31 July 2014

National Grid Gas Distribution in 2013/14
2013/14 RRP supporting narrative

Purpose of Document

National Grid Gas Distribution (NGGD) has prepared this document on its business performance in 2013/14.This has been the first year of the new 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).

As part of our stakeholder liaison for our RIIO business plan submission we are committed to publish each year our progress against our commitments in an annual stakeholder report, to be published in September each year.

This report provides further detailed information for stakeholders. However this is primarily for Ofgem to support our 2013/14 Regulatory Report Pack (RRP) and will be used to assess our progress against our RIIO plan commitments. The RRP pack describes our performance across a wide range of areas that include workload, standards of service, reliability, asset health and costs. The reporting pack has over 70 data tables, in an agreed format for all Gas Distribution Networks with supporting guidance notes.

As well as providing information on our 2013/14 performance, the report also provides forecasts based on a number of assumptions for the remainder of the price control. These forecasts will also be published in September.

For consistency this report has been structured along the themes that our stakeholders told us were important to them:

- We will Keep you safe and warm, and will be reliable
- Deliver a quality service to all
- Safeguarding future generations
- Provide value for money

Associated documents

Our performance for 2013-14

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Executive summary

Who we are

National Grid Gas Distribution connects people to the energy they use and delivers it safely, reliably and affordably to around 11 million customers.

In a typical year our field force responds to around half a million reported gas emergencies, mostly within the home. We also replace around 1,600km of gas mains and we connect 20,000 new customers to the network. Additionally, we are developing a pipeline of connections for new sources of gas such as bio-methane and shale gas. Around 10,000 people are engaged in delivery of our services, which our customers and communities value.

Meeting the RIIO-GD1 challenges

Stakeholders have told us about the things that are important to them: that we help keep them safe and warm; and that we deliver a quality, reliable service to all. In delivering against these requirements our stakeholders and customers require us to demonstrate and ensure that we are providing value for money.

The new RIIO price control brings us eight years of relative stability around the regulatory framework. Its introduction has been a great opportunity for us to think differently about the way in which we plan and deliver business and customer value, as well as how we innovate in the way we do things.

Prior to the start of RIIO-GD1 we have undertaken a number of initiatives that will help us to deliver against the challenges we have been set over the new regulatory period, and so deliver improved service to our customers. These include:

- Investment in a new computer system that integrates new front office mobile technology with our back office systems. The new systems help us recognise performance issues early and correct them before they have an impact on our services to our customers;
- We have aligned our organisation around the core processes that we know deliver value to our customers, so that we can respond to customer feedback and improve the individual services we provide;
- Development of new gas distribution strategic partnerships (GDSPs) that replaced six existing contract structures with two. The new contracts are for eight years and are aligned to the principles of RIIO. They have enabled us to reduce back office support costs across the organisations and align responsibilities for planning and design. This will help improve the customer experience when we renew our assets;
- Reviewing terms and conditions for our employees that provide a better alignment between our reward package and the delivery of our outputs; and
- Initiating a new Performance Excellence programme an integrated approach to organisational performance management that will deliver improved value to customers, while improving organisation effectiveness and capabilities.

As customer expectations are increasing in many areas, we continue to work on improving our customer satisfaction, particularly for our planned works and our connection processes. We have been responding to customer feedback by focusing further efforts on providing a good quality service at an affordable price and carrying out works in the most efficient way possible.

During this first year of RIIO, we have delivered a strong performance for our customers across our four networks, and can continue to do so, particularly if we deliver on our Performance Excellence agenda. This will help us deliver positive outcomes for our customers, in a way that is affordable.

This report provides further detail on our performance, in terms of what we have been able to deliver for our customers this year, as well as our expectations over the eight year RIIO period. We have included a summary below of the areas our stakeholders have told us are important.

Keeping you safe warm and be reliable

The main emergency commitments that we know our stakeholders value the most have been delivered or exceeded in 2013/14.

Our attendance standard of service for uncontrolled escapes was 97.5% to 98.5% and for controlled escapes 98.5% to 99.2%. The target in each category is 97%. In addition our emergency call centre telephone response was 93.9% within 30 seconds (target 90%).

In response to the introduction of the three-tier iron mains replacement programme, we have focused on riskier mains to deliver a safer network for our customers. In the first year of the new RIIO price control, we have significantly exceeded the target for iron mains risk reduced in all of our networks.

Overall, across our networks we have also reduced the outstanding level of escape repair risk. However at a network level, three of our networks had higher scores than they had in 2012/13, while remaining significantly better than historic performance levels. We will continue to focus on this commitment over the coming years.

Our overall network reliability was better than 99.999%, with a significant improvement in our overall minutes of interruption relative to total Ofgem target minutes. During the year we tackled a number of challenges with our unplanned interruptions; that is interruption time while repairing an escape. Overall minutes were up on our 2012/13 performance. We developed an action plan which we implemented in March 2014, with a new process supported by system enhancements and training that has resolved these difficulties. We expect that this will reduce the time during which customers are without their supply into future years as we perform our essential safety work.

Process improvements have also enabled us to improve our performance on pressure and telemetered faults.

Deliver a quality service to all

We have been doing significant work to improve the quality of our services and are pleased to report that the independently measured customer satisfaction scores increased in all our networks. Our overall performance scores (out of a total of 10) ranging from 7.8 in London to 8.3 in East of England and North West networks.

Our emergency repair and response score ranged from 8.8 (Ln) to 9.2 (NW), and we made our biggest overall improvement in planned work; up on average by 0.2 to 8 out of 10.

On connections, we have exceeded the 90% standard of service for all connections service categories. Our connections customer satisfaction score was flat at 7.4 out of 10. We have undertaken a fundamental review of our processes and we plan to address this through a range of measures, including improving communication with customers and simplifying the way in which our processes work for customers.

We are confident that this focus on our customers across all our services will see customer satisfaction levels rise again in 2014/15 and beyond as our planned process improvements continue.

We recognise that customer expectations have never been greater and our commitment to open, transparent stakeholder communication continues. We actively engage in a number of industry initiatives, including the new smart metering developments and we regularly communicate and engage with our different audiences and stakeholders and to explain our performance in a way that accounts for their varying needs.

National Grid and our partner Affordable Warmth Solutions have increased the volume of fuel poor connections and are ahead of the RIIO output commitment, except in London where there has been a small shortfall this year as a result of lower demand for these connections.

Safeguarding future generations

Our most significant contribution to carbon emissions is that of gas leakage and our key environmental measure and incentive is in place to manage this. Under RIIO, Ofgem has set a baseline level of leakage, which includes the impact of the mains replacement programme on this measure. In addition to the effect of mains replacement, which reduces leakage by around 2% pa, we have also implemented a number of improvements, primarily around improved pressure management. Overall our leakage reduced by 5%.

We are also experimenting with new technologies to reduce the amount of gas we use in the operation of our networks. We are targeting these initiatives to reduce further our emissions in future years.

We completed our first ‘green gas’ connection in East of England in 2013/14 and have a further thirteen projects that have been accepted and scheduled for connection in 2014/15.

We have obtained value for customers by optimising the amount of National Transmission System capacity we acquire on their behalf at a level below the target volume in all our networks except West Midlands.

Provide Value for Money

Under RIIO, Ofgem has 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.

These allowances also assume that we can deliver additional efficiencies every year. These are challenging targets, and we have responded to this challenge by successfully implementing a number of initiatives. These have already, delivered a step change in our operating efficiency and, through the RIIO sharing mechanism, will deliver additional value to customers.

In 2013/14 our totex[1] expenditure to deliver our services and necessary investments was £917m, £123m (12%) below the allowance. the main highlights of the actions we took to achieve these savings are:

- The implementation of our new eight-year strategic partnerships, which significantly improve how we deliver our replacement expenditure, where new flexibility under RIIO meant that we could target high risk mains and also reduce costs;
- Lower capital expenditure, which includes some deferral of outputs to later years of the price control as we develop our delivery strategies to ensure network outputs are delivered in a cost effective way;
- On operating expenditure, we have advanced the demolition of redundant gas holders, returning these sites back to communities for long term beneficial use; and
- All of our networks outperformed their totex cost allowance targets, primarily from replacement expenditure.

Over the eight-year period, the regulator has challenged us to continually improve our cost efficiency. We believe that we can meet that challenge in part through our asset delivery and performance excellence drive. If these programmes deliver as we expect, we have the opportunity to improve our cost efficiency, even beyond the ongoing efficiency improvements that underpin our allowances. We will need to deliver further efficiencies if we are to maintain our totex outperformance levels as we tackle more challenging replacement projects and other increased activity levels to deliver our eight-year output targets.

Over the coming years we do expect to incur costs to deliver additional outputs for customers in activities covered by uncertainty mechanisms. These include upgrading our physical site security important to safeguard critical network infrastructure and costs that are a consequence of the smart metering rollout. We are working to try and mitigate these costs as far as possible and deliver required outputs in these areas. These additional costs are expected to be covered by

[1] Totex expenditure is our total expenditure including controllable operating costs (opex) and the investments we make to replace our existing pipes (repex) and to build or purchase new equipment (capex)

uncertainty mechanisms. These uncertainty mechanisms are designed to remunerate efficient costs that were not sufficiently certain to include in allowances at the time the RIIO controls were set.

The regulator has indicated that well-performing networks should be able to meet their required outputs and also deliver double-digit real returns on regulated equity by maximising revenue incentive performance and outperforming challenging totex targets. This is an excellent outcome for customers as it delivers cost savings through sharing and the service they need. We believe that our networks are performing well and can continue to do so, if we deliver on our performance excellence agenda and maximise the use of innovation. Returns are likely to vary across our networks as there are some differences in the make-up of each network. We are confident that that all of our networks can continue to achieve good performance throughout the RIIO period.

Overall, the strong first years performance and our anticipated future expenditure, which includes further incentive improvements are expected to see the cost to the average domestic gas customer, at around £139 per annum, are expected to remain broadly flat (in today's prices) over the next seven years.

1. We will keep you safe and warm, and will be reliable

1.1 Process safety

Process safety is the term used to describe the safety of industrial installations such as our pipes and other equipment. It refers to the safety of the equipment itself not to accidents that workers might have.

We experienced no process safety related incidents that resulted in deaths or injuries or damage to structures during 2013/14.

We take the control of process safety risks very seriously. We manage risk by understanding the various hazards, determining their cause and how they may be mitigated and operating adequate control measures. Asset condition is monitored and this information used to inform maintenance and investment plans.

The RIIO price control arrangements are better aligned with optimum asset management decision making because they focus on totex and so incentivise appropriate behaviour. In addition asset health is measured and there are targets to improve asset condition.

1.2 Emergency service

We operate the national gas emergency telephone answering service on behalf of all eight gas distribution networks. During 2013/14 we answered 2,248,307 calls; 93% of which were answered within 30 seconds compared with the required standard of 90%.

The telephone service provides important customer safety advice as well as taking details of the gas emergency. The advice reduces the risk of explosion or carbon monoxide poisoning while we are on route. During 2013/14 we amended the scripts used by our staff to provide a better service to customers.

To ensure that we have adequate resources to respond to fluctuations in escape report workload we maintain the capability to call in additional staff, and redeploy personnel within our customer contact centre. The rate of telephone calls received can increase to 125% of typical levels at times, for example if a pungent cloud is emitted by a chemical manufacturer and drifts across a populated area.

We respond as rapidly as possible to all reports of an escape of gas. This is important because the situation on site may be deteriorating and our rapid attendance mitigates the risk of explosion.

Gas escapes are classified as controlled or uncontrolled. Controlled escapes occur downstream of the meter, and are made safe by the customer shutting their emergency control valve (the valve next to their meter). Uncontrolled escapes cannot be made safe by the customer reporting the escape and so are potentially more hazardous.

In 2013/14 we had a 98.0% performance of attending uncontrolled gas escapes within an hour, and a 98.9% performance of attending controlled gas escapes within two hours. The required standard is 97% in each case. The table below refers.

Network	Uncontrolled	Controlled
EoE	97.9%	99.0%
Lon	97.7%	98.5%
NW	98.5%	99.2%
WM	97.9%	98.8%
Total	**98.0%**	**98.9%**

To ensure that we deliver the highest possible emergency response standard while maintaining productivity levels we continually review the amount of resources allocated to emergency work, compared to other work. This is done in real time, so we can rapidly redeploy personnel as required. We also flex shift patterns and adjust the overall number of personnel we employ within our operations function during the year to match likely work patterns.

To minimise the time taken to attend each escape we use 'Smart Travel', a computer application that is part of our Gas Distribution Front Office (GDFO) system. It monitors the whereabouts of our workforce using GPS, and makes sure the work is allocated to the best placed operative.

1.3 Annual network risk

Most escapes (82%) are from appliances or from pipes within premises. However, there are also escapes from the gas distribution system. Many of these escapes are caused by corrosion, such as the corrosion of an old steel gas service pipe. Others are caused by ground movement causing pipes particularly iron pipes (which are brittle) to fracture, or as a result of the deterioration of joints.

Different escapes result in gas leaking out at different rates; for example iron pipes which fracture and leak at a higher rate than those that experience a joint escape. In addition escapes that are close to premises are, all other things being equal, more dangerous than those that occur further away. These and other factors are taken into account by the operative who attends site, and with the aid of a laptop computer, each network escape is risk assessed to determine its priority for issue to a repair team. This risk assessment produces a score known as the network risk of the escape. The scores are used to prioritise those escapes that are not worked on straight away.

46% of gas escapes from our pipeline system were stopped in 12 hours during 2013/14. Where this was not the case, escapes were either worked on straight away but completed after 12 hours, or assessed as not posing a significant risk and deferred due to operational considerations. An escape may take over 12 hours to resolve if, for example, a number of joints some distance apart are leaking, with each requiring a separate excavation. Deferral of an escape may be appropriate if for example the escape is relatively low risk and it is located under a busy road during a period of heavy traffic.

The amount of risk posed by outstanding escapes may be assessed by the total network escape risk outstanding at the end of each day. The annual network risk is calculated by adding the daily scores together. This score does not seek to predict incident probability, but it is an indicator of escape repair performance.

The table below shows the annual network risk for each of our networks in 2013/14, and how they compare with 2012/13.

Network	12/13	13/14
EoE	5,166,275	3,023,211
Lon	4,621,376	4,863,933
NW	4,911,749	5,322,794
WM	2,502,277	3,037,830
Total	**17,201,677**	**16,247,768**

Overall annual network risk decreased from 2012/13 to 2013/14. Ofgem used 2012/13 as the baseline year to set our performance targets. Both 2012/13 and 2013/14 were mild winters If a future winter is colder than the last two years it is likely that there will be more escapes and so more leaks to repair potentially resulting in higher scores. Our forecasts have been based on 2012/13 performance, but as set out in the RIIO-GD1 Final Proposals document we will be looking to develop how the output is affected by factors such as variations in weather.

1.4 Iron risk removed

Iron gas pipes represent a small but real risk to those who live or work near to them.

Iron pipes are continually deteriorating due to ongoing corrosion, which progressively reduces their strength. However, the particular risk that they pose is due to the fact that they are brittle and so they fracture suddenly because of forces exerted by the surrounding ground, resulting in significant escapes of gas. It is not yet possible to predict such fractures but it is possible to estimate the probability that a particular pipe will fracture during a period of time.

As a result of this, and based on experience built up over many years, we have developed a model that predicts the probability that a pipe will fracture and give rise to an incident, which gives pipes individual risk scores.

The risk removed measure is an eight year target; with the new three-tier regime for replacement we have moved from a zonal approach to a more targeted replacement of highest risk pipes. In the first year we have therefore been able to achieve a higher proportion of risk reduction than the average annual level required for the target, as shown in the table.

Network	% of RIIO Target	
	2013/14	8 Year Forecast
EoE	23%	108%
Lon	15%	100%
NW	23%	105%
WM	16%	105%

During RIIO we have both risk and length replacement targets.

We expect to meet or exceed our risk removed targets in all of our networks by achieving our length replacement targets. However due to the risk profile of the pipes that we operate in our London Network we may have to incur additional costs to ensure that we deliver on our risk target commitment.

In 2013/14 we replaced 1,574km of iron pipe, which was 98% of the annual run rate required to deliver our HSE commitment.

Regarding the total kilometres to be replaced, we worked on fewer large diameter pipes than the trend rate would require, because we are developing innovative technologies and making arrangements with highway authorities and other stakeholders to deliver on this commitment effectively while limiting disruption to the public. This engagement and technological development is especially important in respect of the work we plan on carrying out in central London, where very large medium pressure pipes are to be replaced in a densely populated area.

Overall we plan to deliver the eight-year target in each network.

Discussion of the technologies that are under development is provided in the innovation section below.

1.5 Network reliability

There can be a significant impact on customers if supply fails. We design our system to provide enough capacity to meet a level of demand that's unlikely to be exceeded more than once in any twenty year period. In addition to designing and constructing a system that meets this obligation, we also monitor and control flows and pressures to ensure adequate capacity is always made available. The pressure and flow information is also used to validate the network pressure and flow models that are used to design and operate the system.

All of the assets that we install are designed to industry agreed design codes and subject to quality assurance. Afterwards they are maintained according to appropriate asset management principles.

Despite these precautions there are unplanned supply interruptions that affect customers. In particular, escapes on gas service pipes including riser pipes supplying flats lead to interruptions, because such pipes cannot usually be worked on without interrupting supply.

During 2013/14 our reliability was better than 99.999% in all our networks.

During the year we tackled a number of challenges with our unplanned interruptions. Overall minutes were up on our 2012/13 performance. We implemented an action plan in March 2014, with a new process supported by system enhancements and training that has resolved these difficulties. This will help reduce the time customers are without their supply in future years. We are committed to achieving our eight-year Ofgem target for the RIIO period and expect that the improvements we have already implemented will help us to achieve this.

The table below shows the total number of customer minutes during which there were unplanned interruptions. It also shows progress against the Ofgem RIIO period target.

Network	2013/14 minutes actuals	8 Year Average Annual Minutes	
		Forecast	Target
EoE	11.6m	6.2m	6.2m
Lon	11.7m	11.7m	13.8m
NW	10.7m	9.8m	9.7m
WM	7.7m	6.0m	6.0m
Total	**41.7m**	**33.7m**	**35.7m**

In addition, some customers are affected by planned work, such as the planned replacement of their service pipe to ensure their future safety.

In compliance with our obligations we notify customers in advance of planned work. We have also been working with our strategic partners to extend and improve our communications with customers. This is described below.

A benefit of this is that we are able to work more collaboratively with customers affected by our works and this has reduced our planned interruption minutes.

We expect to do more replacement in future years and this will tend to increase our total planned interruption minutes, however, we have plans to mitigate this by reducing the average duration of each individual interruption. We are planning to improve average individual customer interruption duration by 2% pa.

Network	2013/14 minutes actuals	8 Year Average Annual Minutes	
		Forecast	Ofgem Target
EoE	22.2m	22.7m	38.4m
Lon	17.6m	19.7m	32.1m
NW	19.4m	19.9m	35.8m
WM	14.3m	14.7m	25.0m
Total	**73.5m**	**77.0m**	**131.3m**

Two other reliability metrics are associated with telemetry and pressure faults. We are ahead of the targets, given process improvements over the last two years. On telemetry, we have worked with an independent human factors expert, reviewing our approach to alarm management. This is resulting in a number of process improvements.

	Telemetry Faults		Pressure Faults	
	2013/14	Target	2013/14	Target
EoE	12.2	127	5%	8%
Lon	45.3	127	4%	9%
NW	27.2	127	11%	18%
WM	18.1	127	5%	6%

1.6 Managing assets for the future

The eight year RIIO price control arrangements introduce new network output measures (NOMs).

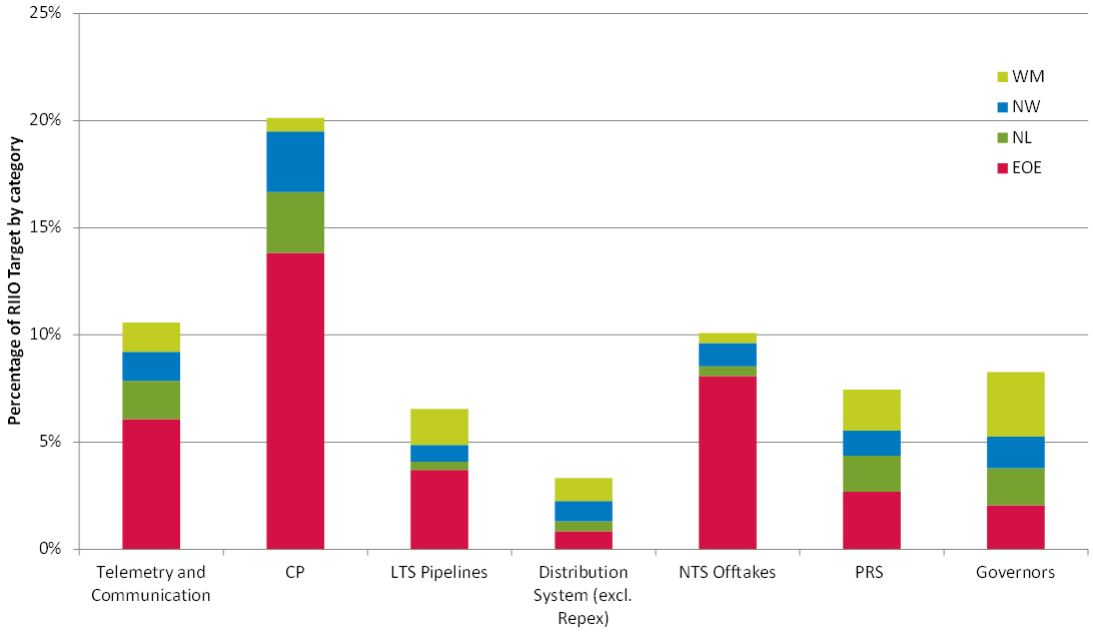
NOMs measure the health of our assets other than iron mains that we use to transport gas to customers. The NOM targets are the amount of health improvement to be delivered during the period. They are expressed as a number of points of risk removed and there are targets for different asset categories.

To ensure that we can deliver our required NOMs effectively we have enhanced our approach to asset management. The change has facilitated development of long-term initiatives, such as new technology, new techniques and new processes, all of which are designed to deliver NOMs efficiently for customers.

A key component of our approach is to phase the delivery of NOMs in such a way as to maximise the benefits of innovation. For this reason we are concentrating on the delivery of priority asset health work. This includes, for example, security of supply related work, in the early years, with other work to be delivered once the anticipated outputs from our various innovation initiatives are available.

We have developed our plan to deliver our NOM targets.

Altogether we delivered a total NOM score of 3,163 in 2013/14. The chart below shows the amount of progress made in each category towards the eight-year target.



1.7 Safeguarding the public during our works

The public may be put at risk by our doing work. We operate commercial vehicles and carry out road works, as well as works in and around premises for example, digging a hole in a drive to replace a gas service pipe.

To reduce the risks posed to the public we carried out a driver safety programme and have also improved our processes relating to the maintenance of barriers and signs around our excavations. This has reduced the risk that members of the public have an accident in the vicinity of our works. We have added to our ongoing operative training programme to help them to better safeguard the public at all times, taking particular care of vulnerable people such as the disabled, children and the elderly. We have encouraged our employees to think about how their work may affect these groups and what they can do to protect them. Contract partners have operated similar initiatives.

2. Deliver a quality service to all

2.1 Customer satisfaction

Customers experienced a better service from National Grid in 2013/14. Evidence for this includes the positive movement in independently monitored customer satisfaction scores. The table below shows the scores out of ten that were awarded by customers across a range of activities that effect incentive income and how these differ from those achieved in 2012/13.

Overall NGG performance	**12/13**	**13/14**	**Ofgem target**
Emergency Response and Repair	9.00	**9.07**	8.81
Connections	7.39	**7.44**	8.04
Planned Work	7.75	**7.93**	8.09

We undertook significant work to deliver these improvements that touched on all points of the job life cycle. Our process teams took a lead in this, applying the process excellence techniques that are now becoming embedded in our business.

Daily and weekly performance meetings are held at all levels within the organisation; performance is monitored; jobs that went well and not so well are discussed and the learning points pulled out and shared.

Our teams analyse process steps to remove inefficiencies and the causes of poor performance. In addition good performance is shared and, if appropriate, rewarded through our 'Appreciate' scheme, a process for recognising those who have performed particularly well. Mini-projects, colloquially known as A3s are set up as required to address issues that cannot simply be improved by changing the behaviour of a few individuals or a single process step that is easily addressed.

An important factor in helping our drive for improvement is the depth of valuable management information that can be produced from the Gas Distribution Front Office computer system. We now also use the feedback we receive from complaints to help us understand the causes of poor customer satisfaction scores by identifying causes of complaints made to us. Complaints are regrettable, but by using them to identify where we are not meeting customer expectations we are able to improve our performance.

Process excellence is a continuous process of examining what we are doing and seeking to improve. It works by improving our people's performance, our systems, our processes and the technology that we use. Through process excellence we are delivering on our ambition to provide customers with an excellent service that meets their needs and exceeds their expectations.

Our connections customer satisfaction score was flat at 7.4 out of 10. We have undertaken a fundamental review of our processes and we plan to address this through a range of measures, including improving communication with customers and simplifying the way in which our processes work for customers.

The 2013/14 customer satisfaction scores by networks were as follows.

Network	Emergency Response & Repair	Connections	Planned
EoE	9.18	7.59	8.17
Lon	8.84	6.61	7.90
NW	9.21	8.03	7.68
WM	9.06	7.52	7.95

2.2 Standards of service

Customer perception stems from the service that they receive. We have been taking steps to improve our performance in all three customer areas.

Emergency

We have retrained our employees and provided additional tools that have increased the proportion of emergency control valve (ECV) jobs that are completed at the first visit by the first call operative rather than being passed to a repair team. This provides a better customer experience because the job is completed in one visit as well as being more efficient.

We introduced more detailed and job specific information boards on road signs. They provide road users with details such as the status of the job (main on test, concrete curing etc.) and information of the type of work we are doing.

We are rolling out QR codes (square bar codes that can be scanned by a smart phone) on our road signs, providing the public with access to greater information about our road works, such as the likely duration and the reason for the work.

Connections

We exceeded the 90 % standard of service for the time taken to deliver all our connections service categories (Guaranteed Standards of Performance categories 4 to 11) for all of our networks.

However, our customer satisfaction score is below where we wish it to be. We are undertaking a fundamental review of our connections process to improve customer experience from the point at which a customer first makes an enquiry through to the physical completion of work. We aim to improve customer satisfaction and reduce complaints by:

- simplifying the application process
- creating a single point of contact from survey to completion
- improving customer communication
- reducing the lead time

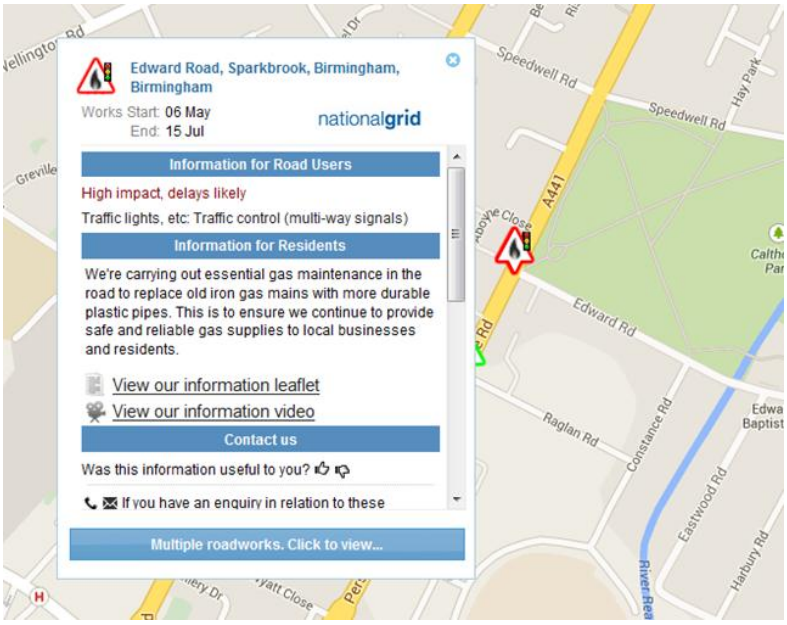
We're developing our processes step-by-step, because we want to make sure our stakeholders have the opportunity to engage with us as we make changes. It also helps make sure we can maintain performance levels as we change our systems and processes.

Planned work

We have improved communication between our customer contact team and those operated by our strategic partners by introducing an automated link between their work management systems and our SAP system. Updates to customer records are automatically visible on both systems and this enables us to effectively manage enquiries and to more effectively resolve complaints. This interactivity is seen as an essential tool in resolving complaints and the effective handling of enquiries.

We have improved customer contact on site by designating a member of the operational team as the point of contact for customers; identified by wearing a different colour high visibility vest. The customer contact arranges access times, resolves questions and deals with matters as they arise. This establishes an approachable and easily identifiable point of contact within the team.

Our strategic partners are trialling the use of roadworks.org. The intent is to provide online information about our projects such as how long they will take, why they are being carried out and to provide contact details. The screen shot below refers.



2.3 Engaged with shippers and other stakeholders

During 2013/14 we continued to engage effectively with shippers and other stakeholders.

We were awarded a score of 7.1 out of 10 by the Stakeholder Engagement Panel, a group of industry experts appointed by Ofgem to judge network operator performance. This was the highest score awarded to a gas distribution network operator in 2013/14.

Smart metering has created the potential to increase and improve the data the industry is able to use, which will improve the accuracy of how energy usage is allocated. This allows for more timely and accurate calculation of transportation and energy charges to be invoiced to shippers and ultimately consumers.

The programme for development of the relevant systems and processes together with the contractual regime, is known as Project Nexus, and represents the most significant change to the uniform network code (UNC) since Network Sales in 2005.

We have exclusively led the development of the contractual elements, created the detailed business rules, prepared the legal text and raised three major UNC modifications. Two of our modifications have been approved by Ofgem and the other is awaiting direction, which is expected shortly. Our modifications are planned to take effect from October 2015. We are now leading on identification of the necessary contractual terms to facilitate transition from existing arrangements to the new regime.

Throughout 2013/14 we have been actively engaged with industry parties on smart metering, either directly or through representation on a variety of forums ranging from the DCC to Energy UK, Ofgem, gas suppliers other Gas Distribution Network Operators and DECC. Our principle objective in supporting the smart metering programme is to ensure that when rollout begins we are able to provide a co-ordinated delivery model with suppliers and other parties – one that ensures customers experience the best possible outcomes, both during and after installation of their smart meter. While there is much work to be done before the proposed start of the rollout later in 2015, we are confident that together with our industry partners we will be prepared to meet our obligations and facilitate a successful implementation.

We have worked with our partner Affordable Warmth Solutions to promote the benefits of gas to fuel poor customers. We have also engaged with Housing Associations and other providers of social housing to deliver community schemes. As a result, the volume of fuel poor connections was 11% higher than the forecast year one RIIO output. The volume was ahead of target in all networks except for London, where there was a small shortfall as a result of lower customer demand.

In addition to these industry initiatives we have engaged with customers and stakeholders in a variety of ways; we have established a social media presence and published a range of documents to explain our performance. The picture refers.

In April 2013 we made 29 commitments to our customers and stakeholders in our 'Committing to you for 2014' publication. And in November 2013 we launched our second stakeholder consultation, 'Have your Say: Our questions to you', so t we could find out how our stakeholders

think we are doing, how they want to carry on engaging with us and, importantly, how they would like us to focus our resources during 2014/15.

We had more than 70 responses from a very wide range of customers and stakeholders. Everyone who responded felt we had listened and they had had a chance to have their say, with 91% saying we had acted on their feedback, or they understood the reasons why, when we hadn't. The other 9% said it was too early to say just yet.

Following this consultation we have taken a new approach to deliver the outcomes our customers and stakeholders want us to focus on this year, and we have made 12 new broader commitments for 2014/15.

2.4 Complaints and compensation

We endeavour to provide an excellent service and therefore avoid complaints. However, sometimes we get it wrong and a customer is displeased with something that we have done.

We receive complaints by telephone, letter, e-mail and through social media. We have standards of service to complete our investigation and respond to customers within determined timescales.

We are pleased to report that we have improved our performance and that this has reduced the number of complaints that we have received from 9,873 in 2012/13 to 8,553 in 2013/14. In addition we are more effective at resolving complaints, following a number of initiatives, including:

- reviewing processes to best support the customer experience;
- enhancing our complaints handling system;
- improving our training; and
- coaching our people to ensure that they retain their customer focus.

Compensation may be paid following a complaint for example to compensate a customer for damage to their premises. However, most compensation is paid when a standard of service has not been met, for example when a customer has been without supply of gas for more than 24 hours.

2.5 Carbon monoxide

In recent years there has been an increased appreciation of the dangers posed by carbon monoxide fumes that may be generated by badly installed or poorly maintained appliances. We have always reacted to reports of dangerous appliances, and identified many more in the course of doing other work. We have made such appliances safe and advised customers of the next steps that they should take. Now we are taking steps to raise the profile of the issue, and to visit customers to check their safety.

In the last year we undertook a number of new initiatives to raise awareness of carbon monoxide and gas safety. These included:

- launching a suite of online safety videos that achieved 6,000 hits;
- promoting safety advice through social media channels, reaching 30,000 Facebook users; and
- providing more than 206,000 home safety resource packs to cub scouts, helping them to spot the signs of CO, and as a result awarded 22,600 cub scout home safety badges.

We also launched a pilot with Staffordshire Fire and Rescue Service, with fire officers providing CO awareness advice and alarms to hard-to-reach, vulnerable people while carrying out their home safety visits.

3. Safeguarding future generations

3.1 Environmental performance

Leakage and shrinkage

Methane is a potent global warming gas and the major component of natural gas. The leakage of natural gas therefore contributes to global warming while also being wasteful. In addition to the leakage component, gas is used to operate our system (own use gas) for example, in preheating gas prior to pressure reduction. We also incorporate an estimate for gas that is illegally taken from the system by a very small minority of consumers. Shrinkage is the collective term used to describe these total system losses; i.e. leakage, own-use gas and theft.

We use an industry approved model to estimate the amount of leakage from our gas distribution system. This model includes an assessment of emissions from mains, services and above-ground assets, in addition to an estimate of leakage associated with specific mains interference damage incidents. The model applies pre-determined leakage rates but is updated annually for a number of 'activity factors', the most significant of these being changes to mains asset lengths, primarily associated with the mains replacement programme as identified above, and the pressure at which we have been operating our distribution mains systems.

The RIIO price control includes significant incentives to reduce the level of leakage and shrinkage, which take into account the anticipated effect of the ongoing mains replacement work that Ofgem determined that customers should fund on safety grounds.

The table below shows the level of shrinkage reduction achieved in 2013/14 in comparison to 2012/13, and provides a comparison of forecast performance over the RIIO period to the 'outputs' anticipated in the Final Proposals (FP).

Network	2012/13 Shrinkage (GWh)	2013/14 Reduction	% Reduction over 8 Years	
			Latest Forecast	Ofgem Target
EoE	557	6%	20%	15.3%
Lon	299	5%	20%	17.5%
NW	413	6%	23%	19.8%
WM	331	4%	18%	15.5%
NGGD	**1,600**	**6%**	**20%**	**16.9%**

In addition to ongoing mains replacement, we have applied process excellence principles to work on all the other factors that contribute towards superior leakage performance. Typically, mains replacement would deliver around 2% reduction in shrinkage year-on-year. However, in 2013/14 we have delivered a 6% reduction, which is due predominantly to improvements in pressure management.

We believe that we will be able to sustain the improved pressure performance throughout the RIIO period by continued investment in these systems. Therefore we are currently forecasting an

outperformance of the anticipated 'outputs' in the Final Proposals. The forecast from 2013/14 onwards has been based purely on the further leakage reductions associated with mains replacement. However, we review the leakage model on an annual basis and are looking at ways of improving the modelling methodologies, particularly where this could facilitate further reductions in emissions via efficient investment.

We are experimenting with new, and for the UK, innovative gas pre-heating equipment using catalytic and low pressure water bath heaters that have the potential to both reduce ongoing maintenance costs and the amount of gas used for pre-heat.

We have worked with shippers and Ofgem to address concerns in relation to the theft of gas. Theft results in costs that are born by law abiding customers because the cost of the gas illegally taken has to be paid for. It also has safety implications. For example a person may tamper with a meter and leave an unsafe installation that may result in an escape of gas.

We are working closely with Ofgem, shippers and other Gas Distribution Networks on measures to allocate, investigate and pursue theft of gas cases. We are the only GDN to have successfully recovered the value of gas taken by members of the public and refunded it to customers via a positive adjustment to transportation revenues. Our priority in undertaking theft investigations is to maintain the safety of the public, gas consumers and our employees in what is a difficult and complex environment for gas transporters to operate within.

Land Regeneration

RIIO allows us to continue a long-term programme of environmental remediation, as well as funding to remove roughly half our fleet of gas holders. This addresses the safety risks posed by ageing and operationally redundant assets.

The Distribution Network property portfolio comprises former manufactured gas plants, industrial landfills, gas holders and other brownfield sites with complex and variable land contamination issues. The focus of the ongoing remediation programme is on proactive management of environmental risk, while returning land, where it is surplus to operational requirements, to productive public or private use where possible.

In 2013/14 National Grid Gas Distribution embarked on a joint initiative with National Grid Property, a separate legal company with the National Grid group, to transfer surplus and redundant gas holder sites. The aim was to achieve their earlier removal and allow the Gas Distribution business to focus on our core business.

This joint initiative will allow the better management of surplus land and assets with associated cost savings. It will provide accelerated return of value to Gas Distribution customers through land transfer based on independent external valuations; and move the complications and potential risks of disposal to the external market where they can be better managed.

National Grid Property has a proven track record for considerate implementation of remediation projects and in safely demolishing gas holders. It adopts a proactive approach to stakeholder management generally. Recognition of the industrial heritage value of gas holders is an important

consideration in the planned demolition programme, and National Grid Property is committed to continuing to work in partnership with English Heritage in this regard.

This initiative means that gas holder demolition costs and associated statutory land remediation occur in the first two years of RIIO GD-1. It also results in an accelerated return of value to our customers, through disposal and the avoidance of inspection and maintenance costs that would be incurred if the gas holders remained in our ownership.

Other environmental issues

Our operations can affect the local environment and have an impact on global warming. As a result we are obliged to retain ISO14001 (Environmental Management System) accreditation as an important control on our operations. This may cause incidents such as the discharge of oil into a drain from a piece of mobile plant. During 2013/14 we detected and resolved six ISO14001 non-compliances through routine audit.

We monitor the amount of spoil that goes for recycling as opposed to landfill, and also the amount of virgin aggregate we are obliged to import. The table below shows how we have outperformed against our commitments in these areas by sending less material to landfill and using less virgin aggregate.

	% Landfill	**% Virgin Aggregate**
EoE	7%	41%
Lon	4%	0%
NW	3%	28%
WM	2%	3%
Target	10%	30%

We have performed well because our Gas Distribution Strategic Partners are incentivised under their contracts to recycle materials. However, in the East of England network the aggregate recycling industry is less well developed than London, for example, where there are significant recycling facilities. We are working on improvements with our strategic partners in East of England.

3.2 Future of gas

Demand

Gas consumption is slowly declining due to the progressive replacement of older appliances, with newer more efficient ones being introduced, together with improvements to insulation standards. However, the net number of connected gas consumers is increasing as the population rises and more properties are constructed. These trends are expected to continue throughout the RIIO price control period.

These trends imply that the carbon efficiency of 'heat' is gradually improving as more premises are being heated and more hot water provided with less gas being consumed.

Green gas

Since the advent of natural gas in the 1970s all the gas transported to customers through distribution systems in the UK has been a fossil fuel.

Due to concerns about global warming there have been technological developments that enable the conversion of biological material, for example farm waste, into gas that may safely be used in UK appliances. The introduction of the Renewable Heat Incentive has made such gas production economically viable.

Gas that is derived from recently living biological material is said to be 'green' because it is produced from renewable sources; consequently, it does not contribute to the level of CO2 in the atmosphere. The use of such gas de-carbonises the gas grid by diluting the amount of fossil fuel gas delivered to consumers.

One project was connected in Doncaster, East of England Network, during 2013/14. A further 13 projects have been accepted and are scheduled for connection in 2014/15. This is against a forecast of 80 renewable gas connections in total throughout the RIIO period.

Shale gas

Shale gas has transformed the gas market in the USA by reducing the price paid for gas there.

There are said to be large deposits of shale gas in the UK and that these can be economically extracted. We are aware that there has been exploratory drilling within the area of our North West Network and that this has resulted in controversy with the developers, as it is opposed by some local people and environmental groups.

We are obliged to provide equal system access to all Gas Safety Management Regulations compliant gas. No shale gas is currently flowing into our system, although during 2013/14 we had two enquiries in respect of our North West Network that related to shale gas connections. These are currently going through the initial processes of establishing a connection point and carrying out design and impact assessments.

3.3 Providing capacity

We are obliged to connect customers when it is reasonable and economic to do so and to maintain adequate capacity within our system that enables customers to safely use their appliances. Demand in local areas may increase even when demand overall is gradually reducing. For example, the construction of a new housing estate that is connected to a supply of gas may require reinforcement of our system in that area. We laid around 9 km of pipe to reinforce our pipeline system in 2013/14.

We have obtained value for customers by optimising the amount of National Transmission System capacity we have acquired on their behalf. We have an incentive to minimise the cost of obtaining this capacity and share the benefit of any cost reduction with customers. The table below shows the saving in NTS flat capacity purchased by network in 2013/14.

Network	Capacity Booking	Target	Difference
EoE	816	887	71
Lon	437	467	30
NW	518	535	17
WM	360	355	(5)

All figures in GWh expressed as a daily total for the Network.

3.4 Fuel poor, assisting the community

During 2013/14 we connected 4,810 premises that are described as 'fuel poor'. A fuel poor connection is where the occupants are likely to spend a significant portion of their income on energy. Such connections are provided at a discount.

We carry out community schemes and individual fuel poor connections. Community schemes are carried out through our subsidiary Affordable Warmth Solutions (AWS) who proactively contact potential customers. In addition, AWS also have identified areas where individual customers qualify for a fuel poor connection enabling us to offer them this service.

The table below shows the numbers delivered in each of our networks compared with the Ofgem target numbers.

Network	Actuals	Ofgem target	Difference
Eo E	1,625	1,260	365
Lon	270	360	(90)
NW	1,785	1,666	119
WM	1,130	1,045	85
Total	**4,810**	**4,331**	**479**

The volume of fuel poor connections was 11% higher than the forecast year one RIIO output and was ahead of target in all networks except for London, where there was a small shortfall as a result of lower customer demand.

A customer benefitting from a fuel poor connection will save an estimated £228 per year. This is relative to the cost that they would have incurred if their existing fuel was 80% electricity and 20% solid fuel.

The connection of 4,810 fuel poor customers in 2013/14 will save over 26,000 tonnes of CO2 being emitted annually, because burning gas results in less CO2 being emitted than the fuels that it displaces.

Over the RIIO period we will continue to promote these connections and if possible connect more than the RIIO targets.

4. Provide value for money

4.1 Driving performance

As described above we have embraced performance excellence principles to drive improvements in our business.

Performance excellence touches on people, their skills and behaviours and technological innovation, as well as looking at processes and systems.

It delivers results by providing frontline visibility of our day-to-day performance, aiming to cut out waste and poor practice. It identifies good practice and innovation, while sharing and celebrating good performance.

People are the heart of our business

The services we provide our customers are delivered through a combination of excellent systems and processes and experienced, dedicated and motivated people. We have put in place a reward framework that we believe achieves the right balance between retaining and motivating our employees and providing value for customers.

During 2013/14 we introduced revised terms and conditions for our field force that reward high performance and achieve a more appropriate balance between cost and output. This is expected to drive future efficiencies while maintaining standards and improving customer satisfaction.

We have agreed an RPI-linked pay deal covering the period to 2017/18 with our employees who are covered by collective bargaining. The pay deal also increases the proportion of pay that is related to performance. Furthermore, the new pay arrangements distinguish between different skill levels and over time will result in a pay reduction of around 5% in respect of employees who do not require specialist technical knowledge to do their work.

We have also successfully renegotiated the pension arrangements in respect of those employees who are on the Defined Benefit pension scheme. This caps increases in pensionable salary that will accrue for future service at the least of 3% or RPI or the annual pay award for the individuals involved. This makes the scheme more sustainable and should prevent customers being exposed to the cost of funding the scheme increasing.

We are also in the process of building the capability of our front line supervisory staff who have a vital role to play in delivering the performance and services that our customers value. They must enable success through our teams of field force employees who have the most up-to-date technical skills.

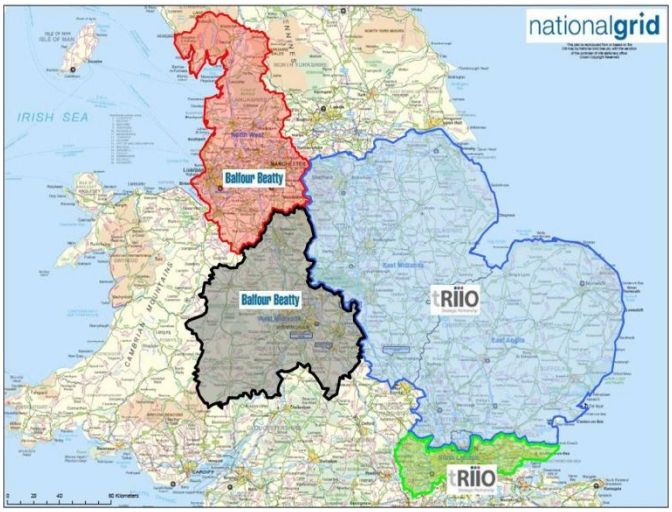
For many years we have been working to improve our occupational safety performance. Initiatives have focused on our field force and extend to the safety of workers in our contract partners, who we are obliged to have effective safety management systems. We have now achieved a world class injury frequency rate of 0.08, that is to say 0.08 injuries incurred in a typical working life.

During the RIIO period the total number of employees is expected to decline as the business becomes more efficient and in response to declining workload, for example declining repair workload produced through ongoing mains replacement. However, the age of many field force employees and of significant numbers of highly skilled technical staff and managers is such that there will also be some recruitment.

Delivering through contract partners

The changes brought about by RIIO required a new contracting strategy. During 2012/13 we developed the next stage of our innovative contracting strategy to replace six existing contract structures with two. The new contracts are called Gas Distribution Strategic Partnerships and deliver the majority of our mains and service replacement work over the RIIO-GD1 price control. We have signed four contracts:

- Balfour Beatty – North West & West Midlands Networks
- tRIIO – a joint venture between Skanska and Morrisons – East of England and London Networks.



To maximise the likelihood of successful delivery under the RIIO period we designed the contracts to mirror the key principles of RIIO:

<u>Alignment with our regulatory outputs:</u>

The GDSPs are contractually required and incentivised to deliver the same outputs that National Grid has committed to under RIIO as cost effectively as possible. The most critical outputs that are aligned are:

- Mains risk removed
- HSE mains replacement targets
- Customer satisfaction
- Complaints performance
- Leakage reduction
- Guaranteed standards of performance

Long term partnerships to encourage innovation

In exactly the same way that Ofgem has given the GDNs a longer period to encourage innovation, our GDSP contracts have been agreed for eight years and give our partners an unprecedented degree of certainty over workloads. This has allowed them to take a longer-term view and incentivises them to invest in innovative approaches to design, delivery and data capture solutions that will deliver value throughout the period of the contracts.

Maximised economies of scale

We selected the scope of the contract to maximise:

- efficiency of the back-office and management;
- similarity of contract scope, which ensures processes can be further developed consistently; and
- work that fitted with the core competences of the contracting market.

Maximised control of the value chain

We have also given the GDSPs greater control over the design, planning, delivery and data capture of our replacement programme. This ensures they have control over the work they are completing and allows them to drive customer, safety and financial performance. In completing this work we have set policies and standards that the partners must adhere to, ensuing that the design of the network, safety standards, engineering practices and data capture functions operate to the standards we and our stakeholders expect.

Flexible labour arrangements

We have built contractual arrangements that allow us to flex National Grid and GDSP resources between replacement and repair activities. Forming a contract around this arrangement means we gain maximum efficiency in our processes and ensure that our operations are flexible to deal with seasonal fluctuations in workload.

Our partners were selected through a robust procurement event during which we assessed the bidders against a full range of criteria:

- Safety
- Efficiency
- Customer service
- Innovation track record
- Sustainability
- Proven track record of delivery of streetworks

Established contract management and control function

To ensure that the contracts deliver for all of our stakeholders, we have introduced a contract management and control (CMAC) team. The CMAC team has a number of functions:

- ensure that the GDSPs are operating the contracts effectively, safely, compliantly and efficiently;
- to collaborate with the GDSPs to drive great performance; and
- to provide assurance that the GDSPs have sufficient controls in place to mitigate risks on safety, engineering, commercial and data capture.

Making and developing effective asset strategies

The most effective savings and the most effective way of maximising performance is to ensure that we do the right work.

During the summer of 2013 we developed asset specific strategies that are designed to deliver all of our outputs during the eight year RIIO GD1 period. These strategies look holistically at assets and seek to achieve an appropriate balance of investment and maintenance. They also look at the delivery timetable taking into account likely technological development, resources and stakeholder requirements.

Technology

New technology offers potential for significant customer and efficiency benefits. However it is often not mature enough to use immediately. This means that trials and development are usually required before it can be used. We want to maximise the potential that new technology has to offer and so we have planned the delivery of our work to best make use of it, while ensuring that adequate work takes place in the intervening years to maintain a safe and reliable pipeline network.

Resources

Delivering a programme requires competent resources, not just field workers, but also supervisors, designers, commissioning engineers, programme managers and other skilled people. Failure to align resources with the programme significantly increases risk. Therefore in determining the phasing and delivery of a work programme we look at the resource needs of the programme and seek to deliver these; but at the same time, the available resource levels influence the scale and scope and phasing of the planned programme.

Stakeholders

If we are proposing to carry out major work it may affect stakeholders. These may include landowners in whose property our equipment is located, for example a pipe crossing over a canal; or Highway Authorities, customers or the wider public. Delivery of work requires that interested parties agree or at least acquiesce with our proposals.

Example

Our programme to replace large diameter medium pressure mains in central London is an example of this approach to strategy development. We have produced a replacement strategy that progressively mitigates the risk posed by the pipes in question. At the same time, it provides time to develop the required technology and techniques, to develop the skills required to deliver the work and to gain agreement with stakeholders such as Highway Authorities. It also takes into account capacity and supply security requirements throughout the build period.

Technology and innovation

We understand that new technology has the potential to unlock significant value for customers by improving productivity and delivering completely new and innovative ways of working. As a result we are working on a range of initiatives. The revised and much improved funding arrangements in the RIIO period enable this.

We are working on a number of technologies, some of which are described below. In each case we expect them to deliver significant benefits in the future, both financial and non-financial, that customers will share.

Cast iron sealing robot (CISBOT)

CISBOT has two key functions; which are:

- it enables accurate internal inspection of iron pipes; and
- it enables joints to be treated internally. This means that many joints can be repaired or their likelihood to leak in the future reduced from a single excavation.

We carried out a world first trial of this technology on 18” diameter pipes in Highgate Road in Camden in November 2013.

CISBOT was able to treat 62 joints from one excavation in 12 days.

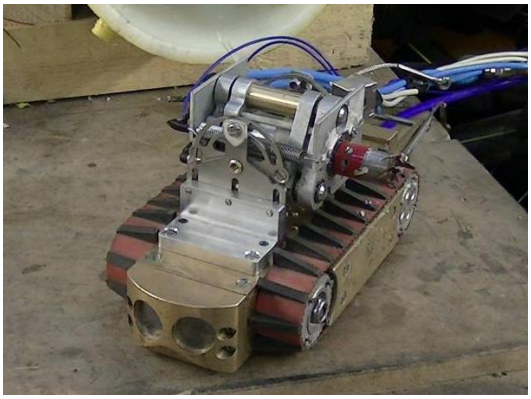
The trial is currently being evaluated, together with the potential to merge with other technologies to ultimately carry out the entire repair and remediation process to extend the life of the asset assessed.

Tier one replacement system (TORS)

TORS is designed to make it possible to renew mains and services within a street from two excavations, one at each end of the street, and to achieve cost reductions of around 25%.

Working remotely would also deliver the following benefits:

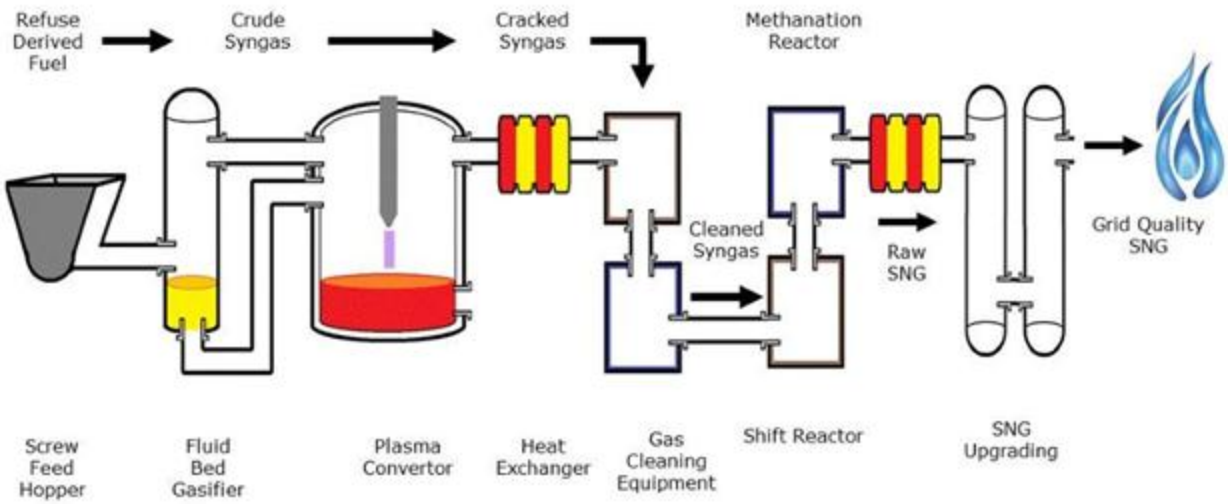
- eliminating service connection excavation, operation and reinstatement logistics costs and effort and reduced potential for lost time injuries;
- reducing the amount of reinstatement material purchased and sent to landfill;
- reducing traffic management and council interaction costs; and
- reducing customer disruption.



Development started in 2013/14. The target implementation date is 2015/16.

Bio synthetic natural gas demonstration project

We obtained funding through the 2013 Network Innovation Competition (NIC) for a bio synthetic natural gas demonstration project. This will demonstrate and prove the economic feasibility of using thermal gasification of waste to produce a renewable synthetic natural gas.



Bio-SNG, has the potential to produce three times as much renewable gas than from anaerobic digestion. The project commenced on 1st April 2014 and is expected to take around three years.

- Overall cost of project: £4.15m
- Funding received from NIC: £1.88m

Renewable gas at scale has the potential to significantly decarbonise the gas network and so enable customers to continue to use their existing appliances. It also allows the existing networks to continue to be used in the long term.

Improved MEG fogging system for gas distribution pipes

Approximately 8,000km of our low pressure iron mains have lead and yarn joints. These joints are treated using mono-ethylene-glycol (MEG), which reduces the rate at which gas leaks from these joints.

If gas is 100% saturated with MEG, leakage through lead yarn joints is cut by 60%. However, current saturation levels are around 22% (mean across the networks we operate).

We have been working with the Technology Partnership in Cambridge to trial an innovative vibrating diaphragm device that produces a fine mist of MEG. This increases the effectiveness of MEG take up by gas and therefore the achieved saturation level. If the ongoing trial proves to be successful there are around 350 sites that may benefit from this technology.

4.2 Cost performance

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 have led to us delivering a step change in our operating efficiency and will continue to drive further efficiencies in future years.

In 2013/14 our totex expenditure to deliver our services and necessary investments was £917m, £123m (12%) below the allowance. Through the sharing mechanism 37% of the totex outperformance will be delivered to customers in future years[2].

The most significant item in our investment activity was the demobilisation of the previous contracting organisations (six in all), which were replaced by the two new strategic partnerships. These eight-year strategic partnerships are the largest outsourcing contracts ever awarded by National Grid and are a cornerstone of our long-term performance plan.

Over the eight-year period, the regulator has challenged us to continually improve. We believe that we can meet that challenge in part through our asset delivery and performance excellence drive. If these programmes deliver as we expect, we have the opportunity to improve our cost efficiency, even beyond the ongoing efficiency improvements that underpin our allowances.

[2] Given repex is an investment, the majority of outperformance will be seen by customers in future years

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

Over the coming years we do expect to incur costs to deliver additional outputs for areas of uncertainty that are not covered by the Final Proposal allowances, but are instead covered by uncertainty mechanisms. These include upgrading our physical site security and costs that are a consequence of the Smart metering rollout.

We are working to try and mitigate these costs as far as possible and deliver required outputs in these areas. These additional costs are expected to be covered by uncertainty mechanisms. These uncertainty mechanisms are designed to remunerate efficient costs that were not sufficiently certain to include in allowances at the time the RIIO controls were set.

The forecasts that follow are based on a series of assumptions on the level of cost efficiencies that our process excellence and innovation work are targeted to deliver the outputs. There are also external factors that may influence our forecasts.

CAPEX

We now have eight-year asset strategies that optimise our approach to asset health and allow us to invest in innovations that have the potential to make a further change in the way we secure our networks into the future. In the first year of RIIO, while we have delivered key asset health work, at the same time we have phased our planned delivery of some other investments. This means we can maximise the benefits of our new asset delivery strategies and enable more efficient delivery of network output measures (NOMs).

During 2013/14 total CAPEX was £118m, down £68m from the previous year.

Change in Capex from 2012/13 to 2013/14

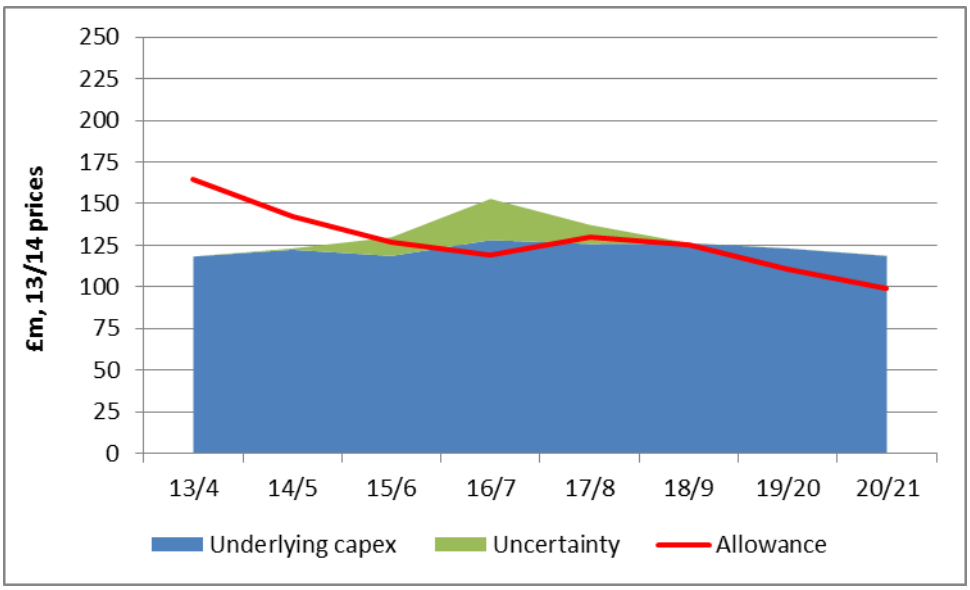
£m, 13/14 prices	EoE	LN	NW	WM	Total
2012/13	**67.6**	**36.1**	**54.5**	**28.1**	**186.4**
LTS, storage and entry	(4.9)	(2.4)	0.6	(3.2)	(9.9)
Connections	(1.0)	1.4	0.7	1.2	2.1
Mains Reinforcement	0.1	(3.0)	(2.3)	(1.5)	(6.7)
Governors (Replacement)	0.6	0.9	(0.3)	0.4	1.6
Other Capex	(23.1)	(9.4)	(19.2)	(3.7)	(55.4)
2013/14	**39.2**	**23.6**	**34.0**	**21.3**	**118.1**

Expenditure was lower on the Local Transmission System, storage and entry expenditure, in part due to our phasing of workload. Our connections level was up as a result of additional customer demand, but our pressure management improvements and overall gas demand reduction enabled less reinforcement activity to be required. The reduction in 'Other Capex' reflects lower spend on physical site security (pending development of requirements, see below, and reduced IT and vehicle expenditure).

During 2013/14 we have particularly focused our activity on high risk work i.e. the work that must be delivered in a given timescale on safety or legal grounds. We have deferred a relatively small amount of expenditure into future years, in order to optimise the opportunities for efficiencies afforded by our new asset strategies. Along with efficiencies delivered in the year, this resulted in our 2013/14 capex being £46m (28%) below the Ofgem final proposals allowance.

Looking forward over the price control, excluding expenditure on uncertainty cost, our performance assumptions and delivery of the output targets would outperform the capex allowances.

Capex Forecasts from 2013/14 to 2020/21



As well as efficient delivery of the outputs, this also includes outperformance associated with mains reinforcement. This is due to our improvements in operating the system in regards to improved pressure management and the underlying reductions in capacity requirements.

The capex uncertainty costs[3] relate to physical site security. Throughout 2013/14 we have been working with the Department of Energy and Climate Change (DECC) to review Critical Network Infrastructure physical site security. We will continue to work with DECC in considering alternative methods of delivery. Our current forecast is that around £48m will be required across our four networks.

The are expected to be some differences between networks given different mix of work types, for example more LTS work in EoE.

Capex 8 Year Performance versus Allowances (1)

	EoE	LN	NW	WM
Opex	2%	4%	5%	9%

(1) underlying cost performance

[3] For which we may apply to Ofgem for additional funding

REPEX

The benefits of RIIO and the eight years of relative stability has enabled us to think differently about the way in which we plan and deliver and to innovate in the way we do things. Our delivery of the replacement outputs of length of main decommissioned and the level of risk removed is a key example that has enabled a significant step change in our cost of delivery.

Our contracting strategy has allowed us to drive significant efficiencies into our mains replacement process while maintaining a focus on delivery of outputs and safety. 2013/14 repex was lower than 2012/13 as illustrated below:

Change in Repex from 2012/13 to 2013/14

£m, 13/14 prices	**EoE**	**LN**	**NW**	**WM**	**Total**
2012/13	**140.3**	**131.9**	**111.3**	**93.1**	**476.6**
Length of Main Abandoned	(14.2)	(1.4)	(21.1)	(12.0)	(48.7)
Efficiencies	(31.6)	(40.0)	(9.0)	(20.5)	(101.1)
2013/14	**94.5**	**90.5**	**81.3**	**60.6**	**326.8**

Our repex year on year have reduced by £150m; a 31% reduction. This reduction is driven by two main factors:

- Length of mains abandoned – workload has reduced year on year. This is a result of:
    - A reduction in allowed workload. The RIIO-GD1 price control and introduction of the three tier framework has substantially reduced our allowed workloads. In particular we have had a reduction on our larger diameter workloads (>8”), this is as anticipated;
    - We completed the work we planned to do in 2013/14. Our strategy was to deliver less in year one, so that we develop the right process, systems and technology to deliver our non-mandatory, large diameter work, in the most efficient way for customers

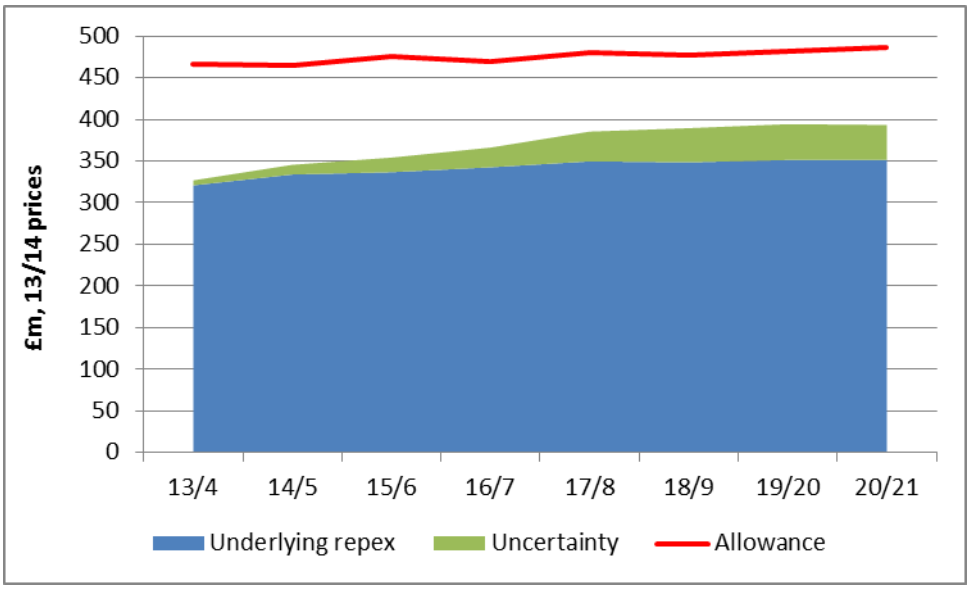
- Efficiencies. The GDSP contracts have delivered significant efficiencies through a combination of factors:
    - Amalgamation of several back office functions, delivering economies of scale across our networks;
    - Giving control of end-to-end processes to our partners, coupled with an eight-year view of work, has allowed them drive efficiencies throughout the value chain;
    - Pipe selection is a significant driver of value and in year one we have prioritised our high risk mains which tend to be smaller in diameter; and
    - These have been partially offset in year one due to mobilisation costs (IT, property, inductions, establishing processes etc.) that come with starting new contracting arrangements of this scale.

The new approach to replacement has enabled significant outperformance of the efficiency challenge set by the allowances that we faced against our historic level of replacement efficiency.

The repex forecast includes further cost efficiencies above that set in the allowances. However, the repex outperformance (excluding the impact of uncertainty costs) marginally declines over the period due to a combination of factors:

- Our mix has focused towards higher risk low diameter work in 2013/14 and, as a consequence, although we are ahead of the annualised risk target in length we are slightly below the length targets and we will increase the length we do over coming years;
- The freedom that the RIIO control has given us to select pipe has enabled us in the early years of the control to select the optimum 'high risk' and consequently 'low cost' mains first. Over the period, mains will inherently have to be more expensive (e.g. diameter size, less favourable locations) while still delivering the risk outputs. This effect is expected to be biggest in London; and
- In London, the level of riser, associated with high rise flats, is expected to increase over the period in line with the level in the allowances. In North West and West Midlands, we are identifying a level of workload that will require higher spend than that assumed in the allowances.

Repex Forecasts from 2013/14 to 2020/21



The main uncertainty cost in repex is associated with the industry rollout of smart meters. With the delay in industry smart metering rollout the impact on our activities is still uncertain. However, we have included a level of expenditure based on the assumption that the activity will result in 1% of all smart metering installations requiring either a non-PE service replacement or other works to assist suppliers, such as PE service alteration.

Under the performance assumptions in these forecasts all our networks will be outperforming as follows.

Repex 8 Year Performance versus Allowances (1)

	EoE	LN	NW	WM
Opex	26%	25%	28%	31%

(1) underlying cost performance

OPEX

During 2013/14 total OPEX was £473m, an increase from 2012/3. This was primarily due to two main factors: initiatives to drive future efficiencies and acceleration of costs relating to the new holder demolition programme. In addition, initial efficiencies started to close the gap in our operating costs to the efficiency target set in the allowances.

Change in Opex from 2012/13 to 2013/14

£m, 13/14 prices	**EoE**	**LN**	**NW**	**WM**	**Total**
2012/13	134.3	95.5	98.5	68.9	397.2
Impact of contract strategy	5.1	3.2	3.0	1.9	13.2
Other transformation initiatives	6.0	4.7	3.0	3.1	16.8
Gas Holder Demolition	20.7	21.5	1.7	3.4	47.3
Loss meterwork/recruitment	1.3	1.0	0.6	1.7	4.6
Cost efficiencies	(1.5)	(3.8)	(1.7)	0.0	(7.0)
2013/14	**165.9**	**122.1**	**105.1**	**79.0**	**472.1**

In 2013/14 we have incurred expenditure in a number of transformation programmes in order to deliver a step change in our performance. This includes opex to facilitate the change in our delivery strategy of repex outputs. This features an ongoing £6m of additional annual costs within opex, representing our own direct costs which would previously have been categorised as repex. This has been the result of moving to the new model of GDSPs delivering the full repex programme. Effectively, we have incurred additional opex to enable larger savings in repex costs, benefitting both the company and customers under the new RIIO totex approach.

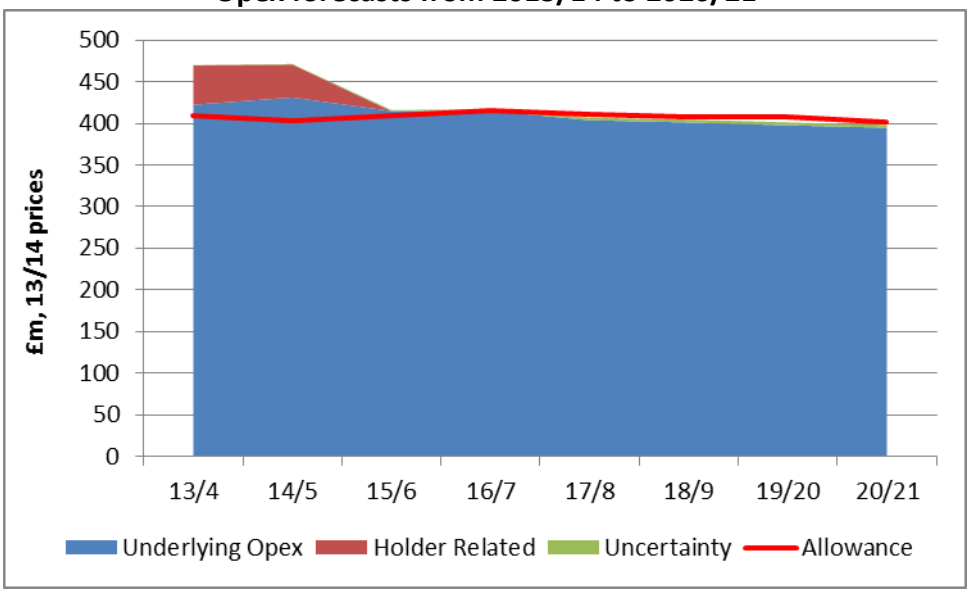
Other transformation costs include transition payments for changes to our field force terms and conditions and our move to a process aligned organisation. The move to align payment to outputs and process excellence are vital to our current, and future, improvements. These include complaints handling, driving improved customer service and starting to deliver additional opex efficiencies to close the gap between the final proposals opex allowance and the current performance level.

There were smaller year-on-year impacts from the loss of meter work and an initial increase in recruitment costs needed to replace the aging workforce.

In the year, there was significant spend on gas holder demolition (and associated statutory remediation). As mentioned previously, this represents the acceleration of spend by Gas Distribution for the whole RIIO period into the first two years under the arrangements with National Grid property.

The chart below anticipates the performance gap closure to the opex allowance during the balance of the RIIO price control period.

Opex forecasts from 2013/14 to 2020/21



Our initiatives seek to remove the efficiency gap identified by Ofgem in the RIIO-GD1 price control with the potential to outperform the targets. 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 chart illustrates the impact of our gas holder demolition and associated statutory remediation spend in the first two years. As part of this programme we have secured £107m net proceeds of sale of land, of which customers' share will be around 70%, representing a good deal for them, as the result of an innovative approach under the new RIIO framework.

In the early years of the control period our underlying opex costs are expected to be above the allowances, but we believe that our efficiency initiatives provide good opportunities to bring our costs down to the efficient allowance level[4] and potentially below.

We expect to see some upward cost pressure from:

- increased maintenance costs (to ensure full delivery of the associated output measures);
- increasing spend on apprentices (to maintain necessary levels of direct labour as aging workforce retire);
- expenditure on medium rise surveys (to check the current state of these assets health); and
- the consequential impact on our regulated cost base from the smart metering roll out removing our non-formula work on 'dumb' meters.

[4]Note: in later years the opex scenario shown is below the allowance, in part driven by front loading of the holder demolition expenditure.

We are expecting the introduction of smart meters to have limited impact on operating costs as we work with the industry to develop effective roll out plans. As a result, we have not shown significant uncertainty costs in the scenario represented in the graph.

Our forecasts see a similar performance across our four networks, as we seek to close the gap to the efficient level. This results in an overall slight underperformance on opex. For the latter years of the period we aim to be operating at the efficient level as set out in the allowance (when you factor in the offsetting factors of the front loading of the holder demolition and the £7m pa trade off from repex to deliver overall totex benefits).

Opex 8 Year Performance versus Allowances (1)

	EoE	LN	NW	WM
Opex	-3%	-5%	-4%	-2%

(1) underlying cost performance

4.3 Financial performance

RIIO brings us eight years of relative stability around the regulatory framework. This is a great opportunity for us to think differently about the way in which we plan and deliver business and customer value and to innovate in the way we do things.

The time spent preparing for RIIO has paid dividends during the first year. Through the implementation of the GDSP contracts with tRIIO and Balfour Beatty we have delivered significant improvements in the cost performance of our repex activities. The introduction of new terms and conditions for our field workforce is starting to unlock productivity improvements and the successful completion of the pay and pensions negotiations gives us certainty over a significant portion of our costs into the future.

We now have eight-year asset strategies that are improving our approach to asset health. They enable us to deliver the RIIO output commitments efficiently and with improved processes that also deliver improving customer and environmental performance.

The regulator has indicated that well-performing networks should be able to meet their required outputs and also deliver double-digit real returns on regulated equity by maximising revenue incentive performance and outperforming challenging totex targets. This is an excellent outcome for customers as it delivers cost savings through sharing and the service they need.

In 2013/14 our networks delivered real returns on equity (RORE)[5] of approximately 10% on average, before any financing under or out-performance is accounted for. We believe that our networks are performing well and can continue to do so, particularly if we deliver on our performance excellence agenda to deliver our totex forecasts and incentive performance.

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

[5] 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.

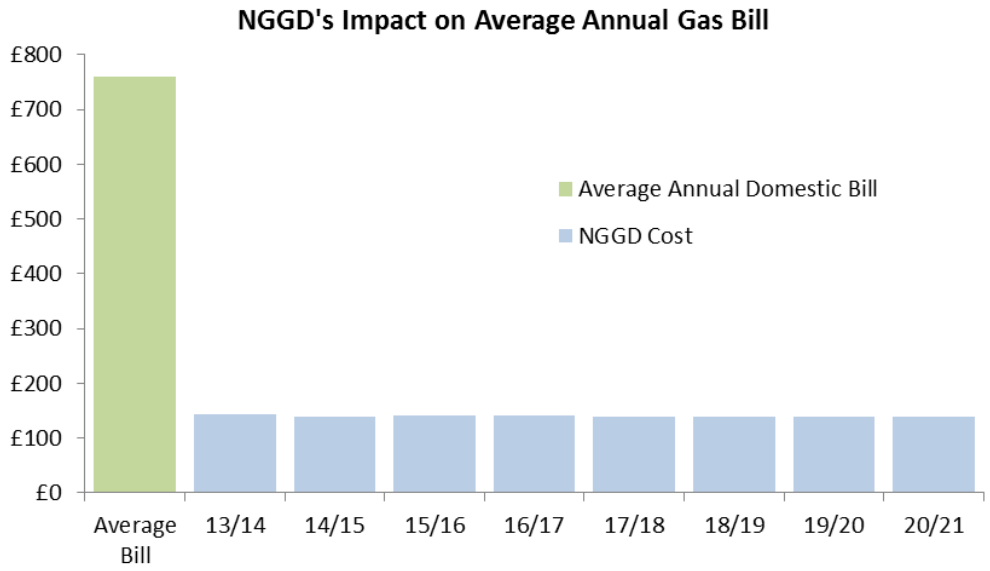
outputs and provide value for money to customers. As you would expect there are many sensitivities around the assumptions made in the forecasts.

We are confident that we can deliver further benefit 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 13/14 at around 10%.

4.4 Impact on customer bills

During 2013/14 the impact on the average annual domestic customer gas bill of National Grid Gas Distribution was £139. This represents 19% of the average household gas bill.

The chart below shows how much we anticipate charging typical domestic customers in the period 2013 to 2021 (2013/14 prices).



2014-15 Prices	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21
Household Annual Bill Cost	143	139	141	140	139	139	139	138
Cumulative Change from 2013/14		-3.0%	-1.2%	-2.0%	-2.6%	-3.2%	-3.1%	-3.5%

The graph and table above illustrate that National Grid's Distribution Network cost for the average annual domestic bill over the current price control period is expected to remain broadly flat in today's prices. As such customers can expect rises in line with inflation for the next six years for this element of their gas bills.

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 following factors, including allowances for known risk, which we will endeavour to mitigate against and minimise over the RIIO-GD1 period.

Our planned performance 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 customer satisfaction across all our processes;
- Outperformance of our gas emissions targets to reduce the impact on the environment from our operations and gas leakage;
- Outperformance of the totex expenditure targets, 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 customer in driving down their own gas usage or identifying alternative ways that they can reduce their bills.