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Dear colleague

### **Decision on our methodology for assessing the equity market return for the purpose of setting RIIO-ED1 price controls**

On 6 December 2013, we published our "Consultation on our methodology for assessing the equity market return for the purpose of setting RIIO price controls".<sup>1</sup> Our consultation raised the issue of whether we should change our methodology for assessing the equity market return in light of the approach taken by the Competition Commission (CC) in its provisional determination for Northern Ireland Electricity (NIE) published on 12 November 2013.<sup>2</sup> We held an open workshop on this issue on 7 January 2014, and the consultation closed on 10 January 2014. We have reviewed consultation responses (see Appendix 2) and carried out further analysis of our own (see Appendix 1). This letter sets out the decision that we have reached.

#### **Our decision**

We have decided to give greater weight to the influence of current market conditions in relation to the equity market return. We have therefore changed our central reference point for assessing the distribution network operators' (DNOs) cost of equity for RIIO-ED1 to 6.0 per cent. This represents a 0.3 per cent reduction from the central reference point we used for the business plan assessment, published on 22 November 2013.<sup>3</sup>

In November, we proposed to fast-track the four DNOs owned by Western Power Distribution (WPD). The decision in this letter translates to a 0.3 per cent reduction in the cost of equity that WPD set out in its business plans. It is for WPD to decide whether to accept such a reduction in order to remain in the fast-track process.

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<sup>1</sup> <https://www.ofgem.gov.uk/ofgem-publications/85020/consultationonequitymarketreturnmethodologyletter6dec2013.pdf>

<sup>2</sup> Having notified parties on 8 November 2013. [http://www.competition-commission.org.uk/assets/competitioncommission/docs/2013/northern-ireland-electricity-price-determination/131112\\_main\\_report.pdf](http://www.competition-commission.org.uk/assets/competitioncommission/docs/2013/northern-ireland-electricity-price-determination/131112_main_report.pdf)

<sup>3</sup> <https://www.ofgem.gov.uk/ofgem-publications/84600/assessmentofriio-ed1businessplansletter.pdf>

This reduction would reduce the typical annual household electricity bill in WPD's area, of the distribution component would be about £87 in 2012-13 prices, by about £0.54 over the RIIO-ED1 period (2015-23).

DNOs' revenue allowances also include an assumed cost of debt. This is based on our RIIO cost of debt index, which is updated each year. Using our forecast for the cost of debt index for 2015-16, a 6.0 per cent cost of equity assumption would represent a weighted average cost of capital (WACC) assumption of 3.8 per cent. The equivalent assumption for WPD would be 3.9 per cent. These assumed WACCs are liable to fall slightly in the first years of RIIO-ED1 if interest rates remain low.

Our decision relates to the revenues that DNOs will be allowed to recover from customers over the RIIO-ED1 period (1 April 2015 to 31 March 2023). The established RIIO-T1 and GD1 controls are not affected.

## **Background**

We published our Strategy decision for RIIO-ED1 in March 2013<sup>4</sup>. In it we set out an indicative range for the cost of equity of 6.0-7.2 per cent, and explained that the allowed cost of debt would be determined using a 10-year simple trailing average index.

In their business plans, all of the DNOs proposed a cost of equity assumption of 6.7 per cent, with the exception of Electricity North West Limited which proposed 6.8 per cent.

On 22 November 2014, we published our assessment of the business plans submitted by DNOs. Our publication explained that we considered that only the business plans of WPD's four DNOs were of sufficiently high quality to be fast-tracked.

In evaluating the business plans, we used a central reference point for the cost of equity of 6.3 per cent. We identified that, while the cost of equity is necessarily an uncertain estimate, the balance of uncertainty at that time was on the downside relative to DNO assumptions. Our central reference point was in particular informed by our analysis of issues relating to the calculation of the Retail Prices Index (RPI), which we set out in Appendix 2 of our December consultation on the equity market return.

In light of this central reference point, we assessed that DNOs' cost of equity proposals would only be satisfactory for a company that commits itself to especially tough cost efficiency assumptions. Our assessment was that only WPD's plans would deliver the cost efficiencies consistent with their financial proposals.

We therefore proposed to fast-track WPD. We published draft determinations for WPD on 22 November 2013, alongside our assessment of DNOs' business plans.<sup>5</sup>

We published our assessment ten days after the CC published its provisional determination for NIE. The CC's view is important because its successor, the Competition and Markets Authority, is the appeal body for the RIIO-ED1 settlements. In light of this, we decided to issue a consultation on our methodology for assessing the equity market return. Our draft determination for WPD was clear that our proposal to fast-track WPD's plans was in part conditional on the outcome of this consultation. We stated that if we decided to alter our equity market return methodology to take account of the CC's approach, then we would need to take this into account in our fast-tracking decision. In so doing, we would provide WPD with the opportunity to accept an adjusted cost of equity as part of its fast-track settlement. We would calibrate this adjustment to reflect only the change in policy.

The equity market return is a key parameter for estimating of the cost of equity. In the past, we have focused on long-term evidence of past equity returns in assessing the equity

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<sup>4</sup> <https://www.ofgem.gov.uk/ofgem-publications/47067/rjioed1decoverview.pdf>

<sup>5</sup> <https://www.ofgem.gov.uk/ofgem-publications/84602/draftdeterminationsmaster.pdf>

market return. However, in its provisional determination for NIE, the CC placed greater weight on contemporary market evidence. Based on this approach, the CC came up with a significantly lower estimate for the equity market return than regulators have typically used in the past.

Some other regulators, notably the CAA and Ofwat, have already taken the CC's views into account.

In our consultation letter, we explained that applying the CC's estimates of the equity market return would imply a cost of equity of 5.5 per cent for DNOs – a reduction of 0.8 per cent compared to the central reference point we used to test DNO business plans. However, we identified a range of issues that needed to be considered, including the implications of such a change for risk, incentives and financing.

## **Our analysis**

We have reviewed the points made by respondents to our consultation. A summary of responses along with our views on the issues raised can be found in Appendix 2.

Alongside our review of consultation responses, we have also carried out further analysis of our own. We summarise this analysis below, and provide more detail in Appendix 1.

Our historical approach of basing our assessments of the equity market return on the long-term history of equity returns was informed by a study carried out for the UK economic regulators in 2003 by Miles, Mason & Wright (Smithers & Co). Using their longer-term approach, Smithers & Co recommended a range of 6.5 to 7.5 per cent for the equity market return (based on an arithmetic average of past equity returns).

As a result of placing greater weight on contemporary market evidence, the CC's provisional determination on NIE suggested that 6.5 per cent should be treated as an upper limit to the equity market return. The CC stated that the weight of evidence tended to support numbers between 5.5 and 6.5 per cent.

We commissioned Stephen Wright, Professor of Economics at Birkbeck College and one of the authors of the 2003 study, and Andrew Smithers to advise us on the CC's approach to the equity market return. We have published their report alongside this letter.<sup>6</sup> Their view is that the long-run history of achieved returns remains the best approach to assessing the equity market return. Their report updates the long-term analysis of equity market returns in the Smithers & Co report to include additional years of data. Based on this updated analysis, they suggest that a downward adjustment of 40 basis points in the long-term equity market return is the *most* that can be warranted in light of more recent data. (This is additional to our adjustment for the RPI formula effect.)

Nevertheless, while the equity market return may remain relatively stable, much of the CC's analysis was informed by current market conditions and, in particular, a sustained period of relatively low risk-free rates. We note that a low risk-free rate will reduce the cost of equity for relatively low systematic risk businesses, even if the equity market return were assumed to be constant. Although we adopted an equity beta range of 0.9 to 0.95 in our Strategy decision, we noted that observed market betas for comparator companies are lower than this.<sup>7</sup> This indicates that the market interprets regulated networks as having relatively low systematic risk. Analysis of forward yield curves suggests that the market currently expects the risk-free rate to remain significantly below the range we used in our Strategy decision for the duration of RIIO-ED1. This means that the cost of equity is likely

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<https://www.ofgem.gov.uk/publications-and-updates/consultation-our-methodology-assessing-equity-market-return-purpose-setting-riio-price-controls>

<sup>7</sup> <https://www.ofgem.gov.uk/ofgem-publications/48160/gd1financeabilitystudydec12.pdf>

to be more sensitive to current market conditions than we had previously assumed, even with a relatively stable equity market return.

We therefore consider that there are a number of factors pointing towards a lower cost of equity for DNOs, in large part reflecting current market conditions as analysed by the CC. Our analysis and advice highlight alternative interpretations of current market conditions, although they point our assessment of the cost of equity in the same downwards direction.

As a result, we are changing our methodology to give greater weight to the influence of current market conditions in relation to the equity market return, specifically in relation to our assessment of its separate components.

The cost of equity assumption needs to be considered alongside that for the cost of debt. In its provisional determination for NIE, the CC allowed for NIE's embedded debt costs. Under our RIIO framework, the allowed cost of debt is determined year-by-year using a ten-year trailing average of a market index. This approach makes no allowance for the cost of embedded debt where it exceeds the index-based benchmark. If interest rates remain low, our cost of debt index is liable not to cover the embedded debt costs of DNOs who raised more expensive and longer term debt further back in the past.

Bearing all these factors in mind leads us to reduce our central reference cost of equity by 0.3 per cent to 6.0 per cent. This is the bottom of the range for the cost of equity we set out in our Strategy decision.

A 6.0 per cent cost of equity is 0.3 per cent lower than the central reference point of 6.3 per cent that we used to assess the business plans. For the four WPD DNOs proposed for fast-track, this translates to a 0.3 per cent reduction in the cost of equity included in their business plans. This is subject to the "make good" provision proposed for any fast-track company's licence. It is for WPD to decide whether to accept such reduction in order to remain in the fast-track process.

### **Implications for slow-track**

We are minded to apply the 6.0 per cent central reference point at slow-track. In our November document, we acknowledged that our consultation on the equity market return created uncertainty over what slow-track companies should assume for their revised business plans. We stated that for the purpose of revising their plans DNOs should assume that our methodology for the equity market return would remain unchanged. However, we also stated that they should consider what elements of their plans they would need to change should Ofgem revise its methodology.

Hence, slow-track companies should already have thought through the effect of a reduction in the cost of equity on their revised business plans. We do not currently consider this reduction will lead to fundamental financeability issues. If DNOs believe it is appropriate or necessary to adjust their financing arrangements to accommodate a reduced cost of equity, then we expect them to provide further narrative in their revised business plans.

Our consultation and analysis have identified a number of issues which we plan to explore further in the longer term. Hence, over the RIIO-ED1 period, we will carry out a programme of work to examine these issues in preparation for future RIIO price reviews. This longer-term work will consider in more detail the appropriate methodology to employ for the equity market return, as well as looking at risk issues including our beta assumption. Within this longer-term work, we will also consider whether it would be appropriate to introduce an index for the cost of equity in future RIIO price reviews.

## **Next steps**

WPD has until 21 February 2014 to confirm whether it accepts a reduction of its cost of equity assumptions to 6.4 per cent. We expect to publish our fast-track decision on 28 February 2014.

Slow-track companies are due to submit their revised business plans to us on 17 March 2014 and will publish them on their websites before the end of March. Subject to our continuing review of the evidence prior to our conclusions on RIIO-ED1, we are minded to use the central reference point for cost of equity of 6.0 per cent in our draft determinations for slow-track companies, which we expect to publish in July 2014.

Yours faithfully



**Hannah Nixon**  
**Senior Partner, SG&G: Distribution**

# Appendix 1: Analysis supporting our decision

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## Our historical approach

1.1. Our established methodology for assessing assumptions for the cost of equity is based on the view that the most objective evidence for prospective market returns is the level of returns achieved by investors in equity markets over the longer term, going back as far as the start of the 20th century or even earlier in the 19th century. We take this history-informed view of the prospective market return and adjust for the level of risk in network businesses relative to the market as a whole to estimate the returns that might be reasonably required by equity investors in network businesses.

1.2. Our methodology has been informed by a study carried out for the UK economic regulators in 2003 by Miles, Mason & Wright (Smithers & Co)<sup>8</sup> which advised that the equity market return is relatively stable over time. Smithers & Co estimated a range of 6.5 per cent to 7.5 per cent for the equity market return (based on the arithmetic average of historical returns). In previous price reviews, Ofgem's assessments of the equity market return have remained within this range.

1.3. Consistent with good regulatory practice, we generally seek to avoid unnecessary subjectivity in our assessments. Basing our view of the prospective equity market return on the longer term history for equity market returns has helped to achieve this goal, since it has allowed us to base our assessment on objective historical data.

## CC's approach for NIE

1.4. In its provisional determination for NIE, the CC gave more weight to contemporary evidence. The CC reviewed a number of sources of evidence for prospective market returns, and concluded that the equity market return is likely to be lower than the range originally estimated by Smithers & Co. The CC suggested that 6.5 per cent should be treated as an upper limit to the market return, and stated that the weight of evidence tended to support numbers between 5.5 and 6.5 per cent.

1.5. Our December consultation provided further detail on the evidence basis for the CC's estimate of the equity market return. A factor that appears to be important in the CC's analysis is that the risk-free rate has been exceptionally low for a sustained period of time. The CC appears to take the view that this has suppressed equity investors' expectations for equity market returns in the future.

1.6. The CC's view is important because its successor, the Competition and Markets Authority, is the appeal body for the RIIO-ED1 settlements. In its response to our consultation, Consumer Futures highlights its view that it would be damaging to regulation if regulators and the appeal body differed on fundamental issues.

1.7. We note that other regulators have already taken on board the CC's thinking. In particular:

- In its notices of the proposed licences for Heathrow and Gatwick airports, the Civil Aviation Authority (CAA) reduced its point estimate of total market returns from

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<sup>8</sup> <https://www.ofgem.gov.uk/ofgem-publications/50794/2198-jointregscoc.pdf>

6.75 per cent (the estimate in its final proposals) to 6.25 per cent, a reduction of 50 basis points.<sup>9</sup> This reduction was explicitly to take account of the CC's provisional determination on NIE.

- Ofwat cited the CC's views in its risk and reward guidance which it published in January 2014.<sup>10</sup> Ofwat proposed a range for the equity market return of 6.25 to 6.75 per cent, with a point estimate of 6.75 per cent.

## Advice from Stephen Wright and Andrew Smithers

1.8. We commissioned Stephen Wright and Andrew Smithers to advise us on the issues raised by the CC's approach to assessing the equity market return. In their report, Stephen Wright and Andrew Smithers argue that the evidence base for an assumption that the equity market return moves up and down with the risk-free rate is not strong. They suggest that the equity risk premium has some counter-cyclical influences and that it remains reasonable to assume that the overall market return is relatively stable over time.

1.9. They also suggest that there is no straightforward way of incorporating contemporary market evidence into estimates of the equity market return, because the equity market return relates to the expectations of investors and these are inherently unobservable.

1.10. Hence, Stephen Wright and Andrew Smithers advise that focusing on the long-term history of achieved returns remains the best approach to estimating the equity market return. Working within this framework, they have updated the long-term analysis of equity returns in Smithers & Co to take account of the additional years of data that are now available. On the basis of this updated analysis, they advise that a downward adjustment of 40 basis points to the equity market return is the *most* that can be justified. They consider an adjustment of 25 basis points would be cautious. This would be additional to the adjustment in respect of RPI which we reflected in our central reference point of the cost of equity in our November 2014 assessment.

1.11. We remain open to the possibility that prospective market returns may differ from the historic returns that have been achieved by investors in the past. For example, this could be due to a structural and enduring break in market conditions, as suggested by Consumer Futures in its response to our consultation. Alternatively, it has been suggested by economists Elroy Dimson, Paul Marsh and Mike Staunton (DMS) that equity investors in the 20th century may have benefitted from higher than expected returns,<sup>11</sup> in which case the history of achieved returns may overstate expectations of future returns. However, we recognise the need to be cautious about placing weight on these hypotheses given that there is no consensus on these issues.

## Impact of low risk-free rate on relatively low-risk companies

1.12. Even if the equity market return is unchanged, placing more weight on contemporary market data implies a lower cost of equity for relatively low risk companies during periods when the risk-free rate is low. This is because, for businesses that are perceived as having relatively low levels of systematic (market-related) risk, the returns required by investors holding these assets will be more influenced by the returns available to investors on risk-free assets than by expected returns for the equity market as a whole.

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<sup>9</sup> Notice of proposed licence for Heathrow: <http://www.caa.co.uk/docs/33/CAP%201138.pdf>

Notice of proposed licence for Gatwick: <http://www.caa.co.uk/docs/33/CAP%201139.pdf>

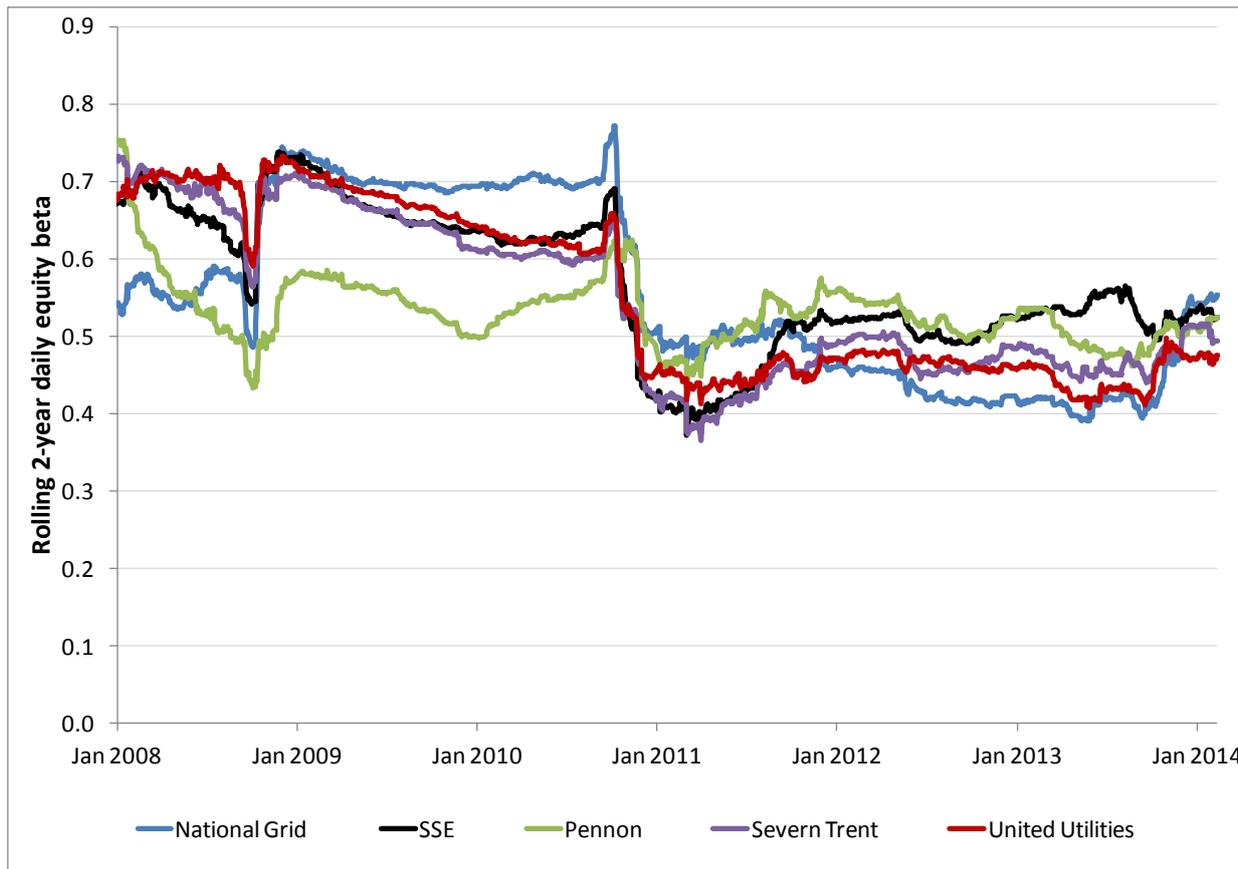
Technical appendix on cost of capital: <http://www.caa.co.uk/docs/33/CAP%201140.pdf>

<sup>10</sup> [http://www.ofwat.gov.uk/pricereview/pr14/gud\\_tec20140127riskreward.pdf](http://www.ofwat.gov.uk/pricereview/pr14/gud_tec20140127riskreward.pdf)

<sup>11</sup> 'Triumph of the Optimists', Princeton University Press, October 2001

1.13. The RIIO Financeability Study that we published in December 2012 presented evidence that the underlying beta for regulated networks may be no higher than about 0.5. The study highlighted two specific and large crisis-related market events in the last decade when there was a strong but short-lived covariance between movements in the market and share prices in the few remaining regulated networks listed on the stock exchange. These events were responsible for some relatively high observed betas. Taking account of short-lived response of network shares to these two events, the study showed the underlying betas observed for the network companies remained broadly around or below 0.5. As shown in Chart 1 below, observed betas for the remaining regulated network companies have continued at around this level through 2013.

**Chart 1: Equity beta estimates for comparator companies**



Source: Bloomberg

1.14. We note that these remaining listed regulated network companies have gearing ratios that are broadly consistent with the notional gearing ratio of 65 per cent we are using for RIIO-ED1.

1.15. In our Strategy decision for RIIO-ED1, we used a beta range of 0.9 to 0.95 to produce our initial range for the cost of equity. The allowances for the cost of equity proposed in the DNO business plans implied an equity beta of about 0.9.

1.16. However, relatively low observed betas imply that the cost of equity for regulated networks is likely to have been influenced by the exceptionally low risk-free rates that we have experienced in recent years.

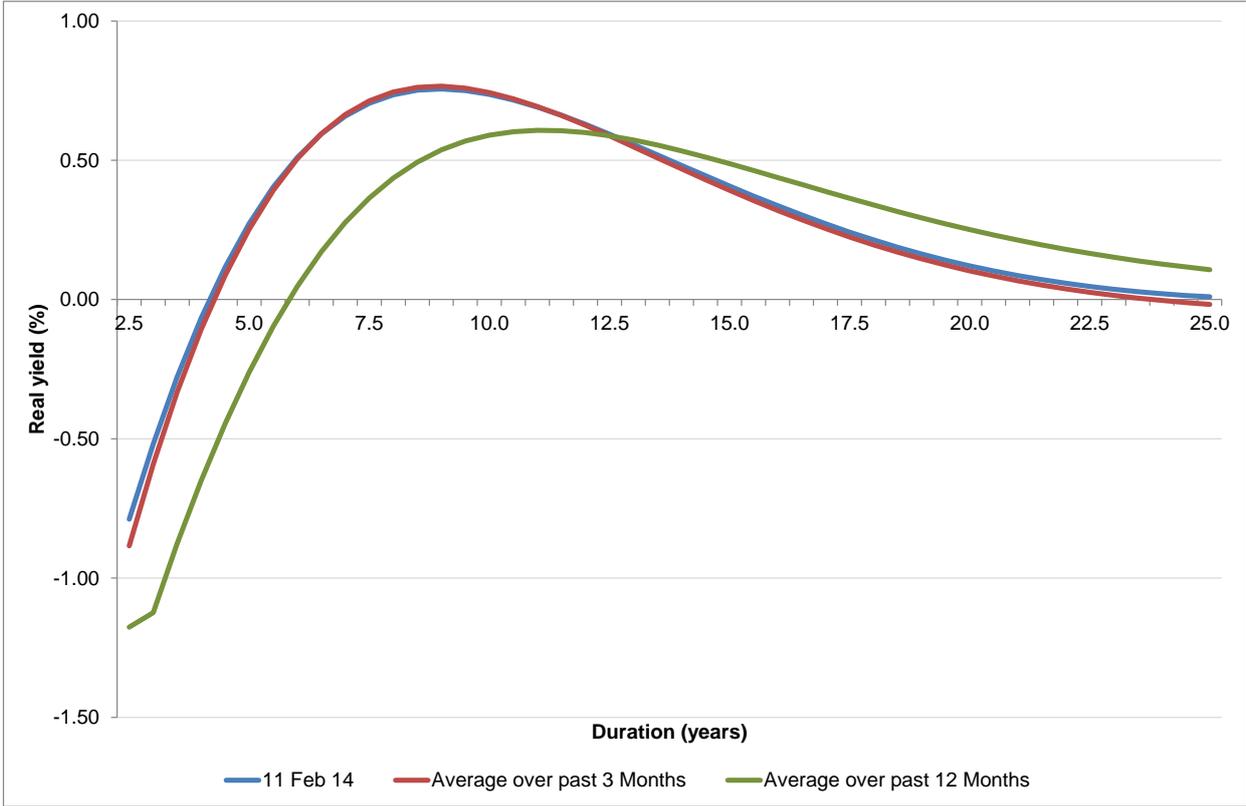
1.17. In our Strategy decision, we quoted a range for the risk-free rate of 1.7 to 2.0 per cent reflecting our long-term view. As explained in our consultation on the equity market

return, we subsequently gave more detailed consideration to the uncertainties in our estimate and in particular to the impact of the RPI formula effect. The formula effect has led to an enduring increase of around 0.4 per cent per annum in the RPI due to a problem with the calculation methodology, leading to it being de-designated as a National Statistic. This statistical artefact has implicitly led to a corresponding reduction in the yield or cash flow return that investors require on index-linked assets. After adjusting for this effect in RPI, our previous range for the risk-free rate becomes 1.3 to 1.6 per cent.

1.18. In interpreting market evidence, we need to take account of the fact that we are setting the cost of equity for a period in the future. The key question for us is to what extent we can assume that risk-free rates will remain lower than our previous range, for the duration of the eight-year RIIO-ED1 price control period.

1.19. The evidence from forward yield curves in the gilt market is that the risk-free rate is expected to rise during the period. This is illustrated by Chart 2 below, which shows the real interest rates for future periods that are implicitly incorporated within today’s spot interest rates. Focusing on the most up to date data (shown by the lines labelled ‘11 Feb 14’ and ‘Average over past 3 Months’), the implied forward rate rises to a peak of around 0.7–0.8 in nine years time, before declining again.

**Chart 2: UK implied real forward curve**



Source: Bank of England

1.20. Hence, the latest market evidence suggests that the risk-free rate over the RIIO-ED1 control period is unlikely to be as high as our previous range (after adjusting for the RPI formula effect) of 1.3 to 1.6 per cent.

1.21. This suggests that placing more weight on contemporary market evidence (specifically on the risk-free rate) would reduce our estimate of the cost of equity for relatively low risk equities, including DNOs, even if the equity market return is unchanged.

## Summary of evidence for lower cost of equity

1.1. The discussion so far has highlighted a number of different mechanisms suggesting that the cost of equity for DNOs should be lower when more weight is placed on recent data. In particular:

- the CC's analysis concludes that low risk-free rates have reduced the equity market return
- the report by Stephen Wright and Andrew Smithers questions the CC's interpretation but finds that updating the long-term analysis of equity returns in Smithers & Co might justify a reduction in the equity market return
- our analysis suggests that even if the equity market return is unchanged, placing more weight on current market data implies a lower cost of equity for DNOs given relatively low exposure to systematic risk implied by the observed betas for comparator companies.

1.2. In the light of this, within RIIO-ED1 we consider it is appropriate to recognise that placing more weight on recent data will reduce the cost of equity, regardless of which of the above mechanisms is considered.

1.3. We also consider that more comprehensive work is required in the longer term to explore these issues more fully. Hence, we propose to carry out a programme of work during the RIIO-ED1 period to examine these matters in more depth in preparation for future RIIO price reviews.

## Consideration of cost of equity index

1.22. We are concerned to ensure that the approach we take to estimating the cost of equity at successive reviews avoids unnecessary subjectivity. We can objectively observe the history of equity market returns (and assume they will remain relatively stable in the longer term). We can also objectively observe the risk-free rate, and market evidence can inform forecasts of the risk-free rate over a control period. We recognise that the prospective equity risk premium is difficult to observe directly without a more subjective assessment of a wide range of evidence.

1.23. In adopting a methodology that gives greater weight to contemporary market evidence, which inherently varies over time, we believe it would be desirable to have an objective basis for updating our cost of equity estimates. This points towards use of risk-free rate information rather than periodic reassessments of the equity risk premium.

1.24. One relatively objective way of taking account of contemporary market data on the risk-free rate would be to adjust the allowed cost of equity year-by-year to reflect movements in index-linked gilt yields. This would have the advantage of not requiring us to take a view on how the risk-free rate may evolve over a regulatory period, since market movements would automatically feed into the allowed cost of equity.

1.25. Under RIIO, we already use an index approach for the cost of debt. A cost of equity index could potentially be updated annually using similar procedures to those we currently use for the cost of debt.

1.26. However, we recognise that the introduction of a cost of equity index at this stage during RIIO-ED1 would be a substantial change to our regulatory framework. We consider that more extensive analysis and consultation would be required to develop the details of a suitable cost of equity index.

1.27. Hence, we have concluded that it would not be appropriate to introduce a cost of equity index for RIIO-ED1.

1.28. We expect to explore the concept in the longer term programme of work that we plan to carry out during the RIIO-ED1 period.

## **Recognition of volatility in assessments**

1.29. Our discussion has highlighted that low risk-free rates might either be considered as directly affecting the equity market return (which appears to be the CC's thesis) or else as affecting the cost of equity for relatively low risk companies even if the equity market return itself is unchanged.

1.30. In either case, placing more weight on recent market data on the risk-free rate means that there may be somewhat greater variation in cost of equity assumptions from control period to control period.

1.31. Whether we make ex ante estimates of the risk-free rate based on contemporary market evidence or adopt an index-based approach, we recognise that altering our methodology will mean that the allowed cost of equity for relatively risk-free businesses will be influenced to a greater extent than in the past by movements in the risk-free rate. Our analysis indicates that there is naturally some volatility in the cost of equity for these businesses, and our proposed methodology reflects this.

1.32. It would be possible to avoid any such volatility by using long-term estimates of both risk-free and equity risk premium components of the equity market return. However, since privatisation regulatory estimates of the risk-free rate have been as high as 3-4 per cent (twenty years ago), while risk-free rates are now close to zero. Adopting a stable long-term view of the risk-free rate could lead to long periods where our cost of equity assumptions are significantly out of line with market realities. We consider that our proposed methodology avoids this risk.

## **Cost of debt**

1.33. While we believe it is appropriate to reduce our estimate of the cost of equity for DNOs, we acknowledge that the CC's position on the cost of equity in its provisional determination should be viewed in light of its position on the cost of debt.

1.34. The CC allowed for NIE's embedded debt costs in calculating the allowed cost of debt for NIE. We recognise that the cost of NIE's legacy debt has been influenced by factors specific to the company, since its bonds have traded at substantially higher yields than those of equivalent regulated businesses in GB for many of the last few years.

1.35. The CC recognised that a cost of debt index had the advantage of giving companies incentives to reduce the cost of their debt to outperform the index. By contrast, it acknowledges that allowing for NIE's actual embedded debt costs provided weaker incentives.

1.36. Despite this, the CC chose not to introduce a cost of debt index for NIE on the grounds that it was a policy decision that required pre-notification in order to allow the regulated company to make appropriate financing decisions.

1.37. Clearly, the same issue does not arise in RIIO-ED1, given that DNOs have already been notified that we will be using a cost of debt index and that policy was subject to an extensive consultation process. Hence, we do not consider that the CC's provisional determination on NIE has any implications for our continued use of a cost of debt index under RIIO.

1.38. We recognise that a policy of allowing for the costs of legacy debt protects companies from some market timing and inflation risks (risks that investors can diversify by investing in bonds). On the other hand, a cost of debt index protects companies from market risks on new debt issues within a price control period.

1.39. Nevertheless, we acknowledge that the CC's approach on the cost of debt means that it was taking a decision on the cost of equity in a materially different context. We further acknowledge that some DNOs do have a large burden of legacy debt with rather longer maturity periods than the 10 years inherent in our RIIO cost of debt index. If interest rates remain low in RIIO-ED1, some DNOs would experience a material divergence between their actual interest costs and the interest costs allowed for under the CoD index. Some are likely to experience a material divergence in any event due to a large value of outstanding bonds issued at a time of relatively high interest rates in the 1990s.

1.40. Taking this wider context into account, we believe it would be inappropriate to adjust cost of equity assumptions by the full 0.8 per cent (from our previous central reference point of 6.3 per cent to 5.5 per cent) that would be implied by a direct translation of the CC's methodology on the equity market return.

## **Regulatory stability**

1.41. We note that maintaining regulatory stability is important to reassure investors in the sector. In our Strategy decision, we stated that our range for the cost of equity was 6.0 to 7.2 per cent. We consider that there are strong advantages in terms of regulatory consistency in keeping within this range.

## **Financeability issues**

1.42. We recognise that our new methodology is likely to lead to some volatility in cost of equity assumptions, from control period to control period. Inherently, this will lead to some underlying volatility in the cashflow-based credit metrics that rating agencies monitor, other things being equal.

1.43. We recognise that the cashflow positions of the slow-track DNOs may already be under some stress at a time of relatively high RPI inflation. We have carried out indicative modelling, assuming that companies start the RIIO-ED1 period with gearing at our assumed notional level of 65 per cent. This modelling suggests that, before any reduction in the cost of equity from our previous central reference point of 6.3 per cent, some companies may have some difficulty maintaining the post maintenance interest cover ratio (PMICR). This credit metric is considered key by two of the main rating agencies, at levels the rating agencies consider acceptable.

1.44. Reducing cost of equity assumptions to 6 per cent would lead to some further deterioration in PMICR. Our modelling suggests that, on a notional basis, DNOs should still be able to maintain credit ratings within investment grade. However, we recognise that companies with relatively expensive old debt, the effective value of which exceeds the debt principal, would be under particular pressure.

1.45. Given our analysis of the cash flow risks that DNOs are exposed to under RIIO and the inherent attractiveness of RPI-indexed assets, we continue to consider that a gearing ratio of 65 per cent, in principle, should be consistent with investment grade ratings. We expect to have a continuing dialogue with the rating agencies on the risk issues, but we acknowledge that they may legitimately be concerned about deterioration in cash flows arising from reduced cost of equity assumptions. We are therefore open to the possibility that some companies may need to enter into a programme of degearing to reinforce their financial positions. We would expect any such degearing to be achieved through a period of reduced dividends although companies may wish to raise new equity instead.

1.46. If slow-track companies consider that they would face financeability problems, then we would expect them to set out how they plan to address these problems in their revised business plans.

## Appendix 2: Summary of consultation responses

2.1. This appendix summarises the responses from stakeholders that have helped to inform our decision. We received 12 non-confidential responses to the consultation. These responses were from Oxera (on behalf of the Energy Networks Association), six DNOs (including WPD), National Grid, Wales & West Utilities, Centrica, a UK utility equity analyst and a consumer group, Consumer Futures. Three DNOs and Centrica provided reports from economic consultants as part of their response.

2.2. We summarise these responses under the five questions that we asked in our consultation. We also summarise what respondents said about the RPI formula effect.

### A direct translation of the Competition Commission's estimates to DNO cost of equity assumptions

#### Summary of consultation

2.3. We calculated that a direct translation of the CC's estimate of the equity market return would reduce DNO cost of equity assumptions by approximately 0.8 per cent, being the difference between our central reference point for testing DNO business plans of 6.3 per cent and the result of 5.5 per cent shown in Table 1 below.

**Table 1: Direct translation of the CC's estimate**

	Using existing methodology		CC estimate for equity market return	
	DNO proposals	BP assessment baseline	CC provisional determination: NIE	BP assessment baseline adjusted
Gearing	65.0%	65.0%	50.0%	65.0%
Equity market return	7.25%	6.85%	6.00%	6.00%
Risk-free rate	2.00%	1.60%	1.25%	1.25%
Equity risk premium	5.25%	5.25%	4.75%	4.75%
Asset beta*	0.38	0.38	0.42	0.38
Debt beta	0.10	0.10	0.10	0.10
Equity beta	0.90	0.90	0.75	0.90
CoE	6.70%	6.30%	4.80%	5.50%

Source: Ofgem interpretation of CC provisional point estimate cost of equity for NIE  
 \* Note: A DNO asset beta has been inferred from CC's debt beta assumption for illustrative purposes only

2.4. We did not consider the CC's analysis qualified our assessments of DNO betas. This was because the CC drew from Ofgem's beta assessments as its evidence base for its own beta estimate.

2.5. We also did not consider the CC's estimate of NIE's cost of debt had a material impact on our cost of debt methodology or on our assessments of other components of the cost of capital. This was because its discussion of the cost the debt was focused on issues specific to the company and to Northern Ireland.

2.6. We consulted on the following question:

*Do you agree with our direct translation of the CC's equity market return estimate to DNO cost of equity assumptions?*

## **Summary of responses**

2.7. The majority of responses from the DNOs and their consultants disagreed with our translation of the CC methodology.

2.8. They argued that the CC has assumed an asset beta range of 0.35 to 0.45 for GB utilities. Therefore, if Ofgem's translation was consistent then it would assume the mid-point estimate of 0.4 which implies a higher equity beta than the 0.9 equity beta used in the translation.

2.9. One respondent argued against our translation of the same debt beta as the CC decision. They consider this to be in opposition to the analysis that DNOs will have to degear to maintain credit rating ratios which would increase interest rate risk and thus increase the debt beta.

2.10. Additionally, several respondents disagreed with the appropriateness of using the mid-point as a point estimate. They refer to previous CC decisions, where a point estimate at or near the top end of the range was chosen.

2.11. Both Centrica and National Grid agreed with the mechanics of our translation, but they did not agree with the inputs being utilised.

2.12. The other respondents either did not comment on the mechanics of our calculation or disagreed with it on the basis that the cost of equity cannot be viewed in isolation and therefore we also needed to consider the CC's views on the other WACC parameters.

2.13. The focus of the majority of responses to this question was whether the CC's equity market return methodology is a valid methodology to adopt.

2.14. The responses from the DNOs and their consultants, other network companies and a UK utilities equity analyst disagreed with the CC's equity market return estimate methodology. The major arguments they put forward are outlined below:

- **The CC is yet to publish its final determination on NIE**

2.15. Numerous respondents noted that the CC's November 2013 provisional determination was a consultation document in which the CC set out its current thinking. The CC may yet adjust its thinking in its final determination in response to submissions from stakeholders, including NIE and investors, and therefore any change to the RIIO methodology may be premature.

2.16. *Our assessment is evidence based, not determined by the CC. As our appeal body, we give due recognition to evidence the CC considers material but our current assessment is not contingent on the outcome of the CC inquiry process.*

- **Issues with assessing contemporary evidence**

2.17. On the whole, the responses to this consultation disagree with the CC's logic that there is robust recent evidence that justifies changing the established UK regulatory

methodology of using long term historical data to estimate equity returns. A focus on contemporary market evidence is not viewed as a robust approach for estimating the equity market return, especially as capital markets continue to be heavily influenced by macroeconomic policy, which introduces additional volatility and uncertainty.

2.18. For example, Frontier Economics contend that whilst the CC's choice of risk free rate reflects current low gilt rates, these low interest rates are largely due to a combination of investors substituting from risky assets to low-risk assets in the face of greater market uncertainty (the so-called 'flight to safety phenomenon') and the quantitative easing (QE) policies employed by the Bank of England. These factors are likely to be temporary and therefore any unwinding of the flight to safety and QE would result in government bonds yields increasing with a greater likelihood that this will happen in the longer RIIO-ED1 period (2015-23) compared to the NIE price review which ends in 2017.

2.19. In addition, many of the DNOs and their consultants argue that short term market conditions tend to move towards long term averages over time (ie theory of mean reversion). An extensive body of literature supporting mean reversion has been cited by respondents to support claims that the CC's focus on contemporary market evidence is not as robust as the existing Ofgem approach.

2.20. Furthermore, a short-term approach to estimation of the equity market return would inevitably introduce systematic risk to the regulated business, as the allowed returns would be more in-line with the market returns. This would increase beta, and therefore imply a higher cost of capital.

2.21. *We draw a clear distinction between subjective assessments and objective evidence-based determinations. We have therefore avoided placing too much weight on forward-looking assessments of the equity market return.*

- **The cost of equity should not be viewed in isolation**

2.22. All DNOs, their consultants and an equity analyst stated that it would not be robust to translate the CC's equity market return estimate in its provisional determination for NIE across to DNOs without consideration of differences between the regulatory frameworks and in the approach taken to the overall WACC.

2.23. The CC's provisional determination for NIE estimates a higher asset beta, a lower gearing and a fixed allowance, rather than the indexation method, for the cost of debt. DNOs therefore believe that any decision on the cost of equity cannot be considered independently and must be considered in the context of its interplay with other WACC parameters.

2.24. WPD has referred to paragraph 13.103 of the CC report for NIE as reinforcing this view. The paragraph states:

"This is because: (a) values of debt and equity are related as claims on the same underlying assets and (b) robust WACC estimates require consistency in parameters between debt and equity."

2.25. Furthermore, respondents have also argued that Ofgem's RIIO framework and the framework set by the Utility Regulator in Northern Ireland are significantly different. RIIO was specifically designed to enable GB electricity network companies to meet their investment challenges which are of an unprecedented scale and significantly different (in both scale and nature) than those faced by NIE.

2.26. All respondents agree that if Ofgem were to adopt CC's cost of equity methodology it would also need to adapt the cost of debt methodology to produce a consistent WACC.

2.27. *While we consider the cost of equity and cost of debt issues are separable, we acknowledge the importance of interpreting the CC evidence in context. Our approach seeks to ensure our overall WACC assumptions are appropriate.*

▪ **Different timeframes for the NIE and RIIO-ED1 price reviews**

2.28. There was a consensus amongst DNOs and other network companies that given the significant difference in the length of the price review periods between NIE (2012-17) and RIIO-ED1 (2015-23), a direct translation of the CC's provisional methodology does not seem appropriate.

2.29. The CC's provisional determination was based on current forward looking market data and therefore given the significantly longer RIIO-ED1 period compared to the NIE price control the respondents do not consider it appropriate to apply the CC methodology to RIIO-ED1.

2.30. *We recognise that the RIIO-ED1 period is very different to NIE's. Our methodology therefore needs to accommodate this but this does not necessarily imply a rejection of CC's methodology.*

▪ **Relationship between risk free rate and equity market returns**

2.31. A number of respondents disagreed with the CC's assertion that a decline in the risk free rate should correspond to lower equity returns. NERA dispute this relationship and assert that it is not supported by any new academic evidence and is contrary to the 2003 report by Smithers and Co on which the CC has previously relied.

2.32. The UK utility equity analyst commented that, based on his analysis, returns on equity have remained stable during this period of low interest rates whilst there has been a material increase in equity risk premium and/or beta.

2.33. *Our advisors argue and we accept that the equity market return does not necessarily decline with the risk free rate.*

▪ **The CC have selectively chosen data and empirical evidence which biases the cost of equity downwards**

2.34. Several of the responses from the economic consultants have provided examples to argue that the CC has made selective use of data and empirical evidence which has biased its estimate of the cost of equity downwards.

2.35. Frontier Economics notes that of the historical data sample utilised to support its equity risk premium range of 4 to 5 per cent, only four of the 40 estimates of equity risk premium have a value of 5 per cent or less, while 27 of the estimates cited take on a value of 5.5 per cent or higher.

2.36. NERA has identified alleged inconsistencies in the CC's methodology for deriving forward looking estimates of the total market return. The CC have used contemporary evidence on the risk free rate for its estimate of NIE's cost of equity but it has not used

contemporary evidence on the equity risk premium. For example, it has ignored Bloomberg and Bank of England estimates of the equity risk premium based on forecast dividend growth rates, but has instead relied on estimates of the equity risk premium from sources such as Fama and French (2002) and DMS (2013) which are largely based on long run historical data.

2.37. Furthermore, Frontier Economics provide additional examples of academic literature which suggest the equity risk premium could be much higher than DMS suggest, including a recent survey of 49 UK finance academics which found that the average view of the equity market return is 7.7 per cent.

2.38. *We acknowledge the concerns but cannot comment on how the CC has formed its conclusions. We do wish to minimise dependence on subjective reassessments of evidence.*

- **Adopting the CC's approach represents a major shift away from established regulatory precedent**

2.39. The consensus view amongst network company respondents was that Ofgem's RIIO framework has been developed and debated through extensive consultation across the ED1, GD1 and T1 processes over the past three years and that there has been no new evidence or significant developments in capital markets that would warrant a change in methodology for assessing equity market returns this late in the RIIO-ED1 process.

2.40. Respondents indicated that a change in regulatory practice at this point in the RIIO-ED1 process is likely to cause significant unease across the entire UK network utility sector, resulting in an increase in perceived regulatory risk and serving to discourage investment in the electricity distribution sector. Some respondents suggested that the increased regulatory uncertainty would be likely to increase the cost of capital of the sector in the long run.

2.41. A number of respondents also remarked that an adoption of the CC approach would break the linkage between the various RIIO price controls and undermine the perception of both regulatory stability and predictability that the RIIO process has developed.

2.42. *While guarding against unnecessarily subjectivity, our assessments do need to reflect new evidence, which includes assessments made by other regulatory authorities. It would be inconsistent for us to ignore new evidence.*

- **No new evidence to support a change in methodology**

2.43. A number of respondents argue that there has been no substantive new evidence that would support a change to the approach set out in the RIIO-ED1 Strategy decision published in March 2013.

2.44. National Grid remarks that the cost of equity range is consistent with observed market trends, and there is no substantive new evidence that would justify a change to the approach.

2.45. Moreover, Frontier Economics highlight that the evidence base that the CC has relied upon in the NIE case is the same as that it relied upon in the Bristol Water case despite the fact that it arrived at an estimate of equity market returns 1 per cent lower.

2.46. *The considered reassessment of existing evidence by an authoritative body is by itself new evidence.*

▪ **Responses from other parties**

2.47. The responses received from Centrica and its consultants (CEPA) and from Consumer Futures provided alternative views to those of the network companies.

2.48. Centrica did not agree with our interpretation of the CC approach. CEPA argues that the RIIO decisions represent a change in the interpretation of available market evidence albeit with a similar methodological approach. It suggests that if the interpretation of market evidence were consistent with the price controls prior to RIIO (ie DPCR4, TPCR4, GDPCR and DPCR5), then a total market return consistent with the top half of the CC range for NIE would be achievable. In addition, CEPA state that Ofgem's central estimate of the total market return is inconsistent with recent regulatory determinations by Ofwat, the Office of Rail Regulation and the recently announced CAA decision.

2.49. Consumer Futures argues that as the CC is the appellate body for utility sector price controls, its thinking should inform Ofgem's. It states that should Ofgem's view drift too far away from that taken by the appellate body, then this will increase regulatory risk. Consumer Futures believes that contemporary data is more likely to represent plausible investor expectations as investors will base decisions on alternative investments at the prevailing time rather on the long run average return.

**Overall**

2.50. Recognising that the CC's successor, the Competition and Markets Authority, is the appeal body for the RIIO-ED1 settlements, we have consulted on whether or not we should change our methodology for assessing the equity market return in light of the evidence set out in the CC provisional determination. Whilst we agree that there is potential for the CC to change its view when it announces its final determination in April we believe it is important for us to make our own independent, considered and evidence based assessment.

2.51. We have decided to change our methodology to place greater weight on contemporary market evidence on the risk-free rate. Analysis of forward yield curves suggests that the market currently expects the risk-free rate to remain significantly below the range we used in our Strategy decision for the duration of RIIO-ED1.

2.52. We recognise that providing a greater reliance on current data will potentially increase volatility between price controls however our analysis indicates that there is naturally some volatility in the cost of equity for relatively risk free assets such as network businesses. Given risk free rates are now close to zero, adopting a stable long term view of the risk free rate could lead to long periods where our cost of equity assumptions are significantly out of line with market realities. We consider that our proposed methodology avoids this risk.

2.53. We recognise that the cost of equity needs to be considered alongside the cost of debt. We have kept this in mind, in only making a modest reduction in the cost of equity (rather than, for example, reducing it by the full 0.8 per cent implied by a direct translation of the CC's numbers).

2.54. We have also been mindful that our decision is consistent with our cost of equity range set out in our Strategy decision 6.0 to 7.2 per cent, and there are strong benefits in terms of regulatory consistency from keeping within this range.

## Implications for risk

### Summary of consultation

2.55. In our consultation letter, we noted that giving greater weight to contemporary market evidence may therefore open up regulatory assessments to more volatility and greater uncertainty. It would require Ofgem at each price review to reinterpret market conditions and assess how much weight it should give to that reinterpretation. This uncertainty might increase sensitivity of equity investors to actual or perceived systematic and regulatory risk, and consequently a detrimental impact on the cost of capital.

2.56. We consulted on the following question:

*Can you provide evidence on the impact of giving greater weight to contemporary market evidence on perceived systematic and regulatory risk?*

### Summary of responses

2.57. The responses from DNOs, consultants and network companies argue that by giving greater weight to more recent market evidence and forward looking estimates the CC's approach introduces additional volatility into the setting of the allowed rate of return resulting in greater pro-cyclicality and therefore systematic risk. They argue that this is undesirable from consumers' perspective as it impacts the stability of bills.

2.58. The responses suggest that the volatility resulting from reliance on short term data could be caused by one or more of the following reasons:

- choosing a spot estimate that is unrepresentative of the conditions over the regulatory period especially when the regulatory period is long and still some way into the future
- increased regulatory discretion and subjectivity, as there is a range of forward looking estimates. Historic returns are considerably more certain as there are established databases. Furthermore, increased regulatory discretion will be accompanied by the (real and/or perceived) risk of asymmetric regulatory treatment where the regulator lowers allowed returns during economic downturns but does not allow returns to increase in good times
- higher probability of measurement error and misjudgement as the regulator will have to re-estimate and re-interpret market evidence at each price control.

2.59. There was also a consensus amongst respondents that a change in the cost of equity methodology this late in the process will increase regulatory risk as the cost of equity assumptions become less predictable.

2.60. The response from a UK utility equity analyst suggested that a rushed and inconsistent change in returns will potentially impact the credibility of the regulator. This respondent noted that the consultation has come shortly after utility bills have moved up

the political agenda, and argued that this resulted in an increased perception of political risk.

2.61. Centrica states that whilst it favours analysing longer term averages of market evidence, which will reduce systematic and regulatory risk, a lower equity market return could be achieved if Ofgem's methodology were applied consistently with how it has been applied historically throughout price controls prior to RIIO.

2.62. Consumer Futures argues that if regulatory bodies diverge too far from the appellate body this may call into question the credibility of the overall UK regulatory regime and create investment risk. However, it also acknowledges that the use of contemporary data could increase systemic volatility as the required rates of return could vary between price control settlements more so than they currently do.

2.63. Consumer Futures also argues that monopoly utility stocks are as close to risk free assets as you can get whilst investing in equity, as shown by the propensity of investors to seek out these stocks in times of market turbulence, and therefore it would seem justified to discount required returns heavily against the total market return.

### **Our view**

2.64. We acknowledge these concerns. We are seeking to minimise pro-cyclicality or unnecessary regulatory risk (including subjectivity). However, it would be inconsistent for us to ignore new evidence, and doing so would by itself introduce regulatory risk of ignoring new evidence in the future if it points in the opposite direction.

## **Financing issues**

### **Summary of consultation**

2.65. In our consultation, we recognised that a reduction in the allowed cost of equity would, other things being equal, reduce DNO revenues and, accordingly, the cashflows from their operations. Logically, this would reduce the capacity of DNO businesses to support debt.

2.66. Unless it coincided with a reassessment of the risks faced by network businesses and the requirement for headroom in a company's financial structuring, this would require DNOs either (i) to reduce their debt levels or (ii) to accept lower credit ratings. The first could lead to a sector-wide de-gearing at a time of very low interest rates, which could reduce the scope to harness low interest rates for the ultimate benefit of consumers. The second could lead to increased interest costs for DNOs.

2.67. We consulted on the following questions:

*Do you think changing our methodology for the equity market return would impact on interest costs for DNOs? If so, how would this need to be accommodated in our approach to the financial package or the regulatory package more widely?*

### **Summary of responses**

2.68. Responses from the DNOs and their economic consultants concurred that a change in methodology for the equity market return will result in lower cashflows which will cause

downward pressure on credit ratios and may have potential negative implications for credit ratings.

2.69. Furthermore, these respondents believe that the adoption of the CC's estimate of equity market returns will result in a reduction in the credit rating agencies' assessment of the stability and predictability of the regulatory framework. This could result in a credit rating downgrade as stability is one of the main qualitative factors taken into account in determining the rating given to debt issued by regulated networks.

2.70. These respondents argue that if a downgrade to credit ratings would result in an increase in the cost of raising new debt.

2.71. Several responses have suggested that if the CC's approach on the cost of equity is adopted then the allowance for the cost of debt would need to be adapted to ensure consistency. Respondents have suggested basing the cost of debt on embedded debt and/or increasing the trailing average for the cost of debt index to 20 years.

2.72. Centrica and its consultants do not believe that a lower cost of equity requires Ofgem to reconsider how the cost of debt is determined. They observe that at least three DNOs have comfortable metrics and that this issue has been examined as part of the RIIO Financeability Study.

### **Our view**

2.73. We recognise that the impact on credit metrics is a key concern of DNOs especially since our new methodology will lead to reduced cashflows.

2.74. We anticipate that some companies may have some difficulties maintaining the PMICR. However, credit agencies also take into account qualitative factors and will look at the pattern of ratios over a number of years, so this threshold should not be interpreted too mechanistically.

2.75. Companies may wish to adopt financing strategies with lower gearing levels that would be able to maintain appropriate metrics under a wide range of market conditions.

2.76. We would look to DNOs to manage any potential financing problems.

## **Investment incentives**

### **Summary of consultation**

2.77. In principle, investment incentives might be more finely calibrated if cost of capital assumptions are consistent with the current market view of forward-looking expected returns. A potential problem with using a relatively stable measure of equity market return is that it might create incentives for over-investment when the market anticipates lower returns, and deter investment when the market anticipated higher returns.

2.78. In practice, the methodological and judgemental issues involved in assessing a current market view may make that kind of fine calibration difficult. We also consider that the RIIO process builds in strong incentives for companies to invest efficiently and where necessary to deliver desired outputs. We therefore consider a longer-run view of the equity market return to have no more than a second order effect on incentives.

2.79. We consulted on the following questions:

*How do you consider that the choice of methodology for determining the appropriate equity market return impacts on investment incentives? Is there any evidence that you can provide?*

### **Summary of responses**

2.80. DNOs and their consultants indicated that the adoption of the CC's cost of equity methodology has the potential to lower allowed returns to a level which disincentivises investment. Given the long term nature of network assets, these respondents believe it is essential that allowed returns are maintained at levels that attract long term investors. They argue that the adoption of the CC's total market return methodology would result in increased volatility, and that lack of predictability over future returns could undermine the RIIO objective of encouraging long term planning and delivering long term efficient outcomes.

2.81. Oxera raises the potential for a distortion of investment incentives between electricity and gas, and between distribution and transmission, as a result of the inconsistency that would be introduced between the RIIO price controls.

2.82. Furthermore, Oxera suggests that the choice of methodology in itself, as long as it is communicated in advance, will not have a direct impact on investment incentives. However, it argues that given the long-lived nature of utility assets the consistency of methodology across price controls will be important. It suggests that if a change is to be made it needs to be consulted on sufficiently in advance of companies preparing their business plans.

2.83. Centrica argues that if Ofgem maintains its estimate of the equity market return at a level above the range selected by other regulators (including the CAA and the Office of Rail Regulation) then equity investors in electricity distribution will receive windfall gains at the expense of the consumer.

### **Our view**

2.84. While we recognise that assumptions for returns do influence investment incentives, incentive issues arise if returns are too high as well if they are too low. Our aim is to provide a basis for confident and efficient long term investment.

## **Eight-year RIIO price control period**

### **Summary of consultation**

2.85. RIIO price control periods have eight year durations. It may be significant that the CC's final determination for NIE will take place part way through NIE's control period with around 3.5 years before the control period comes to an end.<sup>12</sup> The CC may, as a result, be able to reach a more confident view of the equity market return over that period than we would be able to for a period that ends nearly a decade later.

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<sup>12</sup> The control period subject to the CC inquiry is 1 January 2013 to 30 September 2017.

2.86. We consulted on the following question:

*To what extent do you think the merits of the alternative approaches to the assessment of the equity market return are affected by the eight-year RIIO control period?*

### **Summary of responses**

2.87. Network companies and their consultants argued that given the significant difference in the length of the price review periods between NIE (2012-17) and RIIO-ED1 (2015-23), a direct translation of the CC's provisional methodology does not seem appropriate.

2.88. Respondents have pointed out that the CC's decision applies to a five-year period that started 1.5 years ago whilst Ofgem's RIIO decisions will apply to an eight-year period. In the case of RIIO-ED1, this period will only begin 15 months from now. In future RIIO reviews, Ofgem is also likely to have to forecast the equity market return for an eight-year period starting around 12–24 months ahead.

2.89. Frontier suggest that one interpretation of the CC's determination is that it considers a short-run approach suitable for NIE because it is determining a relatively short-term price control. Even if this is the case, Frontier argue that this approach is highly suspect given the significant uncertainties surrounding growth, asset prices and returns for the next three years.

2.90. First Economics states that in the case of the shorter time period, it is arguably easier to give recognition to current market data on the basis that there is a lower likelihood that market conditions will change materially within a short period of time. By contrast, when the relevant time horizon more than doubles from just less than four years to close to ten years, there is naturally much more uncertainty about the persistence of current market conditions.

2.91. NERA argues that available indicators actually predict a significant change in macroeconomic and financial conditions over the next ten years. It states that macroeconomic forecasters expect GDP growth for the UK economy to normalise during the RIIO-ED1 period at a level of around 2.0 per cent, significantly above most "current" forecasts for this year and more in line with pre-crisis average growth rates. Therefore, if there is any tendency for required returns to revert towards the long-term average, the CC's provisional assessment, that required returns are currently lower than long-term realised returns, is less likely to hold, on average, over the RIIO-ED1 period than over the remainder of the RP5 period.

2.92. Centrica argues that there is no reason to adopt an alternative approach to the assessment of the equity market return, but notes that the equity beta remains high compared to market evidence. It believes that a review of long term evidence, such as averages of index-linked gilts and both DMS and Barclays evidence on total market returns, remains valid, but that cross checks must be used to ensure that the cost of equity assumption is justifiable based on all available evidence.

### **Our view**

2.93. We acknowledge that the RIIO-ED1 period is very different to NIE's. Our methodology therefore needs to accommodate this but this does not necessarily imply a rejection of CC's methodology.

## Impact of RPI formula effect

### Summary of consultation

2.94. We signalled in our November 2013 assessment of business plans that the statement on 13 January 2013 by the ONS concluding its review of the RPI had the effect of reducing the level of real annual returns required by investors in RPI-indexed assets. The Regulatory Asset Values of DNOs are RPI-indexed. We recalibrated our central reference point for the cost of equity for evaluating DNO business plans to 6.3 per cent, reflecting a reduction of 0.4 per cent in our estimate of the long-run RPI-adjusted risk-free rate. While the context for this recalibration was our view that the balance of uncertainty at that time was on the downside relative to DNO assumptions, we were in particular informed by a structural change in RPI that had emerged since the ONS changed its data collection routines in 2010 and, specifically, the UK Statistics Authority's confirmation in its 10 January 2013 statement that it will not change its RPI methodology.

2.95. We identified that the level of annual increases in the RPI has been structurally increased by statistical artefact relative to increases in real world prices. This would mean that investors would benefit from additional inflation indexation of the RAV each year, and the requirement for annual cost of equity assumptions in their cash flows would therefore be reduced.

2.96. We estimated the scale of the structural change from 'formula effect' data, published monthly by ONS, which identify how much of the difference between RPI and CPI relate to the use of different statistical methodologies.

### Summary of responses

2.97. CEPA, on behalf of Centrica, agreed with the decision to adjust the cost of equity assumption down by 0.4 per cent. However, it contends that it would be more appropriate to reduce both the risk free rate and equity risk premium by 0.2 percentage points each.

2.98. Respondents disagreed with the methodology employed to calculate the 0.4 per cent decrease. The respondents did not consider a direct translation of a one-day movement in gilt yields to be appropriate for the following reasons:

- movements in gilt yields on any given day will reflect a range of factors, and therefore attributing the entire change to one event is inappropriate
- investor expectations of the ONS decision would have been factored into gilt yield movements prior to the event itself.

2.99. Respondents believe it is more appropriate to measure the difference between RPI and RPIJ which calculates inflation from the same dataset as the RPI but uses the Jevons formula instead of the Carli formula. Frontier Economics has calculated a range of 25 – 29 basis points for the size of the formula effect, depending on the period of review.

2.100. Several DNOs have contended that Ofgem should also take into account the structural break that has occurred due to the recent restrictions imposed on council tax increases resulting from the Localism Act 2011. Owing to the fact that council tax features in the RPI, but not in CPI, the DNOs believed this had previously added to the difference between RPI and CPI. Furthermore, the DNOs assert that Ofgem had already taken into

account an increase in long term RPI inflation when it raised its view of RPI inflation by 0.1 per cent which offsets some of the formula effect difference.

2.101. Northern Powergrid argued that the ONS expected to make further changes to its data collection routines which would reduce the formula effect, unwinding some or all of the increase in the formula effect during 2010.

2.102. Northern Powergrid submitted an addendum to their original response on the 5 February 2014 which raises an additional issue regarding changes to the price collection routines in 2010 which they argue has increased CPI inflation by significantly more than the increase in the formula effect offsetting our proposed adjustment to RPI. Without a corresponding increase in the inflation target, this increase would prompt a tougher monetary stance by the Bank of England resulting in higher base interest rates, and thus a higher risk-free rate.

2.103. The five slow-track DNOs all commented that any change relating to the RPI formula effect should have been consulted on with stakeholders during the RIIO-ED1 process. They believe that this change should have been signalled to stakeholders in the Strategy decision and that the failure to do so was against regulatory best practice and undermines the stability and predictability of the RIIO-ED1 framework.

## **Our view**

2.104. While we noted that gilt yields moved by about 0.4 per cent on the day of the ONS statement, we did not use the movement in gilt yields as the basis for the adjustment. Had the ONS statement been anticipated in full by the markets, we would not have expected such a movement – the presence of a movement simply indicated that the statement appeared to come as a surprise to the markets. The movement did, however, demonstrate that RPI-indexed assets had become inherently more attractive. Our estimate was instead based on the change in level of the formula effect published by the ONS before and after 2010.

2.105. While the difference between RPI and RPIJ would appear to measure the formula effect, we understand from our discussions with ONS officials that this difference identifies the impact of the RPI using the Carli (arithmetic) rather than the Jevons (geometric) formulae for averaging price differences. We understand that it does not pick up other differences in the use of the Dutot method (ratio of arithmetic average prices) between CPI and RPI. We consider that the change in the level of the formula effect published by the ONS before and after 2010 remains a reasonable indicator of the structural change in the overall formula effect that occurred as a result of ONS's revised data collection routines.

2.106. We disagree with the view that government reforms to Council Tax will affect the required adjustment. Reforms to Council Tax may reduce the difference between RPI and CPI, but they would not reduce the scale of the statistical artefact in annual RPI movements. Council Tax is a relevant component of housing costs, and thus real world prices, and relevant to a measure of general inflation. Council Tax affects the coverage rather than formula effect difference between RPI and CPI.

2.107. Similarly, the fact we increased our long term forecast of RPI inflation by 0.1 per cent does not affect the scale of the statistical artefact in annual RPI movements.

2.108. We noted in our consultation letter statements by the ONS and the UK Statistics Authority that the ONS would only contemplate routine changes in the RPI, "such as the annual update of the basket and weights, improvements to data validation and quality

assurance etc.” However, we understand from our discussions with the ONS that these routine changes, for example changing items in the basket or tightening their descriptions, may reduce unnecessary formula effect. Although such changes would not be expected to unwind the majority of the consequences of the routines established in 2010, they could nevertheless be significant. Stephen Wright and Andrew Smithers advised that an adjustment of 0.25 per cent relating to the formula effect would be cautious.

2.109. We note Northern Powergrid’s assertion that the CPI itself has experienced a structural increase as a consequence of the changes in data collection routines in 2010, and we understand there is some validity to this point. We are not convinced that this increase and any consequential pressure on Bank of England monetary policy will lead directly to an increase in the long run risk-free rate beyond that evident in current forward yield curves. However, a structural increase in the CPI will more directly add to the structural increase in the RPI and represent another component of statistical artefact. Taking this in to account, together with the possible effects of future routine changes to the RPI referred to above, we consider 0.4 per cent remains a reasonable estimate of the enduring effect of the changes to data collection routines in 2010.

## **Transaction / traded values versus RAV**

### **Summary of consultation**

2.110. In our consultation document, we explained that the evidence from transaction values and traded shares shows that the market has valued regulated networks at more than their regulatory asset values, and that a valuation premium has persisted for a number of years. Some of the valuation premium can be explained by anticipated operating outperformance (and perhaps bidders’ optimism bias in some cases). However, we can infer that some of the premium reflects a difference between the returns the market requires at present, in a low interest rate environment, and the longer term.

### **Summary of responses**

2.111. In addition to the consultation questions, several respondents commented on potential causes for observed transaction premiums. These factors included:

- measurement error due to lack of accurate public information
- non-regulated earnings
- valuation of potential outperformance
- error on the part of buyers / optimism bias
- synergies
- valuation of future potential opportunities
- specific features of the buyer
- volatility in market returns
- taxation value of mergers and pensions adjustments
- flight to safety.

### **Our view**

2.112. We acknowledge the complexity of the issue but equally recognise the need to reflect on evidence provided by transaction and share values.

## CC beta estimate

### Summary of responses

2.113. DNOs contend that the CC has assumed an asset beta range of 0.35 to 0.45 for GB utilities. They therefore argue that if Ofgem's translation was consistent then it would assume the mid-point estimate of 0.4 which implies a higher equity beta than the 0.9 equity beta used in the translation.

2.114. NERA argues that whilst they believe the CC's estimate of total market return is too low, the CC provisional determination compensates for this by providing a generous beta estimate that is above observed estimates. NERA believes that translation of the CC total market return decision must only be considered in conjunction with the CC's high beta estimate.

2.115. CEPA analysed observed betas for listed UK utilities and calculated an average equity beta of 0.77 using re-levering at 65 per cent notional gearing.

2.116. The UK utility equity analyst disagrees with the short timeframe that the CC has used to calculate its equity beta as the period from 2002 has included a number of events that have caused increased market volatility and unrepresentative equity betas.

### Our view

2.117. The CC discussed the differences between its assessment of NIE's beta and Ofgem's assessments with reference to the specific circumstances of NIE. We do not consider the CC's view provides a basis for any adjustment to our assessment.