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End of Period Review of the First Gas Distribution Price Control (GDPCR1)

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Overview:

GDPCR1 is the gas distribution price control which ran for five years, from 1 April 2008 to 31 March 2013.

In December 2007 we set out final proposals specifying the maximum revenue that each gas distribution licensees, known as the gas distribution networks (GDNs), could recover from its customers through the price control period. The network companies have since submitted annual reports in accordance with their licence conditions, enabling us to monitor their performance.

This report identifies the impact on customer bills, outputs which have been achieved over the period, the revenue the GDNs are allowed to recover, the actual expenditure against that allowed in the price control and the workloads associated with these costs.

Context

Each of the eight gas distribution networks operating in Great Britain are monopoly providers of gas distribution services. Our principal objective is to protect the interests of gas and electricity consumers, and in the context of GDNs we do this by periodically reviewing the revenue which GDNs are allowed to recover from their customers. This involves establishing a framework that creates incentives for GDNs to operate efficiently, deliver an agreed standard of service, contribute to sustainability and meet their statutory obligations and licence conditions.

In December 2007 we published our final proposals on the operating, capital and replacement revenues the gas distribution companies could recover for the five year period commencing 1 April 2008.

The price control ended in 31 March 2013, and this report draws upon the data and supporting information submitted by GDNs to review how the companies have performed against the allowances set in advance of the five year price control period, their effectiveness in delivering services cost-efficiently and the benefits they have delivered to consumers and stakeholders.

Associated documents

Gas Distribution Price Control Review Final Proposals – Decision Document (ref 285/07)
https://www.ofgem.gov.uk/ofgem-publications/48550/final-proposals.pdf

Gas Distribution Price Control Review Final Proposals – Supplementary Appendices (ref 285a/07)
https://www.ofgem.gov.uk/ofgem-publications/48551/gdpcr-final-proposals-appendix-rev.pdf

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Executive Summary

The first Gas Distribution Price Control (GDPCR1) was the first full price control for the Gas Distribution Networks (GDNs) since their formation following National Grid Gas's sale of four distribution networks on 1 June 2005.

Benefits for customers have been realised through separately owned, managed and operated GDNs, evidenced by cost efficiency and the delivery of a range of improvements in terms of network safety and reliability, customer satisfaction, social obligations and management of environmental emissions. Cost efficiency assessments and delivery of outputs should be considered together to gain the full picture of the performance of individual GDNs. The total industry expenditure over the price control was £10.5 billion, £0.5 billion lower than was allowed under the price control. This has allowed us to set lower allowances for the current price control so that present and future consumers will benefit from the efficiencies gained.

Revenue and customer bill impact

Gas distribution network charges account for approximately 16 per cent of a typical gas customer's total bill. When we set GDPCR1 we announced that household gas bills would increase by over £12 during the period. However, the estimated average annual network charge per household was lower than expected, increasing by less than £8, from £121.84 to £129.76 (2012-13 prices).

At the beginning of GDPCR1 we set a base revenue with recognition that there would be some adjustments, for example for costs which the GDNs have no ability to control, awards relating to incentive mechanisms, events triggering additional allowances under uncertainty mechanisms and shrinkage.[1] In GDPCR1 this adjustment amounted to £554 million (2005-06 prices), the most significant elements being:

- shrinkage allowance was forecast to be £350 million over the period, actual cost was £278 million. This was driven by different gas prices than the GDPCR1 estimates.
- exit capacity £180 million. This was driven by changes to exit capacity[2] charging arrangements in 2011-12, this transferred responsibility from the National Transmission System (NTS) to the GDNs. Whilst this had an impact on the gas distribution network charge of £86 million, it had no impact on gas customers' total bill. A further £94 million was driven by the capacity output incentive which incentivises GDNs to make best use of the capacity management outputs available to them.

[1] Gas lost from the distribution system due to leakage, theft and gas used for operational purposes.
[2] GDNs pay exit capacity costs to take gas from the NTS.

Outputs performance

We have assessed achievements made in GDPCR1 against the outputs categories used in the RIIO framework to highlight the benefits achieved for customers and other stakeholders during the period.

Safety

Gas is transported along 289,000km of pipe, enough to reach round the world six times. The replacement of old gas mains and services reduces the likelihood of gas escapes which in turn reduces the volumes of gas emissions and the likelihood of damage to people and properties.

A total of 21,000 km of mains were decommissioned during the period, of which 18,500 km were iron mains decommissioned under the Health and Safety Executive's iron mains enforcement policy. Safety indicators show that:

- the iron mains replacement programme has been successful in improving safety, and reducing risk and likelihood of incidents
- the rate of iron mains replacement is keeping ahead of the effects of deterioration of the iron mains left in service
- the replacement of iron mains has been effectively prioritised

A total of 1.3 million service pipes known to be susceptible to corrosion failure were replaced during GDPCR1.

The GDNs are responsible for managing the gas emergency service, responding to customer reports of gas escapes. Each year there are over one million public reported gas escapes, 97 per cent of these must be attended to within either one or two hours depending on the type of gas escape. Attending to gas escapes in a timely manner is a core activity for the GDNs. The standard was met for all years of the price control except 2010-11 where five GDNs failed their emergency standards resulting in fines of £4.3 million for National Grid Gas Distribution (NGGD) and £0.9 million for Northern Gas Network (NGN). We believe that the penalties imposed have driven a change in approach by all GDNs in the planning and delivery of the emergency standards.

Effective regulation is underpinned by the reporting of accurate information. During GDPCR1 we took enforcement action against NGGD and Wales and West Utilities (WWU) for failing to provide accurate information on mains replacement. This resulted in penalties of £8 million being imposed on NGGD and £375,000 for WWU. This has reinforced the importance of accurate reporting by GDNs.

Reliability

Customers require their gas supply to be available 24 hours a day, 365 days of the year and the industry continues to achieve high levels of network reliability. Network availability over the price control was 99.997 per cent, despite some challenging winters during the five year period. This performance is driven by established practices designed to avoid the high cost of safely restoring supplies.

Customer satisfaction

Given the high levels of reliability customers rarely need to communicate with their GDN. When they do need to it is essential their points are dealt with in a timely and professional manner. Planned work on the mains replacement programme means every customer is likely to have their supply affected once in 30 years. For unplanned work this is normally associated with gas supply emergencies where a customer reports an escape or has lost their supply. Customers also contact the GDN when they require a new connection to the gas supply.

There is an improving trend in customer satisfaction scores from the results of customer surveys which were introduced in GDPCR1 and a decreasing trend in payments under the guaranteed standards of performance. For the guaranteed standards of performance relating to connections there is a slightly increasing trend in payments. WWU and Scotland rank highest based on the total overall customer survey score.

Social obligations

Extending the gas network enables customers' access to a cheaper source of fuel to heat their homes. Over 44,000 fuel poor customers were connected to the network during GDPCR1 under the Fuel Poor Network Extensions Scheme. Companies have also raised awareness of carbon monoxide poisoning. Under the discretionary reward scheme the industry was rewarded £14 million, recognising good progress with these initiatives.

Environment

Gas leaking from the underground network of mains represents 95 per cent of the GDNs' business carbon footprint. The industry outperformed the gas leakage reduction target by five percent in the first year rising to 14 per cent in the final year. The industry was rewarded with £43 million for this outperformance.

Return on regulatory equity performance

The price control sets the revenue the GDNs can recover from customers in return for running a safe and efficient network. Incentivising the companies to operate their networks efficiently leads to returns to investors in the current price control and future cost savings for customers when we set the next price control.
The best performing networks are able to earn higher returns if they deliver the outputs efficiently and all GDNs earned a return greater than the 7.25 per cent notional regulatory equity set for GDPCR1. The additional returns ranged from 0.9 per cent (North London) to 3.9 per cent (NGN). GDNs achieved this through:

- efficiencies in operating expenditure
- a lower cost of debt.
- outperforming the exit capacity incentive

Cost assessment

The GDNs are natural monopolies and therefore there is no realistic way of introducing competition across the whole sector. As part of our price control process

we look to compare the costs of running the networks between the GDNs. This enables us to identify the most efficient network operators and use these to help set future price controls. NGN was the most efficient GDN during GDPCR1, followed by WWU. North London was the least efficient followed by Southern when looking at cost of delivery. Importantly, as we go through the RIIO-GD1, we will be looking to ensure our assessment looks to fully encompass cost efficiency assessment with the long term delivery of outputs.

1. Introduction

Chapter summary

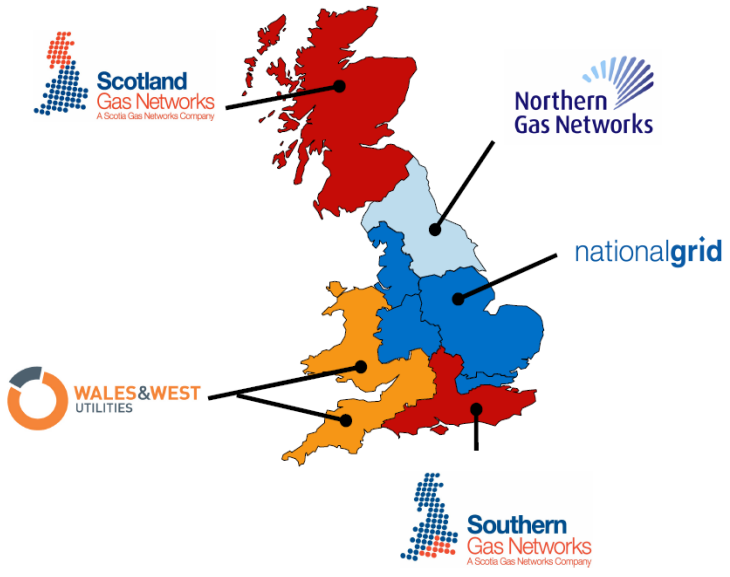
This chapter discusses who the GDNs are, how we regulate them, the purpose of the report, and summarises the structure of the report. All costs in this report are in 2012/13 prices unless otherwise stated.

1.1. The Gas Distribution Networks (GDNs) own and operate the pipeline assets which transport gas from the National Transmission System to the homes and businesses of over 21 million customers in GB. They are responsible for any maintenance and upgrade of this network and running the National Gas Emergency service.

1.2. GDPCR1 was the first full gas distribution price control for the gas distribution networks (GDNs) since their formation following National Grid Gas's sale of four distribution networks on 1 June 2005. Before that, National Grid owned and operated gas distribution networks across the whole of GB. The creation of separately owned, managed and operated GDNs has allowed more effective comparisons to be made, building on the sense of rivalry which exists between independent management teams. There are eight licensed GDNs which are listed in Table 1.1 together with the companies they are managed by.

Table 1.1: Gas distribution network operators

Company	Gas Distribution Network (GDN)	GDN short name
National Grid Gas plc	East of England	EoE
	North London	Lon
	North West	NW
	West Midlands	WM
Northern Gas Networks Limited	Northern	NGN
Scotia Gas Networks Limited	Scotland	Sc
	Southern	So
Wales & West Utilities Limited	Wales and West	WWU



1.3. GDNs submit an annual report to enable us to monitor performance against their price control obligations and incentives. This report brings together and

summarises the GDNs performance over the five-year GDPCR1 period, from 1 April 2008 to 31 March 2013.

1.4. GDNs are responsible for providing and maintaining the network which transports gas from the transmission system to gas customers. Each of the eight GDNs is a monopoly provider of gas distribution services over its network, with responsibility for a particular region. We therefore regulate the GDNs to ensure their customers receive high-quality network services and value for money. We do this by setting the allowed revenues which GDNs can collect from customers. In return for this revenue they must provide the services and meet the standards set out in their licences. Customers and other stakeholders play an important part in ensuring that they receive a good service by raising a complaint when they do not get the service they are due or by contacting the companies to set out where they think they could be performing better.

1.5. In October 2010, we introduced Revenue=Incentives+Innovation+Outputs (RIIO), our new performance based approach to network regulation. RIIO aims to promote smarter gas and electricity networks for a low carbon future and puts sustainability alongside customers at the heart of what network companies do. RIIO was introduced in 2013 for gas distribution (RIIO-GD1) and set the price control between 2013-2021. The network companies are now required to engage with stakeholders when developing their long-term business plans and demonstrate how they have responded to stakeholder views.

1.6. This report aims to give stakeholders important information on the performance of their gas distribution networks and is set out as follows:

- Chapter 2 – Revenue and customer bill impact
- Chapter 3 – Output performance
- Chapter 4 – Cost performance
- Chapter 5 – Financial performance

2. Revenue and customer bill impact

Chapter summary

This chapter identifies the key revenue and customer bill impact drivers and presents an assessment of GDPCR1 industry base revenue against the maximum allowed revenue.

2.1. Consumers pay for GDNs to operate and maintain the gas distribution network through their gas bill. This is called the gas distribution transportation charge this makes up around 16 per cent of an average customer's gas bill.[3] When we set GDPCR1 we announced that household gas bills would increase by over £12 during the period. However, the estimated average annual network charge per household only increased by less than £8, from £121.84 to £129.76 (2012-13 prices).

2.2. We set the GDPCR1 base revenue across the industry at the beginning of the price control period. The GDNs submitted annual revenue returns to us during the price control period in accordance with their licence conditions.

2.3. The revenue returns contain information on the components that are added to (or deducted from) base revenue to arrive at a maximum allowed revenue in each year of the price control. These components comprise broadly of pass-through costs, cost adjustments, a correction element that takes into account an under or over recovery of revenue in the prior year, and incentive revenue.

2.4. We refer to the difference between the base revenue and the maximum allowed revenue as the base revenue delta as illustrated in Table 2.1 below. The elements of the base revenue delta that relate to distribution network charges are passed on to the shippers. The shippers in turn pass them on to consumers through their bills.[4]

[3] Further information is available on the Ofgem website https://www.ofgem.gov.uk/ofgem-publications/64006/householdenergybillsexplainedudjuly2013web.pdf

[4] According to Ofgem's fact sheet, 16 per cent of consumer bills were impacted by distribution charges in 2011-12. See Ofgem factsheet 98 at: https://www.ofgem.gov.uk/ofgem-publications/64006/householdenergybillsexplainedudjuly2013web.pdf

Table 2.1: Revenue and customer bill impact drivers (2005-06 prices)

GDN	Maximum allowed distribution revenue £(m)	Distribution Base Revenue £(m)	Change in base revenue delta (base revenue -maximum allowed revenue)	Components of the base revenue delta					
	Total (2008-09 to 2012-13)	Total (2008-09 to 2012-13		Environmental Emissions Incentive	Exit capacity costs & incentive revenue	Shrinkage allowance	Loss of meter work	Mains and services adjustment	Other
EoE	2177.4	2092.7	-84.7	-9.4	-29.8	-48.0	-7.7	-4.3	14.5
Lon	1418.3	1376.2	-42.1	-3.8	-16.0	-26.8	-3.0	-3.3	10.7
NW	1559.8	1452.1	-107.7	-5.3	-28.3	-34.1	0.0	-11.3	-28.7
WM	1164.2	1123.5	-40.7	-4.5	-18.4	-27.3	-7.0	8.4	8.2
NGN	1449.5	1404.5	-45.0	-4.7	-10.8	-36.1	-18.0	2.9	21.8
Sc	994.9	957.8	-37.1	-1.8	-1.9	-19.4	-4.1	1.7	-11.7
So	2402.5	2277.0	-125.5	-7.9	-44.3	-50.6	-12.6	-1.0	-9.2
WWU	1359.9	1288.8	-71.1	-6.1	-30.6	-35.7	-11.3	6.8	5.8
Industry	**12526.6**	**11972.5**	**-554.0**	**-43.4**	**-180.2**	**-278.0**	**-63.7**	**0.0**	**11.3**

2.5. At the beginning of GDPCR1 we set base revenue with recognition that there would be some adjustments, for example awards relating to incentive mechanisms, events triggering additional allowances under uncertainty mechanisms, shrinkage and allowances for costs which the GDNs have no ability to control. In GDPCR1 this adjustment amounted to £554 million (2005-06 prices), the drivers of this were:

- Environmental Emissions Incentive
- shrinkage allowance
- exit capacity costs and revenue incentive
- loss of meter work revenue driver
- incentivised repex mains and services
- other.[5]

2.6. The Environmental Emissions Incentive accounted for £43 million of the total impact. This was a reward for outperforming the leakage target. The reduction in leakage has reduced cost of shrinkage which would have been passed to consumers.

2.7. Exit capacity £180 million. This was driven by changes to exit capacity charging arrangements in 2011-12, this transferred responsibility from the National

[5] Other includes income adjusting events, pass through items, discretionary reward scheme, innovation funding incentive, and the correction factor.

Transmission System (NTS) to the GDNs. Whilst this had an impact on the gas distribution network charge of £86 million, it had no impact on gas customers' total bill. A further £94 million was driven by the capacity output incentive which incentivises GDNs to make best use of the capacity management outputs available to them.

2.8. Shrinkage allowance was forecast to be £350 million over the period, actual cost was £278 million. This was driven by different gas prices than the GDPCR1 estimates.

2.9. The revenue driver associated with industry loss of meter work accounted for increase in revenue claimed of £64 million. This revenue driver mitigates any stranded costs associated with the loss of meter work. Three of the networks (NGN, Southern and WWU) were impacted the most with the loss of this work. Further information can be found in Appendix 5.

2.10. Industry incentivised repex mains and services' adjustments totalled to zero. The industry abandoned four per cent more mains than the GDPCR1 forecasts, but with variations at the GDN level. The industry's number of services replaced was comparable with the GDPCR1 forecasts, but also with variations at the GDN level. We have made the related workload adjustments which impacted positively on the industry allowed revenue.

2.11. The other element of base revenue delta gave rise to a net impact of over £11 million in the consumers' favour, these are shown Table 2.2.

Table2.2: Other elements of base revenue delta (2005-06 prices)

	£m
Pass through costs	- 93.9
Adjustment to under/over recoveries	29.6
Income adjusting events	18.9
DRS	5.0
Innovation	29.1
Total	**- 11.3**

3. Outputs performance

This chapter examines the performance of the key outputs that were achieved during the GDPCR1 period, setting the scene for measuring agreed outputs through RIIO-GD1.

3.1. As part of GDPCR1 we set outputs for standard of service, replacement of iron mains and customer service. For RIIO-GD1 the delivery of the following six outputs forms the cornerstone of the new RIIO price control framework[6]:

- safety outputs
- reliability outputs
- customer satisfaction
- connections
- social obligations
- environmental outputs.

3.2. We recognise that a formal commitment to deliver some of these outputs did not feature in GDPCR1, and instead, GDNs' operational strategies were specifically tailored to meet the challenges and opportunities the GDPCR1 price control presented. However, this review of outputs delivered by the companies during the GDPCR1 serves to:

- demonstrate to stakeholders the changes in networks performance using various measures as a result of the activities undertaken in GDPCR1
- measure the delivery of services to customers
- inform the assessment of future investment and performance
- provide learning points for effective measuring and monitoring outputs through the future.

Safety

Emergency standards

3.3. Emergencies fall into two categories:

- Uncontrolled escapes (ie where the source of the leak cannot be confirmed as having been isolated by turning off an emergency control valve)

- Controlled escapes (ie if the source of the leak is confirmed as having been isolated by the closure of the emergency control valve).

[6] Further detail of the outputs framework in RIIO-GD1 is available on the Ofgem website at https://www.ofgem.gov.uk/ofgem-publications/48155/2riiogd1fpoutputsincentivesdec12.pdf

3.4. GDNs have a licence requirement to attend uncontrolled escapes within one hour and controlled escapes within two hours from the time the report has been received, for a minimum of 97 per cent of all calls received.

3.5. Tables 3.1 show that five of the eight GDNs failed to meet this standard during 2010-11. Three GDNs also failed to meet the 97 per cent standard for responding to controlled gas escapes within two hours as shown in Table 3.2.

Table 3.1 – Percentage of uncontrolled gas escapes attended within one hour

GDN	Percentage of uncontrolled gas escapes responded to within standard				
	2009	2010	2011	2012	2013
EoE	97.2%	97.1%	95.2%	97.8%	98.5%
Lon	97.7%	97.4%	96.1%	97.4%	97.8%
NW	97.4%	97.0%	92.1%	99.2%	98.3%
WM	97.7%	98.2%	95.3%	99.1%	98.2%
NGN	97.7%	97.0%	91.6%	99.5%	99.5%
Sc	98.7%	97.8%	97.3%	99.4%	99.0%
So	98.4%	98.0%	97.1%	98.4%	98.2%
WWU	98.0%	97.6%	98.5%	98.7%	98.3%
Industry average	97.9%	97.5%	95.4%	98.6%	98.4%

Table 3.2 – Percentage of controlled gas escapes attended to within two hours

GDN	Percentage of controlled gas escapes responded to within standard				
	2009	2010	2011	2012	2013
EoE	98.6%	98.1%	96.8%	99.0%	99.4%
Lon	98.1%	97.4%	97.9%	98.5%	99.0%
NW	98.5%	97.7%	95.1%	99.4%	99.2%
WM	98.7%	98.8%	97.7%	99.7%	99.2%
NGN	99.1%	98.0%	94.3%	99.9%	99.9%
Sc	99.4%	98.7%	98.6%	99.9%	99.7%
So	99.3%	99.1%	98.7%	99.2%	99.2%
WWU	99.1%	99.1%	99.4%	99.6%	99.6%
Industry average	98.9%	98.4%	97.3%	99.4%	99.4%

3.6. We accept that there may be circumstances where this is not possible to attend within the timescales of the standard, for example in extreme weather conditions, hence the obligation for GDNs to achieve the standard on 97 per cent of calls.

3.7. We investigated NGGD's and NGN's failure to achieve the minimum standard of emergency response, this followed a period of severe weather in December 2010. We concluded that they were not sufficiently prepared and imposed a fine of £4.3

million for NGGD and £0.9 million for NGN. These penalties have reinforced the requirement for GDNs to deliver their emergency standards and would expect that any industry best practice is shared.

Iron mains risk reduction

3.8. Iron mains are known to fail in service with the potential to cause major incidents (fires and explosions) leading to injuries and fatalities.

3.9. GDNs improved safety risk and environmental emissions over the GDPCR1 period by decommissioning 21,000 km of iron mains with polyethylene mains. The network now comprises of 29 per cent iron mains, down from 37 per cent at the beginning of the period.

3.10. The rate of iron mains replacement achieved during the GDPCR1 period and the output commitments agreed under RIIO-GD1 gives confidence that completion of the iron mains replacement programme by 2032 will be achieved in compliance with the HSE iron mains enforcement policy.

3.11. We can assess the success of the mains replacement activity in achieving safety improvement using lagging indicators associated with mains safety. These are:

- the number of incidents[7]
- the number of occurrences of "gas in buildings" events caused by iron mains
- the numbers of pipe fractures and corrosion failures from iron mains
- the numbers of mains condition repairs received
- the numbers of mains condition reports received
- in-service iron mains (km)

3.12. Gas in buildings events are the pre-cursor of an incident which may cause structural damage to buildings, personal injuries and fatalities. Data for gas in buildings[8] has been collected for the three years 2011, 2012 and 2013.

[7] Incidents are defined as major structural damage, major injury or loss of life
[8] Gas in buildings frequency relates to iron mains leading to the presence of gas in buildings detected at any concentration.

Table 3.3: Lagging indicators - iron mains

	2008	2009	2010	2011	2012	2013
Incidents (attributable to iron mains)		2	0	1	2	1
Gas in Buildings (attributable to iron mains) (number of occurrences)				816	626	686
Fractures and failures from iron mains				12,069	9,570	8,095
Mains condition repairs (number)	86,737	108,655	99,410	98,354	84,124	76,829
Mains condition reports (number)	74,490	71,393	68,304	68,995	56,300	53,216
In-service iron mains (km)	97,122	92,137	88,313	84,335	82,345	76,232
Average in-service iron mains (km)	98,907	94,629	90,225	86,324	83,340	79,289

3.13. It can be seen that over the course of GDPCR1 the average annual reduction in the length of in-service iron mains was 4.7 per cent. Alongside this we can see the average annual effects on the lagging indicators:

- Mains condition reports show an average annual decline of six per cent (although the trend isn't consistent between years, with a slight increase in 2011 followed by a large decrease in the following year).
- Mains condition repairs show an eight per cent decline in the last four years of the period, but a large increase in the first year.
- Iron mains fractures and corrosion failures are declining by 18 per cent in the last two years (there is limited data on this indicator).
- There is no clear trend in the number of occurrences of gas in buildings and there is only limited available data.
- Incidents are occurring at an average frequency of around one per year. There were no fatal incidents in the GDPCR1 period.

3.14. These trends suggest that:

- the iron mains replacement programme has been successful in improving safety
- the rate of iron mains replacement is keeping pace with the deterioration of the iron mains left in service
- the percentage of iron mains being decommissioned is less than the percentage improvements in the lagging indicators, meaning that population of iron mains is being effectively prioritised.

3.15. As the regulator, we require the companies to report accurate information to us. We can investigate companies if there is evidence that this is not done. We can investigate these companies and where it meets our criteria for a licence condition breach we can take enforcement action, which could result in financial penalty. Following notification by NGGD and WWU of misreporting we took enforcement action against them for breaching their licencees where they had failed to provide

accurate information when reporting against their replacement programme. This resulted in penalties being imposed of £8 million for NGGD and £375,000 for WWU[9]

Service pipe replacement

3.16. Gas service pipes deliver gas from the main to the meter. Non-PE and mixed material service pipes present a safety risk due to through-wall corrosion leading to gas escapes, and because of their proximity to buildings may lead to gas ingress and subsequent incident.

3.17. At the close of GDPCR1 there were an estimated 3.7 million in-service non-polyethylene (PE) or mixed material service pipes from a starting estimated population of 5 million. This represents 17 per cent of the total service pipe population. The replacement of steel services is carried out in conjunction with mains replacement, if its poor condition has led to an escape or when the service is worked on for any other reason, such as alterations for new meter positions.

3.18. We can assess the impact the reduction in numbers of non-PE or mixed material service pipes population has on safety by considering trends in lagging indicators.

3.19. The lagging indicators available for this assessment are:

- the number of incidents[10]
- the number of occurrences of "gas in buildings" events caused by service pipes
- the number of service relays after escape[11]
- the number of service condition repairs received
- the number of service condition reports received
- the number of in-service non-PE or mixed material service pipes

[9] Further information on the misreporting penalties can be found on the ofgem website:
https://www.ofgem.gov.uk/sites/default/files/final_ngg_penalty_notice_for_breach_of_licence_obligations_on_regulatory_reporting.pdf
https://www.ofgem.gov.uk/publications-and-updates/final-wales-and-west-utilities-limited-penalty-notice-failure-comply-licence-conditions-its-gas-transporter-licence-0

[10] Incidents are defined as major structural damage (greater than £10,000), major injury or loss of life.

[11] In the interests of safety and cost efficiency GDNs replace leaking service pipes rather than repair them.

Table 3.4: Lagging indicators – non-PE and mixed material services

	2008	2009	2010	2011	2012	2013
Incidents (attributable to services)		0	0	1	0	0
Gas in buildings (attributable to services)				8,281	8,115	8,364
Service relay after escape	43,640	41,662	43,562	45,015	42,917	41,058
Service condition repairs	73,000	81,132	80,781	95,454	85,186	108,960
Service condition reports	70,649	73,902	75,322	88,289	78,708	93,539
In-service non-PE or mixed material service pipes	5,014,236	4,751,365	4,493,327	4,230,646	3,932,244	3,731,758

3.20. The non-PE and mixed material service population is declining by an average of 5.7 per cent each year. We can see the effects of this on annual changes in the lagging indicators:

- service condition reports are increasing by an annual average of six per cent
- service condition repairs are increasing by an annual average of nine per cent
- numbers of services relaid after escape are broadly steady
- there is no clear trend from the limited data for occurrences of gas in buildings associated with service pipes.

3.21. Emergency reports and repairs appear to be increasing despite the declining populations of non-PE and mixed material services, indicating deterioration in the integrity of the remaining service pipes. We are working with the companies to understand the accuracy and validity of the service condition report numbers they have reported and will improve these measures to better understand service pipe safety risk.

3.22. The level of deterioration of service pipes may be calculated in terms of relays after escape per thousand in-service non-PE and mixed material service pipes. The trend is increasing from 8.4 to 10.7 service relays per 1000 in-service pipes, signalling a deterioration.

3.23. The average number of gas in buildings occurrences attributable to service pipes is far greater than that for iron mains, but there are significantly more incidents that occur from leaking iron mains. The volume flow rate of gas from leaking iron mains is generally higher than service pipes leading to a faster build-up of gas in buildings, which may explain this. Detailed records of all service pipe populations are not held by GDNs. The composition of a proportion of their service pipes has either been estimated by them in their GDPCR1 annual reports or reported as being unknown. From this position we estimate that at the end of the GDPCR1 period there were approximately 3.7 million services, 17 per cent of the total service pipe population, which are constructed from non-PE materials or a mixture of PE and steel and are therefore susceptible to corrosion failure.

3.24. There was one incident attributable to the condition of a service pipe during the period. We will continue to monitor service pipe performance during the RIIO-GD1 period.

Reliability

3.25. The industry achieved a network availability of 99.997 per cent in terms of system availability, despite some challenging winters during the five year period. This performance is driven by established practices designed to avoid the high cost of safely restoring supplies. A breakdown showing the level of availability by GDN is shown in Table 3.5.

Table 3.5 – Supply interruptions and availability rate

GDN	Average interruptions (number) per 100 customers	Average interruptions (minutes) per customer	Network availability
EoE	2.1	461.9	99.998%
Lon	2.4	912.6	99.996%
NW	2.8	728.4	99.996%
WM	2.3	509.1	99.998%
NGN	2.7	587.2	99.997%
Sc	2.6	587.5	99.997%
So	2.6	544.2	99.997%
WWU	2.5	281.3	99.999%
Industry	2.5	579.1	99.997%

Customer service

Customer satisfaction survey

3.26. Customer satisfaction is monitored by way of customer satisfaction surveys, covering:

- planned interruptions (for example when consumers are advised of the need to temporarily interrupt their supply prior to the disconnection, to facilitate work on the service pipe supplying their property)
- emergency response and repair (when consumers have had their supplies temporarily disconnected as a result of emergency work, and when consumers have reported a gas emergency or interruption to their supply)
- connections (when customers, using less than 73,200kWh per annum, have had work completed for a new or altered gas connection).

3.27. The industry scores over the period show an increasing trend, indicating improving levels of customer satisfaction. However, it should be noted that the final two years of the period used a different methodology.[12] GDNs trialled the customer

[12] It should be noted therefore that the customer satisfaction survey data presented in

satisfaction survey that will be used for RIIO-GD1 in the last two years of GDPCR1. In RIIO-GD1 we are continuing to monitor customer satisfaction and applying a financial incentive.[13]

3.28. WWU and Scotland ranked highest of the GDNs based on the total overall customer survey score using two different assessments, the average over the GDPCR1 period and the position in the final year of the period (2012-13). Full customer satisfaction survey results are shown in Appendix 2, and GDN ranking in tables 3.6 and 3.7 below.

Table 3.6: Customer survey ranking – average scores over GDPCR1

GDN	Interruptions	Emergency	Connections	Total score
EoE	5	4	5	4
Lon	7	8	8	8
NW	8	6	3	6
WM	6	7	7	7
NGN	4	5	6	5
Sc	2	2	2	2
So	3	3	4	3
WWU	1	1	1	1

Table 3.7: Customer survey ranking – Scores in final year of GDPCR1

GDN	Interruptions	Emergency	Connections	Total score
EoE	3	1	6	5
Lon	6	8	8	8
NW	7	5	4	6
WM	8	4	7	7
NGN	3	7	5	4
Sc	1	2	2	1
So	5	3	3	3
WWU	2	5	1	2

Appendix Tables A2.3 to A2.5 includes data for the final 2 years which is calculated using a different methodology. 2008-09 to 2010-11 customer satisfaction score data is an average score of several introductory survey questions. 2011-12 and 2012-13 customer satisfaction score data is based on a score for the customers' overall satisfaction of the service provided.

[13] The financial incentive mechanism also takes in to account complaints and stakeholder engagement.

Guaranteed standards of performance

3.29. The purpose of the Guaranteed Standards of Performance (GSOP) is to ensure that customers are guaranteed a minimum level of service from the GDNs. If the GDNs fail to meet the prescribed standards they must pay a prescribed level of compensation to individual customers.

3.30. There is an improving trend in customer satisfaction scores from the results of customer surveys which were introduced in GDPCR1 and a decreasing trend in payments under the guaranteed standards of performance. For the guaranteed standards of performance relating to connections there is a slightly increasing trend in payments.

3.31. Appendix 2 shows that the industry paid over £14 million in compensation during GDPCR1. Approximately 76 per cent of total GSOP payments related to GSOP 1 - Supply Restoration (also covered under reliability output).[14] We have retained the GSOP incentive mechanism in RIIO-GD1.

Connections

3.32. Connections is an activity where competition exist and this section relates only to those connections made by the GDNs

3.33. GDNs made 297,000 new connections during GDPCR1. Table 3.8 below provides an industry breakdown by type of connection.

3.34. Around a fifth of connections made to existing housing were undertaken under the fuel poor network extension scheme.

3.35. Further information on how the number of connections compare with forecast workload can be found in Appendix 6.

[14] GDNs must restore customers' gas supplies within 24 hours following unplanned interruptions on their network. If the GDN fails to meet this standard then they have to pay domestic customers £30 and non-domestic customers (with annual gas consumption less than 73,200kWh) £50. Further payments (of the same amount) for each subsequent 24 hour period during which the failure continues will be due, up to a cap of £1000 per customer.

Table 3.8: Number of connections

Activity	Number of services
New housing connections	72,031
Existing housing connections (excl fuel poor scheme)	165,512
Existing housing connections (fuel poor scheme)	43,615
Non domestic connections	15,871
Total new connections	297,029

Connections guaranteed standards of performance

3.36. Customers seeking a new connection rely upon the GDN to provide them with an efficient service. Several Connection Guaranteed Standards of Performance (GSOPs) relate to the delivery of connections services. If GDNs fail to meet the required standard, they must make a compensation payment to the customer. Payments are due in respect of the initial failure and each additional working day on which the failure continues.

3.37. The industry paid over one million pounds during GDPCR1, more details of this are shown in Appendix 2. We have retained the connection GSOPs for RIIO-GD1.

Social obligations

3.38. GDNs have an important role to play in facilitating network extensions to off-gas fuel poor customers and raising awareness of the risks of carbon monoxide poisoning. In GDPCR1 we introduced arrangements to achieve this through the fuel poor[15] network extension scheme and a discretionary reward scheme. A factsheet on the fuel poor scheme is available on our website.[16]

3.39. In 2009 we introduced arrangements to help address fuel poverty for consumers with 44,000 fuel poor connections being made at a cost of £55 million.

3.40. Recongnising these successes, companies were rewarded £14 million under the discretionary reward scheme (DRS). The DRS is used to encourage performance

[15] Fall with at least one of the following categories; 1) reside in a deprived area, 2) eligible for measure under Warm Front (England), Nest (Wales), or the Energy Assistance Package (Scotland), 3) fall within the priority group for measures under the Carbon Emissions Reduction Target, or 4) in fuel in fuel poverty based on the standard government definition – that is spending more than 10% of your disposable income on all household fuel use to maintain a satisfactory heating regime.

[16] A factsheet on the fuel poor network extension scheme can be found on the Ofgem website at https://www.ofgem.gov.uk/publications-and-updates/what-fuel-poor-gas-network-extension-scheme

in areas that cannot be easily measured or incentivised through more mechanistic regimes. There is a two year lag in recovery of DRS and only £6 million has currently been recovered through revenue. A breakdown of the rewards by company can be found in Appendix 1.

3.41. We have retained the DRS for RIIO-GD1[17]. The incentive will continue to drive GDNs to deliver environmental, social and carbon monoxide safety outputs.

Environmental outputs

Shrinkage

3.42. Gas shrinkage is gas lost from the network through leakage, theft and own use.[18] Shrinkage results in additional costs to customers and accounts for around 95 per cent of the business carbon footprint of GDNs. Leakage is the largest component of the elements that contribute towards shrinkage.

3.43. In GDPCR1 we introduced the Environmental Emissions Incentive (EEI) to reduce gas lost through leakage. The impact on leakage of the repex allowance was built into the target baseline when setting both GDPCR1 and RIIO-GD1.

3.44. For RIIO-GD1 we have increased the level of penalty and reward associated with performance and introduced rolling incentive mechanisms to strengthen the incentives on GDNs to reduce shrinkage.

3.45. The industry outperformed its baseline target from five per cent in the first year of the period rising to 14 per cent in the final year as shown in Table 3.7. A breakdown showing the baseline and actual leakage for GDNs can be found in Appendix 3. We rewarded the industry £43 million under the EEI in recogition of this outperformance. The overall leakage reduction results in a lower shrinkage cost.

Table 3.7: Industry leakage volumes

	2009	2010	2011	2012	2013
Baseline leakage volume (GWh)	3,943	3,867	3,788	3,726	3,664
Actual leakage volume (GWh)	3,740	3,577	3,468	3,236	3,160
Percentage outperformance	5%	7%	8%	13%	14%

[17] During RIIO-GD1, the DRS will run every three years, with the first assessment taking place in summer 2015. We have set a reward of £12 million to be allocated across the industry in three tranches of four million.

[18] Own use gas refers to that used for operational purposes on the GDNs' network. This is predominantly for pre-heating gas on operational sites to protect pipes and equipment from the harmful effects of freezing.

4. Cost performance

Chapter summary

This chapter evaluates GDPCR1 actual expenditure against the costs allowed in the GDPCR1 settlement, taking into account actual workloads. It looks at the various cost categories and activities which make up the total expenditure (totex) and assess comparative cost efficiencies across the industry.

Total expenditure (Totex)

4.1. Totex is the total controllable cost of the licenced GDN activities, these include operational, capital and replacement expenditure. The industry's £10.5 billion totex expenditure was five per cent lower than the £11 billion allowed.

4.2. Breaking this down:

- Operating expenditure (opex) was underspent by 11 per cent (£464 million)[19]
- Capital expenditure (capex) underspent by 6.4 per cent (£140 million)[20]
- Replacement expenditure (repex) overspent by 0.6 per cent (£27 million).

4.3. Table 4.1 shows the industry totex underspend and variance in opex, capex and repex from allowed costs. A breakdown by GDN can be found in Appendix 4.

Table 4.1: GDNs' totex performance against allowances

GDPCR1 totex allowances (£m)				GDPCR1 totex actuals (£m)				GDPCR1 totex over (under) spend	
Opex	Capex	Repex	Totex	Opex	Capex	Repex	Totex	£m	%
4,229.6	2,196.6	4,617.5	11,043.6	3,765.3	2,056.7	4,644.3	10,466.3	(577.3)	-5.2%

4.4. The price control features a mechanism by which capex and repex under and overspend is shared between GDNs' and consumers. However, opex underspend is retained by the GDNs in full. This incentive significantly contributed to the totex efficiency. Present and future consumers will benefit from the efficiencies gained because historic expenditure was taken into account when setting RIIO-GD1 allowances. In RIIO-GD1 we have equalised incentives and a sharing factor will apply to all under and overspends.

[19] Opex excludes research and development costs (R&D). R&D costs were set as part of the innovation funding incentive and claimed by GDNs as additional allowed revenue, see Chapter 2.

[20] Capex excludes physical security upgrade expenditure. Capex allowances are post IQI adjusted and repex allowances are workload adjusted. These exclusions and adjustments are respectively reflected in totex.

Income Adjusting Events

Income adjusting events are situations that occur which require additional funding but an efficient level of funding could not be determined at the beginning of the price control period because the need is uncertain. These are limited to predetermined events specified in licence conditions.

Traffic Management Act

4.5. When we were setting allowances for the price control, the impact of the implementation of the Traffic Management Act (TMA)[21] on GDNs' costs was unclear.[22] For this reason we introduced a specific price control re-opener mechanism.

4.6. In 2011 and 2013, Scotland, Southern and North London GDNs gave notice of an income adjusting event (IAE) following the implementation of the TMA and the Transport (Scotland) Act 2005 and proposed an adjustment to their allowed revenue. The total claims made were £97 million of which we allowed £42 million following consultation and efficiency assessment.[23]

Other incoming adjusting events

4.7. We also had two further reopeners for Scotland for Statutory Independent Undertakings and reinforcement scheme where we allowed an additional £27.9 million and £23 million respectively. Further details can be found in Appendices 5 and 6 respectively.

Operating expenditure (opex)

4.8. Opex costs consist of two main cost areas, direct opex and indirect opex.

4.9. Direct opex activities are made up of:

- work management (asset management, operations management, customer management and system control)
- work execution (emergency, repair and maintenance)
- independent undertakings

[21] Traffic Management Act 2004 and the Transport (Scotland) Act 2005 are referred to as "TMA" unless the context requires otherwise.
[22] The exception was an expenditure allowance related to the systems which GDNs were putting in place in anticipation of its introduction, where we provided GDNs as a whole with a capital expenditure allowance of £11.3 million (2005-06 prices).
[23] The 2011 decision can be found on the Ofgem website at https://www.ofgem.gov.uk/publications-and-updates/notice-decision-re-opener-applications-respect-additional-income-associated-traffic-management-act-and-transport-scotland-act-under-first-gas-distribution-price-control-review and the 2013 decision at https://www.ofgem.gov.uk/sites/default/files/docs/decisions/tma_iae_2012-13_final_decision_published_19dec13.pdf

- other direct activities.

4.10. Indirect opex costs are those incurred for business support, which include:

- IT & comms
- property management
- human resources
- insurance
- finance, audit & regulation
- procurement
- stores and logistics
- training and apprentices.
- Chief executive office

4.11. An underspend in direct opex of £354 million and an underspend in indirect opex of £111 million make up the total £464 million opex variance. This represents some 80 per cent of the overall totex underspend. Work management and maintenance activities account for the majority of this, being below the allowances set by around £195 million and £125 million respectively. A breakdown of the opex variances by activity can be seen in table 4.2 below.

Table 4.2 GDNs' opex performance against allowances

	Work management	Emergency	Repairs	Maintenance	Independent Undertakings	Other direct opex	Direct opex	Indirect opex[1]	Opex[1]
GDPCR1 allowances (£m)	1,043.4	507.4	640.7	623.2	57.0	272.5	3,144.2	1,085.3	**4,229.6**
GDPCR1 actuals (£)m	848.0	489.0	607.8	497.9	53.1	294.7	2,790.5	974.9	**3,765.3**
Industry over (under) spend £m	(195.4)	(18.5)	(32.9)	(125.3)	(3.9)	22.2	(353.8)	(110.5)	**(464.2)**
Industry over (under) spend %	-19%	-4%	-5%	-20%	-7%	8%	-11%	-10%	**-11%**

1. Excluding research and development costs

4.12. Direct opex underspends were largely achieved through the restructuring and reorganisation of resources and in environment and land remediation. GDNs also changed their low pressure gasholder maintenance programme following a review of their storage strategy and plans to demolish all low pressure gas holders within the next two price control periods.

4.13. The £111 million business support underspend was mainly achieved though lower expenditure on insurance, property management training and apprenticeships.

4.14. Appendix 5 sets out a more detailed assessment of opex.

Capital expenditure (Capex)

4.15. Capital expenditure includes costs for:

- LTS and storage
- reinforcement mains and governors
- new connections
- other capex.

4.16. Poor economic circumstances which occurred early in the GDPCR1 period led to significantly lower workload volumes than were forecast, which is the overriding feature in capex underspends. Overall industry capex was underspent by six per cent (£140 million). Significant underspend came from LTS and storage (£231 million) and connections (£68 million), which was offset by an overspend in other capex (£160 million). Expenditure in reinforcement mains and governors was in line with allowances. Table 4.3 below shows the industry performance against allowed expenditure. A breakdown by GDN can be found in Appendix 6.

Table 4.3: Capex expenditure against allowance

GDPCR1 capex allowances (£m)					GDPCR1 capex actuals (£m)					GDPCR1 capex over (under) spend	
LTS & storage	Mains & Governors	Connections	Other	Total capex	LTS & storage	Mains & Governors	Connections	Other	Total capex	£m	per cent
738.4	350.1	293.8	814.3	2,196.6	507.5	349.9	225.3	974.0	2,056.7	(139.9)	-6.4%

4.17. A proportion[24] of capex underspend is passed on to consumers in accordance with the GDPCR1 incentive mechanism. Efficiencies made in GDPCR1 are reflected in RIIO-GD1 allowances because the allowances are partly based on historical actual expenditure.

[24] 64 per cent of underspend is repaid to the consumer where this occurs in National Grid Gas (Distribution) GDNs or NGN GDN, and 67 percent where this occurs in Scotland, Southern or WWU GDNs. The values are determined by Ofgem under the Information Quality Initiative in GDPCR1 Final Proposals.

4.18. Whilst NGGD GDNs underspent on LTS and storage, mains and governors and connections cost areas, they all overspent in the 'other' category, and of particular note is the £223 million project investment it made in its Gas Distribution Front Office (GDFO) IT system. The new system is expected to deliver improved cost efficiencies into RIIO-GD1 which we recognised when setting RIIO-GD1 allowances.

4.19. RIIO-GD1 is an outputs based price control that commits GDNs to achieving agreed and quantified benefits in network performance.

4.20. A more detailed assessment of capex can be found in Appendix 6.

Replacement expenditure (repex)

4.21. Repex expenditure represented an investment of over £4.6 billion over the GDPCR1 period, 44 per cent of totex, to progress a 30-year iron mains abandonment programme and ensure mains and services outside the scope of the iron mains programme are replaced when necessary to maintain a safe network.

4.22. The industry GDPCR1 £27 million variance consisted of an overspend in replacement services (£170 million), an underspend in mains (£100 million) and an underspend in other repex (£44 million). Table 4.4 below shows the industry performance against allowed cost. A breakdown by GDN can be found in Appendix 7.

Table 4.4: GDNs repex performance against allowances (2012-13 prices)

GDPCR1 repex allowances (£m)					GDPCR1 repex actuals (£m)					GDPCR1 repex over (under) spend	
Mains	Incentivised services	Non incentivised services	Other repex	Total repex	Mains	Incentivised services	Non incentivised services	Other repex	Total repex	£m	per cent
3,162.5	923.2	301.0	230.8	4,617.5	3,062.9	1,006.0	388.2	187.3	4,644.3	26.8	0.6%

Mains replacement

4.23. The industry abandoned a total of 21,000 km of mains during the period, 18,500 km of iron mains of which were replaced under the HSE iron mains enforcement policy.25

4.24. Each GDN was set workload targets for mains abandonment work, and were allowed predetermined unit costs set out in our final proposals. Allowances were adjusted under GDPCR1 arrangements to enable GDNs to alter their mains and services replacement workload mix to continually re-prioritise their overall programme and gain the best outcomes in terms of risk reduction.

4.25. Despite the overall underspend in mains replacement, the industry achieved a four per cent increase in abandonment length than targeted.

Incentivised service replacement

4.26. Incentivised services are services replaced at the same time as mains replacement work.

4.27. Table 4.4 shows the industry's incentivised service replacement programme was overspent against allowed costs by nine per cent, however NGN, Southern and WWU GDNs underspent against their allowances. The industry's number of incentivised domestic services replaced was comparable to the GDPCR1 forecasts.

Non incentivised services

4.28. Non incentivised services are services replaced which are not associated with mains replacement work, for example a service replacement carried out at the same time a customers meter is repositioned or when a service pipe is found to be leaking.

4.29. Table 4.4 shows that the industry's non incentivised services were overspent against allowances by 29 per cent. All the GDNs except NGN overspent against their incentivised services allowances.

Other repex

4.30. Other repex comprises LTS repex, capitalised overheads, rechargeable diversions and risers in multi-occupancy buildings (MOBs)[26].

[25] Further information on the iron mains enforcement policy can be found on the HSE website at http://www.hse.gov.uk/gas/supply/mainsreplacement/irongasmain.htm

[26] A multiple occupancy building is a building where there are multiple supply meter points situated within individual premises within a larger structure served by one or more riser pipes

4.31. The industry outperformed cost allowances in this work area by 19 per cent, resulting from underspend on MOB work and significant underspend on LTS repex.

4.32. Most GDNs outperformed their allowances except North London and Southern, which overspent by 56 and 34 per cent respectively. This was due higher variable unit costs in the London area than elsewhere in Great Britain. North London and Southern GDNs accounted for 75 per cent (34 and 41 per cent respectively) of the total industry number of risers replaced during GDPCR1.

Non-controllable costs

4.33. Certain costs are outside the control of the GDNs and are pass through items. At the start of the price control we assessed these as £1.8 billion, the actual cost that was passed through was £119 million lower. This was driven by reduced distribution network rates. The pass through items were as follows:

- distribution network licence fee - £22 million above allowance
- distribution network rates - £149 million below allowance
- pension deficit costs - £8m above allowance

Cost efficiency

4.34. When assessing GDPCR1 cost efficiency we have adopted the same methodology used when setting RIIO-GD1 allowances. We recognise that when setting allowances for GDPCR1 we did not set a totex allowance and the methodology used in setting capex allowance we only used regression analysis for connections and mains reinforcement. However, we consider it appropriate to report the GDNs totex and the full capex performance that can be compared with RIIO-GD1.

4.35. We have updated the four historic performance assessment with the full GDPCR1 actuals. This method uses the estimation technique, historical costs regression models, cost drivers, and regional labour, sparsity and urbanity factors[27].

4.36. We have also made normalisations and adjustments consistent with those made for RIIO-GD1. An additional adjustment for physical security upgrade for East of England, North London and North West was made in this analysis, which was specific to these GDNs and largely outside their control. We have also included the streetworks re-opener adjustments for North London and Southern. During GDPCR1 additional streetworks costs only impacted these two GDNs. We have made no adjustment for reported severance costs.

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that needed replacement due to their condition.

[27] A Step-by-step guide for the cost efficiency assessment used in preparing for RIIO-GD1 is available on the Ofgem website at: https://www.ofgem.gov.uk/ofgem-publications/48198/gd1initialproposalsstepbystepguidefor-cost-efficiency.pdf

4.37. Table 4.5 presents GDNs' GDPCR1 totex, opex, capex and repex efficiency rankings.[28] Annual cost efficiency rankings are shown in Appendix 8.

4.38. Using this assessment methodology, NGN was the most cost efficient GDN in terms of totex. Its totex performance is underpinned by good relative performance across the opex, capex and repex cost categories. WWU was second ranked with good relative performance in opex and repex despite poor relative performance in capex.

Table 4.5: Cost efficiency rankings

	NGGD				**NGN**	**SGN**		**WWU**
	EOE	Lon	NW	WM	NGN	Sc	So	WWU
Cost group	**GDPCR1 efficiency rankings**							
Totex	4	8	6	3	1	5	7	2
Opex	6	8	7	5	2	4	3	1
Capex	2	6	4	1	3	8	5	7
Repex	5	3	4	8	1	6	7	2

4.39. North London and Southern showed relatively low performance in two of the three cost groups. The remaining GDNs' totex performances were driven by a mixture of performance rankings in the three cost groups.

4.40. We intend to continue conducting outputs, costs and workload performance reviews through the RIIO-GD1 period.

[28] The efficiency rankings are based on efficiency scores. We have run regressions and derived modelled costs for each GDN for each of the five years. We have then calculated the GDPCR1 efficiency scores as: (sum of GDPCR1 normalised adjusted actual costs)/(sum of GDPCR1 normalised adjusted modelled costs).

5. Financial performance

This chapter presents the opening and closing position of the regulatory asset value (RAV) for GDPCR1 and the GDNs return on regulatory equity (RoRE) performance. It evaluates the contribution of each main aggregate cost group (ie opex, capex and repex) to the total RoRE. It also identifies the key RoRE performance drivers.

Regulatory Asset Value

5.1. Regulatory Asset Value (RAV) is the value of capital investment in networks on which we allow, within the price control allowances, a return on capital and a depreciation return. As an indicator of financial performance the GDNs can earn more returns, if more investment of an efficient nature is made to increase the RAV.

5.2. Table 5.1 shows an increase in the opening RAV at the end of the GDPCR1 price control. The closing RAV is calculated as opening RAV + RAV additions – RAV depreciation - disposals.

5.3. During GDPCR1 there were other adjustments to opening RAV rolled forward each year. Adjustments were made for pots 2 and 3 described below. These are overspends incurred between 2002 and 2007.

5.4. Pot 2 – "efficient overspend" – included in the RAV, but no allowances given for depreciation or return in the first five years following inclusion.

5.5. Pot 3 – "re-opener" – included in the RAV, allowances given (including allowances for under-recoveries) as if included from the period incurred.

Table 5.1: GDPCR1 RAV summary (£M)

GDN	Opening RAV (GDPCR1 final proposal) 2005/06 prices	Closing RAV (PCFM) after LRAV adjustment[1] 2005/06 prices	Difference (closing - Opening) RAV
EoE	2,182.4	2,265.7	83.3
Lon	1,241.1	1,459.2	218.1
NW	1,410.2	1,555.3	145.1
WM	1,089.7	1,177.7	88.0
NGN	1,340.1	1,399.0	58.9
Sc	973.2	1,149.4	176.2
So	2,244.5	2,562.3	317.7
WWU	1,235.0	1,443.0	208.1
Industry	**11,716.2**	**13,011.7**	**1,295.5**

1 This includes legacy adjustments made as part of the annual iteration process in November 2013

Return on Regulatory Equity

5.6. The price control sets the revenue the GDNs can recover from customers in return for running a safe and efficient network. Incentivising the companies to operate their networks efficiently leads to returns to investors in the current price control and future cost savings for customers when we set the next price control.

5.7. The best performing networks are able to earn higher returns if they deliver the outputs efficiently and all GDNs earned a return greater than the 7.25 per cent notional regulatory equity set for GDPCR1. The additional returns ranged from 0.9 per cent (North London) to 3.9 per cent (NGN), more detail is shown in Table 5.2. GDNs achieved this through:

- efficiencies in operating expenditure
- a lower cost of debt
- outperforming the exit capacity incentive.

5.8. Return on Regulatory Equity (RoRE)[29] is a representation of the percentage of returns earned by shareholders as a measure of equity RAV.[30]

5.9. We set the GDPCR1 cost of equity at 7.25 per cent. This was in line with the long-run average total equity market returns. It also reflected the assessed systematic and non-systematic risks, which the GDNs faced under the terms of the price control.

5.10. We measure GDNs' RoRE performance against the baseline equity return[31] as illustrated in Chart 5.1.

5.11. Opex was the main source of additional return. Any opex underspend is retained by the GDNs in full. This incentive significantly contributed to the totex efficiency. Present and future consumers will benefit from the efficiencies gained because historic expenditure for the most efficient GDNs was taken into account when setting RIIO-GD1 allowances. In RIIO-GD1 we have equalised incentives and a sharing factor will apply to all under and overspends. The opex RoRE performance mirrors the industry GDPCR1 opex cost performance discussed in Chapter 4.

5.12. GDPCR1 industry capex and repex RoRE slightly outperformed the baseline, but with some variation between the GDNs. The capex RoRE performance also mirrors the industry GDPCR1 capex costs performance discussed in Chapter 4.

[29] Our calculations do not reflect any additional returns GDNs may have earned from the environmental emissions incentive, discretionary reward scheme, innovation sustainable development incentive, or with regard to loss of meter work. The RoRE estimates are also not adjusted for differences in pension expenditure.
[30] GDPCR1 equity RAV was derived as an average of the equity proportion of GDPCR1 forecast RAV over the price control period.
[31] This is based on the assumption that cost under or over performance is converted into returns to shareholders (sharing factor taken into consideration).

5.13. The industry achieved additional returns by incurring exit capacity costs which were not anticipated at GDPCR1 final proposals. These costs which were driven by the 2012 NTS exit reform are discussed in Chapter 2.

5.14. The environmental emissions incentive incentivised the GDNs to benefit financially through targeting reduced leakage on their networks as discussed in Chapter 2.

Chart 5.1: GDPCR1 RoRE performance

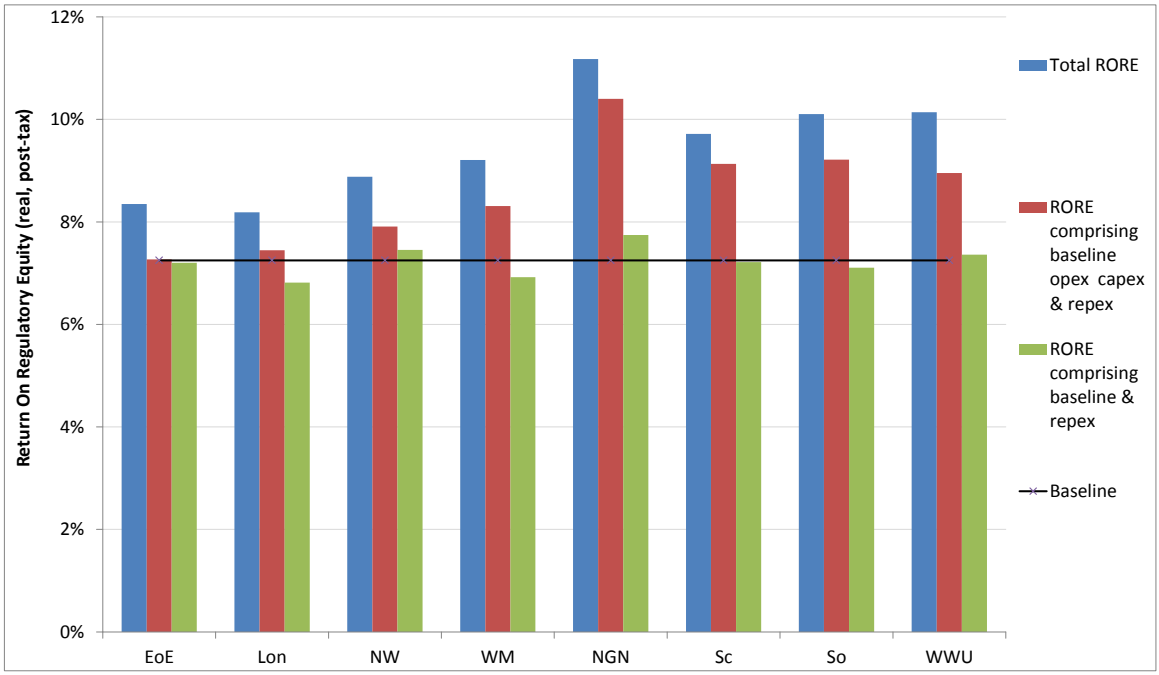

Table 5.2: GDPCR1 RoRe performance

GDN	Total RORE	RORE comprising baseline opex capex & repex	RORE comprising baseline & repex	Baseline	Opex	Capex	Repex	Shrinkage	Exit capacity incentive	Interest	Tax adjustment
	%	%	%	%	%	%	%	%	%	%	%
EoE	8.35	7.27	7.20	7.25	0.20	-0.14	-0.05	0.15	0.30	0.47	0.15
Lon	8.19	7.45	6.81	7.25	0.28	0.35	-0.44	0.07	0.20	0.47	0.00
NW	8.88	7.91	7.45	7.25	0.55	-0.10	0.20	0.11	0.35	0.47	0.04
WM	9.21	8.31	6.92	7.25	1.68	-0.30	-0.33	0.09	0.34	0.47	0.09
NGN	11.18	10.40	7.74	7.25	2.12	0.54	0.49	0.04	0.19	0.47	0.08
Sc	9.72	9.13	7.21	7.25	1.92	-0.01	-0.04	0.05	0.07	0.47	0.00
So	10.10	9.21	7.11	7.25	1.81	0.29	-0.14	0.08	0.34	0.47	0.00
WWU	10.14	8.95	7.36	7.25	1.33	0.26	0.11	0.10	0.62	0.47	0.00
Industry Average	**9.47**	**8.58**	**7.23**	**7.25**	**1.24**	**0.11**	**-0.02**	**0.09**	**0.30**	**0.47**	**0.04**

5.15. Interest costs (cost of debt) were set using a notional rate of 3.55 per cent at the beginning of GDPCR1. The outperformance highlighted arises from the interest rate environment turning out to be different, with a general lower cost of borrowing from that forecast, it also assumes the GDNs achieved the ten year Iboxx. To recognise this we have also calculated the actual cost of debt on a notional basis.

5.16. We intend to review the GDNs' RoRE on an annual basis during the RIIO-GD1 price control period.

Appendices

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Appendix 1 – Social obligations

Table A1.1: Number of Fuel Poor Network Extensions GDPCR1

GDN	2009	2010	2011	2012	2013	GDPCR1 Total
EoE	0	1,326	1,125	2,214	2,748	**7,413**
Lon	0	362	357	378	200	**1,297**
NW	0	1,369	1,981	1,858	1,943	**7,151**
WM	0	683	1,059	954	1,206	**3,902**
NGN	0	645	801	1,804	914	**4,164**
Sc	0	672	3,768	4,533	2,801	**11,774**
So	0	167	626	725	120	**1,638**
WWU	0	187	1,779	2,205	2,105	**6,276**
Industry	**0**	**5,411**	**11,496**	**14,671**	**12,037**	**43,615**

Table A1.2: Discretionary Reward Scheme reward amount (£m)

GDN	2009	2010	2011	2012	2013	Total
NGN	0.0	0.2	0.5	1.1	0.8	2.6
NGGD	0.4	0.5	1.0	0.9	0.8	3.6
SGN	0.6	1.1	1.3	0.8	1.0	4.7
WWU	0.0	0.2	0.4	1.2	1.4	3.1
Industry	0.9	2.0	3.1	4.0	4.0	14.0

Appendix 2 – Customer satisfaction outputs

1.1. The following tables show guaranteed standards of performance payments and customer survey scores by GDN for the three areas:

- planned interruption
- emergency response and repair
- connections

1.2. Customer satisfaction is scored from one to ten, one being very dissatisfied and ten being very satisfied.

Table A2.1: Customer Satisfaction Survey – Planned Interruption scores

GDN	Score out of 10				
	2009	2010	2011	2012	2013
EoE	7.5	7.8	7.5	8.0	8.1
Lon	6.9	7.5	6.9	7.9	7.9
NW	7.1	7.2	7.1	7.7	7.6
WM	7.5	7.5	7.5	7.5	7.4
NGN	7.3	7.7	7.7	8.1	8.1
Sc	7.8	8.0	8.0	8.2	8.5
So	7.8	7.9	7.8	7.6	8.1
WWU	8.1	8.0	8.2	8.5	8.4
Industry average	7.5	7.7	7.6	7.9	8.0

Note: Planned work comprises customers of the GDN who have, during the relevant month, been affected by planned work carried out by the GDN on service pipes which is likely to have caused an interruption to their gas supply.

Table A2.2: Customer Satisfaction Survey - Emergency Response and Repair scores

GDN	Score out of 10				
	2009	2010	2011	2012	2013
EoE	8.0	8.2	8.0	8.9	9.2
Lon	7.3	7.7	7.3	8.3	8.5
NW	8.1	8.0	8.1	8.6	9.0
WM	8.0	8.2	8.0	8.5	9.1
NGN	8.2	8.2	8.2	8.8	8.8
Sc	8.1	8.3	8.5	8.8	9.1
So	7.9	8.4	8.3	8.7	9.1
WWU	8.2	8.6	8.6	8.8	9.0
Industry average	8.0	8.2	8.1	8.7	9.0

Note: Emergency and repair comprises customers of the GDN who have, during the relevant month:

- been affected by work carried out by the GDN on service pipes which is likely to have been associated with an unplanned interruption to their gas supply, and/or
- contacted the gas emergency telephone line to report a leak or interruption to their gas supply.

Table A2.3: Customer Satisfaction Survey - Connection scores

GDN	Score out of 10				
	2009	2010	2011	2012	2013
EoE	7.2	7.1	7.2	7.8	7.2
Lon	6.2	6.4	6.2	7.5	6.6
NW	7.1	7.4	7.0	8.1	7.8
WM	6.9	7.3	6.9	7.5	7.1
NGN	6.6	7.1	7.4	7.5	7.7
Sc	7.6	7.7	7.6	7.5	8.3
So	7.2	6.8	7.2	7.8	7.9
WWU	7.6	7.7	7.9	8.3	8.4
Industry average	**7.1**	**7.2**	**7.2**	**7.7**	**7.6**

Note: Connections comprise customers consuming (less than 73,200kWh) per annum who have had work completed on a new or altered existing gas connection.

Table A2.4: Guaranteed Standards of Performance – total GDPCR1 payments (£m)

GDN	2009	2010	2011	2012	2013	Total
EoE	0.1	0.2	0.2	0.1	0.2	0.8
Lon	0.7	1.1	0.6	0.8	0.7	3.9
NW	1.5	0.4	0.2	0.3	0.3	2.7
WM	0.1	0.1	0.1	0.1	0.2	0.5
NGN	0.2	0.3	0.1	0.2	0.1	0.9
Sc	0.2	0.3	0.3	0.1	0.2	1.2
So	0.4	0.6	0.9	1.3	0.7	3.8
WWU	0.1	0.1	0.1	0.2	0.1	0.6
Industry	3.3	3.1	2.5	2.9	2.5	14.3

Table A2.5: Connection Guaranteed Standards of Performance - Gas Connections Total (£m)

GDN	2009	2010	2011	2012	2013	Total
EoE	0.03	0.03	0.05	0.05	0.08	0.24
Lon	0.03	0.02	0.05	0.07	0.07	0.23
NW	0.02	0.01	0.02	0.02	0.02	0.09
WM	0.02	0.01	0.02	0.02	0.04	0.11
NGN	0.06	0.09	0.04	0.05	0.05	0.29
Sc	0.01	0.01	0.01	0.01	0.01	0.04
So	0.01	0.02	0.02	0.03	0.02	0.11
WWU	0.04	0.03	0.05	0.04	0.03	0.19
Industry	0.21	0.21	0.26	0.28	0.32	1.29

Appendix 3 – Environmental outputs

Table A3.1: Leakage outputs

	Baseline leakage volume (GWh)				
GDN	**2009**	**2010**	**2011**	**2012**	**2013**
EoE	655	653	651	648	645
Lon	375	374	371	368	364
NW	488	473	460	455	450
WM	396	385	374	371	367
NGN	508	500	493	484	475
Sc	270	264	258	252	245
So	727	709	691	672	653
WWU	524	507	490	476	463
Total	**3,943**	**3,867**	**3,788**	**3,726**	**3,664**

	Actual leakage volume (GWh)				
GDN	**2009**	**2010**	**2011**	**2012**	**2013**
EoE	599	568	549	508	505
Lon	361	360	346	319	305
NW	468	439	428	398	391
WM	378	355	345	319	316
NGN	492	479	473	435	408
Sc	270	257	243	232	228
So	691	656	635	599	589
WWU	482	464	450	425	420
Total	**3,740**	**3,577**	**3,468**	**3,236**	**3,160**

Appendix 4 – Total expenditure

1.1. Table A4.1 shows how operating expenditure (opex), capital expenditure (capex) and replacement expenditure (repex) contribute to the total expenditure (totex) underspend of £577 million.

Table A4.1: Totex breakdown by GDN

GDN	GDPCR1 totex allowances (£m)				GDPCR1 totex actuals (£m)				GDPCR1 totex over (under) spend	
	Opex	Capex	Repex	Totex	Opex	Capex	Repex	Totex	£m	%
EoE	642.4	241.4	671.7	**1,555.6**	628.0	268.6	679.9	**1,576.5**	20.9	1%
Lon	483.5	275.3	616.1	**1,374.8**	471.5	234.9	668.6	**1,375.0**	0.1	0.0%
NW	524.0	181.2	633.3	**1,338.5**	498.6	194.1	608.5	**1,301.2**	(37.2)	-3%
WM	396.8	114.8	426.7	**938.4**	337.1	144.2	458.3	**939.6**	1.2	0.1%
NGN	500.7	252.6	532.6	**1,285.9**	406.1	185.2	469.9	**1,061.2**	(224.7)	-17%
Sc	431.7	276.1	331.8	**1,039.7**	368.7	277.1	336.0	**981.8**	(57.9)	-6%
So	750.2	495.9	943.8	**2,190.0**	612.7	428.2	977.0	**2,018.0**	(172.0)	-8%
WWU	500.1	359.2	461.5	**1,320.8**	442.6	324.4	446.1	**1,213.2**	(107.7)	-8%
Industry	**4,229.6**	**2,196.6**	**4,617.5**	**11,043.6**	**3,765.3**	**2,056.7**	**4,644.3**	**10,466.3**	(577.3)	-5.2%

Appendix 5 – Operating expenditure

1.1. This appendix further details the operating expenditure (opex) by individual opex cost category that make up the overall £464 million opex underpend against allowed expenditure.

1.2. Opex costs consist of two main cost areas, direct opex and indirect opex.

1.3. Direct opex activities are made up of:

- work management (asset management, operations management, customer management and system control)
- work execution (emergency, repair and maintenance)
- independent undertakings
- other direct activities (ODA).

1.4. Indirect opex costs are those incurred for business support, which include:

- IT & comms
- property management
- human resources
- insurance
- finance, audit & regulation
- procurement
- stores and logistics
- training and apprentices.
- Chief executive office

1.5. Table A5.1 below shows the breakdown of opex by cost category and GDN.

1.6. Opex savings were achieved as a result of both a reduction in workload and lower costs through efficiencies. The industry opex and capex expenditure are both underspent against allowances and it is difficult to assess the level to which capex – opex trade offs[32] have played a part in reducing costs. We will look at this in more detail during RIIO-GD1.

[32] Opex capex trade-offs are where solutions can be achieved by either an opex or capex strategy.

Table A5.1: Breakdown of allowed and actual opex over GDPCR1

GDPCR1 allowances (£m)	Work management	Emergency	Repairs	Maintenance	Independent Undertakings	Other direct opex	Total Direct opex	Indirect opex[1]	Total Opex[1]
EoE	157.9	77.6	72.9	95.9	0.0	45.1	449.3	193.1	**642.4**
Lon	122.4	64.9	82.9	74.9	0.0	29.8	374.9	108.5	**483.5**
NW	128.8	62.9	73.5	79.0	0.0	30.0	374.1	149.9	**524.0**
WM	94.8	41.4	55.6	66.7	0.0	24.8	283.4	113.4	**396.8**
NGN	129.8	58.0	79.9	71.5	0.0	32.9	372.1	128.6	**500.7**
Sc	93.8	46.4	53.1	56.8	57.0	20.6	327.7	104.1	**431.7**
So	196.7	103.9	144.3	94.2	0.0	53.1	592.2	158.1	**750.2**
WWU	119.2	52.4	78.5	84.2	0.0	36.3	370.5	129.6	**500.1**
Industry	**1,043.4**	**507.4**	**640.7**	**623.2**	**57.0**	**272.5**	**3,144.2**	**1,085.3**	**4,229.6**
GDPCR1 actuals (£m)	**Work management**	**Emergency**	**Repairs**	**Maintenance**	**Independent Undertakings**	**Other direct opex**	**Total Direct opex**	**Indirect opex[1]**	**Total Opex[1]**
EoE	140.5	84.8	75.0	87.0	0.0	51.4	438.7	189.3	**628.0**
Lon	100.0	66.8	93.4	49.8	0.0	33.8	343.8	127.6	**471.5**
NW	120.0	61.1	71.7	68.1	0.0	34.3	355.2	143.4	**498.6**
WM	86.1	40.5	40.4	38.9	0.0	24.4	230.4	106.7	**337.1**
NGN	87.8	49.7	91.1	45.7	0.0	27.7	302.0	104.1	**406.1**
Sc	80.2	39.5	43.0	54.4	53.1	26.7	296.8	71.9	**368.7**
So	116.2	91.1	133.3	94.1	0.0	47.5	482.2	130.6	**612.7**
WWU	117.3	55.4	59.9	59.9	0.0	49.0	341.4	101.2	**442.6**
Industry	**848.0**	**489.0**	**607.8**	**497.9**	**53.1**	**294.7**	**2,790.5**	**974.9**	**3,765.3**
Industry over (under) spend (£m)	(195.4)	(18)	(32.9)	(125.3)	(3.9)	22.2	(353.8)	(110.5)	**(464.2)**
Industry over (under) spend (%)	-19%	-4%	-5%	-20%	-7%	8%	-11%	-10%	**-11.0%**

1. Excluding research and development

Direct opex

Work Management

1.7. The £195 million work management variance accounts for over half of the direct opex variance.

1.8. Work management is a labour intensive activity which supports the work execution activities. We based allowances on the expectation that 85 per cent of costs were staff related, however actual average industry staff costs were 73 per cent (ranging from 55 to 85 per cent) which accounts for a significant proportion of the variance achieved. During GDPCR1, particularly in the earlier years of the period, GDNs carried out significant restructuring of both staff and IT operations which had a direct impact on work management costs.

1.9. The reasons given for restructuring efficiencies varied across the GDNs, and included targeted manpower reduction and services and staff brought in-house.

1.10. There were also significant changes in respect of IT operations falling under work management. Four GDNs[33] migrated from the National Grid legacy systems and took over the operational management of their system control functions under the SOMSA Exit project[34].

1.11. Environmental and land remediation activities were also below allowances by around £3 million. However the actual spend varied significantly across the GDNs. North West was above allowances by around £7.5 million, which largely related to remediation projects in 2010-11 and 2011-12. However, NGN, Scotland and Southern did not complete their remediation work by the end of the price control period, accounting for £10 million. Where under-spend results from delivery of fewer outputs, this would be offset against the cost of delivering the shortfall in future periods. This resulted in an adjustment to their allowances in RIIO-GD1 of £2.2 million each for Scotland and Southern and £5.6 million for NGN.

Work execution

1.12. Expenditure in work execution activities were all below allowed levels. Maintenance had the largest variance of £125 million, followed by repairs with £33 million and emergency with £18 million.

[33] Scotland, Southern, NGN and WWU. NGGD sold these four GDNs in 2005 and part of the condition of sale was that the GDNs would take over their own system control functions.
[34] NG entered into a System Operator Managed Services Agreement (SOMSA) which was a transitional arrangement designed to expire when each GDN migrated from NGG's legacy systems.

Maintenance

1.13. GDNs underspent their maintenance allowance by £125 million, representing around a third of the total direct opex saving. Just four of the GDNs accounted for £100 million of this sum (North London, West Midlands, NGN and WWU).

1.14. The maintenance activity covers:

- local transmission system maintenance
- gas storage
- other maintenance

1.15. The largest saving came from gas storage, which includes costs for:

- gas holder painting
- the upgrading of handrails
- gas holder demolition.

1.16. Cost reduction was achieved mainly as a result of a change in diurnal storage[35] strategy reducing the need for gas holders, due to a combination of a decrease in demand and using of alternative storage such as LTS linepack and NTS flex.[36] GDNs have been given allowances in RIIO-GD1 to support a strategy to decommission half of their low pressure gasholder assets. It is anticipated that the remaining will be decommissioned in RIIO-GD2

1.17. Additionally, NGN decommissioned its salt cavity storage facility during the GDPCR1 period.

1.18. West Midlands and North London GDNs were also allowed £11 million and £2 million respectively to compensate land owners or to divert pipelines where their presence prevents commercial use of the land in which it is located[37]. The actual work required was significantly less than expected resulting in actual spend of around £2.5 million compared to the £13 million allowed.

Emergency

1.19. The emergency service deals with and attends to gas leaks reported by the public (known as public reported escapes or PREs) and other emergencies. Repair is the activity associated with repairing the network in response to these calls.

[35] Diurnal storage is gas stored for the purpose of meeting within-day variations in gas demand

[36] LTS Linepack is the volume of gas held within the local transmission system by virtue of its pressure, principally to meet diurnal storage needs of the network. NTS Flex is gas provided from the National Transmission System to aid balancing.

[37] subject to conditions in the pipeline's easement or wayleave agreement

1.20. The emergency activity was underspent against allowances by £18 million. Southern and NGN underspent by between 12 and 15 per cent and East of England was overspent by nine per cent whilst others were broadly in line with allowances.

1.21. Allowances were predominantly set based on our benchmark (regression) analysis using a composite scale variable of external PREs[38] (80 per cent) and repairs workload (20 per cent) plus our assessment of GDNs ability to use operatives on alternative work when call volumes are low. In setting allowances we expected external PREs would reduce by around three per cent per year, however they reduced by less than one per cent. Trends in emergency reports and repairs are discussed in Chapter 3, outputs performance.

1.22. The emergency activity was impacted by the loss of meterwork contracts[39] which is used as fill-in work for emergency operatives during periods when call volumes are low. Utilising unproductive time results in lower costs in the emergency activity as costs are recharged to other supplementary activities.

1.23. The GDPCR1 allowances were based on a loss of meterwork of 55 per cent and we introduced a revenue driver[40] to trigger additional revenue based on a pre-determined number of meterwork jobs.[41] This was set at a level to provide an incentive for GDNs to find supplementary fill-in work for operatives.

1.24. Tables A5.2 and A5.3 below show the trigger number of meterwork jobs (the 'tipping point'), the number of actual meterwork jobs and the percentage of meterwork jobs to the tipping point. The values in red indicate the years when a claim for additional revenue was valid.

1.25. All but one GDN, North West, submitted claims under the revenue driver and we allowed £64 million to the industry in respect of this.

[38] External PREs are emergency calls received from the public as a result of leakage from the gas distribution network's mains and service pipes, as opposed to internal PREs which relate to leakage from equipment not owned by the GDN, such as consumer's internal pipework or appliances.
[39] The GDN meterwork contracts have reduced significantly due to the introduction of competition and new dedicated meter replacement companies.
[40] The revenue driver was not set up to fully compensate the GDNs for loss of meterwork, therefore the GDNs were incentivised to find alternative supplementary work to utilise FCO's unproductive time
[41] This is otherwise known as the tipping point and is defined as the number of jobs below which the GDNs will incur additional costs.

Table A5.2: Loss of meterwork – number of meterwork jobs to trigger additional allowance

	EoE	Lon	NW	WM	No	Sc	So	WWU
Tipping point	**225,512**	**124,540**	**91,040**	**161,388**	**118,753**	**183,696**	**369,657**	**246,060**
2009	342,926	224,607	210,232	171,621	34,478	181,477	375,457	217,195
2010	210,758	141,561	145,165	115,968	11,132	138,324	279,645	150,419
2011	159,247	115,052	119,612	87,303	10,008	115,552	261,652	110,063
2012	116,309	77,179	104,881	71,606	8,650	104,352	171,031	102,901
2013	120,435	73,247	94,676	70,773	7,832	107,959	180,527	97,230

Table A5.3: Percentage actual loss of meterwork jobs below tipping point

2009	-52%	-80%	-131%	-6%	71%	1%	-2%	12%
2010	7%	-14%	-59%	28%	91%	25%	24%	39%
2011	29%	8%	-31%	46%	92%	37%	29%	55%
2012	48%	38%	-15%	56%	93%	43%	54%	58%
2013	47%	41%	-4%	56%	93%	41%	51%	60%

Repairs

1.26. The industry underspent the allowance by £33 million. GDNs explained that they achieved this through:

- greater use of their repair teams on other activities to take up seasonal changes in workload, maximising the productivity of labour resources
- reducing the number of contractors employed

1.27. The repair activity is the process set up to repair gas escapes from gas distribution assets. Typically the activity involves:

- attending site to locate an escape
- excavating down to buried assets
- repairing the asset
- reinstating the excavation.

1.28. When setting allowances for GDPCR1 we used benchmark analysis (regression) using condition repairs as the workload driver. Following consultation with GDNs as part of the RIIO-GD1 price control assessment we reviewed cost drivers and model selection criteria. We decided that condition reports were a more reliable workload driver because this data is consistently captured across the GDNs. We note that the industry total repairs over the period exceeded the number of reports and will look at this as part of our RIIO-GD1 monitoring.

1.29. In setting the allowances it was assumed that repair workload would reduce by around three per cent per year due to the ongoing replacement of non-PE mains and steel services. The reported industry actual repair workload was variable, mains

repairs showing a declining trend but service repairs showing an upward trend. This is further discussed in chapter 3, outputs performance.

Independent undertakings

1.30. Statutory Independent Undertakings (SIUs) are six remote (independent) gas networks; four in Scotland and two in Wales. These networks are owned and operated by the GDNs but are not physically connected to the GB main gas system.

1.31. The four Scottish independent undertakings (Thurso, Wick, Oban and Campbeltown), represent over 7000 consumers and are served by liquefied natural gas (LNG) which, at the beginning of GDPCR1, was sourced from a National Grid facility in Glenmavis. However, due to the condition of the plant National Grid closed it in April 2010 leaving Scotland to source LNG from the only remaining GB facility in Avonmouth, Bristol.

1.32. The additional road tanker mileage to deliver gas to the Scottish Independent Undertakings was a major factor in Scotland's £3.9 million overspend against allowed expenditure. Scotland also incurred increased capital expenditure capex costs by £9 million for additional road tankers and a storage facility at Provan, near Glasgow.

1.33. Scotland submitted a reopener for this and we allowed an additional £17.9 million for opex and £10 million for capex.

1.34. National Grid has signalled closure of its Avonmouth facility in 2018 and Scotland expect to submit an uncertainty mechanism claim under the terms of their RIIO-GD1 licence in 2014 to fund a long-term solution.

Indirect opex - business support

1.35. The industry's expenditure on business support (excluding research and development, training and apprentices) was below the allowances by 10 per cent, or £111 million. NGGD's expenditure in this area was broadly in line with its allowances, the underspend being driven by Scotland, Southern, WWU and NGN who outperformed by 31 per cent, 17 per cent, 22 per cent and 18 per cent respectively.

1.36. GDNs were given an allowance of 50 trainee recruits per year, however NGGD, Scotland and NGN under recruited while WWU over recruited against this level. Scotland and NGN significantly underspent on training and apprentices (45 and 35 per cent respectively) while NGGD and WWU over spent (9 and 16 per cent respectively). Total industry costs for training and apprentices was overspent against allowances by 11 per cent.

1.37. We rejected NGGD's request for adjustment in RIIO-GD1 to take account of their under recruitment in GDPCR1. GDNs that trained fewer than their allowed numbers of trainees/apprentices in GDPCR1 were not awarded additional allowance for these in RIIO-GD1.

Appendix 6 – Capital expenditure

1.1. This Appendix further details the capital expenditure (capex) by individual capex cost category that make up the overall £140 million capex underpend against allowed expenditure.

1.2. The capex cost categories are:

- local transmission system (LTS) and storage
- reinforcement mains and governors
- new connections
- other capex

1.3. Table A6.1 shows the allowed and actual capex by cost category and GDN.

Table A6.1 Capex breakdown by GDN

GDN	GDPCR1 capex allowances (£m)					GDPCR1 capex actuals (£m)					GDPCR1 capex over (under) spend	
	LTS & storage	Mains & Governors	Connections	Other	Total capex	LTS & storage	Mains & Governors	Connections	Other	Total capex	£m	%
EoE	51.7	21.3	44.9	123.5	**241.4**	37.3	11.5	36.6	183.2	**268.6**	27.1	11%
Lon	149.5	22.4	32.4	70.9	**275.3**	104.3	14.5	18.6	97.6	**234.9**	(40.4)	-15%
NW	36.4	32.9	24.8	87.0	**181.2**	20.5	24.1	15.9	133.6	**194.1**	12.9	7%
WM	12.5	16.7	20.6	65.0	**114.8**	17.2	15.5	15.0	96.4	**144.2**	29.4	26%
NGN	55.0	32.5	41.8	123.3	**252.6**	28.3	28.0	27.1	101.7	**185.2**	(67.4)	-27%
Sc	104.9	55.7	32.1	83.5	**276.1**	79.5	70.4	35.9	91.2	**277.1**	0.9	0.3%
So	196.6	126.4	50.4	122.5	**495.9**	112.5	131.3	44.6	139.9	**428.2**	(67.7)	-14%
WWU	131.6	42.1	46.9	138.5	**359.2**	107.9	54.6	31.6	130.3	**324.4**	(34.8)	-10%
Industry	**738.4**	**350.1**	**293.8**	**814.3**	**2,196.6**	**507.5**	**349.9**	**225.3**	**974.0**	**2,056.7**	**(139.9)**	**-6.4%**

LTS and storage

1.4. The industry underspent LTS and storage allowances by 30 per cent as a result of a lower than forecast workload volume due to the cancellation of major projects.

1.5. In 2010 Scotland GDN applied for additional funding under a GDPCR1 re-opener mechanism for four reinforcement schemes. This was to accommodate the transfer

of certain industrial consumers from interruptible to firm status under interruption reform[42].

1.6. Following an examination of their proposals, Scotland was allowed an additional £23 million. One of the four schemes with a value of £1.4 million did not go ahead because a suitable interruptible contract was eventually secured as an alternative solution. Scotland did not apply for further reinforcement funding in RIIO-GD1 for this scheme which may become necessary when the contract expires.

Connections

1.7. The connections activity involves the construction of mains extensions and new services to connect domestic and non-domestic premises to the gas network. These include new and existing premises not previously supplied.

1.8. Table A6.2 below shows the number of new connections made by connection type and GDN.

Table A6.2: New connections by GDN

	EoE	Lon	NW	WM	NGN	Sc	So	WWU	Total
New housing connections	11,660	4,294	4,119	4,086	8,931	3,891	19,364	15,685	**72,031**
Existing housing connections (excl fuel poor scheme)	20,672	6,814	9,255	7,337	22,827	31,857	32,994	33,757	**165,512**
Existing housing connections (fuel poor scheme)	7,413	1,297	7,151	3,902	4,164	11,774	1,638	6,276	**43,615**
Non domestic connections	636	543	409	296	2,618	2,268	5,492	3,609	**15,871**
Total new connections	**40,381**	**12,948**	**20,934**	**15,621**	**38,540**	**49,790**	**59,488**	**59,327**	**297,029**

1.9. GDNs forecast a steady or rising connections workload over the price control period, however the economic downturn resulted in a significant reduction in the construction of new properties and the consequential reduction in connections workload.

[42] Consumers on interruptible contracts may be required to reduce or cease their gas consumption during periods of high gas demand, in return for a discount on their transportation charges. Interruption reform introduced new arrangements allowing GDNs to offer interruptible contracts solely in the locations and volumes required, via an auction process. Network reinforcement is necessary if a GDN is unable to secure sufficient interruptible capacity at an economic price relative to the cost of providing firm capacity.

1.10. Reasons given by GDNs for the significant reduction in workload include:

- the impact of the recession on the domestic property market and the collapse of the mortgage market leading to a significant reduction in the construction of new properties
- higher gas prices impacting on homeowners decision to convert to gas as a heating fuel

1.11. The industry underspent against allowances by 23 per cent, however mains workload was 66 per cent less than forecast and services connections by 55 per cent. This means unit costs were higher than forecasted.

1.12. The fuel poor network extension scheme was introduced in GDPCR1 to provide gas connections at a discounted price to vulnerable customers, helping to alleviate fuel poverty. More customers using natural gas will also mean lower greenhouse gas emissions so it also contributes towards sustainable development targets. A factsheet on the fuel poor scheme is available on our website.[43]

1.13. GDNs completed 44,000 fuel poor connections across the industry, representing 21 per cent of all new domestic connections. Over a quarter of these were undertaken in Scotland.

Mains reinforcement and governors

1.14. Mains reinforcement is required to ensure the provision of sufficient gas capacity in the mains network. New governors are sometimes required to support greater gas demand, the extension of the distribution network and for new connections.

1.15. Expenditure in GDPCR1 was comparable with allowances, however, the industry's mains reinforcement workload was only 59 per cent of the forecast level and governor workloads only 69 per cent due to the lower than expected growth in gas demand. We will monitor reinforcement expenditure in RIIO-GD1, however allowed expenditure is reduced over the GDPCR1 price control because of lower levels of forecast growth in gas demand over the period.

Other capex

1.16. Other capex comprises operational and non-operational capex. Operational capex includes:

- plant and equipment

[43] A factsheet on the fuel poor network extension scheme can be found on the Ofgem website at https://www.ofgem.gov.uk/publications-and-updates/what-fuel-poor-gas-network-extension-scheme

- land and buildings
- other operational capex.

1.17. Non-operational capex includes:

- system operations
- information systems (IS) infrastructure
- IS systems (excluding infrastructure)
- xoserve
- vehicles
- telecommunication systems
- security
- furniture and fittings
- tools and equipment
- other capex not classified elsewhere.

1.18. NGGD and SGN overspends in other capex meant the total industry overspend against allowances was 20 per cent.

1.19. NGGD used some cost savings resulting from reduced work volumes to finance its gas distribution front office (GDFO) system. NGGD's £223 million GDPCR1 total spend on its GDFO system was £130 million (140 per cent) higher than their initial £93 million project estimate. This project was not included in NGGD's forecasts when setting GDPCR1 allowances but is expected to provide a range of cost efficiencies in RIIO-GD1.

1.20. NGGD's other capex overspend was also attributed to a higher than anticipated investment in plant and machinery, this includes physical site security work.

1.21. SGN also invested operational capex in information system upgrades contributing to an overspend against allowances. SGN also cites higher spend on lands & buildings investment in operational depot properties to allow continuation of localised response as an additional cause.

1.22. NGN's and WWU's other capex underspend was driven mainly by lower expenditure on plant and equipment, information systems and vehicles. NGN reported that it had reviewed its information system development plan in order to deliver rationalised and more economic solutions.

Appendix 7 – Replacement expenditure

1.1. Table A7.1 shows the allowed and actual replacement expenditure by cost category and GDN, making up the £27 million overspend against the original allowance.

Table A7.1: Replacement expenditure by cost category and GDN

GDN	GDPCR1 repex allowances £m					GDPCR1 repex actuals £m					GDPCR1 repex over (under) spend	
	Mains	Incentivised services	Non incentivised services	Other repex	Total repex	Mains	Incentivised services	Non incentivised services	Other repex	Total repex	£m	%
EoE	481.5	145.1	32.7	12.4	**671.7**	454.8	178.2	37.9	8.9	**679.9**	8.2	1%
Lon	465.1	86.3	26.9	37.8	**616.1**	428.8	116.0	64.7	59.1	**668.6**	52.5	9%
NW	480.5	112.9	30.0	9.9	**633.3**	451.9	116.1	40.3	0.1	**608.5**	(24.8)	-4%
WM	313.4	84.5	21.9	6.9	**426.7**	323.0	105.3	25.9	4.1	**458.3**	31.6	7%
NGN	318.2	116.6	45.4	52.4	**532.6**	306.2	113.7	43.4	6.7	**469.9**	(62.7)	-12%
Sc	231.1	70.0	24.4	6.3	**331.8**	226.6	68.9	36.0	4.5	**336.0**	4.2	1%
So	603.9	203.4	88.4	48.0	**943.8**	597.6	211.6	103.2	64.5	**977.0**	33.2	4%
WWU	268.8	104.4	31.3	57.0	**461.5**	274.0	96.1	36.7	39.3	**446.1**	(15.4)	-3%
Industry	**3,162.5**	**923.2**	**301.0**	**230.8**	**4,617.5**	**3,062.9**	**1,006.0**	**388.2**	**187.3**	**4,644.3**	**26.8**	**0.6%**

Appendix 8 – GDPCR1 efficiency rankings

Table A8.1: Totex efficiency rankings

GDN	2008-09	2009-10	2010-11	2011-12	2012-13	Cumulative GDPCR1
EoE	4	3	4	5	7	**4**
Lon	7	7	7	8	8	**8**
NW	5	5	8	6	4	**6**
WM	2	4	3	4	3	**3**
NGN	1	1	1	1	1	**1**
SC	8	8	6	3	2	**5**
SO	6	6	5	7	5	**7**
WWU	3	2	2	2	6	**2**

Table A8.2: Opex efficiency rankings

GDN	2008-09	2009-10	2010-11	2011-12	2012-13	Cumulative GDPCR1
EoE	6	6	6	6	7	**6**
Lon	8	8	7	8	8	**8**
NW	7	7	8	7	6	**7**
WM	3	3	5	4	3	**5**
NGN	1	1	3	5	5	**2**
SC	4	5	4	1	1	**4**
SO	5	4	2	2	2	**3**
WWU	2	2	1	3	4	**1**

Table A8.3: Capex efficiency rankings

GDN	2008-09	2009-10	2010-11	2011-12	2012-13	Cumulative GDPCR1
EoE	1	2	2	3	3	**2**
Lon	5	6	7	7	8	**6**
NW	3	3	4	4	4	**4**
WM	2	1	1	1	1	**1**
NGN	4	4	3	2	2	**3**
SC	8	8	8	8	6	**8**
SO	6	5	5	5	5	**5**
WWU	7	7	6	6	7	**7**

Table A8.4: Repex efficiency rankings

GDN	2008-09	2009-10	2010-11	2011-12	2012-13	Cumulative GDPCR1
EoE	4	4	4	6	7	**5**
Lon	6	3	5	4	2	**3**
NW	5	5	6	5	4	**4**
WM	2	7	8	8	8	**8**
NGN	1	1	1	1	1	**1**
SC	7	8	3	2	3	**6**
SO	8	6	7	7	6	**7**
WWU	3	2	2	3	5	**2**

Appendix 9 – Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments

Please send your comments to:

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