29 July 2016

National Grid Gas Distribution in 2015/16
RRP supporting narrative

Purpose of Document

National Grid Gas Distribution (NGGD) has prepared this document on its business performance in 2015/16. This has been the third year of the RIIO-GD1 price control that runs from 2013/14 to 2020/21 for our four networks; East of England (EoE), London (Ln), North West (NW) and West Midlands (WM).

This report provides information for stakeholders. However, it is primarily for Ofgem and written in support of our 2015/16 Regulatory Report Pack (RRP). It explains our performance and shows how we are meeting our RIIO-GD1 commitments.

The RRP pack describes our performance across a wide range of areas that includes standards of service, safety and reliability, asset health, the work we have done and costs. The reporting pack has over 70 data tables for each network, which have been produced in an agreed format common for all Gas Distribution Networks.

As well as providing information on our 2015/16 performance, the report also provides forecasts based on a number of assumptions for the remainder of the RIIO-GD1 period.

We are committed to publish our progress against our commitments in an annual stakeholder report, this year to be published jointly with this report. The format of the 'Our Performance for 2015/16' report has been refreshed this year based on stakeholder feedback and we have therefore published a range of more accessible materials. Firstly, a short animated video taking you on a journey through our performance. This is then supported by a booklet containing a full output scorecard together with a customer bill breakdown showing you the cost of our service and what you receive in return. This RRP report meets the needs of those who still prefer to read a detailed written document.

Associated documents

4 GDN tables

Stakeholder booklet - Our Performance for 2015/16

Stakeholder animated video

Contents

Executive Summary

In 2015/16 National Grid Gas Distribution (NGGD) delivered a safe network that provided a secure supply of gas with all emergency standards of service met and a network reliability of 99.999%.

In addition to exceeding emergency attendance standards we increased the proportion of repairs completed in 12 hours and delivered our Network Repair Risk output targets in all of our networks.

We are ahead of our cumulative iron mains risk reduction targets, we replaced 13% more iron pipes than last year and we increased our delivery of Network Output Measures.

We carried out more planned service pipe replacements than our RIIO target, which enhances safety. Through improved operational performance we kept total planned work interruption minutes within the output threshold agreed with Ofgem.

Unplanned interruption minutes increased in 2015/16 primarily due to Multi-Occupancy Building (MOB) jobs. We are improving our processes and introducing new technology to mitigate the impact of MOB escapes by avoiding interruptions and to reduce interruption durations. MOBs workload is most significant in London. About 15% of unplanned London interruptions affect MOB customers however they caused over 90% of the unplanned minutes and the RIIO-GD1 target did not include the increase in these jobs.

Overall our customer satisfaction survey results improved. Customers continued to give our emergency and repair service a high rating and our connections service quality improvement plan was successful in delivering higher satisfaction scores with two of our networks now above target. Our planned work scores were essentially unchanged and remain disappointing given this has been an area of focus; we have invested further in enhancing our planned work customer experience and we hope to see better results over the coming year.

Leakage performance improved by 49.5 GWh relative to 2014/15; we are ahead of our RIIO targets in this area and all our other environmental measures were also achieved.

We connected 12 renewable bio-methane production plants in 2015/16. Replacing natural gas with renewable gas is a cost effective method of reducing carbon emissions. The level of subsidy is low compared to other low carbon energy sources and little system investment is required as existing capacity is re-purposed and customers can use their existing appliances.

We continue to deliver strong performance on our social outputs with work to mitigate the risks posed by carbon monoxide poisoning and tackling fuel poverty.

The Stakeholder Panel awarded us a score of 6.9 (our 2014/15 score was 5.9), which was the highest score awarded to any GDN in 2015/16. It reflected the work we have been doing to protect vulnerable consumers, improve the experience of road users affected by roadworks and our work looking at the future of gas in the evolving energy market. Stakeholder engagement is a key part of developing our plans for RIIO-GD2 and beyond.

Our TOTEX was at a similar level to 2014/15 at £943m, with costs lower than the allowance by £103m (10%). We have kept our RIIO period forecast substantially unchanged and expect to deliver costs 8% lower than the eight year allowances. We will be delivering further cost efficiencies, eg from new innovation technologies, however work and expenditure will be increasing to deliver our output commitments, eg large diameter mains replacement, over the remaining period of RIIO-GD1. TOTEX and incentive performance are expected to deliver RORE of around 10% over the eight year period.

Customers are experiencing reducing network charges during the RIIO period with our charge for a typical domestic customer falling in real terms by 11% from £134 in 2013/14 to £119 in 2020/21.

1. Outputs delivery

This section discusses the delivery of primary outputs there is detailed discussion relating to other outputs and changes in costs and other measured values in the appendix.

1.1 Operating a safe network

Emergency response

We provide a gas emergency service which keeps people safe in their homes and businesses. We respond to internal and external gas escapes and also to potential spillages of carbon monoxide from appliances.

In 2015/16 we attended 428,743 reported gas emergencies and in doing this we delivered the required 97% standards of service for emergency response in all of our networks; the table below refers:

Network	Attend uncontrolled gas escape within 1 hour	Attend controlled gas escape within 2 hours
East of England	97.94%	98.77%
North London	98.04%	98.64%
North West	98.52%	99.14%
West Midlands	98.63%	99.10%

We also operate the National Gas Emergency contact centre, which takes calls and provides safety advice on behalf of all Gas Distribution Networks and independent Gas Transporters. In 2015/16 we answered a total of 2.07 million calls, the average time to answer was about 9.5 seconds, 92.59% of calls were answered within 30 seconds; the required standard is 90% within 30 seconds.

Repair management

During 2015/16 we experienced 87,112 network escapes, which is similar to the 83,729 network escapes that were reported in 2014/15.

By improving the way in which we operate we increased the proportion of network escapes that were resolved in 12 hours and continue to perform better than our RIIO targets; the table refers:

Network	2015/16	2014/15	Target
East of England	52%	54%	42%
North London	52%	48%	43%
North West	51%	48%	34%
West Midlands	51%	50%	36%

We delivered our Network Repair Risk target commitments in all of our Networks.

Network	Network Repair Risk 2015/16 (millions)	Target Network Repair Risk (millions)
East of England	4.68	5.17
North London	4.32	4.62
North West	4.71	4.91
West Midlands	2.31	2.50

We improved our performance in this area relative to 2014/15 by successfully implementing our 'Repair Risk initiative'. This initiative combined training and changes to working practice with improved management information and most significantly increased flexibility of resources between different parts of the country.

Our forecast is to outperform this measure in all future years and we have arrangements in place to increase and re-focus resources to repair work to accommodate changes in workload. Operational performance is impacted by adverse weather, which can reduce productivity; severe conditions also tend to increase workload; as a result the Network Repair Risk target may be missed in an individual year.

Mains replacement is designed to reduce the number of Gas in Buildings events, however the number of GIBs varies from year to year because mains are affected by ground conditions e.g. water table, temperature and other factors. We experienced 241 iron mains fracture related GIBs in 2015/16 less than the 320 which occurred in 2014/15.

Major accident prevention

Our current Gas Safety (Management) Regulations Safety Case was approved by the HSE. We are now working to refresh our Safety Case in preparation for the sale of our business.

Two incidents occurred during 2014/15 that were resolved legally in 2015/16. These incidents were not reportable in RRP data tables however we provide a summary here.

Dugdale

On the 22nd of April 2014 an 11 year old boy (Robbie Williamson) was fatally injured when he fell from a gas main installed on the side of a canal bridge crossing at Dugdale Bridge in Burnley. He was able to access the pipe through local authority railings which had been prised open and because there was no deterrent guard on the pipe crossing the canal.

We fully co-operated with the HSE investigation of the incident.

We plead guilty at the first opportunity in the Crown Court to a breach of Section 3 of the Health and Safety at Work Act 1974; which resulted in our receiving a fine on the 8th of December 2015.

All learning identified from this incident was shared with the other GDNs as well as being embedded within our policies and procedures. We also carried out a supplementary survey of above ground river / canal crossings.

Scunthorpe

On the 24th June 2014 a serious leg injury was sustained by one of our contract personnel whilst he was repairing a gas main in Ashby Road, Scunthorpe.

We fully co-operated with the HSE investigation of the incident.

We plead guilty at the first opportunity in the Crown Court to a breach of Section 3 of the Health and Safety at Work Act 1974; resulting in our receiving a fine on the 25th of January 2016

As a result of our own investigation into the circumstances of the accident we have undertaken a number of actions to improve safety during such work.

Iron mains risk reduction

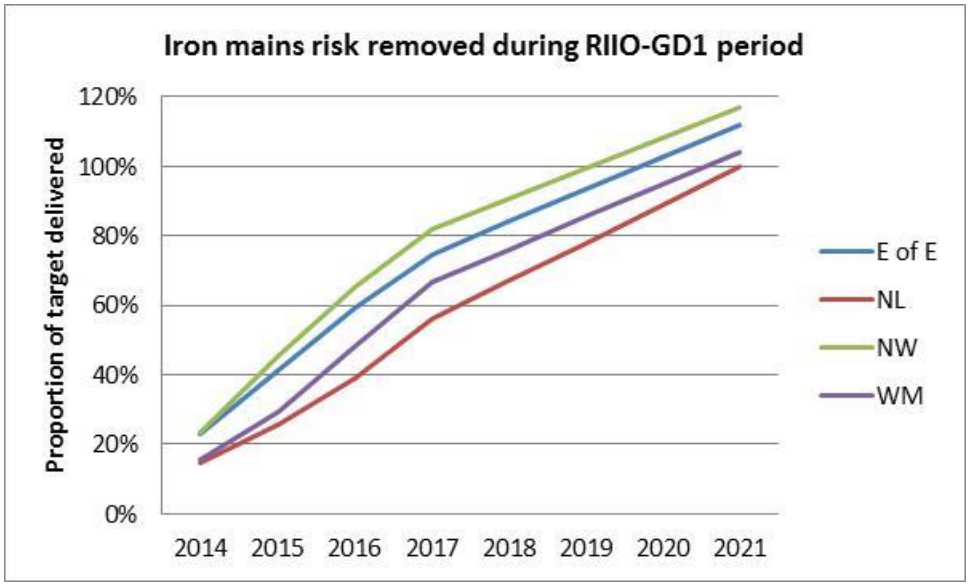
Iron pipes may fail by fracture as a result of ground movement giving rise to sudden and significant escapes of gas. As a result of this National Grid Gas Distribution is carrying out an HSE agreed programme of replacement work to mitigate the risk posed by these pipes.

The primary purpose of the programme is risk reduction however it also significantly reduces gas leakage, which decreases future operating costs and the environmental impact of escaping gas, which contains methane. Replacing the remaining iron pipes will also enable the continued use of the gas pipeline network to deliver renewable or carbon free gas in the future.

We have continued our policy of removing the highest risk mandated pipes and this has ensured that we are ahead of target against our primary iron risk removed output in all of our Networks; the table refers:

Network	Iron Risk Removed 2015/16	3 yr Cumulative Risk Removed	3 yr Implied RIIO Commitment	Difference	Difference %
East of England	34,913	114,273	72,213	42,060	58%
North London	13,664	40,028	38,355	1,673	4%
North West	30,640	100,979	57,911	43,068	74%
West Midlands	24,857	63,492	49,273	14,220	29%

The graph shows our actual and anticipated progress in removing iron mains risk during the eight year RIIO-GD1 period.



After three of the eight RIIO-GD1 years we have delivered in excess of three eights of the HSE mandated iron pipe abandonment length in our East of England, North London and North West Networks and we are on track to recover the shortfall in West Midlands by the end of March 2017. This is aligned with the forecast we provided to Ofgem in the July 2015 RRP.

In respect of large diameter Tier 2B, and Tier 3 iron pipes, our forecast is to complete allowed workloads by the end of the RIIO-GD1 period, with the exception of London Medium Pressure iron pipes. We will deliver these pipes in line with the report provided to Ofgem on the 18th of December 2015 in which we outlined our proposed phasing over the RIIO-GD1 and RIIO-GD2 price control periods.

We are ahead of our RIIO commitment to replace steel gas service pipes.

We are working on a number of significant innovations to deliver on our output commitments efficiently. We have made progress on these projects and further detail is provided in the Innovation section of this report.

We are also improving our understanding of the risks associated with our pipeline assets through the work we are doing with the rest of the industry and Ofgem on risk monetisation. Risk monetisation presents an opportunity to identify different approaches to managing the future investment and maintenance of our networks. For example by selecting the optimum combination of asset replacement or refurbishment achieving risk targets at least cost for customers.

Sub-deduct networks

We are continuing to deliver work to remove the outstanding sub-deduct networks. The table refers:

Network	Proportion completed in 2015/16	Proportion completed RIIO period to date
East of England	5%	83%
North London	6%	81%
North West	13%	67%
West Midlands	9%	63%

Since April 2013 we have discovered a few additional sub-deduct networks that were not in our RIIO business plan and it is possible that others might be detected. Our objective is to clear the risk posed by these networks by the end of March 2018.

1.2 Network reliability

Achieving the 1 in 20 supply capacity obligation

We ensured that adequate capacity was available to meet a level of demand that is not likely to recur more often than once in every twenty years.

Due to our control centre optimising the operation of our pipeline system we were able to minimise NTS exit capacity bookings. This reduces the requirement for future NTS investment, which should result in lower customer bills in the future.

Minimising interruptions

Our average network reliability was 99.999% (excludes planned work notified in advance to customers and jobs where there were delays in gaining access that were outside of our control).

We make efforts to minimise the impact however customers may be interrupted when we carry out essential work to repair, replace or maintain network equipment.

Numbers of interruptions

With the exception of North London Network we expect to deliver 8 year interruption numbers which outperform our RIIO-GD1 target levels.

In North London we have increased the number of planned work steel service pipes that we expect to replace. This is because of the mix of iron mains that we are replacing to meet our iron mains risk removed commitment. This increase in service pipe replacement is of benefit to customers because it should result in fewer gas escapes, lower service pipe GIB risk and fewer unplanned interruptions in the future.

Duration of interruptions

We have successfully implemented changes to working practices, which have cut average planned interruption durations. This has enabled us to maintain our total planned interruption minutes below the RIIO targets for all of our Networks. The table refers:

Planned Interruptions (Nos)	2015/16 actual performance minutes (millions)	Implied annual target minutes (millions)
East of England	26.60	38.40
North London	21.57	31.96
North West	22.57	35.87
West Midlands	22.23	24.98

Our unplanned interruption duration performance is significantly affected where a high proportion of jobs take place in Multi-Occupancy Buildings (MOBs), this is particularly the case in London where 15% of interruptions are in MOBs.

MOB jobs are more complex than routine jobs because pipes have to be routed up the outside of or threaded through medium or high rise buildings. In addition there may be protracted negotiations with landlords, planning, housing and highway authorities prior to our receiving permission to install new pipes, gain access to erect scaffolding or cross third party land.

The table below shows our 2015/16 performance for unplanned interruptions relative to RIIO targets.

Unplanned Interruptions (Nos)	MOB interruptions minutes (millions)	non-MOB interruptions minutes (millions)	Implied annual target minutes (millions)
East of England	4.11	6.28	6.20
North London	62.31	6.27	13.82
North West	0.77	7.05	9.73
West Midlands	0.91	4.30	5.98

The table shows non-MOBs in East of England are 1% adverse to the implied annual target however the target is an eight year RIIO-GD1 period target and we expect East of England non-MOBs related interruption minutes to be within target in the future.

Our RIIO business plan proposed an uncertainty mechanism to deal with these jobs however it was not accepted by Ofgem. Ofgem allowed additional funding for MOB work without modifying the corresponding interruptions targets.

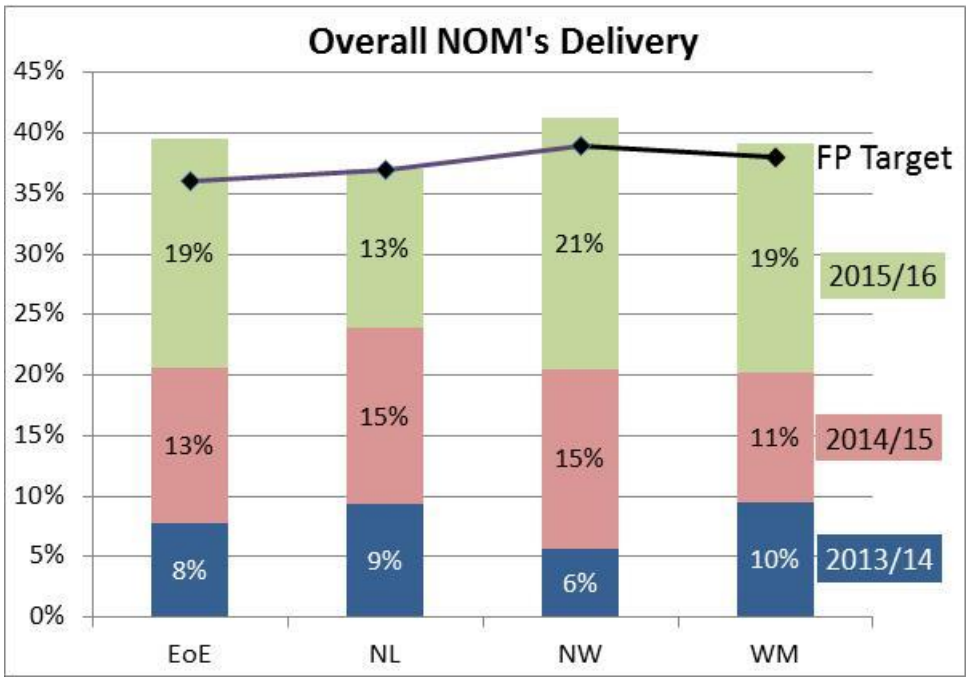
To mitigate the impact of MOB interruptions we are continuing to improve customer experience. We are improving our processes and introducing new technology to mitigate the impact of MOB escapes by avoiding interruptions and to reduce interruption durations. Despite this and solely as a result of the impact of MOB jobs we expect to exceed our RIIO-GD1 period target minutes for unplanned interruptions minutes in London and East of England Networks.

Note: This output is under review by Ofgem.

<u>Maintaining operational performance</u>

To ensure that customers continue to enjoy the benefits of a safe and reliable network it is necessary to balance maintenance and investment and to ensure that resources are allocated optimally between asset classes. Performance in this area is currently measured by Network Output Measures (NOMs).

We have increased our delivery of NOMs and are on track to deliver our RIIO-GD1 targets; the chart refers:



In addition to ramping up NOMs delivery in 2015/16 we have been doing work to enhance our ability to deliver additional NOMs in future. For example we have been working with Network Rail to deliver maintenance and investment programmes in respect of pipes crossing above or below railway lines. This long lead time and complex work requires significant planning to ensure delivery in spite of the constraints inherent in working in railway land.

The NOMs targets were set in 2012, based on the best information available at that time. We continually review the condition and performance of our asset portfolio to ensure secure and safe gas supplies. As a result our intervention plans change over time in response to new information. For example back in 2012 we did not appreciate that we would have to take action in respect of significant lengths of LTS pipeline in East of England Network, which have reduced depth of cover due to erosion produced by intensive agriculture.

In the future we expect to report NOMs on the basis of monetised risk in line with ongoing discussions with Ofgem. This year, together with other GDNs, we have completed the new tables outside of the RRP process on a 'best endeavours' basis to test the new way of working. The new approach represents a significant step forward in the evaluation and reporting of risk, both for the current period and in preparation for GD2. The methodology, once embedded and supported by strong data provides an opportunity to improve the targeting of risk management interventions.

1.3 Customer service

There are three RIIO measures of customer service. They are the customer satisfaction survey, complaints handling and stakeholder engagement. Ofgem described these as the 'Broad measure of customer satisfaction'; our performance against each of these areas is described below.

Customer satisfaction survey

Overall our customer survey scores increased from 2014/15 to 2015/16. There are areas where our performance is not as good as we would like it to be. To that end we are developing and implementing a number of initiatives to improve service to customers.

Emergency & repair work

Customers continue to be very satisfied with our emergency work performance and as a result our scores are significantly ahead of target in all of our Networks. 2015/16 initiatives in this area have included arranging to have a customer liaison officer available at all times including overnight to immediately address concerns and doing refresher training of our operatives so that they have the skills to engage more effectively with customers.

Network	2015/16 performance	2014/15 performance	Target performance
East of England	9.38	9.29	8.81
North London	9.03	8.87	8.81
North West	9.38	9.20	8.81
West Midlands	9.26	9.15	8.81

Planned work

Customer satisfaction scores for planned work broadly stayed the same and hence all of our Networks remain below target. We are disappointed that we are not yet meeting the target and we are continuing to work with our contract partners to improve the quality of our service.

A significant amount of time and resource was invested in 2015/16 to improve planned work customer satisfaction including:

- Work planning to reduce the proportion of jobs where we fail to meet the plan date communicated with the customer
- Quality and timeliness of reinstatement
- Customer communications at all stages of the job including the introduction of our K.I.C.K. (Knock, Inform, Care & Knock again) process for customer contact on site.
- More effective and timely resolution of queries and complaints
- Training personnel on customer service

We will continue to focus on improving our service offering in 2016/17.

The table below summarises the planned work customer satisfaction scores achieved.

Network	2015/16 performance	2014/15 performance	Target performance
East of England	8.07	8.03	8.09
North London	7.96	7.91	8.09
North West	7.97	7.89	8.09
West Midlands	7.73	7.86	8.09

Connections

Our connections transformation programme has delivered improvements in customer performance evidenced by the scores we have obtained. Two of our Networks are now ahead of target. We are continuing to build on the work we have done with the intention of further improving our service.

Network	2015/16 performance	2014/15 performance	Target performance
East of England	8.13	7.73	8.04
North London	6.88	6.55	8.04
North West	8.67	8.30	8.04
West Midlands	7.83	7.95	8.04

There was a small dip in performance in West Midlands early in the year; our strategic partners worked with their contractors to reverse this trend. In the second half year scores exceeded 8.0; we are seeing this trend continuing in early 2016/17.

Customer complaints

We operate an effective complaints handling system ensuring that customers receive a timely, helpful and courteous service and that compensation payments are made to those who are entitled to it. Our complaint metric score was better than the RIIO target and improved relative to last year.

Network	Unresolved D1	Unresolved by D31	Repeats	Ombudsman finds against DN	Complaint metric score	RIIO target
East of Eng.	71.19%	7.09%	0.40%	0.12%	9.46%	11.57%
North London	77.44%	8.89%	0.31%	0.22%	10.59%	11.57%
North West	76.08%	6.76%	0.24%	0.12%	9.77%	11.57%
West Mids	74.86%	6.24%	0.31%	0.09%	9.52%	11.57%

Stakeholder engagement incentive

We have worked hard to improve our delivery to our wider stakeholders and we were pleased when the Stakeholder Panel recognised this by awarding us with a score of 6.9, which was the highest awarded to any GDN operator.

To deliver what stakeholders need we have adopted a four point approach, which is:

- **Identify & engage**: by listening to make sure we focus on things that stakeholders want most
- **Understand the need**: Understand stakeholder needs and get on with making changes
- **Act & inform**: to embed change so it keeps working for customers
- **Monitoring & reviewing**: Checking back with our stakeholders to ensure their needs have been meet, that it is delivering value to the stakeholder and that a blue print is available

Once we have developed a blue print that supports the needs of stakeholders, and demonstrably delivers value we share and support others to do the same.

In 2015/16 following inputs from our stakeholders we carried out a number of initiatives some of which were showcased in our submission including:

- promoting awareness, thought generation and action on the Future of Gas;
- improving the experience of vulnerable customers throughout Scotland, England and Wales by moving to one Priority Service Register (gas and electric);
- working with Highway Authorities to improve the experience of the travelling public and
- work with our stakeholders around our London medium pressure mains replacement program.

Smart meters

326,000 smart meters were installed across our networks in 2015/16; approximately 9,000 of these installations required subsequent intervention by our personnel.

Around 11 million smart meters are expected to be installed in our footprint during the roll out period; consequently we have included adequate costs in our business plan to accommodate the likely level of fault related workload. Depending on the level of smart roll out and the impact that it has on our business we may approach Ofgem during 2017 to discuss cost recovery.

We have trained our operations and contact centre staff to be able to provide an appropriate response and where appropriate to divert the customer back to their Gas Supplier where it is not appropriate that we attend.

We are concerned about the possible impact on the skilled gas installer jobs market, which we also depend upon for resources. DECC have indicated that up to 9,000 additional personnel are likely to be required (industry wide) to deliver the smart meter installation programme.

In order to support this we have had to make business and system changes. We are also working with gas suppliers and collaborating with other GDNs to minimise the impacts of the roll out on our customers.

1.4 Connections

New gas connections

It has been our policy to encourage competition in connection services because it promotes customer choice reducing costs and enhancing customer service.

The majority of new connections within our networks are delivered by Utility Infrastructure Providers (UIPs) or independent Gas Transporters (iGTs) however we aim to deliver a good service when a customer requests us to provide it.

Overall and guaranteed standards of performance

We delivered all of our emergency response and call centre standards of service. We also delivered all of the required connections standards GSOP 4 – 11.

1.5 Social obligations

Fuel poor network extension scheme

In 2015/16 we delivered a total of 4,375 fuel poor connections, 1,234 of these connections were carried out as part of community schemes and 3,141 were one-off connections in fuel poor areas.

Our community schemes are delivered by Affordable Warmth Solutions; their website discusses the schemes and innovations they are driving, https://www.affordablewarmthsolutions.org.uk/

We are forecasting to deliver our RIIO target levels for fuel poor connections. There has been a low rate of fuel poor connections in London in the first three years of the RIIO-GD1 period. This is because of a low take up of one off connections and it has proved difficult to develop community schemes. We believe that the cause of the low demand is that customers do not have the funds available to install gas heating. Nevertheless we are taking steps to encourage fuel poor connections in London.

Carbon monoxide (CO) awareness

We are committed to raising awareness of the dangers of carbon monoxide (CO) recognising these interventions contribute to saving lives.

We attended over 400,000 emergency jobs in 2015/16 and we use that opportunity to identify those most at risk and to educate them about the dangers of CO.

We have trained all our Repair Team members and First Call Operatives to speak with customers and provide them with appropriate CO advice every time they visit a home. We also ask customers to complete a questionnaire, which leads them into a better understanding of the risk they face and what they could do to improve their safety.

Following a successful trial in our North West Network we are extending this approach to our planned mains replacement programme, which has the potential to touch more than 100,000 additional households a year.

Through our partnerships with bodies, such as Fire Authorities and food banks, we have engaged people who we would otherwise have contacted. Working with these partners we are making real progress in targeting CO hotspots (geographic areas with higher than average CO poisoning risk).

As a result of our ongoing CO awareness programmes, we have seen a 28% reduction in the number of CO incidents reported since 2012. Overall we have issued over 17,000 CO alarms across all of our initiatives and educated many more people on the dangers of CO.

1.6 Protection of the environment

Shrinkage

Shrinkage is gas lost from the pipeline system in leakage, used in the operation of the system or which is stolen upstream of the gas meter.

During 2015/16 we incurred 1,324GWh of shrinkage compared with our RIIO target of 1,460 GWh.

Minimising shrinkage is important because the lost gas has to be replaced, at a cost of £17.4m in 2015/16, and it impacts the environment because the gas that leaks out contains methane which contributes to global warming.

There are a number of factors that can influence shrinkage. Significant measures that we are taking to mitigate shrinkage levels include:

- Pressure management, which ensures that pressures are minimised whist adequate capacity is provided, to reduce leakage. The opportunities for additional savings from further investment in this area are limited.
- Improved business processes have enabled us to increase the concentration of mono-ethyleneglycol within gas, which improves joint treatment and reduces leakage. The effectiveness of this technology reduces as mains are replaced.
- Our ongoing programme of mains replacement continues to be the significant factor affecting the reduction in leakage.

Connecting renewable sources of gas

Bio-gas plants convert waste into a renewable gas that has a negligible carbon footprint and which can be used within existing appliances.

During 2015/16 we connected 12 additional bio-methane plants, with a combined capacity of around 70MW. Altogether a total of 22 bio-gas plants are now connected to our networks, which produce enough renewable gas to supply the full needs of a town of around 30,000 people.

Bio-gas developers are often entrepreneurs, cash flow is important to them, and so it is vital for us to meet their expectations particularly around timely project delivery. Here are extracts from two of the e-mails we have received.

> *"Thank you all for your hard work and understanding over the last few months. You have shown remarkable patience and dedication over what must have been a frantic and trying time. It is very much appreciated. Please also pass our thanks on to the teams on the ground."*
> ***Paul Thompson, Qila Energy***

> *"Just a quick note to thank you for your support on our gas to grid project over the last couple of weeks. We achieved our gas on date on 24th March so thank you for allowing some flexibility with regards to the E2E on site tests which certainly enabled us to do this"*
> ***Tom Lissett***

Apart from the costs of connection very little investment is required to connect these plants because existing capacity can be re-purposed to enable them to deliver renewable energy to customers.

We are on track to meet our RIIO period forecast to connect these plants however the continuation of the renewable heat incentive is essential to the continued development of the industry.

The renewable heat incentive is good value for money compared with other low carbon incentives. Subsidy levels are changing over time however by way of example the October 2015 maximum subsidy paid to a bio-gas developer was £6.60/MWh: contrast this with the 2015/16 subsidy given for off shore wind power which was £84.23/MWh. Furthermore the use of waste as a feedstock creates a circular economy where waste instead of creating a disposal issue is first used to generate renewable gas, and the bi-product is a valuable fertiliser.

To date bio-methane plants have used anaerobic digestion, a proven economic technology, however the scope is constrained by available feedstock. In 2014/15 we initiated a project to create substitute natural gas from municipal black bag waste. This work is being part funded through the Network Innovation Competition. This project is now two years through its three year term, and the plant has been constructed and commissioned. Testing is now under way. In 2016/17 we anticipate demonstrating end-to-end operation and subsequently refining the operating conditions to optimise production of substitute natural gas.

In 2015/16 National Grid Gas Distribution was successful in being awarded further NIC funding for a much larger BioSNG plant to demonstrate the technology under commercial conditions. The project started at the beginning of 2016; planning and environmental permitting has been gained, and ordering of equipment is about to commence. The project is due for completion by the end of 2018. Refuse derived fuel will be supplied under contract from Swindon Borough Council, and renewable gas will be sold to a local road haulier who will use the renewable gas to fuel HGVs. Gas will also be injected into the local (Wales & West Utilities) network to supply remote CNG fuelling stations. The new plant has also been awarded funding by the Department for Transport's Advanced Biofuels Competition, and will produce 1 million kg of renewable gas for transport in 2018 (22 GWh/a).

If government and industry subsequently develops full scale BioSNG production plants, the technology has the potential to deliver up to 100 TWh pa of renewable gas.

<u>Other environmental objectives</u>

In addition we met our virgin aggregate and spoil to landfill targets using about 8.6% virgin aggregate (our target is less than 30%) and sending about 1.9% of our spoil to landfill (our target is less than 10%). The table refers:

Network	Virgin aggregate	Spoil to landfill
East of England	16.32%	5.31%
North London	0.18%	0.88%
North West	11.65%	1.55%
West Midlands	1.56%	0.00%

We retained our ISO14001 accreditation.

ISO14001 is an international standard for businesses that requires them to have appropriate management systems, and take appropriate steps, which minimise environmental impacts. It operates at different levels such as:

- Taking precautions to prevent oil spills from industrial plant such as excavators
- Minimising the creation of contaminated waste
- Reducing environmental impact by reducing the consumption of energy

1.7 Summary of primary outputs delivery

The table below shows 2015/16 within year outputs:

Primary output		Deliverable	EofE	Lon	NW	WM
Safety	Emergency response	Attend P1 escape in 1 hr				
		Attend P2 escape in 2 hrs				
	Repair	GS(M)R 12 hr repair				
		Repair risk metric				
	Major accident hazard	GS(M)R safety case accepted				
		COMAH safety report review				
Customer satisfaction		Planned work survey				
		Emergency response survey				
		Connections survey				
		Complaints metric				
Connections		GSOP delivery				
Environmental		Leakage				

The table below shows our current forecast of total RIIO-GD1 period outputs delivery:

Primary output	Deliverable	EofE	Lon	NW	WM
Safety	Iron mains risk				
	Sub-deduct networks				
Reliability	Duration planned interruptions				
	Duration unplanned interruptions	*	*		
	Number planned interruptions		**		
	Number unplanned interruptions				
	Achieve 1 in 20 obligation				
	NOMs delivery				
Social obligation	Fuel poor connections				
	Carbon monoxide awareness				
	Stakeholder engagement				
Connections	Introduce gas entry standards				
Environmental	Leakage				
	Provide bio-methane connections				

* These outputs are 'green' based on the fact that if the long duration MOB related jobs, which were not taken into account in the setting of the target, are excluded the East of England and London are within the target set for duration of unplanned interruptions. In the2014/15 Ofgem annual report on RIIO-GD1, Ofgem set out their intent to review these targets given this and other issues with other GDNs on this measure. We expect to discuss this issue further with Ofgem.

** The number of planned interruptions is above target in London due to the change in our mains selection criteria to ensure the delivery of the iron mains risk reduction target. We are replacing more relatively higher risk Tier 1 pipes and these tend to be in more densely populated areas and so have more services. Additional service work results in more interruptions and more delivery of the secondary steel service pipe replacement target. It will result in increased safety in the future and is in the interest of customers.

2. Innovation

Our innovation portfolio contributes towards the delivery commitments to keep people safe, be reliable, safeguard future generations, provide value for money and deliver a quality service for all. In this section of this report we will touch on some of our current initiatives.

2015/16 saw the successful launch of our second NIC (National Innovation Competition) project: the Bio SNG commercial demonstration project, which has been described within the section on 'Protection of the environment' above.

We have made progress towards supporting the remediation of pipes in multi-occupancy buildings (MOBs). To improve customer experience we are seeking to implement technologies that enable us to safely repair or remediate riser pipes avoiding isolating supplies and replacing pipes with all the attendant disruption.

Some of the techniques that we are developing and deploying into the business are:

- Self-Amalgamating tape (a composite repair system which can be applied to leaking joint)
- Riser sleeves – sheaths which can be crafted according to the geometry of the pipework, allowing a polymeric sealant to be injected into the annulus between the sleeve and the existing pipe, thus creating a durable repair
- Internal Epoxy Liners – these liners are blown through the existing riser system and can be used to seal leaking joints and pin-holing (localised pitting of the riser pipe causing leaks) providing a means of remediation
- Geberit Mapress – lightweight stainless steel pipe system which provides a lighter and easier-to-construct pipework system where replacement of the asset is the only option

We continue to develop three significant projects which support our no dig strategy ("No Dig" is focussed on reducing the number and duration of excavations and supply disruption to the customer).

- PRISM and BAE:
  - PRISM is a lining technique which allows us to replace mains pipes without a significant loss in the capacity of the pipeline PRISM itself is a resin, sprayed directly into the pipe it is already proven in the water industry and is being developed as a high-volume Tier 1 mains replacement solution.
  - BAE is a complementary technology which would allow us to replace services, with the potential to form a chemically bonded connection to a PRISM main thus providing a 'whole pipe' replacement solution.

  Both PRISM and BAE are currently undergoing structured trials. If successful, they should be available by the end of the RIIO-GD1 period, and potentially they may facilitate the replacement of a large proportion of our Tier 1 mains, and associated services.
- We continue to develop TORs, an in pipe robot used to remotely connect the service pipes to mains. TORs would significantly reduce the number of excavations required and therefore allows us to carry out our iron mains replacement more safely and in a more customer focused way. We are currently undergoing field trials and plan to have two prototype robots available by the end of this year.
- Cured In Place Pipe (CIPP) – a collaborative project with SGN. CIPP provides trenchless remediation and replacement for large diameter mains and is being progressed as a potential solution for T2 / T3 mains replacement. Particular benefits are expected in densely

populated urban environments due to the reduction of the site area required to complete the work. We are planning to field test CIPP early in 2017.

Our innovation team has been focused on implementation this year; two of our 2015/16 successes have been provided below:

CNG vehicles

CNG vehicles have lower carbon dioxide emissions than their diesel equivalents, whilst also producing lower levels of local air pollutants such as particulates, which can affect public health. CNG is particularly effective when applied to heavy goods vehicles (HGVs) or other large vehicles which return to a depot such as buses and is currently the only viable option for reducing the environmental impact of these vehicles. Combined with the purchase of renewable gas it enables a customer to justifiably claim a near zero net emissions vehicle fleet.

In 2015/16 we facilitated the direct high pressure connection of a CNG filling station in Leyland, Lancashire. This facility, which will eventually refuel 500 HGVs a day, did away with pressure regulation allowing the compressor to receive gas at full line pressure. This reduced the capital cost incurred by the developer and also enables them to cut running costs and environmental impacts because less compression and so less electrical energy will be required, to compress gas into the trucks.

The success of this project has initiated the purchase of our first CNG fuelled vacuum excavator truck, which is now being tried out by our repair teams; the picture refers.

Fence feet

2016 has also seen the successful adoption by the business of new safer supports for our fencing around deep excavations. The newly designed fence feet reduce trip hazards for members of the public and are safer and lighter to lift. They have been adopted by SGN as well as our strategic partners. The pictures refer:

Upcoming innovation work

Before it was converted to transport Natural Gas in the 1970s our network of pipes supplied Towns Gas to customers. Towns gas comprised a blend of gasses which contained Hydrogen. Hydrogen when it burns produces only water, consequently burning Hydrogen has no adverse environmental impact.

This year we are proposing to start a project to understand the impact of once again transporting Hydrogen through our pipe networks. As a result we are currently working on a NIC submission in collaboration with Northern Gas Networks and hosted by Keele University. The aim of this project is to demonstrate that natural gas containing levels of hydrogen far beyond those permitted in the Gas Safety (Management) Regulations specification can be distributed and utilised safely and efficiently in a representative section of the distribution network. It is proposed to progressively increase hydrogen injection levels to a target 20% hydrogen / 80% natural gas blend testing the impact on the pre-existing appliances at each stage. Separately we will also experiment supplying pure hydrogen in a small isolated section of pipes with modified appliances.

Hydrogen has the potential to unlock significant decarbonisation of heat as exemplified by the NGN Leeds H21 project. http://www.smarternetworks.org/Project.aspx?ProjectID=1630

3. Cost efficiency

The RIIO Final Proposals set expenditure allowances based on the upper quartile performance of the eight Gas Distribution Networks, i.e. at an efficient level taking into account network benchmarking and factors such as anticipated UK wage rises. Our initiatives led to us delivering a step change in our operating efficiency in 2013/14. In 2015/16 we have improved output performance, such as repair risk and replacement length, whilst delivering improved financial performance. We still believe we can continue to drive further efficiencies in future years that will maintain cost efficiency targets and deliver our outputs.

In February 2016, National Grid published a stakeholder consultation document outlining our proposals on how key services delivered to the industry will continue to be provided following the sale of a majority stake in our Gas Distribution Network business. With the potential of a sale of National Grid Gas Distribution by National Grid over the coming six to nine months, the management team are focused on delivering business as usual and look forward to the potential opportunities that may now come if this business becomes an independent company.

The forecasts in this report are based on an "as is" basis reflecting Gas Distribution being a part of National Grid Group and hence the regulatory allocations of shared services have been applied. The Sale process is progressing and any costs of sale will be borne by the company with no costs for the transaction being passed into the regulatory cost-base and hence customer bills.

3.1 2015/16 performance

In 2015/16 our TOTEX expenditure to deliver our services and necessary investment was £939m up £10m from 2014/15. The table shows a breakdown by network.

2015/16 Totex

£m, 15/6 prices	EoE	Lon	NW	WM
2014/15	303	224	258	155
Movement in repex	5	18	10	27
Movement in capex	-3	1	-8	-5
Movement in opex	-5	-3	-31	-3
2015/16	300	240	228	174
Variance to Allowances	-17	-65	-9	-12
Variance to L.Y.'s fcst.	3	1	5	1

Explanation of variance from 2014/15

Our overall average unit cost of mains replacement reduced year on year reflecting the focus on continuous improvement by our GDSPs. However, REPEX expenditure increased in all four networks. In London our costs increased due to an increase in the proportion of larger diameter, more costly, work we carried out, and as a result of wage pressures being experienced in that part of the country. In our other three networks we increased our mains replacement output.

Capital spend was lower, with lower expenditure on our information systems and property.

Operating costs reduced in all of our networks with the benefits of lower expenditure from our change initiatives that were undertaken in the first two years of RIIO in order to address the efficiency challenge. Against this there has been some increase in Maintenance expenditure to

ensure the delivery of asset heath NOMs related work. This included our having to take action to address the risks posed by LTS pipelines that were found to be affected by soil erosion.

The major OPEX cost movement in 2015/16, and reason for the higher reduction in expenditure in North West network is the different phasing of holder demolition. This is associated with land disposal proceeds being achieved sooner than in our RIIO-GD1 submission leading to an earlier sharing, 67%, of the benefits of land disposal to customers.

Variance to Allowance

2015/16 saw costs continue to be lower than allowances by around £100m (11%). Our most significant area of efficiency continues to be replacement expenditure. However OPEX expenditure has also improved significantly against the allowance, and is now only 2% above. Business Support activities remain the key area where costs are above the allowance.

Through the sharing mechanism 37% of our TOTEX efficiency will be delivered to customers. The majority of our efficiency is REPEX related and as this is investment expenditure the benefit will be felt by customers over time due to the fast/slow money rules of RIIO.

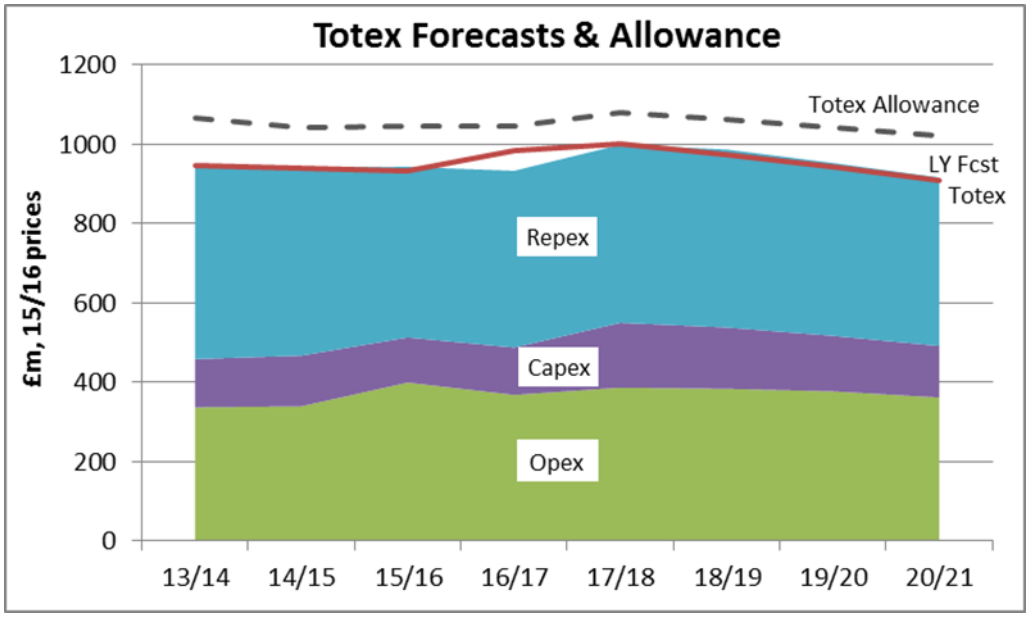
Variance to Last Year's forecast

Our 2015/16 TOTEX performance was £10m (1%) higher than we forecasted last year. This was predominantly due to replacement expenditure as detailed above.

3.2 RIIO-GD1 Forecasts

Overall our TOTEX forecast for the eight year RIIO-GD1 period remains relatively unchanged at just over £7,613m; with costs lower by £786m (9%) than the TOTEX allowance. This is higher than the 8% detailed in last year's report. The reason for this is that during 2015/16 Ofgem increased our allowances as a result of the consultations on the physical security and streetworks Uncertainty Mechanisms. In respect of each review, Ofgem concluded that an increase was justified, but found that there was a case for greater future efficiencies than we had included in our submission.

The forecasts that follow are based on a series of assumptions that include anticipated benefits from our various process excellence and technical innovation initiatives. External factors may influence our ability to perform as forecast.



We recognise that we will need to improve further if we are to maintain our TOTEX efficiency levels as we tackle more challenging replacement projects and other increased activity levels to deliver our eight-year output targets.

It is possible that we will outperform these forecasts if our efficiency programmes deliver at the maximum end of expectations however there are also risks associated with our plans that may require higher expenditure. These include certain asset safety/reliability areas, such as multiple occupancy buildings and pipelines that have reduced depth of cover due to erosion. We will seek to minimise any impacts on customers. The risk trading methodology being developed in conjunction with Ofgem and the other Gas Distribution companies should help us further identify the value of these interventions to our customers.

As well as a slight phasing change, there are also some material differences in some of our underlying assumptions, the material changes being outlined below:

Movement in Totex

£m, 15/16 prices	Repex	Capex	Opex	Totex
14/15 RRP Forecast	**2,926**	**1,131**	**3,567**	**7,624**
Replacement	27			27
Data Centre		-39		-39
Mains Renforcement		-12		-12
Depth of cover		14	16	30
Physical Security		-8		-8
Other capex		-15		-15
Operating costs			7	7
15/16 RRP Forecast	**2,953**	**1,071**	**3,590**	**7,613**
Overall change	**27**	**-60**	**23**	**-11**
% change	1%	-5%	1%	0%

These changes in our forecasts are discussed in the following sections.

Replacement expenditure

Our changed approach under RIIO-GD1 to replacement has enabled significant additional efficiencies from our historic level of replacement efficiency. These changes were driven from the two key factors:

- The focus that the RIIO control has given us to select pipe based on risk removed rather than just length has enabled us in the early years of the control to select the optimum 'high risk' and consequently 'low cost' mains first.

- Secondly the change in our delivery approach to mains replacement, where we moved from a multiple organisation delivery model to one based on outsourcing delivery to two Gas Distribution Strategic Partners. In 2015/16 our new model has now bedded in and is delivering the required output rates to ensure meeting the overall secondary output of length of old mains being replaced alongside our continued success in meeting the new primary output of iron mains risk removed.

We continue to develop and be confident that we can implement and deliver customer benefits from innovation techniques such as TORS and PRISM. We have however modified our overall cost delivery forecasts that we set out in both our 2013/14 and 2014/15 forecasts based on an updated view of when some of these innovations will take effect, as we are not able to deliver as much future cost efficiency from contract as previously forecast.

Our 2016 forecast of outperformance by network is shown in the table below:

Repex 8 Year Performance

£m, 15/6 prices	EoE	Lon	NW	WM
8 yr Repex Forecast	**839**	**974**	**634**	**506**
Outperformance	209	371	208	174
% Outperformance	20%	28%	25%	26%

Our forecasts still maintain last year's assumptions that REPEX efficiency outperformance marginally declines over the period as, over the period, our planned mains replacement will be more biased to more expensive assets (e.g. diameter size, less favourable locations) while still delivering the risk outputs. This effect is especially seen in London.

In our RRP narrative last year and subsequently in a report we sent to Ofgem on the 18th of December 2015 we described how we will deliver our planned replacement of large diameter Medium Pressure mains in central London. This work has commenced and significant portions of these pipes will be replaced during RIIO-GD1 with the balance (some 40km) in RIIO-GD2. In our report to Ofgem we described the difficulties involved with delivering the work at a rate that would ensure completion in RIIO-GD1 whilst at the same time accommodating stakeholder, e.g. Highway Authority, concerns. Work phasing has to ensure a secure network at all times that provides adequate capacity.

This issue was highlighted by Ofgem in their 2014/15 annual report on RIIO-GD1. We are continuing to discuss a solution with Ofgem. We are proposing that the London Tier 2/3 output target is reduced by 40 km and that the allowance is adjusted down by the unit costs used in the REPEX allowance. This will ensure customers do not pay in advance for this work. This proposed change can be accomplished through the annual pricing mechanisms in place.

Capital expenditure

We have reduced our RIIO-GD1 period capital forecasts by a total of £60m (5%). This is as a result of a number of developments:

- Our mains reinforcement forecast has been reduced by £12m. The reason for this is that customer requirements for capacity have been subdued. In London we expect to spend in line with the allowance because we are carrying out a specific reinforcement project in Fulham to accommodate large diameter Medium Pressure mains replacement.

- Data centres expenditure has been removed from our central case forecast (£39m), work we did during 2015/16 has enabled us to be in a position where we do not anticipate the need to invest in a new data centre for security / asset management reasons.

- Physical site security, following consultation Ofgem determined that expenditure was justified but that some disallowances on our submission was warranted. We are reviewing our expenditure plans and seeking cost savings to enable us to achieve the allowance granted by Ofgem. This sees our forecast reduced by £8m from last year's plan.

- Reductions across other capital expenditure areas of £15m has been offset by the need to increase our capital expenditure on specific LTS reinforcement work to overcome specific pipe that is at increased risk due to soil corrosion.to ensure reliability of our networks on physical site security (discussed further in later section on uncertainty costs) and our information systems data centres.

Our forecast is now £39m (4%) under the Capex allowance. There are some network differences as set out in the table below:

Capex 8 Year Performance

£m, 15/6 prices	EoE	Lon	NW	WM
8 yr Capex Forecast	**410**	**239**	**249**	**172**
Outperformance	4	-16	22	30
% Outperformance	1%	-7%	8%	15%

London is the only network now above the allowance due to two main factors:

- Reinforcement expenditure is in line with the allowance, whereas in the other three networks we are able to reduce expenditure given long term security of supply factors.

- Vehicles, where for operational reasons we need to spend above the allowance to maintain a fleet of vehicles, including new core and vac vehicles that are required to maintain our operational performance, including emergency and repair activity.

Operating expenditure

We have increased our Opex forecast by £27m (1%) from last year's projections for two main factors:

- Maintenance expenditure around the newly identified risk of the depth of LTS pipe in certain agricultural areas due to soil erosion. In addition to specific capital work we are incurring necessary operating costs to increase surveying and to provide compensation to impacted land owners where we need to restrict their range of activities, e.g. ploughing, for safety reasons.

- Overall Operating costs where we there are small varying movements in our forecast, but the main two increases in forecasts being business support and work management forecasts

Over the eight year period our forecast overspend is provided in the table below. Overall we now forecast to overspend by around £220m. The reason for overspend is due to two factors:

- Our business support costs, that although improving by 2% p.a. over the RIIO-GD1 period, they remain above the allowance. In total by £190m.

- The inclusion of the expected impact of Smart metering rollout - we have continued to work with the industry to help ensure that the supplier led programme that will replace all 11 million National Grid customer meters will deliver a good customer experience and be done at least cost particularly with regard to consequent emergency or repair work as a result of installation. With further delays in the start of the rollout we are still uncertain as to the level of expenditure, but are central assumption have not changed the overall expectation of around £90m additional resources required to maintain emergency and repair activities during this period. Given continued uncertainty and low level of activity, we have not yet made a submission for this uncertainty mechanism but are considering this for 2017.

These two factors mask the underlying efficiencies that our direct activities are expected to achieve over the RIIO-GD1 period. In driving for efficiencies, we are also mindful of the need to deliver improvements in customer service and to deliver the network outputs associated with our ongoing maintenance programme to ensure long term network reliability.

The individual network efficiency performance against allowances on Opex is provided below :

Opex 8 Year Performance

£m, 15/6 prices	EoE	Lon	NW	WM
8 yr Opex Forecast	**1215**	**858**	**886**	**631**
Outperformance	-98	-47	-62	-8
% Outperformance	-9%	-6%	-8%	-1%
Outperformance adjusted for Smart	*-64*	*-25*	*-39*	*4*

Non-controllable costs

Our non-controllable cost forecast for the RIIO 8 year period have reduced due to the reductions in our NTS exit cost and shrinkage cost. Customers are benefiting from our incentive performance and the lower cost of gas is being passed through to customers.

Non Controllable Costs - 8 Year forecasts

£m, 15/6 prices	FP	LY fcst	Latest
Licence/network/other	1218	1424	1498
NTS exit costs	867	868	739
Shrinkage	311	180	131
NTS pensions contributions	172	199	204
Total	**2568**	**2670**	**2572**

4. Return on Regulated Equity

As well as our success in improving our position on output delivery, discussed in earlier sections, our confidence in delivering the forecast level of cost efficiency over RIIO-GD1 is increasing. Our latest forecasts confirm an overall return in regulated equity (RORE)1 of 10%, a slight improvement on last year's forecasts and the 9.9% included in Ofgem's 2014/15 annual report. The improvement is across all three components set out in the table below

	Baseline RoRE (Post-tax cost of equity)	Totex Incentive Mechanism	Broad Measure of Consumer Satisfaction	Gas Management Incentives*	**Total**
East on England	6.7%	0.9%	0.3%	0.9%	**8.8%**
London	6.7%	2.7%	0.2%	0.8%	**10.4%**
North West	6.7%	2.0%	0.3%	1.0%	**9.9%**
West Midlands	6.7%	3.1%	0.3%	0.9%	**10.9%**

* Includes environmental emissions, shrinkage, NTS exit capacity and IQI additional income

West Midlands network is now expected to be our highest performing network given an increase in our expectation on within the gas management incentives and London Network's slight decline on the TOTEX element associated with slightly higher replacement expenditure requirements.

In line with Ofgem's methodology, we have not included any Uncertainty Mechanism allowance for the expenditure forecast for impact of the UK rollout of smart meters on our operations. We have however reduced our RIIO-GD1 allowance for London associated with Medium Pressure iron mains issue discussed in section 3.2.

There are many factors that will influence the level of our capital, replacement and operating costs over the remainder of the RIIO period. The forecasts provided in this document and the associated tables represent our current expectations for the RIIO period, indicating our aspiration to deliver outputs and provide value for money to customers. As you would expect there are many sensitivities around the assumptions made in the forecasts.

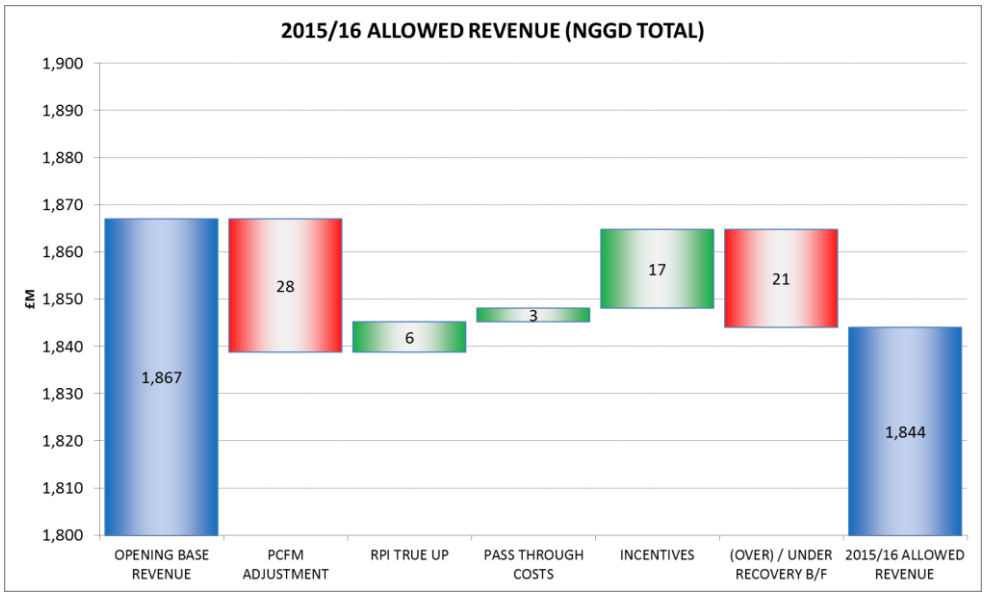
We are confident that we can deliver the improvements required from our incentives and cost performance, but there are external factors that could influence costs in the business including the level of uncertainty costs. If performance reflects the assumptions behind the forecasts then networks would deliver a RORE (in real terms) in line with previous forecasts of around 10%.

[1] Return on Regulatory Equity (RoRE) is a representation of the percentage of returns earned by shareholders as a measure of equity RAV. The price control set allowances for the running of a safe and efficient network at 6.7%. GDNs are incentivised to outperform.

5. Revenue & Customer bill impact

5.1 Allowed revenue

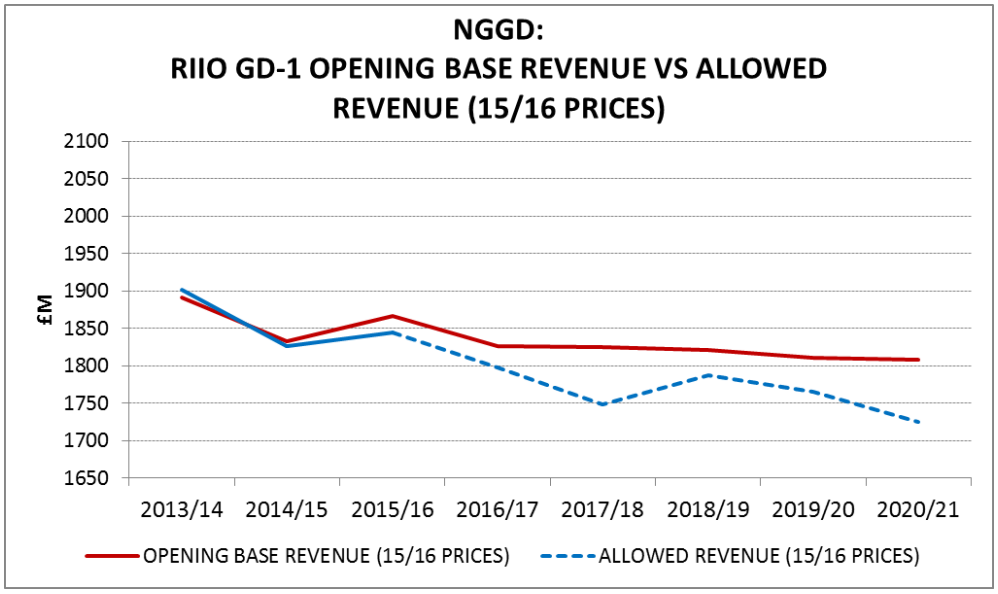
2015-16 Allowed Revenue includes the two year lagged arrangements to the base allowances of RIIO-GD1from our first year of RIIO-GD1 performance. In the first year of RIIO-GD1 (2013/14) we had lower totex cost than the allowance (PCFM adjustment) and incentive performance where we had improved our performance on standards of service and environmental outputs.



Our actual revenue received in 2015/16 was overall £9.5m (0.5%) higher than the allowed revenue. This was due to small changes in parameters used to set prices. The small (well within required tolerances) over recovery in London and North West will be returned in 2016/17.

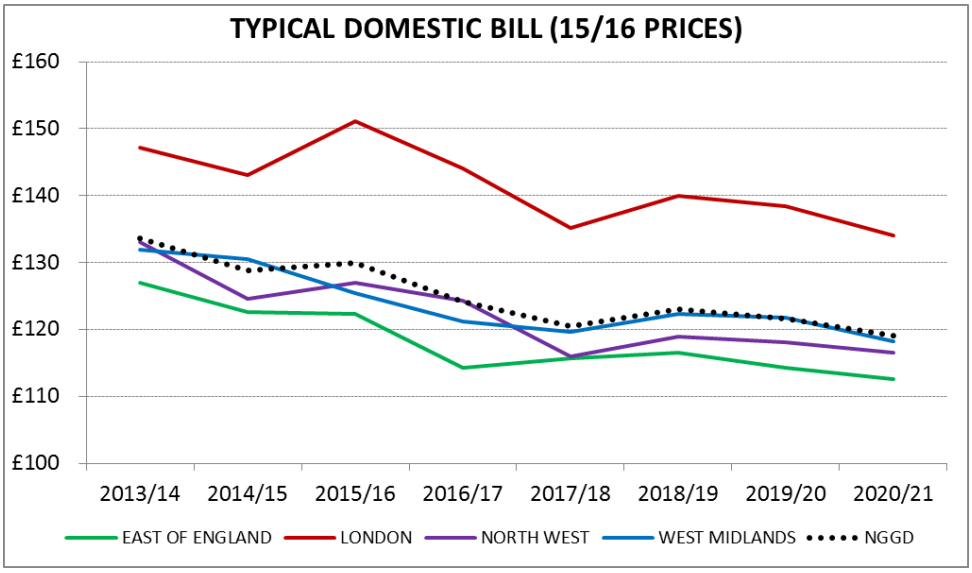
	Total Collected Revenue	Allowed Revenue	Over / (Under) Recovery	
	£m	£m	£m	%
East of England	623	623	(0)	(0%)
London	446	443	3	1%
North West	460	453	7	2%
West Midlands	325	326	(1)	(0%)

Our allowed revenues are expected to decline over the RIIO-GD1 period in real terms. This is based on our performance over the first three years of the period, the forecast of our performance contained in this report, together with lower cost of debt, tax and gas prices we are experiencing. The forecast does not assume any revenue adjustment for further uncertainty mechanisms.



5.2 Customer bill

The typical domestic gas bill forecast, based on the methodology adopted by Ofgem in their 2014/15 RIIO-GD1 annual report, continues to show continued reductions in real terms for customer bills. Across NGGD's four networks, the typical gas bill will fall from £134 in 2013/14 to £119 in 2020/21, a real reduction of £15 (11%), that's 1.6% pa. This reduction is an increase from that forecast last year of a 7% reduction.



This report has demonstrated both our progress against the outputs, service improvements to our customers and the changes we have made to our business to deliver these at an efficient cost. Our cost forecast is based on the assumptions that include some allowance for known risk, which we will endeavour to mitigate against and minimise over the RIIO-GD1 period.

Our planned assumptions built into the cost forecasts include:

- Delivery of the outputs our customers have requested covering improvement in the health of our assets and a continuation of our network reliability;

- Expectation of improvement in our planned and connections customer satisfaction across all our networks;

- Continued performance against our gas emissions targets to reduce the impact on the environment from our operations and gas leakage;

- Reduced TOTEX, driven by cost efficiencies and the implementation of innovative approaches to deliver our output commitments;

- Increased costs associated with enhancing the security of the UK's Critical National Infrastructure that we operate on behalf of our customers; and

- Cost incurred in facilitating the introduction of smart meters, which will help customers in driving down their own gas usage or identifying alternative ways that they can reduce their bills.

With the potential of a Sale of National Grid Gas Distribution by National Grid over the coming six to nine months, the management team are focused on continuing to deliver the outputs that our customers require and will be reviewing our plans in light of the separation of the business and assessing the opportunities that may arise if the business becomes independent company.

CAUTIONARY STATEMENT

This announcement contains certain statements that are neither reported financial results nor other historical information. These statements include information with respect to NGGD's financial condition, its results of operations and businesses, strategy, plans and objectives. Words such as 'anticipates', 'expects', 'should', 'intends', 'plans', 'believes', 'outlook', 'seeks', 'estimates', 'targets', 'may', 'will', 'continue', 'project' and similar expressions, as well as statements in the future tense, identify forward-looking statements. These forward-looking statements are not guarantees of NGGD's future performance and are subject to assumptions, risks and uncertainties that could cause actual future results to differ materially from those expressed in or implied by such forward-looking statements. Many of these assumptions, risks and uncertainties relate to factors that are beyond NGGD's ability to control or estimate precisely, such as changes in laws or regulations, including any arising as a result of the United Kingdom's anticipated exit from the European Union, announcements from and decisions by governmental bodies or regulators (including the timeliness of consents for construction projects); the timing of construction and delivery by third parties of projects requiring connection; breaches of, or changes in, environmental, climate change and health and safety laws or regulations, including breaches or other incidents arising from the potentially harmful nature of its activities; network failure or interruption, the inability to carry out critical non network operations and damage to infrastructure, due to adverse weather conditions including the impact of major storms as well as the results of climate change, due to counterparties being unable to deliver physical commodities, or due to the failure of or unauthorised access to or deliberate breaches of NGGD's IT systems and supporting technology; performance against regulatory targets and standards and against NGGD's peers with the aim of delivering stakeholder expectations regarding costs and efficiency savings; and customers and counterparties (including financial institutions) failing to perform their obligations to the Company. Other factors that could cause actual results to differ materially from those described in this announcement include fluctuations in interest rates and commodity price indices; restrictions and conditions (including filing requirements) in NGGD's borrowing and debt arrangements, funding costs and access to financing; regulatory requirements for the Company to maintain financial resources in certain parts of its business; inflation or deflation; the delayed timing of recoveries and payments in NGGD's businesses and whether aspects of its activities are contestable; the funding requirements and performance of NGGD's pension schemes ; the failure to attract, train or retain employees with the necessary competencies, including leadership skills, and any significant disputes arising with the NGGD's employees or the breach of laws or regulations by its employees; the failure to respond to market developments, the need to grow the Company's business to deliver its strategy, as well as incorrect or unforeseen assumptions or conclusions (including unanticipated costs and liabilities) relating to business development activity.

New factors emerge from time to time and NGGD cannot assess the potential impact of any such factor on its activities or the extent to which any factor, or combination of factors, may cause actual future results to differ materially from those contained in any forward-looking statement. Except as may be required by law or regulation, the Company undertakes no obligation to update any of its forward-looking statements, which speak only as of the date of this announcement.