



RIIO-GD1: COST OF CAPITAL

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CONTENTS

1. Introduction	1
2. Cost of equity	1
2.1. Relative risk.....	1
2.2. Cost of equity components	3
2.3. Analyst commentary and transaction evidence	4
2.4. Implications of IQI	5
3. Cost of debt and notional gearing	6
4. Conclusions	7
Annex: Analysis of the IQI	8

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1. INTRODUCTION

This brief paper sets out our specific comments on the allowed cost of capital, and in particular the cost of equity, proposed by Ofgem in its Initial Proposals (IPs)¹. It has been commissioned by Centrica but provides CEPA's independent view. In this paper we focus on the cost of equity, and also provide brief comments on the cost of debt and financeability. We comment in more detail on transitional arrangements and financeability in a separate note.²

This note is supported by an annex summarising our analysis of the relative risk in the Information Quality Incentive (IQI) mechanism for GD1, which informs our assessment of the cost of equity.

2. COST OF EQUITY

Our discussion in this section is focused on the cost of equity. In our 19th June 2012 paper on the cost of equity³, we concluded that the required cost of equity allowance for GD1 falls in the range of 6.0%-6.75%. We noted, however, that this view would need to be updated on publication of IPs. Having reviewed the IPs and considered additional evidence that has become available since 19th June, we conclude that our range of 6.0%-6.75% remains valid. Ofgem's allowance of 6.7% is, in our view, consistent with the evidence – although it is at the upper end of our range.

In the remainder of this section we:

- consider Ofgem's cost of equity allowance in the context of relative risk;
- recap our evidence on individual components of the cost of equity (the risk-free rate, the market risk premium (MRP) and beta);
- update our evidence from equity analysts and recent transaction multiples; and
- briefly comment on the implications of the IQI.

2.1. Relative risk

Our conclusions (from the 19th June paper) on the riskiness of other Ofgem price controls compared with GD1 are replicated in Table 2 overleaf. In this table, the arrows indicate risk relative to GD1. For example, we find opex risk to have been higher in GDPCR1 than in GD1, and represent this with an upward arrow.

¹ Ofgem (2012): 'Initial Proposals – Overview', 27 July 2012.

² CEPA (2012): 'RIIO-GD1: Assessment of financeability and transition arrangements – A report for Centrica', 21 September 2012

³ CEPA: 'RIIO-GD1: cost of equity – A report for Centrica', 19 June 2012, available at: <http://www.ofgem.gov.uk/Networks/GasDistr/RIIO-GD1/ConRes/Documents1/CEPA%20response%202nd%20business%20plans%20consultation%207112.pdf>

Table 1: Risk of other price controls compared with GD1

Risk category	GDPCR1	DPCR5	RIIO-T1 fast track
Volume or Margin	Unclear Margin risk depends on changes to HSE programme.	Similar Revenue cap with uncertainty mechanisms.	Similar Revenue cap with uncertainty mechanisms.
Opex risk	↑ Inclusion of Opex in RIIO-GD1 IQI reduces exposure from 100%.	↓ Similar recalibrated IQI but weaker incentive rate in DPCR5.	↓ Similar recalibrated IQI but weaker incentive rate in RIIO-T1.
Capex risk	↓ Recalibrated IQI may lead to increased exposure in RIIO-GD1.	Similar Weaker incentive rate in DPCR5 but risky given levels of projected capex.	↑ Similar incentive design but risky given high levels of projected capex.
Performance incentives	Similar Similar form of performance incentives in both controls.	Similar Will depend on final incentive cap and collar proposals in RIIO-GD1	↓ Lower risk business with simpler output commitments.
Regulatory risk	↑ Longer term regulatory commitments anticipated in RIIO.	Similar Major changes from DPCR4 but similar in design intent as RIIO.	Similar Longer term regulatory commitments anticipated.
Investment intensity	↑ Slight reductions in capex to RAV ratios at industry level.	↑ Higher sector projected capex to RAV ratios.	↑ Higher sector projected capex to RAV ratios.
Operational gearing	↑ Improved projected operating cash flow measures in RIIO-GD1.	Similar Apparent differences between sectors appear small.	↑ Lower projected operational gearing but higher totex to RAV ratios.
Overall conclusions	Implementation of RIIO regime as currently set out and projected sector cash flow measures leads us to conclude that overall RIIO-GD1 can be considered as relatively less risky than GDPCR1.	Despite differences, and reasons why RIIO-GD1 might be perceived as more risky and reasons why it could be seen as less risky, we conclude RIIO-GD1 as set out is overall no more risky than DPCR5.	Anticipated investment requirements leads us to conclude that the fast-tracked RIIO-T1 companies are relatively higher risk than the GDNs in RIIO-GD1.

Source: 'RIIO-GD1: Cost of equity – A report for Centrica', CEPA, 19 June 2012.

We concluded that GD1 is less risky than GDPCR1 and T1 (for the fast-tracked companies), and of comparable risk to DPCR5. This assessment represented our initial view based on Ofgem's proposed strategy for GD1. We are now able to update this based on a review of Ofgem's IPs. In particular, we can form a judgement on financing risk based on Ofgem's gearing assumptions for the notional entity. Gearing in GD1 is relatively high, at 65%. This is higher than for GDPCR1 and T1 (in particular the two Scottish networks), and other things being equal would suggest GD1 is high risk relative to these price controls.

Our overall conclusions, however, remain unchanged. The difference in gearing relative to GDPCR1 is small, and supported by wider reductions in risk (including reduced investment intensity). The more substantial difference relative to the two Scottish transmission networks reflects substantially higher capex risk. In its supporting document on finance and uncertainty, Ofgem presents a similar table and reaches similar conclusions. Our view, therefore, is that a baseline cost of equity allowance of 6.7% for GD1 is consistent with Ofgem's other decisions.⁴

2.2. Cost of equity components

We have updated our evidence on the individual components of the cost of equity, and our conclusions remain as stated in the 19th June paper:

"It is very difficult to see how GDN requests for costs of equity of over 7% are justified. CAPM based analysis, cross checked with relative risk analysis and clear market data from transactions suggest an absolute ceiling of 7% for the allowed cost of equity. Our view, subject to review of Initial Proposals, is that a range of 6.0% to 6.75% is appropriate. This is consistent with Ofgem's DPCR5 decision and our view that GD1 has not, overall, increased risk relative to that decision."

The real risk-free rate – as implied either by index-linked or deflated nominal UK gilts – has continued to fall in 2012. Evidence suggests that over time horizons of 5-20 years the rate is in negative territory, and has been for 21 months for five year gilts. Rates in the region of 1.5% predate the ongoing financial crisis (although we note that market actions to address the crisis are likely to be depressing current rates). In our view it is unlikely that the outturn risk-free rate will be as high as 2% over the whole of the GD1 price control period.

Our interpretation of the MRP evidence differs from Ofgem's. The upper limit of our range, based on historical data, is lower at 5%. We also note that assumptions for the MRP and the risk-free rate should be made consistent with one another. In other words, total market returns – i.e. the sum of the risk-free rate and the MRP – are more stable than their individual components. Ofgem appears to have taken into consideration forward-looking evidence such as that provided by the Bank of England – which may suggest, in the short-term, an MRP slightly higher than historical averages. As Barclays Capital notes, however:

⁴ These include an allowance of 7.3% for GDPCR1, 6.7% for DPCR5, 7.0% for T1 electricity and 6.8% for T1 gas.

“conventional measures of the [MRP] are high now, not mainly because equity owners have become more intolerant of equity risk, but because the valuation drivers of the asset that forms the basis of comparison (‘safe’ government debt) have changed so radically” [ref, pg. 13].

In other words, recent relatively high estimates of the MRP mirror (to an extent) falls in measures of the risk-free rate. Selecting a relatively high rate for each does not appear a balanced approach, and it is likely that the implied rate of 7.25% (Ofgem’s Initial Proposals are based on a risk free rate of 2.0% and a MRP of 5.25%) exceeds the cost of equity for the market as a whole.

Taking these points together, we continue to argue that an appropriate set of assumptions would imply a market cost of equity of no more than 7%. This would be achieved by a risk-free rate no higher than 2% and an MRP no higher than 5%.

Estimating an appropriate asset beta is more challenging given the lack of listed pure comparators. The asset beta implied by Ofgem’s 0.9 equity beta and 65% notional gearing is 0.32. In our view this is consistent with the evidence – although we note that this is likely to be an upper limit, and an asset beta as low as 0.20 could be supported by evidence from comparator companies.

2.3. Analyst commentary and transaction evidence

Our 19th June paper noted that many analysts anticipated significant opportunities for equity investors in National Grid to continue to benefit from WACC outperformance. While Ofgem’s allowance of 6.7% for the cost of equity may have been slightly below consensus expectations, most analysts continue to value National Grid at a premium to RAV based on Initial Proposals:

“We estimate that Ofgem’s initial proposals imply c.10-15% premium to RAV, vs. the market-implied premium of 33-40%.” – Berenberg, 17 July 2012.

Deutsche Bank’s 16 July 2012 research note also suggests that a premium to RAV of around 20% could be supported based on Initial Proposals. Our analysis suggested that such premia have been driven by expectations of significant cost of equity outperformance, as well as gearing, incentives and cost of debt outperformance.

This view continues to be supported by evidence from transaction multiples. In our 19 July paper, we noted that Market Asset Ratio (MAR) values for UK utility transactions have generally been around 10%-30%, with the two most relevant recent energy transactions resulting in premia of 32% (Central Networks) and 27% (EDF). Since we conducted that analysis, a consortium led by Cheung Kong Infrastructure (CKI) has purchased Wales & West Utilities (WWU).

In this case the MAR premium is more difficult to interpret. Based on the purchase price alone, and WWU’s March 2012 nominal RAV, the basic MAR appears to be 1.09. As many analysts note, this is cheaper than recent comparable transactions. This reported premium, however, may be deflated by losses on swap contracts:

“The price represents a 1.09x [MAR], which looks cheap at first glance but the multiple could be much higher, at over 1.4, if we include all the marked-to-market losses of the RPI index-linked swap contracts at market value.” – Deutsche Bank, 26 July 2012.

The appropriate MAR is, therefore, uncertain – but is likely to lie in the range 9%-40%. This is consistent with longer term historic evidence. We maintain our view from our 19th June paper that much of the observed premia can be explained by cost of capital outperformance.

In addition, WWU's relative efficiency status suggests its premium should be below the industry average:

“...the low acquisition price reflects the operational performance of the business and a discount for the inflation hedges. In the recent RIIO initial proposals for the next 8 year price control WWU appears to be the least efficient gas operator in the industry. Northern Gas Networks (NGN) CKI's other gas distribution company received cost allowances of 13% less than it requested, WWU received 25%, the sector average is 17%.” – HSBC, 15 August 2012.

Overall, although we note that much commentary from analysts addressed financeability implications for National Grid as a whole rather than the cost of equity for Gas Distribution specifically, there is no evidence of significant concerns over allowed returns from market participants.

2.4. Implications of IQI

The IQI has implications for the cost of equity in two ways. First, the incentive rates or sharing factors (which determine how totex over- or under-spend is penalised or rewarded) influence our assessment of risk. Other things being equal, higher sharing factors equate to higher risk and a higher cost of equity. Second, the IQI and Ofgem's baseline assessment must be calibrated to ensure that companies do not benefit from any riskless reward payments. In other words, the cost of equity allowance assumes that the IQI will be incentive compatible, and any reward payments can be earned only through submitting more accurate cost forecasts or delivering lower outturn expenditure.

Table 2 above presented our assessment of opex and capex risk in light of Ofgem's Initial Proposals in relation to IQI. In addition, an annex at the end of this note provides further analysis of the IQI. This appears to suggest that opex risk has effectively declined, while capex risk has increased – in line with the conclusions in our 19th June paper. In theory, the sharing factors contained in the GD1 IQI appear consistent with our overall assessment of relative risk and a baseline cost of equity allowance of 6.7%. This conclusion is based on our expectation that the IQI is incentive compatible.

In our view there are two reasons why the IQI in GD1 may not, in practice, be incentive compatible. First, the 'truth telling' incentive (the incentive for companies to submit accurate cost estimates) is relatively weak. There is a further (unintended) mechanism by which companies may attempt to influence their IQI returns: if they believe that Ofgem's baseline assessment will take into consideration their estimates, they may attempt to raise that baseline by submitting 'padded' cost estimates. In our view the relative weakness of the truth telling incentive heightens that risk. Our analysis suggests that if companies expect even a marginal revision of Ofgem's baseline in response to their submissions, they are likely to submitted padded estimates.

Second, we note that business plans were on average 13% more costly than Ofgem's assessment of upper quartile costs, and were more costly relative to Ofgem's assessment than in GDPCR. Such a pattern does not seem consistent with the introduction of an effective truth telling incentive. Since Ofgem's benchmarking of efficient costs drew on companies' totex forecasts, it is possible that the baseline has indeed been affected by padding.

This evidence is very difficult to interpret, as ultimately efficient costs are unknown. We acknowledge that the relatively high company IQI ratios may reflect that Ofgem has held down its baseline assessment of costs, despite any padding. In our view, however, there appears to be a material possibility that IQI reward payments are not wholly incentive compatible, and may be a source of positive returns even for firms submitting padded estimates. This would suggest that the cost of equity allowance of 6.7% would need to be revised downwards, in order to ensure that it represents an appropriate baseline upon which to apply IQI rewards and other sources of risk.

3. COST OF DEBT AND NOTIONAL GEARING

We do not comment extensively on the cost of debt or notional gearing in this note. We remain supportive of Ofgem's pragmatic approach to cost of debt indexation. Evidence from historic network debt issuances strongly suggests that the proposed index has been and will continue to be in line with (or slightly above) actual debt costs.

Importantly, an indexed allowance will enable movements in underlying debt costs to be reflected more accurately in allowed revenues, reducing shareholders' risk. We concur with the view expressed by Ofgem in the 16 July City Briefing⁵ that this approach to managing the risk represents an improvement on the old approach. Shareholders have little control over trends in debt costs – although they are able to adjust, to an extent, the timing, maturity profile and nature (e.g. floating or index-linked) of issuances. As a result, Ofgem has previously concluded that a single, five-yearly forecast must include a significant degree of headroom. The reduction of this headroom represents an improvement in efficiency.

The notional gearing assumption is based primarily on an assessment of financeability. We comment on this in more detail in our accompanying note discussing financeability. However, we note here our key conclusion that a relatively high level of gearing is consistent with the stable, low capex nature of gas distribution compared to transmission (and in particular the two Scottish electricity transmission networks).

⁵ Ofgem City Briefing – July 16th 2012 Investor Relations Update.

4. CONCLUSIONS

We see several potential sources of downward pressure on the cost of equity proposed by Ofgem at IP for GD1:

- evidence on individual components of the cost of equity (in particular the risk-free rate) continues to suggest values lower than Ofgem has assumed;
- Ofgem's approach of combining top end estimates of parameters for the risk-free rate (2%) and the MRP (5.25%) is likely to significantly overstate the market cost of equity – our view is that a top end of 7% for the market as a whole is more appropriate;
- market sentiment appears to reflect an expectation of significant outperformance of the allowed WACC; and
- there appears to be a risk that IQI reward payments are not wholly incentive compatible, and may in part be a source of unwarranted positive returns.

Although none of these points fundamentally undermines Ofgem's judgement, that judgement does appear generous. The 6.7% cost of equity allowance is consistent only with the upper end of the available evidence.

ANNEX: ANALYSIS OF THE IQI

Menu regulation and the IQI in theory

Ofgem has previously used specific incentives for cost outperformance, such as rolling incentives. While such mechanisms were well developed, they did little to encourage companies to submit accurate estimates of required expenditure ('truth-telling').

Menu regulation attempts to address both efficient delivery of outputs and truth-telling. The IQI is an example of menu regulation. The IQI provides networks with incentives to: (i) submit efficient forecasts of their costs that are not 'padded'; and (ii) control their actual costs once in the price control period.

The IQI works via a matrix, with three components:

- the level of allowed expenditure;
- a fixed reward of additional income; and
- a sharing factor that is applied to cost under- or over-spend.

These components combine to give a company's total reward. The total reward is determined based on a company's cost forecast (its totex 'bid', expressed as a ratio of business plan costs to Ofgem's assessment of efficient costs) and its subsequent actual expenditure. Fuller details on the IQI mechanics are set out in Ofgem's Handbook for implementing the RIIO model (October 2010).

The IQI in GD1 vs. GDPCR

Without having evidence on the impact of the IQI on returns across GDPCR1, it is very difficult to evaluate how the new IQI mechanism will work. Comparing the IQI matrix for GD1 and GDPCR1 is difficult, as the new matrix covers totex, while for GDPCR1 opex efficiency was incentivised through a separate mechanism. Changes to the setting of the baseline for the matrix would further complicate any comparison, but the baseline continues to relate to the upper quartile.

Ofgem has noted that the increased sharing factor gives a greater efficiency incentive. If sharing factors have indeed increased (and this is not entirely clear), and as risk refers to the volatility of cash flows, the increasing efficiency challenge means that risk has increased slightly relative to GDPCR1. The level of rewards has also changed. According to CEPA analysis, a company bidding and delivering expenditure at the Ofgem baseline will be better off by c.1% of totex. If all companies were to achieve this, total revenue from the IQI mechanism would be £129m greater under GD1 than for GDPCR1.

For example, in Ofgem's cost assessment efficiency analysis, Northern Gas Networks is seen to be relatively efficient.⁶ The size of the IQI reward for bidding and delivering the Ofgem baseline under GD1 for Northern Gas Networks would be close to £40m over eight years for their totex

⁶ Ofgem (2012): 'Initial Proposals – Supporting document – Cost efficiency', p.20

allowances, equivalent to an additional 0.87% per annum return on opening notional equity. Under the GDPCR1 matrix (assuming a stylised network with 60% capex and repex), our estimate of the equivalent returns would be £23m and an additional 0.53% return on opening notional equity.

To understand more on how the IQI mechanism functions, the bids are our best indicator of how the companies have responded to the matrix. Table A2 below shows what actual bids expressed as a proportion of the baseline were for GD1 compared to GDPCR1.

Table A1: Company IQI bids

Network	GDPCR ratio	GD1 ratio
East	105.7	114.1
London	109.3	120.1
NW	110.5	112.5
W Midlands	104.4	108.9
Northern	108.8	106.8
Scotland	111.7	109.8
Southern	115.5	111.3
Wales & West	114.0	118.3
Averages	110.0	112.7

Source: Ofgem GDPCR Financial model, RIIO GD1 Financial model

Most but not all companies have submitted higher bids (relative to Ofgem’s baseline) in GD1 than in GDPCR1. The existence of relatively high bids raises the question of whether bids have been padded, although there may be increased uncertainty around capex. At this point, it is useful to return to the strength of the truth telling incentive – effectively the incentive for a company not to pad its totex bid.

Consider a company expecting to incur costs in line with Ofgem’s baseline (i.e. 100). If such a company were to bid at 100, its return would be equal to 2.49% of totex. Were it to bid at 105, its return would be equal to 2.47% of totex. Although the lower bid delivers slightly greater returns, the difference is small. The lower bid also increases risk (through the higher sharing factor) and may have little chance of influencing Ofgem’s baseline. If, by contrast, a company believes it may be able to affect the baseline by padding its bid, the higher bid may appear attractive. In the above example, a company would only need to anticipate shifting Ofgem’s baseline by enough to deliver an additional 0.02% of totex – a relatively low hurdle. This possibility is discussed further in the following section.

An independent view of the efficient level of costs

The principles of IQI assume that Ofgem reaches an independent view of efficient costs. If companies consider they can influence Ofgem’s baseline estimate, however, there may be an incentive to submit padded cost forecasts. As already noted, by submitting padded forecasts the

companies are able to reduce the risk faced due to the inverse relationship between the sharing factor and totex bid.

The matrix is very sensitive to changes in the baseline once a company has made its bid. Consider the case of a company which expects its actual expenditure to be at 105 units compared to Ofgem's view of 100 units. In the case of a one-shot game, the principles of the IQI matrix mean that the company maximises returns by submitting an accurate bid of 105 units.

If, however, companies expect that Ofgem will revise its baseline estimate after the business plan this principle no longer holds. Consider an example in which Ofgem would respond to a bid of 105 units by revising the baseline to 100.1. A company that expects to produce at a cost of 105 units is now best off by bidding at 115 units (i.e. significantly padding its business plan estimate).

The significance of this is two-fold. Firstly, within GD1, the networks would benefit from the inflated baseline. While the IQI sharing factor would ensure that companies faced an appropriate degree of risk (in terms of cost volatility), the IQI would effectively also deliver an additional, riskless return to shareholders. Secondly, the GD1 IQI and outturn performance will serve as inputs to GD2. Padded business plans may affect the quality of Ofgem's later cost assessments – even if the IQI matrix is incentive-compatible – as there is a reduced efficiency incentive to lower actual expenditure, which may be an input to future cost assessments.

Summary

Our assessment suggests that the benefits to companies of padded business plans may well outweigh the strength of the IQI truth telling incentive. This has implications for the arguments put forward with regards to the cost of equity and cost assessment. The cost of equity allowance is specific to the degree of risk, and assumes that under the IQI (and other incentive schemes), companies are only able to earn reward payments by taking on additional risk (by submitting lower cost forecasts) or by outperformance. If the IQI delivers additional, riskless return due to padding then the cost of equity allowance may as a result be higher than required.

It is therefore important to understand whether Ofgem's baseline assessment may have been influenced by padded business plans. This appears to be a possibility, since Ofgem's benchmarking of efficient costs drew on companies' totex forecasts. The relatively high totex bids – despite slightly stronger incentives than in GDPCR1 – may suggest that companies have submitted padded estimates. Equally, however, the relatively high totex bids may have resulted from a relatively aggressive baseline assessment from Ofgem (although it has stated that, as for GDPCR1, the baseline is intended to represent upper quartile performance). Our overall view is that there is a risk that padded cost estimates have resulted in an inflated baseline. While the evidence is too uncertain to justify revisions to Ofgem's cost assessment or to the IQI matrix, it may be appropriate to consider it a source of slight downward pressure on Ofgem's cost of equity allowance.