.08% using Ofgem's methodology) and 2016/17 (2.14%), resulting in an underperformance against the allowance at notional gearing in these years.

Real Cost of Debt	*Actual*					*Forecast*		
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Actual	3.75%	2.74%	1.10%	1.45%	1.83%	2.30%	1.30%	1.20%
Allowed	2.55%	2.42%	2.29%	2.09%	1.94%	1.78%	1.63%	1.48%
Difference	1.20%	0.32%	-1.19%	-0.64%	-0.11%	0.52%	-0.33%	-0.28%

Figure 4.1: *Cost of debt (Northeast)*

For notional gearing, Table R7 shows us outperforming the cost of debt allowance both for the ED1 period to date and the overall ED1 forecast. Outperformance is reduced, compared with our 2018/19 RFPR due to lower inflation forecasts increasing the real cost of debt, particularly in 2020/21 and 2021/22. It should be noted that, because this table is at a licensee level, higher-coupon debt held at holdco level is excluded.

For actual gearing we show a much higher outperformance against the cost of debt allowance, as our gearing (at 52% on average) is significantly below the notional level. It should be noted that, although this gives a positive result in Table R7, the additional element funded by equity is effectively receiving the lower cost of debt allowance and therefore the overall impact on RoRE of having lower than notional gearing is negative, as noted in section 2.

Yorkshire

As actual inflation was particularly low in 2015/16 (1.08% using Ofgem's methodology), this year shows a more significant underperformance against the allowance than in the following years in the ED1 period to date, even though our nominal actual cost of debt was lower in this year than any other year in the ED1 period to date.

Real Cost of Debt	*Actual*					*Forecast*		
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Actual	4.83%	3.83%	2.35%	2.87%	2.93%	2.48%	2.23%	1.43%
Allowed	2.55%	2.42%	2.29%	2.09%	1.94%	1.78%	1.63%	1.48%
Difference	2.28%	1.41%	0.06%	0.78%	0.99%	0.70%	0.60%	-0.05%

Figure 4.2: *Cost of debt (Yorkshire)*

At notional gearing, Table R7 shows us underperforming the cost of debt allowance both for the ED1 period to date and the overall ED1 forecast. Yorkshire had a bond with a coupon rate of 9.25%, which matured in 2019/20, after which we forecast improved performance in the remaining years of ED1. The forecast years still show underperformance, compared with an outperformance forecast in our 2018/19 RFPR. This change is largely the result of lower inflation

forecasts in these years, particularly in 2020/21 and 2021/22. It should be noted that, because this table is at a licensee level, higher-coupon debt held at holdco level is excluded.

At actual gearing we show a much lower level of overall ED1 forecast underperformance against the cost of debt allowance, as our gearing (at 48% on average) is significantly below the notional level. It should be noted that, although this gives a positive result in Table R7, the additional element funded by equity is effectively receiving the lower cost of debt allowance and therefore the overall impact on RoRE of having lower than notional gearing is negative, as noted in section 2.

Net Debt (Table R8)

As noted above in relation to Financing (Table R7), actual gearing is significantly lower than the notional level. Northeast's gearing starts at 52% and is approximately 52% on average over the period. Yorkshire's gearing starts at 51% and falls during the period (giving an average of approximately 48%).

RAV (Table R9)

'Closing RAV per latest published PCFM' reported in row 11 of Table R9 is effectively a hybrid - being based on a combination of opening allowances (for the forecast years) and actual expenditure/allowances in the ED1 period to date.

Northeast's ED1 closing RAV forecast is approximately 1% higher than the closing RAV value per the latest PCFM (row 11) and Yorkshire's is 2% higher, due to a combination of re-profiling of expenditure into later years of the period and expected additional allowances.

Taxation (Table R10)

Over the ED1 period, RoRE performance relating to tax is negligible (0.0%). For the ED1 period to-date both licensees have a small RORE outperformance of 0.1%. As described in section 2, this relates primarily to the dead-band applied to tax legislation changes, which has allowed us to keep some benefit of a reduction in the Corporation Tax rate in the ED1 period-to-date.

Dividends paid and current policy (Table R11)

Our current dividend policy is aligned to Ofgem's PCFM assumption that 5% of the equity element of RAV is paid as a dividend annually. Annual values for dividends paid are shown in Table R11.

Pensions (Table R12)

The values on Table R12 do not feed into the RoRE calculations within the RFPR, on the basis that differences between established deficit allowances and the equivalent element of deficit repair payments are timing differences only, and the incremental deficit is assumed to be funded as part of totex.

It should be noted that the disallowed element of the established deficit is not taken into account in the RoRE in Table R1, as it is a cost deemed not to relate to the regulated business.

To the extent that the incremental deficit is greater than that assumed at the time of setting allowances, it will be subject to the TIM incentive rate and therefore will not be fully funded. The incremental deficit is included in the overall TIM performance reported in Table R4. The values included in row 11 of this table represent the amount of the incremental deficit we have included in actual totex for the years concerned, rather than an assessment of the element of this which has been funded via allowances.

The proportion of the deficit attributable to post cut-off-date service (the incremental deficit) increased significantly at the March 2016 triennial valuation, due predominantly to low gilt rates at that time.

DATA ASSURANCE STATEMENT

We have applied Ofgem's Data Assurance Guidance (DAG) methodology. Data inputs are predominately from well-established existing sources of information (the first two of which are subject to data assurance under DAG requirements):

- RRP – Costs and Volumes Reporting pack and Revenue Reporting pack;
- our pension RIGs submission following the March 2016 triennial valuation;
- our 10 year business plan

Our forecast is based on our annual 10-year business plan that is prepared for our shareholder. The plan is signed-off by the Chief Executive, the Board and ultimately formally approved by our shareholder. We use the latest approved plan (in this case the plan approved in 2019) as the basis for our annual RRP and RFPR forecast reflecting any significant changes that are known at the time of preparation, for example changes in costs subject to uncertainty mechanisms.

The internal process for preparing the business plan is extensive and has significant Executive and management oversight. Business managers prepare local budgets based on guidance around key assumptions and targeted levels of expenditure (for example holding costs below RPI) whilst identifying cost pressures and new cost saving initiatives. Iterative reviews of the plan are then undertaken to ensure that the plan meets the requirements of our stakeholders.

Capital and direct costs are largely forecast based on volumes of work required to deliver our outputs at planned unit costs (e.g. asset replacement) with certain lines forecasted on a run-rate basis (e.g. faults). Indirect costs budgets are built up at individual cost centre and cost category level.

The assumptions in our planning process are consistent with the parameters of the ED1 settlement.

ANNEX B1: ENDURING VALUE METHODOLOGIES

Ofgem requires that we classify any updates to allowances which are not included in the last published PCFM as enduring value adjustments.

a) Smart Meter Roll-out updated allowances

For the first four years of the ED1 period, smart meter roll-out updated allowances updates have already been directed, as this is done on an annual basis as part of the annual iteration process.

The expected allowance update for 2019/20 is based on actual interventions in 2019/20. Future years are our best estimate at this time, based on our experience of intervention rates in the ED1 period to date.

The smart meter roll-out continues to face delays, and more latterly has been severely impacted by COVID-19. It is uncertain at this stage what the enduring impact on the supplier-led programme will be against the revised targets for the programme in 2024.

We have forecast allowances continuing into the last two years of ED1 in line with government's revised target completion date.

b) Visual Amenity allowances

For the first four years of the ED1 period, visual amenity allowances have already been directed, as this is done on an annual basis as part of the annual iteration process.

The expected allowance update for 2019/20 is based on actual costs incurred in 2019/20. Future years represent recovery of our planned expenditure up to the maximum total level for ED1 set out in our licence.

c) Street Works allowances

We have included anticipated allowance updates for Northeast based largely on our May 2019 ED1 reopener submission for the costs associated with Local Authorities implementing new permit schemes and for lane rental costs. Although, under Ofgem's assessment, Northeast did not meet the materiality threshold for the May 2019 reopener, we are able to apply again at the end of the ED1 period based on costs incurred. Our anticipated allowance update for Yorkshire relates to lane rental costs only. Yorkshire received additional allowances for new permit scheme costs as a result of the May 2019 reopener process and does not have to meet the materiality threshold again in order to apply for additional allowances at the end of the ED1 period.

d) Adjustment to remove impact of re-phasing/timing differences

An enduring value adjustment has been made to reverse the value of our underspend in each year of the period-to-date that we attribute to rephasing/timing and to profile that reversal over the remainder of the ED1 period, giving no total ED1 adjustment. This gives a better view of our underlying performance to date, and future expected performance under the Totex Incentive Mechanism.

ANNEX B2: BASIS OF APPORTIONMENTS AND ALLOCATIONS

The RFPR draws on data from well-established existing sources of information which are subject to data assurance under DAG requirements i.e. the RRP – Costs and Volumes Reporting pack and Revenue Reporting pack.

No further apportionments or allocations between licensees were required in the population of the RFPR.

ANNEX B3: GLOSSARY – COST CATEGORIES

Load Related

The cost of managing the load on the network: for example, the installation of new assets to accommodate changes in the level or pattern of electricity demand and generation.

Non Load Capex (excluding Non-Operational Capex)

Primarily the costs of replacing and refurbishing network assets, including operational buildings, defending our substations against flooding, and the costs of operational IT & telecoms systems/equipment.

High Value Projects

Capital expenditure projects with a particularly high value. For ED1, these are projects expected to cost at least £25.0m (in 2012/13 prices), which may be Load Related or Non Load Related in nature.

Network Operating Costs

Primarily the cost of repairing faults on the network, inspection and maintenance activities and smart meter related expenditure.

Closely Associated Indirects

The cost of supporting direct activity on the network, such as the costs of network design, project management, engineering management, clerical support, operational training, call centres and control centres.

Business Support Costs

The cost of running the DNO business, such as those associated with the CEO, finance, IT and non-operational property running costs, HR and non-operational training.

Non-Operational Capex

Capital expenditure on non-operational IT and telecoms systems/equipment, non-operational property, vehicles, tools and equipment.

Other/Totex Adjustments

Adjustments made to expenditure to remove related party profit margins that are not allowed as totex and deduct other items prescribed by Ofgem, such as proceeds from the sale of assets, in arriving at the overall totex value.

Contact us about this report

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 we could be doing. If you would like to comment, you can contact us in a number of ways:

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