Consultation on Ofgem's methodology for assessing the equity market return for the purpose of setting RIIO price controls

The response from Northern Powergrid

10 January 2014

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EXECUTIVE SUMMARY

1) Northern Powergrid recognises that, since the Competition Commission (CC) is the primary appeals body for regulated energy networks, Ofgem must make sure that it considers any implications arising from the material published by the CC. We also recognise that the provisional findings of the CC in the Northern Ireland Electricity (NIE) price control reference take a materially different approach to the cost of capital compared to the one which Ofgem had set for the RIIO-ED1 price control following extensive consultation.

2) We will demonstrate that there are very good reasons why Ofgem ought to conclude that it does not need to change its approach to the determination of the allowed cost of equity. That said, if Ofgem were to decide to adopt the approach used by the CC, it would need to do so both for the cost of debt as well as the cost of equity. The risk that Ofgem's 10 year trailing average cost of debt index imposes on the electricity distribution sector, in light of its pre-existing long term financing structure, is material. As a result, a cost of equity set at the same level as that being proposed by the CC would be unsustainable in combination with Ofgem's cost of debt index.

3) Moreover, the CC's position on the cost of debt in fact goes further, with the CC stating that it is inappropriate to apply debt indexation in a manner that would leave companies unable to take appropriate financing decisions in light of the indexation. Ofgem's current approach, which retrospectively assumes the sector can achieve an average residual maturity on its debt of 5 years (when the average as at December 2013 varies between 10 and 24 years depending on the company), does not allow this. There are however two ways that Ofgem could balance its desire to introduce a cost of debt index with the CC's provisional views. These would be either to:

    a) provide a fixed allowance for debt issued before Ofgem's March 2013 decision to apply indexation at RIIO-ED1, while providing an indexed allowance for debt issued after Ofgem's decision (with index weights based on refinancing requirements and the debt funded proportion of the growth in regulatory asset value); or

    b) adopt a form of debt indexation that reflects companies' approach to debt issuance before the decision to index, for instance applying a 20 year trailing average where companies have typically adopted a long-term financing approach (or a shorter term trailing average where they have not).

4) Assuming that Ofgem does not decide to adopt directly the approach that the CC eventually takes in its final determination for NIE, Ofgem will still need to determine the return allowed over the RIIO-ED1 period. The business plans submitted by electricity distribution companies in July 2013 all adopted Ofgem's cost of debt index, and proposed a cost of equity of 6.7%-6.8%.[1] In the consultation, Ofgem sets out the 'central reference point' for the cost of equity that it used in testing the business plans of 6.3%. This was calculated using a notional baseline of 6.7% less a 0.4 percentage point adjustment which Ofgem justifies based solely on the increase in the RPI inflation formula effect which took place in 2010, and which increased the long-run gap between RPI and CPI inflation.

5) We firstly note that, given the risks entailed by the RIIO-ED1 policy approach, which places greater onus on companies (in order ultimately to drive improved outcomes for customers) there is significant evidence that the cost of equity is more comparable with electricity or gas transmission (which were allowed 7.0% and 6.9% in their respective RIIO price controls in combination with gearing of 60% and 62.5%) than gas distribution (which was allowed 6.7% in combination with 65% gearing). A baseline above 6.7% is justified.

6) Secondly, Ofgem is incorrect to adjust its baseline downwards by 0.4 percentage points on account of the 2010 increase in the formula effect, for the following reasons.

   a) Ofgem's analysis has overstated the increase in the formula effect by between 50% and 100% compared to its true level – it was in fact in the range 0.2 to 0.3 percentage points, not the 0.42 percentage points stated by Ofgem.

   b) There has been a further structural break that offsets much of the increase in the formula effect (of around 0.16 percentage points), since the Localism Act (2011) means that council tax, which features in the RPI but not the CPI, will increase much more slowly in future than over 1997-2009.

   c) Ofgem had already increased its view of RPI inflation consistent with the Bank of England hitting its inflation target from 2.7% to 2.8% between 2009 and the RIIO price controls, meaning Ofgem had already taken any structural break in RPI inflation into account.

   d) The UK statistical authorities have expended significant effort in identifying changes to data collection routines that could partially offset the 2010 increase in the formula effect, and such changes have not been ruled out.

[1] We note that five of the six plans are due for resubmission in March 2014 and that the resubmitted plans may propose alternative approaches to financing.

7) There is in fact no reason to adjust the baseline cost of equity allowance for the RIIO-ED1 price control on account of the changes that took place to long term prospects for RPI inflation over 2010 to 2011.

INTRODUCTION

8) This is the response from Northern Powergrid Holdings Company and its subsidiaries Northern Powergrid (Northeast) Ltd and Northern Powergrid (Yorkshire) plc to Ofgem's consultation on its methodology for assessing the equity market return for the purpose of setting RIIO price controls (the Consultation).

9) Below we set out Northern Powergrid's response to each to the questions in the Consultation.

10) Northern Powergrid also commissioned an independent response to Ofgem's questions from Frontier Economics. This has been submitted alongside the company's own response.

Question 1: the CC's equity market return estimate

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

11) We note that the Competition Commission's (CC's) equity market return estimate is currently provisional. We note that Northern Ireland Electricity (NIE) has submitted evidence to the CC suggesting that a different approach would be appropriate, and that the allowed cost of equity should be higher.[2] The implication of this evidence is that a direct translation of the CC's provisional equity market return estimate to electricity distribution network operators (DNOs) is inappropriate. We therefore refer Ofgem to this evidence. In particular, we believe that the CC should have recognised the significant body of evidence which supports a higher total return on equity.

12) Northern Powergrid has also commissioned an independent response to Ofgem's consultation from Frontier Economics, which has been submitted to Ofgem alongside our own response. Frontier's report contains a significant body of evidence supporting the conclusion that the CC has set too low a cost of equity.[3] Northern Powergrid believes

[2] http://www.competition-commission.org.uk/assets/competitioncommission/docs/2013/northern-ireland-electricity-price-determination/131212_nie.pdf

[3] Frontier Economics, 2013, RIIO cost of equity consultation: a report prepared for Northern Powergrid, pages 15-21.

that the evidence set out by Frontier Economics is sufficient to justify Ofgem maintaining its current estimate of the total equity market return (7.25%).

13) At paragraph 1.6 of the Consultation, Ofgem states that it agrees with the CC's interpretation of contemporary evidence, citing the persistence of valuation premiums over a number of years. Ofgem cites the potential for future performance and optimism bias as potential alternative reasons for such premia, in addition to the cost of debt. We believe that these two factors make a significant contribution to the observed premia. However, Ofgem has omitted to mention other factors which contribute to such premia, such as pure mis-estimation of the valuation in private transactions, and the inclusion of non-regulated businesses in the transaction. Importantly, in the context of the current consultation, Ofgem has also failed to recognise explicitly the cost of debt as a factor. Since all regulators (including the CC) make allowance for the cost of historically issued debt, any transactions that take place at a time when the cost of issuing new debt is below the regulatory debt cost allowance will be valued at a significant premium (since the future revenues from the debt financed portion of the regulatory asset value (RAV) will be valued well above par when it is purchased at a time when the cost of issuing new debt is at historical lows). This factor alone can explain a significant proportion of recent transaction premia in energy networks. Moreover, it highlights the fact that it is inappropriate to separate consideration of the cost of equity from the cost of debt, as Ofgem's consultation does. We set out a fuller analysis of these issues at annex 1 to this response.

14) Ofgem has in any case failed to translate correctly the CC's provisional findings for the cost of equity to DNO cost of equity allowances.

    a) Ofgem's conclusion that the CC's approach to NIE's cost of debt does not have an impact on Ofgem's assessment of other aspects of the cost of capital is incorrect, as the CC states clearly that it is inappropriate for cost of debt indexation to be applied to financing decisions taken before indexation was announced, contrary to Ofgem's proposed approach at RIIO-ED1.

    b) Ofgem's assumed asset beta for GB is erroneously lower than the one the CC states that it would apply to GB; properly accounting for this partially offsets the CC's assumption of a lower total return on equity.

    c) Ofgem's translation fails to take into account the increase in risk exposure for electricity distribution under RIIO-ED1. Taking this into account would suggest an asset beta that is higher than the one the CC states it would apply to GB based on pre-RIIO data.

d) Ofgem's calculation of the likely change to expected future RPI inflation is incorrect: not only has Ofgem failed to calculate correctly the impact of the change in price collection routines in 2010 on the size of the formula effect, but it has also failed to take into account the fact that the change has been offset by other factors (such as the significant reduction in annual council tax increases that will result from the Localism Act 2011).

15) We develop each of these four points further below.

The CC's provisional findings do have implications for the cost of debt

16) Ofgem states at paragraph 1.16 that it does not consider that the CC's estimate of NIE's cost of debt allowance has a material impact for Ofgem's cost of debt methodology.

17) This statement is not correct. The CC states at paragraph 13.56 of its provisional findings that debt indexation:

> 'is a policy decision that requires pre-notification in order that the regulated company can make appropriate financing decisions.'

18) We note that Ofgem concluded that it should apply some form of debt indexation in its RIIO decision, published in October 2010, but at this stage stated it had yet to decide on the length of the index to be applied. Only in Ofgem's March 2013 strategy decision was the use of a 10 year trailing average based on the iBoxx index to set debt allowances for the RIIO-ED1 period finally decided and notified to us. This means there was no pre-notification of debt indexation in relation to any decisions taken to issue debt of a longer (or shorter) tenor than 10 years before March 2013. The statements of the CC in relation to NIE therefore have clear read across to Ofgem's debt indexation model under RIIO. It is therefore inappropriate for Ofgem to consider the CC's statements on the cost of equity in isolation from its statements on the cost of debt. Moreover, there is nothing in the statement made by the CC that suggests that it arrived at its views on debt indexation because of factors that are specific to Northern Ireland. Indeed, its provisional findings are, in this respect, consistent with its views in the Bristol Water case.[4] Moreover, the CC's approach to making allowance for previously issued debt in the Bristol Water case was consistent with that it took in a number of previous cases.[5]

[4] Competition Commission, 2010, Bristol Water enquiry report, Appendix N, para 47.

[5] The Mid Kent Water enquiry (2000), the BAA enquiry (2007) and the Stansted enquiry (2008).

19) We also note that the debt issued by Northern Powergrid prior to Ofgem's announcement of debt indexation has a similar cost structure to the debt carried by NIE. It therefore follows that, for Northern Powergrid, the CC's methodology for the cost of capital in the round would yield comparable figures to those yielded for NIE (i.e. around 4.1% vanilla real). If Ofgem were to combine the CC's extremely low provisional view on the cost of equity with Ofgem's own extremely low view on the cost of debt, it would set a cost of capital that is well below 4.1% vanilla real, and well below the weighted average cost of capital that it is possible for Northern Powergrid to achieve, even in current conditions where new debt can be issued at relatively low rates.

The CC states it would apply a higher asset beta to GB than Ofgem assumes

20) Ofgem's calculations of the cost of equity the CC approach implies for GB are incorrect in relation to asset and equity beta. Ofgem quotes an inferred asset beta for illustrative purposes, which appears to have been calibrated to deliver the equity beta of 0.9 assumed by most of the July 2013 DNO business plans as part of their overall financing package. Ofgem's approach is not appropriate because the CC has set out the asset beta it would have determined in the GB regulatory context.

21) The CC clearly states at paragraph 13.171 (d) (iii) of its provisional findings that the asset beta it estimates for GB utilities is in the range of 0.35 to 0.45. The mid-point of the CC's range is 0.40, which should be used for consistency with the fact Ofgem has used the mid-point of the CC's range for all the other parameters. This is higher than Ofgem's assumption of 0.38. The mid-point of the CC's asset beta range translates to an equity beta of 0.96, and Ofgem's comparison must reflect this, otherwise a true comparison of cost of equity estimates is not being undertaken. The cost of equity the CC's decision implies for GB energy network utilities is 5.8%, not the 5.5% stated by Ofgem.

22) By considering certain parameters in isolation of all parameters used to set the cost of equity (let alone the cost of capital) Ofgem has misinterpreted the CC's approach. While the CC has indeed determined a lower total equity market return, it has also implicitly stated that it believes the GB cost of equity, at 65% gearing, is significantly closer to the total market return than Ofgem's calculations imply.

Equity risk under RIIO-ED1 has risen compared to the DPCR5 settlement

23) We note the CC has made its estimates of GB asset betas using pre-RIIO data.

24) There is significant evidence that equity risk is higher under RIIO than the pre-RIIO regime. For example, exposure to cost and reliability performance is being significantly increased, and while this should deliver customer benefits through better performance it does add to the risks faced by equity holders. Full details of the evidence are set out in the financing section of Northern Powergrid's July 2013 business plan.[6] These include the findings of an Oxera study (which was undertaken in full consultation with the Ofgem finance team) that concluded asset risk was increasing by 5% to 20% due to the factors Oxera could quantify.

25) Of particular note is the fact that Ofgem's cost of debt indexation approach significantly adds to equity risk for electricity distribution companies. While an indexation approach can in theory reduce risk, it does so only if the industry is able to match its tenor of debt to the average assumed in the index. A company matching a 10 year index would have an average outstanding tenor on its debt book of 5 years. However, all electricity DNOs have financed their businesses using much longer term debt, an entirely efficient and appropriate approach given the long lifetime of the assets being funded. The table below shows the average outstanding tenor of DNO debt.

Table 1: The average outstanding tenor of DNO debt

DNO	Years to maturity (weighted average)
Northern Powergrid	13 years
ENW	10 years
WPD	20 years
UKPN	12 years
SSE *	24 years
SP *	14 years

Source: Northern Powergrid analysis of company debt books as at December 2013, using Thomson Reuters data and company accounts

** Figures based on debt clearly identified as financing the electricity network element of the business. Including all debt issued by SSE and SP (including SSE's gas network joint venture) would give tenors of 11 years and 12 years respectively.*

26) As can be seen from the table, all companies have existing debt books that will turn over far more slowly than Ofgem's debt index. Moreover, re-financing requirements are

[6] Northern Powergrid June 2013 business plan, section 3.3: the cost of equity, pages 7-12

frequently lumpy, which precludes matching Ofgem's index when it is eventually replaced (short of incurring material carry costs from issuing tranches of new debt years before they are required). For example, almost all of ENW's debt that matures in the next ten years will be concentrated in just two years, 2015 and 2021, meaning it will be exposed to the possibility that interest rates in those years are above the amount that is eventually funded by the index.

27) In light of this pattern across the whole industry, Ofgem's 10 year debt indexation approach adds significant risk to the sector: If Ofgem adopts the CC's approach on the cost of equity but does not move wholesale to the CC approach, by modifying its debt indexation approach to reflect the cost of debt that was embedded at the time indexation was finally formally decided and notified (March 2013), then Ofgem, must take into account the material additional risk the debt index imposes on electricity distribution equity holders by setting a significantly higher cost of equity than the CC's approach implies.

28) While the CC has not opined on whether risk has increased under RIIO, it is hard to see how it could conclude that asset beta has not increased. Since it has arrived at an equity beta of 0.96 based on pre-RIIO data (based on the central point of its range for GB asset beta, and a 65% gearing level), it seems likely that an equity beta approaching unity would be the result of any translation to an assessment based on the RIIO approach Moreover, if Ofgem does not adopt the CC's approach to the cost of debt, which exposes companies to significantly less risk, it would need to set a significantly higher cost of equity in order to be consistent with the CC's overall approach to the cost of capital.

Ofgem overstates the adjustment to business plans needed for changes in the formula effect

29) We firstly note that the business plans themselves were formulated at a time when the change in the formula effect was known, and so companies should already have reduced their proposed cost of equity on account of any issue. For example, the financing section of Northern Powergrid's plan presented significant evidence that the cost of equity for RIIO-ED1, measured on a comparable basis to other RIIO controls and the DPCR5 settlement, was 6.9%. Nevertheless, the cost of equity set out in the plan was moderated to 6.7% based on stakeholder feedback that costs should be contained wherever possible, and because the existing 6.7% remained within the reasonable range that could be estimated, a reduction which depended on securing the benefits of being fast tracked.

30) Ofgem has also significantly over-stated the case for an adjustment required on account of the change in the formula effect. The necessary adjustment is far smaller than the 0.4 percentage points stated by Ofgem, for three reasons:

a) There has only been a 0.3 percentage point increase in the formula effect, not a 0.4 percentage point increase. The data Ofgem has used to calculate the increase in the formula effect uses the CPI weights on clothing, not the RPI weights: using the correct weights would reduce the increase in the formula effect to 0.2 to 0.3 percentage points (depending on the time periods considered).

b) Ofgem has not accounted for the reduction in future annual council tax rises that will result from the Localism Act 2011, from 6% per annum between 1997 and 2009 to 2% in future. This will reduce one of the other factors which creates a gap between RPI and CPI by around 0.16 percentage points, offsetting a large part of the increase in the formula effect.

c) In formulating its cost of equity range for RIIO-ED1, Ofgem had already assumed an increase in inflation compared to the typical economist and analyst view in 2009 before the formula effect increased: 0.1 percentage points of the post-2009 increase in long-run RPI was already accounted for in Ofgem's RIIO-ED1 strategy decision.

d) No account has been taken of efforts by the UK statistics authority to identify potential changes to data collection routines with the explicit objective of offsetting some of the increase in the formula effect.

31) Taking these offsetting factors into account, and even if potential future changes to data collection routines deliberately aimed at reducing the formula effect are discounted, there is no reason for Ofgem to make an adjustment on account of changes in long run RPI inflation. Even if the formula effect increase is at the upper end of the range we have estimated, there is only a wedge of 0.05 percentage points that remains unaccounted for. However, if the formula effect increase is at the lower end of the range we have estimated, the increase in the formula effect has already been more than offset (which would warrant an upwards adjustment to the cost of equity). Either way, the amount is not material in the context of the estimation of the cost of equity, and so does not warrant specific attention or any adjustment.

32) We set out more detail on each of these four items in annex 2 to this response.

Question 2: the impact of placing greater weight on contemporary evidence

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

33) The question relates to two areas – perceived systematic risk, and perceived regulatory risk. We consider each in turn below.

34) In terms of perceived systematic risk, placing greater weight on contemporary evidence (both recent historical, and short-term forwards looking) is likely to create a closer link between the realised returns of equity investors in energy utilities and investors in the wider stock market. This would directly add to systematic risk, since it adds another reason for a correlation between stock market and energy utility returns, and so will directly contribute to higher estimated equity (and asset) betas.

35) In terms of perceived regulatory risk, shorter term market evidence on equity returns fluctuates more and gives wider ranges than longer term evidence. The use of a wider range confers a higher degree of regulatory discretion over the eventual cost of capital, and by definition can only increase perceived exposure to regulatory risk. There is significant evidence that regulatory risk is a major component of the overall risk perceived by investors in regulated network utilities, and can make a significant contribution to the overall required cost of capital.

a) A 2013 survey of investors on behalf of Water UK found that the most important source of risk affecting the water sector was regulatory risk.[7] Similar results are likely to apply in the regulated energy network sector.

b) A 2005 paper on financing the water industry found that the perceptions of regulatory risk created in that sector by the 1999 price control review probably increased its cost of capital by 0.3 percentage points when it came to the 2004 price control review.[8]

36) The transcripts of Ofgem's investor call following the RIIO-ED1 fast track decision, and the questions posed by sector analysts and other participants, provide direct evidence that any move by Ofgem to a shorter term approach on the cost of equity would add

[7] Indepen (2013), 2013 Survey of Investors in the water sector, A Report for Water UK.

[8] Palmer and Nixon (2005), Financing the water industry: lessons from PR 04.

significantly to perceived regulatory risk. If the potential addition to regulatory risk is similar to that experienced in the water sector following the 1999 price control review, a move to a shorter term approach to setting the cost of equity would add 0.3 percentage points to the cost of capital (equivalent to 0.9 percentage points on the cost of equity at 65% gearing). There was also a general consensus amongst participants at the consultation workshop hosted by Ofgem on 7 January 2014 that such a change would add to perceived regulatory risk.

37) By adopting, and sticking to, a long-term approach, regulators can mitigate some of the perceived regulatory risk associated by their discretion over the cost of capital, since they are constrained to a choice within a narrower range by their own framework. By maintaining its current long-term approach, Ofgem could well be reducing the long-term cost of equity by almost 1 percentage point. The short-term savings of a move to shorter term estimates of the cost of equity would quickly be offset.

Question 3: the impact of a different methodology on DNO interest costs

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?

38) Ofgem has suggested an interesting point at paragraph 1.24 in its consultation – namely that companies may need to de-lever to maintain their investment grade in the context of a low cost of equity, and that this would be incompatible with its debt indexation approach, since they would have to avoid issuing debt for some time (while the current extremely low debt costs would continue to pull the indexed RIIO cost of debt allowance downwards). Ofgem estimates that a single year of issuing no new debt under a 10 year debt funding strategy would raise debt costs by around 0.2 percentage points.

39) In other words, Ofgem has recognised that adopting the CC's approach on the cost of equity may necessitate a departure from the pure 10 year debt indexation approach currently proposed for RIIO-ED1.

40) This is a special case of a more general issue with Ofgem's debt indexation model – that DNOs may not be able to match it because it is impossible for them to take financing decisions that would allow this. We note that some DNOs are in such a position because debt issued before indexation was announced involves rates of interest above the rates

that the debt index makes allowance for. This issue is progressively becoming worse as higher cost debt from the 2000s is replaced in the index by current low cost debt. This issue significantly exacerbates the financing issues that would result for at least some of the industry if Ofgem were to adopt the CC's approach to the cost of equity without also reflecting the CC's statement that debt indexation is inappropriate when it is applied to financing decisions taken at a time before the policy was announced.

41) There is however a route to addressing the financing issues that a significantly lower allowed cost of equity would create. This would involve taking into account the CC's statements in relation to the cost of debt. This could be done by either:

a) Providing a fixed allowance for debt issued before Ofgem's March 2013 decision to apply indexation at RIIO-ED1, while providing an indexed allowance for debt issued after Ofgem's decision (with index weights based on refinancing requirements and the debt funded proportion of RAV growth).

b) Adopting a form of debt indexation that reflects companies' approach to debt issuance before the decision to index, for instance applying a 20 year trailing average where companies have typically adopted a long-term financing approach (or a shorter term trailing average where they have not).[9]

42) This would then allow Ofgem to adopt the cost of equity parameters the CC ultimately adopts (if it judges that these are indeed appropriate for RIIO-ED1), while also recognising the CC's statements on the cost of debt.

Question 4: impacts on investment incentives

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?

43) We note there is a recognised tendency for regulators to set higher allowed returns when they recognise that significant investment is required, and lower allowed returns when they do not. This tendency may undermine investors' confidence because it suggests

[9] By the time the RIIO-ED1 period starts, there will be 17 years' of historical data on the iBoxx index. In practical terms, this means that if Ofgem were to maintain its preference for the iBoxx index (which was chosen by Ofgem as the best available option following consultation) it would need to start with a 17 year trailing average and progressively lengthen it until the required length was reached, or develop a reasonably proxy for the data iBoxx would have measured prior to 1998.

that the investment may not return its true cost of capital once the investment peak has passed. Investors must judge the extent to which this may be the case at the point in time when they make any investment decision. If regulators cannot credibly commit to providing a long-term return that equals the long-term cost of capital of investors, then a disincentive to invest will be created at the point in time when investment is required.

44) Taking a long-term view of the cost of equity reduces the range of uncertainty associated with estimates of its parameters. This is particularly the case where a long-term view is taken of the total equity market returns. The long run of historical evidence available means that additional years' worth of data (potentially from very atypical years of realised equity returns) leads only to small changes in estimated market returns.

45) Moreover, in light of equity beta estimates that are typically close to 1 at 65% financial gearing, short-term volatility in individual components of the total equity market return become irrelevant as they are self-offsetting, helping remove another factor that can contribute to a wide range of potential figures and additional regulatory discretion.

46) As noted in response to question 2, the more regulatory discretion that is systematically built into the setting of the allowed return, the greater the perceived regulatory risk will be. The result of taking a short-term approach is therefore either that a disincentive to invest will be created, or that the regulator will have to find a way to commit to a higher cost of capital over the long-term for a given set of market evidence than it would need to commit to on a long-term approach. Evidence on the potential cost of a perceived increase in regulatory risk is set out in response to question 2.

47) We note that a number of other regulators also recognise the benefits of taking a long-term view of the total market return, including for example the CAA in its Q6 price control for Heathrow and Gatwick airports.[10]

48) We also believe that direct evidence can be drawn from the German offshore transmission sector on the impact that the methodology for determining equity returns can have on investment incentives. Media commentary suggests that a methodology which determined an equity return that was too low has delayed investment and, in the absence of remedial action to address the problem, could have prevented the investment altogether.

[10] CAA, 2013, Estimating the cost of capital: a technical appendix to the CAA's Final Proposal for economic regulation of Heathrow and Gatwick after April 2014, page 61, paragraph 7.23

a) In 2012 the German transmission operator, Tennet, needed to obtain equity investment in order to finance new offshore transmission assets which it was unable to sustainably finance from its own balance sheet. It encountered difficulty in doing so, delaying a number of projects. This was attributed by industry experts to the available equity returns being insufficient to attract investors.[11]

b) By 2013, these issues had been resolved. This was achieved thanks to new legal arrangements over the risk liability associated with the assets, which was to be covered by a new levy on electricity consumer bills.[12]

49) Our interpretation of these developments is that, in order to secure investment, the assets had to be significantly de-risked, in order that their risk profile would be consistent with the low equity returns being allowed.

50) While there may have been a solution to the disincentive that low allowed equity returns created for investment in the German offshore transmission sector, the same solution would not be appropriate in the GB electricity distribution sector. The RIIO model of regulation has placed the onus fully on companies to manage risk where they are best placed to do so. Electricity distribution assets have significantly more inter-connectivity and require more regular maintenance than a discrete sub-sea transmission cable, meaning distribution companies have a greater role in mitigate risks. The costs of any wholesale transfer of risk to consumers and away from the company would therefore be significantly higher, and so not an option which Ofgem should contemplate.

51) The example of German offshore transmission assets therefore suggests that any move by Ofgem to a methodology which sets 'too low' a cost of equity in the context of the RIIO-ED1 price control could create a significant disincentive to investment. Moreover, a change in equity methodology by Ofgem would be likely to add to perceived regulatory risk, which would be difficult to eliminate once created.

52) Overall, there are therefore significant advantages of setting the cost of equity using a long-term methodology. While this forgoes the potential benefits of 'fine tuning' the cost of equity to reflect latest market conditions (which Ofgem acknowledges is likely to have a second order effect on investment incentives), it avoids the much larger potential detriment caused by increased perceived regulatory risk.

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[11] Source: http://www.utilityweek.co.uk/news/German-offshore-wind-links-delayed/825102

[12] Source: http://www.windpowermonthly.com/article/1185626/tennet-claims-german-offshore-financing-secure

Question 5: the eight year RIIO price control period

Question 5: 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?

53) The merits of the alternative approaches are indeed affected by the eight-year RIIO control period.

54) The last year of the RIIO-ED1 period is 9 years from now, while the last year of the NIE price control is only three years from now. There is therefore a significant difference in the time horizon over which expected equity returns are being estimated and set.

55) The CC has concluded that expected returns (in investments generally) are unlikely to return to pre-crisis levels in the next few years, but there is a much higher chance they will when the time horizon is trebled.

56) Moreover, this means that the risk of setting a cost of equity that is too low by using the CC's methodology (and incurring the costs associated with weakened incentives to invest) are higher at the RIIO-ED1 price control review in the presence of this longer time horizon than they are at NIE's price control review with its shorter time horizon.

ANNEX 1: FACTORS AFFECTING TRANSACTION PREMIA

57) Paragraph 1.6 of the Consultation mentions transaction premia.

58) While the Consultation recognises some of the factors that can drive premia other than differences between allowed returns and the cost of capital (such as future outperformance and optimism bias), it omits some factors (such as the taxation value of mergers and pensions adjustments). This annex sets out a more comprehensive analysis of the reasons that can cause premium.

59) Moreover, the issue of transaction premia highlights an important shortcoming of Ofgem's attempt to consider the cost of equity in isolation of the cost of debt. The cost of debt has in fact been a significant factor in explaining recent valuation premia. These premia therefore represent prima facia evidence that Ofgem must consider the allowed return as a whole, rather than looking only at the cost of equity.

60) The rest of this annex sets out further detail on these points.

The Consultation does not recognise all the factors behind observed premia

61) The consultation recognises future outperformance and optimism bias as factors that help explain transaction premia, in addition to differences between allowed and market returns. However, there are also a number of other factors that will play a role.

a) *Prices paid may well be overstated* – full details of private transactions are rarely public domain, with the press reliant instead on leaks. The management teams selling assets have an incentive to quote as high a price as possible on the deal to make it sound like they have achieved a top price, even if this might not properly reflect the terms of the deal. Meanwhile, the acquirers would not want to do anything to change this perception, at least until the deal has completed. By the time the deal has closed, many months later, media interest in any new information about the valuation will have faded.

b) *Stripping out the value of non-regulated assets can be very difficult* – regulated assets are often bundled with non-regulated assets. By definition, such assets have values which are linked even less closely to any available financial measure of their size (such as book value). Attempting to strip out their value therefore gives rise to a wide margin for error, and in situations where they have been valued aggressively by the purchaser, is likely to give rise to an over-estimate of the value placed on the regulated business.

c) *Pension related adjustments can be material* – different sectors can have materially different regulatory treatments of pension costs. These differing treatments can be the source of significant adjustments to valuations, are difficult to strip out in any calculation of a transaction premium, and mean that such estimates can be materially affected.

d) *Taxation can be a significant driver of value in corporate transactions* – tax losses which can absorb profits have scope to create significant value in corporate transactions. This value might vary significantly between buyer and seller, creating a wide range for negotiations unrelated to the economic value of the asset (when looked at in isolation). They can therefore lead to significant differences in the value creation associated with a transaction, and therefore prices paid, when compared to regulated asset value.

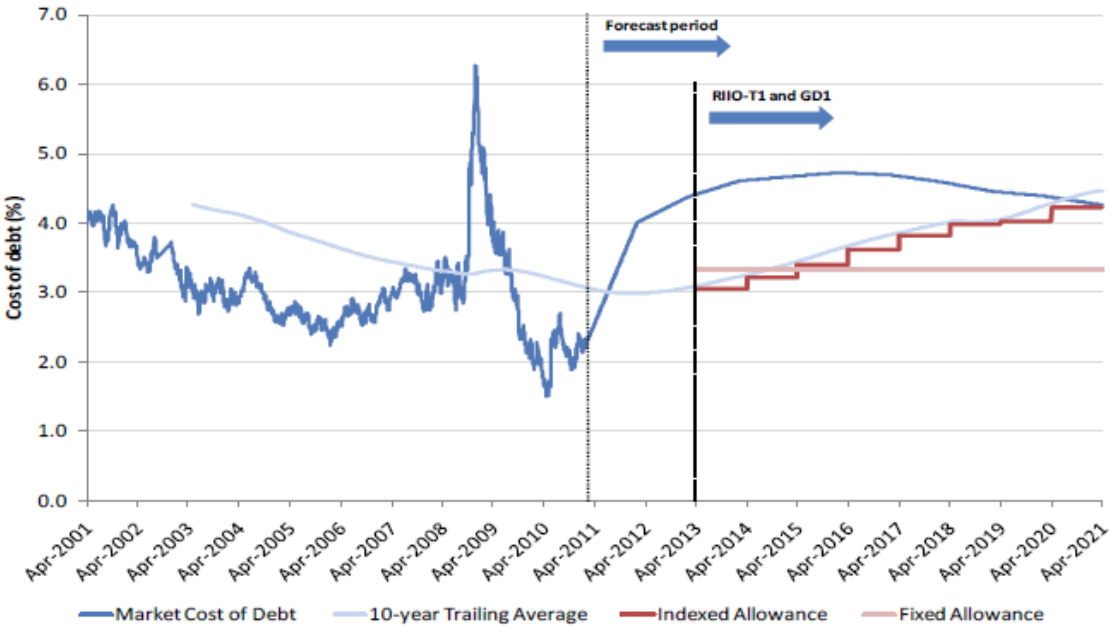
62) Taken together with the factors mentioned by Ofgem (outperformance potential and optimism bias), these factors can explain a significant proportion of the premia observed in some transactions.

The cost of equity cannot be considered in isolation from the cost of debt when evaluating premia

63) The 30% premia observed in the electricity distribution sector early in the DPCR5 period took place at a time of exceptionally low spot rates in the debt market.

64) At the same time, the allowed cost of debt had been fixed at 3.6% real to the end of the DPCR5 period (April 2015). There is also likely to have been an expectation amongst the parties bidding in those asset auctions that the allowed cost of debt in the subsequent price control period would continue at levels close to the DPCR5 3.6%. This was illustrated well by Ofgem's publication in March 2011 of its view of the future path for the cost of debt index based on analysis for forward curves.

Table 2: Ofgem's March 2011 illustration of the cost of debt on 10 year utility bonds



Source: Ofgem, March 2011, RIIO-T1 and GD1 strategy decision, financial issues document, page 20

65) Any transaction funded at a time when the spot rate on debt was around 2%, where the bidders expected the allowed cost of debt to remain at or around 3.6% for the lifetime of the assets (due to future rises in the spot rate of debt supporting regulatory allowances) will have warranted a sizeable premium, especially where the asset for sale was being offered with very little debt on its balance sheet (or where existing debt is marked to market in the calculation of any valuation premium to RAV). But now that expectations for the future profile in the cost of debt allowance are far closer to the current spot rates on debt, which have themselves been rising recently, such premia will have been significantly reduced.[13]

66) The table below shows our modelling of how the transaction premia on a notional company will have varied between March 2011 and the level it is likely to be at in March 2015.

[13] By early 2013, Ofgem's iBoxx measure of the cost of issuing new debt had fallen to around 1%, continuing to support cost of debt premia in an environment where Ofgem's 10 year trailing average for the coming year remained at 2.9%.

Table 3: Transaction premia on a notional DNO in 2011 and 2015	
Purchase date	Premium implied by future cashflows on the cost of debt, relative to spot rates
1 April 2011	17%
1 April 2015	9%

Source: Northern Powergrid analysis

67) The only differences between these two scenarios are the timing of debt issuance, and the assumption on future cost of debt allowances. The first scenario implicitly assumes a purchase at a low spot rate of debt followed by a recovery in debt rates that leads to the allowed cost of debt remaining around the DPCR5 level of 3.6%. The second scenario assumes debt is issued at current rates (which are higher than in 2011) and factors in our business plan central scenario for the cost of debt in the RIIO-ED1 period, which is well below 3.6%.

68) Both scenarios assume relatively aggressive gearing above the operating company, taking the overall level to 80%, using 10 year bonds. Higher gearing can be sustainably financed in the short term, without stressing the majority of credit metrics, where it is possible to gear up at spot rates that are below the regulatory allowance for debt costs. Equity would of course take on the additional refinancing risk associated with this debt, and face greater exposure to losses in the event debt interest payments cannot be met. But this would not stop the net effect of increased gearing in these specific circumstances from adding to the valuation of the target company. Since the scope to gear up on this basis will be significantly diminished from the start of the RIIO-ED1 period, the step down in premia moving from the early years of the DPCR5 period to the early years of the RIIO-ED1 period will be larger than the figures calculated above suggest.

69) The analysis shows that the persistence of low spot rates of interest, in combination with a 10 year trailing average approach to setting the allowed cost of debt in the RIIO-ED1 period, will remove at least 10 percentage points from transaction premia compared to those observed in the early parts of the DPCR5 period. Moreover, transaction premia in relation to the cost of debt can still be expected even under an indexed approach to the cost of debt, for as long as the spot rate on new debt remains below the level the indexed allowance is expected to take over coming years.

ANNEX 2: THE CHANGE IN LONG-TERM RPI PROSPECTS

70) In our response to question 1 of the Consultation, we cite four reasons that, taken together, mean that Ofgem has significantly over-stated the size of the change in long run prospects for RPI inflation that has taken place since 2009. These reasons are that:

a) Ofgem has over-estimated the increase in the size of the formula effect.

b) Lower council tax increases in future will reduce the wedge between RPI and CPI inflation, offsetting a large part of the increase in the formula effect.

c) Ofgem has already increased its view of long-term RPI inflation prospects between 2009 and the RIIO-ED1 strategy decision

d) The UK statistics authority has not ruled out, and in fact is actively considering, changes to data collection routines that would reduce the formula effect.

71) This annex sets out the analysis supporting these four points.

72) In addition to this analysis, it is also worth noting that it may not be appropriate to adjust a 6.7% cost of equity assumption for electricity distribution by the (net) change in prospects for RPI inflation. All electricity distribution companies were aware of the change in the formula effect, and other offsetting factors, at the time they submitted their July 2013 plans, so these factors should already be taken into account in the plans submitted by both the fast- and slow-track companies.

73) Moreover, the 6.9% cost of equity set for gas transmission, and the 7.0% cost of equity set for electricity transmission, are more appropriate baseline benchmarks for the level of risk involved in electricity distribution than the 6.7% awarded to gas distribution (supporting evidence is set out in the financing section Northern Powergrid's July 2013 business plan). The fact that business plans did not assume higher equity costs suggests that the increase in the formula effect has already been taken into account in those plans.

Ofgem has over-estimated the increase in the size of the formula effect

74) Ofgem's view of the formula effect, set out in chart 4 of the Consultation, is based directly on the ONS data tables that decompose differences between CPI and RPI

inflation. Ofgem uses this data to calculate the increase in the formula effect that occurred following the change to data collection routines in 2010.

75) These tables are however not appropriate to rely on for an estimate of the increase in the formula effect for Ofgem's current purpose for the following reason.

76) In short, they give the formula effect *that would exist if the RPI used the same weights as CPI*. Since the RPI actually places significantly *lower* weight on clothing prices than the CPI, and since clothing is one of the main contributors to the formula effect, the true formula effect (and its increase) is lower than is stated in the ONS decomposition.

77) The full logic is as follows.

a) The ONS calculations start from the CPI measure of inflation and progressively work towards the RPI measure of inflation. At the step of the calculation where the formula effect is calculated, the weights being used remain those present in the CPI measure of inflation. As a result, the formula effect the ONS calculates is the formula effect that would exist if RPI used the same weights as CPI (which, of course, it does not).

b) The CPI contains significantly higher weights on clothing. Clothing is one of the categories that contributes significantly to the formula effect, and changes in clothing price data collection routines in particular were responsible for a large proportion of the increase in the formula effect. Since the ONS figures state the formula effect *that would exist if the RPI used the same weights as CPI*, they significantly overstate the true formula effect. They also overstate the increase in the formula effect that took place when data collection routines were changed.

c) The last step of the ONS calculation, the weights and other differences element of the decomposition, is calculated as a residual. This value will capture the reduction in the formula effect which will occur when the RPI's weights on clothing are used in its calculation, rather than the CPI's weights. For Ofgem's purposes, of calculating the increase in long-term RPI inflation prospects that resulted from the change in data collection routines, this reduction should be taken into account.

78) We have confirmed that this logic is correct through discussions of the issue with the ONS.

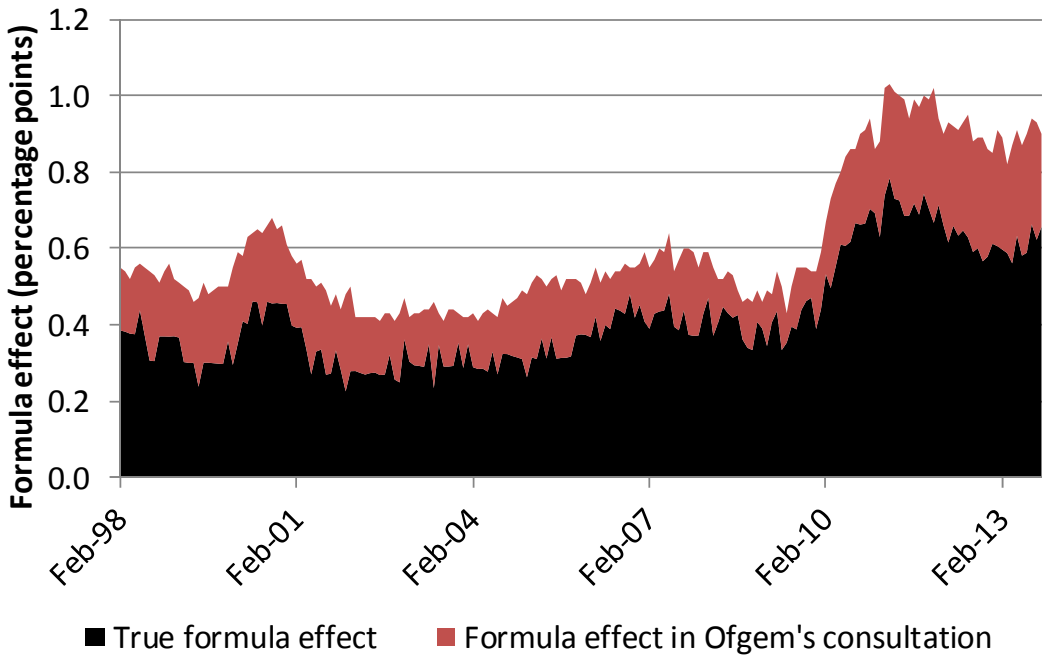
79) The simplest way to arrive at a measure of the formula effect that is suitable for Ofgem's purposes is to calculate it directly, as the difference between RPI inflation and

RPI inflation as it would be calculated if RPI used the same Jevons formula as CPI inflation.

80) The ONS now publishes data on RPIJ, in which the Carli formula (which is principally responsible for the formula effect) is replaced by Jevons formula, and which has been designated as a national statistic. By calculating the difference between RPI and RPIJ, the formula effect which is needed for Ofgem's current purposes can be estimated.

81) The figure below shows the 'true' formula effect from 2007 to 2013, calculated using the difference between RPI inflation and RPIJ inflation, and also highlights the over-estimate entailed by Ofgem's figures (the red area).

Table 4: Ofgem's over-estimation of the formula effect



Source: Northern Powergrid analysis of ONS data

82) The figure shows that the formula effect, when properly defined for the current purpose, is smaller than the figures quoted by Ofgem. [14]

[14] RPIJ still uses the Dutot formula, rather than the Jevons formula, for around 30% of its coverage. The statistical tests performed by the ONS in its October 2012 consultation show that the Dutot formula performs as well as the Jevons formula in almost all circumstances. While it could still lead to some differences in measured inflation compared to the Jevons formula, the ONS has confirmed to us that this effect will be less than 0.1 percentage points on the all items RPI index. Moreover, the only available direct evidence on the size of this 'Dutot formula effect' (which comes from the

83) More importantly, the chart shows that the increase in the formula effect is smaller than Ofgem's estimate. The 'true' formula effect stepped up from an average of around 0.35 percentage points before 2010, to an average of around 0.65 percentage points from 2010 onwards, a difference of just under 0.3 percentage points.

84) The figures also suggest that there was a spike in the formula effect as the new ONS data gathering routines were 'bedding in' during 2010 and 2011. The difference between the formula effect for the period from 2012 onwards, and the five years preceding the 2010 change, is even smaller, at around 0.2 percentage points.

85) In other words, while there was an increase in the formula effect, it started from a lower base, and was less pronounced, than Ofgem's figures in the Consultation show. The potential implications of the increase in the formula effect for both the cost of equity, and cost of debt via its automatic impact on the index, are therefore smaller than Ofgem has stated in the Consultation.

The cap on council tax increases will offset part of the increase in the formula effect

86) Ofgem has not accounted for the likely reduction in future council tax rises, to 2.0%, which will reduce other factors which create a gap between RPI and CPI by around 0.15 percentage points.

87) As justification for disregarding non-formula effect changes, Ofgem cites an OBR paper. However, this paper was written in 2011 and is now substantively out of date. The OBR itself no longer uses its results for its estimate of long run RPI inflation. In particular, the paper made no reference to the Localism Act (2011) and the reduction in annual increases in council tax, compared to historical levels, this is likely to bring about.

88) The Localism Act (2011) introduced the requirement for local councils to hold a referendum if they want to increase council tax by more than 2%. Previously they have risen much faster than this. Since council tax features in the RPI, but not in CPI, above 2.0% increases in council tax have previously added to the wedge between RPI and CPI.

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estimated data published alongside the ONS November 2012 consultation, on options 3 and 4 for RPI inflation) suggests it actually reduced at the time the changes in data collection routines were brought in, moving from around 0.03 percentage points during 2009 to only 0.01 percentage points during 2011.

89) The likely outcome of the Localism Act over the medium term is that council tax will increase by 2.0% per annum. Once current incentives for councils to avoid any increase in council tax expire, councils are likely to seek to maximise the revenue increases they can obtain from council tax. But local residents are unlikely to support tax increases on themselves in a referendum, which will mean the likely outcome is for average council tax rates to increase by 2.0%. In the near term, council tax rates are likely to increase by significantly less than this.

90) Quantifying the scale of this change in prospects for RPI inflation requires an assessment of the degree to which council tax increases have historically added to RPI inflation. Over the 12 years from 1997 and 2009, council tax bills on a band D property more than doubled, rising by 105%, according to DLCG figures, which equates to average increases of just over 6% per annum. This corresponds to the average annual increase recorded by the ONS for this component of RPI over the same time period. The weight on council tax in the RPI is 4%. This means council tax increases will have historically added around 0.24 percentage points to RPI inflation. The Localism Act means that, in future, this contribution will be reduced to around 0.08 percentage points.

91) Overall, the introduction of the limits on council tax increases put in place by the Localism Act (2011) mean that the long run wedge between RPI inflation and CPI inflation has been reduced by around 0.16 percentage points.

92) Moreover, this change occurred only shortly after the change in the formula effect. It means that over 50% of the increase in the formula effect has already been offset by a directly observable, comparable, factor. Ofgem must therefore reconsider its view at paragraph 2.20 of the consultation that housing cost inflation (including council tax) is not likely to be lower in future years than it was over 1997 to 2009.

Ofgem has already increased its view of long-term RPI inflation since 2009

93) In formulating its cost of equity range for RIIO-ED1, Ofgem had already taken into account an increase in long-term RPI inflation prospects compared to 2009. Since Ofgem had already raised its view of RPI inflation by 0.1 percentage points in advance of the 2013 strategy decision, this offsets at least part of the increase in the formula effect that took place over the course of 2010.

94) When Ofgem conducted DPCR5, it relied on advice from external economic advisors and estimates from analysts for estimates of the long-term gap between RPI and CPI inflation.

a) Its external economic advisors, CEPA, concurred with many contemporary economists and concluded that the long-term level of RPI inflation consistent with the Bank of England's 2.0% CPI inflation target was 2.7%, stating that '*we assume a trend growth rate of 2.7% per annum, which is the RPI inflation rate that corresponds to CPI inflation of 2% (i.e. in line with the Bank of England's target)*'.[15]

b) The consensus of analyst forecasts provided to Ofgem at the time of the review, evidence which Ofgem factored into the cost of debt element of the DPCR5 settlement, was also that this figure was 2.7%.[16]

95) By the time Ofgem took its decision on the strategy consultation in 2013, it had increased its view of long-term RPI inflation prospects, assuming that the Bank of England hits its inflation target, to 2.8%.[17] This upwards shift was based on actual data on the gap between RPI and CPI inflation. One of the factors which led to the increase was therefore the increase in the formula effect. In other words, Ofgem has already accounted for at least part of this increase.

96) Since Ofgem has already increased its forecast of long-term RPI inflation by 0.1 percentage points over the same time horizon as the increase in the formula effect, it should net this amount off any adjustment on account of the increase in the formula effect.

The UK Statistics Authority has been actively exploring further changes to data collection routines to reduce the formula effect

97) Ofgem notes at paragraph 2.12 of its consultation that future changes to the elementary formulae of the RPI have been ruled out (and that only routine changes will be made). While Ofgem recognises that the formula effect could increase or decrease in the future it effectively assumes that the mathematical expectation of future changes is zero.

[15] CEPA, 2009, Report on behalf of Ofgem – update on input price inflation forecasts, p3.

[16] Ofgem, 2009, DPCR5 Final proposals, Financial issues document, p10.

[17] Ofgem, 2013, RIIO-ED1 strategy decision, Financial issues document, p13, para 2.36.

98) This is not however the true mathematical expectation of likely future changes. At present, the balance of the probabilities appears to be that there will be changes to data collection routines that will reduce the formula effect in future.

99) While the ONS decision not to change the elementary formulae used to construct the RPI index included a commitment to continue to improve the quality of price statistics data, it did not rule out making future changes to data collection routines that could offset the increase in the formula effect. The UK Consumer Prices Advisory Committee, in its latest meeting, was still actively considering changes that could be made to data collection routines to reduce the formula effect.[18] During 2012, this involved a major pilot on clothing items, which included the following:

a) Using more tightly defined descriptions for items such as women's formal jackets.

b) The introduction of seasonal distinctions for items such as men's casual jackets.

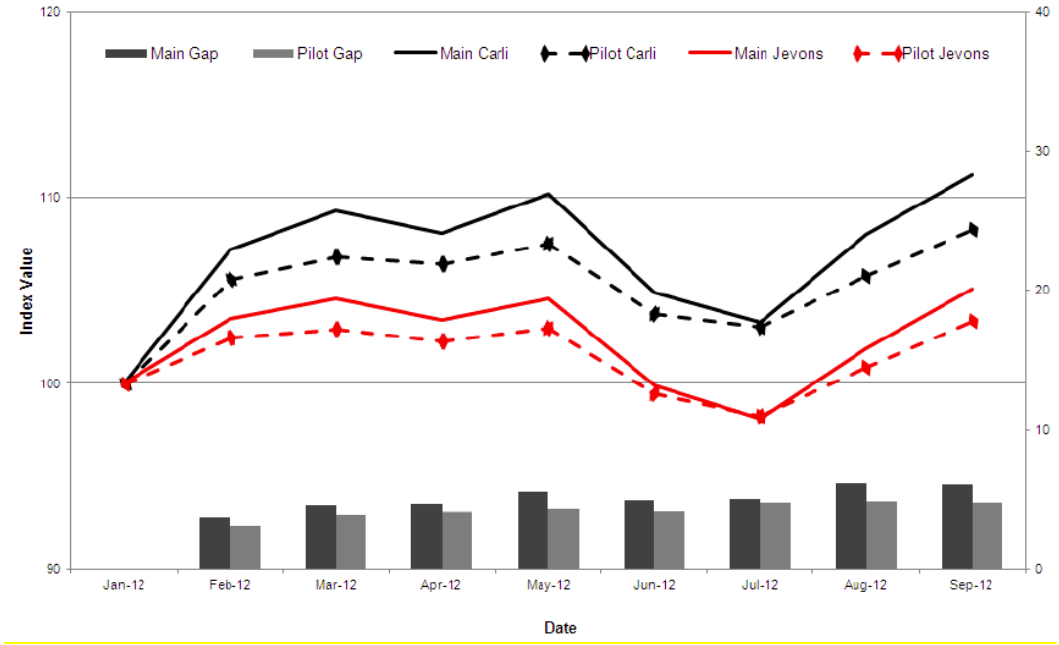
c) The reintroduction of an 'out of stock' code so that price collectors do not immediately need to select a replacement item if the initial item is not available.

d) New guidelines on the selection of replacement items when they are required, such as matching quality and branding as closely as possible.

100) The initial results of the pilot showed that the changes would result in a reduction in the formula effect for clothing, eliminating around 20% of the effect, as illustrated in the chart below.

[18] The UK Consumer Prices Advisory committee last met in January 2013. It has not met since then pending the results of a review into the governance of UK price statistics. A separate review is also considering price statistics in the context of the needs of users.

Table 5: The initial results of the ONS 2012 pilot of revised data collection routines



Source: CPAC November 2012 update on the clothing price collection pilot

101) While this may not offset the whole of the increase in the formula effect due to changes in data collection routines in 2010, it does demonstrate that some reduction is certainly possible.

102) It also demonstrates that the bodies governing UK statistics have actively been considering changes which could have the effect of offsetting the 2010 increase in the formula effect. They can be expected to continue doing so.