Transmission Price Control Review: Updated Proposals and Smithers & Co. Ltd.: Report on the Cost of Capital

Response to consultation

Prepared by

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On behalf of:
BG Gas Services Ltd
BP Gas Marketing
Centrica (British Gas Trading Ltd)
Centrica Storage Ltd
Gaz de France ESS
Shell Gas Direct Ltd
Statoil (UK)

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1 Introduction

1.1 This paper sets out a number of comments on the Updated Proposals and the associated Smithers report on the cost of capital, and refers to the response dated 24 July 2006 to the Initial Proposals supported by BG Gas Services Ltd, BP Gas Marketing, Centrica (British Gas Trading), Centrica Storage Ltd, Shell Gas Direct Ltd and Statoil (UK). This further analysis is supported by these six companies and also by Gaz de France ESS.

1.2 We acknowledge that the Updated Proposals do not take into account Ofgem's completed review of Smithers' report and our main comments therefore relate to the latter. However we first comment on two matters raised in the Updated Proposals and which refer to issues raised in the 24 July response. These matters are asymmetric risk and the double counting of tax liabilities.

1.3 We have a number of major concerns on the Smithers report. We welcome the report's commonsensical analysis of the beta evidence, but are especially concerned that it proposes an unfeasibly high cost of debt. Our analysis of Smithers' methodology reveals what we believe is a fundamental error. We also comment on the estimates for the value effect and the term premium. Finally, we highlight an apparent anomaly in Smithers' analysis of the arithmetic averaging issue.

1.4 In the light of our findings, we consider there is no substantive reason for us to depart from the central conclusion of the 24 July 2006 response that the cost of capital for a UK transmission business is significantly lower than Ofgem's working assumption and likely to be between 3.2 and 3.7% per annum. We consider that the evidence now points more confidently towards the lower end of the range.

2 Updated Proposals

Asymmetric Risk

2.1 Paragraph 8.7 of the Updated Proposals noted that "some gas shippers have provided evidence to suggest that the cost of capital should be significantly lower than we have assumed (3.2 to 3.7 per cent), although they have also acknowledged that TO's face asymmetric risk which is not captured by the CAPM methodology they have used in deriving their estimates. In the past, Ofgem has implicitly allowed for such risks in its allowed rates of return to equity."

2.2 A key argument in the 24 July response was that the existence of asymmetries would have a detrimental impact on both the cost of capital and incentives, and thus the behaviour of managers of regulated businesses. The detriment to users is clear. Ofgem's duties should direct it to minimise such asymmetries, which are largely a function of the regulatory regime itself. The 24 July response referred to penalty-only mechanisms such as one-sided ex post disallowances for expenditure considered to be inefficiently incurred, but also recommended that the risk issues should be transparently analysed. We believe that the regime should be systematically modelled to show how the components and mechanisms of the regime, including the periodic review process itself, interact with the business risks. This would provide a clear analysis of the risk issues in general, but would in particular highlight the causes of asymmetries and help show how modifications to the regime can eliminate them.

2.3 We consider that Ofgem should only use the existence of asymmetric risk to justify a higher cost of capital as a last resort when it has fully explored changes to the regulatory regime that could eliminate the causes. It appears that Ofgem has not yet reached this point.

Double counting of tax

2.4 Paragraph 8.27 of the Updated Proposals fairly presents the argument made in the 24 July response, that Ofgem's proposed approach would mean users funding tax payments twice. However, paragraph 8.28 noted that "we consider that the approach to tax in past reviews was clear to both the companies and the regulator. Adjusting the tax allowance to reflect deferred tax from past periods would therefore be inappropriate, as it would represent a re-opening of previous price controls. It would also be inconsistent with the approach adopted in DPCR4."

2.5 The argument set out in the 24 July response would absolutely not represent a re-opening of previous price controls. There is no question of re-opening those price controls. The issue is about the double counting of

tax liabilities by including tax liabilities **in the forthcoming price control** that have already been paid for by users in previous price controls.

2.6 Ofgem has changed the basis of allowing for tax from an accruals basis to a pay-as-you-go basis, at the same time as the Inland Revenue changed the rules for computation of tax liabilities in the opposite direction, from a relief-as-you-go basis to an accruals basis. In the longer run, this pair of changes still leaves users paying for tax on an accruals basis (the accruing will be done in the tax regime rather than the regulatory regime) and the 24 July response showed that the longer-term tax cost, taking into account the tax shelter on nominal interest, will be broadly consistent with a conventional tax-wedge calculation. However, it is the transitional effects which are problematic.

2.7 The change in Inland Revenue rules means that companies will have a transitional period of relatively high tax payments as the tax accruals build up and the benefits of accelerated tax relief are unwound. Users did not have access to those benefits since they contributed to a headline rate of tax in the tax wedge.

2.8 The symmetrical treatment for Ofgem would be to recognise the unwinding of the tax accruals implicit in the regulatory accounting. Though Ofgem has not formally accounted for this regulatory deferred tax, it exists and ignoring it during this transition in policy would lead to a material double counting of user contributions for tax.

2.9 The principle at issue is analogous to the principle of deducting depreciation from the RAV consistent with what was allowed for in previous periods; this ensures that users do not pay twice for capital expenditure. If Ofgem were to change its basis for allowing depreciation to a pay-as-you-go basis, it would be virtually inconceivable that Ofgem would not provide for a transitional mechanism to ensure that investors did not lose the value of un-depreciated past investment. Its policy for tax is making a precisely analogous error.

2.10 We acknowledge that correcting this approach would make it inconsistent with the approach adopted in DPCR4, but this is not a justification for a materially inequitable and demonstrably wrong policy.

3 Smithers' report: the cost of debt

3.1 Smithers propose an unfeasibly high range for the cost of debt of 3.5 to 4.75%. This reflects an assumption that the approximate risk-free rate is 2.5%. Even the lowest end of the range is higher than the assumptions Ofgem made for modelling purposes in its initial proposals.

3.2 We have analysed the methodology adopted by Smithers and identify two key issues. The first appears to be a fundamental error in the calculation of a real risk-free rate suitable for an RPI-indexed regulatory regime. The second relates to the suggestion of a term premium of up to 0.75%, the basis of which seems to be weak.

The systematic difference between CPI and RPI

3.3 Section 8 of Smithers' report suggests that "the best current market-based estimate of the forward-looking real interest rate is the nominal yield on medium-dated bonds, less the Bank of England's inflation target of 2%". This statement appears to reflect a fundamental error in Smithers' thinking, reinforced by the statement that "In 2003, the Bank of England's inflation target was officially lowered from 2 ½% to 2%".

3.4 National Statistics' December 2003/January 2004 paper 'The new inflation target: the statistical perspective' strongly contradicts this interpretation, highlighting that the move from 2 ½% to 2% simply mirrors the difference in the measures used for the targets before and after the change: from a RPI-based to a CPI-based target. It suggested that the formula effect (the effect of using arithmetic means in the computation of RPI instead of geometric means in CPI) accounts for a fairly stable 0.5% difference between the annual changes in the two indices.

3.5 However, a further difference is liable to arise from the exclusion of council tax and housing costs from the definition of CPI. The January 2004 paper commented that this alone had an average effect of 0.7% per annum from 1989 to 2003, but it has been lower in some recent months due to lower house price inflation – reducing the CPI-RPIX gap to zero in September 2005. The CPI-RPIX gap has now returned to 0.8% and the CPI-RPI difference was 1.2% in September 2006. The Bank of England's February 2004 Inflation Report suggested that the CPI target of 2% would be consistent with a longer-term RPIX of 2.75% (page 36). This fits with forecasts set out in the December 2005 Pre-Budget report, which projects an overall difference of 0.75% from 2007/08:

Economic assumptions for the public finance projections
Percentage changes on previous year
Outturn Estimate Projections

	2004/05	*2005/06*	*2006/07*	*2007/08*	*2008/09*	*2009/10*	*2010/11*
CPI	1.50%	2.25%	2.00%	2.00%	2.00%	2.00%	2.00%
RPI (September)	3.00%	2.75%	2.50%	2.75%	2.75%	2.75%	2.75%

Source: HM Treasury, December 2005 Pre-Budget report, Table B3

3.6 It is therefore clear that a better current market-based estimate of the forward-looking real interest rate, suitable for use in **an explicitly RPI-indexed regime**, would be the nominal yield on medium-dated bonds, less the Bank of England's CPI-based inflation target of 2% **less** a formula effect of 0.5% and **less** a council tax and housing cost effect of perhaps 0.25%.

3.7 It would therefore seem that Smithers' estimate of the cost of debt could be overstated by about 0.75%.

The term premium

3.8 Smithers' careful analysis of the term premium seems to reinforce its statistical conclusion that "there is no obvious reason to expect currently low term premia to revert to higher values on a sustained basis". However, it argues that real returns have been high in some periods, speculates, rather sensationally, that both short-term and long term risk-free rates could in principle be pulled upwards towards the equity return and that the risk is accordingly greater on the upside. This leads it to suggest a term premium of up to 0.75%.

3.9 The basis for this assessment seems at best speculative, suggesting that Ofgem should give greatest weight to the lower end of the range in its own assessment.

Conclusion

3.10 Taking these issues into account, we consider that there is no good case for Ofgem to move from the assumption for the cost of debt used in the Initial Proposals, 3.4%, a figure which is also consistent with earlier submissions by National Grid.

4 Smithers' report: cost of equity

4.1 We welcome and support Smithers' commonsensical recognition that the evidence for transmission businesses being low risk is compelling and now practically irrefutable. We believe Ofgem's assumption of a beta figure close to unity is now unsustainable.

4.2 However there are two specific issues we wish to comment on: the adjustments for the value effect and for arithmetic means.

The value effect

4.3 Smithers suggest an adjustment of between 0 and 1.25% for the value effect. It acknowledges that there is at best weak evidence for any value affect for regulated businesses. This would suggest that the range should be strongly weighted towards the lower end.

Arithmetic means

4.4 The Smithers report analyses the rationale for an adjustment for arithmetic returns with clarity. It identifies, with reference to its 2003 report, that the longer-term returns on investments in the equity markets have averaged about 5.5% in real terms, on a compound return basis. However, volatility has the effect of creating a difference between the arithmetic average of returns and the geometric average. This is a function of the mathematics – an equal number of years with returns of +25% and -20% will give an arithmetic mean of 2.5% per annum, but the overall compound return will be zero.

4.5 To ensure that investors have a reasonable prospect of making a specific compound return, they must has a reasonable prospect of making a higher rate of return on average (arithmetically) in any one year. Ofgem would need to allow such a higher annual rate of return, recognising that actual returns will be uncertain and therefore volatile, in order to provide a reasonable prospect of earning an appropriate compound rate of return.

4.6 Smithers appears to have used the volatility of log returns in equity markets to derive an adjustment.

4.7 We would note that Ofgem is setting an allowance for a regulatory return, an expected cash flow IRR, taking into account opening and closing values of the RAV in a truncated IRR calculation. It is not setting an annual allowance for returns on a stock market. It would therefore be necessary to consider the volatility of the outturn regulatory returns, rather than the stock market, to identify an appropriate arithmetic averaging adjustment.

4.8 If the regulatory return volatility is taken into account, the allowance should provide a reasonable prospect for investors to earn an appropriate

overall compound rate of return, in regulatory terms. The overall compound regulatory rate of return would, in the long run, have to relate to the overall compound rate of return exhibited in the market valuations of the shares, as there is no reason to expect any systematic difference (in the long-run). In the short run, however, market valuations would naturally be much more volatile due to the erratic way that information emerges and market sentiments change. Market returns will therefore reflect an additional dimension of volatility that is not present in the underlying cash flow IRRs. While the overall geometric returns will systematically relate to each other, the arithmetic mean returns in the market will necessarily be higher.

4.9 Using stock market return volatility to determine an arithmetic mean adjustment would therefore overstate the mean regulatory returns necessary to generate an appropriate compound rate of return for investors in the longer term.

4.10 We suggest that Ofgem carry out a study with reference to historical cash flow and RAV information to estimate the level of volatility in regulatory returns and use this estimate to determine an arithmetic mean adjustment. We would expect this level of volatility to be substantially lower than volatility in the market. The adjustment to arithmetic average suggested by Smithers may therefore be substantially overstated.

4.11 For illustration, we have assumed a reduction of 1% to the centreline of Smithers' assessment of 1.5% for the adjustment. The effect of this would be to reduce the effective market risk premium in the calculation of the cost of equity.

Conclusion and summary calculation of the WACC

4.12 We observe that Smithers' view of the cost of equity, 4.5 - 6.25% post-tax, is now significantly lower than Ofgem's working assumption of 7%, driven mainly by the more realistic assessment of beta. Allowing for a reduced arithmetic averaging effect would reduce this further.

4.13 The following calculation shows our revised calculation of the weighted average cost of capital, using the inflation and tax methodology explained in the 24 July response and the cost of debt figure of 3.4% used by Ofgem. We have adopted a generous figure of 0.65 for the beta, at the top end of all of the assessments made by Smithers. We consider that this provides sufficient headroom for any remaining concern about issues such as the value effect. The calculations also allow for a significant increase in the enterprise tax rate above the headline rate, to nearly 40%, to allow for more deferred capital allowances, as discussed in the 24 July response.

WACC estimate - inflation and tax analysis
Assuming equity beta = 0.65

	Full arithmetic averaging		Reduced arithmetic averaging		
	No inflation	With inflation	No inflation	With inflation	
	headline tax	38.75% tax	headline tax	39.4% tax	
Gearing	60.00%	60.00%	60.00%	60.00%	
Cost of debt					
Pre-tax cost of debt	3.40%	3.40%	3.40%	3.40%	
Inflation		2.50%		2.50%	
Nominal pre-tax cost of debt	3.40%	5.99%	3.40%	5.99%	
Headline rate	30.00%	30.00%	30.00%	30.00%	
Post-tax nominal cost of debt	2.38%	4.19%	2.38%	4.19%	
Inflation		2.50%		2.50%	← Effect of tax shelter
Post-tax real cost of debt	2.38%	1.65%	2.38%	1.65%	
Cost of equity					
Post-tax MRP	5.00%	5.00%	4.00%	4.00%	
Equity beta	0.650	0.650	0.650	0.650	
Risk premium	3.25%	3.25%	2.60%	2.60%	
Risk-free rate	2.00%	2.00%	2.00%	2.00%	
Post-tax cost of equity	5.25%	5.25%	4.60%	4.60%	
Vanilla post-tax (pre-tax debt)	4.14%	4.14%	3.88%	3.88%	← Vanilla post-tax
WACCs					
Post-tax WACC	3.53%	3.09%	3.27%	2.83%	← Full post-tax
Effective enterprise tax rate	30.00%	38.75%	30.00%	39.40%	
Pre-tax enterprise WACC	**5.04%**	**5.04%**	**4.67%**	**4.67%**	← Pre-tax cost of capital

Source: IMR calculations

4.14 This suggests a range for the pre-tax cost of capital, rounding out to the next quarter percents, of 4.5 - 5.25%. This is broadly consistent with the

lower end of the range contained in the Smithers & Co. report. In the light of the discussion on the double counting of tax in section 2 above, we would compare Ofgem's final proposals with such a pre-tax figure rather than any of the artificial post-tax measures which ignore a key component of the overall cost of capital to the users.

4.15 This range compares with the implied pre-tax return in the Initial Proposals of 6.72% for NGG NTS, relating to a headline tax rate equivalent of 6.0%.