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RIO-T1: Initial Proposals for National Grid Electricity Transmission plc and National Grid Gas plc

Initial Proposals – Finance Supporting document

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Overview:

This Supporting Document sets out further detail on the financial aspects of our Initial Proposals for the transmission price controls for National Grid Electricity Transmission (NGET) and National Grid Gas Transmission (NGGT) 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 Initial Proposals Overview document.

Associated documents

Main Document

[RIIO-T1: Initial Proposals for NGGT and NGET - Overview](#)

Supporting Documents

[RIIO-T1: Initial Proposals for NGGT and NGET – Outputs, incentives and innovation](#)

[RIIO-T1: Initial Proposals for NGET and NGGT – Cost assessment and uncertainty](#)

[RIIO-T1: Initial Proposals for NGGT and NGET – Impact Assessment](#)

Other Relevant Documents

[RIIO-GD1: Initial Proposals - Overview](#)

[RIIO-T1 and RIIO-GD1: Draft licence conditions – First informal licence drafting consultation](#)

[RIIO ET1 Price Control Financial Handbook](#)

[RIIO GT1 Price Control Financial Handbook](#)

[RIIO-T1 Final Proposals for SP Transmission Ltd & Scottish Hydro Electric Transmission Ltd - Overview](#)

[Decision on strategy for the next transmission price control – RIIO-T1](#)

[RIIO-T1/GD1: Financial model](#)

[Cost of capital study for RIIO –T1 and GD1](#)

Glossary

<http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-GD1/ConRes/Documents1/Glossary.pdf>

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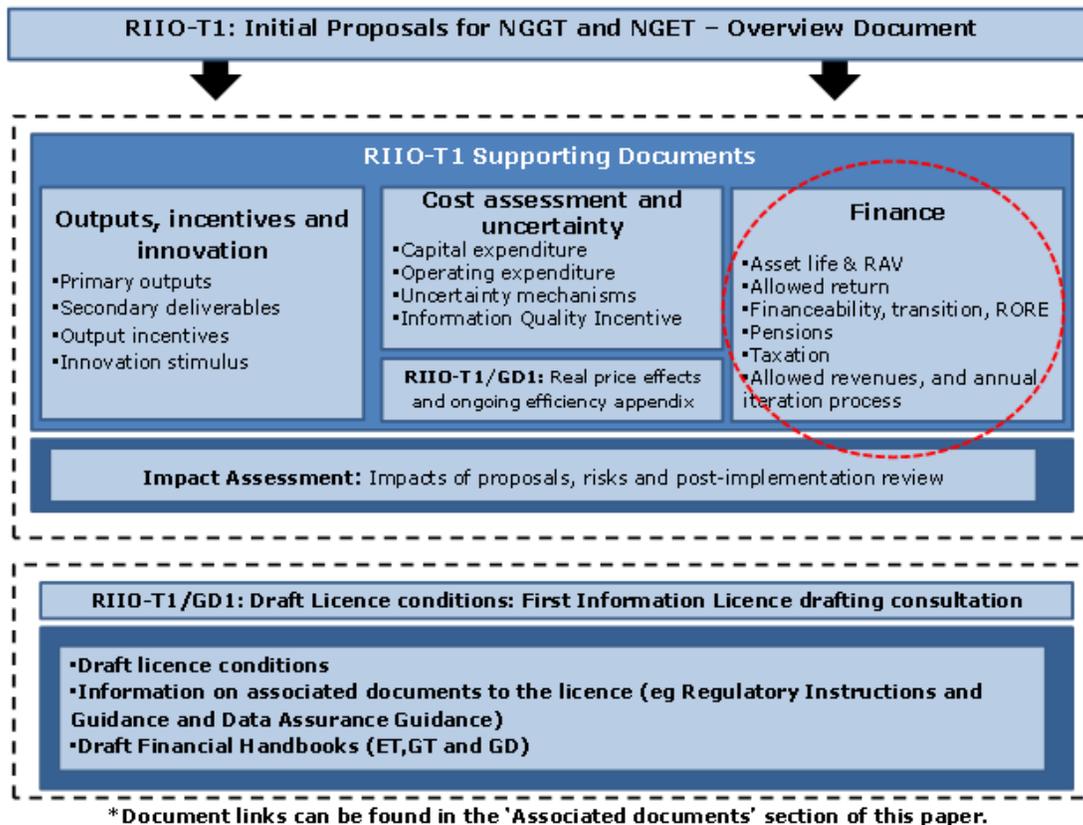
1. Introduction

Chapter Summary

This chapter explains the structure and purpose of this document.

1.1. Figure 1.1 below provides a map of the RIIO-T1 documents published as part of the suite of consultation documents.

Figure 1.1 RIIO-T1 document map



1.2. This document sets out further detail on our Initial Proposals for National Grid Electricity Transmission (NGET) and National Grid Gas Transmission (NGGT) for the next transmission price control, RIIO-T1. 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 NGET and NGGT. It is aimed at network companies, investors and those who require a more in-depth understanding of the proposals. We

are publishing this document alongside the Initial Proposals Overview Document (“Overview Document”) which provides a more accessible overview of the package of Initial Proposals for NGET and NGGT.

1.4. As noted in the Overview Document these Initial Proposals build on the regulatory framework for RIIO-T1 set out in our Strategy Document (“Strategy Document”)¹ and are based directly on the updated RIIO-T1 business plans developed by NGET and NGGT.

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

- Chapter 2 outlines how our approach to asset lives has been amended and the impact that this and allowed expenditure has on the Regulatory Asset Values (RAV)
- Chapter 3 outlines our assessment of the allowed return
- Chapter 4 sets out our views on financeability 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 would use to update NGET’s and NGGT’s revenues in RIIO-T1.

¹ Decision on strategy for the next transmission price control - RIIO-T1
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/T1decision.pdf>

2. Asset lives and RAVs

Chapter Summary

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

2.1. One of the aims 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. We set out the asset lives and depreciation profiles we proposed to apply for RIIO-T1 in our RIIO Strategy Document published on 31 March 2011 as well as the intended approach for establishing the capitalisation rate for totex. Both NGGT and NGET submitted business plans in compliance with these proposals. The tables below set out our proposals on asset life, depreciation and capitalisation rates.

Summary of key components of Initial Proposals

Table 2.1: Asset lives and depreciation profiles

Company	Asset Type	Asset Lives	Depreciation Profile
NGET	Pre RIIO existing assets	20	Straight Line
	New assets	45	
NGGT	Post-2002 existing assets	45	Straight Line
	New assets		

Table 2.2: Capitalisation rates

Capitalisation Rates Table		Capitalisation Rate Used
NGET TO	Base	85%
	Uncertainty	85%
NGET SO	Combined	31%
NGG TO	Base	53%
	Uncertainty	90%
NGG SO	Combined	37%

2.2. The remainder of this chapter sets out the rationale for these proposals and the resulting expected RAVs of RIIO-T1.

Asset lives

2.3. In our Strategy Document we set out our intention to amend the average expected economic lives of electricity transmission assets from 20 to 45 years, and our intention to leave unchanged the average expected economic lives of gas transmission assets at 45 years. This continues to be our position.

2.4. We set out that the change in asset life for electricity transmission assets would only be applied to new investment from the start of RIIO-T1. Existing assets include new expenditure on projects already started under the transmission investment for renewable generation scheme (TIRG) which would continue to use the existing 20 year asset life in accordance with that scheme's terms.

2.5. Our consultants, CEPA, issued a report² on which we based our intention to extend asset lives going forward to 45 years. They also produced a report³ which considered the potential impact on this average expected economic life of the future anticipated shorter generation assets. They concluded that it is not appropriate to allow shorter economic lives for onshore network assets required for generation connections in general, and renewable generation with lower technical lives in particular.

Transitional arrangements

2.6. In our Strategy Document we permitted the use of transitional arrangements for financeability purposes for Transmission Owners (TOs) in moving to apply the asset lives of 45 years. NGET proposed a transition period of 16 years in their business plan submission.

2.7. For the fast-tracked⁴ companies we accepted 8-year transition for SP Transmission Ltd (SPTL) and 16-year transition period for Scottish Hydro Electric Transmission Ltd (SHETL) reflecting the greater investment programme, relative to their RAV, of SHETL. Although NGET has a large investment programme it is not of the relative scale of SHETL and following our financeability assessment we consider eight years to be appropriate. This is covered further in Chapter 4.

² The Economic Lives of Energy Network Assets – Report by CEPA/SKM/GL on behalf of Ofgem
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/CEPA%20Econ%20Lives.pdf>

³ Onshore transmission assets and risks associated with renewable projects with potentially limited lives - Report by CEPA on behalf of Ofgem
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/ceparenewablelives.pdf>

⁴ Where business plans are of sufficient quality, fast-tracking provides a process whereby we can reach early settlement of a company's price control, ie their business plans may be "fast-tracked".

Depreciation profiles

2.8. In our Strategy Document our proposal was to retain a straight line depreciation profile for both electricity and gas transmission assets. NGET and NGGT submitted their business plans on this basis and we have used it in our Initial Proposals.

Totex capitalisation and additions to RAV

2.9. Additions to RAV (also known as 'slow money') are calculated by applying the totex capitalisation rate to the totex amount. The totex capitalisation rate is set at the outset of the price control and is initially calculated as the ratio of the opex and capex components of totex (referred to below as the 'natural' rate).

2.10. In their business plan submissions NGET and NGGT suggested that split capitalisation rates should be applied to reflect the difference between ex ante funding and funding resulting from the operation of uncertainty mechanisms.

2.11. We agree with NG that in some circumstances a split capitalisation rate is an appropriate approach, particularly when the majority of expenditure is covered by uncertainty mechanisms.

2.12. For NGET we do not consider the level of potential volatility is sufficient to merit a split capitalisation rate and we therefore propose to use the same approach as for the fast-track companies with a single capitalisation rate for all totex slightly below the natural rate. NGET's natural rate in its business plan is 86 per cent and we have used a rate of 85 per cent in our assessment.

2.13. For NGGT the level of investment uncertainty is much greater than for the electricity transmission companies and we consider a split rate to be appropriate. NGGT have proposed rates of 57 per cent for base expenditure and 90 per cent for incremental expenditure. These rates are below the natural rates in their business plans but following the amendments we have made to the business plan we consider rates of 53 per cent for base expenditure and 90 per cent for incremental investment to be appropriate.

2.14. Table 2.3 compares the rates proposed by NGET and NGGT together with our proposed rates.

Table 2.3: Summary totex capitalisation rates

Capitalisation Rates Table		Company Proposed Capitalisation	Capitalisation Rate Used
NGET TO	Base	86%	85%
	Uncertainty	100%	85%
NGET SO	Combined	31%	31%
NGG TO	Base	57%	53%
	Uncertainty	90%	90%
NGG SO	Combined	37%	37%

2.15. The rate of capitalisation chosen does impact the assessment of the financeability of our proposals and we discuss the actual rates chosen in section 4 on financeability.

2.16. The NGGT expenditure to which the “uncertainty” capitalisation rate would be applied is that which is included in the uncertainty mechanisms detailed in the Cost assessment and uncertainty Supporting Document.⁵ (broadly relating to Entry and Exit Revenue Drivers, Network Flexibility spend, Industrial Emissions and Bi-directional flow expenditure).

2.17. For the two System operators (SOs) we have used the capitalisation rates suggested by NGET and NGGT.

2.18. We set out our proposed RAV methodology in Appendix 8 of the Financial Issues Supplementary Annex to the Strategy Decision. We still propose to apply this with some small adjustments as detailed below.

2.19. The RAV methodology has been updated as follows:

- We have clarified:
 - the treatment of Traffic Management Act penalty costs can exceptionally be treated as totex if they can be shown to be efficient
 - pension deficit repair payments relating to the incremental deficit are treated as totex; 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
- For NGGT there would be a split capitalisation approach for totex as follows:
 - All totex relating to allowances which are set within the RIIO-T1 period (ie those established by uncertainty mechanisms – see paragraph 2.16) will be capitalised at 90 per cent

⁵ Cost assessment and uncertainty Supporting Document
[RIIO-T1: Initial Proposals for NGET and NGGT – Cost assessment and uncertainty](#)

- o Remaining totex (ie totex relating to allowances specified in the licence in advance of RIIO-T1) would be capitalised at 53 per cent.

RAV balances

2.20. Tables 2.4 to 2.8 show the projected RAV movements based on our Best View of the NGET and NGGT business plans, and the totex capitalisation rates proposed. The transfers into RAV reflect for NGET the TIRG expenditure which enters RAV at the end of the incentive period; and for NGGT the expenditure under TPCR3 and TPCR4 revenue driver arrangements which is held in a 'shadow' RAV calculation until completion of the appropriate funding mechanism. The TIRG shadow RAV closing balance is £96m for 2012-13; £90m for 2013-14; £85m for 2014-15 and £80m for 2015-16.

Table 2.4: NGET TO RAV projection

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAV (before transfers)	8,680	9,601	10,650	11,563	12,566	13,238	13,895	14,233
Transfers	0	0	0	80	0	0	0	0
Opening RAV (after transfers)	8,680	9,601	10,650	11,643	12,566	13,238	13,895	14,233
Net additions (after disposals)	1,484	1,657	1,571	1,627	1,414	1,427	1,125	867
Depreciation	(564)	(608)	(658)	(704)	(741)	(770)	(787)	(797)
Closing RAV	9,601	10,650	11,563	12,566	13,238	13,895	14,233	14,304

Table 2.5: NGGT TO RAV projection

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAV (before transfers)	4,057	4,316	4,369	4,527	4,793	5,635	5,994	6,340
Transfers	243	2	2	11	484	72	22	1
Opening RAV (after transfers)	4,300	4,318	4,371	4,538	5,277	5,707	6,016	6,341
Net additions (after disposals)	156	193	300	405	527	468	514	552
Depreciation	(140)	(142)	(144)	(149)	(169)	(180)	(190)	(199)
Closing RAV	4,316	4,369	4,527	4,793	5,635	5,994	6,340	6,693

Table 2.6: NGGT Shadow RAV projection

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAV (after transfers)	548	312	330	392	484	72	22	1
Net additions (after disposals)	15	27	72	113	72	22	1	0
Depreciation	(7)	(8)	(8)	(10)	0	0	0	0
Transfers	(243)	(2)	(2)	(11)	(484)	(72)	(22)	(1)
Closing RAV	312	330	392	484	72	22	1	0

Table 2.7: NGET SO RAV projection

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAV	75	95	106	112	117	120	117	115
Net additions (after disposals)	35	30	29	29	30	26	28	27
Depreciation	(16)	(19)	(22)	(25)	(27)	(29)	(30)	(30)
Closing RAV	95	106	112	117	120	117	115	112

Table 2.8: NGGT SO RAV projection

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Opening RAV	68	92	102	108	111	111	106	100
Net additions (after disposals)	37	28	27	26	25	23	23	24
Depreciation	(13)	(18)	(21)	(23)	(26)	(28)	(28)	(27)
Closing RAV	92	102	108	111	111	106	100	97

3. Allowed return

Chapter Summary

This chapter sets out our Initial Proposals regarding 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 the network companies’ business plans.

Questions

1. Do you have any comments on our relative risk assessment?
2. Do you agree with our proposed elements of the allowed return?

3.1. This chapter outlines our proposals for the components of the allowed return of NGET and NGGT and the implied ‘vanilla’ weighted average cost of capital (WACC),⁶ which are set out in table 3.1.

3.2. These reflect our view that NGET faces more cash flow risk than NGGT but slightly lower risk than the transmission companies we fast-tracked earlier in the year. The sections that follow describe the rationale for these proposals.

Table 3.1: Summary of allowed return proposals

	NGET (TO and SO)	NGGT (TO and SO)
Cost of equity (post-tax real)	7.0%	6.8%
Cost of debt (pre-tax real)	iBoxx 10-year simple trailing average index (currently 3.03%)*	
Notional gearing	60%	62.5%
Implied vanilla WACC*	4.6%	4.4%

* The value of the cost of debt index may change ahead of Final Proposals, and may vary during the price control period. Any changes would be reflected in the WACC.

3.3. We begin by reviewing the position set out in our Strategy Document, the network companies’ proposals in their business plans, and our previously-published initial assessment of these proposals.⁷ We then turn to discussing the relative risk of the RIIO-T1 price controls, present our proposals for notional gearing and the cost of equity, and review issues that have been raised regarding the use of an index to estimate the cost of debt. We conclude by outlining the notional dividend, notional

⁶ The ‘vanilla’ WACC consists of pre-tax cost of debt and post-tax cost of equity, weighted by a notional gearing (i.e. the relative share of debt) assumption.

⁷ Initial assessment of RIIO-T1 business plans and proportionate treatment

<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/busplanletter.pdf>

new equity and index-linked debt modelling assumptions that were used in deriving the financial packages.

3.4. We contracted FTI Consulting to review a number of the issues that have been raised by the network companies with regard to the allowed return. We are publishing the report that FTI Consulting produced alongside our Initial Proposals.⁸ In its paper, FTI Consulting recommends using the mid-period review to re-assess certain aspects of the financial proposals. We reiterate that the mid-period review is a review of outputs and not of the financial package.

Summary of Strategy Document

3.5. In March 2011 we set out our framework for the financial package in RIIO-T1 and GD1, as well as initial ranges.⁹ This formed the context to the business plans that the network companies subsequently submitted to us. In our Strategy Decision we set out our intention to:

- set notional gearing on a consistent basis with the cash flow risk in the regulatory package
- update annually the estimate of the cost of debt in the regulatory package based on a 10-year simple trailing average of the iBoxx GBP Non-Financials indices of 10+ years maturity with broad A and BBB credit ratings
- include a provision for companies to propose alternative weighting of the cost of debt index in exceptional circumstances
- convert the iBoxx indices to estimates of the real cost of debt by deflating them using the Bank of England's 10-year breakeven inflation data
- make no adjustments in the index for debt issuance fees, liquidity management fees, new issue premia or the inflation risk premium
- set an indicative range for the cost of equity of 6.0-7.2 per cent (post-tax real), and
- set an ex ante allowance for the cost of any notional new equity required in our financial proposals, with an ex post true-up.

Summary of business plans and our assessment

3.6. All four transmission companies submitted business plans in July 2011.¹⁰ Overall we were not convinced that any of the companies had justified their financial plans as being efficient. Both SHETL and SPTL submitted revised business plans,

⁸ Cost of capital study for RIIO -T1 and GD1 price controls – report by FTI Consulting
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIO%20T1%20Cost%20of%20capital%20study%20for%20RIIO%20T1%20and%20GD1.pdf>

⁹ Decision on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1
Financial issues

<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/T1decisionfinance.pdf>

¹⁰ RIIO-T1: Transmission companies' business plans – publication and next steps
<http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/RIIOT1busplans.pdf>

which were accepted for fast-track earlier this year.¹¹ NGET and NGGT submitted revised business plans in March 2012.¹² The proposals pertaining to allowed return were unchanged in NGET and NGGT's revised business plans from their original submissions.

3.7. In their business plans, the network companies raised a number of issues regarding the appropriate financial packages for RIIO-T1. These issues include:

- the risk of the RIIO price control relative to the current price control
- the relative risk of transmission and gas distribution
- the relative risk of different companies within the transmission sector
- costs not explicitly covered by the cost of debt index
- the risk implications of annually updating the cost of debt based on an index
- the appropriate cost of equity, and
- the appropriate dividend policy to model as part of the financial package.

3.8. We address each of these points below in describing our proposals.

Relative risk

3.9. 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.

3.10. The analysis in this section informed our assumptions on notional gearing and the cost of equity for NGET and NGGT. The third component of the allowed return – the cost of debt assumption – would be set annually based on a trailing average index, in line with our previously published decision. Our analysis is, therefore, focused on identifying the relative risk of returns on equity of our proposed package since, assuming debt obligations are fully met, it is equity investors who would bear the consequences of cash flow risk.

3.11. In our assessment of relative risk we compare RIIO-T1 to the existing price controls (TPCR4,¹³ GDPCR1 and DPCR5), as well as comparing the sectors (electricity transmission, gas transmission and gas distribution) to each other. Additionally, we compare NGET and NGGT to the fast-tracked companies. In this regard, our approach takes into account investors' preference for consistent regulatory determinations.

¹¹ RIIO-T1: Decision on fast-tracking for SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd <http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/Further%20assessment%20of%20RIIO-T1%20business%20plans.pdf>

¹² RIIO-T1: Publication of the revised business plans of National Grid Electricity Transmission plc and National Grid Gas plc <http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/NGET%20BP.pdf>

¹³ 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.

3.12. In our view, the cash flow risk in a particular sector is determined by the balance of rewards, incentives and uncertainty mechanisms that the regulatory framework provides. In the remainder of this section we review in detail two factors that affect cash flow risk: the scale of investment and the incentive rate that applies to any over- or underspend. 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. We also discuss the length of the price control period, which has been raised by network operators as a key issue affecting risk. We then bring the analysis together to arrive at an overall view of relative risk.

Scale of investment

3.13. As noted in the fast-track Initial Proposals, 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 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.

3.14. 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 nearer the time of investment, would typically expose the company to less risk than with 'base' totex allowances set at the start of the period. Therefore, allowances can be split into three stylised categories (although in practice the differentiation is less clear-cut with the 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 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), both unit costs and volumes are set when the needs case is identified during the price control period. As such, they reduce both unit cost and volume risk.

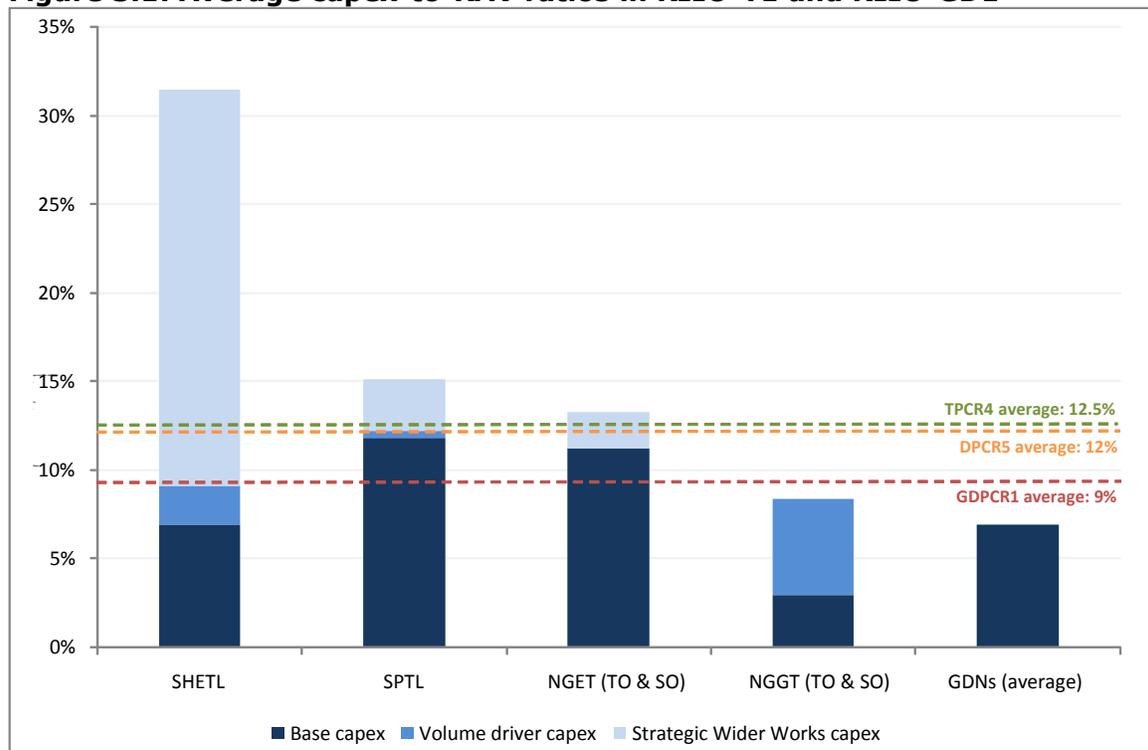
3.15. All three types of allowances described above would be subject to the same incentive rate being applied to any over- or underspend.

3.16. In figure 3.1 we plot NGET and NGGT’s average capex-to-RAV ratios for RIIO-T1. We compare these to the corresponding ratios for the two fast-tracked companies, the average for GDNs in RIIO-GD1, and the average ratios in the current price controls. We split each ratio into base, volume driver and Strategic Wider Works capex. These are based on the ‘Best View’ of investment that informs our Initial Proposals.

3.17. For NGET, figure 3.1 shows that the level of investment (relative to RAV) is broadly similar to that of SPTL and lower than that of SHETL. Whilst the base capex levels for NGET and SPTL are greater as a proportion of RAV than for SHETL, this is more than compensated for by the scale of SHETL’s overall investment programme relative to its RAV (even though a large portion of this is subject to within-period determinations). In contrast, NGGT’s investment rate is substantially lower – especially in respect of base capex – and is closer to that of the GDNs. NGET’s capex-to-RAV ratio of 13.3 per cent is similar to the average in TPCR4, while NGGT’s ratio of 8.3 per cent is lower than in any of the current price controls.

3.18. Overall from a scale of investment perspective, we conclude that NGET faces a lower level of cash flow risk than SHETL, a slightly lower level of cash flow risk to SPTL and a similar level of cash flow risk as under TPCR4; while NGGT faces lower risk.

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



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

Incentive rate

3.19. Another factor in assessing the companies' exposure to cash flow volatility is the extent to which the regulatory framework allows variations in expenditure to be reflected in the network companies' charges. (As mentioned earlier, this affects our view of the appropriate level of notional gearing but does not materially affect our view of the appropriate cost of equity). In RIIO-T1, the allowance for variation in expenditure is through the 'incentive rate', which determines each company's exposure to any over- or underspend in totex. 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. In TPCR4 we had set separate incentive rates for capex (25 per cent) and opex (100 per cent).

3.20. In order to compare the relative exposure to over- and underspend between the two price control periods, we calculate the effective incentive rate in TPCR4, 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 rate proposed for RIIO-T1 on a pre-tax basis.

Table 3.2: Comparison of incentive rates in TPCR4 and RIIO-T1

(Allowances in £m in 2004-5 prices)	NGET	NGGT
Allowed opex (incentive rate: 100%)	1,289	688
Allowed capex (incentive rate: 25%)	3,041	824
Effective incentive rate in TPCR4	47.3%	59.1%
Incentive rate in RIIO-T1	48.1%	44.6%

Note: Figures listed in the table refer only to the TOs.

3.21. For NGET, the incentive rate in RIIO-T1 is marginally higher than the effective incentive rate in TPCR4. In contrast, the incentive rate for NGGT is considerably lower in RIIO-T1 than in TPCR4 (ie NGGT's exposure to cash flow risk is materially lower). However, we are proposing to change the totex incentive mechanism to operate on a post-tax basis in RIIO-T1. The impact of this depends on the proportion of opex that is included in any deviation of totex from the allowed amount. Adjusting for the tax impacts, the incentive rate for NGET is slightly higher than in TPCR4 but broadly the same for NGGT.

3.22. The potential impact of incentives on the notional business is also important. We have reflected the different incentive rates in our RoRE analysis (as shown in figure 4.2) to ensure that, in combination with the other incentives provided by the regulatory regime and the selected financial parameters for the cost of equity and notional gearing, the potential range in RoRE is comparable across and within sectors.

Length of price control period

3.23. A common argument of the network companies is that eight-year price controls expose the companies to greater cash flow risk than the previous five-year price controls. This is because the assumptions that underpin the price control decision are more likely to be incorrect further into the future (ie in price control years six to eight). In its revised business plan, National Grid estimated the impact (together with the application of a 50 per cent incentive rate) to increase the cost of equity by 254 basis points (bps) for NGET and 177bps for NGGT.

3.24. It is true that the assumptions which underpin a price control are more likely to prove incorrect further into the future. This is something that we acknowledged during the RPI-X@20 review when we decided to adopt longer price control periods.¹⁴ However, we also noted that this risk can be effectively mitigated through appropriate uncertainty mechanisms. Indeed, the network companies were given the opportunity to propose such mechanisms as part of their business plans. The longer period also provides management with more time and scope to take mitigating actions.

3.25. A key uncertainty mechanism is the indexation of allowed revenues to RPI, which protects the network companies from economy-wide inflation (ie it removes a systematic risk). The ability to set additional totex allowances during the price control period, as discussed above, through within-period determinations and volume drivers reduces the network companies' exposure to potential changes in the investment need over time. This would be further helped by the mid-period review of outputs, which aims to ensure that allowances are appropriately targeted. Additionally, the introduction of annually updated cost of debt assumption (based on a trailing average index) would protect the network companies from the potential impact of future interest rate movements.

3.26. The annual iteration process – described in detail in Chapter 7 – would mean that changes in the network companies' performance (ie over- or underspend) or circumstances (ie provision of new allowances, updates of pension deficit funding, corporate tax rates and the cost of debt assumption) would be reflected in allowed revenues more quickly. We consider that this reduces cash flow risk relative to the approach in current price controls. For example, it prevents any revenue shortfall relating to efficient overspend from accumulating until the next price control period.

3.27. Lastly, longer price control periods reduce the frequency at which investors are exposed to 'reset risk' of regulatory determinations. Since the parameters of the regulatory settlement – ie the financial package and incentive rate on over- or underspend – are 'locked in' for a longer period, both the network companies and their investors can focus on operations and delivery.

3.28. Overall, we consider that the move to eight-year price control period has a neutral impact on cash flow risk.

¹⁴ RIIO: a new way to regulate energy networks – final decision
<http://www.ofgem.gov.uk/Networks/rpix20/ConsultDocs/Documents1/Decision%20doc.pdf>

Summary

3.29. We have focused on three factors that influence cash flow risk above. There are several other factors that may affect risk to a lesser extent. We provide a brief overview of each in tables 3.3 and 3.4. Table 3.3 brings together our views on relative risk regarding NGET and table 3.4 does the same for NGGT. The report by FTI Consulting further considers pension costs risk.

3.30. It is worth reiterating our assessment from the fast-track proposals, which was that SHETL faces somewhat more cash flow risk than SPTL, owing to the very large investment programme that it is expected to undertake during RIIO-T1. This observation led us to accepting SHETL's proposal for bespoke weighting of the cost of debt index (compared to the simple average index for SPTL), and 16-year transition on asset lives (compared to eight years for SPTL).

3.31. Overall, our assessment is that NGET faces lower cash flow risk than SHETL and slightly lower than SPTL in RIIO-T1. We consider that it faces somewhat higher risk than NGGT and the GDNs. We view NGET's cash flow risk as broadly comparable to TPCR4.

3.32. For NGGT, we consider that cash flow risk is lower than for the electricity transmission companies, particularly SHETL and SPTL. We assess NGGT's cash flow risk to be somewhat higher than the GDNs', but still lower than in TPCR4.

Table 3.3: Summary of relative risk assessment for NGET

	NGET's risk relative to:				
	SHETL	SPTL	NGGT	GDNs	TPCR4
Scale of investment	See detail above. Lower	See detail above. Similar	See detail above. Higher	See detail above. Higher	See detail above. Similar
Complexity of investment	Similar technical issues. Similar	Similar technical issues. Similar	A greater number of major interlinked projects. Higher	Investment plan consists of larger, more complex projects. Higher	Plan for RIIO-T1 is a continuation of the TPCR4 investment. Similar
Incentive rate	SHETL's incentive rate in RIIO-T1 is 50%. Lower	SPTL's incentive rate in RIIO-T1 is 50%. Lower	See detail above. Higher	GDNs' incentive rate ranges from 61-64%. Lower	See detail above. Higher
Totex approach	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Under totex approach, expenditure choice not driven by regulatory treatment. Lower
Focus on outputs	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Delivery options not driven by regulatory treatment. Lower
Uncertainty mechanisms	The UMs are broadly similar. Similar	The UMs are broadly similar. Similar	Different UMs offering similar degree of protection. Similar	Not directly comparable	Additional mechanisms introduced in RIIO-T1. Lower
Incentives	Overall strength of incentives comparable but impact lower. Lower	Overall strength of incentives comparable but impact lower. Lower	Overall strength of incentives comparable. Similar	Overall strength of incentives comparable. Similar	Additional incentives introduced in RIIO-T1. Higher
Pension costs	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Incremental deficit subject to totex incentive rate. Higher
Cost of debt approach	Bespoke approach potentially further reduces risk for SHETL. Higher	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Annual update protects provides better match to notional company cost. Lower
Length of price control	Eight-year price controls. Similar	Eight-year price controls. Similar	Eight-year price controls. Similar	Eight-year price controls. Similar	See detail above. Similar
Timing of revenue adjustments	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Changes reflected in allowances more quickly via annual iteration process. Lower
Overall	Lower	Slightly lower	Higher	Higher	Similar

Table 3.4: Summary of relative risk assessment for NGGT

	NGGT's risk relative to:				
	SHETL	SPTL	NGET	GDNs	TPCR4
Scale of investment	See detail above. Lower	See detail above. Lower	See detail above. Lower	See detail above. Similar	See detail above. Lower
Complexity of investment	Fewer and more isolated projects. Lower	Fewer and more isolated projects. Lower	Fewer and more isolated projects. Lower	Predominantly larger bespoke projects. Higher	Plan for RIIO-T1 is a continuation of the TPCR4 investment. Similar
Incentive rate	SHETL's incentive rate in RIIO-T1 is 50%. Lower	SPTL's incentive rate in RIIO-T1 is 50%. Lower	See detail above. Lower	GDNs' incentive rate ranges from 61-64%. Lower	See detail above. Similar
Totex approach	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Under totex approach, expenditure choice not driven by regulatory treatment. Lower
Focus on outputs	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Delivery options not driven by regulatory treatment. Lower
Uncertainty mechanisms	Different UMs offering similar degree of protection. Similar	Different UMs offering similar degree of protection. Similar	Different UMs offering similar degree of protection. Similar	Not directly comparable	Proposed mechanisms consistent with TPCR4. Similar
Incentives	Overall strength of incentives comparable but impact lower. Lower	Overall strength of incentives comparable but impact lower. Lower	Overall strength of incentives comparable. Similar	Overall strength of incentives comparable. Similar	Additional incentives introduced in RIIO-T1. Higher
Pension costs	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Incremental deficit subject to totex incentive rate. Higher
Cost of debt approach	Bespoke approach potentially further reduces risk for SHETL. Higher	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Annual update protects provides better match to notional company cost. Lower
Length of price control	Eight-year price controls. Similar	Eight-year price controls. Similar	Eight-year price controls. Similar	Eight-year price controls. Similar	See detail above. Similar
Timing of revenue adjustments	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Same approach used. Similar	Changes reflected in allowances more quickly via annual iteration process. Lower
Overall	Lower	Lower	Lower	Slightly higher	Lower

Notional gearing

3.33. There is no simple rule by which differences in cash flow risk can 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.

3.34. Our Initial Proposals are to apply notional gearing of 60 per cent to NGET and 62.5 per cent to NGGT. These levels, together with the rest of our Initial Proposals, result in achieving financeability parameters and RoRE ranges that are consistent with our targets. This is further discussed in Chapter 4. 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

3.35. 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.¹⁵

¹⁵ The fast-track decision is particularly useful as it provides a benchmark of what investors consider an acceptable financial package given the cash flow risk of SHETL and SPTL in RIIO-T1. As our analysis shows, we see NGET to be faced with slightly lower cash flow risk than the fast-tracked companies, and NGGT with even lower risk.

3.36. We asked FTI Consulting to review whether the range of 6.0-7.2 per cent that we put out in the Strategy Document remained appropriate in light of information since then. FTI Consulting reviewed the CAPM parameters, recent regulatory precedents, and alternative approaches to estimating the cost of equity – namely the Dividend Growth Model (DGM) and Residual Income Model (RIM).

3.37. FTI Consulting noted that estimates based on current values of the risk-free rate and equity risk premium have moved significantly in the past year owing to financial and economic uncertainty. For example, the estimate of the risk-free rate based on a 10-year average of the yield on index-linked gilts has fallen to 1.4 per cent, compared to 1.7 per cent at the time of the Strategy Document. In contrast, the Bank of England’s estimate of the current equity risk premium has spiked to around 7 per cent, compared to around 5 per cent at the time of the Strategy Document.

3.38. Having also reviewed alternative approaches and long-term estimates such as the Dimson, Marsh and Staunton database, FTI Consulting concludes that the range of 6.0-7.2 per cent remains appropriate for the cost of equity. However, it highlights the need to continue to observe market trends ahead of Final Proposals, on account of the significant variability in current estimates of the CAPM components.

3.39. In the Strategy Document we also noted the divergence of short-term and long-term estimates of the CAPM components. We considered it appropriate to focus on longer-term estimates, particularly as we are setting controls for an eight-year period. Our experience from previous price controls shows that looking beyond short-term volatility is a prudent approach to take when setting the cost of equity assumption for network companies. Therefore, we have based our Initial Proposals on the assumption of 2.0 per cent risk-free rate and 5.25 per cent equity risk premium.

3.40. Cash flow risk affects our cost of equity assumption via the beta component of CAPM. There are two aspects to this: higher cash flow risk indicates a higher asset beta; but since we propose to set lower notional gearing for network companies with higher cash flow risk, the overall impact on the equity beta is somewhat mitigated. Table 3.5 summarises our proposed cost of equity assumptions for NGET and NGGT in terms of the CAPM components.

Table 3.5: Cost of equity assumptions for NGET and NGGT

	NGET	NGGT	Strategy Document range	TPCR4
Risk-free rate	2.0%	2.0%	1.7-2.0%	2.5%
Equity risk premium	5.25%	5.25%	4.75-5.5%	4.5%
Equity beta	0.95	0.91	0.9-0.95	1.0
Cost of equity	7.0%	6.8%	6.0-7.2%	7.0%

3.41. Taken together, the allowed return proposals for NGET of 7.0 per cent cost of equity and 60 per cent notional gearing reflect our assessment that it faces somewhat lower cash flow risk than the Scottish transmission network companies, and similar cash flow risk to TPCR4. The allowed return proposals for NGGT of 6.8 per cent cost of equity and 62.5 per cent notional gearing reflect our assessment that it faces lower cash flow risk than the electricity transmission network companies and under TPCR4, but somewhat higher than the GDNs.

Cost of debt

3.42. Our proposal is to retain the approach of annually updating the cost of debt estimate based on the simple 10-year trailing average of the iBoxx indices. We do not propose to make any adjustments to the index, although we propose to make a minor technical change to the way the index is calculated, which is described in Appendix 2.

3.43. The remainder of this section addresses some of the issues raised by the network companies with regard to the cost of debt approach set out in our Strategy Document. Specifically, we cover concerns regarding embedded debt costs, recent bonds issuances, the inflation risk premium, the potential impact of Basel III and Solvency II regulations, and the possibility that using an index to estimate the cost of debt would result in network companies' returns becoming more procyclical. The report by FTI Consulting further considers some of the issues raised by the network companies.

Embedded debt costs

3.44. Some network companies have argued that current low interest rates (and the prospect that they remain low) could result in efficiently-incurred past debt not being fully funded as the value of the cost of debt index declines faster than the companies' average cost of debt falls. National Grid proposed that this could be addressed by introducing a trigger to ensure that the network companies are able to outperform the cost of debt index by a minimum of 30bps.

3.45. As FTI Consulting notes, the potential for embedded and new debt costs to diverge is an issue that crops up in every price control review. In that regard, any

risk that the network companies may be exposed to is not a function of the proposal to update the cost of debt assumption annually based on an index.

3.46. The extent to which the indexed allowance would reflect a network company's actual cost of debt would depend on a number of factors, including:

- the timing and frequency of debt issued by the company
- how efficiently the debt was incurred (ie the coupon on the bonds)
- the duration of the company's debt (while the index completely "refreshes" itself every ten years, network companies' typical debt maturity ranges from around ten to 20 years), and
- the credit rating of the company (a company rated in the A category would typically issue debt more cheaply than a company rated in the BBB category).

3.47. In the Strategy Document we modelled the index and stylised "actual" costs for three types of network companies, under a scenario of rapidly rising interest rates (this reflected market forward rates at the time). We found that the index provides adequate allowance for the network companies, with the potential exception of a company that raises substantial amounts of debt at a time when interest rates rise sharply. We, therefore, included a provision for companies in such exceptional circumstances to propose alternative weighting of the index.

3.48. In developing these Initial Proposals, we further tested the robustness of the cost of debt index. We modelled the index and each company's actual cost of debt from its regulatory reporting pack for 2010-11 under several scenarios in which the market cost of debt rises, falls or remains constant.¹⁶ We find that the 10-year simple trailing average provides adequate coverage for debt costs in RIIO-T1. Therefore, we do not propose to make any adjustment for embedded debt costs.

Recent bond issuances

3.49. Some network companies argue that their bonds issued during 2010 and 2011 have not outperformed the iBoxx index to the same extent as in the past and, at times, have been issued at a premium to the index. This, it has been argued, suggests that past outperformance of the index were a temporary phenomenon, rather than a reflection of network companies' inherent low risk (the so-called 'halo effect'). In order to ensure that efficiently-incurred debt is fully funded, including any additional costs not captured in the index (eg issuance and liquidity fees), some network companies have argued that an uplift should be applied to the index.

3.50. As discussed in the Strategy Document, we consider 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). These characteristics include a predictable revenue stream as part of the price control process, asset value

¹⁶ We do not present the analysis here as it includes commercially confidential information about licensees' financing costs.

underpinned by the RAV, effectively no competitive pressure, no volume risk on revenues, and operating within a well-established regulatory regime. We consider that these characteristics are innate to regulated network companies.

3.51. We do note, however, that bonds issued by the network companies since the start of 2010 have outperformed the iBoxx index by 9bps, compared to 55bps over the history of the iBoxx index. This may be a temporary issue and a function of the financial crisis, rather than any structural change in the risk profile of the network companies. We intend to keep this matter under review until Final Proposals, but at present there does not seem to be sufficient evidence to change our approach. We note, as mentioned above, that the approach covers debt costs over RIIO-T1 under a range of scenarios.

Inflation risk premium

3.52. Some network companies argued that the 'breakeven inflation' figures we intend to use to deflate the iBoxx index contain an inflation risk premium and, therefore, overstate expected inflation. As a result, the estimated cost of debt would be lower than it should be.

3.53. Our analysis in the Strategy Document addressed this issue and found no evidence that using breakeven inflation systematically overstates investors' long-term inflation expectations. This is reflected by the fact that, when averaged since the Bank of England began targeting inflation (May 1997), the 10-year breakeven inflation figure we use matches the sum of the Bank's inflation target (two per cent) and the difference between RPI inflation and CPI inflation. The network companies have not refuted this point of our argument. We, therefore, do not propose to make any changes to the index.

Potential impact of Basel III and Solvency II¹⁷

3.54. Some network companies have argued that Basel III regulations will increase the cost of liquidity facilities and that Solvency II requirements would reduce insurance companies' demand for long-dated utility bonds and, therefore, increase the cost of debt. They have argued that these costs would not be captured in the iBoxx index.

3.55. We note that the outcome and timing of application of Basel III and Solvency II is still uncertain. Any impact these regulations might have is not a function of the decision to update the cost of debt estimate annually based on the iBoxx index. Indeed, if the market cost of debt rises as a result of these regulations, it would be captured in the index. In any case, as FTI Consulting notes, network companies should also be able to access funds from sources that are not affected by these regulations, such as dedicated liquidity facilities.

¹⁷ Basel III and Solvency II are proposed sets of regulations on the capital requirements of banks and insurers, respectively. While they are not under Ofgem's control, they are expected to come into effect during RIIO-T1 and may have an impact on network companies' financial activities.

Procyclicality of returns

3.56. Some network companies argued that, since interest rates tend to rise in accordance with general economic growth, our introduction of annually updated cost of debt assumption would result in network companies' revenues rising in tandem with better overall economic performance. This means that their returns would become more procyclical, raising their equity beta and, therefore, the cost of equity.

3.57. We consider that there are two counter-arguments to the above:

- First, as FTI Consulting explains, the relationship between corporate debt costs and economic growth is not as clear-cut as suggested by the network companies, and nor is the relationship between share prices and economic growth.
- Second, the cost of debt makes up around ten per cent of network companies' allowed revenue – their enterprise value is still underpinned by guaranteed revenue, cost recovery, little volume risk and the RAV – all of which would continue to make them a strong countercyclical hedge.

3.58. We, therefore, do not propose to make any changes.

Financial policies

Allowance for the cost of issuing notional new equity

3.59. Our Strategy Document included a proposal to set an ex ante allowance of five per cent of any notional new equity needed to achieve financeability for companies who are undergoing significant RAV growth during RIIO-T1 and GD1. All four transmission companies' business plans included an assumption on notional new equity being raised, with a corresponding five percent allowance.

3.60. Different transmission companies have applied different rules for notional equity issuances. In accepting the proposals of SHETL and SPTL for fast-track, we accepted their proposals for notional equity issuances. For SHETL, notional equity is set to be issued in any year in which closing (modelled) gearing is above the notional gearing level (55 per cent), so as to bring gearing back to the notional level. SPTL's proposal involves a specific gearing level for each year, above which notional new equity would be issued.

3.61. The need to issue notional new equity is a function of both credit ratios and the levels of investment. The RIIO principles state that (for a notional company) significant levels of investment should be funded by both debt and equity. We, therefore, formulate our modelling rule to assume a notional equity issuance whenever modelled gearing reaches a threshold above the notional gearing level. This modelling assumption is robust for the additional investment expected to be allowed under our Best View of expenditure during the price control period (eg

Strategic Wider Works and volume drivers), as well as to any reasonable over- or underspend.

3.62. Owing to the relatively large amount of investment forecast by NGET, we consider it appropriate to set a lower threshold for notional equity issuance than for NGGT and the GDNs. The threshold for NGET, therefore, is 2.5 per cent above notional gearing (ie 62.5 per cent). Our Initial Proposals would result in £1.3bn notional new equity (in nominal prices) being issued by NGET during RIIO-T1. For NGGT, the threshold is 5 per cent above notional gearing (ie 67.5 per cent). Our proposals result in no notional new equity being issued by NGGT during RIIO-T1.

Notional dividend modelling assumption

3.63. Our financial model assumes that a fixed per cent of the notional equity share of RAV is paid as dividend in any given year. Our modelling assumption of a fixed dividend rate being paid out, and notional equity being issued to address any financeability needs, is a simplification used in order to reduce the level of complexity in the model. In reality, a company is faced every year with a range of choices as to how it may achieve financeability. These options include the possibilities of reducing dividends, or maintaining dividends and raising new equity. Our modelling assumption is for the notional company only and should not be considered to represent our suggestion on the approach that network companies should adopt.

3.64. In line with previous price controls and SHETL and SPTL's fast-track proposals, we have assumed a five per cent dividend payout rate. For NGGT, since the 'Best View' includes a significant ramp-up in investment, we calculate the dividend payout on 'base view' RAV. This is because we do not consider it realistic that a company would increase its dividend payout at the same time that its investment level rises sharply. (The five per cent dividend 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

3.65. In line with our past practice, for example in GDPCR1, and the business plan submissions of most of the network companies, we have assumed that 25 per cent of each network company's debt is index-linked. This assumption is broadly consistent with the extent to which we observe network companies relying on index-linked debt to fund their activities, as shown in table 3.6. The table shows the proportion of index-linked debt in network companies' overall debt as per the latest regulatory reporting packs, which cover the regulatory year of 2010-11. We will update our analysis once the reporting packs for 2011-12 are received in August.

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

Table 3.6: Network companies' index-linked debt share

Values for 2010-11	Proportion of Licencee Index-Linked Debt*
NGET	46.1%
NGG	37.5%
SHETL	0%
SPTL	0%
Transmission	38.8%
Northern Gas	0%
Scotia - Scotland	32.8%
Scotia - Southern	21.6%
Wales & West	5.9%
Gas Distribution	15.1%
Total	31.2%

* Excludes floating rate debt and debt denominated in currencies other than GBP and EUR

4. Financeability, transition and return on regulatory equity

Chapter Summary

This Chapter summarises our financeability assessment of the proposals for NGET and NGGT. It outlines the transitional arrangements on asset lives for NGET, 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 Initial Proposals.

Questions

3. Do you agree with our proposal for eight-year transition on NGET's asset lives for assets constructed after the start of RIIO-T1?

Our approach to assessing financeability

4.1. Our principal objective is to protect the interests of existing and future consumers. In carrying out its functions in accordance with the principal objective, the Authority must also have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations on them. This means that, in setting price controls, we should have regard to the ability of efficient network companies to secure financing in a timely way and at a reasonable cost in order to facilitate the delivery of their regulatory obligations. This is also in the interests of consumers. However, it is important that the regulatory framework does not provide excessive returns, reward inefficiency or 'bail-out' a company that has encountered financial distress as a result of its own behaviour.

4.2. Our Strategy Document outlines our approach to assessing financeability in RIIO-T1 and GD1. Our financeability assessment looks at six credit ratios (FFO/interest,¹⁸ PMICR,¹⁹ FFO/net debt, RCF/net debt,²⁰ RCF/capex, and Net debt/RAV) and two equity ratios (Regulated equity/EBITDA,²¹ and Regulated equity/Regulated earnings²²). These 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.

4.3. 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

¹⁸ FFO is 'funds from operations'. FFO/interest is often referred to as 'FFO interest cover'.

¹⁹ 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'.

²⁰ RCF is 'retained cash flow'.

²¹ EBITDA is 'earnings before interest, tax, depreciation and amortisation'.

²² We use 'profit after tax' as the measure of regulated earnings for this ratio.

the notional company. Our financeability assessment, therefore, 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.

4.4. There are three technical points about our financeability assessment that are worth outlining:

- Index-linked debt – in line with the approach taken by the major credit rating agencies, the inflation accretion component is excluded from the FFO/interest and PMICR ratios, but is included in all other credit ratios.
- Fast and slow money – we give most emphasis to the credit ratios based on the regulatory treatment of totex (rather than statutory allocation of capex and opex), with the capitalised proportion treated as 'slow money' and the expensed proportion treated as 'fast money'. Again, this approach is consistent with those of the major credit rating agencies.
- PMICR – we apply the principle of 'economic capital maintenance expenditure' when calculating the PMICR.²³ This uses regulatory, rather than statutory, depreciation to calculate the ratio. The approach is also consistent with rating agency Moody's approach to the adjusted interest cover ratio.

4.5. We test the financeability of each network company under both 'base' and the 'best' views of investment, on an efficient company basis assuming that its expenditure is in line with our proposed view of efficient costs, as well as assuming no further rewards or penalties under any incentive mechanisms. Additionally, we stress-test the 'Best View' scenario with assumptions about:

- over- and underspend on totex
- the future profile of the cost of debt index
- the proportion of debt that is index-linked.

Our proposals are robust to all of the above.

Financeability and the need for transition

4.6. Our Strategy Document noted the potential financeability implications of the decision to apply the economic asset lives of 45 years in electricity transmission. Mindful of this, we decided to apply economic asset lives only to new investment from the start of RIIO-T1. Existing assets (including new expenditure on projects already started as part of the transmission investment for renewable generation (TIRG) incentive) would continue to be depreciated over the 'accelerated' profile of 20 years. We consider that this provides an element of transition, which mitigates any potential cash flow hit on the network companies.

²³ For an explanation see the report 'Post-Maintenance Interest Coverage Ratios for UK Regulated Utilities' by Fitch Ratings.

4.7. Nevertheless, we acknowledged that, given the sizeable investment programme expected during RIIO-T1, network companies may require additional transition in order to ensure financeability. The network companies were able to propose such transitional arrangements. NGET's business plan sought transitional arrangements applied to new assets over 16 years..

4.8. The key factor that drives financeability and the need for transition is the size of the new investment programme (ie outgoing cash flow) compared to the allowed revenue generated from the existing RAV (ie incoming cash flow). As Figure 3.1 shows, in the case of SHETL new investment is sizeable compared to the existing RAV. We, therefore, accepted SHETL's proposal for transition over 16 years. Figure 3.1 also shows that NGET's investment programme relative to RAV is broadly similar to that of SPTL. We accepted SPTL's proposal for an eight year transition and having assessed the financeability of NGET under a range of options for transition, our view is that transition of new asset lives over eight years is appropriate. Our proposal is robust to the stress tests listed earlier in this chapter.

4.9. For NGGT, no transitional arrangements are applicable since no changes were made to its asset lives. Our proposal for NGGT is also robust to the stress tests listed above.

Return on regulatory equity (RoRE)

4.10. 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-T1 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.

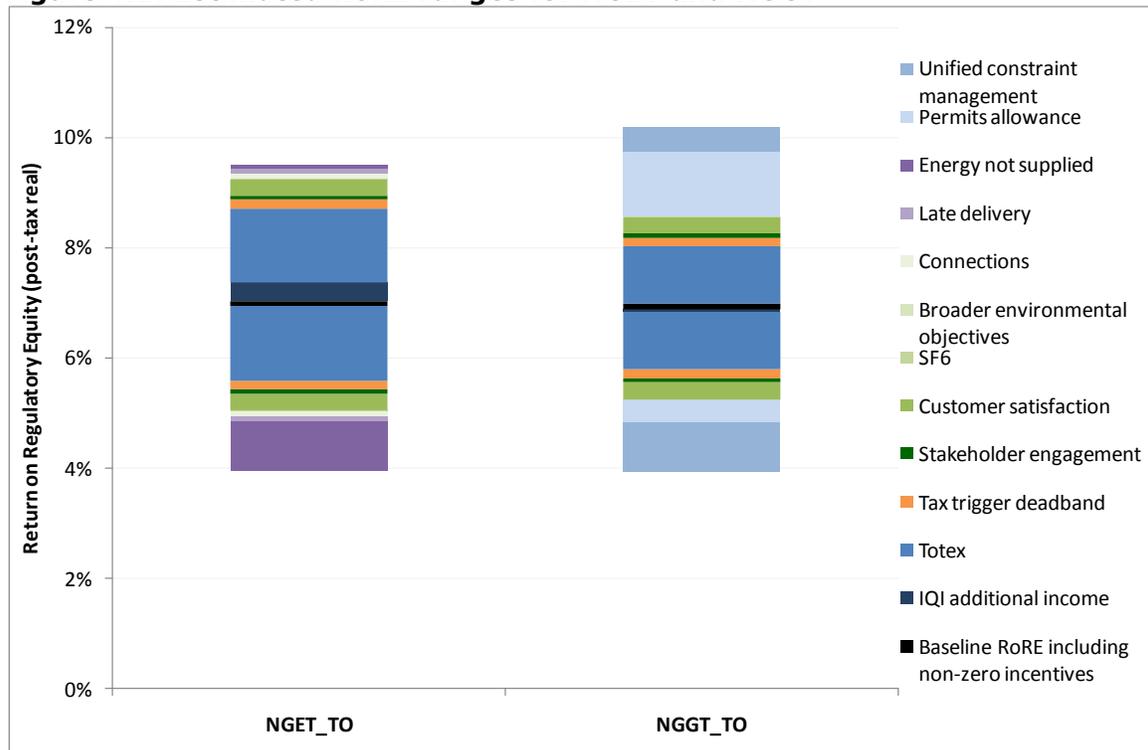
4.11. We regard an appropriately calibrated price control package as one in which RoRE upside (ie the reward available for the best-performing companies) provides the potential for double-digit returns on (notional) equity, and RoRE downside (ie the penalties that would apply to the worst-performing 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.

4.12. 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 that we attribute more weight to financeability analysis than to RoRE.

4.13. Figure 4.1 presents our estimates of upside and downside potential returns for NGET and NGGT. We have developed these estimates using a mixture of historical performance and projected plausible values (including caps and collars, where

applicable). We stress that these are estimated, rather than capped, RoRE ranges. The figure is based on our cost of equity and notional gearing proposals, as per Chapter 3.

Figure 4.1: Estimated RoRE ranges for NGET and NGGT

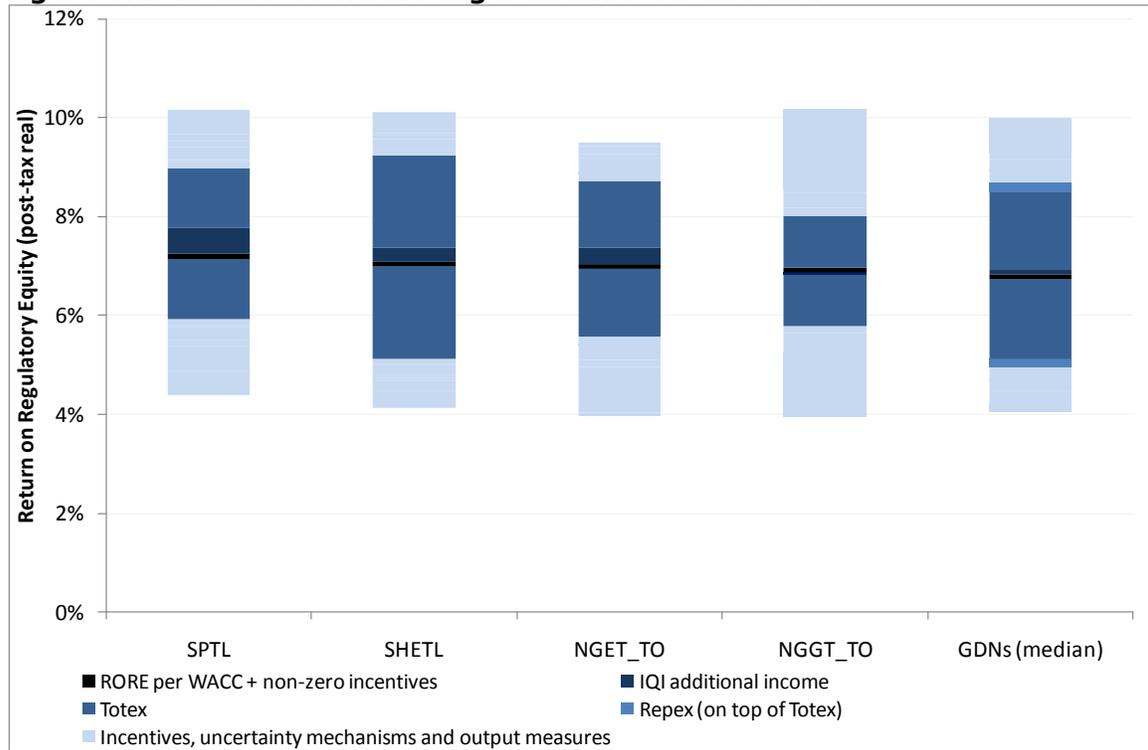


4.14. Our assessment shows that, over the whole of RIIO-T1, both NGET and NGGT could achieve double-digit returns for exceptional performance. With regard to the downside, we show that returns are unlikely to fall as low as our current estimate of the cost of debt. The assessment over the entire price 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.

4.15. Figure 4.2 compares NGET and NGGT’s RoRE ranges to those of the fast-tracked companies and the GDNs. For simplicity of presentation and comparison between companies we have grouped all incentives, output measures and uncertainty mechanisms together.

4.16. 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 4.2: Estimated RoRE ranges in RIIO-T1 and GD1



5. Pensions

Chapter Summary

This chapter sets out our Initial Proposals for the treatment of pension costs.

Questions

4. 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?
5. Do you agree that the costs of contingent assets may be allowed if considered to be in consumers interests?
6. Do you agree with the thresholds for pension scheme administration costs and Pension Protection Fund levies?

5.1. We have modelled pension deficit funding and ancillary costs and set allowances based on the methodology in Appendix 6 of our Strategy Document - Financial Issues Supplementary Annex²⁴ at Appendix 6 and our pension principles in Appendix 7 with some limited exceptions, which are described in this chapter. The pension allowances are summarised in table 5.1 below and the remainder of this chapter sets out the basis for these allowances.

Table 5.1: Total Pension Allowances

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NGET TO Total Allowances	31.7	31.5	31.5	31.7	31.5	31.5	31.7	31.5
NGET SO Total Allowances	10.3	10.2	10.2	10.3	10.2	10.2	10.3	10.2
NGGT TO Total Allowances	44.0	43.9	43.9	44.0	43.9	43.9	44.0	43.9
NGGT SO Total Allowances	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Defined benefit schemes – allowed costs

5.2. As set out in our 22 June 2010 Pensions paper²⁵, we are committed to funding the repair costs of the established deficits of network operators defined benefit (DB) pension schemes; for TOs this is the deficit as at 31 March 2012 (the “cut-off date”). We no longer set specific allowances for ongoing pension service costs for DB or defined contribution (DC) schemes; or the incremental deficit related to service of active members of the DB schemes after the cut-off date as these costs are treated as part of totex. We have set specific allowances for the legacy DB scheme established deficits, Pension Protection Fund (PPF) levies and DB scheme administration costs. Such allowances are subject to being efficient. These have been

²⁴ [March 2011 Strategy Document - Financial Issues](#)

²⁵ [Price Control Treatment of Pension Costs final](#)

set following a review²⁶ of all network operators' pension costs undertaken for us by the Government Actuary's Department (GAD). That review has informed setting allowances for RIIO-T1 and the true-up of TPCR4 costs.

5.3. The methodology for the attribution between established and incremental deficit, which will apply to all energy network operators, is currently under discussion with network operators. Subject to the ongoing discussions, we expect to publish the final methodology before Final Proposals. This methodology will replace the regulatory fraction from the first reset of pensions in RIIO-T1 (the regulatory fraction is the current approach used to assess the proportion of a scheme that is funded through regulatory revenues – see paragraph 5.15).

5.4. We have based the proposed allowances on the updated valuations as at 31 March 2011 to be consistent with the approach used for the fast tracked companies. These valuations apply the same actuarial assumptions that were adopted in the previously completed full triennial valuation, updated only for changes in asset values and market conditions.

5.5. 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-T1.

5.6. 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-T1 is 2.6 per cent up to the first reset. We will reset this rate at each subsequent triennial review on a rolling basis.

5.7. Our pension principles²⁷ set out our approach to both innovative investment strategies, used to manage the pension scheme's liabilities and hedge risks, and contingent assets. Where these are used we will examine each on its merits. The costs of contingent assets may be allowed if considered to be in consumers' interests.

5.8. NGGT have included the cost of a contingent asset in their submission. At this point they have not demonstrated clear benefits to consumers. We are in discussions with NGGT and will review our proposals on funding ahead of Final Proposals.

²⁶ Government Actuary's Department Review of energy network operators' pension costs <http://www.ofgem.gov.uk/Networks/Documents1/GAD%20peniosn%20Report-16052012.pdf>

²⁷ Pension principle 1 paragraphs 1.15 to 1.16

Deficit values, de-risking strategies and current market conditions

5.9. In the current volatile market conditions, companies are experiencing a significant increase in their updated deficits (used to set allowances) compared to recent years and their last full valuation. Current scheme valuations are materially affected by the value and negative real returns currently experienced for gilts.

5.10. 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.

5.11. Whilst a move to de-risking these mature closed schemes is expected, we will need to keep under review the increase in the burden for consumers. This is 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

5.12. The valuations used to inform setting allowances pre-date the cut-off date for determining the established deficits. We propose to finalise the actual amounts during the RIIO-T1 price control period and true up at the first reset as noted above.

5.13. Where there is a difference in the size of a network company's deficit between the 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), these would be adjusted in revenue allowances at the first reset within the RIIO-T1 price controls. We propose that all true up adjustments will be NPV neutral. We propose to 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

5.14. We propose to undertake the next reasonableness review in mid-2014, true up and reset revenues from 1 April 2015 and every three years thereafter. That review would also determine the TO's and SO's established deficit based on updated or full valuations at 31 March 2012. There would be an additional true up for the difference between the deficit used to set ex ante allowances at Final Proposals and the actual established deficit at 31 March 2012. We do not intend to 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 propose to conduct reasonableness reviews across all energy network operators, as with the recently completed Government Actuaries Department (GAD) review.

Regulatory fraction

5.15. The regulatory fraction represents the element of licensee's pension deficit that relates solely to the activity of the transmission business (ie the licensed business) and which ultimately, under the pension principles, is funded by customers.

5.16. We are engaging with NGGT in a review of the appropriate regulatory fractions. We have not yet completed this review and the component shares may be subject to amendment at the first reset of pensions in RIIO-T1 once that is concluded. As part of this work we have not agreed the level of unfunded Early Retirement Deficiency Contributions (ERDCs) and we propose that this will be incorporated with the other regulatory fraction work at the first reset of pension allowances during RIIO-T1. For these Initial Proposals we have applied the TPCR4 regulatory fractions for both NGET and NGGT.

5.17. The NGGT pension scheme encompasses both transmission and existing NG GDN employees as well as legacy pensioners of all of the GDNs. At present the estimated charges relating to the GDN pensions are charged to the GDNs and passed onto their customers. This treatment is likely to change in RIIO-T1 and this is referred to in Chapter 7 paragraph 7.3.

Treatment of PPF levies and scheme administration costs

5.18. The Pension Protection Fund (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 schemes annual levy as the PPF adopts a risk based approach applied to each scheme's assets and liabilities and the likelihood of failure.

5.19. We propose to set a separate allowance for PPF levies and pension scheme administration costs and true up and reset every three years, subject to review for efficiency and a de minimis threshold. We propose that both TOs and SOs should each be subject to a de minimis threshold each year, below which there will be no true up adjustment in RIIO-T1 or reset, which we have set at £1m p.a.

True up adjustments for TPCR4 and the TPCR4 rollover year

5.20. The true up adjustments are shown in tables 5.2 to 5.5. We propose that the amount is all treated as fast money with no adjustment to RAV (slow money). The true up is only for ongoing defined benefit pension service costs and deficit recovery payments. We do not true up TPCR4 defined contribution costs.

5.21. These adjustments are based on actual expenditure and a forecast for 2011-12 and 2012-13. In the event that actual costs in 2011-12 and 2012-13 turn out to be materially different to the estimate, we would expect to alter revenue following

the first review of pension allowances in RIIO-T1. We propose to undertake the next efficiency review in mid-2014, true-up and reset revenues from 1 April 2015 and every three years thereafter. For TOs and SOs, that review would also determine their established deficit. We also propose an additional true-up for the difference between the deficit used to set allowances and the actual established deficit at 31 March 2012 for TOs and SOs. At the three year review, any deficit costs relating to incremental deficit would be treated as totex.

5.22. The proposed adjustments are NPV neutral applying the appropriate vanilla WACC plus tax effects for each year. We propose spreading these adjustments equally over the 8-year period of RIIO-T1. At the reset we would recalculate the allowance and spread over the remaining RIIO-T1 period.

RIIO-T1 Allowances and true up adjustments

5.23. Tables 5.2 to 5.5 set out the proposed annual allowances for NGET and NGGT and true-up adjustments to previous price controls.

Table 5.2: Pensions allowances – NGET TO

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
TPCR4 true up	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Established deficit recovery	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
Pension Protection Fund Levies	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Pension Administration	1.0	0.8	0.8	1.0	0.8	0.8	1.0	0.8
Total allowances	31.7	31.5	31.5	31.7	31.5	31.5	31.7	31.5

Table 5.3: Pensions allowances – NGET SO

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
TPCR4 true up	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Established deficit recovery	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Pension Protection Fund Levies	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pension Administration	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2
Total allowances	10.3	10.2	10.2	10.3	10.2	10.2	10.3	10.2

Table 5.4: Pensions allowances – NGGT TO

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
TPCR4 true up	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Established deficit recovery	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
Pension Protection Fund Levies	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Pension Administration	2.3	2.2	2.2	2.3	2.2	2.2	2.3	2.2
Total allowances	44.0	43.9	43.9	44.0	43.9	43.9	44.0	43.9

5.24. The values in table 5.4 include a substantial element relating to the NTS scheme that is currently recharged to the GDN companies (as the costs relate to GDN pensioners). This recharge may not be appropriate during RIIO-T1. See Chapter

7 of the RIIO-GD1 Initial Proposals –Supporting Document – Finance and uncertainty for further details.²⁸

Table 5.5: Pensions allowances – NGGT SO

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
TPCR4 true up	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Established deficit recovery	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pension Protection Fund Levies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pension Administration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total allowances	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Table totals do not add due to roundings and negative TPCR4 true up.

²⁸ [RIIO-GD1: Initial Proposals – Supporting document – Finance and uncertainty](#)

6. Taxation

Chapter Summary

This section sets out the key factors and methodology applied to the financial modelling of taxation for Initial Proposals.

Questions

7. Do you agree with our amended treatment for modelling the cash flows of corporation tax (CT) payments?
8. Do you agree with conforming the revenue adjustment for tax clawback to be annually in line with the annual iteration process?
9. Do you agree with our treatment of expenditure for tax modelling?

6.1. We have modelled tax and set allowances based on the methodology in our Strategy Financial Issues supplementary paper with limited exceptions which are explained below. This methodology has been incorporated in the draft Financial Model Handbooks (there are separate Handbooks for Electricity Transmission and for Gas Transmission) for the annual iteration process. Table 6.1 below sets out the allowances for tax for each licensee and the remainder of this chapter sets out our approach to modelling the tax allowance.

Table 6.1: Tax allowance summary

2009-10 Prices £m	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NGET TO	90.1	95.5	91.8	86.1	75.4	69.8	61.0	59.4
NGET SO	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NGGT TO	5.8	10.0	14.7	18.5	24.2	10.3	7.9	6.9
NGGT SO	4.3	0.1	0.0	0.0	1.1	0.6	0.6	0.7

6.2. Each regulated business is modelled for tax calculation price control purposes as a standalone entity. All expenditure is treated as if it is incurred directly by the transmission businesses.

Applicable tax regime

6.3. We have applied the UK standard tax rules that have passed into legislation by the time of the Initial Proposals and have included the proposed future reduction in corporation tax (CT) rates for 2013-14. These Initial Proposals reflect that position.

6.4. We have modelled tax under UK GAAP in 2013-14 and 2014-15; and based on the Accounting Standards Board's (ASB) revised draft proposals for the future

financial reporting in the UK²⁹. Broadly, this means that companies would follow, from 1 April 2015, either EU-IFRS (if they had already adopted it for the statutory accounts) or the new UK GAAP, which is based on IFRS for SMEs with certain exceptions and retains some existing UK GAAP treatment. The proposed tax treatment of opex and capex would follow the existing UK GAAP treatment for 2013-15 and from 1 April 2015 the proposed accounting frameworks.

6.5. We have reviewed the proposed new UK GAAP for guidance on the treatment of connections and related contributions in financial statements and compared it with 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, which would be offset against costs in considering the amount allocable to capital allowance pools. Any change 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 TOs control. However, it should be noted that currently in Special Condition D10 paragraph 3 contributions (i.e. connection charge receipts) are defined as excluded services. As such these would not be funded through base revenues so any change to the accounting treatment will be for companies to bear. We would continue to review this treatment and changes to ASB's proposals for Final Proposals.

6.6. All capital allowances are assumed to be claimed at rates in line with current legislation and, with the exception of deferred revenue expenditure, as claimed in the year the expenditure is incurred. For deferred revenue expenditure the allowances would follow the company's accounting approach to depreciation.

Regulatory tax losses

6.7. Where tax losses arise, we propose not to give affected transmission companies negative tax allowances. We propose to log up the tax value of any tax losses as calculated on a regulatory basis and then to deduct them from expected tax allowances when the timing differences that led to the loss reverse. Regulatory tax losses would be the value of deferring negative tax allowances and would not be synonymous with a licensee's actual CT losses.

6.8. In computing regulatory tax losses, we propose to ignore and reverse any surrender by a transmission company of losses to a group company (ie both group and consortium relief), so that customers benefit from the full amount of the tax value of the losses as they reverse.

Modelling of capital allowances

6.9. We propose to use three main capital allowance pools – General, Special Rate and Deferred Revenue – and the relevant rates of annual writing down allowance.

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.

These reflect the relevant legislation currently in place. We propose to also allow for expenditure that is identified as non-qualifying for capital allowances, principally easements, being interests in land, and buildings following the abolition of the Industrial Buildings Allowance regime.

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

6.11. We propose that the annual allowance for deferred revenue should follow the company's statutory depreciation rates and is three per cent straight-line, based on the rate assessed by NGET (NGGT does not have this category of allowances).

6.12. We have followed the proposals made in the Strategy Document for the purpose of modelling tax allowances. For Initial Proposals, therefore, we have applied a company specific attribution of expenditure to capital allowance pools and revenue. Our attributions have been derived from TO's and SO's expenditure reported in their business plans against each pool, revenue and non qualifying expenditure. We have used attributions fixed for the whole of RIIO-T1. We recognise that these will not necessarily follow the nuances of businesses individual expenditure or allocations. They are a broad expectation of how the various categories of expenditure are attributed and follow historical trends.

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

- (a) Load related (LRE) capex – (connection of new assets)
- (b) Non-load related capex (NLRE) – (primarily replacement of existing assets)
- (c) Non-load related other capex – (primarily asset health)
- (d) Non-operational capex (being Other Plant & equipment; Land & Buildings)
- (e) Contributions (ie connection charge receipts)
- (f) Network operating expenditure – 100 per cent revenue deduction.

These percentage attributions are as follows:

Table 6.2: NGET TO and SO tax allocations

		General Pool	Special Rate Pool	Deferred Revenue	Revenue	Non Qualifying	Total
TO	Total LRE	10.3%	82.0%	1.9%	0.1%	5.7%	100.0%
	NLRE Capex - Asset Replacement	10.7%	47.9%	38.8%	0.0%	2.6%	100.0%
	NLRE Capex - Other	10.7%	47.9%	38.8%	0.0%	2.6%	100.0%
	Non-operational capex	74.7%	5.5%	18.0%	1.8%	0.0%	100.0%
	Capex Contributions	0.7%	99.3%	0.0%	0.0%	0.0%	100.0%
SO	Overall	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Table 6.3: NGGT TO and SO tax allocations

		General Pool	Special Rate Pool	Deferred Revenue	Revenue	Non Qualifying	Total
TO	Other LRE	3.2%	95.1%	0.0%	0.0%	1.7%	100.0%
	NLRE Capex - Asset Replacement	7.2%	91.3%	0.0%	0.0%	1.5%	100.0%
	NLRE Capex- Other	40.1%	55.1%	0.0%	1.7%	3.1%	100.0%
	Non-operational capex	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Capex Contributions	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
SO	Overall	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%

6.14. We have treated contributions (ie connection charge receipts) in accordance with Special Condition D10 paragraph 3 as excluded services. As such these would not be funded through base demand revenues; and to eliminate them for tax purposes, we have offset these against connection costs by allocating them 100 per cent in the special rate pool. This matches the treatment of totex for attributing net costs to RAV. We will keep this treatment under review for Final Proposals.

6.15. We propose that all pension costs should be treated as 100 per cent deductible in the year of expenditure. We propose to ignore pension spreading under the irregular payment rules as we consider this a minor timing issue.

6.16. Expenditure on Strategic Wider Works would be assumed for tax allocation purposes to be 99 per cent load related and with the remaining 1 per cent regarded as opex.

Capital allowance opening pool balances

6.17. We have used the TO's and SO's forecast closing capital allowance pool balances for 31 March 2013. These pools are reduced by deduction of allowances that relate to expenditure remunerated under separate incentive schemes (as these are funded on a pre tax basis). For NGET we have removed the values relating to the TIRG projects still under that incentive scheme. For NGGT the capital expenditure relating to capex remunerated under TPCR3 and TPCR4 revenue drivers (with the exception of Milford Haven which is dealt with separately) has been removed.

6.18. We will review the opening pools and their derivation from their latest submitted tax returns (as rolled forward to 31 March 2013), as these will be received after Initial Proposals are published, for Final Proposals. Closing capital allowance pool balances would be reset 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

6.19. Transmission licensees are regarded as large companies under tax legislation and are required to pay their tax liabilities for any given year in instalments commencing in the current year. In the Strategy Document we assumed that half the annual charge to CT is paid in the regulatory year, and half in the subsequent year, and ignore subventions for surrendered tax losses. We indicated that we would take no account of additional payments (or receipts) from settling earlier years' tax liabilities. The spreading of CT payments over two years is a useful refinement when tax liabilities are uneven from year to year. In introducing the annual iteration process, such a refinement would be an unnecessary complication when liabilities are being retrospectively revised. We propose to model tax liabilities and resultant cashflows as being incurred in the year they arise.

Interest (payable and receivable)

6.20. Interest receivable/payable has been modelled by applying the nominal rate of interest (the assumed cost of debt plus modelled RPI estimate) to net debt as determined by the financial model, on an accruals basis. Interest has been treated for tax purposes as fully deductible / taxable in the period in which it arises, subject to the operation of the tax clawback mechanism.

Tax treatment of incentives

6.21. Incentive revenues which do not form part of base revenues and penalties are on a pre-tax basis (we propose that they do not give rise to further revenues in respect of the tax charge in the revenues). Incentives that are included within totex, which in general relate to investment, would be included within the financial model which calculates appropriate tax allowances.

Treatment of excluded services

6.22. No allowance or relief for tax would be given in respect of excluded services costs and revenues, including sole use connections. In setting ex ante allowances, we propose to deduct costs attributable to these services from the cost base of providing use of system services.

Tax clawback for excess gearing

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

6.24. 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 our open letter of 31 July 2009³⁰ and is now proposed to be 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 would consider this when undertaking these trigger tests.

6.25. We have calculated the adjustments arising from the TPCR4 control which ended on 31 March 2012 and the TPCR4 rollover year, using actual data where available together with that forecast in network companies business plans. If the actual amounts differ from the forecasts used, we reserve the right to make a further ex post adjustment. We will update 2011-12 for actual data before Final Proposals. Where a business incurs a regulatory tax loss the adjustment would be added to the tax loss carried forward.

6.26. We now propose, consistent with the annual iteration process in RIIO price controls, to update and reset the clawback every year. Our previous proposal was to update every three years with a spreading of any clawback over the following three years.

6.27. In its business plan submission NGET suggested that we should modify the claw back mechanism so that it is triggered only if the actual gearing exceeds the notional gearing by a certain tolerance (five per cent for example). We have examined this suggestion and believe that, as our approach to financing allows for equity issuance costs to be funded as gearing rises, such a threshold is unnecessary.

Tax trigger

6.28. We propose to introduce a tax trigger mechanism as set out in the Strategy Document. The detailed methodology is set out in the 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 demand revenues (either up or down). These amounts would be fixed throughout the price control for each licensee and would not be revised through the operation of the annual iteration process. The amounts (+/-) for each business are as follows:

Table 6.4: Tax deadband threshold

£m 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NGET TO	4.2	4.9	5.0	5.4	5.9	5.7	5.8	5.8
NGGT TO	1.8	1.9	1.9	2.0	2.4	2.5	2.7	2.6
NGET SO	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3
NGGT SO	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

³⁰ Tax gearing clawback letter July 2009
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=49&refer=Networks>

Business rates

6.29. 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 2015. During RIIO-T1, further revaluations in 2015 and 2020 are expected. Each network company is able to influence the valuation that is given and hence the business rates³¹ that it will incur in the future.

6.30. For the purposes of setting the base price control revenue allowances, we propose that business rates are those from the 2010 valuations. For the period from 1 April 2013 up to 31 March 2015, we propose retaining the previous TPCR4 mechanism that enabled companies to recover the difference between the actual and assumed costs. After that time, we propose to 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 would then reactivate the cost adjustment mechanism for the remainder of the period, (ie from 1 April 2015 up to 31 March 2021). We propose to deal with the 2020 valuation on a similar basis.

6.31. 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.

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.

7. Allowed revenues, annual iteration process and financial handbook

Chapter Summary

This chapter provides a summary of proposed allowed revenues and associated issues, and sets out the process to annually update allowed revenues to reflect companies actual performance and revised allowances (for example as volume driven allowances change). It also outlines the information held in the financial model handbooks.³²

Questions

10. The annual iteration process does not currently include any adjustment to TIRG values. We propose to add an adjustment. Do you agree?
11. Do you have any views on the calculations and layout in the financial model?
12. Should the financial model also capture, for presentational purposes only, the revenue from all incentive schemes?

Allowed revenues

7.1. The allowed revenues for NGET and NGGT TOs under our Initial Proposals are summarised in tables 7.1 and 7.2 and are set out in more detail in Appendix 1. Further detail underpinning these values can be found in the financial model³³ which has also been published today. In Appendix 1, for NGET and NGGT TOs we include allowed revenues for both the base case (ie the revenues set in the licence at the time of Final Proposals) and our Best View expectations, which include our estimate of the likely outturn and use made of the various uncertainty mechanisms. Allowed revenues could turn out to be higher or lower depending on the utilisation made of the uncertainty mechanisms. 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. Details of the SO allowed revenues are included in Appendix 1 tables A5 and A6.

³² [RIIO ET1 Price Control Financial Handbook](#) and [RIIO GT1 Price Control Financial Handbook](#)

³³ [RIIO-T1/GD1: Financial model](#)

Table 7.1: NGET allowed revenues (Best View)

2009-10 Prices £m Best View	2012-13 per Rollover	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NGET	1,332	1,412	1,551	1,616	1,701	1,692	1,723	1,698	1,666
Yr on Yr Change		6.0%	9.8%	4.2%	5.2%	(.5%)	1.8%	(1.4%)	(1.9%)
Cumulative Change		6.0%	16.4%	21.3%	27.7%	27.0%	29.4%	27.5%	25.1%

Table 7.2: NGGT allowed revenues (Best View)

2009-10 Prices £m Best View	2012-13 per Rollover	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NGGT	586	559	567	595	638	744	720	742	770
Yr on Yr Change		(4.5%)	1.4%	5.1%	7.2%	16.6%	(3.2%)	3.0%	3.7%
Cumulative Change		(4.5%)	(3.2%)	1.7%	9.0%	27.0%	22.9%	26.7%	31.4%

7.2. As a consequence of the adoption of the RIIO approach to totex we will make allowance for all future expenditure relating to entry and exit revenue drivers on a totex basis. Any over or under spend will be subject to the totex incentive mechanism. In particular, this means that future revenue driver expenditure would be funded through the TO rather than the SO as at present. This has the advantage of matching the revenue with the expenditure which would also be reflected in RAV rather than sit in a shadow RAV calculation during an "incentive" period. This will not impact on revenue drivers already signalled (which would continue to receive revenue funding in the SO whilst the capex will reside in a shadow RAV). This is why the NGGT SO revenue driver income falls to zero from 2017-18 as shown in Appendix 1, table 6.

SIUs and NTS pension deficit

7.3. The approach to the costs of Statutory Independent Undertakings (SIUs) and the NTS pension deficit costs associated with the legacy GDN employees has historically involved a recharge between NGGT and the GDNs. These arrangements are subject to review as set out in section 7 of the Gas Distribution Initial Proposals³⁴ (Finance and Uncertainty Supporting Document) and may affect revenue at Final Proposals.

Annual iteration process

7.4. As part of the RIIO price controls, we propose to introduce an annual iteration process to update base revenues during the price control for a defined set of variable parameters. In general, the items we would adjust during the price control are items we would normally true-up at the end of the price control or are additional variable items that are being introduced as part of RIIO, such as the debt indexation mechanism.

³⁴ [RIIO-GD1: Initial Proposals – Supporting document – Finance and uncertainty](#)

7.5. To facilitate the annual iteration process we are proposing a number of new financial licence conditions, and developed a new financial model supported by a financial handbook. We are publishing today a separate consultation³⁵ on the draft licence conditions for RIIO, including the new finance licence conditions and the draft financial handbook (for both electricity and gas transmission) supporting these Initial Proposals. We propose that both the financial handbook and the financial model will be incorporated in the licence and subject to clear change control procedures. The financial model currently accommodates both gas and electricity transmission and gas distribution. However, as the model is proposed to become an integral part of the licence it will be split into three separate models – gas transmission, electricity transmission and gas distribution – in advance of Final Proposals.

7.6. The proposed new financial licence conditions and draft financial handbook set out the process in more detail (although at this stage the handbook is not complete). In summary, the proposed annual iteration process will update base revenues by updating a defined set of variable values. The update process would largely operate between the end of July, when we receive the annual reporting pack from network operators, and the end of November when the Authority would issue directions to amend the following formula year's base revenues within the maximum allowed revenue formula.

7.7. The proposed changes to be made fall into four main categories:

- Changes arising from the true-up of previous price controls eg capex roller and pensions true-up
- Changes arising from changes to specified financial adjustments ie cost of debt indexation, tax and pensions
- Totex incentive mechanism (update for actual expenditure) and
- Changes made to totex allowances either through revenue or volume drivers, new allowances being granted eg new strategic wider works projects or amendments being made to existing allowances.

7.8. Provisional values for the adjustments from previous price controls would already be included in base revenues at Final Proposals. However, TPCR4 Rollover will not have concluded and therefore new actual data will become available in 2013-14 and hence further adjustments may be necessary. In addition, some projects, for example Milford Haven in gas transmission, will not have completed the post completion reports and analysis and further adjustments may become necessary to close out these projects.

7.9. The specified financial adjustments cover the cost of debt indexation, pensions and tax. We have set out previously that we intend to introduce a debt indexation mechanism to annually update the allowance for the cost of debt. As described earlier in Chapter 3, we would use data as at the last working day in October each year to update the allowance for the following formula year. The draft financial

³⁵ [RIIO-T1 and RIIO-GD1: Draft licence conditions – First informal licence drafting consultation](#)

handbook (Chapter 3) sets out the mechanism and provides a link to the model used to calculate the cost of debt allowance value.

7.10. We set out in our Strategy Document that we would reset the pensions deficit allowances and, subject to a threshold, the PPF levy and scheme administration costs every three years. The dates of the update are set out in Chapter 5. We propose to use the triennial valuations by licensees subject to the reasonableness test that is part of our pensions approach to reset allowances. We would also true-up for any efficient variation between allowances and actual costs, subject to the reasonableness review. Chapter 3 in the draft financial handbook provides further details on the process that will be followed.

7.11. There are also two potential tax adjustments. The tax trigger mechanism and the tax gearing clawback. Chapter 4 in the draft financial handbook provides further details.

7.12. The totex incentive mechanism calculates changes to revenues arising from any under or over expenditure against the totex allowance using the relevant incentive strength for each network operator. In the RIIO Strategy Document we stated that we intended to make the incentive work more quickly than in previous controls so that management were suitably motivated. This would use the actual expenditure reported to us in July each year and adjust revenues in the following formula year. The incentive mechanism would therefore operate with a two year lag.

7.13. We propose a number of incentive schemes that would update totex allowances. These will be set out in the financial handbook and would have their own review process as set out in their respective licence conditions. The proposed annual iteration process would implement all the adjustments to allowances approved during the year by adjusting the variable values in the financial model, following the issue of directions by the Authority, which will calculate changes to base revenue.

7.14. At present there are no annual adjustments provided for in the financial model variable values table in respect of TIRG projects as this incentive scheme has a separate term $TIRG_t$, outside of base revenues and the investment forms part of the 'shadow' RAV. However, during RIIO-T1 these projects will transfer as shown in Table 2.3 into the core RAV. At present, these would transfer at the values assumed at Final Proposals. However, there is a mechanism within TIRG licence condition to allow for income adjusting events. Whilst this would change revenues permitted by the TIRG term, it would not update the transfer value in the licence model and therefore revenues after the incentive period would not reflect any asset adjusting events. We could add a further variable value to reflect the impact of asset adjusting events that have been approved as part of the TIRG licence condition and invite views on this.

Price Control Financial Model ('PCFM')

7.15. As mentioned above, we have developed a new financial model for these controls that will also form part of the licence as one of the financial instruments. The model is currently in a combined form for electricity and gas transmission and gas distribution but will be separated ahead of Final Proposals. In addition to calculating the base revenues set at Final Proposals, the model would also be used in the annual iteration process described above to calculate revised base revenues reflecting changes to the specified list of variables.

7.16. For the purposes of the annual iteration process the model only needs to reflect changes to base revenues. Revenues associated with non-totex incentives such as customer satisfaction and network availability do not need to form part of the financial model. However, we can see the merit in the model capturing all revenues for completeness and propose for presentation purposes only to include the revenues from all incentive schemes in due course. We welcome views on this subject.

7.17. Under our proposals, the financial model while providing the detail of the calculation of base revenue is subservient to both the licence and the financial handbook. The model should therefore only update base revenue for variables that are permitted by the licence and in accordance with the approach set out in the financial handbook.

7.18. The variables that are currently envisaged are set out in the input worksheet of the model in the "blue box". Other assumptions which are used in the calculations within the financial model are shown in yellow shaded boxes on the input worksheet and would be set at Final Proposals. A change control process is set out in the draft financial handbook (Chapters 1 & 2) which sets out the draft formal process for changing the functionality within the model should this be necessary during the RIIO period.

7.19. The financial model has been published alongside this consultation. We have re-designed its layout in order to make it easier to follow and we welcome any views on the model and its basis of calculations, some of which incorporate amendments from earlier financial models.

Appendices

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Appendix 1 – Allowed Revenues

Table A1: NGET – Best View

NGET TO	RIIO-T1								Total	Average	
	£m 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20			2020-21
Totex											
Slow Pot	1,484	1,657	1,571	1,627	1,414	1,427	1,125	867	11,173	1,397	
Fast Pot	262	292	277	287	249	252	199	153	1,972	246	
Totex	1,746	1,950	1,849	1,915	1,663	1,678	1,324	1,020	13,145	1,643	
Regulatory Asset Value (RAV)											
Opening RAV	8,680	9,601	10,650	11,563	12,566	13,238	13,895	14,233	-	-	
Transfers from 'shadow RAV'	-	-	-	80	-	-	-	-	80	-	
Restated opening RAV including transfers	8,680	9,601	10,650	11,643	12,566	13,238	13,895	14,233	-	-	
RAV additions (totex slow pot)	1,484	1,657	1,571	1,627	1,414	1,427	1,125	867	11,173	-	
Depreciation	(564)	(608)	(658)	(704)	(741)	(770)	(787)	(797)	(5,629)	-	
Closing RAV	9,601	10,650	11,563	12,566	13,238	13,895	14,233	14,304	-	-	
Allowed Costs											
Fast pot expenditure	262	292	277	287	249	252	199	153	1,972	246	
Non-controllable opex	94	88	88	88	88	88	88	88	708	88	
RAV depreciation	564	608	658	704	741	770	787	797	5,629	704	
Return	412	457	501	546	582	612	635	644	4,390	549	
Other (including Pensions, IQI & adjustments from previous price controls)	105	127	124	112	80	57	56	54	715	89	
Tax allowance	90	95	92	86	75	70	61	59	629	79	
Price Control Revenue											
Total costs	1,528	1,667	1,740	1,823	1,816	1,849	1,826	1,795	14,043	1,755	
Less excluded services	(116)	(117)	(124)	(122)	(124)	(125)	(127)	(129)	(984)	(123)	
Base Revenue	1,412	1,551	1,616	1,701	1,692	1,723	1,698	1,666	13,059	1,632	
TIRG	14	14	13	-	-	-	-	-	41	5	
Regulatory Revenue	1,427	1,565	1,629	1,701	1,692	1,723	1,698	1,666	13,101	1,638	
Excluded Services	116	117	124	122	124	125	127	129	984	123	
Total revenue	1,542	1,681	1,753	1,823	1,816	1,849	1,826	1,795	14,084	1,761	
Annual change to Base Revenue	6%	10%	4%	5%	-1%	2%	-1%	-2%	-	-	

Table A2: NGET – base view

NGET TO	RIIO-T1								Total	Average
	£m 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20		
Totex										
Slow Pot	1,301	1,419	1,277	1,223	1,059	1,003	909	765	8,956	1,119
Fast Pot	230	250	225	216	187	177	160	135	1,580	198
Totex	1,530	1,669	1,503	1,439	1,246	1,180	1,069	900	10,536	1,317
Regulatory Asset Value (RAV)										
Opening RAV	8,680	9,417	10,236	10,872	11,498	11,855	12,137	12,319	-	-
Transfers from 'shadow RAV'	-	-	-	80	-	-	-	-	80	-
Restated opening RAV including transfers	8,680	9,417	10,236	10,951	11,498	11,855	12,137	12,319	-	-
RAV additions (totex slow pot)	1,301	1,419	1,277	1,223	1,059	1,003	909	765	8,956	-
Depreciation	(564)	(600)	(641)	(677)	(702)	(720)	(727)	(731)	(5,362)	-
Closing RAV	9,417	10,236	10,872	11,498	11,855	12,137	12,319	12,353	-	-
Allowed Costs										
Fast pot expenditure	230	250	225	216	187	177	160	135	1,580	198
Non-controllable opex	94	88	88	88	88	88	88	88	708	88
RAV depreciation	564	600	641	677	702	720	727	731	5,362	670
Return	408	443	476	507	527	542	552	557	4,013	502
Other (including Pensions, IQI & adjustments from previous price controls)	105	123	110	126	58	57	56	54	690	86
Tax allowance	87	93	84	92	71	74	74	74	650	81
Price Control Revenue										
Total costs	1,489	1,597	1,624	1,706	1,632	1,658	1,657	1,639	13,003	1,625
Less excluded services	(116)	(117)	(124)	(122)	(124)	(125)	(127)	(129)	(984)	(123)
Base Revenue	1,373	1,481	1,500	1,584	1,508	1,532	1,530	1,511	12,019	1,502
TIRG	14	14	13	-	-	-	-	-	41	5
Regulatory Revenue	1,387	1,494	1,513	1,584	1,508	1,532	1,530	1,511	12,060	1,508
Excluded Services	116	117	124	122	124	125	127	129	984	123
Total revenue	1,503	1,611	1,638	1,706	1,632	1,658	1,657	1,639	13,044	1,631
Annual change to Base Revenue	3%	8%	1%	6%	-5%	2%	0%	-1%	-	-

RIIO-T1: Initial Proposals for National Grid Electricity Transmission Ltd and National Grid Gas Transmission Ltd

Table A3: NGGT – Best View

NGGT TO	RIIO-T1										
	Em 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total	Average
Totex											
Slow Pot	156	193	300	405	527	468	514	552	3,114	389	
Fast Pot	100	98	115	139	165	126	126	130	999	125	
Totex	256	291	415	544	692	594	640	681	4,113	514	
Regulatory Asset Value (RAV)											
Opening RAV	4,057	4,316	4,369	4,527	4,793	5,635	5,994	6,340	-	-	
Transfers from 'shadow RAV'	243	2	2	11	484	72	22	1	836	-	
Restated opening RAV including transfers	4,300	4,318	4,371	4,538	5,277	5,707	6,016	6,341	-	-	
RAV additions (totex slow pot)	156	193	300	405	527	468	514	552	3,114	-	
Depreciation	(140)	(142)	(144)	(149)	(169)	(180)	(190)	(199)	(1,314)	-	
Closing RAV	4,316	4,369	4,527	4,793	5,635	5,994	6,340	6,693	-	-	
Allowed Costs											
Fast pot expenditure	100	98	115	139	165	126	126	130	999	125	
Non-controllable opex	96	96	96	96	96	96	96	96	772	96	
RAV depreciation	140	142	144	149	169	180	190	199	1,314	164	
Return	187	189	193	203	237	254	269	283	1,816	227	
Other (including Pensions, IQI & adjustments from previous price controls)	33	34	35	35	55	56	57	57	362	42	
Tax allowance	6	10	15	18	24	10	8	7	98	12	
Price Control Revenue											
Total costs	563	570	598	641	747	723	745	773	5,360	670	
Less excluded services	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(25)		
Base Revenue	559	567	595	638	744	720	742	770	5,335	667	
Excluded Services	4	3	3	3	3	3	3	3	25		
Total revenue	563	570	598	641	747	723	745	773	5,360	670	
Annual change to Base Revenue	-5%	1%	5%	7%	17%	-3%	3%	4%	-	-	

Table A4: NGGT – base view

NGGT TO	RIIO-T1										
	Em 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total	Average
Totex											
Slow Pot	99	96	102	118	135	92	85	85	812	102	
Fast Pot	87	86	91	105	119	81	76	75	720	90	
Totex	186	182	193	223	254	173	161	160	1,532	192	
Regulatory Asset Value (RAV)											
Opening RAV	4,057	4,259	4,216	4,180	4,167	4,631	4,637	4,586	-	-	
Transfers from 'shadow RAV'	243	2	2	11	484	72	22	1	836	-	
Restated opening RAV including transfers	4,300	4,260	4,218	4,190	4,651	4,703	4,659	4,587	-	-	
RAV additions (totex slow pot)	99	96	102	118	135	92	85	85	812	-	
Depreciation	(140)	(140)	(141)	(142)	(155)	(158)	(158)	(159)	(1,192)	-	
Closing RAV	4,259	4,216	4,180	4,167	4,631	4,637	4,586	4,513	-	-	
Allowed Costs											
Fast pot expenditure	87	86	91	105	119	81	76	75	720	90	
Non-controllable opex	96	96	96	96	96	96	96	96	772	96	
RAV depreciation	140	140	141	142	155	158	158	159	1,192	149	
Return	186	184	183	182	202	203	201	198	1,539	192	
Other (including Pensions, IQI & adjustments from previous price controls)	33	34	35	35	55	56	57	57	362	42	
Tax allowance	5	12	18	24	34	27	29	32	181	23	
Price Control Revenue											
Total costs	548	553	563	584	662	621	617	618	4,766	596	
Less excluded services	(4)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(25)		
Base Revenue	545	550	560	581	659	618	614	615	4,741	593	
Excluded Services	4	3	3	3	3	3	3	3	25		
Total revenue	548	553	563	584	662	621	617	618	4,766	596	
Annual change to Base Revenue	-7%	1%	2%	4%	13%	-6%	-1%	0%	-	-	

RIIO-T1: Initial Proposals for National Grid Electricity Transmission Ltd and National Grid Gas Transmission Ltd

Table A5: NGET – SO

NGET SO	RIIO-T1										
	Em 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total	Average
Totex											
Slow Pot	35	30	29	29	30	26	28	27	235	29	
Fast Pot	79	68	65	65	67	58	63	60	524	66	
Totex	114	98	94	94	98	84	91	86	759	95	
Regulatory Asset Value (RAV)											
Opening RAV	75	95	106	112	117	120	117	115	-	-	
Transfers from 'shadow RAV'	-	-	-	-	-	-	-	-	-	-	
Restated opening RAV including transfers	75	95	106	112	117	120	117	115	-	-	
RAV additions (totex slow pot)	35	30	29	29	30	26	28	27	235	-	
Depreciation	(16)	(19)	(22)	(25)	(27)	(29)	(30)	(30)	(198)	-	
Closing RAV	95	106	112	117	120	117	115	112	-	-	
Allowed Costs											
Fast pot expenditure	79	68	65	65	67	58	63	60	524	66	
Non-controllable opex	-	-	-	-	-	-	-	-	-	-	
RAV depreciation	16	19	22	25	27	29	30	30	198	25	
Return	4	5	5	5	5	5	5	5	39	5	
Other (including Pensions, IQI & adjustments from previous price controls)	11	11	11	11	11	11	11	11	88	11	
Tax allowance	3	-	-	-	-	-	-	-	3	0	
Price Control Revenue											
Base Revenue	113	102	103	106	111	104	109	105	853	107	
Excluded Services	-	-	-	-	-	-	-	-	-	-	
Total revenue	113	102	103	106	111	104	109	105	853	107	
Annual change to Base Revenue	11%	-9%	0%	3%	5%	-7%	5%	-3%	-	-	

Table A6: NGGT – SO

NGG SO	RIIO-T1										
	Em 2009-10 prices	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total	Average
Totex											
Slow Pot	37	28	27	26	25	23	23	24	213	27	
Fast Pot	63	48	46	44	43	39	39	40	363	45	
Totex	100	76	72	70	68	62	62	64	576	72	
Regulatory Asset Value (RAV)											
Opening RAV	68	92	102	108	111	111	106	100	-	-	
Transfers from 'shadow RAV'	-	-	-	-	-	-	-	-	-	-	
Restated opening RAV including transfers	68	92	102	108	111	111	106	100	798	-	
RAV additions (totex slow pot)	37	28	27	26	25	23	23	24	213	-	
Depreciation	(13)	(18)	(21)	(23)	(26)	(28)	(28)	(27)	(184)	-	
Closing RAV	92	102	108	111	111	106	100	97	-	-	
Allowed Costs											
Fast pot expenditure	63	48	46	44	43	39	39	40	363	45	
Non-controllable opex	-	-	-	-	-	-	-	-	-	-	
RAV depreciation	13	18	21	23	26	28	28	27	184	23	
Return	3	4	5	5	5	5	4	4	35	4	
Additional income	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(2)	(0)	
Tax allowance	4	0	-	0	1	1	1	1	8	1	
Price Control Revenue											
Base Revenue	83	70	71	73	75	72	72	73	589	74	
NGGT SO Revenue Driver Income	94	87	79	59	-	-	-	-	319	40	
Total revenue	178	158	150	131	75	72	72	73	908	114	
Annual change to Base Revenue	29%	-16%	0%	3%	3%	-3%	0%	0%	-	-	

Appendix 2 – Cost of debt index

Addressing a technical issue with the calculation of the index

1.1. In our discussions with the network companies an issue was raised regarding the way in which the index is calculated. It was noted that the Bank of England uses the 'Fisher approximation' to derive breakeven inflation figures from Gilt market data. The Fisher approximation can be written as:

$$i = \pi - r$$

Where:

i is the estimate of breakeven inflation

π is the nominal yield on Gilts

r is the real yield on Index-Linked Gilts

1.2. A more accurate approach when comparing nominal and real yields is to use the full Fisher equation, which can be written as follows:

$$i = \frac{1 + \pi}{1 + r} - 1$$

1.3. Since it is more accurate, it has been our preference to use the Fisher equation when deflating the iBoxx index to arrive at an estimate of the real cost of debt.³⁶ It can be shown that, when both the nominal and real yields are positive (as has typically been the case historically), the Fisher approximation will overstate breakeven inflation compared to the full Fisher equation. The consequences of applying the Fisher equation when the breakeven inflation data has been derived from the Fisher approximation is to understate the real cost of debt. This is illustrated in Table A2.1.

³⁶ See, for example, the illustration of the cost of debt index calculation that was issued with SHETL and SPTL's fast-track Initial Proposals: http://www.ofgem.gov.uk/Networks/Trans/PriceControls/RIIO-T1/ConRes/Documents1/Cost_of_debt_model.xlsx.

Table A2.1: Illustration of impact of Fisher equation

		Fisher approximation	Fisher equation
Yield on 10-year nominal gilts	i	3.40%	3.40%
Yield on 10-year index-linked gilts	r	1.00%	1.00%
10-year breakeven inflation	π	2.40%	2.38%
Average yield on iBoxx 10+ non-financials A and BBB indices		4.75%	4.75%
Estimated real cost of debt		2.29%	2.32%

1.4. In order to correct for the above issue, we propose that instead of using the Bank of England's published breakeven inflation figures, we will calculate them ourselves from the Bank's published nominal and real yields data, using the Fisher equation. We will apply this approach when setting the cost of debt for 2013-14, which will be published alongside the Final Proposals.