Promoting choice and value
for all gas and electricity customers

RIIO-GD1: Final Proposals - Finance and uncertainty supporting document

Finance and uncertainty supporting document

Reference:

Publication date: 17 December 2012

Contact: Peter Trafford, Head of Regulatory Finance
Team: RIIO-GD1

Tel: 020 7901 0510

Email: peter.trafford@ofgem.gov.uk

Overview:

This Supporting Document sets out further detail on the financial and uncertainty aspects of our Final Proposals for the gas distribution price controls from 1 April 2013 to 31 March 2021.

The document is aimed at those seeking a detailed understanding of these financial aspects. Stakeholders wanting a more accessible overview should refer to the RIIO- GD1 Overview document.

Associated documents

RIIO-GD1: Final Proposals – Overview

Supporting Documents

RIIO-GD1: Final Proposals Supporting Document – Outputs, incentives and innovation

RIIO-GD1: Final Proposals Supporting Document – Cost efficiency

Associated Documents

RIIO-GD1: Final Proposals Financial Model

RIIO-GD1: Final Proposals – Real price effects and ongoing efficiency appendix

Consultants report: PKF Audit letter on the financial models

Consultants report: RIIO Reviews Financeability Study (Imrecon working with ECA)

Other documents

RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas – Overview

RIIOT1: Final Proposals for NGET and NGGT - Finance

RIIOT1 Final Proposals Cost & Uncertainty

RIIO-GD1: Initial Proposals

RIIO GD1 Initial Proposals Supporting Document Finance and Uncertainty

Decision on strategy for the next gas distribution price control – RIIO-GD1

Handbook for implementing the RIIO model - Ofgem, October 2010

Pension Deficit Allocation Methodology

Glossary for all the RIIO-T1 and RIIO-GD1 documents

Contents

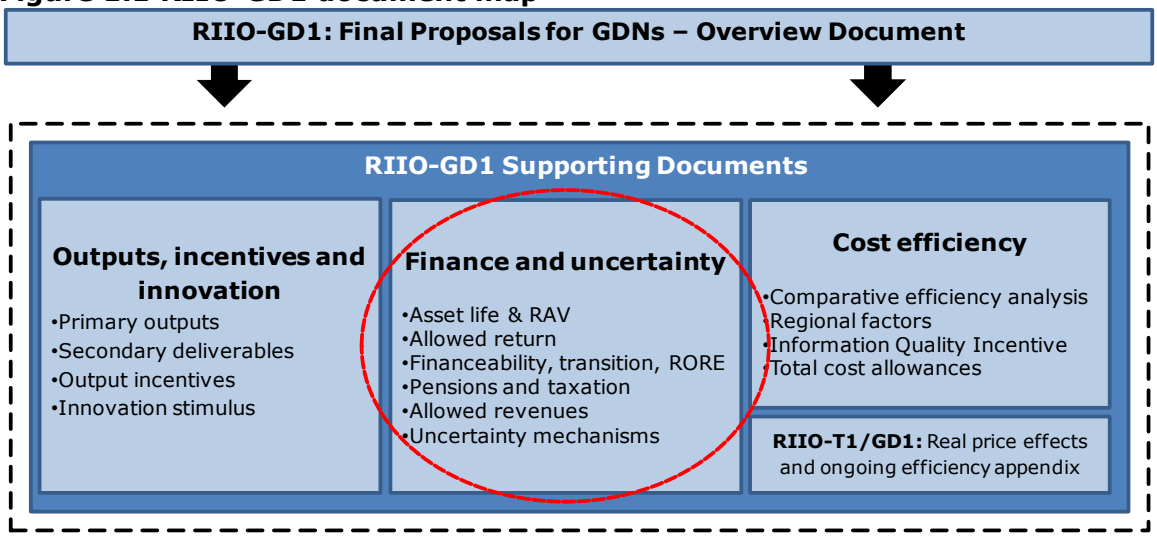
1. Introduction

Chapter Summary

This chapter explains the structure and purpose of this document.

1.1. Figure 1.1 below provides a map of the RIIO-GD1 documents published as part of the suite of consultation documents.

Figure 1.1 RIIO-GD1 document map



1.2. This document sets out further detail on our Final Proposals for gas distribution network companies (GDNs) for the next price control, RIIO-GD1. This price control will cover the eight-year period from 1 April 2013 to 31 March 2021.

1.3. The document sets out detail on each of the key financial elements of the price control packages for GDNs. It is aimed at network companies, investors and those who require a more in-depth understanding of the proposals.

1.4. As noted in the Overview document these Final Proposals build on the regulatory framework for RIIO-GD1 set out in our March Strategy document[1] and applied in the Initial Proposals Document[2].

[1] Decision on strategy for the next distribution price control - RIIO-GD1
RIIO GD1 decision
[2] RIIO-GD1: Initial Proposals – Supporting document – Finance and uncertainty:
RIIO GD1 Finance Initial proposals Supporting Document Finance and Uncertainty

1.5. The remaining chapters provide further detail on the individual financial elements of the price control package for both companies. The document is structured as follows:

- Chapter 2 outlines our approach to asset lives and gives provisional RAV values through RIIO-GD1.
- Chapter 3 outlines our assessment of the allowed return.
- Chapter 4 sets out our views on financeability; transition arrangements; and our assessment of the return on regulatory equity (RoRE).
- Chapter 5 details our approach to pensions.
- Chapter 6 outlines the basis of the tax allowances for both companies.
- Chapter 7 sets out the introduction under RIIO of the annual iteration process that we will use to update GDNs' revenues in RIIO-GD1.

2. Asset lives and Regulatory Asset Values

Chapter Summary

This chapter sets out our Final Proposals for asset lives, depreciation, totex capitalisation and the forecast movements on RAV during RIIO as a result of applying these proposals.

Summary of Final Proposals

2.1. One of the principles of RIIO is to put in place sustainable financial policies to encourage investment. A key policy in this respect is the use of economic asset lives. In our March Strategy Document and in Initial Proposals, we set out the asset lives and depreciation profiles we proposed to apply for RIIO-GD1. GDNs adopted these in their business plans and we confirm these values in these Final Proposals which are shown in Table 2.1 below. It summarises our decision on repex capitalisation transition rates which are the same as used in Initial Proposals.

Table 2.1 Asset lives, depreciation, and repex capitalisation transition rates

Asset lives and depreciation		
RAV pool	**Asset lives**	**Depreciation profile**
Pre 2002 RAV additions	56 years	sum of digits
Post 2002 RAV addition	45 years	sum of digits
Repex capitalisation transition rates		
Initial and Final Proposals		Stepped from 50% in 2013-14 to 100% in 2020-21 in 7 equal instalments of 7.14% per annum

2.2. The remainder of this chapter provides a summary of our Initial Proposals and respondents' views and provides the rationale for our decisions.

Asset lives and depreciation profiles

2.3. In our Initial Proposals, we set out the decision from our March Strategy paper on asset lives and depreciation profiles. We also summarised the background to these decisions. We did not specifically seek views on these decisions in our Initial Proposals.

2.4. In overview, these decisions were to leave the average economic asset lives unchanged at 45 years. In arriving at this decision we noted that there was sufficient uncertainty surrounding the future use of the gas distribution networks that this decision should be reviewed again for RIIO-GD2. We also decided to use a front loaded depreciation profile for post 2002 assets to decrease the risk of increasing customer charges (on a per unit basis) should lower utilisation of the network

transpire under the various scenarios of the future use of the gas distribution network.

2.5. We re-affirm these decisions as part of our Final Proposals.

Profile for the release of backlog depreciation

Summary of Initial Proposals

2.6. A consequence of our decision to apply a front loaded profile to all post 2002 assets, using a 45 year sum of digits approach, is that an amount of catch up, or 'backlog', depreciation is created, ie depreciation which should have been charged into revenue for the period between 2002 and 2013.

2.7. In our Initial Proposals, we set out our approach to the release of the backlog depreciation. That approach was to use a release profile that would help reduce charging volatility. Where possible we used a flat release (as in the case of Wales & West) and where more appropriate we used a generic sculpted profile. We also considered that we may need to amend these profiles in light of any changes to revenues in our Final Proposals.

Summary of consultation responses

2.8. Respondents were in agreement with the principle of smoothing revenue to reduce volatility through RIIO-GD1 and broadly in support of the use of a sculpted profile for the release of backlog depreciation.

2.9. However, there were also a number of specific concerns raised. These concerns were over the flexibility of using this approach, the use of a generic profile rather than operator specific profiles and whether revenues should be profiled before or after certain items. On this latter point, there were comments from a number of the network respondents that the use of the backlog depreciation for revenue profiling should be carried out on base revenues before the impact of the adoption of International Financial Reporting Standards (IFRS) – in effect leaving the change to IFRS as a one-off impact on revenues rather than smoothing out its impact.

2.10. One respondent commented that using a profile that was fixed at Final Proposals would not take into account any changes resulting from additional allowances under uncertainty mechanisms or the Totex Incentive Mechanism.

Our decision

2.11. Respondents suggested that we should smooth revenues before the impact of the change to IFRS. However, our key concern is to smooth the revenues that consumers face through charging and therefore we believe it is right that we smooth revenues after this impact is taken into account. Our decision, therefore, is to use

the profiles shown in Table 2.2 for the release of backlog depreciation. This is unchanged from Initial Proposals.

Table 2.2 Backlog depreciation profile used in our Final Proposals

Year ended 31 March	2014	2015	2016	2017	2018	2019	2020	2021
NGGD, NGN, SGN	15.0%	15.0%	2.5%	0.0%	5.0%	12.5%	20.0%	30.0%
WWU	12.15% per annum							

Transition of the repex capitalisation rate

Summary of Initial Proposals

2.12. In our March Strategy Document, we set out our intention to change the capitalisation rate for repex from 50 per cent to 100 per cent at the start of RIIO-GD1. We also proposed that GDNs could use transitional arrangements for the repex capitalisation rate if needed for financeability reasons.

2.13. All the GDNs used transitional repex capitalisation arrangements within their April business plan submissions. As a result of our financeability assessment in our Initial Proposals, we concluded that it was appropriate to use a stepped approach to capitalisation rates, which was summarised in Table 2.3 of our Initial Proposals. Our stepped approach starts at 50 per cent in 2013-14 and uses seven annual steps of 7.14 per cent to get to 100 per cent in 2020-21.

Table 2.3 Summary of repex capitalisation rates

GDN	GDNs' April busines plan	Ofgem Proposals
NGGD	Flat 75%	Stepped 50% to 100% (7.14% pa)
NGN	Variable between 77% and 83%	
Sc	Flat 85%	
So	Flat 75%	
WWU	Stepped 56.25% to 100%	

Calculation of the totex capitalisation rate

2.14. In our March Strategy Document, we stated our intention to use an average totex capitalisation rate to smooth out any timing differences that might arise on forecast totex spend. This was on the basis of a flat repex transitional rate and would have been calculated as (average repex plus average capex) divided by average totex. This would have resulted in the same rate being used for each year of RIIO-GD1.

2.15. In Initial Proposals, we set out a revised calculation of the totex capitalisation rate to take account of a stepped repex transition rate. Our proposal was to calculate the totex capitalisation rates for each year as the capitalised repex (repex spend at the transitional repex rate) plus average capex divided by the smoothed totex (repex plus average capex plus average opex) for that year. The result is an increasing totex capitalisation rate during the RIIO period reflecting the stepped repex

transition. This was illustrated in Table 2.4 of our Initial Proposals Finance and Uncertainty supporting document.

2.16. Once the repex transition period is complete, the totex capitalisation rate would be calculated as the ratio of repex plus capex to totex (the 'natural' or underlying totex capitalisation rate).

Summary of consultation responses

2.17. The majority of responses from network companies agreed that it was more appropriate to use our approach of a stepped transition for the repex capitalisation rate. One network respondent believed a flat transition approach was appropriate. Another respondent suggested that a shorter four year period of transition would be consistent with maintaining financeability for most networks and suggested that a transition over eight years would be appropriate for one GDN only. This respondent also suggested that the first transition step should be in 2013/14 – in other words using eight steps rather than delaying the transition and applying over seven steps.

Our decision

2.18. Following our assessment of financeability, as set out in Chapter 3, we have concluded that a stepped approach to transition is still appropriate and will remain as seven steps through the RIIO period as set out in Initial Proposals and in Table 2.4.

Calculation of the totex capitalisation rate

2.19. The approach of using a blended totex capitalisation rate (with opex and capex averaged and repex in a stepped transition), as set out in our Initial Proposals gives rise to the situation that the amount of repex capitalised in any one year is a function not just of the repex spend but also the respective opex and capex allowances for that year. We have therefore decided to refine the totex capitalisation rate calculation further so as to expose the actual repex spend directly to the transitional repex capitalisation rate. Opex and capex expenditure will be capitalised at the average capitalisation rate for the combined opex and capex allowances, which is more in line with the concept set out in our March Strategy document.

2.20. Once repex has transitioned to a full capitalisation position there will no longer be a need for the transitional approach to totex capitalisation.

2.21. This transitional approach to the totex capitalisation calculation has been raised and discussed with the GDNs in a working group forum. The change to the totex capitalisation calculations has the effect of reducing cash flows marginally during RIIO-GD1, though the impact on base revenues over the eight years is not material.

2.22. However, GDNs have raised financeability concerns over this approach which exposes repex directly to the repex transitional rate. Their concerns are mainly related to the level of additional spend that may be incurred under uncertainty mechanisms on, for example, street works (which is forecast to comprise a large

proportion of repex) and also the Mains & Services Replacement Expenditure uncertainty mechanism (which is 100 per cent repex). They expect that this expenditure is likely to be incurred in the last four years of the RIIO-GD1 period when repex capitalisation rates are between 75 per cent and 100 per cent.

2.23. In our base case and in our scenario testing as part of our financeability assessment of GDNs, we have used the direct repex capitalisation calculation to derive the totex to be capitalised. The scenarios we have tested use the mid-point estimates from GDNs of spend under the uncertainty mechanisms.

2.24. Having completed our financeability assessment, we conclude that GDNs are financeable using this refinement of our approach to totex capitalisation and we have therefore decided to use this approach. The resulting rates are shown in Table 2.4.

Table 2.4 Summary of totex capitalisation rates

GDN	Non-Repex rate	Transitional Repex rate
EoE	26.6%	Stepped from 50% in 2013-14 to 100% in 2020-21 in 7 equal instalments of 7.14% per annum
Lon	23.5%	
NW	26.1%	
WM	24.9%	
NGN	35.0%	
Sc	35.1%	
So	32.2%	
WWU	35.8%	

RAV balances

2.25. The detailed calculations for RAV during the RIIO-GD1 period are set out in the Final Proposals model. Our RAV methodology is set out in Appendix 6 which also sets our approach to other movements in RAV during the RIIO-GD1 period. Table 2.5 shows projected closing RAV balances by GDN at Final Proposals.

Table 2.5 Projected closing RAV balances during RIIO

Provisional Closing RAV for year ending 31 March (09/10 prices - £m)	2013	2014	2015	2016	2017	2018	2019	2020	2021
Industry	**14,571**	**14,594**	**14,611**	**14,724**	**14,885**	**15,066**	**15,240**	**15,403**	**15,545**
NGGD (total)	**7,243**	**7,244**	**7,227**	**7,264**	**7,321**	**7,393**	**7,462**	**7,528**	**7,585**
EoE	2,535	2,523	2,501	2,495	2,497	2,500	2,501	2,497	2,492
Lon	1,644	1,660	1,678	1,713	1,747	1,793	1,842	1,893	1,946
NW	1,743	1,747	1,738	1,741	1,753	1,764	1,772	1,780	1,782
WM	1,321	1,314	1,310	1,315	1,324	1,336	1,347	1,358	1,365
NGN	**1,577**	**1,584**	**1,598**	**1,624**	**1,655**	**1,682**	**1,707**	**1,732**	**1,753**
Scotia GN (total)	**4,141**	**4,148**	**4,155**	**4,193**	**4,252**	**4,314**	**4,372**	**4,419**	**4,455**
Sc	1,277	1,282	1,287	1,300	1,320	1,340	1,357	1,368	1,375
So	2,863	2,865	2,869	2,893	2,932	2,974	3,015	3,051	3,080
WWU	**1,610**	**1,619**	**1,630**	**1,644**	**1,658**	**1,677**	**1,699**	**1,725**	**1,752**

3. Allowed return

Chapter Summary

This chapter sets out our Final Proposals for the components of the allowed return – notional gearing, the cost of equity and the cost of debt. We explain the rationale for our proposals and address issues raised in stakeholders' responses to our Initial Proposals.

Summary of Final Proposals

3.1. This chapter outlines our Final Proposals for the components of the allowed return for the eight GDNs and the implied 'vanilla' weighted average cost of capital (WACC).[3] These are summarised in Table 3.1. The proposals reflect our view that the GDNs face notably less cash flow risk than the transmission companies will face over the same period under their price control (RIIO-T1).[4] We have also taken into account evidence from the capital asset pricing model (CAPM), regulatory precedents, evidence from transactions and our return on regulatory equity (RoRE) analysis. The sections that follow describe the rationale for these proposals.

Table 3.1 Summary of allowed return proposals

	RIIO-GD1
Cost of equity (post-tax real)	6.7%
Cost of debt (pre-tax real)	iBoxx 10-year simple trailing average index (2.92% for 2013-14)*
Notional gearing	65%
Implied vanilla WACC*	4.2%

* The value of the cost of debt index may vary during the price control period. Any changes would be reflected in the WACC.

3.2. This chapter is split into three sections:

- assessment of relative risk, leading to our proposals for notional gearing and the cost of equity
- approach to the cost of debt
- modelling assumptions about financial policies.

[3] The 'vanilla' WACC consists of pre-tax cost of debt and post-tax cost of equity, weighted by a notional gearing (ie the relative share of debt) assumption.
[4] For more detail on the financial package of the transmission network companies and our assessment of their relative risk see RIIO-T1: Final Proposals for National Grid Electricity Transmission plc and National Grid Gas plc, Finance Supporting document
RIIO-T1: Final Proposals for NGET and NGGT – Finance

3.3. For each of these, we begin by summarising our Initial Proposals, and then provide an overview of stakeholders' responses to our proposals. We then set out our Final Proposals in each of these areas.

3.4. Alongside this paper we are publishing a report by our consultants Imrecon (working with Economic Consulting Associates).[5] The paper outlines an approach to assessing relative risk, as well as considering the financeability of network companies (this is discussed further in Chapter 4). Since the approach used in the paper has not been previously consulted on, we consider it a useful additional piece of information, but do not base our relative risk views on the findings of the paper.

Relative risk

Summary of Initial Proposals

3.5. Our assessment in the RIIO-GD1 Initial Proposals was that the GDNs face similar cash flow risk to each other; that they face lower risk than in GDPCR1 or any of the gas and electricity RIIO transmission companies; and that their risk level is similar or somewhat lower than in DPCR5. We, therefore, proposed to set notional gearing for RIIO-GD1 at 65 per cent, and the cost of equity assumption at 6.7 per cent.

Summary of consultation responses

3.6. The GDNs commented on our relative risk assessment, and subsequently, our notional gearing and cost of equity assumptions, in their submissions. They also submitted supporting material by Oxera. The arguments differ slightly in their scope between the individual GDNs and can be found in their responses published on our website.[6]

3.7. The key arguments by the GDNs and their consultants are that:

- The implied asset beta from our Initial Proposals is disproportionately lower than GDPCR1 and from that of the fast-tracked transmission companies (SHETPLC and SPTL).
- Our analysis attributes too much weight to the ratio of capex to RAV[7] and not enough to other metrics, such as the ratio of opex to RAV.
- The totex incentive rate in RIIO-GD1 exposes the GDNs to a larger share of overspend in capex and repex than was the case in GDPCR1.
- Longer duration of cash flows in gas distribution increase risk relative to electricity transmission and distribution.
- Longer price control periods increase risk for the GDNs.

[5] RIIO reviews financeability study – report by Imrecon
RIIO Reviews Financeability Study (Imrecon working with ECA)
[6] See responses to RIIO-GD1: Initial Proposals
Initial Proposals - Overview
[7] For the purpose of this ratio we considered repex as 100 per cent capex.

3.8. The GDNs and their consultants, therefore, disagreed with our notional gearing proposal of 65 per cent, and with the equity beta used to derive our cost of equity assumption. However, they broadly supported the risk-free rate and equity risk premium figures used to derive our cost of equity assumption.

3.9. In contrast, one supplier supported our relative risk assessment, but considered that our estimates of the risk-free rate and equity risk premium were relatively high. The supplier supported a cost of equity assumption of 6.5 per cent.

Our approach to relative risk assessment

3.10. One of the key principles introduced as part of the RIIO approach is that the (base) allowed return for network companies should reflect their exposure to cash flow risk. This principle means that, where there are material differences in cash flow risk, the allowed return may be different across and within sectors. In this section we present our assessment of the GDNs' cash flow risk, which in turn informs our assumptions on notional gearing and the cost of equity for RIIO-GD1. The third component of the allowed return – the cost of debt assumption – will be set annually based on a trailing average index, as discussed later in the chapter.

3.11. It is important to note at the outset that cash flow risk is just one aspect of relative risk. When comparing risk across industries or countries, other factors would also need to be accounted for. That wider risk assessment was carried out during the strategy phase of the price control review, and informed cost of equity range in the strategy decision paper (6.0–7.2 per cent).

3.12. This section sets out our in-depth cash flow risk assessment of the GDNs in RIIO-GD1 relative to the existing price controls (GDPCR1, DPCR5 and TPCR4[8]), as well as comparing the sectors under review at this time (gas distribution, electricity transmission and gas transmission) to each other. Additionally, we compare the eight GDNs to each other. Our approach, therefore, also takes into account stakeholders' preference for consistent regulatory determinations.

3.13. In our view, when comparing network companies within similar sectors, the cash flow risk can be assessed by considering the balance of rewards, incentives and uncertainty mechanisms that the regulatory framework provides. Our assessment covers the array of factors that potentially influence cash flow risk. However, we consider that the main factor is the way the regulatory framework interacts with the company's expenditure. This manifests itself in two key ways: the scale of allowed investment during the price control period, and the extent to which the company is exposed to cash flow implications of actual expenditure differing from the allowance. The former is captured by our analysis of the ratio of capex to RAV, while the latter depends on the incentive rate that we apply to deviations in totex from our allowance and the various uncertainty mechanisms.

[8] For the purposes of this analysis we do not include the TPCR4 Rollover, as the decision on the allowed return for the Rollover was not informed by detailed risk analysis.

3.14. We regard the scale of investment as the most significant differentiator of risk affecting both the asset beta (and, therefore, the cost of equity) and the appropriate level of notional gearing. The incentive rate does not, we consider, have a material impact on the asset beta but will influence the appropriate level of notional gearing and, therefore, the weighted average cost of capital.

3.15. We consider that two factors raised in consultation – the duration of cash flows and the impact of longer price control periods – have been addressed fully in our previous publications. Following analysis by both CEPA and Europe Economics, our Strategy Decision paper set out that we do not consider the duration of cash flows to be a material factor in setting the appropriate allowed return for RIIO-T1 and GD1. Our Initial Proposals argued that, overall, longer price control periods can be expected to have a neutral impact on cash flow risk. We, therefore, do not reconsider these factors in detail again here.

3.16. In the remainder of this section we update our assessment of the scale of investment and the incentive rate to any changes between Initial Proposals and Final Proposals. In light of the responses to our Initial Proposals, we supplement our relative risk assessment by modelling the probable range of expenditure around our allowance. We then bring the analysis together to arrive at an overall view on relative risk.

Scale of investment

3.17. The handbook for implementing the RIIO model[9] identified the size of a company's planned investment programme relative to its existing RAV as the key factor for potential differences in relative risk between companies. We consider the ratio of capex to RAV to be a better indicator of the riskiness of an investment programme than simply looking at absolute capex levels. This approach is also consistent with the considerations of the major credit rating agencies. Where this ratio is higher, we consider the company to be potentially exposed to higher cash flow risk, and vice versa.

3.18. A second consideration is how volume and unit cost risk are allocated within the investment programme. The structure of the RIIO price controls, particularly for transmission, allows for additional investment to be funded if a sufficient needs case is identified during the price control period. As such, these allowances, by virtue of being set near the time of investment, would typically expose the company to less risk than with 'base' totex allowances set at the start of the period. Allowances can be split into three stylised categories (although in practise the difference is less clear-cut with the level of actual risk being dependent upon specific regulatory arrangements):

- Base totex – both unit cost and volume allowances are set ex ante, which potentially exposes the network company to variations in both, particularly in the

[9] Handbook for implementing the RIIO model
Handbook for implementing the RIIO model

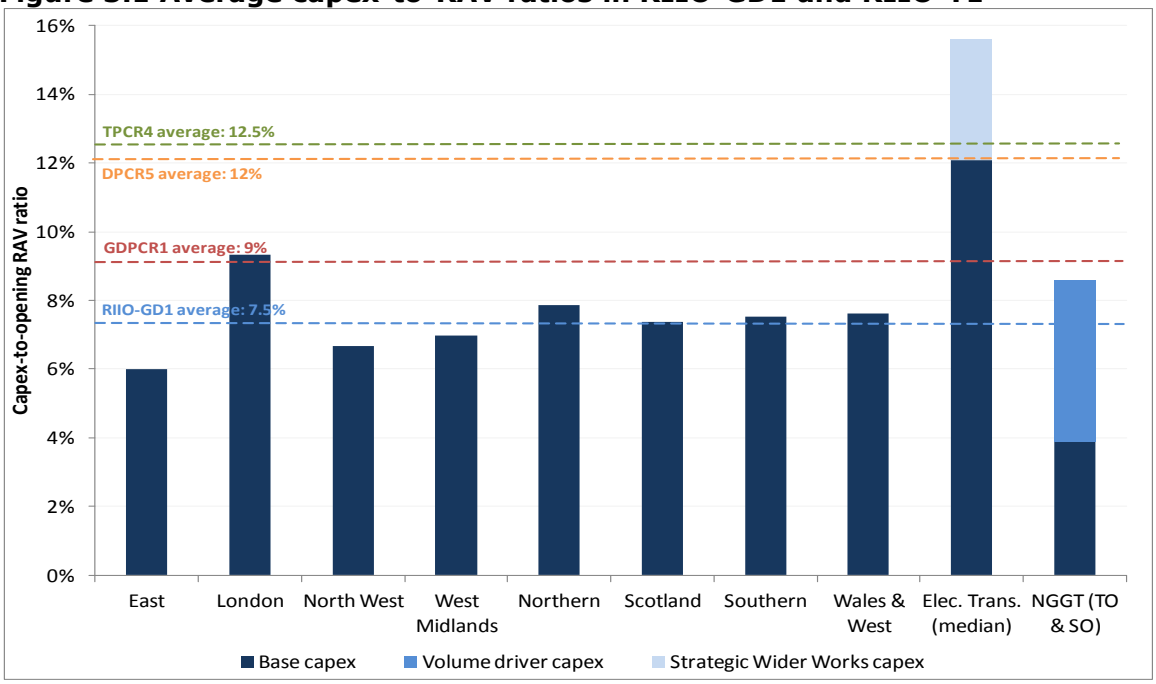
latter years of the price control period (although this depends on the regulatory arrangements and in many cases base totex has a degree of volume protection).

- Volume drivers – the unit cost allowances for these are set at the beginning of the price control period, with the amount of investment set when the needs case is identified.
- Within-period determinations – for these allowances (such as Strategic Wider Works in electricity transmission), both unit costs and volumes are set when the needs case is identified during the price control period. As such, they reduce forecasting risk for both unit costs and volumes.

3.19. All three types of allowances described above would be subject to the same incentive rate being applied to any over- or under-spend. Our relative risk modelling further assesses the potential variability around the three stylised totex categories.

3.20. Figure 3.1 updates our calculations of each GDN's average capex-to-RAV ratio for RIIO-GD1. We compare these to the corresponding ratios for gas transmission and electricity transmission (median) in RIIO-T1, and the average ratios in the current price controls. For transmission, we split each ratio into base, volume driver and Strategic Wider Works capex. These are based on the 'Best View' of investment that inform these Final Proposals.

Figure 3.1 Average capex-to-RAV ratios in RIIO-GD1 and RIIO-T1



Note: For consistency, we treat repex as 100 per cent capex in this chart.

3.21. The figure shows that the eight GDNs face a similar level of investment relative to RAV in RIIO-GD1. Although London is slightly above average and East of England is slightly below, we considered the difference was not significant enough to merit any change in financial parameters. GDNs' capex-to-RAV ratios are somewhat lower than for NGGT and GDPCR1, and substantially lower than for electricity transmission and DPCR5. From a scale of investment perspective, our updated assessment is

consistent with the conclusions of our Initial Proposals that the GDNs face a similar level of risk to each other, and lower risk than current and past comparators.

3.22. The exception is the London network, which has a slightly higher capex-to-RAV ratio than NGGT and similar to GDPCR1. However, NGGT's investment programme includes a number of isolated large projects, which exposes it to greater risk than the GDNs, whose investment programmes consistent of smaller projects.

3.23. Also worth noting is the argument in Imrecon's paper that, based on the reasonable assumption that construction costs are typically pro-cyclical, for allowances that are set at the beginning of the price control period, large capex programmes would tend to reduce the exposure to systematic risk. For within-period determinations, however, this relationship reverses and large capex programmes would tend to increase the exposure to systematic risk, since the allowances would reflect movements in project costs. This supports our above conclusion on the different risk exposures of the GDNs and electricity transmission companies.

Incentive rate

3.24. The incentive rate on totex determines each company's exposure to any over- or under-spend. The higher the incentive rate, the larger the share of any over- or underspend that is borne by the company and, therefore, the greater its exposure to cash flow risk. As highlighted by the return on regulatory equity (RoRE) analysis,[10] performance against the totex allowances has the largest impact on overall return on equity.

3.25. In GDPCR1 we had set separate incentive rates for capex and repex (33-36 per cent, depending on the company) and for opex (100 per cent). In order to compare the relative exposure to over- and under-spend between the two price control periods, we need to calculate the effective incentive rate in GDPCR1, by applying the above incentive rates to the proportions of allowed capex and opex, respectively. The results are summarised in Table 3.2 and are compared to the totex incentive rates in RIIO-GD1.

Table 3.2 Comparison of incentive rates in GDPCR1 and RIIO-GD1

(Allowances in £m in 2005-6 prices)	East	London	North West	West Midlands	Northern	Scotland	Southern	Wales and West
Allowed opex (incentive rate: 100%)	507	380	413	313	395	327	589	395
Allowed capex and repex (incentive rate: 33-36%)*	715	689	618	448	638	452	1,123	652
Effective incentive rate in GDPCR1	62.5%	58.8%	61.7%	62.3%	60.5%	61.1%	56.0%	58.3%
Incentive rate in RIIO-GD1	63.0%	63.0%	63.0%	63.0%	64.0%	63.7%	63.7%	63.2%

* The incentive rate is 36% for all GDNs except for Scotland, Southern, and Wales and West, for whom the incentive rate is 33%

3.26. The effective incentive rate is marginally higher for all GDNs, most notably for the London, Southern and Wales & West networks. It is worth noting, however, that

[10] See Figure 4.1

we are changing the application of the incentive rate from a pre-tax basis in GDPCR1 to a post-tax basis in RIIO-GD1. By providing a specific allowance for tax, the mechanism provides additional protection for the GDNs.

3.27. Overall, we consider that the incentive rate in RIIO-GD1 is likely to have a neutral impact on cash flow risk when compared to GDPCR1. The incentive rate is, however, higher than for the four transmission companies.

Monte Carlo modelling of relative risk

3.28. One of the GDNs' arguments against our relative risk assessment in the Initial Proposals was that it was not backed by detailed modelling. As our consultants FTI Consulting noted when reviewing the network companies' risk modelling,[11] the results of analysis based on Monte Carlo simulations[12] are sensitive to the inputs assumptions, and there are likely to be equally plausible sets of assumptions resulting in potentially widely different results. The risk is that apparently sophisticated modelling may present a spurious degree of accuracy and provide a false sense of confidence in the results. Therefore, we do not think that such modelling could be applied in a mechanistic way to translate changes in cash flow risk into changes in the allowed return, as was used by some network companies in their business plans.

3.29. We do, however, see some value in Monte Carlo simulations to assess the potential degree of variability around a limited and tightly-defined set of parameters. This type of analysis could be relevant in understanding the extent to which network companies' expenditure levels may diverge from our totex allowance, both in terms of expenditure under uncertainty mechanisms that is not captured in the Final Proposal allowances, and in the potential to over- or under-spend. Such analysis would represent an additional piece of information to balance when assessing the relative risk of different network companies.

3.30. We have used Monte Carlo simulations to estimate the totex variability for each GDN. We compare the GDNs to each other, as well as to the transmission companies. We would have liked to also compare RIIO-GD1 to GDPCR1, but doing this analysis on a consistent basis would have required us to model one five-year price control period and the first three years of a second period. We do not think that there is clear and objective way in which to model the impact of a price control review and, therefore, have restricted our analysis to a comparison across contemporaneous RIIO periods.

3.31. The output from the Monte Carlo modelling is a probability distribution of expenditure, which we compare to our Final Proposals allowance. Given the different

[11] Cost of capital study for RIIO –T1 and GD1 price controls – report by FTI Consulting
Cost of capital study for RIIO-T1 and GD1 price controls report by FT1 Consulting

[12] In a Monte Carlo simulation, input values are picked at random from a pre-defined probability distribution to produce a set out outputs. The simulation is typically performed a few thousand times in order to produce a probability distribution for the outputs.

sizes of companies both within and across sectors, we measure totex variability in percentage terms relative to the Final Proposals allowances.

3.32. In our analysis we ran four sets of simulations on the totex inputs into the Final Proposals financial model. The detailed assumptions for each simulation are described in Appendix 4. At a high level they can be described as follows:

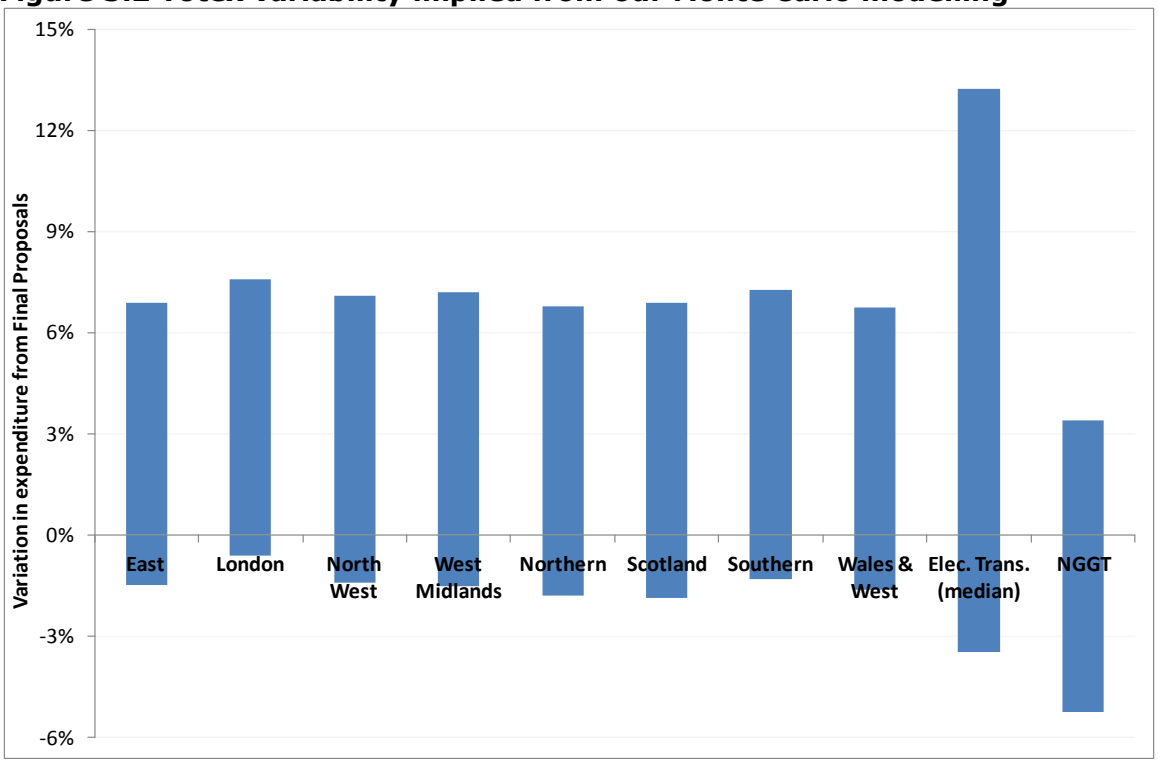
- Simulation 1 – a baseline assumption in which all cost categories are assumed to have a probability distribution of ±10 per cent around our allowance
- Simulation 2 – each cost category is set its own probability distribution, with capex categories typically set wider variance than opex categories
- Simulation 3 – as in Simulation 2, but with the introduction of 'price shocks'
- Simulation 4 – as in Simulation 3, but with the introduction of correlations between certain cost categories.

3.33. The results from Simulation 4 are presented in Figure 3.2. The results from the other simulations produce a very similar picture and are shown in Appendix4. It is worth stressing that for GDNs our Final Proposals allowances do not include estimates of expenditure under most uncertainty mechanisms.[13] In order to be able to create distributions for these uncertainty mechanisms we have had to make an assumption on a 'most likely' level of expenditure. The result is that Figure 3.2 shows a greater scope for actual expenditure to be above our Final Proposal allowances. This should not be interpreted as there being a greater likelihood of unfunded over-spend than under-spend, since the difference between the upside and downside relates to expenditure funded through the uncertainty mechanisms.

3.34. Our Monte Carlo modelling is consistent with our analysis of other cash flow risk factors – the GDNs face similar levels of totex variability to each other and less than the electricity transmission companies.

[13] This is not the case for transmission, where our 'best view' provides some assumption around uncertainty mechanism expenditure.

Figure 3.2 Totex variability implied from our Monte Carlo modelling



Summary of relative risk factors

3.35. We have focused on the key factors that influence cash flow risk above. As noted, there are several other factors that may affect risk to a lesser extent. We provide a brief overview of each in the Table 3.3, which brings together our views on relative risk for the GDNs. We do not consider our assessment to double-count factors.

3.36. To conclude, in this section we updated our relative risk assessment to reflect any changes between our Initial Proposals and Final Proposals. We further supplemented our assessment with Monte Carlo modelling of relative risk. Overall, our assessment supports the conclusions of our Initial Proposals that the GDNs face similar cash flow risk to each other; that they face lower risk than in GDPCR1 or any of the gas and electricity transmission companies and that their risk level is similar or somewhat lower than in DPCR5.

Table 3.3 Summary of relative risk assessment for RIIO-GD1

	The GDNs' risk relative to:			
	Electricity transmission	**NGGT**	**GDPCR1**	**DPCR5**
Scale of investment	See detail above. **Lower**	See detail above. **Similar**	See detail above. **Lower**	See detail above. **Lower**
Totex variability	See detail above. **Lower**	See detail above. **Higher**	Not directly comparable.	Not directly comparable.
Complexity of investment	GDNs' investment plan consists of predominantly small and medium projects. **Lower**	GDNs' investment plan consists of predominantly small and medium projects. **Lower**	Repex is the main driver of investment, so RIIO-GD1 plan is broadly a continuation of the GDPCR1 investment. **Similar**	Technical issues broadly comparable. **Similar**
Repex policy	Not applicable.	Not applicable.	Risk-based approach more consistent with GDNs' asset management approach. **Lower**	Not applicable.
Totex incentive rate	TOs' incentive rate ranges from 47-50%. **Higher**	NGGT's incentive rate is 44%. **Higher**	See detail above. **Similar**	DNOs' incentive rate ranges from 45-51%. **Higher**
Totex approach	Same approach used. **Similar**	Same approach used. **Similar**	Under totex approach, expenditure choice not driven by regulatory treatment. **Lower**	Same approach used, but broader definition of totex. **Lower**
Focus on outputs	Same approach used. **Similar**	Same approach used. **Similar**	Delivery options not driven by regulatory treatment. **Lower**	Same approach used. **Similar**
Uncertainty mechanisms	Not directly comparable.	Not directly comparable.	Additional mechanisms introduced in RIIO-GD1. **Lower**	Not directly comparable.
Incentives	TOs' incentives have a greater revenue impact relative to RAV. **Lower**	NGGT's incentives have a greater revenue impact relative to RAV. **Lower**	Additional incentives introduced in RIIO-GD1. **Higher**	Fewer incentives in DPCR5, but wider RoRE range. **Lower**
Pension costs	Same approach used. **Similar**	Same approach used but NGGT established deficit larger. **Lower**	Incremental deficit subject to totex incentive rate. **Higher**	Same approach used. **Similar**
Cost of debt approach	Same approach used. **Similar**	Same approach used. **Similar**	Annual update provides better match to notional company cost. **Lower**	Annual update provides better match to notional company cost. **Lower**
Length of price control	Eight-year price controls. **Similar**	Eight-year price controls. **Similar**	See detail above. **Similar**	See detail above. **Similar**
Timing of revenue adjustments	Same approach used. **Similar**	Same approach used. **Similar**	Changes reflected in allowances more quickly via annual iteration process. **Lower**	Changes reflected in allowances more quickly via annual iteration process. **Lower**
Overall	**Lower**	**Slightly lower**	**Lower**	**Similar or slightly lower**

Notional gearing

3.37. We reiterate our view from Initial Proposals that there is no simple rule by which differences in cash flow risk could be converted into different allowed return levels. Ultimately, there is a need to balance different pieces of evidence. In addition to considering cash flow risk, when determining the appropriate notional gearing level we also take into account:

- Financeability – both in terms of the gearing ratios that the major credit rating agencies consider are consistent with ratings in the BBB-A range, and in terms of the impact on other credit ratios.
- Return on regulatory equity (RoRE) range – in RIIO price controls our intention is that companies should be able to achieve an upside return on (notional) equity in the low double-digits, and be exposed to a downside return at or below the cost of debt. Since we calculate RoRE at the notional level, increasing notional gearing widens the RoRE range and vice versa. We use RoRE as a key sense-check on our financial parameters. If we selected the right levels of cost of equity and notional gearing for the cash flow risk of the businesses, we should find that the RoRE ranges are comparable (see Chapter 4).
- Regulatory precedent – this consideration takes account of the fact that stakeholders value consistent regulatory determinations.
- Network companies' actual gearing – this provides an indication of the proportion of debt that network companies have been able to carry while maintaining investment grade credit ratings.

3.38. We consider that our analysis above (and in Chapter 4) supports setting notional gearing at 65 per cent for all GDNs, as in Initial Proposals. Together with the rest of our Final Proposals, this results in achieving financeability parameters and RoRE ranges that are consistent with our targets. This level is also consistent with the range of determinations in our current price controls (60-65 per cent) and with recent regulatory precedents, as identified by FTI Consulting. Furthermore, this level is consistent with the gearing levels that we observe for the network companies that we regulate, as well as for comparators such as water companies.

Cost of equity

3.39. Our approach to determining the appropriate cost of equity assumption consists of two stages:

- using the Capital Asset Pricing Model (CAPM), taking into account the relative risk analysis
- sense-checking against alternative approaches, information from transactions and regulatory precedent.

3.40. We maintain our view from Initial Proposals that it is appropriate to rely on long-term estimates of the CAPM components to set the cost of equity assumption. This supports the assumption of 2.0 per cent risk-free rate and 5.25 per cent equity risk premium.

3.41. The work of our consultants during this project – Europe Economics in the strategy phase[14] and FTI Consulting for Initial Proposals – as well as more recently by Imrecon, provides clear evidence that the equity beta for a regulated network company is likely to be materially below one. Based on our relative risk assessment, we continue to consider that an equity beta of 0.9 is appropriate for RIIO-GD1 and can be considered conservative. Therefore, we retain the cost of equity assumption in our Initial Proposals of 6.7 per cent. Table 3.4 shows our Final Proposals for the cost of equity in terms of the CAPM components. We note, however, that it is the overall allowed return that matters.

Table 3.4 Cost of equity assumptions for RIIO-GD1

	RIIO-GD1	Strategy Document range	GDPCR1
Risk-free rate	2.0%	1.7-2.0%	2.5%
Equity risk premium	5.25%	4.75-5.5%	4.75%
Equity beta	0.9	0.9-0.95	1.0
Cost of equity	**6.7%**	**6.0-7.2%**	**7.25%**

3.42. Furthermore, Imrecon's analysis provides evidence that investors may not be fully pricing in the support provided to the network companies by the regulatory framework. Our approach has been pragmatic, and we consider that our proposals strike an appropriate balance between different types of evidence regarding the allowed return.

3.43. We note that, since Initial Proposals, Wales & West been acquired by a consortium led by CKI. The purchase by CKI would have taken the Initial Proposals into account, including our proposed financial package. The transaction was at a premium to RAV, estimated at between 9 and 40 per cent, depending on how different analysts valued the company's index-linked swaps. The premium to RAV provides some support to our view that the Initial Proposals financial package was reasonable.

3.44. Taken together, the allowed return proposals for RIIO-GD1 of 6.7 per cent cost of equity and 65 per cent notional gearing reflect our assessment that GDNs face lower cash flow risk than the gas and electricity transmission companies, and lower cash flow risk than in GDPCR1. They reflect the fact that we assess the cash flow risk faced by GDNs to be similar or slightly lower than in DPCR5.

[14] The Weighted Average Cost of Capital for Ofgem's Future Price Control (March 2011 update) – Report by Europe Economics

Cost of debt

Summary of Initial Proposals

3.45. Our Initial Proposals were to update annually the cost of debt estimate based on a simple 10-year trailing average of two iBoxx indices for sterling-denominated corporate bonds, deflated by breakeven inflation, with no further adjustments to the index. We did, however, propose to make a minor technical change to the way the index is calculated by deriving the breakeven inflation estimate from nominal and real gilt yields published by the Bank of England, rather than using the Bank's own breakeven inflation forecasts.

Summary of consultation responses

3.46. The GDNs commented on our proposed approach in their submissions and submitted supporting material by Oxera. The GDNs and Oxera argued that the proposed approach increases risk in RIIO-GD1 relative to a fixed cost of debt approach, owing to GDNs' relatively low RAV growth expected in the period, and the limited need for refinancing.

3.47. All GDNs, as well as Oxera and the DNOs that responded to the consultation, have argued that the index should be adjusted to reflect the risk differential between the indexed approach and a fixed allowance. They have also argued that the index should be uplifted for additional costs, such as issuance fees and the inflation risk premium.

3.48. The GDNs were split on whether embedded debt costs should be addressed through an additional adjustment to the index. Wales and West continued to advocate a cap and collar mechanism, set around the GDPCR1 allowance of 3.55 per cent. We remain unclear as to why this level is considered the appropriate baseline, given that it included "headroom" (ie an insurance premium for setting a fixed allowance), and the fact that market debt costs have exhibited a notable downward trend since GDPCR1 came into effect.

3.49. In contrast, one supplier supported our proposed approach. The supplier argued that there was clear evidence that the index provides a sufficient allowance for efficiently financed GDNs.

Conclusions on cost of debt

3.50. Our Final Proposals are to retain our approach of annually updating the cost of debt estimate based on the simple 10-year trailing average of the iBoxx indices, with no adjustments to the index. We do not consider that the consultation responses provided new arguments or materially change our assessment.

3.51. We also retain our view that there are characteristics of network companies and the regulatory regime within which they operate that have allowed them to raise

debt more cheaply than other companies of similar credit ratings (ie to outperform the Cost of Debt Index), and that this trend should continue going forward. We are confident that the proposed approach would cover efficiently incurred debt costs and, hence, we do not propose to accept Wales and West's cap and floor or any other uncertainty mechanism. The limited number of new bonds issued since Initial Proposals do not change our view that the margin provided by the index above network companies' new bonds would cover costs not directly captured in the index (eg issuance and liquidity fees).

3.52. In accordance with our stated intention, we have updated the cost of debt assumption to reflect the value of the 10-year trailing average index at the end of October 2012. The value to be applied to the allowed return calculation in 2013-14 (ie the first year of RIIO-GD1) is 2.92 per cent. We will update this annually as at the last working day in October for the following price control year, with allowed revenues adjusted through the annual iteration process (see Chapter 7).

Financial policies

Summary of Initial Proposals

3.53. Our Initial Proposals set a threshold of five per cent above notional gearing (ie 70 per cent) as the trigger point for our financial model to assume that a GDN issues notional new equity. Our Initial Proposals, therefore, resulted in no notional new equity being issued by any of the GDNs.

3.54. Our Initial Proposals also included a modelling assumption that each GDN pays out an annual dividend equal to five per cent of its notional regulated equity. Further, our modelling assumed that 25 per cent of the GDNs' debt is index-linked.

Summary of consultation responses

3.55. Consultation responses did not comment specifically on the financial policies that were used in modelling our Initial Proposals. One GDN group, however, noted the different treatment by rating agencies of index-linked debt accretions in the calculation of credit ratios. The GDN group sought clarity on which approach was used by Ofgem to assess financeability.

Allowance for the cost of issuing notional new equity

3.56. Based on our Final Proposals, the GDNs are expected to exhibit relatively stable RAVs during RIIO-GD1. We, therefore, retain our modelling assumption in which an injection of notional equity is assumed if modelled gearing exceeds a threshold of five per cent above notional gearing (ie 70 per cent). Our proposals result in no notional new equity being issued by any of the GDNs.

Notional dividend modelling assumption

3.57. We retain our assumption of a five per cent dividend payout rate (of regulatory equity). This assumption is for the notional company and should not be considered to represent our view on the payout rate that network companies should adopt.

Index-linked debt modelling assumption

3.58. We retain our assumption that 25 per cent of each network company's debt is index-linked. This assumption is consistent with the extent to which we observe network companies relying on index-linked debt to fund their activities, as shown in Table 3.5. The table shows the proportion of index-linked debt in network companies' overall debt as per the latest regulatory reporting packs, pertaining to regulatory year 2011-12.

Table 3.5 Network companies' index-linked debt share

Values for 2011-12	Proportion of licencee debt that is index-linked
Transmission*	38.6%
Gas Distribution*	28.5%
Total	**33.0%**

* NGG's share apportioned to transmission and gas distribution based on relative shares of closing RAV for 2012-13

3.59. The modelling assumption regarding index-linked debt does not affect the allowed revenue for the companies, but does impact some of the ratios used in our financeability assessment (owing to the way credit rating agencies treat the inflation accretion on index-linked debt). This is discussed further in Chapter 4.

4. Financeability, transition and return on regulatory equity

Chapter Summary

This chapter summarises our financeability assessment of the GDNs. It outlines the transitional arrangements on repex capitalisation, which we consider are appropriate to achieve financeability. The chapter also provides an overview of the range of return on regulatory equity (RoRE) that we estimate to be available to the notional companies as a result of these proposals.

Financeability

Summary of Initial Proposals

4.1. In Initial Proposals, we assessed the GDNs to meet our financeability criteria under both the allowed expenditure levels and a range of stress-tests. Aiding our judgement on financeability were our proposals to apply a fixed capitalisation rate across RIIO-GD1 for totex excluding repex, and to overlay them with a stepped transition for repex capitalisation. The proposed transition was from 50 per cent repex capitalisation in 2013-14 to 100 per cent in 2020-21, in equal incremental steps.

Summary of consultation responses

4.2. With the exception of one group, the GDNs supported our proposal to apply stepped transition to repex capitalisation. However, SGN argued for a constant capitalisation rate, predominantly due to revenue profiling concerns. In contrast to the GDNs, one supplier argued that, with the exception of the London network, all GDNs should be able to achieve financeability with transition over four years, rather than eight.

4.3. With the exception of one GDN, the GDNs argued that our Initial Proposals result in credit metrics that would provide inadequate support for downside risks. They, as well as investors in one GDN, argued that the Initial Proposals would result in the GDNs attaining BBB credit ratings. It was argued that this is inconsistent with the use of indices for BBB and A rated bonds in setting the cost of debt.

4.4. Despite being involved in the development of the Financial Model published alongside Initial Proposal, including having sight of the financial ratios calculations based on their business plans data, the GDNs have argued that there was a lack of transparency in our approach to testing financeability, since the ratios assessed were not published with the Initial Proposals. The GDNs also sought greater clarity on the scenarios tested to assess financeability.

4.5. Some of the GDNs also raised technical points regarding the financeability assessment, such as: different credit rating agencies' approach to index-linked debt in the ratio FFO/interest;[15] the extent to which our conclusions on financeability were influenced by the profile of Retail Prices Index (RPI) assumed in the financial model; and the fact that the model published with Initial Proposals did not capture the cash flow implications of differences between actual and allowed expenditure.

Overview of our approach

4.6. In setting price controls, we are required to have regard to the ability of efficient network companies to secure financing to facilitate the delivery of their regulatory obligations. This is also in the interests of consumers. We define this ability as indicated by a notional efficient network company attaining a 'comfortable investment grade' credit rating (ie in the BBB-A range).

4.7. As set out in the financial issues supplementary annex to our Strategy Decision paper, our financeability assessment looks at six credit ratios (FFO/interest,[16] PMICR,[17] FFO/net debt, RCF/net debt,[18] RCF/capex, and Net debt/RAV) and two equity ratios (Regulated equity/EBITDA,[19] and Regulated equity/Regulated earnings[20]). The credit ratios are compared to the target ranges that the three major credit rating agencies have told us are consistent with credit ratings in the BBB-A range.

4.8. Credit ratios typically account for around a third of the assessment carried out by rating agencies. Similarly, our assessment also considers the broader context for the notional company. It is important to reiterate, however, that our financeability assessment does not intend to replicate the different rating agencies' methodologies.

4.9. Furthermore, our assessment is not predicated on an expectation that the notional companies would be able to achieve all target ratios in all years of the price control period. The Competition Commission applied the same rationale in considering the Bristol Water case in 2010:

> *"We also note that the ratings agencies adopt a variety of quantitative and qualitative techniques to assign credit ratings. They do not use a mechanistic approach to assign credit ratings on the basis of an observed or predicted credit ratio in a particular year. It would therefore be inappropriate to place too*

[15] FFO is 'funds from operations'. Rating agencies differ in their treatment of accretions of index-linked debt when it comes to this ratio. Moody's excludes accretions, calculating the ratio on a pure cash interest basis. Standard & Poor's includes accretions, calculating the ratio on a full interest expense basis.
[16] Our financeability assessment looks at this ratio on both cash interest and full interest expenses basis.
[17] PMICR stands for 'post-maintenance interest cover ratio'. It is a derivative of FFO/interest and, therefore, is often also referred to as the 'adjusted interest cover ratio'.
[18] RCF is 'retained cash flow'.
[19] EBITDA is 'earnings before interest, tax, depreciation and amortisation'.
[20] We use 'profit after tax' as the measure of regulated earnings for this ratio.

much emphasis on the value of a particular credit ratio, particularly when considering forecast values based on financial estimates."[21]

Details of the financeability assessment

4.10. The starting point for our financeability assessment is the level of expenditure as set out in these Final Proposals. Additionally, we carry out an extensive range of sensitivities and stress-tests. We have extended the set of scenarios that we test financeability under and assess the impact of assumptions on:

- both persistent and one-off over- and under-spend on totex
- the future profile of the Cost of Debt Index
- the proportion of debt that is index-linked
- different rates of RPI inflation.

4.11. In light of the responses to our Initial Proposals, we have added a further dimension to our financeability assessment by testing financeability under the simulations produced in our Monte Carlo modelling of relative risk (as described in Chapter 3). In the same way that the Monte Carlo modelling provides an additional piece of information for consideration in our relative risk assessment, our financeability simulations provide a supporting – rather than core – piece of evidence for our financeability assessment.

4.12. We use the expenditure levels produced by the simulation as input into the Final Proposals financial model. For each simulation, this produces a set of credit and equity ratios that reflect the difference in simulated expenditure from our Final Proposal allowances. The financial model only calculates base revenue (ie it excludes revenues derived from incentives and output measures). As such, it does not capture any potential links between totex overspend and outperformance on incentives or, conversely, between totex underspend and underperformance on incentives. The simulations, therefore, may overstate the cash flow implications of over- or under-spend on totex, which represents a more stringent test on financeability.

4.13. It would be impractical to perform a detailed financeability assessment on each of the thousands of simulations that we ran, and looking at the probability distributions around individual ratios would represent only part of the wider picture. Thus, we sought a mechanistic way to assess financeability in each simulation and derive a probability distribution around our findings.

4.14. We are only aware of one such methodology that is both publicly-available and addresses most of the above issues. It is credit rating agency Moody's indicative methodology for rating energy networks.[22] It is important to stress that using this methodology does not indicate a preference by Ofgem of Moody's ratings to those of

[21] Competition Commission, Determination on a reference under section 12(3)(a) of the Water Industry Act 1991 (p. O3) http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2010/fulltext/558_appendices.pdf

[22] Moody's, Rating Methodology - Regulated Electric and Gas Networks Moodys.com/researchdocumentcontentpage

other credit rating agencies. Nor does it represent support by Moody's for our Final Proposals. We have not shared our calculations or assumptions with Moody's.

4.15. Moody's published methodology weighs both credit ratios and qualitative factors covering business and regulatory risk to come up with a score which is translated to a credit rating 'notch' (eg. A2 or Baa1)[23]. The methodology is particularly useful for testing downside scenarios since it attributes greater weight to a factor the lower that factor scores on its individual scale. The assumptions used in our application of the methodology are set out in Appendix 4. With regard to credit ratios, we use the weakest three-year average for each ratio, even if those three-year periods occur at different times of the price control for different ratios. In this regard, our approach is particularly cautious by overstating the downside risk.

4.16. As a stress-test of the methodology itself, we calculated the credit score a second time, replacing the adjusted interest cover ratio from Moody's methodology with FFO/interest calculated on overall interest expense (ie including index-linked accretions). This reflects different rating agencies', for example Standard & Poor's (S&P), treatment of index-linked accretions when calculating FFO/interest. It is important to stress that this is not an attempt to replicate S&P's rating methodology, nor does it represent support by S&P for our Final Proposals. We have not shared our calculations or assumptions with S&P.

The cash flow implications of uncertainty mechanisms

4.17. Consultation responses raised the fact that our Initial Proposals totex allowances for the GDNs did not include expenditure under the uncertainty mechanisms. It was also noted that timing delays between when costs were incurred and when they were funded through the uncertainty mechanisms could have a material impact on financeability.

4.18. It is worth reiterating the RIIO principle (set out in the RIIO Handbook) that short-term cash flow variations are for the network companies to manage. Nevertheless, if the proposed mechanisms result in a systematic difference between costs and revenues, this would need to be taken into account when determining the appropriate financial package.

4.19. In developing these Final Proposals, we have looked at the financeability impact of expenditure incurred under the uncertainty mechanisms. We used estimates of expenditure provided by the GDNs. Our modelling reflected the timing of allowances under the various mechanisms, as summarised in Appendix 4.

4.20. The highest levels of expenditure are expected be incurred with regard to the street works and repex uncertainty mechanisms. The former is remunerated through re-opener windows in 2015 and 2018, while the latter is remunerated two years in arrears. The biggest impact on cash flows, therefore, is expected to occur in the first

[23] These levels on Moody's rating scale are, respectively, comparable to A and BBB+ ratings on other rating agencies' scales.

two years of RIIO-GD1, although this is somewhat countered by a proportionate adjustment in the third year.

The need for transition

4.21. Our financeability assessment indicated that some transition on the repex capitalisation was appropriate for all GDNs in order to ensure credit ratios that are consistent with a 'comfortable investment grade' rating (ie in the BBB-A range). We maintain our view from Initial Proposals that credit ratios would be better improved with stepped transition, rather than a constant capitalisation rate. At the same time, this slightly lowers the charges that would be borne by consumers and reduces charging volatility. This is because some GDNs' investment programmes are front-loaded.

4.22. Therefore, our Final Proposals maintain the application of a fixed capitalisation rate across RIIO-GD1 for totex excluding repex, with a stepped transition for repex capitalisation. The transition begins at 50 per cent repex capitalisation in 2013-14 and reaches 100 per cent in 2020-21, in equal incremental steps of 7.14 per cent per year. Revenue profiling is applied through the profile of backlog depreciation, as described in Chapter 2.

Financeability assessment results

4.23. Our assessment of 'Final Proposals allowed expenditure and of the scenarios set out in paragraph 4.10 is that all GDNs are financeable and achieve 'comfortable investment grade' credit ratings.

4.24. Adding the timing impact of uncertainty mechanism expenditure weakens credit ratios somewhat in the first two years of RIIO-GD1. PMICR for the London network is notably weakened during that time. However, there is a proportionate adjustment to cash flows in the third year. A similar pattern, albeit less pronounced, repeats during the remainder of the price control period. Overall, we consider that all GDNs are financeable and achieve 'comfortable investment grade' credit ratings even when accounting for the timing impact of uncertainty mechanisms.

4.25. In our simulations, we looked at the implied credit rating at the 5th per centile (ie in 95 per cent of simulations the implied credit rating was no lower). This is set out for each GDN in Table 4.1. We show the rating implied in Simulation 4. Simulations 1 to 3 resulted in similar ratings. The stress-test using FFO/interest (using overall interest expense) resulted in all cases in the same or higher credit rating as the one showed in Table 4.1. These are summarised in Appendix 4.

Table 4.1 Credit rating implied from Moody's methodology at 5th percentile

	East	London	North West	West Midlands	Northern	Scotland	Southern	Wales & West
95% confidence interval that implied credit rating from Moody's methodology is at least:	Baa1 / BBB+	Baa3 / BBB-	Baa2 / BBB	Baa2 / BBB	Baa2 / BBB	Baa1 / BBB+	Baa1 / BBB+	Baa2 / BBB

4.26. The financial model published alongside this paper includes the financial ratios derived from our Final Proposals view of expenditure for each GDN. These values are also shown in Appendix 3.

4.27. The GDNs have argued that the credit ratios are inconsistent with the Cost of Debt Index. We think it is important to stress the distinction between credit ratios and credit ratings. As noted above, credit ratios typically account for around a third of the assessment carried out by rating agencies, and our financeability assessment considers the broader context for the notional company. Specifically, the low business risk associated with being a monopolistic network company, and the stable and transparent regulatory framework within which they operate, provide substantial support to companies' credit ratings beyond what might be implied if only credit ratios were considered. As such, our financeability assessment finds the Final Proposals consistent with the credit ratings used for the cost of debt assumption, even if certain ratios may deviate from their corresponding levels.

4.28. Further support to our conclusions is provided in the Imrecon report, which characterises our approach to financeability as "inherently cautious".

Return on regulatory equity (RoRE)

Summary of Initial Proposals

4.29. We use RoRE analysis to estimate the financial benefits – as measured by the return on (notional) proportion of the RAV that is financed by equity – that are available to the network companies in RIIO-GD1 from outperforming the price control assumptions. By the same token, RoRE analysis allows us to assess the financial penalties for underperforming the price control assumptions.

4.30. RoRE analysis in our Initial Proposals concluded that the proposed packages for GDNs were appropriately calibrated. Over the whole of RIIO-GD1, GDNs could achieve double-digit returns on (notional) equity for exceptional performance, with a downside return somewhat higher than our estimate of the cost of debt. We also considered that, since RoRE ranges were similar across RIIO-GD1 and T1, our different notional gearing and cost of equity assumptions appropriately reflected differences in cash flow risk across the sectors.

Summary of consultation responses

4.31. Since RoRE is a representation of the price control package, there have been few comments on the analysis itself. Most consultation responses, particularly from the GDNs, have focused on the inputs into the analysis (ie the strength of incentives, the notional gearing assumption) and what they meant for cash flow risk, rather than the analysis itself.

4.32. One GDN argued that the analysis should exclude factors that are outside the network companies' control, such as the tax trigger deadband, and include the impact of a company's cost of debt differing from our index-based estimate. Another

GDN pointed out that our RoRE range double-counted the tax on totex over- and under-spend, since the incentive rate will be applied on a post-tax basis.

Updated RoRE ranges

4.33. While changes to taxation are outside network companies' control, the application of the tax trigger deadband could potentially impact returns to regulatory equity and, hence, we consider it appropriate to include it in the RoRE analysis. RoRE is calculated for the notional company, and we do not think it would be appropriate to take a view on each company's ability to outperform or underperform the index-based estimate. We have corrected the RoRE calculations to reflect the post-tax application of the totex incentive rate. This widens the RoRE range.

4.34. We regard an appropriately calibrated price control package as one in which RoRE upside (ie the reward available for the best-performing companies) provides the potential for double-digit returns on (notional) equity, and RoRE downside (ie the penalties that would apply to the worst-performing companies) is at or below the cost of debt. As noted in Chapter 3, RoRE analysis is one of the factors used in identifying the appropriate notional gearing level.

4.35. However, we acknowledge that, for a given price control package, a balance needs to be struck between the impact of notional gearing on the RoRE range and on financeability. Higher notional gearing means that returns are spread over a smaller equity 'wedge', which widens the RoRE range. At the same time, higher notional gearing tightens credit ratios. When it comes to our decision on notional gearing, our duty to have regard to the need that network companies are able to finance their activities means we attribute more weight to financeability analysis than to RoRE.

4.36. Figure 4.1 presents our estimates of upside and downside potential returns for each of the GDNs. We have developed these estimates using a mixture of historical performance and projected plausible values (including caps and collars on individual incentives, where applicable). We stress that the RoRE range represents an estimate of plausible returns, rather than fixed limits. The figure is based on our cost of equity and notional gearing proposals, as per Chapter 3.

4.37. Our assessment shows that, over the whole of RIIO-GD1, GDNs could achieve double-digit returns on (notional) equity for exceptional performance. With regard to the downside, we show that returns are unlikely to fall as low as our current estimate of the cost of debt. The assessment over the entire price control period, however, masks a degree of annual variability in potential returns. Typically, a wider range of returns is available in the early years. Overall, we think that Figure 4.1 represents an appropriately calibrated package.

4.38. Figure 4.2 compares the median RoRE range for the GDNs with those of the gas and electricity transmission companies in RIIO-T1. For simplicity of presentation and comparison between companies we have grouped all incentives, output measures and uncertainty mechanisms together.

4.39. The overall range of RoRE is broadly similar across sectors. This acts as a sense-check that our differential notional gearing and cost of equity assumptions appropriately reflect differences in cash flow volatility across the sectors.

Figure 4.1 Estimated RoRE ranges for RIIO-GD1

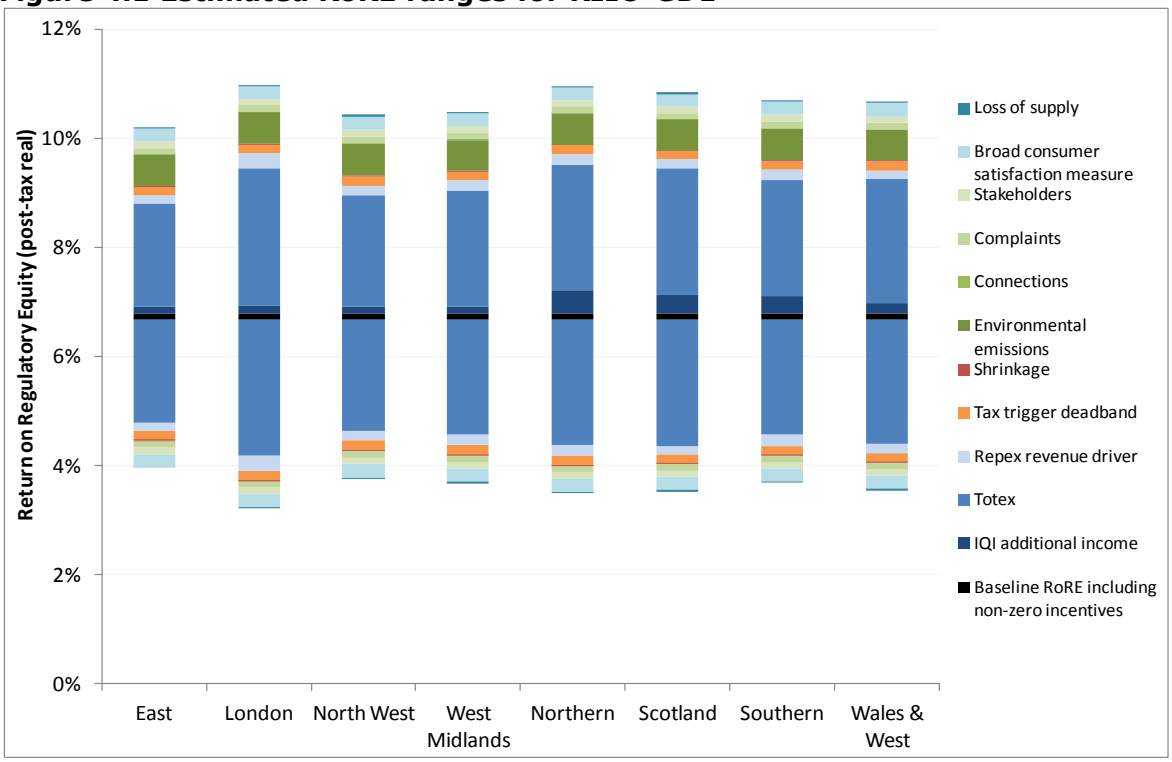
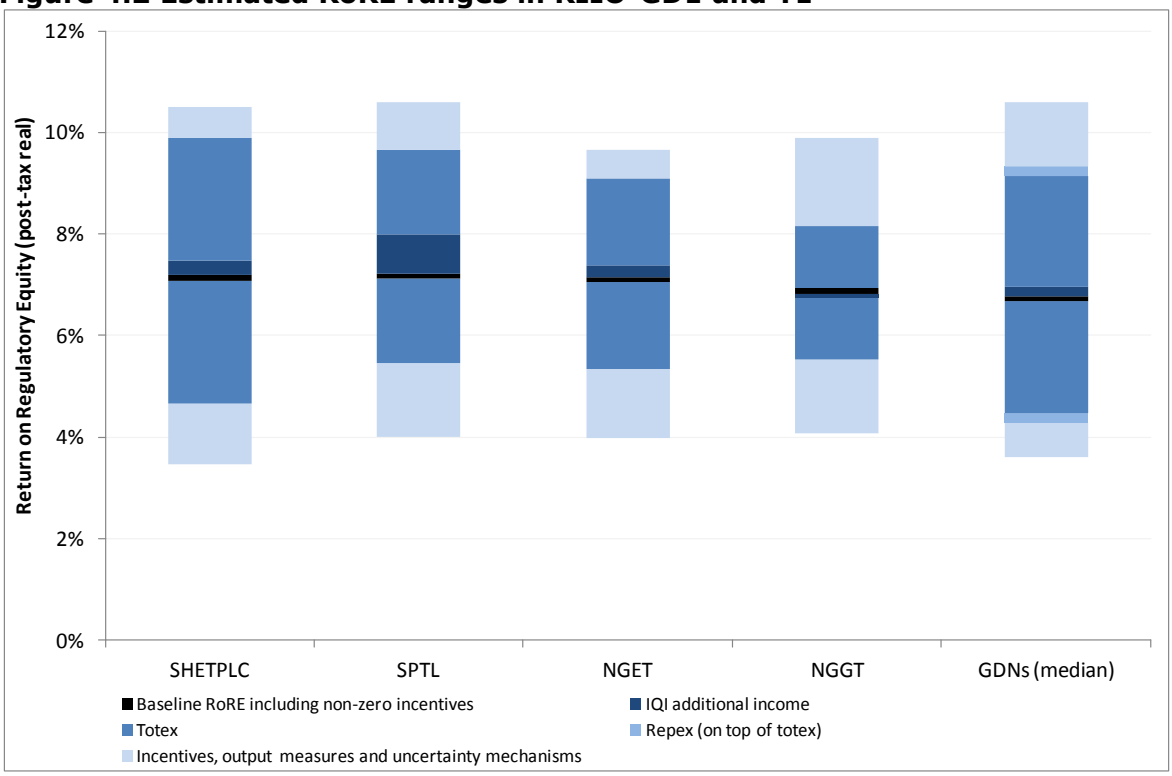


Figure 4.2 Estimated RoRE ranges in RIIO-GD1 and T1



5. Pensions

Chapter Summary

This chapter sets out our decisions for Final Proposals for funding of licensees' defined benefit pension scheme legacy deficits, Pension Protection Fund levies and pension scheme administration costs; and the true up of GDPCR1 and the one-year 2007-08 control pension costs.

Summary of Final Proposals

5.1. In our Final Proposals we have followed the same approach we set out in Initial Proposals and updated the allowances for rolled forward valuations to 30 June 2012 to take account of market movements, 2011-12 actuals and updates to the NGG regulatory fractions. The effect of these changes on allowances is shown in Table 5.1 below.

Table 5.1 Summary pensions funding (excluded from totex)

2009-10 £m	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Total annual allowance	4.7	3.1	3.5	2.7	7.4	11.5	13.5	9.2
Increase over IP	2.1	1.9	1.9	1.6	1.3	1.4	1.2	0.5

5.2. The remainder of this chapter provides a summary of Initial Proposals and respondents' views and provides an explanation of our decisions as well as providing a summary of the pension allowances.

Summary of Initial Proposals

5.3. In Initial Proposals, we modelled and set out pension allowances based on the methodology and pension principles in our March Strategy Document, Financial Issues supplementary annex (Appendices 6 and 7) as amended. We used updated valuations as at 31 March 2012 rolled forward from licensees' last full valuations, which had been subject to an independent reasonableness review undertaken by the Government Actuary's Department (GAD). We also set thresholds for the true up of pension scheme administration costs and Pension Protection Fund levies.

5.4. We said in Initial Proposals, that allowances would be updated at Final Proposals using rolled forward valuations to 30 June 2012, and March 2012 actual pension costs; and that we would complete our review and revise as appropriate, the regulatory fractions applicable to the NGUK Pension scheme for National Grid Gas Distribution companies.

Summary of consultation responses

5.5. In Initial Proposals, we asked three questions:

- whether companies need to demonstrate the benefits to consumers of de-risking strategies;
- whether we should fund efficient contingent asset costs; and
- the appropriate true up thresholds for pension scheme administration costs and Pension Protection Fund (PPF) levies.

5.6. All but one respondent agreed that companies must demonstrate a robust approach as to how their de-risking strategies are protecting future scheme funding; and that they should clearly demonstrate the benefits that they expect to flow to consumers. One suggested that a review of long-term investment strategies should be included in the reasonableness review. One respondent, a DNO, disagreed on the basis that the reasonableness review is sufficient to protect consumers from poor stewardship.

5.7. All respondents agreed that the costs of contingent assets should be allowed if considered to be in consumers' interests. One respondent suggested that stewardship should be considered in the round, rather than individual scheme arrangements, eg contingent assets.

5.8. There was no overall agreement on the appropriate thresholds for pension scheme administration costs and PPF levies. Broadly, respondents considered these costs were largely outside licensees' direct control. Otherwise views varied from agreement with a reset every three years, a lower threshold; a full true up; and an uncertainty mechanism to take account of insolvency risk impacts on the PPF levy.

Our decisions

5.9. We have carefully considered the responses and our decisions are set out below:

- We will review de-risking strategies to understand how they will affect and protect future scheme funding and expect licensees to demonstrate unequivocally the benefits that they expect to flow to consumers. We encourage licensees to brief us on their strategies ahead of each valuation. We will monitor the ongoing effect of these strategies as part of each reset of pension allowances and will consider including a review of long-term investment strategies in the triennial reasonableness reviews.
- We will review the benefits of the use of contingent assets in the round within our overall reasonableness review. We expect licensees to demonstrate the benefits that they anticipate will flow to consumers where such costs are incurred directly by the licensee. Where there is a clear demonstration of a cost benefit for consumers the efficient cost will be funded.

- We acknowledge that licensees have limited direct control of pension scheme administration costs and PPF levies, but they do have some control. We remain of the view that licensee's should be incentivised to influence and manage these costs. We have decided to modify the approach set out Initial Proposals and apply a £1m per annum threshold to the aggregate costs of pension scheme administration and PPF levies. If costs exceed the aggregate of the allowances by more than the threshold, the excess over the threshold will be funded. We will reset the allowances at each reset. This will coincide with the PPF triennial review of their levies and, where efficient, any changes will be allowed. This should protect licensees from significant increases in the levies outside their control.

Defined benefit schemes – allowed costs

5.10. As at Initial Proposals, we set allowances based on the methodology and pension principles set out in our March Strategy Document, Financial Issues supplementary annex (appendices 6 and 7) after taking into account respondents' views.

5.11. In this Final Proposals document we set specific allowances for funding the legacy defined benefit (DB) scheme established deficits, PPF levies and DB scheme administration costs, which are summarised in Table 5.2 below. We no longer set specific allowances for ongoing pension service costs of their DB or defined contribution schemes; nor for the repair costs of the incremental deficit related to service of active members of the DB schemes after the cut-off date. We treat these costs as part of totex and they are within the totex incentive mechanism.

Table 5.2 Annual pension deficit funding and true up

(£m 09-10)	**EOE**	**Lon**	**NW**	**WM**	**NGN**	**Sc**	**So**	**WWU**
Forecast scheme established deficit	1,484.0	1,484.0	1,484.0	1,484.0	83.1	212.4	212.4	86.6
Regulatory fraction	3.7%	2.5%	2.8%	2.0%	100.0%	40.0%	60.0%	100.0%
Licensee's proportion	54.2	37.5	41.6	29.8	83.1	84.9	127.4	86.6
Annual allowances	**EOE**	**London**	**NW**	**WM**	**NGN**	**Scot**	**South**	**WWU**
Established deficit	4.4	3.0	3.3	2.4	6.7	6.8	10.2	7.0
Scheme administration	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.4
Pension Protection Fund Levy	0.0	0.0	0.0	0.0	0.5	0.3	0.3	0.4
True up adjustments	0.3	0.0	0.1	0.2	0.0	4.0	2.5	1.5
Total annual allowance	**4.7**	**3.1**	**3.5**	**2.7**	**7.4**	**11.4**	**13.4**	**9.2**
Allowances at Initial Proposals	2.6	1.2	1.6	1.1	6.1	10.1	12.3	8.7
Increase from Initial Proposals	2.1	1.9	1.9	1.6	1.3	1.3	1.1	0.5
RIIO-GD1 true up and reset threshold	**EOE**	**London**	**NW**	**WM**	**NGN**	**Scot**	**South**	**WWU**
Scheme administration & PPF levy	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

The forecast established deficit is that for the scheme to which the business is a sponsoring employer and before application of the cut-off date regulatory fraction.

5.12. The movement in allowances arise from using updated valuations at 30 June 2012, conclusion of the review of NGGD regulatory fractions, actual 2011-12 data for true ups and limited revisions to 2012-13 forecast costs.

5.13. As set out in our 22 June 2010 Pensions paper[24], we are committed to funding the efficient repair costs of the established deficits of the network operators' DB pension schemes. For GDNs this is the deficit as at 31 March 2013 (the cut-off date).

5.14. The valuations on which deficit funding has been set have been the subject of a review[25] of all network operators' pension costs undertaken for us by the Government Actuary's Department (GAD). That review has informed setting allowances for RIIO-GD1 and the true up of GDPCR1 costs

5.15. We have based the allowances, in accordance with our pension principles, on the latest updated valuations as at 30 June 2012. These valuations apply the same actuarial assumptions that were adopted in the previous completed full triennial valuation, updated only for changes in asset values and market conditions. We do this because: (i) later full valuations are not yet available or are, as yet, incomplete and will not have been cleared by the Pension Regulator; and (ii) we require the underlying actuarial assumptions to be those which have been subject to our periodic reasonableness review by our consultants.

5.16. We acknowledge that the accuracy of updated valuations may be significantly different from that shown by a full valuation, particularly in volatile markets. In addition, they do not reflect member movements, actual salary or pension increases and changes in key assumptions, eg longevity. We deal with these retrospectively by subsequently resetting and truing up allowances based on the latest full valuations at the reset points in RIIO-GD1.

5.17. We spread the established deficits over our 15-year notional funding period and apply a funding rate of return derived from the range of benchmarked pre-retirement real discount rates as applied in network companies' valuations. The rate for RIIO-GD1 is 2.6 per cent up to the first reset. We will review and, if appropriate, reset this rate at each subsequent triennial review on a rolling basis. Table 5.3 (below) sets out the timetable for the reset dates.

5.18. Our pension principles (Appendix 5) set out our approach to both innovative investment strategies, used to manage scheme's liabilities and hedge risks, and contingent assets. Where these are used, we will examine each on its merits. We will review the benefits of using contingent assets in the round within our overall reasonableness review. We expect licensees to demonstrate the benefits that they anticipate will flow to consumers where such costs are incurred directly by the licensee.

Deficit values, de-risking strategies and current market conditions

5.19. In the current volatile market conditions, companies are experiencing a significant increase in their updated deficits (used to set allowances) compared to

[24] Price_Control_Treatment_of_Pension_Costs_final
[25] Government Actuary's Department *Review of energy network operators' pension costs* GAD Review of energy network operators' pension cost-16052012

recent years and their last full valuation. Current scheme valuations are materially affected by the value and negative real returns currently experienced for gilts.

5.20. Companies consider that de-risking should protect the funding position of their scheme, in that it limits the downside. However, it may significantly reduce the upside from future out-performance.

5.21. Whilst a move to de-risking these mature closed schemes may be expected, we will keep under review any increase in the burden for consumers. In particular, on different generations of consumers as de-risking increases costs early on and, if effective, should reduce costs for later generations. In our view, the spreading of deficit funding over 15 years may mitigate this for consumers. Increases in deficit recovery costs are expected to arise from a combination of the speed and timing of de-risking; use of conservative valuation and asset return assumptions (particularly of gilts which are currently showing negative real returns) and increasing longevity. We expect companies to demonstrate how their de-risking strategies are protecting future scheme funding and the benefits that they expect to flow to consumers.

Determining the established deficit

5.22. The valuations used to inform setting allowances pre-date the cut-off date for determining established deficits. We propose to finalise the actual amounts during the RIIO-GD1 price control period and true up at the first reset point.

5.23. We will adjust revenues at the first reset point for any difference between the deficit in the June 2012 valuations, used to set allowances and that shown by either a full triennial valuation at 31 March 2013, or updated valuations at that date (for those with an earlier full valuation date). True up adjustments in revenue will be NPV neutral. We will spread the true up of this difference over the remaining years of the 15-year notional funding period.

Resetting allowances during the RIIO price control period

5.24. We propose to undertake a reasonableness review in mid-2014, true up and reset revenues from 1 April 2015 and every three years thereafter. That review will also determine GDNs' established deficit based on updated or full valuations at 31 March 2013. We will not true up at the end of the each price control period unless this coincides with the rolling three year true up and reset cycle. We will conduct all future reasonableness reviews across all energy network operators, as with the recently completed review. This is summarised in Table 5.3 below.

Table 5.3 Expected timetable for resetting pension allowances

Actuarial scheme valuation as at:	Expected receipt by Ofgem	Reasonableness of costs review completed	Revised values directed for Annual Iteration Process	Values revised for Formula Year
31 March 2013	June 2014	31 October 2014	30 November 2014	2015-16 onwards
31 March 2016	June 2017	31 October 2017	30 November 2017	2018-19 onwards
31 March 2019	June 2020	31 October 2020	n/a	n/a

5.25. The methodology for resetting allowances and true ups was set out in the March Strategy document; and, as updated, is incorporated in the GD1 Financial Handbook, which will be published alongside the licence consultation.

5.26. We have developed with licensees, a methodology for the attribution of DB pension scheme deficits, to the established and incremental deficits, and those elements that are regulated and not regulated. This applies to all energy network operators and this has been published for consultation today[26]. Reporting using this methodology for GDNs commences from 1 April 2013. The methodology adopts a reasonable and pragmatic approach to the attribution of pension scheme assets and liabilities. The principal requirements being that it is both actuarially sound and economic; simple and transparent to use in practise; and that it must provide an appropriate audit trail. We will keep under review with licensees the functioning of the methodology once the first returns for each sector have been submitted. This follows our usual practise with annual reporting returns. It should ensure that the attributions remain equitable as between regulated activities, non-regulated activities and businesses sponsoring a multi-employer scheme.

Regulatory fraction

5.27. The regulatory fraction represents the element of a licensee's established pension deficit that relates solely to the activity of the distribution business (ie the licensed business) and which, ultimately, under our pension principles, is funded by customers. For GDNs, we include the pension deficit funding costs of employees engaged in the metering business. We do this, as there are no dedicated metering employees within those licensees, as staff primarily employed in the gas transportation business perform this activity.

5.28. The regulatory fractions applied are set out in Table 5.2. We have concluded our review of the regulatory fractions for NGGD. These have been increased, leading to higher allowances.

Recharge of NTS legacy pension costs

5.29. In Chapter 8 we set out our review of the future treatment of the NGUKPS legacy deficit (relating to the NTS[27]). Our conclusion is that we will continue with the existing recharge arrangements in RIIO-GD1 and this is described further in Chapter 7. The GDN share of the NGUKPS legacy pension deficit and true up costs are included in base values in Table 5.4 below.

26 Pension deficit allocation methodology
Pension Deficit Allocation Methodology
[28] Open letter to all Gas Distribution Network Operators regarding pensions in the one-year price control

Table 5.4 Annual recharge of NTS pension costs

£m (09-10)	Annual Recharge
EoE	6.5
Lon	3.8
NW	4.4
WM	3.2
NGN	4.1
Sc	2.8
So	6.6
WWU	3.9
Total	35.4

Treatment of PPF levies and scheme administration costs

5.30. The PPF have introduced a new framework for setting their levies in 2012-13, which applies a risk-based approach to each scheme's assets and liabilities, as well as the likelihood of failure. All DB schemes were required to submit data to the PPF under this framework on 31 March 2012. The PPF will review the levies and may amend them every three years. This new basis may increase, or decrease, the quantum of each scheme's annual levy.

5.31. We have revised our approach to the true up of PPF levies and pension scheme administration costs. We set separate allowances for both PPF levies and pension scheme administration costs. We will reset these allowances every three years, subject to a review for efficiency. Where the combined outturn costs in any year exceed the aggregate of the combined allowances plus the £1m threshold, we will true up the excess on a NPV neutral basis. If the amount is lower, there will be no adjustment for that year. The true up operates as per the example in Table 5.5.

Table 5.5 Example of true up calculation

£m	Year 1	Year 2	Year 3
Allowance for scheme administration costs	0.2	0.2	0.2
Allowance for PPF levy	0.6	0.6	0.6
Combined allowances for scheme admin costs and PPF levy	0.8	0.8	0.8
Threshold	1.0	1.0	1.0
Total for comparison to actual costs	1.8	1.8	1.8
Actual costs for scheme admin costs and PPF levy	1.0	2.2	2.1
Actual greater/(lower) than allowance plus threshold	(0.8)	0.4	0.3
Adjustment to revenues	nil	**0.4**	**0.3**

True up adjustments for GDPCR1 and one-year price control

5.32. The true up adjustments in Table 5.2 are treated as fast money. They include those for the one-year price control 2007-08, which we published in September

2009[28]. The true up is only for ongoing defined benefit pension service costs and deficit recovery payments. We do not true up GDPCR1 defined contribution costs, PPF levies or scheme administration unless the latter were included in the DB schemes allowed contribution rates.

5.33. We have based these adjustments on actual expenditure and a forecast for 2012-13. In the event that actual costs in 2012-13 turn out to be different to the forecast, we will alter revenue as part of the legacy price control adjustments.

5.34. We spread these adjustments over the 8 years of RIIO-GD1. The adjustments are NPV neutral applying the vanilla WACC set at GDPCR1 through to 31 March 2013 and applying the vanilla WACC for RIIO-GD1 to spread revenues over eight years.

[28] Open letter to all Gas Distribution Network Operators regarding pensions in the one-year price control Open letter to all GDNs regarding pensions in the one-year price control

6. Taxation

Chapter Summary

This section sets out the key factors and methodology applied to the financial modelling of taxation for Final Proposals and our decision on our consultation on our Initial Proposals.

Summary of Final Proposals

6.1. In our Final Proposals we have largely followed the methodology set out in Initial Proposals (including the introduction of a tax trigger mechanism) and updated the allowances to reflect the March 2012 actual reported costs. We have in addition updated for the change in corporation tax rates set out in the Autumn Statement. Table 6.1 below shows the effect of these changes on allowances.

Table 6.1 Total tax allowances RIIO-GD1

2009-10 £m	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Total RIIO allowance	230.8	150.9	161.9	123.8	134.8	91.2	236.9	81.2
Change over IP	(14.2)	(7.9)	(8.7)	(7.7)	(12.5)	(9.4)	(13.5)	(16.7)

6.2. The remainder of this chapter provides a summary of Initial Proposals and respondents' views and provides an explanation of our decisions as well as providing a summary of the taxation allowances.

Tax allowances

Summary of Initial Proposals

6.3. In Initial Proposals, we modelled and set out tax allowances based on the methodology in our March Strategy Document, Financial Issues supplementary annex in Appendix 4, as amended. We stated that the generic attribution of expenditure to capital allowance pools would be reviewed and that we would update the tax clawback, opening capital allowance pool balances and regulatory tax losses to take account of the actual expenditure in 2011-12 once the annual cost reporting returns had been received and reviewed. We also proposed the introduction of the tax trigger mechanism.

Summary of consultation responses

6.4. In Initial Proposals, we asked three questions on our amended treatment for modelling the cash flows of corporation tax payments, the timing of the revenue adjustment for tax clawback, and our treatment of expenditure for tax modelling.

Three GDNs agreed with our amended treatment for modelling the cash flows of corporation tax payments with one disagreeing.

6.5. All GDNs agreed with our proposal to adjust the timing of the revenue adjustment for tax clawback, so that they are made annually in line with the annual iteration process, and not every three years.

6.6. Two GDNs agreed, one disagreed and one did not respond to our treatment of expenditure for tax modelling. SGN disagree with our treatment. It considered that by applying generic attributions of capital expenditure to tax pools, the tax allowances will not reflect the diverse nature of the GDNs capex plans, or the timing of individual projects. SGN also noted that demolition expenditure should be added to the special rate asset pool and not treated as opex. They also considered that there were adverse impacts from the implementation of IFRS-based framework and our treatment of new connections contributions.

Our decisions

6.7. We have carefully considered the responses. Our decisions are set out below:

- No change is required to our modelling of cash flows of corporation tax payments
- We will clawback the tax benefit of excess gearing annually.
- We will retain the generic approach to attributing expenditure to capital allowance pools but will update it based on the latest allowances and we will treat demolition expenditure as capex and not opex. We have reviewed and refined the modelling of connection contributions under EU-IFRS and new UK GAAP accounting frameworks.

6.8. We have modelled tax and set allowances based on the methodology in our March Strategy Document with limited exceptions and revisions as noted above. This methodology is incorporated in the GD1 financial handbook for the annual iteration process. Tables 6.2 and 6.3 set out the allowances for tax for each licensee and the remainder of this chapter sets out our approach to modelling the tax allowance.

Table 6.2 Annual tax allowance summary

Final Proposals (£m 09/10 prices)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
EoE	16.2	12.2	35.9	33.7	33.6	33.3	32.8	33.3
Lon	-	-	27.1	27.5	25.9	25.0	22.9	22.5
NW	10.3	6.4	25.6	23.9	24.3	23.9	23.8	23.8
WM	6.7	5.1	20.2	18.4	18.8	18.5	18.2	17.9
NGN	6.1	4.3	23.9	21.4	19.3	19.6	19.7	20.5
Sc	-	-	7.0	16.7	17.1	17.0	16.1	17.2
So	-	-	35.7	40.8	41.1	40.7	38.9	39.7
WWU	-	-	-	5.4	20.3	19.1	18.5	18.0
Change on IP (£m 09/10 prices)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
EoE	(1.0)	(2.1)	(1.3)	(1.0)	(1.5)	(1.8)	(2.4)	(3.1)
Lon	-	-	(3.2)	0.5	(0.3)	(0.6)	(1.7)	(2.7)
NW	(0.2)	(1.2)	(0.4)	(0.7)	(1.0)	(1.3)	(1.6)	(2.2)
WM	(0.0)	(0.3)	(1.1)	(1.0)	(0.9)	(1.1)	(1.3)	(2.0)
NGN	(0.0)	(1.5)	(0.6)	(1.3)	(1.8)	(2.0)	(2.4)	(2.8)
Sc	-	-	(7.3)	0.3	0.1	(0.2)	(0.9)	(1.2)
So	-	-	(5.8)	(0.3)	(0.6)	(1.2)	(2.4)	(3.2)
WWU	-	-	-	(7.9)	(2.0)	(2.4)	(2.2)	(2.1)

6.9. Each regulated gas distribution business is modelled for price control purposes as a standalone entity. All expenditure is treated as if it is incurred directly by the gas distribution businesses.

Applicable tax regime

6.10. We apply the UK standard tax rules that have been proposed by the time of the Final Proposals which includes the reduction in corporation tax (CT) rates for 2013-14 to 23 per cent and to 21 per cent from 1 April 2014. We consider that the impact of the changes to Annual Investment Allowance announced in the Autumn Statement is de minimis and have omitted this in our modelling. In all other respects, these proposals reflect the current legislative position.

6.11. We model tax under current UK GAAP in 2013-14 and 2014-15; and, based on the ASB's revised draft proposals for the future financial reporting in the UK[29]. Broadly, this means that companies and groups may continue to report under UK GAAP, which is based on IFRS for SMEs amended for use in the UK. It is a more simplified coherent framework with reduced reporting requirements than full EU-IFRS. The tax treatment of opex, capex and repex follow the existing UK GAAP treatment for 2013-15 and from 1 April 2015, the proposed accounting frameworks. We will treat any deferral of the proposed new UK GAAP accounting framework that affects the tax assumptions as a tax trigger event. We do not expect GDNs, as individual entities, to adopt EU-IFRS in future and where this has an adverse effect on their tax liabilities this will not be a tax trigger event; and, given the option under Statutory Instrument 2012 No. 2301, licensees can and may now revert to UK GAAP reporting from EU-IFRS in their individual accounts.

[29] Draft FRS 100 'Application of Financial Reporting Requirements' and FRS 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' published January 2012.

6.12. We have reviewed the proposed new UK GAAP framework for guidance on the treatment of connections and related contributions in financial statements and compared it with full EU-IFRS. The latter would require a material change in the financial reporting and consequential tax treatment of the contributions. The former has no guidance on this specific issue. We propose to retain the treatment under existing UK GAAP in modelling tax allowances; this will also apply to repex contributions, which we will offset against costs in considering the amount allocable to capital allowance pools. Any changes to UK GAAP affecting the tax treatment will be a tax trigger event, but changes in the tax burden associated with adoption of full EU-IFRS will not be a tax trigger event as adoption is within GDNs control. However, it should be noted that in Special Condition E18 paragraph 4(b) contributions (ie connection charge receipts) are defined as excluded services. As such, these should not be funded through base revenues so any change to the accounting treatment will be for companies to bear. We will continue to review this treatment and changes to ASB's proposals, which are due in early 2013 for any tax trigger impacts.

6.13. We assume that all capital allowances are claimed at rates in line with current legislation and, except for deferred revenue, as claimed in the year the expenditure is incurred. Deferred revenue is allowed as tax deductible applying the licensees accounting asset lives and timing, eg whether depreciated in year of expenditure or following year.

Regulatory tax losses

6.14. In line with our treatment in GDPCR1, where tax losses arise, we do not give affected network companies negative tax allowances. Instead we carry forward regulatory tax losses on a nominal price base until such time that the licensee has sufficient regulatory taxable profits to utilise them.

6.15. In computing regulatory tax losses, we ignore and reverse any surrender by a network company of losses to a group company (ie both group and consortium relief), so that customers benefit from the entity's losses as they reverse.

6.16. In any year that a company does not have a tax liability, we add the amount of any clawback to its regulatory loss position (see Table 6.3 for opening tax loss position). We have now included the benefit of any tax shield from the true up of GDPCR1 pension costs where licensees did not have taxable profits in a year. We have revised the true up of pension cost from that at Initial Proposals. We now make these either: (a) net of tax where the licensee has taxable profits in the year, or (b) gross where it does not. In the latter case, we add the pre-tax value of the pension true up on to opening regulatory tax losses.

Table 6.3 Opening regulatory tax loss position at 1 April 2013

(£m nominal)	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Amount carried forward including any unutilised clawback	0.0	20.9	0.0	0.0	0.0	93.9	106.0	212.2
As at Initial Proposals	0.0	21.7	0.0	0.0	0.0	74.7	79.5	200.4
Increase/(decrease) from Initial Proposals	0.0	(0.8)	0.0	0.0	0.0	19.2	26.5	11.8

Modelling of capital allowances

6.17. We use three main capital allowance pools – General, Special Rate and Deferred Revenue - and the relevant rates of annual writing down allowance. These reflect the relevant legislation currently in place. We also allow for expenditure that is identified as non-qualifying for capital allowances, principally easements, and other interests in land and buildings following the abolition of the Industrial Buildings Allowance regime.

6.18. All other expenditure not qualifying for capital allowances, nor treated as non-qualifying, will attract a 100 per cent deduction.

6.19. The annual allowance for deferred revenue follows the statutory depreciation rates and is 2.22 per cent straight-line, based on the average economic lives of all GDN's relevant assets at 45 years.

6.20. We have applied a generic attribution of expenditure to capital allowance pools and revenue, for modelling tax allowances, and have updated these from Initial Proposals. This is in accordance with our proposals in our March Strategy Document and at Initial Proposals. We have derived the revised attributions taking into consideration the level of our allowances and licensees' attributions reported in their business plans against each CA pool, revenue and non-qualifying expenditure. We will apply these generic attributions, fixed for the whole of RIIO-GD1. We recognise that these will not necessarily follow the nuances of individual businesses actual expenditure or allocations. They are the broad expectation of how the various categories of expenditure may be attributed; and, with the exception of non-operational capex, follow historical trends.

6.21. We have grouped expenditure into four categories to match those used in the model for attribution to capital allowance pools:

(i) Load related capex (LRE) - (LTS / NTS / PRS / Storage / Connections (ie the elements of work funded through networks charges) / governors, and demolition expenditure)
(ii) Non-load related capex including Non-Operational Capex - (Other Plant & equipment; Land & Buildings; IT)
(iii) Mains and services replacement (repex)

(iv) Network operating expenditure – 100 per cent revenue deduction. Compared with Initial Proposals, demolition costs are now treated as capex in the Special Rate pool.

These generic percentage attributions remain fixed throughout RIIO-GD1, as follows:

Table 6.4 Attribution of expenditure to capital allowance pools

	General pool	Special rate pool	Deferred Revenue	Non-qualifying	Revenue
LRE	0.3%	98.9%	0.0%	0.8%	0.0%
NLRE & Non-op capex	89.8%	1.6%	0.0%	8.6%	0.0%
Mains replacement (repex) pre 1 April 2015	0.0%	0.0%	0.0%	0.0%	100.0%
Mains replacement (repex) post 31 March 2015	0.0%	0.0%	100.0%	0.0%	0.0%

6.22. Contributions (ie connection charge receipts) should be treated as excluded services in accordance with Special Condition E18 paragraph 4(b). These are not funded through base revenues and to eliminate them for tax purposes, we offset these against connection costs using the same allocations as for load related expenditure and contributions for repex we set-off against repex costs as shown in Table 6.4. This matches the treatment of totex for attributing net costs to RAV. We treat the provision of connections as being two separate performance obligations (PO) under the relevant EU-IFRS accounting standards. The first where the licence obliges the licensee to provide the initial 10 metres in the public highway of any new connection to domestic premises free of charge; and the second as any amount over that initial distance for which the connectee pays. The first are capex and funded by base revenues and, the second, which are excluded services, are not funded from base revenues.

6.23. We treat the fuel poor connection incentive which obliges GDNs to provide free connections to qualifying customers as costs funded by base revenues and include these in setting the tax allowances and in totex.

6.24. All pension costs will be treated as 100 per cent deductible in the year of expenditure. We will ignore pension spreading under the irregular payment rules in setting allowances, as we consider this a minor timing issue. We will apply it only when we true up the established pension deficit funding at each reset in RIIO-GD1 and will spread any tax deductions, where relevant.

Capital allowance pool balances

6.25. We have used the GDNs forecast closing capital allowance pool balances for actual 2011-12 expenditure and capital allowances, as forecast rolled forward to 31 March 2013. We reset closing capital allowance pool balances at the end of each price control in line with the companies CT600 corporation tax returns and supporting computations.

Modelling cash flows of corporation tax (CT) payments

6.26. Tax legislation regards energy network operators as large companies, which are required to pay their tax liabilities for any given year in instalments commencing in the current year and the balance in the following year. We will model tax liabilities and resultant cash flows as being incurred in the year they arise, as agreed by GDNs in the consultation on Initial Proposals. We do this, as modelling the spreading payments over different years, is an unnecessary complication when revising liabilities retrospectively. We do not take into account any additional payments (or receipts) from settling earlier years' tax liabilities in GD1.

Tax treatment of incentives

6.27. Incentive revenues (which do not form part of base revenues) and penalties are on a pre-tax basis, ie it is not intended that they give rise to further revenues in respect of the tax charge, unless otherwise specified for any specific incentive. Incentives that are included within totex, which in general relate to investment, are included within the financial model, which calculates appropriate tax allowances.

Treatment of excluded services

6.28. We do not give allowance or relief for tax in respect of excluded services costs and revenues, including sole use connections. In setting allowances, we deduct costs attributable to these services from the cost base of providing use of system services.

Tax clawback for excess gearing

6.29. We apply an adjustment to claw back from licensees the tax benefit they obtain from gearing above our notional gearing level.

6.30. The clawback operates when in any year: (i) actual gearing exceeds notional gearing and (ii) interest costs exceed those modelled at the relevant price control. In the case where both of these conditions are satisfied, we will clawback the tax benefit which results from the difference between actual and modelled interest costs in that year. The specific methodology is set out in the GD1 financial handbook and is based on our open letter of 31 July 2009[30]. It is now part of the annual iteration process. Where notional interest varies from that initially modelled at Final Proposals, due to changes to the Cost of Debt Index, we will consider this when undertaking these clawback tests.

6.31. We have calculated the adjustments arising from the two previous price controls, using actual data together with that forecast in network companies business plans. These are set out in the chapter dealing with legacy adjustments in the GD1 Financial handbook. If the actual amounts differ from the forecast amounts, we

[30] Tax gearing clawback letter July 2009
Tax gearing clawback letter

reserve the right to make a further adjustment. We have updated for 2011-12 actual data at Final Proposals. Where a business has regulatory tax loss the clawback adjustment and pension true up costs are added to the tax loss carried forward.

Table 6.5 Tax clawback adjustments at 1 April 2014

(£m nominal)	EoE	Lon	NW	WM	NGN	Sc	So	WWU
Added to regulatory losses	0.0	0.0	0.0	0.0	0.0	2.7	7.5	44.0
As at Initial Proposals	0.0	0.0	0.0	0.0	0.0	4.7	5.2	44.1
Increase/(decrease)	0.0	0.0	0.0	0.0	0.0	(2.0)	2.3	(0.1)

6.32. We allow the recovery of the clawback for GDPCR in the first year of GD1, as the amount is small. We have agreed with licensees, following consultation that, consistent with the annual iteration process in RIIO price controls, we will update and reset the clawback every year.

Tax trigger

6.33. We have introduced a tax trigger mechanism as set out in our March Strategy Document. The detailed methodology is set out in the GD1 financial handbook. We have calibrated the deadband as the greater of a one per cent change in the rate of mainstream CT and a change of 0.33 per cent in base revenues. We will not revise these amounts through the operation of the annual iteration process; as such, they are fixed throughout the price control for each licensee. As the amounts are broadly constant over the period, we have set a fixed amount per annum per GDN for the period. The amounts for each GDN are as follows:

Table 6.6 Tax trigger deadband

For year ending 31 March (09/10 prices - £m)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
EoE	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Lon	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
NW	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
WM	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
NGN	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Sc	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
So	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
WWU	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Business rates

6.34. We treat business rates[31] as non-controllable operating costs (together with our licence fee). The Valuation Office Agency in England and Wales and the Scottish Assessors Association in Scotland completed a revaluation of the assets of the transmission and gas distribution networks in 2010 for the purposes of determining rates until 2017, following the government's announced that the next revaluation has

[31] The largest element of business rates is network rates, which we treat as a non-controllable cost. Other elements of business rates are included in totex.

been deferred to 2017. During RIIO-GD1, only one further revaluation in 2017 is now due. Each network company is able to influence the valuation that is given and hence the business rates that it will incur in the future.

6.35. For the purposes of setting the base price control revenue allowances, business rates are those from the 2010 valuations. For the period from 1 April 2013 up to 31 March 2017, we are retaining the GDPCR1 mechanism that enabled companies to recover the difference between the actual and assumed costs. After that time, we will switch-off this mechanism pending the outcome of the next revaluation exercise. Where network companies can demonstrate that they have taken reasonable actions to minimise the rating valuations, we will then reactivate the cost adjustment mechanism for the remainder of the period, (ie from 1 April 2017 up to 31 March 2021). We will deal with any subsequent valuation on similar basis.

6.36. We consider that this approach provides incentives on network companies to minimise costs, whilst recognising that once the rating valuations are concluded the costs that they incur will be non-controllable.

7. Allowed revenues, financial modelling, the Annual Iteration Process and the Financial Handbook

Chapter Summary

This chapter summarises the approach we have used to apply price control policy decisions to determine the opening base revenue levels proposed in this document. It describes the way we have modelled base revenue allowances, and the other components of allowed revenue, to ensure the financeability of well managed businesses and to support a stable and predictable charging regime.

The more sophisticated modelling approach we are using for the RIIO price controls includes an Annual Iteration Process for the Price Control Financial Model, making base revenue levels responsive to a range of factors set out in the licence conditions we are proposing. In this chapter we describe the way the Annual Iteration Process will work and the instruments that underpin it.

Allowed revenues

7.1. The allowed revenues for all GDNs under our Final Proposals are summarised in Table 7.1 and are set out in detail in Appendix 2. Further detail, underpinning these values can be found in the financial model[32] which has also been published alongside our Final Proposals. Actual allowed revenues could turn out to be higher or lower depending on the utilisation made of the uncertainty mechanisms and incentives. It should be noted that these allowed revenues do not include the Network Innovation Allowance or any view on the level of revenue that may be allowed under the various incentive mechanisms. However, these allowed revenues do include charges associated with the Statutory Independent Undertakings (SIUs), which are recoverable from the NTS.

Table 7.1 Summary of allowed revenues for all GDNs

Allowed Revenue for year ending 31 March (09/10 prices - £m)	2013	2014	2015	2016	2017	2018	2019	2020	2021
Industry	**2,953**	**3,161**	**3,079**	**3,117**	**3,091**	**3,099**	**3,100**	**3,083**	**3,092**
Yr on Yr Change		7.0%	-2.6%	1.2%	-0.8%	0.3%	0.0%	-0.5%	0.3%
Cumulative Change		7.0%	4.3%	5.6%	4.7%	5.0%	5.0%	4.4%	4.7%

[32] RIIO-GD1 Price Control Financial Model
RIIO-GD1: Final Proposals Financial Model

SIUs and NTS pension deficit funding in relation to former GDN employees

Initial Proposals

7.2. In Initial Proposals, we noted that the Statutory Independent Undertakings (SIUs) are subsidised by GB gas customers in accordance with a direction from the Secretary of State which require the DN to charge customers in the Independent Undertakings no more than charges to other customers.[33] Consumers within the SIUs pay the average GB transportation charge. The remaining costs are recovered from GB customers through NTS charges.

7.3. We set out that in 2012/13, the cross-subsidy (ie recovered from all GB customers) was equal to £17.1m for SGN's SIUs.[34] Over RIIO-GD1, SGN envisage that the costs of supply will be around £12 million p.a. over RIIO-GD1 equivalent to an annual per household subsidy of around £1500.[35] The costs associated with the supply of SIUs located outside SGNs licensed area were £0.1 million in 2012/13.[36]

7.4. The direction also ensures that customers in the SIUs pay no more in commodity charges than a reference GB commodity price, with the difference ('bulk supply differential') recovered by shippers through NTS charges.[37]

7.5. We noted that the direction will lapse with the end of the current price control on 31 March 2013 but that DECC has stated to us that it expects to require Ofgem to maintain the current subsidy arrangements, and expects to issue us with a direction.

7.6. NTS pension deficit charges relating to its former GDN employees who retired prior to distribution Network sales are recovered through GDN charges. The transfer is in line with uniform network code (UNC) modification 127 introduced in 2007.[38]

---

[33] Independent Undertakings comprise eight communities and around 10,000 customers connected to independent gas networks, ie not directly connected to the national gas network. The SIUs are supplied by either Liquefied Natural Gas (LNG) or Liquefied Petroleum Gas (LPG). SGN operates/owns the largest SIUs, comprising around 7,700 households in remote areas in Scotland: Campbeltown; Stornoway; Wick; Thurso (all supplied with LNG), and Stornoway (LPG). WWU has independent networks in Llanfyllin; and, Llanwrtyd Wells. Source: GDN responses to DECC questionnaire on SIU subsidy; 2007.

[34] As set out in C26. Source: http://www.ofgem.gov.uk/Networks/Trans/GasTransPolicy/LNGPriceControl/Documents1/120206_GM_noticetomodify.pdf

[35] Calculation: £12 million/ 7,700 households = £1,550 per household.

[36] The subsidy arrangements are given effect through Special Condition C26 of NGGT's gas transporter licence (C26: Gas Conveyed to Independent Systems). See: http://www.ofgem.gov.uk/Networks/Trans/GasTransPolicy/LNGPriceControl/Documents1/120206_GM_noticetomodify.pdf

[37] We understand that the value of the subsidy in 2011/12 was approximately £2million or around an additional £200 per household. Table set out subsidy payments from NTS Operator to shippers under NGGTs Special Licence Condition 26 ("Gas Conveyed to Independent Systems"). Source: NGGT

£	08/09	09/10	10/11	11/12
$BPDE_t + BPDADJ_t$	706,276	836,427	678,398	2,133,892

[38] See: http://www.gasgovernance.co.uk/sites/default/files/0127OfgemDecisionLetter.pdf

The charges recovered by NTS through GDNs price controls are currently £35m per year (2009/10 prices).

7.7. We noted in IP that it was unclear whether the current funding arrangements (ie which involve Gas Transporter – Gas Transporter transfers) for Independent Undertakings and NTS Pension Deficits are permissible under the provisions of the Gas Act 1986[39], and we identified three potential options:

- *Option 1*: do not allow GDNs and NTS to recover their respective costs in relation to SIUs and pension deficits in 2013/14 but allow them to recover such costs *including the additional financing costs* through GT-GT transfers (as now) once legislation is in place. In short, we would log-up the respective costs.
- *Option 2*: allow GDNs and NTS to recover their respective costs through their own controls (ie no socialisation) for 2013/14, and then revert back to existing arrangements once legislation is in place.
- *Option 3*: As per option 2, but do not revert back to current arrangements for NTS once legislation is in place. We would revert back to the current arrangements for Independent Undertakings assuming DECC issued a direction requiring us to do so.

Summary of consultation responses

7.8. In relation to the NTS deficit charging arrangements, two GDNs considered that the NTS charging arrangements were not prohibited by the Gas Act.

7.9. In relation to the Scottish SIUs funding arrangements, SGN stated that it would prefer option 1, ie log-up costs and recover them in year 2 of RIIO-GD1. However, it also considered that it should be able to recover such costs as soon as the statute/ direction were in place, ie outside the principal change in charges on 1 April.

Our decision

7.10. We have considered the GDNs view that the NTS pension funding arrangements were not prohibited by the Gas Act, and we agree with this view.

7.11. In relation to the SIUs, we have decided upon option 1, ie we will allow SGN to log-up the transportation costs associated with the supply to the SIUs, and then recover these costs, including the financing costs, once the requisite statutory amendment and direction from DECC is in place.

7.12. DECC has confirmed to us that it intends to issue us with a direction by 1 April 2013. We expect the required amendment to the legislation to be in place during

[39] This issue in relation to GT-GT transfers has arisen because before 2004 there was only one gas transportation company (National Grid Gas) and therefore no need to consider the transfer of monies between several transportation companies. When the gas grid was split between different gas transportation companies, the Gas Act 1986 was amended, but ambiguity remains.

2013.[40] However, we do not intend to allow SGN to recover such costs before 1 April 2014 to avoid mid-year charge changes in relation to NTS charges.

7.13. As set out in the RIIO-T1 cost efficiency supporting document, we also intend to allow shippers to recover the bulk price differential through NTS charges.

7.14. As part of our statutory licence consultation, we intend to introduce the required licence conditions to allow for DECC's intended funding arrangements (ie where the costs in relation to SIUs are recovered through NTS charges) with the licence conditions activated once the statute and direction are in place.

Financial modelling

Initial Proposals

7.15. In Initial Proposals, we explained that we have developed a new financial model for the RIIO price controls. This model, named the Price Control Financial Model (PCFM), will form part of the licence as one of the Financial Instruments.

7.16. For Initial Proposals this model was in the form of an integrated model covering both RIIO-GD1 and T1. We asked two questions in respect of the financial model. These questions sought views on the calculations and layout of the financial model and whether the model should also capture, for presentational purposes, the revenues from all incentives schemes which sit outside base revenues.

Summary of respondents' views

Calculations and layout of the financial model

7.17. Most respondents commented that the model was laid out well, well structured and was easy to navigate. The network operators were also supportive of the way we had engaged with them in its development. We also received a number of detailed specific queries from the GDNs which were separate to the published responses.

7.18. Respondents also made specific responses in two areas. The first was over the lack of transparency in financeability and the second was on accounting errors in the financial statements.

7.19. In terms of transparency of financeability, respondents commented that the credit and equity metrics which had been included in previous versions of the financial model were not included in the financial model published with Initial Proposals.

[40] The necessary amendment to the Gas Act has been included as part of the Department for Communities and Local Government's (CLG's) Growth and Infrastructure Bill, which is currently before Parliament.

7.20. In terms of the accounting errors in financial statements, one respondent raised the concerns around the use of the financial statements as published in the model (on which credit metric calculations are based) for financeability scenario testing. These concerns were raised as the financial statements included with the Initial Proposals model only calculated financial statement amounts based on the proposed allowances. These financial statements did not reflect the timing differences that may occur between incurring expenditure and the adjustment to base revenue through the MOD term.

Other data for presentation purposes

7.21. Respondents were broadly supportive for the inclusion of the other components of allowed revenue within the formal PCFM although they reiterated that it was not the primary purpose of the model. One respondent suggested that care would need to be taken if other revenues were included so as not to mislead stakeholders as to the purpose of the model. Concerns were raised to avoid duplication of revenue reporting and to ensure that there was clarity over what the data in the model represents.

Subsequent discussions with network operators

7.22. The issues raised by the network operators were subsequently discussed at a working group and with individual network operators on a bilateral basis.

Our Final Proposals

7.23. Although the credit ratios were not included in the Initial Proposals model, the data to calculate the ratios was provided. However, to avoid any apparent lack of transparency we have included the credit ratios in the Final Proposals model. We have also tested financeability taking into account the timing differences associated with the uncertainty mechanisms and the totex incentive mechanism as detailed in Chapter 4.

7.24. Our view on updating RPI is that the previous model overstated the impact of changes in RPI on nominal interest charges as the level of charges for existing indebtedness are not affected by changes in annual RPI. Once the impact of RPI on nominal interest charges is corrected, changes in RPI do not have a material impact on the level of base revenues (in real prices) generated by the model. We have therefore decided not to update RPI on an annual basis as part of the Annual Iteration Process and to use a fixed RPI based on the long run RPI rate of 2.8 per cent, which will ensure that modelled nominal interest rates are appropriate for a long price control period. We note also that a fixed rate was used for GDPCR1 and TPCR4.

7.25. Our Final Proposals financial modelling reflects our discussions with network operators and we have made amendments to the models to address the issues that have been raised where we believe these amendments to be appropriate.

Overview of the financial model

7.26. We noted that we would be splitting the financial model used for Initial Proposals into sector specific models for Final Proposals. This split has been completed and the model for RIIO-GD1 is the GD1 Final Proposals model. The GD1 Final Proposals model contains some additional analysis tabs, such as financial statements and credit metrics, which will not be included in the formal PCFM. The PCFM is the formal financial instrument which will be used on an ongoing basis as part of the Annual Iteration Process for calculating MOD (annual modifications to base revenues set at Final Proposals). This distinction between the two variants of the financial model is further explained in the respective sections below.

7.27. In overview, the common functionality of the two models calculates the elements of base revenues. The financial model performs calculations to compare allowances (starting with Final Proposals allowances and including additional allowances directed during the RIIO period) with actual expenditure for elements of base revenues.

7.28. The main output of the model is recalculated base revenues. The components of base revenues and an overview of how they are calculated is as follows:

(i) Fast-pot expenditure – calculated based on inputs of totex expenditure, the totex incentive mechanism and totex capitalisation rates
(ii) Non-controllable opex – pass through costs based on inputs RAV depreciation – calculated based on RAV additions (itself based on slow money expenditure and disposals and other RAV adjustments) and depreciation rates
(iii) Return – calculated based on RAV balances and the weighted average cost of capital Equity issuance costs – based on the notional equity issuance calculations and the deemed rate of such costs
(iv) Additional income – derived from the application of the IQI mechanism
(v) Core direct allowed revenues terms ('DARTS') – these are items which do not go through the totex incentive mechanism such as pension deficit repair costs, pension administration and PPF levy and revenues from previous price controls
(vi) Tax allowance – based on tax calculations which have applied assumptions of tax pool allocations, capital allowances, totex expenditure amounts, tax losses position and interest calculations (the interest calculations are based on a calculation of the notional net debt position and the cost of debt). Adjustments to the tax allowance can arise from tax trigger events or tax clawback amounts.

7.29. The GD1 financial models perform the calculations for each GDN for all eight years of the RIIO-GD1 price control within the same model. Each GDN has its own input sheet which includes GDN specific and general assumptions.

7.30. Since the PCFM variant of the model will be used for the Annual Iteration Process and is a formal financial instrument of the licence, the layout of the model has been developed with a look and feel that is intended to make it easier to follow calculations as they flow through the model. This approach has entailed that calculations are laid out in simpler steps rather than combining steps within a single

formula. Headings and sub-headings have also been included within the model worksheets together with high level explanatory notes with the aim of explaining the calculations that are being performed.

7.31. The financial model has been developed with the active engagement of the GDNs and networks from other sectors. This engagement has involved finance working group meetings; the issuing of various draft version of the model at different stages of development; and the collection, discussion and resolution of issues on an ongoing basis.

Price Control Financial Model (PCFM)

7.32. As mentioned above, the purpose of the PCFM is to calculate the value of MOD, which is the adjustment to base revenues as a result of the Annual Iteration Process. The additional analysis tabs included within the Final Proposals model are not needed for the calculation of MOD. The PCFM does not currently include the calculations of the other elements of allowed revenues. The governance of changes to the model is set out in a formal licence condition.

7.33. We do not believe therefore that it is appropriate for the supporting analysis included in the Final Proposals model to be included in the formal PCFM. This will also avoid the misinterpretation of such information should it be included.

The Annual Iteration Process for the Price Control Financial Model

7.34. The RIIO-GD1 price control will include an Annual Iteration Process for the PCFM used to set the licensee's opening base revenues. This will allow base revenues to be updated in light of prevailing financial conditions, operational developments, and the performance and output levels achieved by the licensee, supporting the objectives of the RIIO price control approach. The Annual Iteration Process reduces the need to log-up financial adjustments during the price control period and simplifies implementation of uncertainty mechanisms.

7.35. Base revenue is the largest component of the licensee's overall allowed revenue (which also includes other terms dealing with, for example, specialised incentives and cost pass-through items). Under the Annual Iteration Process, the licensee's base revenues will be remodelled by applying revisions to a series of PCFM Variable Values contained in a table on the inputs sheet of the PCFM. PCFM Variable Values have descriptive names and designations. For example, PCFM Variable Values relating to the licensee's allowed percentage cost of corporate debt are designated as 'CDE' values.

7.36. Revisions to PCFM Variable Values are determined under the provisions of relevant licence special conditions and the GD1 Financial Methodologies ('the Methodologies') that are contained in the GD1 Price Control Financial Handbook ('the Handbook'). The Annual Iteration Process will calculate the incremental effect of base

revenue recalculations as a value for the term MODt, for use in the formula for the licensee's base revenue. This is illustrated in the simplified formula below:

Base Revenue for year t = opening base revenue for year t + MOD for year t.

7.37. The value for MOD_t calculated under an Annual Iteration Process may be positive or negative. For Formula Year 2013-14, the value of MOD is stipulated to be zero.

7.38. Once directed, the value of MOD for a given Formula Year is not changed; it becomes a record alongside the licensee's opening base revenue ('PU') value for that year. This is the case, even though special conditions and methodologies may provide for PCFM Variable Values to be retrospectively re-revised. The incremental effects of revising PCFM Variable Values for Formula Years earlier than Formula Year t are always brought forward to the extant calculation of MOD_t.

7.39. The PCFM, special conditions and methodologies will be available on our website, meaning that the licensee and other stakeholders will be able to use their forecasts for PCFM Variable Value revisions to estimate base revenue positions and to carry out sensitivity analysis in advance of each Annual Iteration Process. Once the Authority has given notice of the revised PCFM Variable Values it proposes to direct for use in each Annual Iteration Process, stakeholders will be able to calculate the implied value for MOD. Under the modification protocols for the PCFM, the licensee will have received notice of any changes to the functionality of the PCFM. In addition, the Authority will maintain a reference copy of the PCFM on our website that reflects completed modifications.

7.40. The steps constituting the Annual Iteration Process are set out in Special Condition 2B of the Gas Transporters Licence for gas distribution network operators.

7.41. Our consultations on the drafting of licence conditions for the RIIO-GD1 price control included the special conditions with relevance to the Annual Iteration Process, together with the Financial Handbook and constituent methodologies. The responses we received are reflected in our finalised drafting, and some of the key points are noted below.

Temporal conventions used

7.42. As noted in the simplified formula above, the term MOD_t adjusts the opening base revenue figure for Formula Year t and, in the context of the Annual Iteration Process, references to Formula Years are made, relative to that usage. For example, in a context where MOD_t applied in the formula for base revenue in 2015-16, a reference in the same context to Formula Year t-1 would mean 2014-15 and so on.

7.43. A reference to, for example, the CDE value for Formula Year 2014-15 means the allowed percentage cost of corporate debt value in the 2014-15 column of the PCFM Variable Values Table of the PCFM.

Timetable for the Annual Iteration Process

7.44. The timetable for the Annual Iteration Process is set out in the Handbook and is reproduced below:

Table 7.2 Timetable for the Annual Iteration Process

Annual Iteration Process					
AIP month	**PCFM Functional change cut-off**	**Regulatory reporting information cut-off**	**Proposed PCFM Variable Value revisions**	**AIP completed and MOD_t directed**	**Relevant Year t in which MOD_t applies**
Nov-13	30 Sep 13	31 Oct 13	15 Nov 13	30 Nov 13	**2014-15**
Nov-14	30 Sep 14	31 Oct 14	15 Nov 14	30 Nov 14	**2015-16**
Nov-15	30 Sep 15	31 Oct 15	15 Nov 15	30 Nov 15	**2016-17**
Nov-16	30 Sep 16	31 Oct 16	15 Nov 16	30 Nov 16	**2017-18**
Nov-17	30 Sep 17	31 Oct 17	15 Nov 17	30 Nov 17	**2018-19**
Nov-18	30 Sep 18	31 Oct 18	15 Nov 18	30 Nov 18	**2019-20**
Nov-19	30 Sep 19	31 Oct 19	15 Nov 19	30 Nov 19	**2020-21**

7.45. The timetable is driven by:

- the time needed by Ofgem to review and confirm figures in the licensee's price control review information after submission by 31 July in each Formula Year;
- the work required under the special conditions and methodologies to determine revisions to PCFM Variable Values – noting that provisionally determined values for some are needed for the determination of others; and
- the need for the licensee to have sufficient notice of its base revenue figures for the purpose of setting indicative use of system charges.

7.46. The RIIO-GD1 price control commences on 1 April 2013 and the first Annual Iteration Process will be completed by 30 November 2013. This will calculate the value of MOD for Formula Year 2014-15 for direction by 30 November 2013. Thereafter, in respect of each value for MOD_t, the cycle will be:

- by 30 July – licensee submits price control review information for Formula Year t-2 (see temporal convention above);
- 30 September – cut off date for functional modifications to the PCFM;
- 31 October – cut off date for price control review information changes – Ofgem will apprise the licensee in business correspondence of any issues that are outstanding and which may require restated or adjusted information to be used to re-revise a PCFM Variable Value for a subsequent Annual Iteration Process;
- by 15 November – Ofgem notifies the licensee of the revised PCFM Variable Values that it expects the Authority will direct (14 day notice period provided for under each relevant special condition);
- by 30 November – GD1 PCFM to be used for the Annual Iteration Process published on the Ofgem website;
- by 30 November – Authority gives direction setting out:

(i) revised values for PCFM Variable Values where applicable; and
(ii) the value for MOD_t

7.47. The last Annual Iteration process under this regime will take place by 30 November 2019 in order to determine the value of the term MODt for Formula Year 2020-21, the last year of the RIIO-GD1 price control period. The modelling of opening base revenues for the following price control period will take place as part of the development and proposals process for that price control.

7.48. The direction of revised PCFM Variable Values will also include a 'screenshot' of the PCFM Variable Values Table showing the revised values (in bold) and the PCFM Variable Values that are not being revised for that Annual Iteration Process.

7.49. In the responses we received to our licence consultations, some concerns were raised in relation to the timeline for the Annual Iteration Process set out above.

Notice period for proposed PCFM Variable Value revisions

7.50. Some respondents considered that the 14-day notice period in relation to proposed PCFM Variable Value revisions was too short. It was suggested that a longer 28 day period should be specified, and that there should also be a notice period in relation to a proposed value for the term MOD_t.

7.51. Whilst acknowledging that a 28 day period is more usual in relation to notices given by the Authority, we consider that a 14 day period in this context is optimal because it maximises:

a) the time available before the Annual Iteration Process for the finalisation and processing of information needed to determine PCFM Variable Value revisions; and
b) the time available after confirmation of the value of MOD_t for the licensee and other stakeholders to address the impact on indicative use of system charges for Formula Year t.

7.52. The values set down in the 14-day notice should largely be confirmatory in nature, since the licensee will itself have generated and reported to Ofgem, most of the data used under the PCFM Variable Value determination methodologies. If there are any disputes, uncertainties, or outstanding issues in relation to these data, they will have been addressed in business correspondence between Ofgem and the licensee prior to the formal notice being given. The provisions for the licensee to raise objections or representations in relation to notified values act as safeguards for the licensee in case of errors or unaddressed differences of opinion. It is also relevant to note that:

- where appropriate, special conditions (in relation to allowed Totex expenditure adjustments) and the methodologies contain additional notice requirements and timing stipulations regarding adjustments;

- where possible, the notification of expected PCFM Variable Values and the direction of those values and MOD_t will take place ahead of the backstop dates set out in Table 7.2; and
- the design of the PCFM means that PCFM Variable Values for a given Formula Year can be re-revised at a later time if necessary with consequential and time value of money adjustments taken into account.

7.53. Part B of draft Special condition 2B (Annual Iteration Process for the GD1 Price Control Financial Model) specifies that the value of the term MOD for Formula Year t will be directed by the Authority no later than 30 November in each Formula Year t-1. Whilst there is no provision to provide earlier notice of the proposed value of MOD_t, it should be remembered that:

- the value of MOD_t is calculated automatically by the PCFM, once values on the PCFM Variable Values Table have been revised; and
- the PCFM forms part of Special Condition 2A (Governance of GD1 Price Control Financial Instruments) and its calculation functionality can only be modified under the provisions of that condition.

7.54. In light of the factors outlined above, we have decided that a 14 day notice period for proposed PCFM Variable Value revisions, and formal direction of those values and the value of MOD_t by no later than 30 November in reach Formula Year t-1 remains appropriate.

Default value for MOD_t

7.55. Another concern raised in response to our licence drafting consultations related to the value that MOD_t should take in the unlikely event that the Authority failed to direct its value by 30 November in a Formula Year t-1.

7.56. We consider that the risk of this contingency is very small because the requirement for the Authority to direct the value of MOD_t by no later than 30 November in each Formula Year t-1 is clearly set out in Special Condition 2B. If the direction of a value for MOD_t were to be delayed beyond 30 November, the Authority would be required to direct a value as soon as reasonably practicable in order to complete the Annual Iteration Process under Part B of Special Condition 2B. However, given that the value of MOD_t could represent a significant proportion of the licensee's base revenue, we acknowledge that a satisfactory default provision needs to be in place.

7.57. One respondent argued that, in the absence of a direction of the value of MOD_t by 30 November, the licensee should be able to give notice of its own calculation of MOD_t to the Authority, based on its assessment of the revised PCFM Variable values that ought to be used. Under the suggestion, if the Authority did not direct an alternative value for MOD_t by 21 December, the value notified by the licensee would stand.

7.58. Having carefully considered the responses on this issue, we consider that the default value for MOD_t (in the absence of a direction by the Authority by 30

November) should be an interim value for MOD_t calculated by the licensee using the PCFM, with the same set of PCFM Variable Values as was used for the last completed Annual Iteration Process. In reaching that view we have taken into account:

a) the very limited risk that a value for MOD_t would not be directed by the Authority by 30 November in Formula Year t-1;
b) the short period of time during which a directed value for MOD_t would be unavailable even if the 30 November deadline were missed; and
c) the need for the licensee and other stakeholders to have reasonable certainty regarding the level of the licensee's base revenues.

7.59. Each special condition that refers to the determination of PCFM Variable Values sets out the contingency position if, for any reason, a required revision is not directed by 30 November in a Formula Year t-1. Again, we consider the likelihood of such a situation arising to be small.

Governance for the PCFM and the Annual Iteration Process

7.60. The Financial Handbook (together with its constituent methodologies) and the PCFM are classified as Price Control Financial Instruments and form part of Special Condition 2A. Up to date copies of the Price Control Financial Instruments will be maintained on the Ofgem website during the price control period.

7.61. In the event of any inconsistency between the licence, Handbook and PCFM, the following order of precedence applies:

(i) the main text of the relevant licence condition(s)
(ii) the Handbook and constituent methodologies, and
(iii) the PCFM.

7.62. The other special conditions associated with the Annual Iteration Process are grouped together in licence chapters covering:

- the range of financial adjustments (addressed in this supporting document), covering:
  - specified financial adjustments;
  - the Totex Incentive Mechanism;
  - legacy price control period adjustments; and
- adjustments to allowed Totex expenditure levels under a range of schemes.

Modification of the GD1 Price Control Financial Instruments

7.63. As part of Special Condition 2A, the initial handbook and PCFM will be subject to the statutory licence consultation process. In responses to our two licence drafting consultations, respondents expressed a strong view that the procedures relating to any subsequent modification should be robust.

7.64. The modification procedures for the handbook and PCFM are set out in Special Condition 2A and provide for:

- modification after a notice period where the impact of the change is not expected to be significant; and
- modification under the full licence modification process procedure where the impact of the change is expected to be significant.

7.65. In the event of a difference of opinion between the Authority and the licensee, the licensee can require the full modification process to be followed where it can demonstrate that it reasonably considers that the proposed modification would be likely to have a significant impact.

7.66. Chapter 1 of the Financial Handbook establishes terms of reference for a Price Control Financial Model Working Group whose role will be:

- to review the ongoing effectiveness of the PCFM;
- to provide views on the impact of any proposed modifications to the PCFM; and
- to provide such views or recommendations to the Authority with regard to the PCFM as it sees fit.

7.67. It should be noted that the 'state' of the PCFM can only be changed in two ways which are:

- the completion of an Annual Iteration Process; and
- modification under the provisions of Special Condition 4A/5A.

7.68. It is expected that modifications to the Price Control Financial Instruments that fall into the 'no significant impact expected' category would be logged up for consideration at a later date, to save administrative burden on the licensee and other stakeholders.

The GD1 Price Control Financial Methodologies

7.69. The methodologies (referred to in relevant special conditions) set out how revisions to PCFM Variable Values are to be determined and are contained in appropriately named chapters of the handbook. They cover, as appropriate, the three broad approaches that are used to determine different PCFM Variable Values:

(i) formula driven calculations;
(ii) application, review and determination processes; and
(iii) step by step methodologies.

7.70. The approach used depends on the nature of the adjustment required, but in every case, the text of the relevant special condition/handbook chapter covers:

- the name of the adjustment;

- a description of the purpose of the adjustment; and
- the means by which revised PCFM Variable Values are to be determined.

7.71. Where appropriate, the methodologies refer to, and may summarise, policy decisions separately published by the Authority, for example pension cost principles that are relevant to all network price controls. The methodologies also refer to Regulatory Instructions and Guidance (RIGs) documents as required, and certain key values used in PCFM calculations (such as Totex capitalisation rates) are set down in special conditions.

Records for the PCFM and Annual Iteration Process

7.72. The Authority will include the handbook and PCFM in its statutory consultation on modifications to the licence for the RIIO-GD1 price control and in its subsequent licence modification notices. At the outset of the RIIO–GD1 price control period the handbook and PCFM will be published on the Ofgem website and copies will be placed in Ofgem's secure registry.

7.73. During the price control period copies of any notices relating to modifications of the handbook or PCFM will be placed:

a) on the public register file for the licensee; and
b) in Ofgem's secure registry.

7.74. Updated reference copies of the handbook and PCFM will be maintained on the Ofgem website.

7.75. If a modification is taken forward under the full licence modification process documents relating to the consultation process will also be published on the Ofgem website.

7.76. On or before 30 November in each Formula Year t-1, the Authority will publish the finalised version of the PCFM to be used for the Annual Iteration Process that will calculate the value of the term MOD for Formula Year t. The Excel® file concerned will be named 'GD1 Price Control Financial Model-20XX-XX' (where 20XX-XX represents Formula Year t-1).

7.77. The design of the PCFM incorporates a log of previously calculated values for the term MOD which, together with the archived PCFM copies, will ensure that a suitable record of base revenue calculations is maintained.

7.78. Copies of directions relating to PCFM Variable Values and the term MOD will also be placed on the Ofgem website, on the public register file for the licensee, and in Ofgem's secure registry.

Features of the PCFM and calculation of MOD_t

7.79. The PCFM consists of an Excel® workbook with fixed and variable input tables for each licensee, and processing and output worksheets. It has been designed to be more user friendly than previous models used to calculate price control revenues. The PCFM Variable Values table is arranged in rows (one for each type of PCFM Variable Value) and columns (one for each Formula Year in the price control period).

7.80. Drop down menus allow the user to select the Formula Year t for which MOD_t is to be calculated and the licensee for whom it is to be calculated. This facilitates the updating of the PCFM Variable Values table for the licensee in accordance with directed values. A macro button then allows the calculation functions to be run so that the value of MOD_t can be obtained.

7.81. The PCFM works in a 2009-10 price base (except for some internal tax calculations which use nominal prices derived using embedded, fixed RPI forecast values). The functionality of the PCFM applies time values of money ('carrying value') adjustments across Formula Year calculations, but outputs a value for MOD_t in 2009-10 prices – indexation is applied under the formula for base revenue set down in the special conditions.

Types of adjustment in base revenue recalculations

7.82. PCFM Variable Value revisions are described in the methodologies, but fall into the following categories:

- revenue allowance adjustments;
- actual expenditure level adjustments;
- allowed expenditure level adjustments;
- RAV balance addition adjustments; and
- the percentage cost of corporate debt.

7.83. Under the Annual Iteration Process, the licensee's base revenue figure for each Formula Year in the price control period is recalculated, using formulae consistent with the modelling of opening base revenues, but applying the adjustments outlined above.

Legacy price control adjustments

7.84. Two PCFM Variable Values deal with legacy price control adjustments, with revisions being determined under formulae contained in the relevant special conditions. Each component term in the formulae relates to a revenue allowance adjustment or RAV balance adjustment necessary to close out a scheme that formed part of the GDPCR1 price control arrangements. Most of the adjustments are needed to address outturn/performance values which had not been reported or finalised when the licensee's opening base revenues were calculated.

7.85. The methodologies for determining component term values for legacy price control adjustments are contained in the handbook and confirm that legacy adjustments will be:

- consistent with the approach used to factor any forecast adjustments into the licensee's opening base revenues;
- in accordance with previously published decision documents pertaining to the scheme concerned; and
- ascertained using a calculation workbook (Excel® workbook) published with RIIO-GD1 Final Proposals.

7.86. Legacy price control adjustments are not subject to the Totex Incentive Mechanism.

Status of RAV balance figures and projected values in the PCFM

7.87. Under the Annual Iteration Process, updated RAV balance figures (in 2009-10 prices) will be generated within the PCFM for the purpose of calculating the value of MOD_t using revised PCFM Variable Values. We will, at any given time during the price control period, refer to these RAV balances as being the latest ascertained RAV values for the licensee, but they are subject to revision in respect of any review process applicable to the underlying data concerned.

7.88. At any given time during the price control period, PCFM Variable Values and calculated values contained in the PCFM for Formula Years later than Formula Year t have indicative status only and are subject to change, except for PCFM Variable Values which have been determined under the terms of a special condition on a non-provisional basis.

8. Dealing with uncertainty

Chapter Summary

This chapter sets out our decision on uncertainty mechanisms for RIIO-GD1.

Introduction

8.1. Under the RIIO framework, we expect network companies to manage the uncertainty they face. The regulatory regime should not protect companies against all forms of uncertainty. The use of uncertainty mechanisms should be limited to instances in which they will deliver benefits for consumers (eg in terms of a reduced risk premium) while also protecting the ability of networks to finance efficient delivery.

Summary of Initial Proposals

8.2. In Initial Proposals, we identified a number of costs, and potential costs, which we considered could be more efficiently accommodated through an uncertainty mechanism as opposed to an ex ante allowance. To inform our Final Proposals (FP) we also sought views on a number of uncertainty mechanisms that had been proposed by GDNs in their business plans.

8.3. We published a further consultation on 30 October following the announcement by the Office for National Statistics (ONS) of its review of how it calculates the Retail Prices Index (RPI).[41] Our consultation sought views on how we should address any change to RPI arising from the review. We proposed that we should allow for a reopener to accommodate any change, and invited views on whether we should limit changes to application windows, and apply a materiality test.

Summary of respondents' views

8.4. In the main, GDNs supported our proposed set of uncertainty mechanisms. However, some raised concerns about the specific design of some mechanisms and we set out these concerns below.

8.5. Suppliers expressed concerns about the volatility in allowed revenues, and therefore network charges, which may arise from the use of uncertainty mechanisms. Respondents also requested more information about how we would undertake the review of costs (under the reopener mechanism), and the timetable for publishing changes to allowed costs.

[41] RIIO-T1/GD1: Office of National Statistics (ONS) review of Retail Prices Index (RPI) methodology (Oct 2012):http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=329&refer=Networks/Trans/PriceControls/RIIO-T1/ConRes

8.6. We set out respondents' views by mechanism below.

Indexation for inflation and the ONS review of the RPI

8.7. There were no comments on the proposed method of indexation for inflation which we set out in Initial Proposals.

8.8. A number of responses to Initial Proposals noted the announcement that the Office of National Statistics (ONS) was considering conducting a review of the methodology used to calculate the RPI. Respondents noted that this could impact on a number of areas of the price control settlement and therefore an uncertainty mechanism should be considered. We had not discussed this in Initial Proposals as the ONS announcement was made following publication.

Pass through costs

8.9. In response to Initial Proposals there were no comments made on the proposed treatment of certain costs as pass through. Since Initial Proposals we have published our decision on measures to mitigate network charging volatility.[42] GDNs have expressed the concern that the forecasts for some pass through costs could deviate significantly from actual costs over the price control period. For example, the Shrinkage Allowance is impacted by the gas commodity price. This could impose cash-flow risk on them. They have asked us to consider restating the forecast values during the price control period to minimise the difference between the forecast and actual values, while maintaining a period of notice for any changes.

Reopener mechanism

8.10. In Initial Proposals, we stated that costs associated with street works, enhanced physical site security, the smart meter roll-out, connection of large loads, the roll-out of innovation, and changes to the connection charging boundary would be subject to a reopener, and we set out a standardised approach for all such costs. The approach limited requests for additional revenue allowances to two reopener windows and required a materiality threshold to be met before a reopener could be triggered.

Areas of cost covered

8.11. A number of responses referred to our proposed treatment of street works costs. It was suggested that the mechanism could be more flexible and that where possible an ex ante allowance should be provided in order to incentivise investment to deliver further efficiencies.

[42] Decision on measures to mitigate network charging volatility arising from the price control settlement' (Oct 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=404&refer=Networks/Policy

8.12. Our proposal to include potential costs related to the smart meter roll-out in the scope of the reopener mechanism was supported by some GDNs. However, one GDN noted its continued support for a revenue driver. Another considered that the mechanism should be more flexible, ie not restricted to reopener windows.

8.13. In relation to the proposed reopener for the connection of large loads, all GDNs supported the introduction such a mechanism to allow recovery of costs related to network reinforcement as a result of the connection of large loads. SGN noted that there is one project on its Scotland network where it considers it may trigger this reopener. It noted that the definition of large loads should include large consumption sites, eg power stations and distilleries.

8.14. Some respondents also sought clarity on how the assessment of efficient costs would be conducted if a reopener were triggered, particularly for costs related to the smart meter roll-out.

Restriction of adjustments

8.15. Some respondents considered that the proposed reopener mechanism should be more flexible, eg by not restricting applications to two windows. Some also raised concerns that the proposed materiality threshold of one per cent of revenues is too high and will result in cash-flow concerns for GDNs. In relation to the innovation roll-out mechanism, two GDNs considered that subjecting costs to a materiality threshold would reduce the incentive to innovate. One GDN considered that mandated costs, eg through government legislation, should not be subject to a materiality threshold as costs should be recovered in full.

8.16. Two GDNs proposed that the reopener should be triggered if the cumulative additional cost in all areas subject to the mechanism reaches a defined materiality threshold. They considered that this would reduce the risk they face from the mismatch between incurring costs and recovering these costs through charges to consumers.

Lane rental revenue trigger

8.17. NGGD continue to support the introduction of a revenue trigger for lane rental schemes. It provided additional evidence in support of its proposed method of setting the unit cost required to operate the mechanism. Another GDN did not support the introduction of this mechanism due to the uncertainty in the impact that lane rental schemes will have.

Tier 2 mains replacement revenue driver

8.18. There were differing views expressed by the GDNs in relation to how the revenue driver should operate. Two GDNs considered it should only be for additional mains that reach the risk threshold during the price control period, while the other two GDNs considered it should cover the full population of tier 2 mains above the risk threshold.

8.19. One GDN proposed that the revenue driver should not include services as it is difficult to collect actual data on service replacements. Another proposed that the removal of Medium Pressure Ductile Iron within 30 meters of a property be included.

Fuel poor network extension scheme review

8.20. One GDN raised concerns that not defining when a review of the fuel poor network extension scheme will take place will create uncertainty and potentially discourage funding from other parties. This respondent also proposed a revenue driver to allow connection of additional fuel poor designated connections over and above the volumes funded through ex ante allowances.

Xoserve (Central Agent) review

8.21. Xoserve is the Gas Transporters' (GTs')[43] Agent and provides centralised information and data services to the wider industry on their behalf. Xoserve charges GTs for the services it provides and we provide an allowance in the price control settlement to enable GTs to pay these charges.

8.22. Respondents supported our proposal to review allowances provided to GDNs to fund Xoserve as a result of implementation of new funding arrangements.[44] One respondent proposed that this mechanism also be used to recover additional costs that may arise as a result of industry developments such as smart metering.

Statutory Independent Undertakings (SIUs)[45]

8.23. SGN currently provides liquefied natural gas (LNG) to the SIUs from National Grid Gas's (NGGT's) LNG facility at Avonmouth. This is an interim solution adopted following the closure of NGGT's Glenmavis LNG facility which previously supplied the SIUs with LNG. There is uncertainty over the future of the Avonmouth LNG facility, and SGN intends to identify the enduring solution during the RIIO-GD1 period.[46]

8.24. SGN considers that a reopener is required to provide an opportunity for it to request funding for an enduring solution for the supply of gas to SIUs. It noted that there is considerable uncertainty in relation to future supply costs. SGN considers that the capex costs for the range of solutions it is considering are between £10 and £40 million.

[43] The GDNs and National Grid Gas National Transmission System are collectively known as Gas Transporters.
[44] Open letter review of Xoserve (Jan 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=345&refer=Networks/GasDistr/RIIO-GD1/ConRes
[45] SIUs are independent networks not connected to the national gas network.
[46] For a discussion of NGGT's Avonmouth LNG facility, see National Grid LNG's response to our recent consultation on Avonmouth regulated services (referred to as C3 prices). See: http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=63&refer=Networks/Trans/GasTransPolicy/LNGPriceControl&utm

8.25. Since publication of Initial Proposals, we have published a consultation on our proposed approach to the price review of regulated services provided by Avonmouth (C3 prices), as well as Initial Proposals.[47] In response to our consultation, SGN has also requested that any changes to C3 prices arising from our C3 price review are reflected in NGGT's Special Condition C26 licence condition ("Gas Conveyed to Independent Systems"). C26 sets out the amounts that NGGT pays SGN for the provision of services to SIUs. The effect would be to protect SGN from the cost risks associated with a change to C3 prices.

Medium rise multiple occupancy buildings (MOBs) volume driver

8.26. All GDNs supported a volume driver mechanism for additional costs arising from replacement/repair workload on medium rise MOBs due to uncertainty around the volume of workload required. However, only two GDNs provided additional information on how to set the unit cost assumptions required to establish a driver mechanism. The other GDNs noted the variability in the costs of conducting such work.

The mid-period review and asset health integrity

8.27. Respondents supported our proposal to review funding related to compliance with the Health and Safety Executive (HSE) iron mains replacement programme, if there is a change to it, as part of the mid-period review. One GDN did not support our proposed materiality threshold of five per cent of revenues and proposed that a lower threshold be applied.

8.28. One respondent disagreed with our proposal to review allowances for asset integrity related work at the mid-period. It reiterated its proposal for a trigger mechanism to fund additional work as the need arises, triggered by a reduction in an assets health. Other respondents raised concerns with the materiality threshold that would apply to such costs and the proposal to restrict changes in allowances to one opportunity during the price control period.

Our decision

8.29. Table 8.1 summarises the suite of uncertainty mechanisms that will operate in RIIO-GD1. In coming to our decision, we have considered the materiality and volatility of the uncertain costs, and which parties (companies or consumers) are best placed to manage the uncertain cost risk.

8.30. In finalising the design of the uncertainty mechanisms outlined below, we have implemented our recent decision on mitigating network charging volatility arising

[47] Avonmouth Liquefied Natural Gas facility C3 price review – Open letter (Sept 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=63&refer=Networks/Trans/GasTransPolicy/LNGPriceControl&utm; and Ofgem (26 November) Avonmouth LNG facility price review: Initial Proposals. Source:http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?file=121126_AvonmouthC3Review_InitialProposals.pdf&refer=Networks/Trans/GasTransPolicy/LNGPriceControl

from the price control settlement.[48] We set out below the changes we have made to specific mechanisms to accommodate our charging volatility decision.

Table 8.1 Proposed uncertainty mechanisms

Mechanism	Area covered	Regularity of potential adjustment
Indexation	Inflation, cost of debt[1]	Annual
Pass through	Licence fees, business rates,[1] pension deficit costs, third party damage & water ingress, additional costs directed by the Authority, costs relating to gas theft, the price of gas (in relation to shrinkage), and NTS exit capacity charges	Annual
Reopener	Street works, enhanced physical site security, connection charging boundary, connection of new large loads, innovation roll-out	Twice: April 2016, 2019
Reopener	Smart metering	Flexible. Intention is to open once, and introduce volume driver
Reopener	Statutory Independent Undertakings	Once: April 2016 (SGN Scotland only)
Revenue driver	Tier 2 mains replacement	Annual
Review	Xoserve funding, fuel poor network extension scheme, ONS review of the methodology for calculating RPI	Once: flexible
Mid-period review	Changes in outputs, or introduction of new outputs including changes to the HSE iron mains programme, and asset integrity investment	Once: April 2017
Trigger	Tax legislation[1]	At any time
Reset	Pension deficit repair[1]	April 2015, and every three years there after
Disapplication	Enables price control parameters to be reset if GDN experiences financial distress	At any time

Notes: (1) See Chapter 3 (cost of debt), Chapter 6 (business rates and tax trigger) and Chapter 5 (pensions) for further details on these mechanisms.

Indexation for inflation

8.31. Protection against economy wide inflation is provided through annual indexation of revenues using the RPI. Our approach to indexation for inflation was

[48] See option 4 set out in 'Decision on measures to mitigate network charging volatility arising from the price control settlement' (Oct 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=404&refer=Networks/Policy

explained in our decision of July 2011.[49] In summary, allowed revenues will be indexed by forecast average RPI from 1 April to 31 March of the relevant year. There will be an additional adjustment two years later to true up for the difference between forecast and actual RPI.

8.32. We provide an ex ante allowance for real price effects (RPEs), which represent the expected change in input prices (eg wages, materials) relative to economy wide inflation. Further details can be found in Chapter 3 of the Cost Efficiency Supporting Document.

The ONS review of the RPI

8.33. We published a consultation on 30 October (following our Initial Proposals publication) on how we should address any changes to RPI arising from the ONS review of its RPI methodology.[50]

8.34. Following our review of responses, we have considered whether we should set out a commitment within FP to consult on this issue in the event that the ONS makes a change to the way it calculates RPI or set out this commitment in a licence condition. We note that network companies' responses to our consultation indicated mixed views on the preferred approach.

8.35. We have decided to set out a commitment within FP rather than introduce a licence condition. The reason for our approach is that the effect of any change on network companies is difficult to assess at this stage. As a consequence, it is difficult for us to write a complete licence condition which captures the range of potential changes that we might need to make to the Price Control Financial Model to implement changes to the price control settlement. By setting out a commitment in Final Proposals, we also ensure that we can deal with all network companies at the same time, rather than waiting for the individual licensees to make applications to reopen. Our review of potential changes to the price settlement following the ONS decision on RPI will be subject to the following process:

- Following the announcement of any change to the RPI index by the ONS, we intend to publish a consultation in relation to the impact of the ONS' decision on the price settlement. This would take into account our statutory duties, including our principal objective to protect consumers' interest and our duties to have regard to the need for licensees to finance their regulated activities and to promote efficiency and economy on their part. We expect to publish our consultation within 6 months of any decision by the ONS to change the RPI methodology. That is, assuming the ONS publishes its decision by February 2012, we would expect to publish a consultation document by August 2012. If we do

[49] Decision on the RPI indexation methodology (Jul 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=117&refer=Networks/Trans/PriceControls/RIIO-T1/ConRes

[50] RIIO-T1 and GD1: ONS review of Retail Prices Index methodology (Oct 2012): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=329&refer=Networks/Trans/PriceControls/RIIO-T1/ConRes

not publish a consultation within 6 months of a decision by the ONS, we will write to the companies setting out our revised timetable for consultation.

- Consistent with the definition of RPI in the Special Conditions of each licence, following any change to the methodology for calculating the RPI, we will use the ONS' (revised) RPI to set allowed revenues. For the avoidance of doubt, we will use the (revised) RPI even in the event that the ONS continues to publish an RPI measure based on its existing methodology. However, we will consider within our consultation the option of retaining the use of an RPI based on the existing methodology (for the period for which it is available).
- We expect the consultation will consider, inter alia, the implications of the ONS change on the allowances for real price effects (RPEs) set at the price control review compared to any effect on companies' expected costs in relation to RPEs, the implications for our cost of debt and equity allowances and companies' debt and equity costs, as well as indexation of the Regulated Asset Value (RAV).
- Our review could result in an increase or decrease in companies' allowed revenues. That is, if, following consultation, we determine the outcome of the ONS change to the RPI methodology results in the over-recovery (or the expectation of over-recovery) of costs then we may consider reducing allowed revenues relative to those included in the price control settlement.
- We will only make changes to the price control settlement if we determine, following consultation, the impact on companies' net revenues over the price control period is greater than one per cent of average annual allowed revenue. Our calculation of the net revenue impact of the change in RPI will include the effect on the value of the RAV at the end of the Price Control Period, ie we will consider the difference between the value of the RAV under the revised RPI methodology compared to the value of the RAV if the existing RPI were retained.
- The purpose of the materiality test is to avoid making trivial changes to allowed revenues, and thus minimise regulatory costs. The proposed materiality test is consistent with the materiality test associated with other uncertainty mechanisms.
- The review will only consider changes to companies' net revenues arising from the ONS decision in relation to its review of RPI. We will not take into account other factors, notably, we will not have regard to companies' financial performance against the price control within the context of this review.

Pass through costs

8.36. Those costs treated as pass through costs are outlined in Table 8.1. As a result of our decision in relation to mitigating network charging volatility we are introducing a lag to these mechanisms to improve the predictability of charge changes. This is a change to these mechanisms relative to Initial Proposals. There will be a two year delay between the actual cost being incurred and the adjustment to revenues (with the exception of de minimis pass through, namely gas theft and potential additional costs directed by the Authority (miscellaneous pass through)).

8.37. GDNs will recover, each year, the forecast costs of the pass through items which will be set out in the licence for the eight year price control period. GDNs will then recover the difference between actual costs incurred and the forecast cost two years later.

8.38. In relation to NTS Exit Capacity Costs and the Shrinkage Allowance, as set out in Initial Proposals, we will allow GDNs to pass through price risk to the end consumer (ie NTS Exit Capacity charges, and the gas commodity price respectively), although GDNs retain volume risk (ie NTS Exist Capacity bookings, and shrinkage volumes). In acknowledgment of the concerns expressed by GDNs that these costs are volatile and outside of their control we consider that allowing GDNs to restate forecasts during the price control period will minimise the risk which they face while maintaining a period of notice for changes in network charges.

8.39. For NTS Exit Capacity Costs and the Shrinkage Allowance we intend to incorporate within the relevant licence conditions a mechanism to update the forecast value for costs on an annual basis.[51] The predictability of charges will be preserved as any revisions of these variables for year t will be made by November in year t-2.

8.40. We intend to define the calculation for revising these variables in the licence condition. For NTS Exit Capacity Costs, revisions will be defined as a product of: (i) NTS Exit Price Forecast for time t (as published by the NTS in time t-2), and (ii) allowed offtake (as set at FP). For the Shrinkage Allowances, revisions will be defined with reference to an Allowed Gas Price Reference Cost based on the forward offer price for delivery at the national balancing point published in an Approved Market Price report.

8.41. We have not introduced the requisite changes to the licence condition, the Price Control Financial Handbook, or the Price Control Financial Model required to implement this decision. However, we intend to introduce the required changes in time for them to take effect as part of the Annual Iteration Process in November 2014.

Reopener mechanism

Areas of cost covered

8.42. We will provide GDNs with the opportunity to recover additional costs in a number of areas if they arise and if a materiality threshold is reached. These additional costs will be recovered through allowed revenues and will there impact on the charges which consumers pay. The reopener mechanism is symmetric meaning that we can also propose changes to allowed revenues, ie we can reduce ex ante allowed revenues where there is evidence that GDNs are no longer required to do work that was originally funded. The areas subject to the reopener mechanism are:

- enhanced physical site security
- street works, including lane rental schemes
- network reinforcement as a result of the connection of new large loads
- changes in the connection charging boundary for distributed gas

[51] For NTS Exit Capacity Costs we are referring to the term AEx_t. For the Shrinkage Allowance we are referring to the term $ALSC_t$

- innovation roll-out[52]
- smart meter roll-out

8.43. When a GDN makes a request for additional revenue it will need to provide evidence of the efficiency of the costs incurred, or expected to be incurred. The submissions will then be subjected to an efficiency assessment and we will undertake a consultation to allow all interested parties to comment. We can also trigger the reopener, eg if we consider costs have fallen from those provided in the price control settlement. This process will also include consultation with interested parties. This follows the process set out in our March Strategy Document.

8.44. A number of responses to Initial Proposals requested that we provide a clear framework for how the efficiency assessment will be carried out. We have provided a definition of each cost area that is subject to a reopener in the licence. We also intend to collect information on the costs that are incurred in these areas on an annual basis as part of the Regulatory Instructions and Guidance. We will use this information to aid our assessment of the efficiency of the costs between GDNs, and potentially across other network sectors.

8.45. We explain below our current view of the type of costs that may arise in each area subject to a reopener.

8.46. *Enhanced physical site security*: As outlined in our March Strategy Document a GDN will be required to provide evidence that project costs are efficient. Part of this evidence will be a requirement to provide details of the auditing process that projects have gone through. There are likely to be two stages to the audit process: an audit prior to work commencing and an audit after work is completed. The audits will include information on whether the work meets the operational requirements for physical security and recommendations on whether the costs of the work represent value for money.

8.47. If the reopener mechanism is triggered we will consider making provision for expenditure yet to be incurred, as well as reimbursing the network company for efficient costs already incurred. Our ex post assessment to determine the efficiency of the costs incurred will take account of the recommendations in the audits submitted by the network companies and, where appropriate, we will benchmark costs across the network companies. In providing an ex ante allowance we will consider the certainty of the work commencing, which will require the network company to provide the initial audits that have been undertaken, and the efficiency of the expected costs.

8.48. *Street works*: Our March Strategy Document set out the costs that would be included as part of a reopener in this area. We have not made any changes to the type of costs that will be recoverable through this mechanism. In evaluating the efficiency of the costs incurred we intend to follow the same approach used in the current price control (GDPCR1) reopener assessment which was completed in

[52] See Chapter 8 of the 'Outputs, Incentives and Innovation Supporting Document' for more detail.

December 2011.[53] We expect GDNs to demonstrate the efficiency of the costs incurred.

8.49. In addition, and in light of our decision in relation to the GDPCR1 reopener in December 2011, we will consider, as part of the reopener, changes to the ex ante allowances provided for operating in areas with permit schemes in place.[54] This will be limited to incorporating changes in the assumed impact on productivity when working where permit schemes are in operation. For the avoidance of doubt, this will not protect a GDN from volume risk (if workload is greater than forecast) but will provide them an opportunity to further demonstrate the efficiency of unit costs over and above those already funded.

8.50. *Connection of new large loads*: In proposing an adjustment to revenues a GDN will need to provide robust evidence that the connection has passed the economic test and therefore costs cannot be fully recovered from the connecting party.[55] A GDN will also need to demonstrate that the additional reinforcement costs could not have been avoided through network management, for example by establishing contractual arrangements with parties connected in the affected area. We would expect this mechanism to be triggered following the connection of new large load, but we will also consider providing funding prior to the connection if a GDN can demonstrate that there is certainty in the timing of the connection and the costs of the required reinforcement. This mechanism will not be used to make adjustments to the allowed NTS offtake capacity volumes set at price review.

8.51. *Changes in the connection charging boundary*: This mechanism will only be triggered if there is a change from a 'deep' to a 'shallowish' connection boundary for distributed gas. If this mechanism is triggered we will, information permitting, introduce an incentivised pass through of costs going forward as we explained in our March Strategy Document.

8.52. *Smart meter roll-out*: We discuss below our reasons for treating these costs as part of the reopener mechanism. There are a number of uncertainties in relation to the impact on GDNs from the roll-out of smart meters. The expected impacts include an increase in call volumes to the emergency response line and increased call-outs to deal with meter related faults discovered when fitting a smart meter. We will also consider any requirements placed on the GDNs to fund the Data Communications Company (DCC). It is still unclear which party will be liable to fund the costs that arise, ie whether the obligation will be on the GDN, the supplier or the customer. We will work with the GDNs and stakeholders to ensure further clarity is provided, and the relevant data is collected, as the industry progresses arrangements.

[53] Notice of decision for the re-opener applications in respect of additional income associated with the Traffic Management Act (and Transport Scotland Act) (Dec 2011): http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=545&refer=Networks/GasDistr/GDPCR7-13

[54] This applies to those GDNs where an ex ante allowance has been provided, ie NGGD London and SGN Southern. See Appendix 5 of the 'Cost Efficiency Supporting Document' for more information on the ex ante allowances provided.

[55] For example, see WWU's connection charging methodology statement, annex F: http://www.wwutilities.co.uk/Content/Publications/pdf/WWU_Methods_and_Principles_for_Connection_Charges.pdf

Restriction of adjustments

8.53. In the case of all cost areas outlined above, except for smart meter roll-out costs as we explain below, a reopener can only be triggered during two defined windows, in May 2015 and May 2018.[56] A GDN triggering the reopener will be required to submit to us, during the specified reopener windows, a notice stating the additional costs that have or are expected to be incurred. GDNs will also need to demonstrate that the costs incurred and expected to be incurred over the remaining years of the price control pass a materiality threshold. In the case of each cost area outlined above the materiality threshold is set at one per cent of average annual base revenue after the application of the efficiency incentive rate.[57]

8.54. We are restricting the timing of reopeners, and applying a materiality threshold to limit the impact on volatility in allowed revenues, to improve our ability to compare costs across network companies and to reduce regulatory burden. We consider that providing two opportunities adequately balances the cash-flow risk of GDNs with the impact to consumers of changes in the charges which they pay as part of their energy bill.

8.55. However, in relation to smart metering we have taken into account the concerns raised by GDNs on the potential changes in the timeline for the smart meter roll-out and the knock-on impact this may have to their ability to trigger the reopener during the defined windows. We will therefore allow GDNs to trigger the smart meter reopener at any time, provided the materiality test has been met. We discuss smart meter roll-out costs in more detail below.

8.56. We have also decided to introduce a cumulative reopener as put forward by two of the GDNs in response to Initial Proposals. The cumulative reopener will allow GDNs to recover uncertain costs where they are experiencing cost increases in a number of cost areas (although where individually the costs do not necessarily meet the individual cost area materiality threshold).

8.57. The individual cost area materiality threshold (eg of one per cent), set out above, will still apply. In addition we will allow a GDN to trigger a reopener if the cumulative costs of the individual areas meet a materiality threshold of three per cent of average annual base revenue after the application of the efficiency incentive rate. We will also require each individual cost area to meet a triviality threshold of 0.5 per cent of average annual base revenues to ensure that GDNs do not include trivial claims within the cumulative reopener application, and thus to minimise regulatory costs. Smart meter roll-out costs will not be included within the cumulative reopener because we have introduced a more flexible reopener in this area.[58]

[56] This may result in allowed revenue changes from April 2016 and/or April 2019.
[57] In assessing whether costs have reached the materiality threshold we will consider costs incurred and forecast to be incurred, calculated on a present value basis, discounted using vanilla weighted average cost of capital (WACC).
[58] For the avoidance of doubt, the cost areas included in the cumulative reopener are enhanced physical site security, street works, connection of new large loads and changes in the connection charging

8.58. If costs have not reached, or are not forecast to reach, the materiality threshold by the second reopener window we will assess additional costs as part of the next price control review. Our assessment will take into account the materiality of additional costs incurred.

GDPCR1 reopeners

8.59. There is provision in the current price control (GDPCR1) to trigger an income adjusting event, ie a reopener mechanism.[59] GDPCR1 ends on 31 March 2013 and therefore any adjustments to revenues will occur in the next price control period, RIIO-GD1. The process for recovering additional revenues will require a change to the GD1 Price Control Financial Model which will be made through the formal change control process.[60]

Smart meter roll-out volume driver

8.60. One GDN still considers that a volume driver is a more appropriate method for funding costs related to the smart meter roll-out. We remain concerned that there are still a number of uncertainties on what impacts the roll-out will have on the GDNs' business processes. Uncertainty exists both in terms of the volume and timing of workload and who will be required to fund the work, eg it may be that some work is rechargeable to the supplier/customer. Therefore as discussed above, GDNs will be able to trigger a reopener for additional costs related to the roll-out of smart meters.

8.61. Following the triggering of the reopener by one GDN we will consider making adjustments to all GDNs' revenues either through provision of ex ante allowances or the establishment of a volume driver.

Lane rental revenue trigger

8.62. NGGD continue to support a revenue trigger and has proposed how the unit cost should be set. It considered that it would incur the full cost of the fine in 90 per cent of cases, and only avoid the fine in 10 per cent of cases. If this is true, it suggests that the introduction of lane rental charges will have minimal effect on companies' behaviour. We consider that NGGD's proposed parameterisation of the revenue trigger leaves consumers bearing the cost of funding at a level which may turn out to be too high.

8.63. We do not consider that we have sufficiently robust data to construct a revenue trigger for the start of RIIO-GD1. As set out above lane rental costs will be recoverable as part of the street works reopener. Our intention is to establish a revenue trigger following a reopener request in this area subject to sufficient evidence, namely in relation to the scope for avoiding the lane rental charge through changes to working practices.

boundary.

[59] See Special Condition E7 of the gas transporter licence currently in effect.

[60] See Special Condition 2A of the gas transporter licence proposed to take effect from 1 April 2013.

Tier 2 mains replacement revenue driver

8.64. The HSE revised iron mains replacement policy requires GDNs to decommission all tier 2 iron mains above a specified risk threshold.[61] Tier 2 iron mains are defined as mains greater than 10 inches in diameter but less than 12 inches.

8.65. We will provide a revenue driver for all tier 2 mains above the risk threshold agreed with the HSE and the associated services. There were mixed views from respondents on whether the revenue driver should apply to the full population or only to those that reach the risk threshold during the price control period, ie incremental changes in volumes.

8.66. We have decided to introduce a revenue driver which will cover the entire population of above risk threshold tier 2 mains (as opposed to only those mains not identified at the price control review). This approach ensures that we do not need to identify those mains funded through the price control settlement provided at the review. We have also decided to construct the revenue driver such that we identify a single unit cost for both mains and services, based on our assumed ratio of mains to services. Our approach allows GDNs to recover the costs of both mains and services but ensures that GDNs do not face the costs associated with reporting services which we understand would require data system changes. We also understand the cost of service replacement is low relative to the cost of mains replacement.

8.67. We can also confirm that ductile iron mains within 30 metres of households and above the risk threshold qualify within this revenue driver.

Fuel poor network extension scheme review

8.68. We acknowledge the concerns that a review at an unspecified point in time may create uncertainty and discourage investment in the scheme from third parties. We will consult with stakeholders prior to making any changes to the scheme. As written in the licence, we will also provide at least six months notice of any changes to the scheme and the associated changes to GDN revenues. We consider these steps address the concerns raised.

8.69. We do not propose to introduce a volume driver in place of an ex ante allowance. We do not consider that a volume driver provides the correct incentives where the output is not mandatory (as in this case), as it provides an incentive to connect only those households/schemes which can be connected at below the allowed unit costs.

[61] See chapter 6 of the Outputs, Incentives and Innovation Supporting Document for a more detailed description of the HSE repex policy.

Xoserve (Central Agent) review

8.70. All respondents supported a review of allowances following the conclusions of the review into funding arrangements for Xoserve. In relation to timing of the review, we have begun an implementation project. It is likely to conclude in late 2013 and therefore we expect to make any necessary changes to GDNs' revenues in April 2014 or 2015. We have provided ex ante allowances to GDNs based on the current funding arrangements.

Statutory Independent Undertakings (SIUs)

8.71. We have further considered SGN's evidence in relation to the prospective costs of the capital solutions for supply of gas to SIUs. We accept that the costs are uncertain and represent a material cash-flow risk for SGN. Therefore, we have decided to allow SGN to submit an application to us to recover the efficient costs associated with the enduring solution. We have not set out the terms of the reopener in a licence condition. Instead, we set out the terms below:

- SGN should submit its application for a change in allowed revenues to reflect the estimate of the efficient costs for the least cost solution by 31 May 2015. Following consultation, we would then expect to make a decision on the efficient costs that we will allow SGN to recover by 30 November 2015. This should allow SGN to recover such costs from 1 April 2016.[62]
- We will apply our standard materiality test to SGN's application, ie SGN will need to demonstrate that the costs of the enduring solution (relative to costs allowed at the price control review) are greater than one per cent of average annual base revenue after the application of the efficiency incentive rate.
- As part of its application, SGN must identify the options it has considered for securing supply to the SIUs. For viable options, SGN will need to set out robust cost estimates. It should demonstrate that its preferred option is the least cost option, where costs comprise both financial costs as well as any environmental or social costs.[63] Specifically, as part of its application, SGN must demonstrate that is has considered non-gas solutions (eg electrification) given the prospective high cost of maintaining supply to SIUs through LNG or liquefied petroleum gas (LPG).[64]
- SGN should demonstrate that it has engaged with relevant stakeholders in undertaking its options analysis. Specifically, it needs to demonstrate that it has engaged with the Department of Energy and Climate Change (DECC) at an early stage in relation to the expected funding arrangements for SIUs over the RIIO-GD1 period and beyond, and how this has informed its options analysis.

[62] That the mechanism for changing SGN's allowed costs in relation to SIUs is a change to NGGT's Special Condition 11F (Conveyance of gas to the statutory undertakings).
[63] We would expect SGN's application to be a substantive improvement on the analysis set out in Appendix R of its first business plan submission. For example, we will require greater clarity of the prospective costs and benefits of the potential solutions than provided in the plan. See SGN (November 2011) Business plan submission, Appendix R.
[64] The gas solutions considered by SGN could equate to a cost per household supplied within the SIUs of up to £2,000 per annum, or around 20 times the average cost of supplying a household connected to the network. This is calculated as follows: capital costs of £40 million annuitized over 45 years at pre tax WACC of 7 per cent; plus current operating costs of around £12 million p.a. We divide opex plus annuitized capex by 7,500 households.

8.72. We discuss our approach to recovering the costs associated with SIUs in our Finance and Uncertainty Supporting Document. In this section, we also set out how we will take into account changes in relation to our review of Avonmouth C3 prices in the costs we allow SGN to recover.

Medium rise MOBs volume driver

8.73. We consulted on NGGD's proposal for a volume driver in Initial Proposals. The other GDNs indicated their support for the mechanism but also noted the variability in the costs of such work. As such we consider it is not possible to set robust unit costs that are required to establish a volume driver.

8.74. We have provided all GDNs with ex ante allowances to fund an expected volume of work on medium rise MOBs. As we discuss below, as part of the asset integrity reopener at the mid-period review we will make additional funding available for work required to medium rise MOBs.

The mid-period review

Structure of the mid-period review

8.75. We set out the broad structure and timetable for the mid-period review in our March Strategy Document. We are not making any changes to this proposed structure therefore, in summary:

- The review will be to address material changes in existing outputs justified by changes in government or HSE policy, or the introduction of new outputs to meet the changing needs of network users.[65]
- The review will start with the publication of a consultation setting out potential issues that may be relevant for triggering the review.
- Based on responses we will decide whether there are grounds for reviewing output requirements. If we decide not to proceed with the review then it closes. If we decide to proceed then the review goes into assessment phase.
- We will consult on any changes to outputs or introduction of new outputs, as well as consulting on any consequential changes to cost allowances.
- Any changes in outputs, and associated changes in allowances, will take effect from April 2017.

8.76. Where a GDN is requesting a change in its outputs, or the introduction of new outputs we expect it to justify these changes including evidencing that its proposals were informed by stakeholders views.

[65] We have not defined materiality as a quantitative threshold for such changes, except in the case of changes to the HSE iron mains replacement programme and asset integrity outputs. Our view of materiality will be guided by responses to the consultation.

8.77. If a GDN can demonstrate that they have efficiently incurred costs in relation to any agreed changes to outputs prior to April 2017, we would also consult as part of the mid-period review on whether we should allow it to recover such costs, taking account of the time value of money.

HSE iron mains replacement policy

8.78. In Initial Proposals we explained how we intended to use the mid-period review to consider the impact on outputs and allowances from any change to the HSE iron mains replacement programme.[66] All GDNs agreed with this approach. We therefore confirm that we will follow the process we set out in Initial Proposals, which we summarise as:

- The trigger for reconsidering outputs and allowances will be a change in the HSE policy. The HSE has indicated that it will complete its review of the current statutory framework for 2015.
- During stage one, we will consult on whether the change in policy results in a material change in outputs, and related revenue allowances. We define material changes as five per cent of average annual base revenue.[67] In the event that the materiality threshold is reached by one GDN, we will consider changes to allowed revenues for all GDNs. If the materiality threshold is not reached we will not restate allowed revenues or outputs determined by us at the price control review.
- If the materiality threshold is reached stage two will commence. Stage two will involve further analysis to identify the incremental revenue change required to meet any change in outputs.[68] In resetting allowances we will also consider consequential changes other elements of revenue allowances, eg repairs and emergency services and shrinkage baselines.
- Stage three will provide an opportunity for stakeholders to provide their views of our proposed changes through consultation.
- If we decide to reset outputs and required revenues this will take effect from April 2017.

8.79. One GDN did not agree with our proposed materiality threshold and considers it too high. In applying the materiality test we will consider the net effect on required revenues of the change to HSE policy. For example, a change in the HSE policy could lead to lower required output levels (eg in terms of length of mains abandoned), and therefore lower expected expenditure levels. However, a reduced programme could result in cost increases, eg in relation to increased repairs, higher shrinkage, higher penalties under the environmental emissions incentive (EEI) mechanism. In

[66] In June 2012 the HSE announced a change to its iron mains replacement policy based on a 3-tier approach. The HSE also proposes to undertake a more fundamental review of the Pipeline Safety Regulations (PSR) as they relate to iron mains, and the absolute requirement to maintain a safe network.
[67] We will calculate the change in costs based on the actual change in costs incurred to date in relation to the new HSE policy, and expected cost changes over the remainder of the price control period, discounted at the cost of capital. The expected cost change will be calculated after the application of the efficiency incentive rate.
[68] If the change in HSE policy requires an X unit reduction (increase) in outputs, we will adjust the revenue allowance to reflect the avoided (additional) cost associated with these X units. For the avoidance of doubt, we will not reconsider the unit cost or overall allowance determined at the price review for the units which the GDNs will continue to deliver.

calculating materiality, we will consider all consequential effects of a change in the outputs GDNs are required to deliver.

8.80. The mechanism is symmetric. Therefore if the change in HSE policy results in a decrease in GDNs costs but the decrease is less than five per cent of average annual base revenue then the GDNs will keep those allowances. We still consider it is appropriate to apply a higher threshold here than to the reopener mechanism. We are signalling our clear intention only to reopen the price control where there is substantive change in required outputs.

Review of asset health/risk output levels

8.81. As stated in Initial Proposals we will undertake a review of outputs and allowances related to asset health/integrity in conjunction with the mid-period review given the potential interrelationship with revisions to the HSE iron mains programme.

8.82. In response to Initial Proposals, SGN has proposed a trigger mechanism to provide additional funding in this area. It suggests that the trigger operates by increasing workload when a reduction in reliability is identified. This increased workload is funded through a triggering of additional revenue. Whilst we welcome SGN's proposal we have not had the opportunity to fully consider the implications of the fault trigger methodology across the industry and the level at which the trigger should be set. As such we are not in position to agree to this proposal.

8.83. All GDNs are provided with baseline allowances to fund work related to asset integrity therefore the review will consider changes in assumed workload based on a GDN demonstrating the needs case through provision of more robust information on asset health than provided to date. In order to reconsider the required improvement in asset health/risk secondary deliverable at the mid-period review, we will require the GDN to demonstrate the following:

- it has improved asset health data and criticality for one or more asset classes, and the data are sufficiently robust to support a revision to the asset health/risk secondary deliverable for the specific asset class or classes. For example, we would expect the GDN to address any issues around the quality of data that we identified as part of the price control review. We would also expect companies to have undertaken substantive surveying of assets, collected robust data on deterioration rates etc. We would also expect the company to commit to the delivery of the revised output level.
- the improved data for the asset class or classes supports a material change to the corresponding asset health/risk secondary deliverables set at the price control. We propose to define materiality in terms of the change in allowed costs to deliver the revised asset health/risk secondary deliverable for the asset class or asset classes, where the change in allowed costs exceeds 5 per cent of average annual base revenues after the application of the efficiency incentive rate.

8.84. For clarity, we will not initiate a reopener. We will only reconsider GDNs' outputs and associated allowed revenues in relation to asset health/risk secondary deliverable where this is requested by the GDN.

Disapplication of the price control

8.85. We are not introducing any change to the current policy for disapplication which was set out in our guidance document published in 2009.[69] We consider that the current policy provides adequate and clear guidance for an efficient and economic network company that finds itself in financial distress.

[69] Arrangements for responding in the event that an energy network company experiences deteriorating financial health (Oct 2009): http://www.ofgem.gov.uk/Networks/Policy/Documents1/GUIDANCE%20DOCUMENT%20-%20FINAL%20OCT%2009.pdf

Appendices

Index

Appendix 1 – Financial issues summary of consultation responses

1.1. Responses received by Ofgem which were not marked as being confidential have been published on Ofgem's website www.ofgem.gov.uk. Copies of non-confidential responses are also available from Ofgem's library.

1.2. The following is a summary of those responses which were received. Chapter numbers refer to chapters in the Initial Proposals document.

CHAPTER: Two - Asset lives and RAV

Question 1: Do you agree with our approach of using the profile for the release of backlog depreciation as a mechanism to smooth revenues and reduce their volatility through the RIIO-GD1 period?

1.3. All respondents generally agreed with the approach set out by Ofgem at IP. Three respondents had concerns with the approach. One respondent considered that the profile may cause volatility at the next price control. One respondent suggested that our approach would lack flexibility to adapt to changes in the future, another respondent considered that the flexibility was not being utilised to best effect.

1.4. Two respondents suggested alternative profiling mechanisms could be used. One suggested a GDN-specific profile and the other provided an alternative profile to calculate backlog depreciation.

CHAPTER: Three – Allowed return

Question 2: Do you have any comments on our relative risk assessment?

1.5. The GDNs commented on our relative risk assessment. The key points they raised were:

- The implied asset beta from our Initial Proposals is disproportionately lower than GDPCR1 and from that of the fast-tracked transmission companies, relative to the differences in risk profiles.
- Our analysis attributes too much weight to the ratio of capex to RAV and not enough to other metrics, such as the ratio of opex to RAV.
- The totex incentive rate in RIIO-GD1 exposes the GDNs to a larger share of overspend in capex and repex than was the case in GDPCR1.
- Longer duration of cash flows in gas distribution increase risk relative to electricity transmission and distribution.
- Longer price control periods increase risk for the GDNs.

1.6. In contrast, one supplier supported our relative risk assessment.

CHAPTER: Three – Allowed return

Question 3: Do you agree with our proposed element of the allowed return?

1.7. The GDNs disagreed with our notional gearing and with the equity beta used to derive our cost of equity assumption, but agreed with the risk-free rate and equity risk premium. One supplier considered that our estimates of the risk-free rate and equity risk premium were relatively high. The supplier supported a cost of equity assumption of 6.5 per cent.

1.8. For cost of debt, GDNs did not agree with the proposed approach to annually update cost of debt estimates based on the simple 10-year trailing average of IBoxx indices with no adjustments to the index. This was supported by a report by the ENA's consultant. GDNs considered that this approach would increase risk in RIIO-GD1, relative to a fixed cost of debt approach, owing to GDNs' relatively low forecast RAV growth in the period and the limited need for refinancing.

1.6. All GDNs, as well as Oxera and the DNOs that responded to the consultation, have argued that the index should be adjusted to reflect the risk differential between the indexed approach and a fixed allowance. They have also argued that the index should be uplifted for additional costs, such as issuance fees and the inflation risk premium.

1.7. The GDNs were split on whether embedded debt costs should be addressed through an additional adjustment to the index. Wales and West continued to advocate a cap and collar mechanism, set around the GDPCR1 allowance of 3.55 per cent. We remain unclear as to why this level is considered the appropriate baseline, given that it included "headroom" (ie an insurance premium for setting a fixed allowance), and the fact that market debt costs have exhibited a notable downward trend since GDPCR1 came into effect.

1.8. In contrast, one supplier supported our proposed approach. The supplier argued that there was clear evidence that the index provides a sufficient allowance for efficiently financed GDNs.

CHAPTER: Four – Financeability, transition and return on regulatory equity

Question 4: Do you agree with our approach to transition of the repex capitalisation rate from 50 per cent to 100 per cent in seven equal annual steps ('stepped approach')?

1.9. With the exception of one group, the GDNs supported our proposal to apply stepped transition to repex capitalisation. However, one GDN group argued for a constant capitalisation rate, predominantly due to revenue profiling concerns. In

contrast to the GDNs, one supplier argued that, with the exception of the London network, all GDNs should be able to achieve financeability with transition over four years, rather than eight.

CHAPTER: Five – Pensions

Question 5: Do you agree that companies must demonstrate a robust approach as to how their de-risking strategies, especially if aggressive, are protecting future scheme funding and that they should clearly demonstrate the benefits that they expect to flow to consumers?

1.10. All but one respondent agreed that companies must demonstrate a robust approach as to how their de-risking strategies are protecting future scheme funding; and that they should clearly demonstrate the benefits that they expect to flow to consumers. One suggested that a review of long-term investment strategies should be included in the reasonableness review. One respondent, a DNO, disagreed on the basis that the reasonableness review is sufficient to protect consumers from poor stewardship.

CHAPTER: Five – Pensions

Question 6: Do you agree that the costs of contingent assets may be allowed if considered to be in consumers' interests?

1.11. All respondents agreed that the costs of contingent assets should be allowed if considered to be in consumer's interests. One respondent suggested that stewardship should be considered in the round, rather than individual scheme arrangements, eg contingent assets.

CHAPTER: Five – Pensions

Question 7: Do you agree with the thresholds for pension scheme administration costs and Pension Protection Fund levies set out in Table 5.1?

1.12. There was no overall agreement on the appropriate thresholds for pension scheme administration costs and Pension Protection Fund (PPF) levies. Broadly, respondents considered these costs were largely outside licensees' direct control. Otherwise views varied from agreement but with a reset every three years, a lower threshold, full true up; and an uncertainty mechanism to take account of insolvency risk impacts on the PPF levy.

CHAPTER: Six – Taxation

Question 8: Do you agree with our amended treatment for modelling the cash flows of corporation tax payments?

1.13. Three GDNs agreed with amended treatment for modelling the cash flows of corporation tax payments, with one disagreeing.

CHAPTER: Six – Taxation

Question 9: Do you agree with amending the timing of the revenue adjustment for tax clawback to be annually in line with the annual iteration process?

1.14. All GDNs agreed with our proposal to adjust the timing of the revenue adjustment for tax clawback, so that they are made annually in line with the Annual Iteration Process, and not every three years.

CHAPTER: Six – Taxation

Question 10: Do you agree with our treatment of expenditure for tax modelling?

1.15. Two GDNs agreed with our treatment for tax modelling, one disagreed and one did not respond. SGN disagree with our treatment. It considered that by applying generic attributions of capital expenditure to tax pools, the tax allowances do not reflect the diverse nature of the GDNs capex plans, or the timing of individual projects. SGN also noted that demolition expenditure should be added to the special rate asset pool and not treated as opex. They also considered that there were adverse impacts from the implementation of IFRS-based framework and our treatment of new connections contributions.

CHAPTER: Seven – Allowed revenues, annual iteration and financial handbook

Question 11: Do you have any views on the calculations and layout in the financial model?

1.16. All GDNs considered that the financial model was generally well presented, with a clear layout and structure. Each GDN suggested minor improvements and modifications.

1.17. One GDN had specific concerns that the layout of the financial model could lack transparency on the financeability assessment. It identified some areas for review in the model's financial statements. One GDN suggested that a full audit of the RIIO-GD1 specific model should be undertaken before we publish Final Proposals. One

GDN proposed that the agreed definitions of our financial ratios should be included in the financial model used at Final Proposals.

CHAPTER: Seven – Allowed revenues, annual iteration and financial handbook
Question 12: Should the financial model also capture, for presentational purposes only, the revenue from all incentive schemes?

1.18. Four GDNs and one supplier responded to this question. All were broadly in agreement that all incentives could be disclosed for presentational purposes.

CHAPTER: Seven – Allowed revenues, annual iteration and financial handbook

Question 13: We have set out three options to deal with the issues relating to SIU and legacy pension arrangements. Which option do you prefer?

1.19. Three GDNs and one supplier provided responses. Two GDNs considered that the recharge of legacy pensions was not legally prohibited by the Gas Act and preferred that this recharge continue as per the previous price control.

1.20. Of the three options consulted upon, one GDN and one supplier prefer that we log-up SIUs and pension deficits incurred in 2013/14 and allow them to recover such costs including the additional financing costs through GT-GT transfers (as now) once legislation is in place. Two GDNs prefer the option to allow GDNs and NTS to recover their respective costs through their own controls (ie no socialisation) for 2013/14, and then revert back to existing arrangements once legislation is in place.

Appendix 2 – Allowed revenues

Table A2.1 East of England

East of England										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	100	104	111	119	127	135	142	149	987	123
Fast pot	180	163	152	145	138	128	117	107	1,130	141
Post-TIM totex allowance	280	267	263	264	265	263	259	256	2,117	265
Regulatory Asset Value (RAV)										
Opening asset value	2,535	2,523	2,501	2,495	2,497	2,500	2,501	2,497		-
RAV additions (after disposals)	111	104	111	119	127	133	137	148	990	-
Depreciation	(123)	(126)	(117)	(117)	(124)	(132)	(141)	(152)	(1,033)	-
Closing asset value	2,523	2,501	2,495	2,497	2,500	2,501	2,497	2,492		-
Final Proposals allowances										
Fast pot expenditure	180	163	152	145	138	128	117	107	1,130	141
Non-controllable opex	107	107	107	107	106	106	106	106	852	106
RAV depreciation	123	126	117	117	124	132	141	152	1,033	129
Return	105	104	104	104	104	104	104	104	832	104
Other	10	9	9	9	9	9	9	9	72	9
Tax allowance	16	12	36	34	34	33	33	33	231	29
Price Control Revenue										
Total costs	541	522	525	515	514	513	510	511	4,150	519
Less excluded services	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(29)	(4)
Base revenue	537	518	521	512	510	509	506	508	4,121	515
Excluded services revenue	4	4	4	4	4	4	4	4	29	4
Total revenue	541	522	525	515	514	513	510	511	4,150	519
Annual change to Base Revenue	9.3%	-3.5%	0.6%	-1.8%	-0.2%	-0.2%	-0.6%	0.2%		

Table A2.2 London

London										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	91	100	115	121	137	144	156	168	1,033	129
Fast pot	148	138	137	124	113	103	89	76	926	116
Post-TIM totex allowance	239	238	252	245	250	247	245	245	1,959	245
Regulatory Asset Value (RAV)										
Opening asset value	1,644	1,660	1,678	1,713	1,747	1,793	1,842	1,893		-
RAV additions (after disposals)	98	102	113	114	133	143	155	167	1,026	-
Depreciation	(81)	(84)	(79)	(80)	(87)	(95)	(103)	(114)	(723)	-
Closing asset value	1,660	1,678	1,713	1,747	1,793	1,842	1,893	1,946		-
Final Proposals allowances										
Fast pot expenditure	148	138	137	124	113	103	89	76	926	116
Non-controllable opex	64	64	64	64	63	63	63	63	508	63
RAV depreciation	81	84	79	80	87	95	103	114	723	90
Return	69	69	70	72	74	76	78	80	587	73
Other	7	6	6	6	6	6	6	6	51	6
Tax allowance	-	-	27	28	26	25	23	23	151	19
Price Control Revenue										
Total costs	368	361	383	373	369	368	362	362	2,946	368
Less excluded services	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(17)	(2)
Base revenue	366	359	381	371	367	366	360	360	2,929	366
Excluded services revenue	2	2	2	2	2	2	2	2	17	2
Total revenue	368	361	383	373	369	368	362	362	2,946	368
Annual change to Base Revenue	8.9%	-1.8%	6.2%	-2.5%	-1.3%	-0.3%	-1.5%	-0.1%		

Table A2.3 North West

North West										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	76	79	85	91	99	104	110	116	760	95
Fast pot	136	121	112	107	103	94	87	77	837	105
Post-TIM totex allowance	212	200	196	198	201	199	197	193	1,597	200
Regulatory Asset Value (RAV)										
Opening asset value	1,743	1,747	1,738	1,741	1,753	1,764	1,772	1,780		-
RAV additions (after disposals)	90	80	85	94	98	102	109	113	770	-
Depreciation	(86)	(88)	(82)	(82)	(87)	(94)	(101)	(110)	(731)	-
Closing asset value	1,747	1,738	1,741	1,753	1,764	1,772	1,780	1,782		-
Final Proposals allowances										
Fast pot expenditure	136	121	112	107	103	94	87	77	837	105
Non-controllable opex	84	84	84	84	84	83	83	83	669	84
RAV depreciation	86	88	82	82	87	94	101	110	731	91
Return	73	72	72	73	73	73	74	74	584	73
Other	7	7	7	7	7	7	7	7	56	7
Tax allowance	10	6	26	24	24	24	24	24	162	20
Price Control Revenue										
Total costs	397	379	382	376	378	376	376	375	3,039	380
Less excluded services	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(22)	(3)
Base revenue	394	377	379	373	375	373	373	372	3,017	377
Excluded services revenue	3	3	3	3	3	3	3	3	22	3
Total revenue	397	379	382	376	378	376	376	375	3,039	380
Annual change to Base Revenue	9.7%	-4.3%	0.8%	-1.6%	0.5%	-0.4%	-0.1%	-0.2%		

Table A2.4 West Midlands

West Midlands										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	58	63	67	71	78	83	88	92	598	75
Fast pot	103	98	88	82	80	75	70	60	656	82
Post-TIM totex allowance	160	161	155	153	158	158	157	152	1,255	157
Regulatory Asset Value (RAV)										
Opening asset value	1,321	1,314	1,310	1,315	1,324	1,336	1,347	1,358		-
RAV additions (after disposals)	58	63	67	71	77	83	88	92	598	-
Depreciation	(66)	(67)	(62)	(62)	(66)	(71)	(77)	(85)	(555)	-
Closing asset value	1,314	1,310	1,315	1,324	1,336	1,347	1,358	1,365		-
Final Proposals allowances										
Fast pot expenditure	103	98	88	82	80	75	70	60	656	82
Non-controllable opex	52	52	51	51	51	51	51	51	409	51
RAV depreciation	66	67	62	62	66	71	77	85	555	69
Return	55	55	55	55	55	56	56	57	443	55
Other	5	5	5	4	4	4	4	4	36	5
Tax allowance	7	5	20	18	19	19	18	18	124	15
Price Control Revenue										
Total costs	286	281	280	273	276	276	276	274	2,223	278
Less excluded services	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(16)	(2)
Base revenue	284	279	279	271	274	274	274	272	2,207	276
Excluded services revenue	2	2	2	2	2	2	2	2	16	2
Total revenue	286	281	280	273	276	276	276	274	2,223	278
Annual change to Base Revenue	0.7%	-2.0%	0.0%	-2.8%	1.2%	0.1%	0.1%	-0.8%		

Table A2.5 Northern

Northern										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	86	95	101	107	109	115	122	128	862	108
Fast pot	124	122	117	109	95	89	83	76	815	102
Post-TIM totex allowance	210	216	218	216	204	204	205	204	1,677	210
Regulatory Asset Value (RAV)										
Opening asset value	1,577	1,584	1,598	1,624	1,655	1,682	1,707	1,732		-
RAV additions (after disposals)	86	94	101	107	109	115	122	128	862	-
Depreciation	(79)	(81)	(75)	(76)	(82)	(90)	(97)	(107)	(687)	-
Closing asset value	1,584	1,598	1,624	1,655	1,682	1,707	1,732	1,753		-
Final Proposals allowances										
Fast pot expenditure	124	122	117	109	95	89	83	76	815	102
Non-controllable opex	54	54	54	53	53	53	53	53	426	53
RAV depreciation	79	81	75	76	82	90	97	107	687	86
Return	66	66	67	68	69	70	71	72	551	69
Other	12	12	12	12	12	12	12	12	97	12
Tax allowance	6	4	24	21	19	20	20	21	135	17
Price Control Revenue										
Total costs	341	339	349	340	331	334	336	341	2,710	339
Less excluded services	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(0)
Base revenue	341	339	349	340	331	334	336	341	2,710	339
Excluded services revenue	0	0	0	0	0	0	0	0	1	0
Total revenue	341	339	349	340	331	334	336	341	2,710	339
Annual change to Base Revenue	0.7%	-0.5%	3.0%	-2.5%	-2.8%	0.8%	0.8%	1.4%		

Table A2.6 Scotland

Scotland										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	70	72	74	81	86	90	91	95	659	82
Fast pot	105	96	88	90	87	82	71	66	686	86
Post-TIM totex allowance	175	168	162	172	174	172	162	161	1,345	168
Regulatory Asset Value (RAV)										
Opening asset value	1,277	1,282	1,287	1,300	1,320	1,340	1,357	1,368		-
RAV additions (after disposals)	70	71	74	81	86	90	91	95	659	-
Depreciation	(65)	(67)	(61)	(61)	(66)	(73)	(80)	(88)	(561)	-
Closing asset value	1,282	1,287	1,300	1,320	1,340	1,357	1,368	1,375		-
Final Proposals allowances										
Fast pot expenditure	105	96	88	90	87	82	71	66	686	86
Non-controllable opex	31	31	31	31	31	31	31	31	247	31
RAV depreciation	65	67	61	61	66	73	80	88	561	70
Return	53	53	54	54	55	56	57	57	440	55
Other	14	14	14	14	14	15	15	15	114	14
Tax allowance	-	-	7	17	17	17	16	17	91	11
Price Control Revenue										
Total costs	268	261	255	268	271	273	269	274	2,140	267
Less excluded services	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(2)	(0)
Base revenue	268	261	255	268	271	273	269	273	2,138	267
Excluded services revenue	0	0	0	0	0	0	0	0	2	0
Total revenue	268	261	255	268	271	273	269	274	2,140	267
Annual change to Base Revenue	14.1%	-2.6%	-2.3%	5.0%	1.3%	0.8%	-1.6%	1.7%		

Table A2.7 Southern

Southern										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	145	149	160	175	188	200	208	219	1,443	180
Fast pot	214	189	174	169	161	149	130	115	1,302	163
Post-TIM totex allowance	359	338	334	343	349	349	338	334	2,745	343
Regulatory Asset Value (RAV)										
Opening asset value	2,863	2,865	2,869	2,893	2,932	2,974	3,015	3,051		-
RAV additions (after disposals)	145	149	159	175	188	200	208	219	1,442	-
Depreciation	(142)	(146)	(135)	(136)	(146)	(159)	(173)	(189)	(1,225)	-
Closing asset value	2,865	2,869	2,893	2,932	2,974	3,015	3,051	3,080		-
Final Proposals allowances										
Fast pot expenditure	214	189	174	169	161	149	130	115	1,302	163
Non-controllable opex	129	131	131	131	131	131	130	130	1,045	131
RAV depreciation	142	146	135	136	146	159	173	189	1,225	153
Return	119	119	120	121	123	124	126	127	980	122
Other	19	18	19	19	19	19	19	20	153	19
Tax allowance	-	-	36	41	41	41	39	40	237	30
Price Control Revenue										
Total costs	624	604	615	617	621	623	617	621	4,942	618
Less excluded services	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(4)	(0)
Base revenue	624	604	614	616	620	623	617	620	4,938	617
Excluded services revenue	0	0	0	1	1	1	1	1	4	0
Total revenue	624	604	615	617	621	623	617	621	4,942	618
Annual change to Base Revenue	6.7%	-3.2%	1.8%	0.3%	0.6%	0.5%	-1.0%	0.6%		

Table A2.8 Wales and West

Wales & West										
£m 2009-10 prices	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**Average**
Totex										
Slow pot	89	94	98	102	108	114	120	125	849	106
Fast pot	128	121	113	106	99	93	89	84	833	104
Post-TIM totex allowance	217	215	211	208	207	207	210	208	1,682	210
Regulatory Asset Value (RAV)										
Opening asset value	1,610	1,619	1,630	1,644	1,658	1,677	1,699	1,725		-
RAV additions (after disposals)	88	93	98	101	108	114	120	125	847	-
Depreciation	(80)	(82)	(84)	(87)	(89)	(92)	(95)	(98)	(706)	-
Closing asset value	1,619	1,630	1,644	1,658	1,677	1,699	1,725	1,752		-
Final Proposals allowances										
Fast pot expenditure	128	121	113	106	99	93	89	84	833	104
Non-controllable opex	63	63	63	63	63	63	63	62	504	63
RAV depreciation	80	82	84	87	89	92	95	98	706	88
Return	67	68	68	69	69	70	71	72	554	69
Other	11	11	11	11	11	11	11	11	88	11
Tax allowance	-	-	-	5	20	19	19	18	81	10
Price Control Revenue										
Total costs	349	345	340	341	352	348	347	345	2,766	346
Less excluded services	(1)	(0)	(0)	(0)	(0)	-	-	-	(2)	(0)
Base revenue	349	344	339	340	352	348	347	345	2,764	346
Excluded services revenue	1	0	0	0	0	-	-	-	2	0
Total revenue	349	345	340	341	352	348	347	345	2,766	346
Annual change to Base Revenue	6.4%	-1.3%	-1.5%	0.3%	3.3%	-1.1%	-0.2%	-0.6%		

Appendix 3 – Financeability ratios

1.1. This appendix provides a summary of the credit and equity ratios that we calculate for each GDN based on our Final Proposals allowed expenditure from these Final Proposals.

Table A3.1 Financeability ratios for East

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.5	2.6	2.5	2.6	2.7	2.8	3.0	3.1
FFO/Interest (cash interest)	2.9	3.0	2.9	2.9	3.1	3.2	3.4	3.6
PMICR	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5
FFO / Net Debt	8.6%	9.0%	8.7%	8.8%	9.4%	10.1%	11.0%	12.0%
RCF / Net Debt	5.9%	6.2%	5.9%	6.0%	6.5%	7.2%	8.0%	9.0%
Net Debt / Closing RAV	64.0%	63.0%	62.3%	61.6%	61.0%	60.3%	59.4%	58.6%
RCF / Capex	1.1	1.1	0.9	0.9	0.9	0.9	0.9	0.9
Regulated equity / EBITDA	3.7	3.8	3.7	3.8	3.7	3.7	3.6	3.6
Regulated equity / Regulated earnings	12.2	12.6	15.0	16.0	14.2	12.7	11.7	10.9

Table A3.2 Financeability ratios for London

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.5	2.6	2.5	2.5	2.5	2.6	2.7	2.8
FFO/Interest (cash interest)	2.9	2.9	2.8	2.8	2.9	3.0	3.1	3.2
PMICR	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
FFO / Net Debt	8.5%	8.8%	8.1%	8.1%	8.4%	8.8%	9.2%	9.7%
RCF / Net Debt	5.8%	6.0%	5.4%	5.4%	5.7%	6.1%	6.5%	7.0%
Net Debt / Closing RAV	64.5%	64.3%	64.4%	64.5%	64.9%	65.3%	65.7%	66.1%
RCF / Capex	0.8	0.7	0.6	0.6	0.5	0.6	0.6	0.6
Regulated equity / EBITDA	3.9	3.9	3.4	3.4	3.4	3.3	3.2	3.0
Regulated equity / Regulated earnings	15.5	16.2	21.5	23.5	19.8	16.8	14.9	13.1

Table A3.3 Financeability ratios for North West

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.5	2.6	2.5	2.6	2.6	2.8	2.9	3.1
FFO/Interest (cash interest)	2.9	3.0	2.9	2.9	3.0	3.2	3.3	3.5
PMICR	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
FFO / Net Debt	8.6%	9.1%	8.6%	8.6%	9.2%	9.9%	10.7%	11.7%
RCF / Net Debt	5.9%	6.3%	5.8%	5.8%	6.3%	7.1%	7.8%	8.8%
Net Debt / Closing RAV	64.2%	63.3%	62.8%	62.3%	61.9%	61.4%	60.8%	60.2%
RCF / Capex	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.9
Regulated equity / EBITDA	3.7	3.8	3.6	3.7	3.6	3.6	3.5	3.4
Regulated equity / Regulated earnings	14.4	14.4	17.9	19.3	16.5	14.3	12.9	11.6

Table A3.4 Financeability ratios for West Midlands

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.5	2.6	2.5	2.5	2.6	2.7	2.9	3.0
FFO/Interest (cash interest)	2.9	3.0	2.9	2.9	3.0	3.1	3.3	3.5
PMICR	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4
FFO / Net Debt	8.7%	9.0%	8.5%	8.5%	9.0%	9.7%	10.4%	11.3%
RCF / Net Debt	5.9%	6.2%	5.7%	5.7%	6.2%	6.9%	7.6%	8.5%
Net Debt / Closing RAV	64.2%	63.5%	63.0%	62.6%	62.3%	62.0%	61.6%	61.2%
RCF / Capex	1.0	0.9	0.8	0.7	0.7	0.8	0.8	0.8
Regulated equity / EBITDA	3.7	3.8	3.6	3.7	3.6	3.5	3.4	3.3
Regulated equity / Regulated earnings	13.7	14.3	18.0	19.3	16.4	14.2	12.7	11.4

Table A3.5 Financeability ratios for Northern

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.6	2.7	2.6	2.6	2.6	2.8	2.9	3.0
FFO/Interest (cash interest)	3.0	3.0	2.9	2.9	3.0	3.1	3.3	3.4
PMICR	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
FFO / Net Debt	8.9%	9.2%	8.6%	8.6%	9.0%	9.7%	10.3%	11.2%
RCF / Net Debt	6.2%	6.5%	5.8%	5.8%	6.3%	6.9%	7.6%	8.4%
Net Debt / Closing RAV	64.4%	63.9%	63.6%	63.5%	63.3%	63.1%	62.8%	62.4%
RCF / Capex	0.8	0.8	0.7	0.6	0.7	0.7	0.7	0.8
Regulated equity / EBITDA	3.6	3.7	3.5	3.5	3.5	3.4	3.3	3.2
Regulated equity / Regulated earnings	10.5	10.3	11.6	12.1	11.5	10.5	9.7	8.8

Table A3.6 Financeability ratios for Scotland

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.7	2.8	2.6	2.7	2.8	3.0	3.1	3.3
FFO/Interest (cash interest)	3.1	3.2	3.0	3.1	3.2	3.4	3.6	3.8
PMICR	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6
FFO / Net Debt	9.5%	10.0%	9.2%	9.3%	10.0%	10.8%	11.8%	13.1%
RCF / Net Debt	6.8%	7.2%	6.4%	6.5%	7.1%	8.0%	8.9%	10.1%
Net Debt / Closing RAV	64.1%	63.1%	62.5%	62.0%	61.5%	60.8%	60.0%	59.0%
RCF / Capex	0.9	0.9	0.8	0.7	0.7	0.8	0.9	0.9
Regulated equity / EBITDA	3.7	3.8	3.8	3.6	3.5	3.5	3.4	3.3
Regulated equity / Regulated earnings	10.3	10.5	17.0	17.1	15.2	13.3	11.9	10.3

Table A3.7 Financeability ratios for Southern

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.6	2.7	2.6	2.6	2.7	2.8	2.9	3.1
FFO/Interest (cash interest)	3.0	3.1	2.9	3.0	3.1	3.2	3.4	3.5
PMICR	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
FFO / Net Debt	9.0%	9.4%	8.7%	8.8%	9.3%	10.0%	10.7%	11.7%
RCF / Net Debt	6.3%	6.6%	5.9%	6.0%	6.5%	7.2%	7.9%	8.8%
Net Debt / Closing RAV	64.2%	63.4%	62.9%	62.6%	62.3%	61.9%	61.5%	61.0%
RCF / Capex	0.9	0.9	0.8	0.7	0.7	0.7	0.8	0.8
Regulated equity / EBITDA	3.8	3.9	3.6	3.6	3.5	3.5	3.4	3.3
Regulated equity / Regulated earnings	10.3	10.4	17.9	18.1	16.2	14.5	12.8	11.1

Table A3.8 Financeability ratios for Wales and West

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
FFO/Interest (interest expense)	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.9
FFO/Interest (cash interest)	2.9	3.0	3.1	3.1	3.2	3.2	3.2	3.3
PMICR	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
FFO / Net Debt	8.8%	9.0%	9.3%	9.4%	9.8%	10.0%	10.2%	10.4%
RCF / Net Debt	6.0%	6.3%	6.5%	6.7%	7.0%	7.2%	7.4%	7.5%
Net Debt / Closing RAV	64.4%	64.0%	63.5%	63.1%	62.8%	62.5%	62.3%	62.1%
RCF / Capex	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7
Regulated equity / EBITDA	3.8	3.9	3.9	3.7	3.4	3.5	3.5	3.5
Regulated equity / Regulated earnings	21.8	18.6	16.0	15.9	15.0	14.5	14.0	13.6

Appendix 4 – Detail on Monte Carlo modelling of relative risk

Overview

1.1. This appendix sets out the assumptions and results from our relative risk 'Monte Carlo' simulations. The results provided an additional piece of information for our relative risk assessment, which supported our position from Initial Proposals, as well as providing an additional stringent test on financeability – again confirming our analysis elsewhere.

Summary of assumptions

1.2. In our analysis we ran four sets of simulations on the totex inputs into the Final Proposals financial model. At a high level they can be described as follows:

- Simulation 1 – a baseline assumption in which all cost categories are assumed to have a probability distribution of ±10 per cent around our allowance
- Simulation 2 – each cost category is set its own probability distribution, with capex categories typically set wider variance than opex categories, and greater variance around uncertainty mechanism expenditure than base totex
- Simulation 3 – as in Simulation 2, but with the introduction of 'price shocks'
- Simulation 4 – as in Simulation 3, but with the introduction of correlations between certain totex categories.

1.3. Below we set out the specific assumptions regarding the probability distributions of expenditure around the Final Proposals allowances, the assumptions used to generate price shocks, and the correlation assumptions between totex categories. These assumptions were based on a mixture of historical performance and projected plausible values.

Probability distribution assumptions

1.4. Monte Carlo simulations require a probability distribution for the inputs which are being simulated. Based on our assessment in developing the totex allowances for these Final Proposals, we have developed assumptions regarding the probability distribution of every totex category as it appears in the price control financial model. Where our Final Proposals did not have an allowance for a particular category (eg smart metering roll out costs in gas distribution), we assumed a 'most likely' value around which to create the distribution. It is important to stress that these 'most likely' values are independent of our Final Proposals allowances and of the allowances that will be set out in each company's licence.

1.5. Table A4.1 sets out these assumptions for gas distribution. The assumptions for electricity and gas transmission are set in the corresponding RIIO-T1 paper.

Table A4.1: Probability distribution assumptions – gas distribution

Totex category	Distribution type	"Most likely" value	Simulation 1		Simulations 2-4	
			Downside	Upside	Downside	Upside
Non-variant load related capex	Normal	Final Proposals allowances	10%	10%	20%	20%
Non-variant other capex			10%	10%	20%	20%
Non-variant controllable opex			10%	10%	10%	10%
Non-variant replacement expenditure			10%	10%	10%	10%
Uncertain costs (Enhanced physical site security)	PERT*	1% of Final Proposals capex allowance	Zero	10%	Zero	10%
Uncertain costs (Specified street work costs)		Final Proposals allowance + 1% of Final Proposals totex allowance	10%	10%	30%	London 50% Other GDNs: 30%
Uncertain costs (Connection charging boundary change costs)		Zero	N/A	N/A	N/A	N/A
Uncertain costs (Fuel poor network extension scheme)		Final Proposals allowance	10%	10%	10%	10%
Uncertain costs (Agency costs)		-2% of Final Proposals capex and opex allowance	0%	Zero	0%	Zero
Uncertain costs (Smart metering roll out costs)		1% of Final Proposals opex allowance	Zero	10%	Zero	100%
Uncertain costs (Mains and services replacement expenditure)		5% of Final Proposals repex allowance	10%	10%	50%	50%
Uncertain Costs (Large load connection costs)		Zero	N/A	N/A	N/A	N/A

* PERT (Program Evaluation and Review Technique) probability distributions are defined by three parameters - typically the minimum, maximum and most likely values

Price shock assumptions

1.6. Simulation 3 introduces 'price shocks' that are intended to simulate the possibility of unit price shocks. We model two sets of price shocks: 'capex price shocks' and 'opex price shocks'. The former applies to capex categories and most uncertainty mechanisms; the latter applies to opex and non-operational capex. Table A4.2 summarises the probability distribution assumptions for the two shock types.

Table A4.2: Probability distribution assumptions – price shocks

	Distribution type	"Most likely" value	Simulations 1-4	
			Downside	Upside
Capex price shock	PERT	Zero	20%	20%
Opex price shock	PERT	Zero	5%	5%

1.7. Both types of shocks may occur in any year of the price control period, and may occur more than once during the period. Both shocks are assumed to feed fully

through to costs in the year in which they are incurred, with 20 per cent of any shock also persisting to the following year.

Correlation assumptions

1.8. Simulation 4 introduces correlations between totex categories. These correlations are intended to capture the relationship between the volumes of work carried out under different categories – capturing the nature of investment in the networks, as well as the scope for management action. The extent to which unit costs in different totex categories are correlated is captured in the price shocks introduced in Simulation 3.

1.9. Table A4.3 sets out the correlation coefficients applied in gas distribution. The correlation coefficients used for electricity and gas transmission are set in the corresponding RIIO-T1 paper.

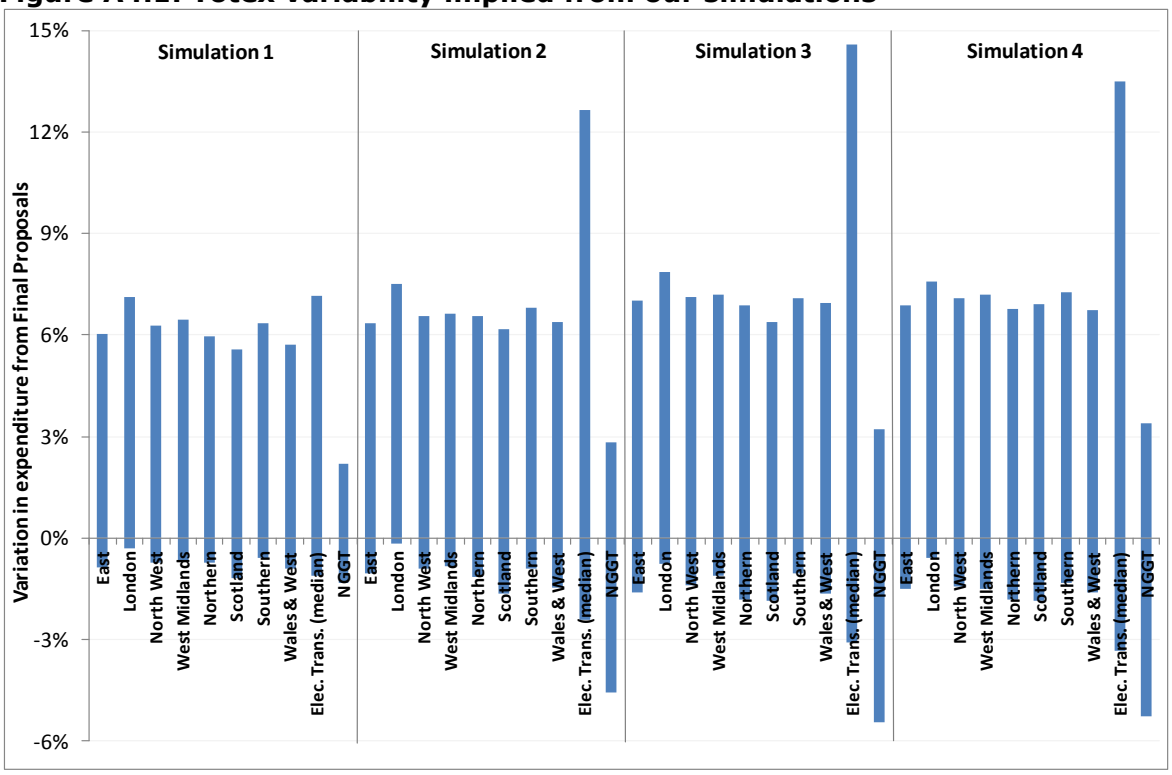
Table A4.3: Correlation assumptions – gas distribution

	Non-variant load related capex	Non-variant other capex	Non-variant controllable opex	Non-variant replacement expenditure	Uncertain costs (Enhanced physical site security)	Uncertain costs (Specified street work costs)	Uncertain costs (Connection charging boundary change costs)	Uncertain costs (Fuel poor network extension scheme)	Uncertain costs (Agency costs)	Uncertain costs (Smart metering roll out costs)	Uncertain costs (Mains and services replacement expenditure)	Uncertain Costs (Large load connection costs)
Non-variant load related capex	1											
Non-variant other capex	-	1										
Non-variant controllable opex	-	(0.1)	1									
Non-variant replacement expenditure	-	(0.2)	0.1	1								
Uncertain costs (Enhanced physical site security)	-	-	-	-	1							
Uncertain costs (Specified street work costs)	0.2	0.1	0.2	0.5	-	1						
Uncertain costs (Connection charging boundary change costs)	-	-	-	-	-	-	1					
Uncertain costs (Fuel poor network extension scheme)	-	-	-	-	-	-	-	1				
Uncertain costs (Agency costs)	-	-	-	-	-	-	-	-	1			
Uncertain costs (Smart metering roll out costs)	0.1	0.1	0.5	0.1	-	-	-	-	-	1		
Uncertain costs (Mains and services replacement expenditure)	-	0.1	0.1	0.5	-	0.5	-	-	-	-	1	
Uncertain Costs (Large load connection costs)	-	-	-	-	-	-	-	-	-	-	-	1

Summary of totex variability results

1.10. The results from the four simulations are presented in Figure A4.1. Since we had to introduce 'most likely' assumptions for uncertainty mechanisms that had a zero value in our Final Proposals, Figure A4.1 shows a greater scope for actual expenditure to be above our Final Proposal allowances. This should not be interpreted as there being a greater likelihood of unfunded over-spend than under-spend, since some of the difference between the upside and downside relates to expenditure funded through these uncertainty mechanisms.

Figure A4.1: Totex variability implied from our simulations



Application of Moody's rating methodology for regulated energy networks

1.11. As explained in Chapter 4, in order to proxy the financeability implications of our Monte Carlo simulations of relative risk, we apply the published credit rating methodology of Moody's. The methodology incorporates both credit ratios and qualitative factors relating to business and regulatory risk. As such, we consider that it provides a reasonable proxy to the more detailed financeability assessment that we carry out on the Final Proposals allowed expenditure and on specific sensitivities, as detailed in Chapter 4.

Summary of assumptions

1.12. In the Moody's methodology, a company would be rated in 11 sub-categories, with the score aggregated on a weighted basis. Categories that have a weaker relative score are weighted more heavily. When applying the methodology to our simulations, the qualitative factors are fixed for all companies, while the

credit ratios and capex-to-RAV ratio vary for each company and with each simulation.

1.13. We further stress-test the methodology by recalculating the rating score when the adjusted interest cover ratio (PMICR) is replaced by an FFO/interest ratio that incorporates accretions on index-linked debt. This is to reflect the different ways in which different rating agencies treat accretions on index-linked debt in their ratios.

1.14. Table A4.4 summarises the assumptions we used in applying the Moody's methodology. These assumptions were not shared with Moody's or any other credit rating agency.

Table A4.4: Assumptions for use of Moody's rating methodology in simulations

Rating sub-category	Sub-category weighting	Assumed rating	Rationale
Stability and predictability of regulatory regime	15%	Aaa	Based on Moody's criteria
Asset ownership model	10%	Aa	Based on Moody's criteria
Cost and investment recovery	10%	A	Based on Moody's criteria
Revenue risk	5%	Aa	Based on Moody's criteria
Cost efficiency	6%	Baa	Assumes no out- or underperformance of price control assumptions
Scale and complexity of capital programme	4%	Average capex:RAV ratio for RIIO-T1	Based on Moody's criteria
Ability and willingness to pursue opportunistic corporate activity	3.33%	A	Neutral assumption based on Moody's criteria
Ability and willingness to increase leverage	3.33%	Baa	Neutral assumption based on Moody's criteria
Targeted proportion of operating profit outside core regulated activities	3.33%	Aaa	By definition for a notional stand-alone network company
Adjusted interest cover ratio (PMICR) or FFO/interest expense	15%	Lowest 3-year average	Conservative assumption based on Moody's criteria
Net debt/RAV	15%	Highest 3-year average	Conservative assumption based on Moody's criteria
FFO/Net debt	5%	Lowest 3-year average	Conservative assumption based on Moody's criteria
RCF/Capex	5%	Lowest 3-year average	Conservative assumption based on Moody's criteria

Summary of Moody's methodology results

1.15. Table A4.5 summarises the implied credit ratings at the 5th percentile (ie providing a 95 per cent confidence interval that the rating would be no lower) from the application of Moody's methodology, and the application of the methodology stress-test.

1.16. As the table shows, all eight GDNs achieve investment grade credit ratings in the Moody's methodology (and stress-test) even when we assume the kind of underperformance of the price control assumptions implied by the 5th percentile. These results provide further support to our assessment that the GDNs are financeable under our Final Proposals.

Table A4.5: Credit rating implied from Moody's methodology

	Simulation 1		Simulation 2		Simulation 3		Simulation 4	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
East	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+
London	Baa3 / BBB-	Baa1 / BBB+	Baa3 / BBB-	Baa1 / BBB+	Baa3 / BBB-	Baa1 / BBB+	Baa3 / BBB-	Baa1 / BBB+
North West	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+
West Midlands	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+
Northern	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+
Scotland	Baa1 / BBB+	A3 / A-	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+
Southern	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+
Wales & West	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+	Baa2 / BBB	Baa1 / BBB+

(A) Using Moody's methodology (B) Using the methodology stress-test in which 'adjusted interest cover ratio' is replaced by FFO/interest expense

Assumptions for uncertainty mechanisms timing delay tests

1.17. As discussed in Chapter 4, we have stress-tested financeability to assess whether any timing delays, between when costs are incurred under our proposed uncertainty mechanisms and when they are remunerated, impact our conclusions on financeability. Our view is that these delays have only a temporary impact on cash flows and that they do not result in a systematic divergence between costs and revenues. As such, the assessment does not change our conclusions on financeability.

1.18. Table A4.6 summarises the assumptions we made regarding any timing delays for the RIIO-GD1 uncertainty mechanisms.

Table A4.6: Uncertainty mechanism timing assumptions – GDNs

Licence condition	Totex category name	Treatment	Timing assumption for modelling
3F	Uncertain costs (Enhanced physical site security)	Allowances are directed following two application windows - in May 2015 and May 2018.	First reopener window sets allowance for first four years of RIIO-GD1. Second reopener window sets allowance for last four years.
	Uncertain costs (Specified street work costs)		
	Uncertain costs (Connection charging boundary change costs)		
	Uncertain Costs (Large load connection costs)		
	Uncertain costs (Fuel poor network extension scheme)	Subject to potential review by Ofgem	No lag
	Uncertain costs (Agency costs)		
	Uncertain costs (Smart metering roll out costs)	Allowances set ex ante once costs are approved.	No lag
3E	Uncertain costs (Mains and services replacement expenditure)	Allowances set ex ante once new projects are approved.	Two-year lag

Appendix 5 – RIIO price control pension principles

1.1. Under RIIO price controls, our pension principles remain the same as previously set out. We have revised the guidance notes, to take account of developments in the pension arena and our pension methodologies, for each principle taking into account how we intend to apply them to Defined Benefit (DB) pension schemes in RIIO price controls. These do not apply to defined contribution pension costs, which will dealt with as part of total employment costs.

Principle 1 - Efficient and economic employment and pension costs

Customers of network monopolies should expect to pay the efficient cost of providing a competitive package of pay and other benefits, including pensions, to staff of the regulated business, in line with comparative benchmarks.

1.2. We should not expect consumers to pay the excess costs of providing benefits that are out of line with the wider private sector practice, nor for excess costs avoidable by efficient management action. We will, unless inappropriate, benchmark total employment costs (including all costs for service after the relevant cut-off date) within total costs and subject these to the same incentive as all other costs. We do this to ensure companies have the correct incentives to manage their costs, including pension costs, efficiently.

Funding commitment

1.3. For each network company, consumers will fund the established deficit as at the end of the relevant price controls (ie DPCR4, TPCR4 and GDPCR1). The established deficit means the difference between assets and liabilities attributable to pensionable service up to the end of each respective price control period set out below and relating to the regulated business under principle 2:

- for DNOs – the price control period ending on 31 March 2010
- for GDNs – the price control period ending on 31 March 2013
- for TOs and SOs – the price control period ending on 31 March 2012.

1.4. In accordance with principle 5, subject to adjustments to the regulatory fraction, the funding commitment covers:

- The quantum of the established deficit at the respective cut-off dates in paragraph 1.3 above
- Changes in the amount of the established deficit, at each triennial reset point within our notional 15-year funding period, caused by exogenous factors, for example caused by a fall in the value of stock markets or changes in longevity assumptions. Changes arising from de- or re-risking or any other rebalancing of assets may be subject to review. We will do this to ensure that the scheme's expectations from such actions, at the point they are considered or

before implementation, demonstrate the benefits to consumers. Our overriding provisos are that the scheme or schemes have been efficiently managed in accordance with principle 3; and, that the costs are efficient and economic in accordance with this principle 1. This will apply, even if there has been an interim period during which a funding surplus is reported.

1.5. Conversely, the funding commitment does not cover any element of deficit falling outside the scope of the established deficit (eg non–regulated activities and bulk transferees) or future service of those employees still active in the scheme after the relevant cut-off date. We will not make any future allowance for funding such deficit elements, ie the incremental deficit, other than through the totex allowance process and subject to the same incentive sharing mechanism that all other elements of totex are subject.

1.6. We will treat any deficit funding payments that arise from service after the relevant cut-off dates above, as part of totex. These are subject to the same incentive mechanism(s) as employment and total costs in general. These payments will be the actual payments made by the network operators determined in accordance with the pension deficit allocation methodology.

Notional deficit repair funding period

1.7. The established deficit will be funded over the notional 15-year deficit-funding period. We will apply a flat profile over the deficit-funding period allowing a rate of return. We do not reset the 15-year period at each subsequent control. The intention is that the deficit at the cut-off dates will be fully funded over the following 15 years from the respective cut-off dates. However, if the established deficit increases materially in the later part of the 15-year period the funding period may be extended. In addition, if a new established deficit arises following the 15-year funding period, additional allowances may be provided if the deficits are considered efficient.

Pension scheme administration costs & Pension Protection Fund (PPF) levies

1.8. These two items are, either paid directly by network operators or funded through increased employer contributions to the scheme. In setting allowances, we standardise the treatment of these costs; identify them separately and, as appropriate, exclude them from active service contributions.

1.9. The PPF have introduced a new framework for setting their levies in 2012-13. All DB schemes were required to submit data to the PPF under this framework on 31 March 2012. The PPF will review the levies and may amend them every three years. This new basis may increase, or decrease, the quantum of each scheme's annual levy as the PPF adopts a risk-based approach applied to each scheme's assets and liabilities and the likelihood of failure. These costs are partly outside the control of sponsors and trustees.

1.10. We have introduced a new approach to funding these costs for RIIO-GD1. We have set a separate allowance for both PPF levies and pension scheme administration costs. We will reset these allowances every three years, subject to a review for efficiency. Where the combined outturn costs in any year exceed the aggregate of the combined allowances and the £1m threshold, we will true up for

the excess. If the amount is lower, there will be no true up adjustment for any year. The true up operates as shown in Chapter 5, table 5.5 and this is not the same methodology as applied in previous controls.

Stranded surplus

1.11. In the event that a surplus arises (ie assets exceed the full buy-out cost of accrued liabilities as shown by an appropriate actuarial valuation), only the trustees have the power to decide whether it is in the interests of scheme members to repay any of the surplus to the employer (in accordance with the scheme rules and other legal requirements). Trustees' have obligations to protect scheme members.

1.12. Network operators' DB schemes are generally closed mature schemes with the majority of members either pensioners or deferred pensioners and with the average age of active members around 48-50 years. As such, we understand that they are generally looking to match their assets and revenues to their liabilities, which should become easier to forecast. In doing this, their investment strategies may move from riskier to less risky assets, and they will likely use hedging strategies and, possibly, innovative funding strategies. In these circumstances, network companies consider that the potential for a surplus is very unlikely to arise. If this was the case, they consider that consumers may indirectly benefit from investing in less risky assets to protect schemes from increased deficits on riskier assets, which are subject to market movements. For the avoidance of doubt on the regulatory treatment, network operators may wish to seek guidance on a case-by-case basis from us.

1.13. Sponsors may also seek to use contingent assets, where possible, to mitigate increases in deficit funding costs where schemes have achieved very high funding levels. This latter option may be effective in reducing funding costs for consumers; and, we will encourage and expect the network operator to demonstrate at inception the expected benefits to consumers.

1.14. We will monitor each scheme's position on an annual basis. In the event that a scheme was in surplus for a given period, particularly a reset point, we consider that there is a reasonable expectation for symmetry in the treatment for funding of deficits and use of a surplus. We would therefore expect to share a surplus between members and consumers pro-rata to their funding of it. We would consider our options at each triennial reset point for truing up and resetting allowances (potentially including negative allowances), such that consumers would benefit and shareholders would cover the cost in the event that contribution levels remain the same. We will review each instance on a case-by-case basis.

Buy-ins and buy-outs of pension schemes liabilities

1.15. These currently fall within the scope of principles 1, 2 and 5. Buy-ins and buy-outs are effectively a de-risking of future liabilities. It will be necessary to determine how such de-risking should be shared between consumers and shareholders, to facilitate efficient management of the schemes and to remove uncertainty as to the regulatory treatment. It is difficult to be prescriptive as to how they should be spread between different generations of consumers. For guidance, an equitable option is to spread these costs over the same deficit repair

period used to set allowances, for DPCR5 and RIIO price controls this is our notional 15-year funding period commencing from the respective cut-off dates. However, if these occur towards the end of that funding period, we reserve the right to review the spreading period. We will deal with buy-ins and buy-outs, if they occur, applying these existing pension principles on a case-by-case basis.

Principle 2 - Attributable regulated fraction only

Liabilities in respect of the provision of pension benefits that do not relate to the regulated business should not be taken into account in assessing the efficient level of costs for which allowance is made in a price control.

1.16. It is for shareholders, rather than consumers of the regulated services, to fund liabilities associated with businesses carried on by the wider non-regulated group. This includes businesses that were formerly carried on by the same ownership group and have been sold, separated and/or ceased to be subject to the main price control. In principle, this may include costs related to self-financing excluded services, metering, and de minimis activities of the network company and of unregulated businesses in the same scheme in the context of a transportation and/or distribution price control. For the purposes of the regulatory fraction and the pension deficit allocation methodology, these are collectively labelled 'non-regulated activities'. These will be dealt with on a case-by-case basis, as in some cases the costs of such businesses or activities are not readily separable from the regulated business.

1.17. The regulatory fraction determined in setting ex ante allowances will be reviewed to assess the adjustment when there have been structural changes to a scheme within a price control period, at each reset. We will also review and adjust for movements, including cash funding by sponsors to the previously unfunded Early Retirement Deficiency Contributions.

1.18. Structural changes may occur when:

- schemes merge or demerge
- members are transferred in or out in bulk
- there is a change of ultimate controller
- there is a buy-in/buy-out of any part of the scheme membership.

1.19. We require that actual or potential movements in the regulatory fraction, arising after the relevant cut-off date, are made and reported annually by network operators. This is required as an adjunct to the operation of the pension deficit allocation methodology.

Bulk transfers

1.20. During a price control period, there may be bulk transfers of members in or out of a DB scheme through corporate activity. These transfers are usually only accepted when the transfer value finances the deficit, if any, of the transferees. Bulk transfers in to a scheme require approval by trustees and as specified by the Pensions Regulator (TPR), they must be fully funded (in all but exceptional circumstances). TPR guidance states: "There is no statutory obligation for a trust-based scheme to accept transfers-in and provide benefits in exchange. Some

schemes do offer defined benefit transfer credits, typically in the form of added years counting for benefits on the scheme's normal formula. Other schemes offer money purchase benefits in exchange for transfers, in which case no issues arise as to assumptions for determining benefits". It also states, "A transfer credit should not be expected to require additional funding from the employer in the long term unless agreed by the employer in advance".

1.21. Under our commitment to fund the established deficits, movements in deficits arising from bulk transfers that result from corporate transactions, whether fully funded or not, are a risk for shareholders and not consumers. This applies even where the transferred protected person's pension liability is underfunded where it arises from a corporate transaction. We require network operators to advise these annually and, as appropriate, we may revise the regulatory fraction.

1.22. Trustees may accept bulk transfers into a scheme. These may include protected persons who may or, may not, be considered part of the regulated activities. We acknowledge that, network operators subject to the protected person's legislation, may have very limited scope to decline transfers in of protected persons. Where protected persons have been funded by one set of consumers in a price-controlled licensee, and transfer into a different licensee's scheme we are minded to continue that funding of the amount transferred relating to an established deficit. In all other circumstances, we consider that these are not part of the established deficit and therefore shareholders, not consumers, will fund any increase related to the transferees at future price controls.

1.23. This clarification covers only bulk transfers where individuals or groups of individuals (but not whole, or substantially, whole schemes) are transferred as part of a smaller transaction to acquire an activity rather than a licensee. We exclude a full merger between two existing DB schemes because of a corporate transaction. We will deal with this as a structural change (see above).

1.24. We cannot predict whether this treatment will be equitable to all situations. If we are satisfied that there are exceptional circumstances, we retain the option to deal with these on a case-by-case basis.

Principle 3 - Stewardship - ante/post investment

Adjustments may be necessary to ensure that the costs for which allowance is made do not include excess costs arising from a material failure of stewardship.

1.25. We will disallow any excess costs arising from material failure in the responsibility for taking good care of entrusted pension scheme resources. Examples might include items such as recklessness, negligence, fraud or breach of fiduciary duty. We will review stewardship and reserve our position to make adjustments to allowances if we observe, for example, any of the following:

- poor investment returns over a long period, eg greater than a single price control

- whether the scheme investment managers are underperforming against their peers or the market and expectations and their performance has not been reviewed or benchmarked at appropriate intervals
- not matching investment/returns to fund future liabilities as they fall due
- material increase in deficits and need for increasing the funding
- maintaining a higher balance of investments in riskier assets compared to investment returns which do not match future liabilities
- accepting transfers in at under value
- making transfers out at over value.

1.26. In determining whether pension costs are reasonable, we may compare the level of funding rate recommended by periodic actuarial valuations to the actual funding rate adopted by the licensee. As long as a funding valuation uses actuarial assumptions, which are in line with best practice and are not outliers, the costs may be included in the assessment of totex and be subject to any incentivisation adjustment and the reasonableness review set out in principle 1. This is one potential indicator of whether there has been a material failure in stewardship. We reserve our position to examine investment and scheme administration costs to see whether these are materially out of line with industry figures.

1.27. The choice of investment strategy is one for trustees and necessarily involves the exercise of judgment, which, for any particular scheme and at any particular point in time, the trustees are best placed to make. We do not think it is appropriate, given our statutory remit, for us to make judgments about investment strategies. In particular, the success or otherwise of any particular strategy can only be measured in hindsight, whereas trustees must make ex ante choices. Moreover, the strategy, which optimises outcomes over the whole life of a scheme, may produce inferior results over any particular shorter period (and vice versa). Therefore, it would be inappropriate for us to make judgements about investment strategies based on outcomes over the period of one price control. As part of a reasonableness review, we will review investment returns and will do so over a period of at least 10 years. We will keep under review the effect of de-risking strategies and any increase in the burden for consumers and different generations of consumers.

Principle 4 - Actuarial valuation/scheme specific funding

Pension costs should be assessed using actuarial methods, on the basis of reasonable assumptions in line with current best practice.

1.28. We expect the level of scheme funding to be assessed on the basis of forward looking assumptions regarding long-run investment returns and other key variables. Network operators are required to provide up-to date actuarial calculations (including the most recent formal actuarial valuation of the relevant schemes) to support their business plan estimates. During an eight-year price control period, network operators are required to provide annual updated rolled-forward valuations to 31 March each year and triennial valuations to enable the resetting of and truing up of opening adjustments.

1.29. We would not expect substantial differences between companies. However, if a reasonableness review identifies an outlier, we will investigate and review the reasons for this. If evidence of material differences arise, and these differences

have contributed to an increase in funding required we may adjust the recommended funding rate for the purposes of setting and truing up price control allowances.

1.30. Network companies have advised that, in their view, de-risking strategies should protect the funding position of their scheme over the long term, in that it places a floor on the downside. However, it may significantly reduce the potential upside from future out-performance of various asset classes.

1.31. Whilst a move to de-risking these mature closed schemes may be expected, we will keep under review the increase in the burden for consumers and different generations of consumers. This may arise from a combination of the speed and timing of de-risking, the use of conservative valuation and asset return assumptions (particularly of gilts, which have shown negative real returns) and increasing longevity. We may require companies to demonstrate how their de-risking strategies are protecting future scheme funding and the benefits that they expect to flow to consumers.

Principle 5 - Under funding/over funding

In principle, each price control should make allowance for the ex ante cost of providing pension benefits accruing during the period of the control, and similarly for any increase or decrease in the cost of providing benefits accrued in earlier periods resulting from changes in the ex ante assumptions on which these were estimated on a case-by-case basis.

1.32. We will not set allowances or make true up adjustments for ongoing pension active service costs in RIIO price controls. Instead, they will form part of the overall assessment of totex and as such are subject to the same incentive mechanisms for sharing under- or over-spend. In the RIIO-GD1 and T1 price controls, those ongoing costs will exclude scheme administration costs and PPF levies.

1.33. Typically, pension schemes undertake full actuarial valuations triennially; whereas, RIIO price controls are typically set for periods of eight years. It is likely that funding rates will change during the period of a price control. It is inappropriate to leave deficit funding unaltered for an 8-year period. We will reset allowances effective 1 April 2015 based on full triennial (where available) or rolled forward updated valuations (as set out in our methodology) as at 31 March 2013 and every three years thereafter. At the same time, there will be a reasonableness review to inform the quantum of the costs and, if considered necessary, adjustments to the allowances for funding of the established deficit but not ongoing service costs or incremental deficit funding.

1.34. The annual funding payments for the incremental deficit (from the respective cut-off dates in Principle 1) will be subject to the same incentive mechanism as all other costs (including ongoing pension service costs). Those annual payments are: (a) those actually made by the company in accordance with the deficit recovery plan in the relevant valuation; and (b) attributed to the incremental deficit in accordance with deficit allocation methodology.

1.35. We will apply the following guidelines to the funding of the established deficit:

- An attribution must be made of the deficit and its constituent assets and liabilities between the established deficit, the incremental deficit and non-regulated activities. The detailed methodology for this is set out in the pension deficit allocation methodology, which is published separately and it will be incorporated into the Regulatory Instructions and Guidance for reporting price control cost information for all licensees.
- We will perform triennial reasonableness reviews and reset allowances for the remainder of the notional 15-year funding period and make any necessary true up adjustments since the previous review or cut-off date. The reasonableness review will inform the allowances for its economic and efficient established deficit costs irrespective of the allowance set at the cut-off date and each subsequent review. We may determine and share the terms of reference with licensees at each review. The review will inform the level of any additional funding if either the outturn costs are higher than the allowances, or where the deficit has increased and either is demonstrably due to inefficiencies. Conversely, where outturn costs are lower than the allowances it will determine whether the licensee should retain any, or a proportion of, the savings.
- At each subsequent triennial review and related reset date commencing 2013, deficit-funding allowances will be reset based on the methodologies set out in the GD1 Financial Handbook.
- Any under- or over-recovery of efficient established deficit funding costs against the allowance in the previous three years as determined above, will be adjusted in future revenues over the remaining period of the initial notional 15-year funding period and be NPV neutral using the same discount rates as used for spreading the ex ante deficit allowances. Consumers will be unaffected by the actual funding period set by companies.
- As noted under principle 2, we will apply a revised regulatory fraction at each triennial reset in accordance with the deficit allocation methodology. This will include the effect of any structural changes to a scheme on a case-by-case basis. We will update the element of the fraction related to movements in unfunded early retirement deficiency contributions (ERDCs) at each triennial review and reset dates.

Unexpected lump sum deficit payments

1.36. These tend to occur in instances of change in corporate control, or through corporate activity within the network operator's wider group. Whilst the trustees may take the opportunity to repair the deficit faster, it is not clear why consumers should pay an accelerated profile. Our default position is that we will treat the portion of the funding attributable to the established deficit as being made in equal annual instalments over the remaining period of the 15-year notional deficit funding period.

1.37. However, in exceptional circumstances, we may review the payment of the lump sum compared to what the position would have been if the deficit were spread over a number of years. This is to ensure that consumers have either positively benefited from, or have not been disadvantaged by the accelerated funding. Where a company cannot satisfy us that the accelerated payment has been in the interests of consumers (as opposed to shareholders or scheme members), our default position will apply.

Accelerated deficit funding payments

1.38. Where an annual deficit payment is accelerated by one or two years, for the purpose of the true up and NPV neutral adjustments, we will treat it as having been made in the year for which they were scheduled (in accordance with the original deficit funding plan) to be made.

Principle 6 - Severance - early retirement deficiency contributions

Companies will also be expected to absorb any increase (and may retain the benefit of any decrease) in the cost of providing enhanced pension benefits granted under severance arrangements which have not been fully matched by increased contributions

1.39. Since 31 March 2004, ERDCs, whether partially funded or totally unfunded, are a matter solely for shareholders.

1.40. The principle requires that an adjustment be made to the allowances for future price controls to exclude the impact of ERDCs resulting from redundancy and re-organisation, which have been offset by use of surpluses, rather than being funded by increased contributions.

1.41. For this purpose, it will be necessary to roll forward the previously agreed amounts of ERDCs arising prior to 1 April 2004. The methodology is set out in our 22 June 2010 pension document and the mechanism is set out in the pension deficit allocation methodology.

Appendix 6 – Computing Regulatory Asset Value (RAV)

Computing the regulatory asset value (RAV)

1.1. The RAV is a key building block of the price control review. RAV represents the value upon which the companies earn a return in accordance with the regulatory cost of capital and receive a depreciation allowance.

1.2. In DPCR5, as a key element in our approach to equalising incentives, we made a fundamental review of the means by which costs are included in the RAV. We will follow this approach for all network companies. The speed of money will be as follows:

- slow money - this will be added to RAV and be calculated by reference to totex spend and totex capitalisation rates.
- fast money - this will be the balance of totex not included in slow money and included in revenue in the year in which it is incurred.

In both calculations totex will be after the application of the totex incentive mechanism.

1.3. RAV calculations will be performed in the Price Control Financial Model (PCFM) as part of the annual iteration process. The PCFM will be published each year following the annual iteration process. The resulting values included within the PCFM will be indicative as potentially components of the calculation may be amended in future annual iteration processes. However, the most recent PCFM will contain the most up to date RAV calculations at that point in time.

1.4. Totex costs on which additions to RAV are based will be calculated on a normal accruals basis. This excludes provisions, except for the actual cash utilisation thereof. The definition of normal accruals will be set out in the Reporting Instructions and Guidance document, prepared and amended in accordance with the licence conditions.

Definition of totex

1.5. Totex consists of all the expenditure relating to a licensees regulated activities with the exception of:

- all costs relating to de minimis activities
- all costs relating to excluded services activities
- pension deficit repair payments relating to the established deficit (see Chapter 6) and for the avoidance of doubt, all unfunded early retirement deficiency costs (ERDC) post 1 April 2004. Pension deficit repair payments relating to the incremental deficit are treated as totex
- all statutory or regulatory depreciation and amortisation
- profit margins from related parties (except where permitted as defined below)

- all additional costs relating to rebranding a company's assets or vehicles following a name or logo change
- fines and penalties incurred by the network company (including all tax penalties, fines and interest). The treatment of Traffic Management Act penalty costs can exceptionally be treated as totex if they can be shown to be efficient
- compensation payments made in relation to standards of performance
- bad debt costs and receipts (subject to an ex post adjustment to allowed revenues)
- any asset revaluation amounts
- reversing, where appropriate, any cost reporting which is not on a normal accruals basis as referred to in paragraph 1.2 above
- costs in relation to pass-through items, including business rates (except for business rates on non-operational buildings). Pass through items include NTS exit charges and Ofgem licence fees
- interest, other financing and tax costs[70] (except for business rates on non-operational buildings and stamp duty land tax); and,
- contributions and other proceeds received (including from legal and insurance claims) relating to the licensees regulated business are treated as an offset to totex unless specifically excluded or specifically applied directly to the RAV.

1.6. Costs added to RAV are all intended to refer to costs incurred by the licensee or a related party of the licensee undertaking regulated business activities. Where those costs are recharged to the licensee, they should not include any internal profit margins of the licensee or related party, except where permitted. The treatment of related party margins is set out in paragraphs 1.14 to 1.25 below.

1.7. In addition, the incentive payment/deduction given/taken under the Totex Incentive Mechanism where licensees have spent less/more than their allowance is included in totex.

1.8. As a transitional measure during RIIO-GD1 to facilitate the transition of repex from a 50 per cent capitalisation rate at the start of the period to 100 per cent capitalisation at the end of RIIO-GD1, the amounts of fast and slow money will be calculated on a repex and non-repex basis initially and added together to obtain the total amount of fast money and slow money.

Deductions from RAV

1.9. The following items are netted off calculated additions to RAV:

- cash proceeds of sale (or market value of intra-group transfer) of operational assets
- cash proceeds of sale of assets as scrap
- amounts recovered from third parties in respect of damage to the network.

1.10. These are netted off on a forecast basis at Final Proposals and subject to a five-year delay from the year in which the proceeds occur until the year in which they are netted for additions to RAV. A true up adjustment between the actual

[70] Tax costs include corporation tax, capital gains tax, payroll taxes, recoverable valued added tax and network rates.

level of proceeds and the forecast level at the time of RIIO-GD1 Final Proposals will be applied at the start of RIIO-GD2.

Spend not included in RAV additions

1.11. For the avoidance of doubt expenditure relating to the following areas is not added to RAV LNG storage (except in limited instances where agreement is given in advance) nor is metering added to RAV.

Other RAV adjustments

Efficient costs

1.12. We reserve the option to disallow costs from totex for any of these categories if they do not relate to the regulated business or are demonstrably inefficient or wasteful. We will specifically review all costs in relation to restructuring of a company's business or operations in relation to corporate transactions, including the associated redundancy costs to satisfy ourselves that these costs are efficient and will deliver future savings for the benefit of the consumer.

Restated costs

1.13. For all costs, in whatever category, activity or exclusion, where a company makes any restatement of costs, we will apply these in to the year in which they were originally incurred rather than in the year of the restatement.

Related party costs

1.14. Costs are only included to the extent they represent the cost of services required by the licensees business. Costs for services recharged to the licensee by a related party[71] will only be admissible if the licensee would otherwise have needed to carry out the service itself or procure it from a third party. We will expect these services and associated costs to be itemised and justified. Such costs are only included to the extent that they satisfy the criteria regarding the prohibition on cross-subsidy in the relevant standard or standard special licence condition. Where licensees already hold derogations to cover the charging and reporting of specified shared services between two or more licensees under common ownership, then the derogations have preference over these requirements.

1.15. All companies and related parties charging the licensee should be able to demonstrate they have a robust and transparent framework governing the attribution, allocation and inter-business recharging of revenues, expenses, assets and liabilities. There should be documented procedures to demonstrate compliance with EU Procurement directives and implementing national legislation where these apply.

[71] A related party is a term used to cover both Affiliate and Related Undertakings as defined in Standard Licence Condition 1 for electricity transmission and standard special licence condition for gas transportation.

1.16. We would expect the network company to be able to justify the charge by reference to external benchmarking, or by reference to market-related testing, or tendering. We would expect related parties to be able to support their charges by either service level agreements or contracts; and that such contracts would be finalised on a timely basis and not remain in draft for an unreasonable period[72].

1.17. The attribution of costs relating to shared services must be on a demonstrably objective basis, not unduly benefiting the regulated company or any other company or organisation and be based on the levels of service or activity consumed by each entity. We expect licensees to document the basis on which they approve these at board level and provide evidence of this together with details of how the continuing assessment and challenge, annually takes place.

1.18. The basis should be consistent from year to year and where there are changes the licensee should both document and justify them.

1.19. The method used to attribute costs from the related party to the licensee and to activities should be transparent and the revenues, costs, profits, assets and liabilities separately distinguishable from each other.

Related party margins

1.20. We will exclude related party profit margins from costs added to RAV unless the related party concerned earns at least 75 per cent of its turnover from sources other than related parties and charges to the licensed entity are consistent with charges to external customers. For this purpose, we consider an entity to be a related party if it is an affiliate or related undertaking or if that entity and the network company have any other form of common ownership. A key indicator of entities being in common ownership is that they are affiliates of the ultimate controller (or controllers where there is more than one).

1.21. Where network operators utilise captive insurance companies, these shall be excluded from the related party exclusion. We will not allow any excess losses relating to these captive insurers (to the extent that they are covered by captive insurers) to be funded by customer.

1.22. When an entity ceases to be a related party, for example on a change in ultimate controller, then from the time it ceases to be a related party its margins will be allowable, if it meets the following requirement. There must be an unambiguous demonstration that its charges to the distribution business (in the original or amended contract) remain competitive and are in line with market rates, or the contract was re-tendered and that there was more than one bidder.

1.23. Whilst not precluding other demonstrations of competiveness, we consider that an open competitive tender is likely to be the clearest indicator. In the absence of an open competitive tendering exercise, we will seek clear evidence that the terms of any contract are competitive.

[72] Whilst not defined, we expect licensees to demonstrate to our satisfaction why a period in excess of 6 months was reasonable.

1.24. Irrespective of whether the network company demonstrates competition and they no longer disallow margins, the licensee must arrange to comply with the requirements of the relevant standard or standard special licence condition (on the maintenance and provision of information). It must continue to report the former related party's costs and margins as if it were still a related party for the remainder of the price control period. The data is required in order for us to be able to monitor performance against the price control and carry out cost analysis to inform future reviews.

1.25. Where a principal related party resource provider[73] ceases to be a related party during a price control period, for example on the restructuring of a group, we shall continue to treat them as a related party until the end of that price control period and we will continue to disallow the margins charged. At the next price control period the margins will be allowed provided that there is unambiguous demonstration that the charges to the regulated business (in the original or amended contract) remain competitive and are in line with market rates, or that the contract is re-tendered and that there is more than one bidder.

RAV adjustments arising from GDPCR1

1.26. The RAV additions included in the opening balances at the start of the RIIO-GD1 period reflect actual expenditure during previous years where this is known. At the time of Final Proposals the actual amount for 2012-13 is not know and therefore an estimate has been used. Amounts may also still be subject to efficiency reviews and may therefore be provisional amounts. The estimate for 2013-14 and any provisional amounts are adjusted to the actual amounts as part of the annual iteration process. Any such adjustments are included within the Legacy price controls term LRAV which is included as a RAV addition in 2013-14.

1.27. The adjustments to RAV arising from GDPCR1, aside from the update to underlying capex, relate to the logging up of fuel poor costs, the adjustment to RAV resulting from cumulative incentivised Mains and Services Replacement costs exceeding the GPCR1 cap and security logged up costs. SIU Capex Costs relating to the interim solution for the Scotland GDN have been included within the capex cost forecast for 2012-13 (but excluded from the capex roller calculation). Adjustments could also potentially be made to capex for re-openers yet to be finalised for the GDPCR1 period where these are not included as part of the uncertainty mechanisms for RIIO-GD1.

[73] A principal related party resource provider is one that has a contract to operate or manage a substantial part of a licensee's day-to-day operations, and that the licensee entered into the contract before or as part of the arrangements for a change in ultimate controller, or controllers, where there is more than one.