

Northern Ireland Electricity Limited

Transmission and Distribution
RP5 Price Control

**Response to the
Competition Commission's
Provisional Determination**

29 November 2013



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CHAPTER 1

INTRODUCTION

Overview

- 1.1 This document comprises NIE's response to the CC's Provisional Determination (PD).
- 1.2 NIE is concerned that, if NIE were, in due course, to be subject to price controls in the form proposed in the PD, that would leave NIE unable to finance its regulated activities, and would be detrimental to customers. NIE submits that the CC's PD strikes an inappropriate balance between the object of protecting customers as to price, and the object of protecting customers' interests in ensuring a safe and reliable system of electricity supply, to the standards attained in other comparable markets such as GB. NIE submits that the CC's proposed revenue allowances for NIE are too low, and the structure of the CC's proposed price control would unduly constrain NIE's flexibility to reprioritise network investment in response to changing circumstances and customers' requirements. We address these issues in detail in the remainder of this submission.
- 1.3 NIE welcomes many positive elements of the CC's provisional decision, and, in particular:
 - its decision not to make any capitalisation adjustments to NIE's opening RAB for the period from 1 April 2012;
 - its decision, in many respects, to follow methodologies used by Ofgem in regulating the GB DNOs; and
 - its encouragement to the UR to benchmark NIE's performance against the performance of the GB DNOs in conducting future price control reviews.

However, the overall result of the CC's provisional assessment would be to place NIE at a material disadvantage, relative to the GB DNOs against which it is to be benchmarked, since the CC has provisionally decided to allow no investment for the automation of rural networks, not to make any allowance for R&D expenditure, and not to allow any incentive mechanisms for the attainment of specified performance levels. Moreover, the CC intends that NIE's price control should be structured to allow NIE far less flexibility than is available to GB DNOs to respond dynamically to changing investment needs. Thus, when NIE next falls to be benchmarked against GB DNOs, the comparison is likely to be so skewed against NIE as to detract substantially from the value of the benchmarking exercise. NIE therefore invites the CC to reconsider how its proposed price control for NIE compares with those applied or likely in future to be applied in GB.

- 1.4 However, NIE's most serious concerns arise from the fact that, in many respects, the CC's provisional determination is tainted by serious errors and deficiencies of assessment. Unless these errors and deficiencies are corrected, the CC's Final Report will be open to serious and justified criticism among informed commentators and to successful challenge in judicial review proceedings. For the reasons given below, NIE considers that it would be unable to finance its regulated activities on the basis of the CC's present proposals. On receipt of the CC's Final Report, it will therefore have no option but to consider all available options to protect the interests of its customers and investors.
- 1.5 In the interests of brevity, NIE has confined its response in the remaining chapters to dealing with issues in respect of which NIE considers it important that the CC should reconsider its provisional determination to correct manifest errors; to reconsider conclusions for which no adequate reasoning is provided; to take account of significant evidence or arguments which have been omitted from consideration; and to achieve a more appropriate overall assessment of the evidence and arguments.
- 1.6 It follows that there are some elements of the PD with which NIE disagrees, but on which it does not comment in the present response. NIE reserves the right to comment on additional points at a later stage, if they assume more importance as the investigation progresses. Likewise, NIE reserves the right to comment further on other elements of the PD, in light of any response made by the UR or by other third parties.

Errors and deficiencies in the CC's provisional determination

- 1.7 Among the points raised in the present response, the following errors and deficiencies in the PD are particularly material.

Benchmarking, RPEs and productivity assessments

- 1.8 The CC's benchmarking and real price effect (RPE) analysis rely on data which is no longer the best available data:
- The CC has, to date, relied on data relating to the 2009/10 year, in conducting its benchmarking work, and has used 2009/10 as its base year. The CC therefore used its RPE estimates to roll forward the resulting base year costs for all later years, including years which are already past.
 - However, the CC has, for some time, had access to data relating to the GB DNOs for 2010/11 and 2011/12. It could have used this data to infer an estimate of an efficient cost level for NIE for 2011/12. The fact that the CC did not have data for NIE need not have prevented it from using 2011/12 as a base year.
 - The CC has relied on its RPE and productivity forecasts to roll forward its estimate of the efficient level of costs from 2009/10 up to 2012/13 (the

opening year of the period under review), and then for each successive year up to 30 September 2017. But, for years which have already past, it is not necessary for the CC to rely on RPE/productivity forecasts (which is merely a second best option). It can use outturn data (the best option) about the evolution of GB DNOs' costs over past periods. Such outturn data reveals that the CC's RPE/productivity forecasts are, overall, too low for the period from 2009/10 to 2012/13. This is strongly suggestive that the CC has also understated the overall RPE/productivity costs which NIE will face for the remainder of the RP5 period.

- During the CC investigation, NIE has been working to produce NIE's cost data in respect of the years 2010/11 and 2011/12, and can now provide it to the CC. Having produced this data, NIE has rerun the CC's benchmarking exercise by reference to the most recent available year (2011/12). This provides quite different results from those produced by the CC for 2009/10, confirming that, by relying on earlier years' data and forecast RPEs/productivity adjustments, the CC has underestimated the efficient level of costs which NIE requires in the opening year of the period under review (2012/13).

In short, NIE considers that the CC has failed to use the best available data to estimate the efficient level of costs for NIE for the period under review. More recent data (including information now available to the CC (i.e. NIE's cost data for 2011/12)) provides a sufficiently material additional insight into the efficient level of NIE's costs for the period under review as to require the CC to rerun its benchmarking and RPE assessments using the more up to date data. The deficiencies in the CC's benchmarking and RPE assessments can be rectified, or mitigated, by using the more up to date information which is now available to the CC.

Capex

- 1.9 The CC's assessment of NIE's direct capex requirements provides no adequate flexibility for NIE's management to respond to unforeseen major incidents affecting the safety and reliability of the network, as they are legally required to do. Under the CC's proposals, NIE would recover, at most, 50% of the costs of addressing such incidents. The flexibility mechanisms proposed by the CC do not provide the degree of flexibility which the CC claims for them.
- 1.10 Nor does the CC make any direct allowance for certain major projects for which NIE has made a convincing safety/reliability case. In particular, the CC's direct capex assessment makes no allowance for NIE to make additional investments to improve its network resilience for the benefit of rural customers in the face of extreme adverse weather conditions. The CC's proposals risk leaving some rural customers with an unacceptably high risk of prolonged interruptions to their supply in periods of extremely bad weather.

- 1.11 The CC fails to take account of the fact that its proposals are designed to provide allowable revenues for 5.5, not 5, years and substantial parts of NIE's capex allowance need to be scaled up to cover the longer period, which will include the busy and cost-intensive run up to an extra winter period.

Pension fund deficit: ERDCs

- 1.12 The CC provides no reasons to explain its provisional conclusion that NIE's shareholders have not yet discharged the 30% of early retirement deficit costs (ERDCs) for which they are liable. NIE's shareholders have made very substantial voluntary contributions to the pension scheme since 2005, which are more than adequate to discharge their responsibility for 30% of the ERDCs. The CC has no good reason to ignore these contributions, since they had the direct effect of reducing the scheme deficit on a pound for pound basis. Since NIE's shareholders were not bound to discharge any part of the deficit other than their share of ERDCs, the contribution should be treated as having discharged their ERDC liabilities before any other portion of the deficit. The CC's provisional decision exposes NIE (and its shareholder) to substantial additional costs without any justification.

Reliance on direct/indirect cost analysis

- 1.13 The CC's overall proposals rely on a split of NIE's costs (direct/indirect) which is quite unlike the capex/opex split which NIE uses in its accounts and in reporting to the UR, and which has hitherto been used in regulating NIE's T&D charges. The CC's decision to rely on a quite different analysis of NIE's costs carries substantial risks:
- There is a real risk that the CC has "lost" costs in its workings, and has therefore underestimated the aggregate level of costs which NIE requires to conduct its regulated activities;
 - There is a real risk that, having arrived at an aggregate figure for NIE's allowable indirect costs, the CC has wrongly allocated it among different elements of the price control allowances. Since the CC envisages that the capex elements of the price control should be strictly structured, so as to preclude NIE from using monies allowed in one fund for other kinds of capex project, there is a real risk that the funds allowed for particular kinds of capex work will be insufficient, and that the flexibility mechanisms available to allow funds to be redirected to different purposes will be insufficient to remedy such shortfalls; and
 - The CC's proposed adjustment mechanisms (e.g. the 50/50 sharing of over-/underspends) assumes that NIE will be able to report its expenditure from day 1 based on an analysis of its costs into direct/indirect costs. This is simply not possible, since NIE has hitherto accounted and reported on a different basis, and, as NIE makes clear in this response, it will take considerable time to move to a different basis of reporting.

- 1.14 It is therefore important that the CC should consider carefully how these risks can best be addressed, with a view to ensuring that NIE is adequately protected in terms of its aggregate allowed revenues, and the mechanisms which are to govern how NIE is free to use those revenues across its business as a whole.

Cost of capital and financeability

- 1.15 The CC's assessment of NIE's cost of capital embodies errors and parts of its assessment are not supported by reasoning. Thus, the CC's estimated cost of debt erroneously computes the weighting of new and existing debt; the estimated ERP relies on a misinterpretation of some of the evidence, while other evidence on which the CC relies comprises an anomalous selection from a large body of available evidence. The CC does not provide reasoning to justify its selection. The CC provides no sustainable reason to reject NIE's proposed NI equity premium.
- 1.16 But, even if the CC's assessment of NIE's overall capex costs, indirect costs and IMFT costs were substantially correct, the effect of the CC's proposals would be that NIE would be unable to finance its regulated functions in the period to 30 September 2017. The CC's financeability assessment recognises that NIE's interest cover ratios would be strained. But the CC fails to recognise that, in consequence, NIE might face a reduction in its credit rating, leading to a further increase in its cost of capital.
- 1.17 The CC's financeability assessment is fundamentally unsound, and the position would be much worse than the CC envisages:
- The CC has used an uncorrected version of the UR's financeability model which does not correct errors pointed out by NIE, and which the UR also recognises to be unsound. Simple spreadsheet errors have led to an overestimate of NIE's revenues and a significant understatement of NIE's capital funding requirements and financing costs;
 - The CC takes no account of the costs which NIE can be expected to incur on capex projects designed to increase the capacity and capability of its transmission network (which will be subject to individual approval by the UR). These are likely to entail, in aggregate, some £150 million of capital expenditure over the period, which the CC has entirely ignored;
 - The CC has ignored the implications of its proposals for the level of allowed revenues which will be (in large part, retrospectively) applied to the period from 1 April 2012 up to 30 September 2014; and
 - The CC has conducted no sensitivity analyses to assess the impact on financeability if it turns out (as the PD itself contemplates to be a possibility) that NIE needs to spend more than the CC has allowed (with only a 50% adjustment to allowed revenues). In view of the considerations outlined in paragraph 1.13 above, this is a particularly pressing concern in the present case.

It is no answer to these concerns to suggest that NIE's shareholder can simply inject additional capital, with no prospect of a timely return. The CC's duty to have regard to the need to ensure that NIE can finance its regulated functions cannot be discharged by expecting ESB (or any other shareholder) to provide additional capital with no prospect of a fair return, in circumstances where the CC has identified no good reason to prevent ESB from earning a fair return.

- 1.18 In short, the overall effect of the CC's PD would be to leave NIE with insufficient revenues to finance its regulated activities over the period to 30 September 2017, with potentially serious detriments to customers and investors. There is, however, an opportunity for the CC to correct these deficiencies in its Final Report. NIE will work constructively with the CC to help it achieve that result.

Other issues

- 1.19 The CC's administrative timetable makes clear that it aims to issue its Final Report in February 2014. Such expedition is clearly desirable, so as to bring certainty as soon as possible to the terms on which NIE is to operate for the remainder of the RP5 period, and so as to allow ample time for the CC's conclusions to be implemented via appropriate licence modifications. However, NIE is concerned that there are numerous important issues which require further attention and consideration, and numerous errors and misjudgements which need to be corrected in any Final Report. NIE would urge the CC to spend additional time in reaching well-founded conclusions in respect of these issues, even if that entails some delay beyond the target date which the CC has set itself for the issuing of its Final Report.
- 1.20 NIE is also concerned that, having conducted a thorough investigation of the matters referred to it, the CC should do all that is necessary and appropriate to ensure that its Final Report is framed in terms which ensure that its conclusions will be implemented in full and as quickly as possible¹. To that end, NIE sets out in chapter 21 of this response its legal submissions as to how this can best be achieved.
- 1.21 We would point out that, except where otherwise stated, all cost figures quoted in the present response are expressed in 2009/10 prices.
- 1.22 Finally, we note that, since publication of the PD, the CC has helpfully provided a series of clarificatory emails to NIE and the UR, responding to specific questions as to how the proposed price control would operate in practice. NIE is still considering the CC's detailed responses to those questions and may wish to make further submissions in respect of them.

¹ Unless, of course, they fall to be set aside in judicial review proceedings.

CHAPTER 2

BENCHMARKING AND REAL PRICE EFFECTS

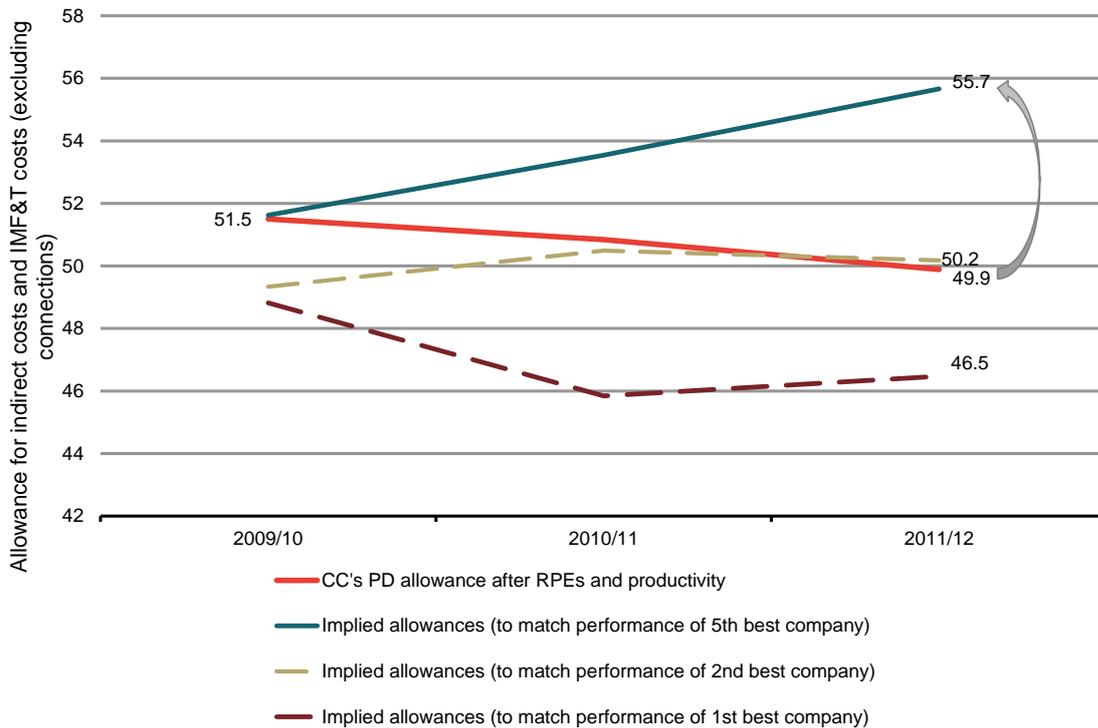
1. INTRODUCTION AND SUMMARY

- 1.1 This chapter sets out our response to the CC's Provisional Determination on benchmarking, real price effects (RPEs) and on-going productivity, as set out in Chapters 8 and 11 of the PD.
- 1.2 NIE has confined its present response to issues where, in NIE's submission, there are errors or deficiencies in the CC's approach, so that the analysis and results of its PD stand in need of correction. We have not sought to challenge the CC's provisional conclusions in respect of matters where NIE merely disagrees with the CC's overall assessment of the evidence, or matters where NIE disagrees as to how the CC has chosen to strike a balance among competing considerations. In short, NIE submits that the CC's Final Report would be logically and legally unsustainable unless it were to correct the errors identified below in respect of these chapters of the PD.
- 1.3 The CC makes clear in its PD that its objective is:
- to rely on the best available benchmarking data to ascertain an appropriately efficient level of allowance for NIE's indirect costs and its inspection, maintenance, fault and tree cutting costs (IMFT) for a base year. The CC has provisionally decided that NIE's allowable costs should be set at a level which would place it 5th in an efficiency ranking of the 15 UK DNOs (PD 8.83); and
 - then to make the best available estimate of how the base year costs should be rolled forward, taking account of both the inflationary factors to which NIE's T&D Business is subject and the extent to which NIE may be expected to attain further productivity savings. The CC thereby aims to derive appropriate cost allowances for the subsequent years of the price control.
- 1.4 If the CC's estimates are sound, in respect of the starting allowance and in the application of year-to-year RPE/productivity adjustments to that allowance, then one might expect the associated allowances to maintain NIE's position as the 5th most efficient DNO over the period of the RP5 price control.
- 1.5 However, the CC's benchmarking and RPE/productivity assessment does not achieve its intended object, by failing to take account of the best available evidence. In part this arises as a consequence of the CC's use of 2009/10 as its base year, rather than 2011/12. Although at the time of the PD the CC did not have available to

it data for NIE for 2011/12 (PD paragraph 8.20), this can now be remedied as NIE is, as part of its response to the PD, submitting the relevant data for 2011/12¹.

- 1.6 When the CC completes its analysis of 2011/12 it will discover that, owing to substantial increases in the costs incurred by the GB DNOs over time, its estimate of the efficient level of costs for NIE will increase substantially. Consequently, it will become clear that the CC has in its PD materially underestimated the appropriate level of allowance that NIE should receive under its own method. For its FD, the CC should rely on 2011/12 data.
- 1.7 Furthermore, analysis of 2011/12 data will also reveal to the CC that it has made an obvious error in determining its RPE and productivity assumptions.
- 1.8 In its PD the CC has relied on an estimate of the effect of RPEs and an estimate of the efficient level of attainable productivity gains from the base year up to the start of the price control in 2012. Analysis of outturn evidence for 2011/12 shows that the combined effect of actual RPEs and actual productivity gains justifies a larger revenue allowance. In other words, the CC has erred in its "forecasts" of RPEs and productivity, as can be seen by reference to the GB DNO cost data that was available to it at the time of its PD. Furthermore, the fact that the CC's "forecast" turns out to have understated the costs actually incurred by DNOs in this period is strongly suggestive that the CC's forecast for the future period (out to September 2017) will also be wrong.
- 1.9 In consequence, the overall effect of the CC's approach is not to require NIE to match the performance of the 5th best company in the CC's sample of 15, but to provide an allowance at a far lower level, more in line with the performance of the 2nd placed DNO in the sample. This is illustrated in Figure 2.1 below.

¹ By virtue of the CC's method, it should be noted that the results of the updated analysis do not depend significantly on NIE's own costs. Indeed, the CC itself could have inferred NIE's 2011/12 efficient costs for the purposes of the PD with the GB DNO data it had, coupled with an estimate of the CSV for NIE.

Figure 2.1: Overall effect of CC's approach

Source: Frontier analysis

1.10 The result is that, although NIE has been found to be relatively efficient in 2009/10, it will face a new price control which entails a year 1 cost allowance that is 14% below its actual cost base, as Table 2.1 below shows.

Table 2.1: Combined impact of the CC's benchmarking, RPE and productivity assumptions

	2009/10	2010/11	2011/12
NIE's actual indirects costs and IMF&T costs - excluding connections, £m	52.1	55.4	58.0
CC's PD allowance after RPEs and productivity, £m	51.5	50.8	49.9
Implied effective efficiency discount under CC's approach (relative to NIE's actuals)	-1%	-8%	-14%

NB: The figures in the second row of this table were derived from the CC's own analysis, specifically rows 13,14, 15 and 23 of the CC's spreadsheet "For parties – CC cost assessment calculations" after applying the CC's own RPE/productivity assumptions between 2009/10 and 2011/12.

Source: Frontier analysis

1.11 As noted, one of the reasons for this divergence of effect and intent is that the CC's method derives the efficient costs for the first year of the price control by rolling forward the costs derived from the benchmarking exercise on 2009/10 data by assumptions for RPEs and productivity. Had the price control review been completed in a timely manner then 2009/10 data would have been the latest data

available (at least until late in the review process) and it is standard regulatory practice to rely on a base year and then project forward. However, in this case, because of the delays involved in finalising the RP5 price control, much more recent data is available and there is now no good reason not to use it.

- 1.12 The validity of these objections to the CC's analysis and conclusions is confirmed by information contained in Ofgem's recent publication in respect of its RIIO-ED1 Fast Track decision².
- 1.13 The GB DNOs have – with only one exception for one licence – forecast that their total expenditure will increase over the RIIO-ED1, in many cases by a substantial amount. We note in particular that each of the four licensees whose business plans have been found by Ofgem to be well-founded, and whose determinations have therefore been Fast Tracked by Ofgem have been so treated on the basis of business plans that project overall cost increases. This contrasts markedly with the cost allowances proposed in the CC's PD, which start from a base that is manifestly too low and then fall significantly over time. The effect of the PD would be to require NIE to live within cost allowances that would be very significantly below the levels that are contemplated for the GB DNOs, an outcome that would entirely fail to deliver the CC's overall objective – namely to hold NIE to the efficiency standard set by the more efficient DNOs.

Table 2.2: Increases in totex projected by the GB DNOs in their RIIO-ED1 business plans

GB DNO	Projected average totex change
ENW	-2%
NPgN	16%
NPgY	15%
WMID	2%
EMID	3%
SWALES	9%
SWEST	20%
LPN	24%
SPN	4%
EPN	7%
SPD	15%
SPMW	27%
SSEH	27%
SSES	19%

NB: Percentage changes measure the difference between average projected totex over the RIIO-ED1 period versus average actual cost during the first three years of DPCR5.

² See in particular "Assessment of the RIIO-ED1 business plans", Ofgem, November 2013. https://www.ofgem.gov.uk/sites/default/files/docs/2013/11/assessment_of_the_riio-ed1_business_plans_0.pdf

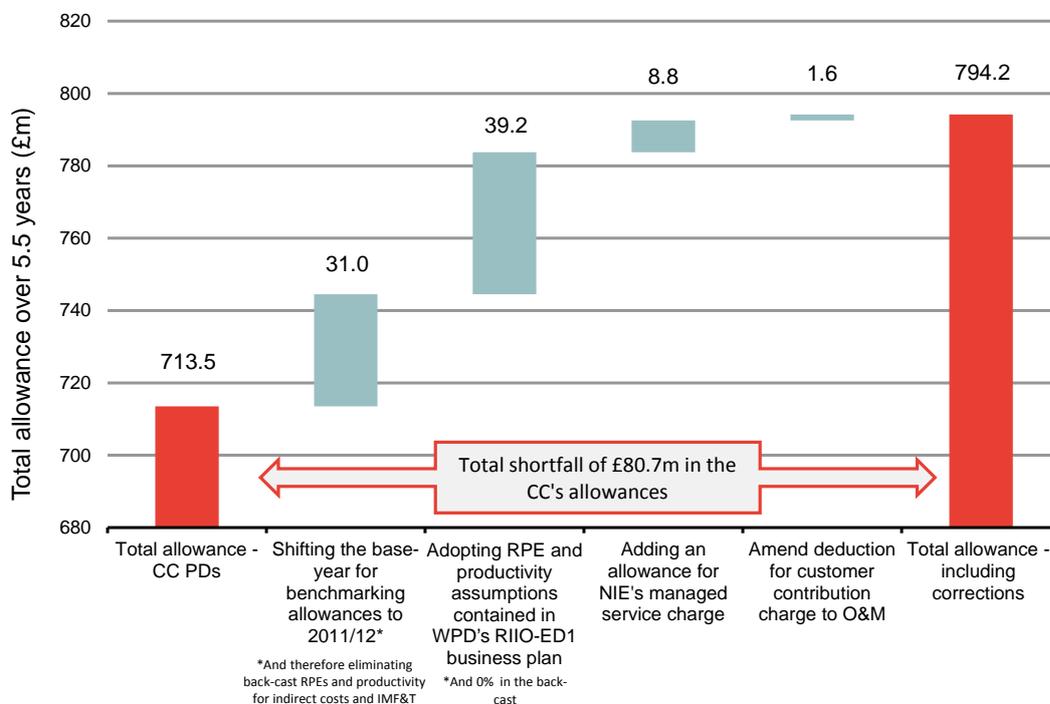
The four GB DNOs in bold have been Fast Tracked by Ofgem.

Source: Assessment of the RIIO-ED1 business plans, Supplementary Annex, Ofgem, 22 November 2013. Appendix 9, Table A9.1.

- 1.14 There are two immediate consequences of this analysis.
- 1.15 The first is obvious and it is that the CC should update its benchmarking analysis using the most up to date information.
- 1.16 The second is that the efficiency frontier derived from the use of outturn data for 2011/12 is so different from the frontier which the CC has estimated that the CC's estimates of RPEs and productivity that were applied for 2010/11 and 2011/12 are shown to be badly wrong and, as such, serious doubt is cast over the CC's estimates for RPEs and productivity for the whole of the RP5 price control period as to render those estimates unreliable. These estimates must therefore also be revisited and revised in the light of the latest available information.
- 1.17 In addition, to the two corrections, NIE has also identified two further errors in the CC's analysis, which require correction. These are in respect of:
- the absence of an allowance for a set of direct costs (hitherto included within NIE's managed service charge), which arises as a consequence of the CC's approach to splitting NIE's capex allowance into its direct and indirect elements; and
 - inadequacies in the CC's proposed treatment of customer contributions to O&M.
- 1.18 Taken together, these inadequacies give rise to a significant shortfall in allowances when compared to the likely level of future cost in GB (as revealed by Ofgem's RIIO-ED1 Fast Track document) and also when compared to NIE's own required allowances. NIE has estimated the allowances that are likely to result should the CC adapt its PD appropriately. This analysis suggests that allowances in aggregate need to be increased by £80.7m to give effect to the CC's intended approach and to correct for obvious errors, broken down between the four necessary corrections as illustrated in Figure 2.2 and Table 2.3 below.
- 1.19 In completing this assessment NIE has adopted the RPE and productivity assumptions contained in WPD's RIIO-ED1 business plan. Given that this plan has now been Fast Tracked by Ofgem, NIE submits that it must be regarded as the latest and most relevant regulatory precedent from GB, revealing Ofgem's present view of the balance between input price inflation and productivity going forward. While it would appear that the CC has chosen to ignore the evidence that NIE has put before it hitherto in respect of RPEs and productivity, it may be persuaded by the contemporaneous view of the most relevant sector regulator.

- 1.20 NIE also notes the CC's overall proposals rely on a split of NIE's costs (direct/indirect) which is quite unlike the capex/opex split which NIE uses in its accounts and in reporting to the UR, and which has hitherto been used in regulating NIE's T&D charges. The CC's decision to rely on a quite different analysis of NIE's costs carries substantial risks, as noted in Chapter 1 (Introduction) to this response (paragraph 1.13). It is therefore important that the CC should consider carefully how these risks can best be addressed, with a view to ensuring that NIE is adequately protected in terms of its aggregate allowed revenues, and the mechanisms which are to govern how NIE is free to use those revenues across its business as a whole. While, in Table 2.3 below, NIE has produced estimates of how the aggregate increase in allowances may flow through to increases in the CC's opex and capex allowances, NIE reserves the right to comment at a later stage on the CC's cost splitting methodology, particularly in so far as this may impact on the speed of money and hence NIE's financeability.
- 1.21 More generally, the CC has adopted a new approach to determining NIE's allowances which is different from how costs were set out in NIE's SoC. There are however a number of costs that the CC has not at present factored into its PD since they sit outside the benchmarking, such as metering costs, that would previously have been included under NIE's cost category of R&M. Consideration needs to be given to the recovery of costs such as these prior to the Final Determination.

Figure 2.2: Combined impact of the CC's errors



Source: Frontier analysis

Table 2.3: Overall impact of CC's errors (£m)

	2012/201 3	2013/201 4	2014/201 5	2015/201 6	2016/201 7	2017/201 8	Total
Allowances - CC's PD							
Opex	34.3	33.9	33.6	33.2	32.8	16.4	184.2
Capex	60.1	68.5	93.6	92.5	91.7	45.6	452.0
Rates and license fees	14.5	14.6	14.6	14.7	14.8	7.4	80.6
Deduction for connection charge contribution to O&M	-0.6	-0.6	-0.6	-0.6	-0.6	-0.3	-3.3
Total	108.3	116.4	141.2	139.8	138.8	69.1	713.5
Allowances after correcting errors							
Opex	38.4	38.4	38.2	38.0	37.9	19.0	210.0
Capex	66.6	76.3	103.6	103.2	103.6	52.0	505.3
Rates and license fees	14.5	14.6	14.6	14.7	14.8	7.4	80.6
Deduction for connection charge contribution to O&M	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-1.7
Total	119.2	129.0	156.1	155.6	156.0	78.3	794.2
Overall impact							£80.7m

Source: Frontier analysis

- 1.22 Should the CC fail to adapt its PD appropriately to address the deficiencies identified above, the consequences for NIE are stark. NIE's activities would be inadequately funded over the course of RP5 which would place an intolerable strain on the business as it seeks to provide an appropriate level of service for customers. It is totally unreasonable to expect the shareholder to fund the shortfall in required allowances.
- 1.23 The remainder of this Chapter 2 comprises four sections, which elaborate on the points raised above, and explain how the CC's errors and deficiencies can be corrected. These sections also cover certain other related errors which ought also to be corrected. The following sections address the following topics:

- benchmarking, including in particular the effect of the CC's use of data from 2009/10 instead of 2011/12;
- an assessment of the extent to which the CC's overall assessment of RPEs and ongoing productivity departs from recent regulatory precedent and the latest available information, so as to be fundamentally unsound. In this section, we explain how the CC's mis-assessment of particular inputs into its RPE/productivity estimates may have led it to a significantly flawed conclusion;
- the absence of an allowance for a set of direct costs (hitherto included within NIE's managed service charge), which arises as a consequence of the CC's approach to splitting NIE's capex allowance into its direct and indirect elements; and
- inadequacies in the CC's proposed treatment of customer contributions to O&M.

2. BENCHMARKING

2.1 This Section 2 details the CC's errors in its approach to the benchmarking of NIE's indirect costs and IMF&T costs.

2.2 In short, the CC's PD is in need of significant revision as:

- the CC needs to estimate efficient costs by reference to information for 2011/12; and
- the CC erred by placing a high weight on model M6 which embodies a wholly inappropriate assumption in respect of economies of scale that results in its being mis-specified.

2.3 There is also an error in the CC's cost mapping exercise for 2009/10 (in respect of the allocation of pensions to the connections business) that requires correction, in addition to a correction to NIE's cost mapping for IMFT that we need to bring to the CC's attention.

Shifting the frontier to 2011/12

2.4 The CC uses 2009/10 as the base year for setting its allowances, rather than 2011/12. Using 2009/10 results in the CC identifying £51.5m³ as the efficient level of costs for the base year. This base year level of cost is then rolled forward using the CC's assumptions in respect of RPEs and productivity.

³ See PD paragraph 8.137.

- 2.5 As is set out in detail below, NIE has asked Frontier to undertake analysis of the costs that the CC would determine should it now make use of the latest information available to it. This analysis reveals that by applying its chosen method the CC will determine a far higher level of allowances in its FD as there have been significant cost increases across the GB DNOs.
- 2.6 Consequently, NIE submits that the CC has materially underestimated the efficient level of costs that should inform RP5 allowances. This should be addressed in the Final Report.
- 2.7 There can be no doubt that, in principle, it is better to base benchmarking on up to date data, since this maximises the prospect that the (historic) benchmarked figures will closely approximate to the revenues required for the (later) period under review. The CC may have considered itself unable to base its benchmarking on later data, owing to the lack of data for NIE for 2010/11 and 2011/12. In response to this potential concern, NIE has undertaken the necessary work to estimate its costs for these years. NIE's data is summarised in Table 2.4 below and will be provided to the CC and UR.

Table 2.4: NIE's indirects and IMF&T costs (excluding connections) - £m

	2009/10	2010/11	2011/12
NIE's outturn costs (further details in paragraphs 2.21 to 2.30)	52.1	55.4	58.0

Source: NIE

- 2.8 Table 2.5 below illustrates the results of Frontier's analysis. We compare (before considering the impact of productivity and RPEs):
- (A) The CC's approach based on 2009/10.** The CC determines an efficient level of costs of £51.5m for 2009/10, which it uses as its estimate of efficient base year costs for indirect costs and IMFT. A flat allowance of £51.5m was set for the remaining years (before productivity and RPEs).
- (B) Updated approach based on latest data available to CC when it completed its PD and the latest NIE data.** Using its latest cost estimates summarised in Table 2.4 above, NIE has repeated the exercise described in B). The estimated efficient costs for 2011/12 under this approach are £55.7m, £4.2m higher than the CC's 2009/10 allowances.

Table 2.5: Impact of the CC's underestimation based on Model M4

	2009/10	2011/12
A) The CC's approach based on 2009/10 data	51.5	51.5
B) Updated approach based on latest data available to CC when it completed its PD and the latest NIE data	51.6	55.7
B – A	0.1	4.2

Note: All results calculated in this table prepared on the same basis as the values reported in PD paragraph 8.137 and Table 8.7.

Source: Frontier analysis

2.9 Frontier's analysis confirms that the CC underestimates the efficient level of costs in 2011/2 by £4.2m (before considering the impact of productivity and RPEs). This underestimation is increased materially as a result of the CC's assumptions for RPEs and ongoing productivity over the period 2009/10 to 2010/11. This is discussed separately in Section 3 below.

Flaws in model selection

2.10 The CC presents 6 different econometric specifications in its FD. The CC has confirmed that it proposes to place the most weight on models M4 and M6 in determining its allowances⁴.

2.11 Model M6 assumes constant returns to scale in the DNO business. The CC acknowledges this as a "disadvantage" (see paragraph 8.132). In fact, this results in the Model M6 being of little, if any, value for the purposes of the CC's benchmarking analysis. It is entirely inappropriate to depend in any way on model M6. It is clear from the CC's own results (and indeed from numerous previous studies on the GB DNO data over many years) that there is no empirical support for an assumption of constant returns to scale within the GB DNO dataset. The deficiency in the Model M6 is particularly significant when, as in this case, the CC's task is to investigate the smallest company in the UK sample.

2.12 Table 2.6 below summarises the parameter estimates for models M4 and M5 (which are specified in logs implying that the coefficient on the scale parameter can be compared against 1 in order to understand evidence on scale effects). We note that these are in each and every case below 1 – consistent with increasing returns to scale – and in the majority of cases statistically significantly below 1 (shown in bold where statistically significant).

⁴ Confirmed to the parties by email from Paul Jackson, received 19 November 2013.

Table 2.6: Evidence on scale efficiencies from the CC's own analysis

	M4	M5
WA0	0.927***	0.780***
WA1	0.908***	0.762***
WA2	0.883***	0.736***
WA3	0.839***	0.690***
WA4	0.885***	0.738***
WA5	0.931***	0.785***
WA6	0.894***	0.746***
WA7	0.841***	0.693***
WA8	0.901***	0.751***

Note: *** denotes that the regression coefficients are statistically significant at 1%; Numbers in bold denote that coefficients are statistically different from 1 at 5%.

Source: CC's PD annexe tables 2 – 7

- 2.13 Despite these very significant deficiencies in the M6 Model, it is apparent from inspection of Table 8.7 in the PD and the raw cost estimate derived by the CC of £51.5m that the CC has in fact placed more weight on model M6 than on its other preferred model, M4. It is clear, on examination, that the CC's reasons for attaching weight to Model M6 are fundamentally unsound.
- 2.14 In paragraphs 8.130 and 8.131 the CC discusses its rationale for placing weight on M6. It provides four main arguments. We respond to each of these in turn.
- 2.15 First, it corresponds to a model used in the past by Ofwat. While this may be true, the fact that this model may be used by another regulator in another sector does not obviate the need to confirm that its underlying assumptions in respect of scale economies are supported by the data before the CC. Its use elsewhere, where the relevant assumptions on economies of scale may (or may not) be satisfied, provides no justification for its use here.
- 2.16 Second, it does not treat the volume of electricity distributed as an important determinant of variations in costs between companies. While this may be true, this is not in itself a strength of the model. It is appropriate to attach some weight to a measure of throughput, as this will be closely correlated with peak demand on the network, which is itself an important driver of network capacity and hence cost. The absence of a measure of throughput is therefore a weakness of this model, not a strength.
- 2.17 Third, it does not rely on a composite scale variable that requires external specification of weights to explanatory factors. While this may be the case, this

benefit cannot offset this model's manifestly inappropriate specification in respect of scale economies.

- 2.18 Finally, the CC considers that, because the dependent variable for this model is cost per customer, rather than total cost, M6 is less prone to the statistical problem of heteroscedasticity. This provides no good reason for using the Model M6 in the present case. There is no good reason for the CC to have concerns as to heteroscedasticity in the sample, given that this would have absolutely no effect on parameter estimates and hence on its efficiency estimates. Heteroscedasticity could be a concern if the CC was undertaking hypothesis testing, as it may cause standard errors to be biased. Since the CC has undertaken no hypothesis testing, this concern is irrelevant. In any event, since heteroscedasticity can also be addressed by estimating models in logs, rather than levels, the CC already has two model specifications where heteroscedasticity would be addressed. And finally, the CC has in any event estimated its regression models using robust standard errors.
- 2.19 In summary, the CC has no good reason to prefer Model M6. Its inappropriate assumptions in respect of scale economies serve unjustifiably to penalise NIE, the smallest company in the sample.
- 2.20 The models adopted by Frontier and CEPA, which both make use of a single and relatively simple cost driver, either the DPCR4 CSV or MEAV, are labelled by the CC as M1 and M2 respectively. The CC's models M4 and M5, are effectively the same models but in logs (i.e. a log linear regression of cost on a single output). NIE considers that any of these models can be used to provide high level insights into the efficiency of NIE's operations. For the most part, the results (in terms of the estimate of NIE's modelled costs) from these four models appear broadly consistent. For simplicity, therefore, since the CC has rejected the use of models that rely on MEAV (PD paragraph 8.133), and seems to prefer the log specification to the levels specification (PD paragraph 8.126) we propose that the CC derives its estimate of NIE's efficient modelled costs from M4.

Data updates and corrections

- 2.21 NIE raises below two concerns in respect of the data that should input into the CC's final benchmarking assessment. While NIE continues to consider certain of the CC's judgements inappropriate, we have decided to limit our comments to areas that we consider to be clear errors, or where there is new information or reasoning to bring to the CC's attention. Below we provide comments on:
- errors in the CC's apportionment of pension costs to the connections business; and
 - an error made by NIE in respect of our estimation of R&M.
- 2.22 As part of our response we are also submitting to the CC the benchmarking data for NIE that it needs for 2010/11 and 2011/12 and we comment briefly on this below.

Allocation of indirect costs to connections

2.23 In respect of the allocation of costs to NIE's connection activities the CC has accepted in its benchmarking the approach hitherto used by NIE/Frontier, i.e. to apportion and hence exclude a fixed proportion (20.3%) of all indirect costs. However, having reviewed in detail the CC's estimation of NIE's indirect cost for 2009/10, the CC has failed to apply the connections adjustment to the entirety of the relevant pension costs. Specifically the CC should apply the connections adjustment to:

- the adjustment it has made for benchmarking to NIE T&D's ongoing pension costs (to ensure that actual cash costs are reflected in the analysis rather than NIE's IAS19 P&L pension charge); and
- the adjustment it has made to NIE Powerteam's ongoing pension costs attributed to indirect and IMFT costs, for the same reason.

2.24 Once corrected, this would exclude a further £0.54m from benchmarked costs (in 2009/10). These costs should be allowed for separately, along with the remaining connection costs already excluded from the benchmarking, through NIE's connection charging methodology. For the avoidance of doubt, similar adjustments have also been applied to the benchmarking data NIE now provides in respect of 2010/11 and 2011/12 (£0.54m and £0.58m respectively).

Estimation of R&M for benchmarking

2.25 NIE has made an error in assessing IMFT costs for the purpose of its benchmarking work. The error relates to the estimated costs of tree cutting associated with overhead line refurbishment and re-engineering programmes.

2.26 In the calculation for this stream of work undertaken for the original estimation of IMFT costs, the cost of tree cutting associated with overhead line refurbishment/re-engineering work was derived on the basis of budgeted rates, as outturn costs were unavailable. However, outturn costs are now available, and indeed have already been passed to UR in support of its investigation into capitalisation practices.

2.27 In the interests of consistency and accuracy, NIE has restated this element of its costs to reflect the information already before UR and the CC. The overall effect of this correction is to increase the estimated quantum of IMFT by £0.3m in 2009/10. For the avoidance of doubt, similar adjustments have also been applied to the benchmarking data NIE now provides in respect of 2010/11 and 2011/12 (£0.13m and £0.02m respectively).

Historic data for 2010/11 and 2011/12

2.28 Frontier's previous benchmarking of NIE's indirect costs was based on a single year of data for 2009/10. Frontier did not have access to the GB DNO data for the more

recent years. NIE therefore did not extend its cost mapping exercise to cover 2010/11 and 2011/12.

- 2.29 The CC subsequently indicated that Ofgem would provide it with access to data for 2010/11 and 2011/12 for the GB DNOs and, at a late stage in the process to date, the CC requested more up to date data from NIE. NIE explained that it would be unable to provide this data before the release of the PD, but would be able to do so in due course.
- 2.30 NIE has completed the work necessary to provide the relevant data for 2010/11 and 2011/12 and now submits this additional data to the CC to inform the CC's benchmarking exercise. NIE's indirect and IMF&T costs for 2009/10, 2010/11 and 2011/12 are summarised in the Table 2.7 below. NIE will provide all relevant details to the CC on how these estimates have been derived and stands ready to answer any questions the CC may have.

Table 2.7: NIE's indirects and IMF&T data (excluding connections)

	2009/10	2010/11	2011/12
CC's estimate	52.3		
NIE's estimate	52.1	55.4	58.0

Source: NIE

3. RPES AND ONGOING PRODUCTIVITY

- 3.1 In this Section 3, we elaborate on the CC's errors in its provisional assessment of RPEs and ongoing productivity.
- 3.2 Our main concerns are that:
- the CC's RPE and productivity "forecasts" for the now-completed periods of 2010/11 and 2011/12 are wholly inconsistent with the evidence as to outturn costs. GB DNO costs have increased by 5.6%⁵ over the period whereas the CC has assumed that they have reduced by 4.0%⁶ for opex and by 2.2%⁷ for capex; and
 - the CC has provisionally determined that, in light of its estimates in respect of RPEs and productivity combined, NIE should be able to achieve significant real cost reductions throughout RP5, a conclusion that is entirely unjustified in the light of the latest GB data, evidence revealed

⁵ This estimate is based on an analysis of the indirect and IMFT cost data provided to NIE by Ofgem (via the CC) for the GB DNOs over the period 2009/10 to 2011/12.

⁶ Derived from analysis of PD Table 11.11.

⁷ Ibid.

by Ofgem as part of its RIIO-ED1 Fast Track decision and a wide variety of recent decisions taken by other regulators.

- 3.3 In short, NIE expects to face significant upward cost pressures in RP5 on the inputs to its business and has consistently provided significant evidence to support this throughout the process. The CC has essentially ignored that evidence. The upward pressures which NIE has identified will result in cost increases in excess of RPI. In its SoC, NIE requested a total allowance of £48 million for such RPEs spread across opex and capex and provided a wide range of analysis to support this view.
- 3.4 In contrast, the combined effect of the CC's estimates in respect of RPEs and ongoing productivity is to reduce NIE's allowances by £38m. In the light of the available evidence, this is wholly unreasonable.
- 3.5 We provide further detail of our concerns, and proposed remedies below.

RPE and productivity backcasts

- 3.6 As we have already evidenced above, the CC's use of 2009/10 as its base year has given rise to a significant underestimation of the efficient level of costs that should inform RP5 allowances.
- 3.7 Part of this underestimation arises directly in the benchmarking, as a consequence of the costs incurred by the GB DNOs during 2011/12. However the underestimation is increased materially as a result of the CC's application of adjustments for RPEs and ongoing productivity between 2009/10 and 2011/12.
- 3.8 GB DNO costs have increased by 5.6% over the period whereas the CC has assumed that they have reduced by 4.0% for opex and by 2.2% for capex.
- 3.9 It is immediately clear from this that the CC's adjustments for RPEs for opex and capex (which both contain significant indirect costs) must be revisited and revised in the FD. The CC's assumptions cannot be sustained and should not be used to set allowances.
- 3.10 The remedy for indirect and IMFT costs is to use 2011/12 as the base. This eliminates the need for the CC to make "forecasts" in respect of periods for which outturn data is available in respect of that subset of costs. As discussed under the heading 'Shifting the frontier to 2011/12' above, NIE's assessment of its efficient costs in 2011/12 is £55.7m, based directly on evidence from GB, whereas the CC's methodology of estimation and roll forward has derived an estimate of just £49.9m.
- 3.11 For costs other than indirect and IMFT costs, NIE submits that the CC should not depend on its backcast assumptions and should instead presume that, at the very least, RPEs and productivity broadly cancel out. The CC may wish to reflect on whether evidence of recent cost increases in the available GB DNO data for indirects and IMFT indicates that there is a need to assume similar real cost increases in other costs.

RPE and productivity forecasts

- 3.12 The CC's overall proposed adjustments for RPEs and productivity over the entire period (2009/10 to 2017/18) imply that NIE should be able to achieve close to 1% real cost reductions year on year across the entirety of its cost base. By the end of the forecast period, the CC assumes that for both opex and capex the level of efficient costs will have reduced by 7% relative to the base year of 2009/10. As we have already noted, there is no support for such a trajectory of costs in the GB DNO data, but here we review specifically the CC's forecast RPEs and productivity gains against evidence from the GB DNOs RIIO-ED1 business plans and against recent regulatory precedent.
- 3.13 In reaching its view on future real cost movements the CC has been strongly influenced, at least in respect of its productivity assumption, by the GB DNOs RIIO-ED1 business plans. The CC has deemed it reasonable to adopt and apply one assumption from the GB DNOs Fast Track plans, i.e. their assumptions in respect of ongoing productivity of 1% gains across the entire cost base, but has essentially ignored their views on RPEs. Consequently, while the CC projects significant real cost decreases on balance over the RP5 period, citing the GB DNOs in support of this view, the GB DNOs in fact take a markedly different view.
- 3.14 The GB DNOs forecast that owing to the net effect of RPEs and productivity changes real costs will fall in the range RPI – 0.1% to RPI + 0.4%. We note that the one GB DNO group to be Fast Tracked by Ofgem – WPD – has forecast real cost increases of RPI + 0.4% per annum on average⁸.

Table 2.8: Net effect of forecast RPEs and productivity projected by the GB DNOs in their RIIO-ED1 business plans and CC PD

GB DNO	Projected net effect of RPEs and productivity
ENW	RPI – 0.1%
NPg	RPI + 0.4%
WPD	RPI + 0.4%
UKPN	RPI + 0.1%
SP	RPI – 0.1%
SSE	RPI – 0.1%
CC - PD	RPI – 0.9%

Source: Assessment of the RIIO-ED1 business plans, Supplementary Annex, Ofgem, 22 November 2013. Appendices 3 to 8. For CC, derived from PD Table 11.11

- 3.15 The CC's conclusions are also markedly different from the judgements made by other regulators during their recent regulatory reviews. NIE submits that this confirms that

⁸ "Assessment of the RIIO-ED1 business plans", Ofgem, 22 November 2013. See Appendix 5, paragraph 1.28.

the CC has misinterpreted the relevant data and has failed critically to evaluate its own forecasts.

3.16 In the course of this inquiry UR has submitted a paper (UR-28) that helpfully summarises recent regulatory settlements. This paper reveals that:

- in its most recent review of National Grid's Electricity Transmission business (RIIO-T1), Ofgem determined that a combined adjustment for RPEs and productivity of RPI+0.1% was justified over the period 2011/12 to 2020/21;
- of the 5 regulatory determinations for opex reported in Table 1 of UR-28, only one identified that a negative adjustment was reasonable (RPI-0.2% on average), with the four other determinations finding positive average adjustments ranging between RPI+0.3% and RPI+1.2% on average; and
- of the 3 regulatory determinations for capex reported in Table 2 of UR-28, each of them found that productivity and RPEs should effectively cancel out.

3.17 In view of the errors identified above, and in the face of these comparators, the CC's position is manifestly unreasonable. It is to be noted that the CC has provided no reasoning to support the very significant differences between its assessment of future real cost changes and that of Ofgem at RIIO-T1, a view that was formed only 12 months before the CC's.

3.18 As NIE argued in its Supplementary Submission (see Annex 6, Section 2, paragraphs 2.3 to 2.12), in steady state, RPEs and ongoing productivity can be expected broadly to cancel each other out. This follows because, as labour becomes more effective over time and creates savings, these will be captured by labour (which will earn its marginal product⁹) and will not be available to be shared between customers and shareholders. Ofgem appears to have taken account of this view in its recent regulatory decisions, whereas the CC does not.

3.19 NIE also identified a range of other factors that would lead one to conclude that the electricity network sector is unlikely to be in steady state going forward. These included:

- the fact that any pre-privatisation inefficiency has now been eliminated, implying that operators now start from a more efficient cost base and future productivity savings must therefore be smaller than has been the case historically;

⁹ In a competitive economy, if we measure wages in terms of "units of output", then it must be the case that a worker will be paid the number of units it produces. If a worker were paid more (less) than a competitive firm would be able to increase its profits by reducing (increasing) the amount of labour it hired. As demand for labour shifted this would change the competitive wage rate in the economy and restore equilibrium. NIE submits that the CC's working presumption should be that RPEs and productivity will typically cancel out, unless there are reasons to believe wages are not in equilibrium.

- decarbonisation is giving rise to significant new challenges for network operators, leading to increasing demand for network services to accommodate the connection of new kinds of generating plant in new locations, and, in consequence, increasing costs; and
- in particular, the significant expansion of electrical networks in UK and beyond which is increasing demand for skilled engineers very materially, and creating genuine scarcity. NIE has submitted direct evidence of GB network operators seeking to poach its staff and offering remuneration far in excess of its own packages. NIE also submitted substantive evidence to show that its wages are at or below market rates for the majority of its job roles.

3.20 The CC does not appear to have addressed adequately any of these factors in its PD, and has instead relied on a purely mechanistic process for estimating real cost changes over time, without applying any obvious sense checks to ensure the result is credible. NIE submits that the CC's PD in this regard is manifestly flawed and unreasonable and should be revised to bring assumptions into line with the wider consensus. One option available to the CC would be to adopt the assumptions embodied in WPD's now Fast Tracked business plan, i.e. to adopt forecasts of RPI + 0.4% over RP5, which may be regarded as consistent with Ofgem's prevailing view of likely real cost changes for an electricity network operator. At the very least, the CC should adopt a view consistent with that of all other regulatory offices that have recently opined on RPEs and productivity, and should presume that on balance RPEs and productivity will cancel out going forward.

3.21 The following subsections provide detail on two areas where the CC may have made inappropriate judgements in its detailed choices in respect of labour and specialist materials. NIE submits that substantial changes are likely to be required in both areas.

Labour RPEs

3.22 NIE's wage settlements submitted as part of its SOC (chapter 8) demonstrated beyond any doubt that NIE did not benefit from the real wage reductions that occurred in the general economy due to the specialist skills of its direct workforce and the significant demand for those skills combined with existing salary levels that were and are below market rates.

3.23 The CC in its PD, paragraph 11.42 (a) states that "NIE's settlements represent a narrow measure of its labour costs as they do not properly capture the price of bought-in labour". This statement is incorrect. NIE's wage settlements represent c.80% of its entire workforce including bought-in labour and is not therefore a narrow measure of its labour costs.

3.24 Further, in paragraph 11.42 (b) the CC states that "NIE settlements would amount to a straight pass-through of actual wage settlements to consumers. These settlements

may not have been set at an efficient level". NIE has submitted substantial evidence as part of its SOC to demonstrate that its wages are set at an efficient level and that the majority of its salary levels (after the inclusion of wage settlements) are efficient and are within or below the relevant market rates and are efficient. It appears that the CC has had little or no regard for the evidence provided in NIE's SOC. NIE submits that its HR model (which includes effective working practices to maximise the working week and maximise efficiency) has allowed it to deliver a significant reduction in head count and consequently significant cost savings since privatisation, all to the ultimate benefit of customers.

- 3.25 In constructing its RPEs, both the UR and NIE made a distinction between specialist and general labour, using a premium of 1.25% above general wage inflation to forecast specialist labour inflation. NIE considered this entirely reasonable as it reflected accurately its experience of the challenges it faces in retaining its highly trained staff as a result of aggressive attempts to recruit its staff by better funded network operators in GB. Further, we note that in its Fast Tracked business plan WPD also assumed that it was reasonable to split labour between general and specialist categories and to then apply an uplift of 1.25% p.a. to its forecast RPE for specialist labour¹⁰.
- 3.26 This distinction also accurately reflects the underlying nature of NIE's HR model, which actively focuses on upskilling its staff to be able to work autonomously across a wide range of activities in remote locations. Given NIE's relative isolation, operating as it does as the sole employer of these skills in NI, NIE has developed HR processes to provide almost all its labour needs for itself.
- 3.27 The CC did not make a distinction between the specialist and general labour categories in its labour RPE forecasts in its PD. Instead, it used the OBR forecast average weekly earnings as the input price index for all labour. But this is an index that covers the entire labour market, and consequently takes no account of the specialist nature of staff employed in the electrical network sector. Rolling forward NIE's labour costs according to an economy wide forecast takes no account of the present and ongoing pressures to retain and attract staff, on which NIE has already submitted detailed evidence. It is not clear that the CC has taken any account of the substantial body of evidence that exists to suggest that there is a shortage of skilled engineers or the future effect of this shortage on real wages for skilled engineers, or the challenges faced by NIE that arise as a result of it being the only operator in NI, which makes it necessary for NIE to train the entirety of its staff itself.
- 3.28 NIE submits that the CC should either base its forecast on evidence that pertains to specialist labour or that it should continue to make use of a general index, but apply a specialist labour uplift to account for the evidence of real wage increases for specialist labour.

¹⁰ See Section 57 of WPD's business plan. <http://www.westernpower.co.uk/About-us/Stakeholder-information/Our-Future-Business-Plan.aspx>

3.29 Finally, as noted in Section 2 (benchmarking) above, NIE submits that the CC should make use of the latest data in its benchmarking and should consequently be informed by GB DNO costs in 2011/12. Assuming that the CC agrees, then the detailed issues pertaining to labour "forecasts" for past periods cease to be relevant. However, in the interests of completeness, NIE wishes to make the following observations. NIE continues to believe that its pay increases over the period 2009/10 to 2011/12 were a necessary and efficient response to prevailing labour market conditions. Recent salary benchmarking undertaken by NIE continues to show that NIE's remuneration strategy is market leading – in this context NIE does not accept the CC's characterisation that NIE faced, or expected to face, a pass through of its labour costs. Moreover, despite the increases awarded over the period, NIE has experienced a rapid increase in resignations, specifically from individuals leaving to take up similar positions with another company for substantial pay increase. NIE submits that, by failing to recognise NIE's pay settlements as part of the overall dataset, the CC is effectively applying an efficiency discount to NIE, in circumstances where the CC's benchmarking reveals that no such discount is justified. If the CC persists in a benchmarking approach which necessitates the making of labour cost adjustments for this period, then NIE submits that it should make use of NIE's own outturn labour RPEs.

Specialist materials RPEs

3.30 NIE's and UR's forecasts of RPEs for specialist materials were derived from the BEAMA Basic Electrical Materials Index. The CC, on the other hand, derived its forecasts from an average of four PPIs from the Office of National Statistics (ONS):

- Electric motors, generators, and transformers; electricity distribution and control equipment (JVR6);
- Electricity distribution and control apparatus (JV72);
- Other electronic and electric wires and cables (K32F); and
- Cold Drawn Wire (JV2C).

3.31 The CC's forecast RPEs for specialist materials derived from these PPIs are significantly lower than BEAMA's independent forecasts (as set out in Table 2.9). NIE's view is that the CC should use BEAMA's forecasts, an index specifically prepared for use in the industry.

Table 2.9: Comparison of BEAMA Elec. nominal forecast with CC and First Economics

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
CC	11.1	4.7	-2.0	3.1			
UR/FE	11.7	10.7	2.0	4.0	5.0	5.0	5.0
BEAMA Elec.	11.7	10.7	0.0	1.0	4.3	4.1	3.9

NB: BEAMA forecast until end-2016. The first three months of 2017 were calculated by taking the compound average monthly growth rate from 2005-2016. This methodology has a minimal effect as it only applies to three months of the financial year.

3.32 NIE supports the use of the BEAMA index because of the following.

- Precision: the BEAMA indices are themselves built from ONS PPI data with the intention of making them directly relevant to the electrical industry.
- Objectivity: this index is produced by a third party organisation. It avoids subjective choice and weighting of ONS input indices.
- Support from the UR: In 'UR-96 RPEs and Productivity putback paper', the UR remarks on the CC's choice of series: "We are surprised by the omission of any BEAMA indices from this list. The BEAMA indices are built from ONS PPI source data for the express purpose of making the ONS data set relevant to the electrical industry. We think that the CC should at least consider one or more BEAMA series alongside the ONS data."
- Insensitivity to choice of time period: The CC relies on a long run average to calculate its forecast. To calculate this average, it uses the period 1996-2012. Table 2.10 below shows how the estimate of long run price changes vary as the first year is brought forward and indicates the substantial effect of the CC's arbitrary choice.

Table 2.10: Sensitivity of CC methodology to base year change (annual average cost increase between stated year and 2012)

	1996	1997	1998	1999	2000
CC Long Run Avg	3.1	3.4	3.7	4.2	4.6

3.33 The CC has provided no sound rationale for preferring to use its own blend of ONS data in preference to an index specifically prepared by an objective third party.

- 3.34 NIE submits that the CC's forecast RPEs for specialist materials should be derived from the BEAMA index. Should the CC continue to depend on backcasts, NIE further submits that it should base these too on the BEAMA index.

RPES and productivity - conclusion

- 3.35 The CC's RPE and productivity "forecasts" for the now-completed periods of 2010/11 and 2011/12 are wholly inconsistent with the evidence as to outturn costs. The CC should not rely on its flawed estimates for this period.
- 3.36 The remedy for indirect and IMFT costs is to use 2011/12 as the base year. This eliminates the need for the CC to make "forecasts" in respect of periods for which outturn data is available in respect of that subset of costs.
- 3.37 For costs other than indirect and IMFT costs, NIE submits that the CC should not depend on its backcast assumptions and should instead presume that, at the very least, RPEs and productivity broadly cancel out. The CC may wish to reflect on whether evidence of recent cost increases in the available GB DNO data for indirects and IMFT indicates that there is a need to assume similar real cost increases in other costs.
- 3.38 The CC's forecasts for RPEs and productivity, taken together, are wholly inconsistent with the evidence revealed by the GB DNOs in their RIIO-ED1 business plans and with all recent regulatory determinations. NIE submits that the CC should adopt the assumptions embodied in WPD's now Fast Tracked business plan, i.e. to adopt forecasts of RPI + 0.4% over RP5. The WPD business plan assumptions must be regarded as the latest and most relevant regulatory precedent from GB, revealing Ofgem's present view of the balance between input price inflation and productivity going forward. While it would appear that the CC has chosen to ignore the evidence that NIE has put before it hitherto in respect of RPEs and productivity, it may be persuaded by the contemporaneous view of the most relevant sector regulator.

4. FAILURE TO ALLOW FOR DIRECT ELEMENT OF MANAGED SERVICE CHARGE

- 4.1 In addition to its benchmarking exercise, the CC has also undertaken an exercise to split NIE's plan into its direct and indirect elements. In completing this exercise the CC has at present failed to allow for a subset of costs (£1.6m out of £5.9m in 2011/12) contained within NIE's Managed Service Charge. This relates to the direct proportion of NIE's Managed Service Charge that would be mapped to network investment in GB. While NIE is content that the remainder of the costs contained within its Managed Service Charge is contained within the GB DNO costs against which NIE has been benchmarked, and therefore implicitly allowed for, NIE requests an uplift to allowances for the proportion of this charge that would be booked as network investment in GB.

- 4.2 The Managed Service Charge is the means through which certain costs incurred by NIE Powerteam on behalf of NIE are charged to NIE T&D. Historically, NIE T&D has recovered 20% of this charge through opex and the remaining 80% is capitalised.
- 4.3 In undertaking its cost splitting exercise, the CC has presumed that the entirety of the Managed Service Charge is related to costs that are included within the scope of its benchmarking¹¹. In practice, a proportion of this charge relates to activities that would be classified as network investment under Ofgem's RIGs.
- 4.4 The costs covered by the Managed Service Charge are associated with technical engineers, asset solutions, safety, ops and outage, procurement and stores (see columns C to J in the NIE PT cost mapping spreadsheet) and the direct proportion of each cost centre is already identified in the PT mapping work. Of the direct cost identified in these columns, NIE estimates that 69% of technical engineers (column C) and 50% of ops and outage (column F) would be recorded as network investment according to Ofgem's RIGs. As noted above, the remainder of managed service charge would be reported in GB so as to be included in the GB DNO Indirect and IMFT data set used by the CC in its benchmarking.
- 4.5 While the costs identified would be reported as network investment costs under Ofgem's RIGs, NIE's own capex plan took no account of these costs (i.e. they were not apportioned to the relevant project costs) as at the time the plan was prepared NIE had anticipated that these costs would continue to be recovered through a separate allowance for the Managed Service Charge. This charge has now been struck out by the CC and replaced with an allowance derived solely from the indirect and IMFT benchmarking, which for the foregoing reasons will fail to allow for this subset of costs. Consequently, these costs (£1.6m in 2011/12) are presently included in no PD allowance.
- 4.6 NIE requests the CC to provide an uplift of £1.6m to its allowances. This might be split 80% to its capex allowance and 20% to its opex allowance, in line with prevailing capitalisation treatment.

5. CUSTOMER CONTRIBUTIONS TO O&M

- 5.1 NIE's Statement of Charges provides that where Authorised Generators seek a connection that will be used wholly or mainly for export to the Distribution System, the connection charge shall include an element to provide for the operation and maintenance (O&M) costs over the lifetime of the connection¹².

¹¹ See cell B180 of CC spreadsheet "CC NIE indirect and IMF&T cost calculation for PD", which notes that the CC has assumed that all of NIE Powerteam charges to T&D are indirect.

¹² Per NIE's Statement of Charges for connections to the Northern Ireland Electricity distribution system (Effective from 1 October 2013), paragraph 6.6.

- 5.2 The CC has estimated that the annual revenue from customer contributions to O&M charges is £0.6 million per annum¹³. The figure of £0.6 million has been estimated on the basis that: (i) half of the assets constructed attracted a capitalized operation and maintenance charge of 16 per cent; and (ii) the total amount of capital contributions from connection charges is £7.8 million.
- 5.3 The CC's assumption that half of the assets constructed attracted O&M charges substantially overstates the position. An analysis of connections capital additions in 2009/10 shows that 26% of the cost of additions in the year was in relation to generation connections, thus attracting O&M charges.
- 5.4 The £7.8 million figure utilised by the CC in their estimation of O&M revenue also appears to be overstated. The £7.8 million figure appears to include amounts released to the income statement in 2009/10 relating to both grants (£0.5 million) and customers' contributions (£7.3 million). The amount for grants (£0.5 million) is unrelated to connections contributions and the calculation of O&M revenue. Therefore, the appropriate figure for use in the calculation of O&M revenue is £7.3 million, rather than £7.8 million as applied by the CC.
- 5.5 NIE requests that the calculation of O&M revenue is adjusted accordingly to take account of the revised inputs detailed above. The revised annual revenue from customer contributions to O&M charges should be £0.3 million, rather than £0.6 million.

¹³ See paragraph 10.208 of the PD.

CHAPTER 3

DIRECT CAPEX

1. INTRODUCTION

1.1 This Chapter 3 sets out NIE's response to the PD in relation to direct capex. It excludes RPEs and productivity which are addressed in Chapter 2. It addresses the following issues:

- The consequences of not providing finance for certain projects;
- The implications of extending the price control period by six months;
- The CC's allowance for extreme weather events;
- The CC's allowance for ESQCR; and
- BPI's rationale for disallowing certain asset replacement volumes.

1.2 In summary, NIE submits that the PD allowance for direct costs should be increased by a total of £27.7 million comprising:

- £13.4 million to adjust for essential requirements for the 6 month extension of the RP5 price control period to 5.5 years;
- £2.4 million increased allowance for storms;
- £5.0 million increased allowance for ESQCR;
- £6.9 million to fund volumes that were unjustifiably disallowed by BPI.

2. THE CONSEQUENCES OF NOT PROVIDING FINANCE FOR CERTAIN PROJECTS

2.1 The PD makes no allowance for either:

- network performance improvements; or
- increasing the resilience of the 11kV overhead line network to ice accretion events.

2.2 If carried forward to the CC's Final Report, this will have the consequences described below.

- 2.3 In relation to network performance (for which NIE requested £9 million), the CC's determination will mean that network performance in NI will fall further behind that of peer companies in GB which continue to make improvements because of the effective incentive mechanisms that were put in place in DPCR5. The direct consequence is that finance will not be available to improve network performance for worst served customers. This will impact almost exclusively on rural customers.
- 2.4 In relation to 11kV network resilience (for which NIE requested £35 million), there will be no reduction of the risk from widespread failure of the rural 11kV networks resulting from extreme ice accretion. This risk will instead rise over the course of RP5 as the network continues to age and deteriorate. As we explained in the Statement of Case and previously, there is a significant risk of extended outages arising from the effects of severe weather on the overhead line networks. Customers located in Great Britain and the RoI are not exposed to this risk to the same extent because the networks in those locations have already had very significant investment to reduce the risk.
- 2.5 NIE submits that a decision by the CC not to fund network performance or 11kV network resilience would be inconsistent with the CC's obligations with respect to protecting the interests of vulnerable customer groups and customers living in rural areas.

3. IMPLICATIONS OF EXTENDING THE CONTROL PERIOD BY SIX MONTHS

- 3.1 NIE prepared its RP5 capex submission on the basis of a five year period, from 1 April 2012 to 31 March 2017. The CC has instead proceeded on the basis of a 5.5 year price control. Despite this, the CC makes only a minimal addition to the capex allowance to cover the longer period, on the presumption that NIE will be challenged to deliver the volume of work sought. The PD proposes simply executing the work over a longer period of time. This amounts, in effect, to a six month deferral of the work with a corresponding increase in network risk, without having regard to NIE's statutory and legal obligations. This is despite BPI (and subsequently the CC) supporting NIE's investment strategies and justification of the need for the proposed investments.
- 3.2 In particular, extending the price control period by six months to a September end date means that the final six months of RP5 will coincide with the preparation of the network for the following winter peak. Peak winter load in 2016/17 will reveal unacceptable circuit and plant overloads and voltage problems at all voltages on the distribution network. These problems can be addressed only during periods of lighter load on the network, normally spring to autumn, when load can be transferred off the stressed parts of the network to allow reinforcement to be carried out.
- 3.3 This requires that all load-related network reinforcement for that year (i.e. reinforcement required to be completed in preparation for winter 2017/18) be completed by the end of the six month extension. In other words, there is a

requirement for another full year's distribution network reinforcement expenditure – which at the average rate for the five year period amounts to some £4.1 million in terms of the direct cost element.

- 3.4 As regards the challenge to delivering the volume of work, NIE accepts that the ramp up of expenditure on the primary network (33kV and higher voltage networks) will require some increased resources. However, a significant portion of the work can be described as 'rolling programmes' of the more repetitive day-to-day work on the network which NIE has been carrying out for a number of years, the delivery of which during RP5 will neither stress the organisation nor will it involve any significant ramp up of resources. Such rolling programmes include virtually all the work on the secondary network (the 11kV and lower voltage networks) and 33kV overhead line work.
- 3.5 To illustrate this: all NIE overhead line work is carried out to a 15 year cycle while most DNOs operate to shorter cycle times. The CC proposal would mean that NIE would have to reduce the pace to that required for a 16.5 year cycle. Furthermore, commitments that have been made to DETI¹ with respect to the removal of undereaves wiring could not be fulfilled and the pace of work to replace meter board cut-outs in domestic premises for safety reasons would have to be reduced with a corresponding increase in network risk. In the event of an incident (e.g. involving a faulty cut-out on customer premises, giving rise to a very high risk situation), NIE could be held liable as a result of reducing the pace at which these issues were being addressed on the basis of insufficient funds. NIE submits that finance for such programmes for the six month extension period should be provided in full at the pace originally proposed; the work has been fully justified and NIE has no concerns with respect to resourcing and delivering at that pace.
- 3.6 In order to address these concerns, NIE submits that its direct capex allowance should be increased by £13.4 million relative to the PD in respect of the six month extension period. Table 3.1 below shows how this additional allowance has been calculated and the projects to which it relates.

¹ See NIE strategy paper D5 – Low Voltage Undereaves.

Table 3.1: Additional direct capex allowance required for six month extension to RP5

	Project	Total	OHL element (excl trees)	Non – OHL element
D7	33kV Overhead Lines	£11,219,417	£8,475,112	
D8	11kV Overhead Lines	£66,040,998	£47,730,648	
D9	LV Overhead Lines	£20,536,085	£13,331,154	
D10	Undereaves	£11,919,778	£11,919,778	
D11	LV Cutouts	£1,832,000		£1,832,000
D15	Secondary Substations	£36,676,990		£36,676,990
	5 Year Total	£148,225,268	£81,456,692	£38,508,990
	CC Direct Cost Factor		69.20%	95.20%
	5 Year Direct Cost		£56,368,031	£36,660,558
	(A) 6 Months Direct Costs		£5,636,803	£3,666,056
D22 - D38	5 Year Distribution LRE	£22,556,000	£3,498,361	£19,057,639
	20% - 1 year additional load growth	£4,511,200	£699,672	£3,811,528
	CC Direct Cost Factor		69.20%	95.20%
	(B) Additional Distn LRE direct Costs		£484,173	£3,628,574
	(A+B) Allowance in addition to PD for 6 month extension.		£6,120,976	£7,294,630
	Total		£13,415,606	

4. THE CC ALLOWANCE FOR EXTREME WEATHER EVENTS

- 4.1 The CC allowance for extreme weather events is based on the assumption that atypical severe events happen at the rate of 1 in 20 years.
- 4.2 NIE submits that extreme weather events in Northern Ireland have occurred at a much higher frequency. Table 3.2 below uses the Ofgem criteria² to identify the so-called "1 in 20 year" atypical severe events in Northern Ireland over the last 10 year period, together with costs of those events. It shows that there were three such 1 in 20 year events since 2003. And while data for the previous 10 year period is not as reliable, it is noted that the Boxing Day storm in 1998 cost the company in excess of £10 million.

² Electricity Distribution (DPCR5): Glossary of Terms – Regulatory Instructions and Guidance: Version 3 27 April 2012. Exceptional Events, page 61 & 62

Table 3.2: Severe weather events in NI since 2003

Report Year	Event HV faults (in a 24 hr period)	Average Daily Fault Rate (ADFR)	1 in 20 threshold (42 x ADFR) ³	No. of 1 in 20 Year Events	Total Cost £k 09/10 PB
2003	544	7.8	327.6	1	172
2004	157	7.7	323.4		
2005	0	7.4	310.8		
2006	0	7.4	310.8		
2007	0	7.2	302.4		
2008	0	6.9	289.8		
2009	366	6.6	277.2	1	3,752
2010	0	6.3	264.6		
2011	187	6.2	260.4		
2012	272	6.0	252	1	2,409
Between 2003 and 2012		Total		3	6,333

- 4.3 The three 1 in 20 events since 2003 cost NIE a total of £6.3 million, which means that the average annual cost has been £0.63 million. The allowance for 5.5 years would be £3.5 million and not the £1.1 million assessed by the CC.
- 4.4 The PD acknowledges (at paragraph 10.202) that the CC's allowance for typical storm costs, based on GB DNO costs, will not cover the cost of atypical severe weather events. The CC therefore recognises that it is necessary to include a separate allowance for atypical severe weather events. The CC's assessment of that allowance proceeds on the basis that 1 in 20 year events can occur only once in every 20 years. But Ofgem's definition of a "Severe Weather 1 in 20 event" is based not on the frequency of such events but rather on the number of incidents at distribution higher voltage within a 24 hour period. Since NIE is able to demonstrate that it has experienced three Severe Weather 1 in 20 events in the past 10 years, it would be irrational for the CC to base its allowance on the assumption that NIE will experience only one such event in 20 years.

³ Ofgem document 36d/12 'Electricity Distribution Price Control Cost, Volume and Revenue Reporting - Regulatory Instructions and Guidance: Version 3' March 2012 Page 62, Severe weather 1 in 20 thresholds are presented. Back calculation confirms this threshold to be 42 times the daily average HV faults per DNO with the severe weather exceptional event being 8 times the Daily average HV faults. This 42 times figure is also discussed in RIIO – ED1 Glossary of terms. NIE has used this factor to calculate its thresholds in the various years in Table 3.2 above.

- 4.5 NIE submits that the CC should increase substantially – to at least £3.5 million – its ex ante allowance for such costs during RP5.

5. THE CC ALLOWANCE FOR ESQCR

- 5.1 The CC has increased the ESQCR allowance to £10.38 million direct costs, approximately £13.5 million on a direct plus indirect cost basis. NIE considers that after patrolling costs of approximately £3.5 million, the remainder of the allowance will finance only approximately 12% of the estimated non-compliance issues.
- 5.2 As noted in the PD, DETI's guidance on the ESQCR states that it expects duty holders will spread workloads associated with these new requirements equally across permitted timescales. The CC's proposed allowance for ESQCR will not therefore allow NIE to spread the work equally over both RP5 and RP6 in accordance with DETI's guidelines and this is likely to create substantial difficulties in delivering the majority of the programme in RP6 necessary for achieving compliance with legislation by 2022.
- 5.3 A further allowance of £5 million of direct costs (in addition to the £10.38 million already allowed) would permit approximately one quarter of the estimated non-compliances to be addressed during RP5, approximately twice as much as would otherwise be possible and which would go some way towards complying with DETI guidelines.

6. THE BPI RATIONALE FOR DISALLOWING CERTAIN ASSET REPLACEMENT VOLUMES

- 6.1 BPI disallowed the replacement of three 110/33kV transformers, three 22kV reactors and 145 distribution transformers.
- 6.2 The reductions against these items amount to some £6.9 million of direct costs. NIE considers that the explanations for the reductions provided by BPI are not robust and failure to carry out the work would result in a substantial increase in network risk.
- 6.3 Each of the three categories of work is addressed in turn below.

Project T14 – 110/33kV Transformers

- 6.4 The BPI rationale for reducing the number of transformers to be replaced is as follows:

“From the information provided, it is BPI's view that there are six transformers which score the highest risk score and are candidates for replacement in RP5, of which two ([X]) hold the highest equipment probability (Reference NIE Strategy Paper B2, Figure 2).

The body of the report includes an assessment of subsequent discussion and input from UR and NIE regarding the differing approaches to asset replacement volumes.

Additionally, we have reviewed NIE's approach to the provision of a spare transformer and in particular its subsequent comments to clarify that the proposed spare will be one of the eight purchased on a rolling basis until the end of RP5 when the spare will then move into RP6.

Considering the evidence provided both before and subsequent to our draft report, BPI recommends that there should be an allowance for the purchasing of six transformers but for the installation of five only. This is in line with our original recommendation but we now believe that the unit regarded as a spare will be installed in the next review period.

BPI does not believe this strategy will increase NIE's network risk.

The body of the report includes an assessment of subsequent discussion and input from BPI considered that five transformers should be replaced rather than the 8 that NIE had identified'

- 6.5 We are unable to find any rational explanation as to why five transformers should be replaced during the period rather than the eight proposed by NIE. Neither has any evidence been presented supporting BPI's view that the strategy proposed will not increase network risk.
- 6.6 NIE considers that the PD disallowance is not defensible and NIE would not be able to explain why, in the event that one of the disallowed transformers fails in service, catastrophically or otherwise, it did not anticipate the failure and proceed to replace the transformer consistent with its treatment of the other transformers with similar levels of assessed risk.
- 6.7 A portion of NIE's risk ranking table produced in strategy paper B2 – 110-33kV Transformers is reproduced below for ease of reference:

Transformer Risk Assessments

	Substation	Equipment (probability)	Site (consequence)	Risk Ranking	AGE
1	[X] TX D	25	12	300	1960
2	[X] TX 3	24	11	264	1970
3	[X] TX 4	24	11	264	1970
4	[X] TX A	22	12	264	1966
5	[X] TX A	29	9	261	1966
6	[X] TX B	29	9	261	1966
7	[X] TX A	22	11	242	1967
8	[X] TX 1	24	10	240	1974
9	[X] TX B	21	11	231	1970
10	[X] TX 2	23	10	230	1974
11	[X] TX 1	24	7	168	1968
etc	etc	Etc	etc	etc	etc

6.8 The [X] substation transformers, items 7 and 9 above, can be retained in service if refurbishment of ancillary equipment is carried out.

6.9 When these transformers are removed from the list, the high priority transformers identified by NIE are as follows:

	Substation	Equipment (probability)	Site (consequence)	Risk Ranking	AGE
1	[X] TX D	25	12	300	1960
2	[X] TX 3	24	11	264	1970
3	[X] TX 4	24	11	264	1970
4	[X] TX A	22	12	264	1966
5	[X] TX A	29	9	261	1966
6	[X] TX B	29	9	261	1966
7	[X] TX 1	24	10	240	1974
8	[X] TX 2	23	10	230	1974

6.10 BPI has essentially 'drawn the line' such that no units from item 6 onwards will be replaced in RP5. This is despite the fact that item 6 has the same risk score as item 5; and items 7 and 8 have risk scores that are only marginally less than item 5. NIE's judgment based on detailed knowledge of the condition of these specific transformers is to draw the line after item 10 ([X] Tx2 with a risk score of 230 – [X] Tx1 being the next at 168).

T15 – 22kV Reactors

- 6.11 BPI (and the CC) disallowed three of the four 22kV reactors which NIE submitted it should replace during RP5. The BPI rationale for reducing the number of reactors to be replaced is as follows:

“From our experience the 6 months’ lead time quoted in the submission is optimistic and could be up to 12 months. Also the expected life of such equipment is quoted by suppliers at 30-40 years.

...

BPI has now reviewed the evidence provided both before and subsequent to our draft report. Notwithstanding our original view, we are now minded to change our recommendation for this particular asset group. However, it must be stressed that our new recommendation is based not on a change of opinion with regards to asset replacement methodology but rather a different conclusion to NIE’s risk scoring. BPI’s recommendation is now for the replacement of one reactor at Castlereaigh but with the provision of a spare which can be moved into RP6.”

- 6.12 NIE cannot understand how BPI can arrive at its conclusions based on NIE’s risk scoring. NIE’s risk scoring is set out in the table below:

Substation	Equipment (prob)	Site (Consequence)	Risk Ranking	Replacement Period	Year	RP Age Start	RP Age End
[] IBT2	20	17	340	RP5	1965	47	52
[] IBT1	18	18	324	RP5	1965	47	52
[] IBT2	18	18	324	RP5	1965	47	52
[] IBT1	19	17	323	RP5	1970	42	47
[] IBT2	18	17	306	RP6	1970	47	52
[] IBT2	14	18	252	RP6	1979	38	43
[] IBT1	13	18	234	RP6	1979	38	43

- 6.13 The table above shows that all four of the highest risk reactors that NIE proposes to replace are already beyond the manufacturer’s expected life and this position will be exacerbated by the end of RP5. Also all four have similar probability of failure, consequence of failure and risk scores.

- 6.14 An important point in relation to reactors is that they have a vital function to play in the operation of the transmission system. Unavailability of a reactor, under certain common system conditions, can lead to very significant costs to the customer arising from transmission constraints and running generators out-of-merit order. These costs are orders of magnitude greater than the tiny benefit to the customer of delaying very small (and ultimately inevitable) replacement costs beyond RP5.
- 6.15 This makes it difficult to justify replacing one reactor and not the others. NIE's judgement based on detailed knowledge of the condition of these plant items is that the risks associated with retaining three age-expired reactors which are fully loaded on a daily basis for another 5 years are unacceptable even if one spare reactor is available particularly when taking into consideration BPI's view on the delivery periods of reactors being of the order of one year.

D15 – Secondary Substations

- 6.16 BPI considered that 145 secondary distribution transformers should be retained in service:

“The SKM modelling presumes that some transformers can be refurbished and reissued and hence have netted off the cost to give a project saving and arrive at a reduced RP5 spend.

BPI does not consider this approach to follow GB DNO engineering practice. In reality substations of the age profile concerned are more economically scrapped or could be potentially stored for spares. Hence BPI's view is that this particular assumption should not be applied with the resultant efficiency expectation.

...

BPI has now reviewed the evidence provided both before and subsequent to our draft report. We accept that NIE's methodology will result in some distribution transformers being replaced ahead of need and note that of the 450 substations to be replaced, 305 can be regarded as being close coupled between switchgear and transformer. Given the driver for substation replacement is aged switchgear, then it would seem reasonable to net off the cost of 145 new transformers.”

- 6.17 During the CC site visit to [§<] substation, it could be seen that there was 6.6kV Reyrolle B HV switchgear in one room and the transformer and LV wall mounted open terminal LV board in an adjoining room. NIE strategy was to replace this type of substation with a new ESI kiosk. Under the BPI/CC proposal, for 145 such installations, allowance has been provided only to change the switchgear to a new RMU and replace the LV board. This would leave an old transformer which requires to be connected to the switchgear. This would require single core cables to be run between the switchgear and transformer with a non standard cable termination arrangement.

- 6.18 The costs associated with recabling the new HV and LV switchgear to these older transformers has not been included in the allowance. Retaining these transformers in service would require bespoke non standard cable solutions with associated safety risks. It is irrational for CC/BPI to consider maintaining these 145 transformers in service without providing an additional allowance for recabling. However, as BPI acknowledges this is not an economic way of managing these assets:

“BPI does not consider this approach to follow GB DNO engineering practice. In reality substations of the age profile concerned are more economically scrapped or could be potentially stored for spares.”

- 6.19 NIE submits that the CC should provide an additional allowance of £1.08 million to permit replacement of the 145 transformers disallowed.
- 6.20 The total increased allowance required against BPI volume reductions is £6.9m as shown in the following table:

Project	Shortfall Direct costs (£ million)
T14 – 110/33kV transformers – 3 additional transformers	3.6
T15 – 22kV reactors – 2 additional reactors	2.2
D 15 – Secondary Substations – 145 transformers	1.1
Total	6.9

CHAPTER 4

PENSIONS

- 1.1 The CC outlines its provisional decisions in respect of pensions in section 12 of the PD.
- 1.2 NIE is generally content with the CC's analysis and approach in this section in so far as it relates to deficit repair.
- 1.3 We welcome in particular the weight that has been attributed to Ofgem precedent in addressing the various questions (summarised in paragraph 12.12 of the PD) that fall to be determined by the CC. The CC has provisionally adopted Ofgem's approach in relation to the following matters:
- adopting a different approach to addressing the historical deficit and any new incremental deficit which may arise;
 - the calculation of the historical deficit and incremental deficit;
 - the decision to pass 100% of the historic deficit repair costs through to consumers (after adjusting for the regulatory fraction);
 - the decision that any incremental deficit should be funded 100% by shareholders;
 - adopting a 15-year recovery period;
 - adopting a 30:70 split for the apportionment of ERDC liability;
 - adopting a three-year review cycle for pension allowances to track the actuarial valuation cycle of the pension scheme and operating separately to the five year price control cycle; and
 - benchmarking of on-going pension service costs at subsequent regulatory reviews.
- 1.4 Such an approach promotes consistency between the position in NI and that in GB and enables NIE to benefit from the considerable work already conducted by Ofgem and the GB DNOs in this area. The clarity and transparency created by this alignment of approach between NI and GB will provide significant comfort to investors in respect of the treatment of pensions now and going forward.
- 1.5 There is however one aspect of the PD with respect to deficit repair where the CC has not followed Ofgem precedent and where the CC's provisional decision appears

arbitrary and inadequately reasoned. This relates to the treatment of past shareholder contributions and ERDCs, and is considered below.

Past shareholder contributions and ERDCs

- 1.6 NIE accepts that its shareholders should bear 30% of the ERDCs incurred from unfunded early retirement schemes run by NIE between April 1997 and March 2003. That has been our position throughout the RP5 price review process.
- 1.7 It has also been NIE's case that its shareholders have already made special contributions to the scheme that exceed the amount of ERDCs attributable to them.
- 1.8 In NIE's submissions to date, a link has been drawn between the special contributions paid by NIE Powerteam in 2005 and 2007, and the allocation to shareholders of ERDCs incurred prior to 2003.
- 1.9 It is helpful to recall the background to the shareholders' special contributions:
- A special contribution of £25 million was made in July 2005 following the sale by NIE's parent company at the time, Viridian Group plc, of a subsidiary company called Sx3.
 - A special contribution of £50 million was made in March 2007 in the context of the acquisition of Viridian Group by Arcapita, and was proposed in order to clear the deficit in the scheme at the time (recorded in the then most recent formal actuarial valuation at 31 March 2006 as £44.1 million).
- 1.10 Out of the total of £75 million of special contributions, £2.7 million was paid by NIE, £63.3 million by NIE Powerteam and £9 million by other Viridian entities.
- 1.11 As noted in NIE's Statement of Case¹, the £2.7 million funded by NIE is included in the calculation of NIE's under-recovery of pension costs for RP4. The £9 million paid by other Viridian entities has no relevance to the pension liabilities of NIE's T&D business. We are therefore concerned only with the contributions totalling £63.3 million made by NIE Powerteam. Of those contributions, £12 million was accounted for as a prepayment of its regular contributions for on-going accrual for 2007/08, 2008/09 and 2009/10.
- 1.12 The value of the special contributions paid by NIE Powerteam net of the £12 million prepayments equated to £68.0 million² as at 31 March 2012. This is made up as follows:

¹ Paragraph 5.6 of Chapter 10

² In our Statement of Case, NIE stated the value of contributions paid by NIE Powerteam at £71.4 million at 31 March 2012. That figure had been calculated approximately on the assumption that all special contributions were payable in March 2006, whereas these calculations have now been refined to allow for the actual dates on which these contributions were paid.

- £22.5 million paid in July 2005, equating to £32.6 million as at 31 March 2012; plus
- £40.8 million paid in March 2007, equating to £49.4 million as at 31 March 2012; less
- the prepayment of £12 million regular contributions for ongoing accrual for 2007/08, 2008/09 and 2009/10, equating in total £14.0 million as at 31 March 2012.

1.13 The 30% of ERDCs to be borne by NIE's shareholders had a value of £39.7 million³ at 31 March 2012.

1.14 The value of the special contributions therefore exceeds the value of the proportion of ERDCs to be borne by NIE's shareholders.

1.15 Despite this, the PD summarily rejects NIE's submission that its shareholders have already paid their share of ERDCs. Paragraph 12.52 states simply that:

"We were not presented with evidence which showed that these contributions were linked to ERDCs and we did not believe that there was a conceptual reason why they should be attributed in this way. We therefore decided that there was no reason to offset these shareholder contributions against NIE's share of ERDCs."

1.16 NIE submits that the CC provides no reasoning in support of this conclusion and that its conclusion is impliedly based on an erroneous assumption that it is for NIE to prove that the shareholder contributions were or should now be hypothecated towards meeting the shareholders' liability for ERDCs.

1.17 We elaborate on this submission in the remainder of this section.

1.18 In short, NIE submits that the CC's approach proceeds from the wrong starting point.

1.19 The CC should start from the basic principle that any contribution which NIE's shareholders made to the pension fund had the effect of reducing the need for future contributions to the full extent of the contribution. The fund is not segregated into separate parts representing ERDC-related liabilities and other liabilities and contributions have not been segregated either.

1.20 Since NIE's shareholders had no particular obligation to make contributions to the fund, there is no reason not to hypothecate them now towards meeting the main part of the fund's historic deficit for which the CC judges shareholders to be responsible – that is, 30% of the ERDCs.

³ The UR previously valued this at £41.2 million at 31 March 2012. In UR's calculations of the £41.2 million, the conversion into 2009/10 prices was calculated using the ratio of October 2009 RPI / March 2011 RPI, whereas NIE believe this should have been October 2009 RPI / March 2012 RPI, which gives rise to a figure of £39.7 million

- 1.21 It is not clear why the CC implies that it is necessary for NIE to show that, at the time when the contributions were made, they were hypothecated towards meeting shareholders' ERDC obligations.
- 1.22 It may be that the CC is concerned that it is for NIE to demonstrate that the contributions were not designed to meet some other obligation.
- 1.23 The CC may be concerned, for example, that the contributions were made in anticipation of some demand by the pension trustees to address some specific need. For example, if the trustees had been concerned that the corporate transactions which triggered the shareholder contributions would weaken the employers' covenant, they might have demanded an up front contribution to avoid the risk of future default in respect of the employers' contribution obligations. They made no such demand but, even if the trustees had demanded up-front payments to address a potential weakening of the employers' covenant, that does not alter the fact that, once the contributions were made, they had the effect of redressing any such weakening of the employers' covenant and of improving the funding position of the scheme.
- 1.24 NIE has discussed this issue with the Scheme Actuary at Aon Hewitt, who confirms that, even if the additional contributions had been paid to offset a weakening of the employers' covenant, nevertheless the money was wholly employed to reduce the scheme deficit. The position might well be different if the shareholder contributions had been used by the pension trustees to purchase insurance or to pursue a hedging strategy, in either case to offset risks arising from the corporate transaction from which the contributions arose. But that did not happen in this case. Nor is there any suggestion that those corporate transactions led to the trustees pursuing a new investment strategy (e.g. adopting a lower risk strategy) that had the effect of depressing investment returns.
- 1.25 The position described above is supported by the scheme annual report and accounts, which we provide at Appendix 4A.1 for each financial year from 2004/05 to 2008/09. There is nothing in these reports to suggest that the shareholder contributions were applied for any purpose other than to reduce the deficit.
- 1.26 The position is further confirmed (at least in relation to the March 2007 special contribution) by the copies of the signed 2006 actuarial valuation report dated 22 March 2007 and a draft of that report dated 29 September 2006, which we provide at Appendix 4A.2. The draft pre-dates the £50 million shareholder contribution whereas this is reflected in the final version. The technical provisions and assumptions are unchanged but the deficit contributions changed as a result of the Arcapita acquisition of Viridian. This shows that the special contribution was seen by the trustees as appropriate mitigation for the potential weakening of the employer covenant and no step change in the measure of technical provisions occurred. The special contribution went straight to funding.

- 1.27 Finally, NIE has previously offered to provide the CC with copies of contemporaneous documents (see paragraph 3.9 of Annex 8 to NIE's 10 June Supplementary Statement) and now attaches copies of those documents at Appendix 4A.3 (relating to the July 2005 special contribution) and Appendix 4A.4 (relating to the March 2007 special contribution). NIE submits that these documents should be sufficient to satisfy the CC that there is no reason not to treat the shareholder contributions as having had the effect of discharging NIE's shareholders' obligations to fund 30% of the ERDCs.
- 1.28 Our proposed approach to the treatment of the special contributions is consistent with the overall rationale of the CC's approach:
1. If NIE Powerteam had made no special contributions in 2005 and 2007, the deficit would have been £68.0 million greater at 31 March 2012 than it in fact was. Under the approach to deficit repair payments set out in the PD, customers would have borne 100% of that addition to the historic deficit over the 15 year recovery period. This is because the CC has accepted that, in principle, 100% of the historic deficit (before special items) should be passed through to customers. But unless the CC calculates deficit repair payments by reference to what the historic deficit would have been absent the special contributions, customers will bear none of the costs of these shareholder contributions.
 2. Similarly, had NIE Powerteam opted in both 2005 and 2007 to increase annual payments to the scheme rather than make a special contribution up front, then under the approach to stranded deficit repair costs set out in paragraph 12.26 to 12.39 of the PD, any additional payments made during the period 1 April 2007 to 31 March 2012 would have been recovered over a 15-year recovery period. As explained in the PD, stranded deficit repair costs are recoverable on the basis of the CC's determination that, in principle, 100% of the relevant historic deficit (before special items) should be passed through to consumers. It is difficult to understand why NIE Powerteam's decision to make a one-off contribution rather than to increase annual payments should result in such a very different outcome. In effect, NIE Powerteam is being penalised because it accelerated payments to repair the deficit, rather than made a series of payments over time. That is contrary to Ofgem's approach to the acceleration of deficit repair payments⁴ and indeed to the approach set out in the PD which recognises that NIE should be compensated for financing costs which have arisen due to timing differences relating to the repayment of the historic deficit.
 3. Finally, had NIE Powerteam made the 2007 special contribution on or after 1 April 2007, rather than in March that year, such a payment would have fallen within RP4 and therefore would be recoverable under the approach to stranded deficit repair costs set out in the PD and referred to above. It hardly seems fair

⁴ See paragraph 1.36 and 1.37 of Appendix 7 to Ofgem's Strategy decision for the RIIO-ED1 electricity price control: Financial issues paper dated 4 March 2013: https://www.ofgem.gov.uk/sites/default/files/docs/2013/02/riioed1decfinancialissues_0.pdf

that payment of the special contribution a few days before the start of RP4 has such a very different outcome for NIE.

- 1.29 The CC makes no comment about the timing of the shareholder contributions. It may be that the CC is concerned that it would be improper for the CC to take account of the 2005 and 2007 shareholder contributions because that would be viewed as reopening previous price control determinations. Such a concern would be misconceived. In the first place, since NIE's liability for ERDCs arises as a result of early retirements that took place prior to 2003, it is only right to take account of shareholder contributions that were made after that date. It would be entirely one-sided for the CC to take account of liabilities arising from earlier periods but to ignore shareholder contributions made in more recent years. Moreover, the RP4 price control had been settled prior to the 2007 shareholder contribution and the UR could not therefore be said to have taken account of the contribution when determining the RP4 price control. The question of whether the CC is reopening the UR's judgement at that time does not therefore arise. In any event, the contributions are so material it would not be appropriate to ignore them.
- 1.30 In principle, the CC should determine deficit repair payments by reference to what the historic deficit would have been absent the special contributions. At the least, this would entail an acceptance that NIE Powerteam's past shareholder contributions are sufficient to have discharged shareholders' responsibility for 30% of relevant ERDCs. On the CC's reasoning, it should not be necessary for NIE to have to demonstrate that such contributions were made for the purpose of discharging such ERDC obligations, in circumstances where such contributions were clearly made voluntarily on the occasion of corporate transactions.

Calculation of annual pensions allowances

- 1.31 The CC has outlined a number of points of principle in the PD relating to how and when pension costs would be recovered under RP5, and these points of principle are summarised in the introduction to this response. The PD does not, however, specify full details of how these points might be applied in practice.
- 1.32 With the exception of the allowances made for special shareholder contributions which we have highlighted above, it is apparent from the PD that the CC aims to adopt a broadly consistent approach to Ofgem's price control pension principles. NIE therefore expects that, in areas which are not addressed in the PD, any specific details about how pension costs are to be recovered would also follow the corresponding Ofgem principles.
- 1.33 As part of this response, NIE has documented its understanding of how these principles apply to the calculation of each year's pension allowance under RP5 and beyond, and these are set out below. A separate Excel spreadsheet at the end of this

Chapter 4 provides NIE's calculations⁵ for the application of these principles for RP5 and beyond.

- The historic deficit would be recovered over a period of 15 years backdated to 1 April 2012. For the purposes of determining the recoverable allowance for each year during this recovery period, the discount rate used in the calculation should be the same rate as that used to calculate the historic deficit as at 31 March 2012. Allowing for payments to increase with RPI inflation over time, which is consistent with the actual repayment schedule agreed with the scheme's trustees, the discount rate for this purpose is 2.08% per annum in real terms. This is consistent with the assumptions used by the Scheme Actuary in his report dated 6 September 2012 confirming the scheme's funding position on a technical provisions measure at 31 March 2012. Scheme deficit payments are in practice payable monthly and for the purposes of calculating the recoverable allowance for each year are assumed to occur, on average, halfway through each year, i.e. at 30 September each year.
- The PD confirms that NIE should be compensated for the financing costs which arise due to timing differences relating to the repayment of the scheme deficit. This is on the grounds that the CC has provisionally decided that consumers should fund the deficit repair payments relating to the historic deficit over a period of 15 years whereas NIE has agreed a shorter repayment schedule ending 31 March 2022 with the trustees. The cost of financing would be measured using NIE's WACC. Any difference between actual payments and allowances for repairing the historic deficit that arise following each valuation date would be corrected for as part of the 3-yearly reviews for pension allowances. So for example any accelerated deficit repair contributions, in excess of allowances, payable for the period from 1 April 2012 until the date of the next scheme valuation at 31 March 2014 would not be reversed until the next true up adjustment reflecting the 31 March 2014 valuation outcome, albeit adjusted to preserve a net present value. This structure would then continue for future 3-yearly reviews for pension allowances.
- The adjustments in relation to historic early retirement costs and stranded deficit repair costs from RP4 would be spread in a consistent manner to the spreading of the historic deficit. Specifically, these adjustments would be spread over a 15 year period commencing on 1 April 2012 and calculated using a real discount rate of 2.08% per annum allowing for annual adjustments to be inflation-linked and occurring halfway through each year.

⁵ The calculations shown on the spreadsheet have been made on the basis that an adjustment should be made for the full value of the special shareholder contributions paid in 2005 and 2007. However, in line with its long-held position, NIE seeks account to be taken of these special contributions only to the extent that is necessary to offset the value of the ERDCs for which it is liable.

- A further adjustment should be made in relation to the special shareholder contributions paid in 2005 and 2007. This adjustment should be spread in a consistent manner to the spreading of the historic deficit.

Other points for clarification

1.34 So far as relates to the application of Ofgem's price control pension principles and methodology⁶ to pension allowances under RP5 in its PD, we would ask the CC to confirm the following points in its Final Report:

- By adopting a 3 year review cycle for pension allowances to repair historical deficit, this aspect of regulation of cost would run in parallel to, and no longer form part of, the 5 year price control reviews;
- The notional 15 year deficit repair period is intended to establish an end date of 2027 for historic deficit funding but is not a "stop dead" date. If during the 15 year period the historic deficit increases materially in the latter part of the 15 year period, the deficit repair period might be extended by the UR in order to protect different generations of consumers, and if following the 15 year period, new deficit emerges due to exogenous factors, additional deficit funding in relation to pre 1 April 2012 pensionable service will be allowed subject to regulatory review of the efficiency of such costs.
- Adjustments to pension deficit allowances following each 3 yearly valuation will operate with effect from 1 April two years after the effective valuation date, thereby allowing for the time taken to complete the actuarial valuation and for the UR to carry out its reasonableness review. For example, the next such review would operate with effect from 1 April 2016 taking into account the outcome from the scheme's triennial valuation at 31 March 2014 and the financing costs due to timing differences arising for the period up to 31 March 2014.

⁶ Ofgem's pensions methodology and principles can be found in Appendices 6 and 7 of Ofgem's Strategy decision for the RIIO-ED1 electricity distribution price control: Financial issues document dated 4 March 2013, and paragraphs 1.7 and Table A6.1 of Appendix 6 and paragraphs 1.7, 1.33 and 1.35 of Appendix 7 are of particular relevance to the above points

RP5 ALLOWANCE FOR PENSIONS COSTS

1. Historic deficit and RP4 under recovery

A - Inputs in relation to historic deficit at 31 March 2012

Historic deficit within the scheme (March 2012 price base)	156.40
Regulatory fraction	99.26%
Historic deficit funded by customers (March 2012 price base)	155.2
March 2012 RPI	240.8
October 2009 RPI	216.0
Conversion to 2009/10 price base	1.115
Historic deficit funded by customers (2009/10 prices)	139.3

B - Inputs in relation to RP4 under-recovery (2009/10 prices)

	2008	2009	2010	2011	2012	Figures are measured at 31 March each year
Opening under-recovery	0	9.26	10.94	13.93	20.88	
Under-recovery during year	8.96	1.02	2.17	6.01	1.40	
Cost of financing	0.30	0.66	0.82	0.93	1.19	
Closing under-recovery	9.26	10.94	13.93	20.88	23.46	
Pre tax WACC	6.80%	6.80%	6.80%	5.50%	5.50%	

C - RP5 allowance

Valuation assumptions and annuity spreading factor

Valuation discount rate (31 March 2012)	5.35%
Valuation RPI inflation assumption (31 March 2012)	3.20%
Valuation real discount rate	2.08%
15-year annuity, payments assumed halfway through each year	12.90 (calculated using the real discount rate on the grounds that all payments will be expressed in 2009/10 prices)

Spreading over 15 years

Year ended 31 March	RP5					RP6					RP7				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Historic deficit repair	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79	10.79
RP4 under recovery allowance	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
TOTAL allowance	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61

[Check on spreading of deficit payments over 15 years]

Discount factor, assuming payments are made halfway through each year		1.01	1.03	1.05	1.07	1.10	1.12	1.14	1.17	1.19	1.22	1.24	1.27	1.29	1.32	1.35
Discounted deficit repair payments (the sum adds up to the starting deficit)	139.3	10.68	10.46	10.25	10.04	9.84	9.64	9.44	9.25	9.06	8.87	8.69	8.51	8.34	8.17	8.00

The cell above should equal the historic deficit to be repaired

D - Cost of financing timing difference (assumed recoverable at the end of the year incurred)

	2013	2014	2015	2016	2017
Projected actual cost from Schedule of Cbns (31 March 2012 prices)	15.38	15.38	15.38	15.38	15.38
Projected actual cost (2009/10 prices)	13.80	13.80	13.80	13.80	13.80
Projected actual cost funded by customers (i.e. multiplied by regulatory fraction 99.26%)	13.69	13.69	13.69	13.69	13.69
Price control allowance in respect of historic deficit	10.79	10.79	10.79	10.79	10.79
Cumulative timing difference at start of year	0.00	2.90	5.80	8.70	11.60
Additional timing difference arising during the year	2.90	2.90	2.90	2.90	2.90
Cost of finance arising over the year	0.07	0.22	0.36	0.51	0.65
RP5 Pre tax WACC	5%	5%	5%	5%	5%

An example is shown here for how the financing costs relating to the timing differences between NIE's actual deficit repair contributions and the amount allowed under the price control. The example assumes a pre tax WACC of 5% and assumes that the cash flow differences arise evenly during the year.

2. ERDC disallowance**A - Inputs in relation to ERDC disallowance**

ERDC disallowance (incl Viridian costs, March 2012 price base)	-50	(from cell L76 of UR calculation spreadsheet sent to NIE on 24 October 2012 - after adjustment for 99.26% regulatory fraction)
less allowance for Viridian employers	9%	
ERDC disallowance excl Viridian costs (March 2012 prices)	-45.5	
ERDC disallowance excl Viridian costs (2009/10 prices)	-40.8	
less RP4 funding	1.1	
Residual liability (2009/10 prices)	-39.7	(note that the UR had calculated this figure to be £41.2M, although we believe this has been calculated incorrectly. In UR's calculations, the conversion into 2009/10 prices was calculated using the ratio of October 2009 / March 2011, whereas we believe this should have been October 2009 RPI / March 2012 RPI, which gives rise to the figure calculated here)

B - RP5 allowance

Year ended 31 March	RP5					RP6					RP7				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
TOTAL allowance	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08	-3.08

3. Special shareholder contributions allowance**A - Inputs in relation to special contribution disallowance**

Special contribution paid by NIE Powerteam in July 2005 funded by shareholders	22.5	
Special contribution paid by NIE Powerteam in March 2007 funded by shareholders	40.8	
Prepayment of NIE Powerteam regular contributions included within the special contributions	12.0	£4M per annum for 2007/8, 2008/9 and 2009/10 - assume payable halfway through each year at 30 September
Focus section investment returns for the period 1 July 2005 - 31 March 2012	1,612	Payment of special contribution was made on 11 July 2005 - returns measured from 1 July 2005 as a proxy for this
Focus section investment returns for the period 1 April 2007 - 31 March 2012	1,351	Payment of special contribution was made on 20 March 2007 - returns measured from 1 April 2007 as a proxy for this
Focus section investment returns for the period 1 October 2007 - 31 March 2012	1,305	
Focus section investment returns for the period 1 October 2008 - 31 March 2012	1,359	
Focus section investment returns for the period 1 October 2009 - 31 March 2012	1,238	
2005 special contribution rolled forward to 31 March 2012 (and converted to 2009/10 prices)	32.5	
2007 special contribution rolled forward to 31 March 2012 (and converted to 2009/10 prices)	49.4	
2007/8 prepayment of regular contributions rolled forward to 31 March 2012 (and converted to 2009/10 prices)	4.7	
2008/9 prepayment of regular contributions rolled forward to 31 March 2012 (and converted to 2009/10 prices)	4.9	
2009/10 prepayment of regular contributions rolled forward to 31 March 2012 (and converted to 2009/10 prices)	4.4	
Total special contributions (net of prepayments) at 31 March 2012 (2009/10 prices)	68.0	

B - RP5 allowance

Year ended 31 March	RP5					RP6					RP7				
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
TOTAL allowance	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27

Date of report and accounts	Investment returns (% p.a.) over the previous:			
	<u>1</u>	<u>3</u>	<u>5</u>	<u>10</u>
	<u>years</u>			
Mar-05	9.10%	-	-2.60%	6.30%
Mar-06	19.70%	-	3.00%	5.80%
Mar-07	5.30%	-	4.60%	5.30%
Mar-08	0.10%	8.10%	10.30%	-
Mar-09	-8.40%	-1.40%	4.60%	-
Mar-10	26.40%	5.40%	7.70%	-
Mar-11	7.70%	7.70%	5.50%	-
Mar-12	7.10%	13.40%	6.20%	-

Date of investment update	Investment returns over the previous quarter:
30-Jun-05	5.60%
31-Dec-07	2.10%
31-Mar-08	-4.50%
31-Dec-08	-2.30%
31-Mar-09	-4.60%
31-Dec-09	1.80%
31-Mar-10	5.40%

Focus section investment returns

Focus section investment returns for the period 1 July 2005 - 31 March 2012	1.612
Focus section investment returns for the period 1 April 2007 - 31 March 2012	1.351
Focus section investment returns for the period 1 October 2007 - 31 March 2012	1.305
Focus section investment returns for the period 1 October 2008 - 31 March 2012	1.359
Focus section investment returns for the period 1 October 2009 - 31 March 2012	1.238

CHAPTER 5

WACC

Introduction

- 1.1 NIE has engaged Frontier Economics ("Frontier") to review and report on the CC's provisional determination of NIE's Weighted Average Cost of Capital (WACC). We attach Frontier's report ("the Report") immediately after this chapter of our response.
- 1.2 The Report concludes that the CC's estimate of NIE's WACC is far too low, because the CC has underestimated NIE's cost of debt and its cost of equity.
- 1.3 The Report takes issue with the overall approach taken by the CC in some important respects, and we invite the CC to reconsider those aspects of its overall approach. In particular, it will be important for the CC to reconsider whether it is justified in departing from the approach to estimating the cost of capital taken by other regulators. We do not repeat or summarise Frontier's arguments in this chapter.
- 1.4 But the Report also identifies errors in the way in which the CC has implemented its chosen approach:
 - It identifies cases where the CC has misinterpreted the evidence on which it relies, and draws unfounded conclusions from it.
 - It identifies cases where the CC provides no explanation or justification for its decision to rely on evidence which is, objectively, unrepresentative of the full body of available evidence.
 - It also identifies cases where the CC's reasons for rejecting NIE's case are logically, theoretically or evidentially unsustainable.
- 1.5 It is important that the CC should correct these errors. If it does not do so, there is a real risk that it will propose a WACC for NIE which is so low as to render NIE unable to finance its functions – a situation which would, self-evidently, be intolerable to NIE and its shareholder. NIE therefore invites the CC to give its fullest attention to the issues identified by Frontier in the Report.
- 1.6 The key errors identified in the Report are summarised below.

Cost of debt

- 2.1 The CC has erred in the weighting of existing and new debt, by failing to take account of the fact that new debt will not be (and, indeed, has not been) issued at the commencement of the price control period under review.
- 2.2 The CC has under-estimated the cost of new debt, by (among other factors) failing to adjust the spread over the relevant gilt rate appropriately to take proper account of

the effect of NIE's issuing new debt for a new 15 year term, and failing to take proper account of the cost of debt that will apply at the time when NIE needs to issue new debt.

Cost of equity

- 3.1 The CC has misinterpreted some of the historic evidence on which it places substantial reliance, with the result that it draws inferences from the evidence which are unsustainable.
- 3.2 The CC provides no explanation or justification for its decision to rely on a selection of unrepresentative and, in some cases, controversial scholarly work in preference to a larger range of evidence.
- 3.3 The CC has failed to take account of up to date evidence from the Bank of England (and relies instead on out of date evidence from the Bank).

Total market returns

- 4.1 The CC's analysis of total required market returns is flawed by inconsistency and inadequate evidence. As well as confusing recent realised equity market returns with the underlying cost of equity capital (only the latter of which is relevant as a basis for the proposed price control), the CC has recognised that there is an inverse relationship between the RFR and the ERP (which is a source of the historical stability in market returns), but has ultimately proceeded on an inconsistent basis, namely that there is a positive relationship between the RFR and market returns. Quite apart from the inconsistency of the CC's position, it has little significant empirical or theoretical support for its approach.

Rejection of NI equity premium

- 5.1 We also find that the CC has erred in rejecting a NI equity premium. Its reasons for doing so rest upon a finance model that the academic literature in this area would not recognise. The only other reason which the CC contemplates for rejecting the NI equity premium (that NI's cost of capital is adversely affected by NIE's association with ESB) is not supported by any evidence.



A review of the Competition Commission's preliminary findings on NIE's cost of capital

A REPORT PREPARED FOR NIE

November 2013

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1 Introduction

We have been engaged by Northern Ireland Electricity (NIE) to provide a critical review of the Competition Commission's (CC's) Provisional Determination (PD) on NIE's Weighted Average Cost of Capital (WACC). This report sets out our analysis of the CC's WACC estimates and our key conclusions.

Our report is structured as follows:

- Section 2 deals with the CC's assessment of NIE's cost of debt;
- Section 3 discusses why the CC's cost of equity estimate is too low; and
- Section 4 deals with the CC's overall approach to WACC in its PD.

2 The CC's estimate of the cost of debt

We consider that the CC has underestimated NIE's cost of debt. The CC has not adopted our previous proposal (that is, that it should adopt Ofgem's rolling debt mechanism with the addition of the NI debt premium). In the present report, we do not pursue that proposal. Instead, we have examined how robustly the CC has implemented its own preferred method (namely, to estimate NIE's own forward-looking cost of debt, by adopting a weighted average of NIE's cost of existing debt and the CC's estimate of the cost of new debt which NIE may need to raise before 30 September 2017). We find that the CC's overall implementation of its approach is reasonable, save that:

- it has erred in the weighting of existing and new debt, by failing to take account of the fact that new debt will not be (and, indeed, has not been) issued at the commencement of the price control period under review; and
- the CC has under-estimated the cost of new debt, by (among other factors) failing to adjust the spread over the relevant gilt rate appropriately to take proper account of the effect of NIE's issuing new debt for a new 15 year term, and failing to take account properly of the cost of debt that will apply when NIE needs to issue new debt.

We discuss these issues in more detail in the remainder of this section.

2.1 Weighting of new and existing debt

The CC proposes to apply a weighting of 80% for existing debt and 20% for new debt for the duration of the price control period. The CC's 20% weighting effectively assumes all the new debt is issued at the very start of the price control. This is clearly not the case since almost two years of the price control have already elapsed and NIE has not yet raised any new debt, and we understand from NIE that it is unlikely to issue new debt in the immediate future.

The CC has therefore erred in not time-weighting the split of new and existing debt, and had it done so it would have attached a weight of between 5% and 10%¹ on new debt rather than the 20% it has applied.

¹ An illustrative range, based on the view that NIE may issue a new bond with 50% of RP5 remaining or 25% of RP5 remaining.

2.2 Estimating the cost of new debt

The CC has determined provisionally a cost of new debt of 2.7% (real). This was based on:

- a nominal current gilt rate of 3.0% to 3.7% for maturities of 15 years and over;
- a spread of 1.65% to 2.5% over gilts based on NIE's 2026 spot bond spread and the average spread over 12 months from June 2012; and
- issuance/carry costs of 0.3%.

While we agree broadly with this approach, the following adjustments need to be made.

- Firstly, the cost of new debt should take account of forecast increases in gilt yields over the course of the price control.
- Secondly, the CC should make adjustments to the spread over gilts to take into account two factors that it has apparently overlooked.
 - The likelihood that new debt issued will have a longer period to maturity than the 2026 bond (on which the CC's spread estimate is made) does at present. We understand that NIE is likely to issue a bond with at least a 15 year maturity, perhaps longer depending on market conditions at the time. The 2026 bond presently has a term to maturity of less than 13 years. The CC has not taken account of the difference in the term premia associated with these two maturities.
 - Given the weak credit metrics derived by the CC in its PD financeability modelling, we also consider the risk and impacts of a fall in NIE's credit rating in the context of the CC's proposed WACC.

2.2.1 The cost of new debt

The range of 3.0% to 3.7% for gilt yields that the CC applies is too low.

The next bond that NIE issues will likely have a maturity of at least 15 years. This corresponds to the maturity of the last bond NIE issued and is consistent with the long life of NIE's network assets and typical practice in the utility sector. Current yields for gilts with a maturity of between 12 and 19 years are in the range 2.90% to 3.39% (see **Table 7** in Annex 3), which appears to support the CC's suggested range. However, the CC has not taken into account the forecast rises in gilt yields over the next few years.

Over the course of the price control new debt costs are expected to rise as QE policies are unwound. If the economic recovery continues it is also likely that investors will begin to move back into riskier investments and out of gilts,

The CC's estimate of the cost of debt

reducing demand for gilts and thereby increasing their yield. For example, the OBR forecasts that gilt rates will rise 120 bps between 2013/14 and 2016/17.² Similarly PWC estimate a rise in gilt rates of the order of 100 bps over the next three years using a variety of methods.³

Our own estimates of forward yields for 10-year and 15-year gilts, based on Bank of England spot yield curves, suggests that current market expectations are that gilt yields will increase, with the 15-year nominal gilt rate rising to over 4% by April 2017 (see **Figure 6** and explanation in Annex 3).

Therefore using a point estimate based on current yields would likely understate significantly the cost of new debt, which is not expected to be issued in the very near future.⁴ A conservative uplift of 50 bps should be applied to the current UK gilt rate to reflect that new debt is likely to be issued only in the last two years of the price control. This gives a range of 3.4% to 3.9% for gilts.

2.2.2 Adjustments to the spread over gilts

The top end of the CC's range for the spread of the yield to maturity of NIE's bonds over the risk free rate (250 bps) is informed by the 12-month average of this spread for the 2026 bond. As a result the top end of the range is prudent, reflecting the possibility that a similarly substantial spread may re-emerge. Since the 2026 bond was issued the average spread has been 260 bps, with a maximum of 354 bps.

The use of a spot spread of 165 bps as the lower end of the range may therefore be low given the observed volatility but we have no strong evidence to reject it as a conservative assumption.

However, this approach underestimates the cost of new debt because it does not take into account the term premium that would be associated with new debt compared to the 2026 bond used to estimate the spread. In addition, the CC's own modelling of NIE's credit metrics indicates that under the CC's proposals, NIE's credit quality could deteriorate significantly. The CC has not taken into account the impact of this on NIE's cost of new debt. These two issues are discussed below.

² OBR, 2013, Economic and Fiscal Outlook. The figures quoted are the weighted average interest rates on conventional gilts. The average maturity of gilts for the bonds used for these figures is 14.5 years.

³ PWC, 2013, The trillion pound question – are gilts the next bubble to burst?

⁴ Although costs of new debt are forecast to rise, issuing a bond now would not be efficient due to the substantial carry costs that would result.

Term premium

The 2026 bond that the CC used to determine the cost of new debt was issued in 2011, and therefore had an initial term to maturity of 15 years. Since its issuance, more than two years have elapsed. When NIE next issues a bond, it is likely to have a term of at least 15 years.

When determining the cost of new debt, the correct question to ask is: ‘how much would it cost to issue the same bond today?’ Instead, the CC has effectively asked: ‘how much would it cost to issue a bond with a 13-year maturity today?’ The CC’s estimate of the cost of new debt should therefore be adjusted to account for the term premium between a 15-year bond and a 13-year bond.

We estimate this term premium by taking the difference between yields on 15-year and 13-year index-linked gilts. Over the past 12 months, this term premium has, on average, been approximately 14 bps.⁵ This estimate is consistent with the term premia commonly estimated for 10-year bonds versus the base rate of 50 bps (equivalent to 10 bps for every two year difference).⁶

On this basis it would be prudent to assume a term premium of 10 bps for new debt above the observed 2026 debt spread.

Risk of a fall in credit rating

Based on the CC’s modelling using its proposed WACC the forecast financial ratios for NIE over the price control are weak (see PD paragraph 16.45). In particular, the PMICR is below (in certain reasonable scenarios far below) the threshold value of 1.5, which UR and NIE have hitherto agreed to be preferred, over the full period of the price control.⁷ Given the expected weakening of NIE’s credit metrics under the CC’s proposals, there is a material risk that its credit rating will be downgraded. This, in turn, would lead to a higher cost of new debt.

A reduction in NIE’s credit rating would clearly increase materially financing costs, which will ultimately be to the detriment of customers.

⁵ This is based on spot yield curves produced by the Bank of England. We use yields on indexed gilts because this virtually eliminates the possibility that the difference in yields between 15-year and 13-year tenors is due to default risk, liquidity risk or inflation risk. We take the average difference in yield over the last 12 months for 15-year versus 13-years gilts. We take this to be a reasonable proxy for the term premium on the basis that there should be very little difference in interest rate expectations that drive differences in yields between 13 and 15 years in the future.

⁶ PWC, 2013, UK Economic Outlook – July 2013

⁷ We understand that NIE has also identified errors and omissions from the CC’s financeability modelling, the correction of which would show NIE’s position under the CC’s proposed price controls to be materially worse. For the purposes of this report, we take no account of those errors and omissions but, if NIE is correct in respect of them, the risk of a reduction in NIE’s credit rating, as contemplated in this section, would, of course, be all the greater.

The CC’s estimate of the cost of debt

Rather than apply an uplift to the cost of new debt to reflect this risk of credit rating deterioration, we believe the CC should address the root causes: a proposed cost of equity allowance that is too low and cost allowances that are inadequate. The first of these points is discussed in Section 3, and we understand that NIE is responding to the CC separately and in detail on the second point.

2.2.3 Issuance and carry costs

There are other significant costs associated with new debt. First, there are issue costs, which given that NIE is likely to be issuing a small tranche(s) of debt will be significant in percentage terms. Second, when new debt is issued there are carry costs as not all of the funds raised will be converted immediately into investment that can generate a return. We agree with the 30 bps that the CC has used for these costs (see paragraph 13.73) and note it is consistent with the CC's approach in the Bristol Water case.

2.2.4 Overall cost of new debt

On the basis of all the adjustments above we believe that if the cost of new debt is applied, a value of 3.09% (real) should be used. This is summarised below in **Table 1**.

Table 1. Estimate of the cost of new debt

Sector	Lower	Upper	Average
Benchmark nominal gilt yield	3.40%	3.89%	
Baseline spread	1.65%	2.50%	
Term premium	0.10%	0.10%	
Implied coupon	5.15%	6.49%	
RPI inflation rate (CC assumption)	3.20%	2.70%	
Real yield	1.88%	3.69%	
Issue and carry costs	0.30%	0.30%	
Total	2.18%	3.99%	3.09%

Frontier Economics analysis

2.3 Conclusions on the cost of debt

Given a weighting of 5% to 10% applied to the cost of new debt, our overall estimate of the cost of debt is close to 3.6% (real). This is higher than the 3.4% (real) proposed by the CC.

The CC's estimate of the cost of debt

3 The CC's estimate of the cost of equity

We consider much of the CC's assessment of the cost of equity to be unsound. This is an important deficiency in the CC's overall assessment of NIE's WACC, since the CC's low estimate of NIE's WACC is largely driven by its low estimate of NIE's cost of equity. We find that the CC's provisional findings in respect of NIE's cost of equity are flawed by the CC's misinterpretation of some of the historic evidence on which it relies; its decision to rely on a selection of unrepresentative and, in some cases, controversial scholarly work in preference to a larger range of evidence (a selection for which it provides no explanation or justification); its failure to take account of up to date evidence from the Bank of England (and its reliance instead on out of date evidence from the Bank); and its heavy focus on short-run data to an extent that represents a significant departure from regulatory precedent. For the reasons described below, we find this shift surprising and unlikely to be effective in protecting the long-run interests of NIE customers, and customers in the utility sector more widely.

In addition, the CC's analysis of total required market returns is flawed by inconsistency and inadequate evidence. The CC has confused recent *realised* equity market returns with the underlying *cost of equity* capital. It is the latter that should be the basis of a price control. Yet the CC appears to have focussed on evidence relating to recent realised returns and has therefore biased its estimates downwards since actual returns earned by investors during recent periods of economic crises have been particularly low. In fact there is good evidence that the returns that investors require in order to commit capital to risky investments have increased, not fallen, because market uncertainty has risen.

Further, the CC recognises correctly that market returns are relatively stable over time, and that there is an inverse relationship between the risk-free rate (RFR) and the equity risk premium (ERP), which is a source of the historical stability in market returns. Yet, it ultimately proceeds on the basis of a positive relationship between the RFR and the ERP, with little empirical or theoretical support for doing so.

We also find that the CC has erred in rejecting a NI equity premium. Its reasons for doing so rest upon a hypothesis that is not supported by the economic literature in this area.

3.1 The ERP

The CC has based its conclusion that the ERP lies within a range of 4.0% to 5.0% on three pieces of analysis (see paragraph 13.145):

The CC's estimate of the cost of equity

- The pure historical analysis conducted by Dimson, Marsh and Staunton (DMS), which the CC finds to support the lower end of its 5% - 6% range;
- The Dimson, Marsh and Staunton (DMS) decomposition approach, which the CC finds to suggest an ERP of 4.5% to 5%; and
- Fama and French's (and other) forward-looking projections based on the DGM, which the CC finds to suggest an ERP of 4.4%.

We address each in turn.

3.1.1 CC's assessment of historic evidence

We consider that the CC's assessment of the historical evidence is in error. Of the 40 historical estimates of the ERP set out in Table 13.7 of the PD, only four of these take on a value of 5.0% or less, and none of these estimates forms part of the DMS data (which the CC explicitly refers to in support of its range). No fewer than 27 of the estimates cited take on a value of 5.5% or higher. This evidence provides no sound basis for finding an ERP of less than 5.0%, still less 4.0%, and we conclude that the CC has erred in relying on this data in support of its finding of a lower bound to the ERP of 4.0%.

Table 13.7 also presents the CC's estimates of the total market return and ERP for a very wide range of investor holding periods. The estimates vary considerably depending on the holding period. When interpreting this evidence, the CC appears to have not considered which of these holding periods is most appropriate, and has therefore effectively treated all holding periods as equally relevant. This cannot be a valid assumption.

Using data on annualised share turnover for the London Stock Exchange, obtained from the World Federation of Exchanges, we estimated that the average holding period for equity investors is very close to two years (see Annex 1 for details of the calculation).⁸ According to the CC's own analysis, a two year holding period would suggest:

- An historic ERP range of 5.5% to 6.2%; and
- A total return on equity of 6.7% to 7.5%.

Both of these ranges are far above the levels that the CC has proposed.

⁸ As the ERP is not a firm-specific parameter (i.e. it represents the risk premium associated with holding the market portfolio), it is reasonable to estimate the average equity holding period using actual trading data on the entire market.

3.1.2 DMS decomposition

The CC will be aware of a vast range of material it could have drawn upon for the purposes of estimating the ERP. However, it has chosen to rely on the forecasts of just three academics, namely, Dimson, Marsh and Staunton. Whilst they provide an excellent source of evidence on the long-run historic ERP, their forecasts naturally rely on a number of judgements and assumptions. The CC has made no attempt to cross-check these assumptions and judgements with those made by other academic economists who have access to the same evidence as DMS, and the CC has provided no explanation of its failure to do so. We conclude that the evidence base the CC has relied upon is too narrow to permit a fair or representative assessment. The meagreness of the evidence base is well illustrated by the fact that the CC spends just a single paragraph discussing it. This is scarcely an adequate evidence base to underpin one out of three of the strands of evidence on which the CC relies. Had the evidence base been widened, different conclusions would have been likely, as we now move onto explain.

DMS's approach to estimating a forward-looking ERP involves "adjusting for non-repeatable factors"⁹. A close inspection of DMS reveals that the adjustments they make are speculative. For instance:

- DMS suggest that there is a strong argument that future real dividend growth for the world index should be lower than the historic average of 0.5% p.a. However, this is simply an assumption on their part. In addition, their assumption takes little or no account of dividend growth in many of the largest and fastest growing economies in the world (e.g. the BRIC nations).
- DMS derive their prospective world risk premium by assuming that the historic real growth rate of dividends was at least half attributable to past good fortune, and that such growth is non-repeatable. Such assumptions are highly speculative.
- DMS assert that "the historical expansion in the price/dividend ratio cannot be extrapolated and might be assumed to be zero" because the supposed cause of the historic growth in the price/dividend ratio, the expansion in diversification opportunities, is unlikely to recur. However, it is not obvious that the expansion of diversification opportunities has been exhausted.

⁹ Credit Suisse, 2013, Global Investment Returns Sourcebook 2013, Section 2.9, Page 41.

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Furthermore, changes in the price/dividend ratio might have been due to reasons other than falling risk premiums.¹⁰

The CC has rejected the use of survey evidence on the ERP (see paragraph 13.141), yet, as noted above, it gives very significant weight to the forecasts of just three academics, namely, Dimson, Marsh and Staunton. Other academic economists have access to the same evidence as DMS, and since the CC is willing to take account of DMS's views on the forward-looking ERP, it ought to be consistent and take account of surveys that canvass other academics.

The most recent of these surveys is by Fernandez, Aguirreamalloa and Linares (FAL), who in their June 2013 study received responses from 49 UK finance academics on their expectations of the ERP and required market return.¹¹ The 2013 FAL survey finds that the average required return on equity expected by UK academics is 7.7%. If we were to assume a RFR of 2.0%, the resulting ERP would be 5.7%, which is significantly higher than DMS's forward-looking ERP range of 4.5% to 5.0%. In FAL's 2012 survey, the average forward-looking ERP amongst UK finance professors was 5.5%, which again is materially higher than the DMS's view.¹²

3.1.3 Fama and French (and other) forward looking projections

The final element of the CC evidence base is derived from an approach suggested by Fama and French, which estimates the underlying return from the sum of average dividend yields and the average rate of dividend growth.

The CC itself acknowledges (see PD paragraph 13.135) that the Fama and French approach "remains controversial", and "that the statistical evidence for the UK is less extensive", but nonetheless this analysis forms the third and final part of the CC's evidence base. In fact, there is some evidence that it is a poor predictor of realised returns. The CC itself cites a study by Welch and Goyal (PD page 13-40 footnote 34), who do not find robust evidence that forecasts of the ERP based on dividend yields were any better at predicting future returns than simply assuming a constant ERP.¹³ The study shows the forecasting

¹⁰ The price/dividend ratio could grow over time if the economy were to produce more companies (a) with high (increasing) valuations; and/or (b) that tend to reinvest profits rather than paying these as dividends. A well-known example of such a firm is Apple Inc., which has grown in value substantially over time, whilst maintaining a low dividend yield on the grounds that it needed to reinvest profits in R&D.

¹¹ Fernandez, P., Aguirreamalloa, J., Linares, P., 2013, 'Market Risk Premium and Risk Free Rate used for 51 countries in 2013: a survey with 6,237 answers', IESE Business School working paper.

¹² Fernandez, P., Aguirreamalloa, J., Linares, P., 2012, 'Market Risk Premium used in 82 countries in 2012: a survey with 7,192 answers', IESE Business School working paper.

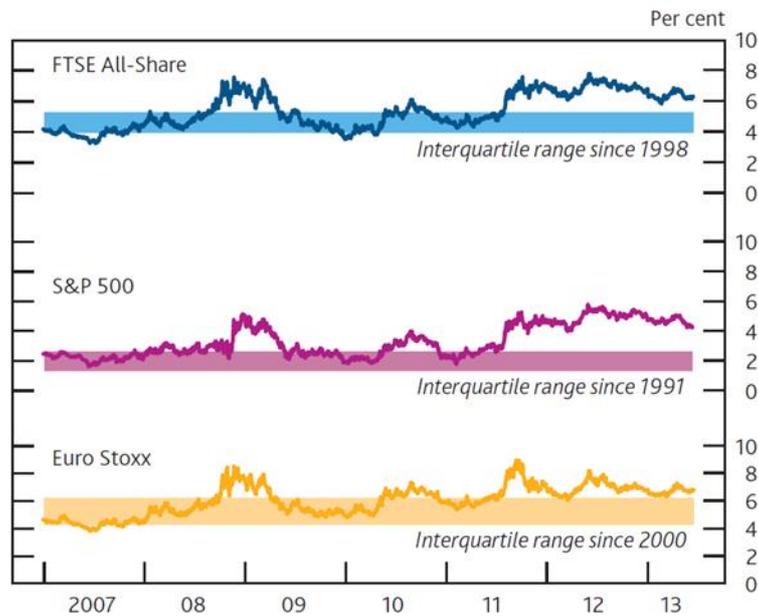
¹³ Welch, I. and Goyal, A., 2008, A comprehensive look at the empirical performance of the equity premium predicting, *Review of Financial Studies* 21(4), 1455-1508.

performance to be particularly poor in the period since 1995. Mehra and Prescott (2003) state that “...over the long horizon the equity premium is likely to be similar to what it has been in the past and the returns to investment in equity will continue to dominate that in T-bills for investors with a long planning horizon.”¹⁴ There is very little discussion of the merits and performance of the Fama and French approach in the PD relative to the weight that the CC appears to have placed on this evidence.

The CC has also given weight to other forward looking estimates of the ERP, including analysis produced by the Bank of England (paragraphs 13.138 to 13.139). This evidence was published in 2010 and suggests that the ERP has fluctuated at around 4.5%, and the market return at around 6.5%. If the CC wishes to use Bank of England analysis to support its conclusions, it should be noted that the evidence relied upon by the CC is now several years out of date. The Bank’s analysis was updated in July 2013, and these DGM-based estimates of the ERP for the UK, presented in **Figure 1** below, are slightly higher than 6%. The data relied upon by the CC fails to capture the fact that since February 2010, forward-looking estimates of the ERP have increased substantially.

¹⁴ Mehra, R. and Prescott, E., 2003, The equity premium in retrospect, *Handbook of the Economics of Finance* 1(B), 889–938.

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Figure 1. Bank of England estimates of the equity risk premium

Source: Bank of England, 2013, Financial Stability Report, June, p.14

3.1.4 ERP summary

In summary, the CC's evidence base for its ERP range is extremely weak, and we conclude that it cannot not support an ERP in the range chosen by the CC.

- Of the 40 historical estimates of the ERP set out in Table 13.7 of the PD, only four of these take on a value of 5.0% or less. No fewer than 27 of these estimates take on a value of 5.5% or higher. This evidence cannot be used credibly to support an ERP of less than 5.0%, still less 4.0%.
- The CC has relied on a very narrow evidence base when estimating the forward looking risk premium and has provided no explanation or justification for doing so. It has drawn almost exclusively on the forecasts of DMS – which embody judgement and assumptions – and ignored a wider set of evidence that differed from DMS and could have led the CC to a different set of conclusions. For example the survey of finance academics by Fernandez, Aguirreamalloa and Linares (FAL), finds that the average required return on equity expected by UK academics is 7.7%. If an RFR of 2.0% were assumed, the resulting ERP would be 5.7%, which is significantly higher than DMS's forward-looking ERP range of 4.5% to 5.0%. In FAL's 2012 survey, the average forward-looking ERP amongst UK finance professors was 5.5%, which again is materially higher than the DMS's view.

The CC's estimate of the cost of equity

- The CC's assessment of forward-looking projections of the ERP has not taken account of alternative evidence of the ERP (such as the most recent estimates derived by the Bank of England).
- The CC itself acknowledges that the Fama and French approach "remains controversial", and "that the statistical evidence for the UK is less extensive". Yet, the CC appears to have relied on this evidence.

In short the evidence gathered by the CC, and its interpretation of that evidence, do not represent an adequate basis on which to set the ERP.

The reason for these flaws is simple: the CC has effectively departed from the traditional approach of estimating the ERP from long run historical data. This inevitably means it must rely on short-run data and forecasts of the future which introduces much more judgement into the estimation process. In order that this judgement be exercised in an unbiased way, the CC would need to draw on a far wider evidence base than it has done, with the consequence that the CC's estimates are not fit for the purpose of setting the price control.

3.2 The market return

The CC has, quite sensibly, also chosen to consider the ERP in the wider context of overall market returns (that is, the sum of the ERP and the RFR). This should, in principle, ensure greater consistency over time and provide a useful cross-check between the overall market return and its component parts. The CC has concluded (in paragraph 13.144) that an upper limit of 6.5% is justified on the basis of:

- The fact that the market return is a more stable parameter than the ERP, but is still subject to volatility so cannot be regarded as fixed over time.
- The reduction in the RFR that should also imply a reduction in the overall market return.
- Research by DMS on the relationship between real interest rates and real returns on equities and bonds.
- Its view that a forward looking expectation of a market return of 7% does not appear credible given economic conditions and lowered expectations of returns.

We would agree with the CC that the market return is a more stable parameter than the ERP, which makes it all the more surprising that the CC has judged that there is an upper limit of 6.5% on the market return. Of the 40 historical estimates set out in the CC's table 13.7, some 31 take on a value of 6.5% or

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greater. It therefore appears that the CC has not applied its own conclusion that the market return is relatively stable over time and instead has chosen to rely heavily on current and volatile market data rather than the more stable historical data.

As far as the supporting points above are concerned, the CC argues that a low RFR will systematically drive a decline in market returns, and it is this argument which underpins its adoption of what is, by historical standards, a low value for total market returns. This position contradicts established finance theory and the empirical evidence. It is all the more surprising that the CC has made this error because it correctly acknowledges the inverse relationship between the RFR and the ERP in paragraph 13.142:

A further reason for using this approach with historical data is that, historically, the market return has tended to be less volatile than the ERP (as measured, for example, by the ratio of standard deviation to mean) and there is some evidence of the ERP being negatively correlated with Treasury Bill rates.

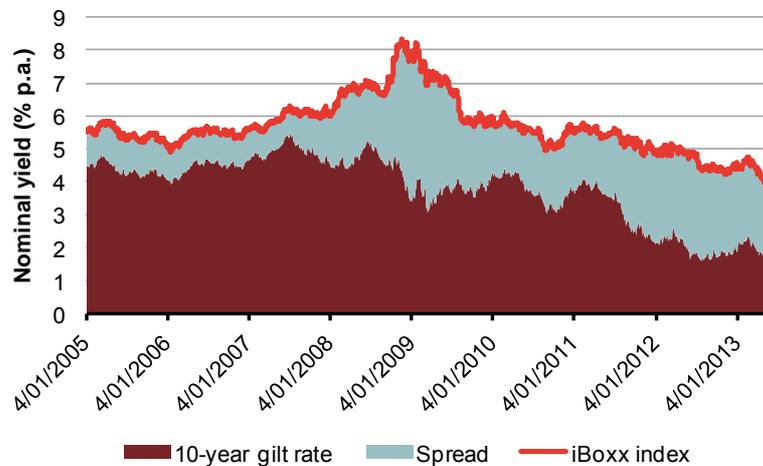
However, the CC has failed to apply this relationship when determining both the overall market return and the ERP. Indeed, in 13.144 (b) the CC contradicts itself:

We consider that there is logic to the proposition that a long-term decline in RFRs, as we discuss above, should correspond with an increased demand for equities and thus increased prices and lower returns.

This is a fundamentally flawed position for two reasons.

First, the evidence is strongly suggestive of an inverse relationship. There is empirical evidence of an inverse relationship between the RFR and risk premiums, for debt capital and equity capital. **Figure 2** below shows the cost of debt (for non-financial companies, as measured by the iBoxx index) and the resulting debt premium relative to the yield on the 10-year gilt. It is clear from the data that the debt premium has been considerably more volatile than the risk-free rate. There is also a clear negative correlation (-0.60) between the RFR and the debt premium. In other words the debt premium tends to widen (narrow) as the risk-free rate falls (rises).

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Figure 2. The RFR and the debt premium

Note: The iBoxx index shown in the above graph is a simple average of the iBoxx Non-financials 10+ indices for A and BBB rated companies. The yield on the 10 year gilt is the yield on the 10 year nominal, zero coupon government security.

Source: Data from the Bank of England and Markit, Frontier Economics analysis

This negative relationship is analogous to the relationship between the RFR and the ERP, and reputable evidence suggests that the risk premium demanded by equity investors has increased contemporaneously as gilt rates have declined. The forward-looking estimates of the ERP derived by the Bank of England which we discussed above clearly show that the ERP has increased significantly since the 2008 financial crisis, and also shows that risk premiums have widened over precisely the same period that ILG yields have declined. This is further evidence that the ERP and RFR are related inversely.

Second, finance theory would support an inverse relationship. If excess demand/supply arises for one form of capital (i.e. risky or safe), there could be substitution between these forms of capital. In such circumstances, we would expect the RFR and risk premiums to move in opposite directions. It is well recognised that the decline in real yields over the past few years has been driven, at least in part, by investors substituting away from risky assets towards relatively safe assets such as gilts, i.e. the ‘flight to safety’ phenomenon, which has been recognised repeatedly by expert bodies such as the Bank of England.¹⁵ These

¹⁵ Bank of England, 2010, Financial Stability Report, December, Issue No. 28.

Bank of England, 2011, Financial Stability Report, December, Issue No. 30.

Bank of England, 2013, Markets and operations, Quarterly Report, Q3.

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safe haven flows have occurred because risky assets in general became riskier still during recent crises.¹⁶

The 2008 financial crisis marked a ‘break point’ for investors, and a number of indicators show compellingly that there has been an upward step-change in risk faced by investors since the onset of the 2008 financial crisis (see Annex 2 for details):

- According to volatility indices on the FTSE100, implied market volatility has been, on average, approximately 44% higher over the past five years since the beginning of the 2008 financial crisis than over the preceding five year period.¹⁷
- There has been a general increase in investor risk aversion since the 2008 financial crisis. Over the five years since 2008, investor risk aversion, as measured by the European Central Bank (ECB) risk aversion index, has been above the ‘neutral’ level (i.e. an index value of zero) for 45% of the time. In the five years immediately preceding the financial crisis, the risk aversion index was above neutral only 24% of the time.
- The degree of investor risk aversion has been more severe since 2008 than over the five year period before 2008. Over the five years since 2008, the average value of the ECB risk aversion index, when it has been above neutral, was approximately 2.4. Over the five years immediately preceding the financial crisis, the average value of the index above neutral was 1.5. Hence, since the onset of the 2008 financial crisis, when investor risk aversion has been positive, it has been approximately 67% higher than over a similar period before the crisis.

It is implausible that following the most severe global financial crisis since the 1987 stock market crash, and in the face of such clear evidence that investors face ongoing uncertainty and perceive heightened levels of risk, that investors’ required rates of return have declined from pre-crisis levels.

At paragraph 13.144 (b), the CC seems to use evidence of falling realised returns to justify its assertion that required (expected) returns have declined recently:

¹⁶ It could be argued that Quantitative Easing has led to such an injection of capital that it reduced both the ERP and the RFR. However, the CC does not evidence this, nor does it submit an estimate of the impact of QE, and in any event, QE cannot be sustained indefinitely. What is clear, as the short discussion in the main text illustrates, is that there has been a significant substitution effect.

¹⁷ As a rough approximation, the ‘start’ of the financial crisis is taken to be the 15 September 2008, the day that Lehman Brothers collapsed.

A forward-looking expectation of a return on the market of 7 per cent does not appear credible to us, given economic conditions observed since the credit crunch and lowered expectations of returns.

Realised equity returns have indeed been depressed lately by the recurring financial crises over the past five years. This is precisely what one would expect to see given recent economic events. However, given the ongoing economic uncertainty that investors face, it is unreasonable to infer from declining realised returns that the returns investors require in order to commit capital to risky assets has fallen. To the contrary, required equity returns have increased because risk premiums have widened.

3.2.1 Market returns summary

In summary, the CC has made two fundamental errors when determining market returns.

- It has confused recent realised equity returns with the underlying cost of equity capital, and it is the latter that should be the basis for a price control. Yet the CC appears to have focussed on evidence relating to recent realised returns and has therefore biased its estimates downwards.
- The CC recognises that market returns are relatively stable over time, and that there is an inverse relationship between the RFR and the ERP (which is a source of the historical stability in market returns), but ultimately it proceeds on the basis of a positive relationship between the RFR and market returns, with little empirical or theoretical support for doing so.

As a consequence, the CC's analysis does not pass a robustness cross-check on the estimates of the ERP it derives.

3.2.2 The CC's position on the ERP and market return is inconsistent with regulatory precedent

The flaws in the CC's analysis become clearer when set against established regulatory precedent for the ERP and market returns. As **Table 2** below shows, the CC's estimates are completely out of line with past UK regulatory determinations, which, to date, have been notably consistent and stable over time.

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Table 2. Recent UK regulatory determinations on ERP and total market return

Sector	Subsector / company	Regulator	Year	ERP	Market return
Energy	Gas distribution	Ofgem	2007	4.75%	7.25%
Aviation	Airport – Stansted	CAA ¹	2009	3%-5%	5.0%-7.0%
Water	General	Ofwat	2009	5.4%	7.4%
Energy	Electricity distribution	Ofgem	2009	5.25%	7.25%
Water	Bristol Water	CC	2010	5%	7.0%
Aviation	NATS	CAA	2010	5.25%	7.05%
Telecoms	BT	Ofcom	2011	5%	7.0%
Energy	Electricity & Gas transmission	Ofgem	2012	5.25%	7.25%
Energy	Gas distribution	Ofgem	2012	5.25%	7.25%
Aviation	Airport - Heathrow & Gatwick	CAA	2013	5.75%	6.75%
<i>CC PD</i>				4% - 5%	5% - 6.5%

¹ Note that the ERP and Market return figures are from the Competition Commission report on Stansted Airport Ltd, Q5 price control review

Source: Regulatory publications

While the numerical effect of the CC's methodology clearly indicates that its PD is an outlier, we also consider that there are elements of the CC's overall methodology that are highly unusual, and which are likely to have the effect of increasing regulatory uncertainty, not just for NIE, but for the utility sector more widely. We comment further on these matters in Section 4.

3.3 Risk-free rate

The CC has identified (see paragraphs 13.114 and 13.120) that index linked gilt (ILG) rates have declined significantly in recent times and are currently negative for short-term maturities, and close to zero for longer-term maturities. This appears to have guided the CC's thinking in respect of its proposals on the RFR.

In the PD (see paragraph 13.121) the CC has suggested that the fall in real interest rates may be of a more permanent nature. In support of this assertion,

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the CC has largely relied on the views of DMS, who identify four possible explanations for recent movements in ILG yields:

- Investors have sought out safe havens in response to increased market uncertainty. The resulting ‘flight to safety’ phenomenon has pushed up the price of UK government bonds and depressed their yields.
- Quantitative easing (QE) interventions by the Bank of England have reduced the supply of UK government bonds. This has also pushed up the price of gilts and depressed yields.
- Demographic shifts, such as “dissaving by retiring baby boomers”.
- Regulatory pressures on pension funds and other financial institutions to increase their holdings of government bonds.

As DMS notes (see paragraph 13.119), the evidence for ‘demographic shifts’ as an explanation for declining rates is “at best, weak”. Of the three remaining causes identified by DMS, in our view only the relatively recent changes to the prudential capital requirements on financial institutions could be considered a permanent ‘step change’.

The extremely low interest rates that have resulted from the flight to safety phenomenon and QE policies are very likely to be temporary. It is very likely that as market uncertainty declines, investors will seek out risk again by substituting away from gilts in favour of risky assets. This would result in ILG yields rising again as capital flows out of safe haven assets.

In addition, QE cannot be maintained indefinitely due to the sustained inflationary pressures that would arise from persistent and extremely low interest rates. High inflation and low interest rates erode incentives for savings. Falling savings rates would ultimately put pressure on economic growth (because of reduced funds available for lending and investment), and on government finances (e.g. through greater social welfare costs to support those who have accumulated insufficient savings). Given the Bank of England’s core purpose to ensure monetary stability by targeting inflation,¹⁸ and concerns over the effect of savings imbalances over the long term, it is inconceivable that it would maintain QE over the long-term. A winding back of QE would depress asset prices and cause ILG rates to rise from current levels.

We consider that DMS’s view that “many alleged ‘distortions’ of ILG yields are likely to be permanent” is unfounded. The CC appears to have accepted DMS’s

¹⁸ According to the Bank of England, its first core purpose is “monetary stability”, and its first strategic objective aimed towards meeting that objective is “Keep inflation on track to meet the Government’s 2% target”.

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view without question, and proposed a RFR range that is extremely low compared to recent regulatory precedent, in particular precedents from Ofgem. We would have expected the CC to have considered their assertions more carefully and canvased a wider set of views.

Given the deep uncertainty over when ILG yields will recover, the CC should err on the side of caution and apply a higher RFR than it has done, for instance, by at least going to the top of its estimated range of 1% to 1.5%. A point estimate of 1.5% would be more in line with its past determinations (e.g. Bristol Water, in which it used a range of 1% to 2% for the risk-free rate) and wider UK regulatory precedent.

Table 3. Recent regulatory determinations on real risk-free rates

Sector	Subsector / company	Regulator	Year	Real risk-free rate
Aviation	Airport - Stansted	CAA ¹	2009	2.0%
Water	General	Ofwat	2009	2.0%
Energy	Electricity distribution	Ofgem	2009	2.0%
Water	Bristol Water	CC	2010	1.0% - 2.0%
Aviation	NATS	CAA	2010	1.8%
Telecoms	Mobile termination	Ofcom	2011	1.5%
Energy	Electricity & Gas transmission	Ofgem	2012	2.0%
Energy	Gas distribution	Ofgem	2012	2.0%
Aviation	Heathrow & Gatwick	CAA	2013	1.0%
CC PD				1.0% - 1.5%

¹ Note that the Real risk-free rate is from the Competition Commission report on Stansted Airport Ltd, Q5 price control review

Source: Regulatory publications

3.4 The CC's rejection of a NI equity premium

The CC has rejected NIE's position in respect of an explicit allowance within the cost of equity for NI-specific risks (see paragraph 13.63). It rejects NIE's case on the basis that, firstly, it does not believe that an observed NI premium on the cost of debt (as demonstrated by NIE and PNGL) translates into a premium on the cost of equity; and, secondly, it considers it possible that some part of the NI

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premium on debt may arise as a consequence of NIE's ownership by ESB, resulting in an additional cost which consumers should not be expected to bear.

The CC explains that it has considered the theory that we (and also Professor Cooper on behalf of PNGL) have advanced. It concludes that, whilst it is plausible that an observed debt premium may also imply a similar equity premium, there are other "equally plausible theories" that could account for a NI debt premium without any equivalent equity premium. The only alternative theory cited by the CC is that additional risk borne by debt investors might be offset by correspondingly lower risk borne by equity holders (see paragraph 13.103).

In regards to the CC's position, we note the following. Firstly, the theory that we and Professor Cooper appealed to — Merton's theory that debt and equity are contingent claims on common underlying assets, and are thereby related to one another — is standard and well established. This theory plays a central role in finance and underpins much of modern financial economics. Our paper provided several example studies that show empirically that the costs of debt and equity are related.¹⁹

The alternative theory that the CC appears to rely on is that "higher [observed] risk borne by bondholders is offset by lower risk borne by equity holders". This is not a theory that the finance literature would recognise.²⁰ Nor is there any intuitive basis to believe that if debt providers observe additional risks of investing in NI companies (or NI-regulated utilities), those risks will not also apply to equity investors. The differences between debt and equity mean that equity investors are generally more exposed to the same risks that affect debt investors, but not to wholly different species of risk.²¹

Being unable generally to explain what kind of NI-specific risk might affect debt providers but not equity providers, the CC points instead to the possibility that

¹⁹ Frontier Economics, 2013, 'Further evidence on NI-specific premiums on debt and equity returns', August.

²⁰ It may be that the CC's conclusion is based upon a confused attempt to apply the Modigliani Miller ("MM") theorem. However, this theorem begins from the premise that the total amount of underlying business risk for an individual business has first been fixed and then its leverage is varied to evaluate the impact on the cost of different forms of finance. That is a completely different situation to the one faced here, where one is trying to make an inference about the difference in underlying business risk across businesses from the levels of their respective debt spreads. The MM theorem is not directly relevant to this analysis. Indeed, if one were to use the MM theorem to justify the conclusion that a higher debt spread implies a lower cost of equity one would be assuming that the incremental debt spread does not signify anything about underlying business risk or the overall cost of capital. That would make the evidence irrelevant, but only because the conclusion had been assumed a priori.

²¹ The only exception to this might arise in the sphere of law-related risks, where defects in insolvency laws might create recovery-related risks for debt providers, but not shareholders, but no such risks are identified, or identifiable, in the present case.

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the cost of NIE debt historically might have been infected by the poor credit quality of its shareholder, ESB. However, at paragraphs 13.4 and 13.5 of the PD, the CC itself rejects this notion by viewing NIE as a “stand-alone ‘ring-fenced’ company”:

13.4 NIE is a subsidiary of ESB, and is majority owned by the Irish Government.¹ However, under the existing regulatory regime for electricity, NIE is treated as a ‘ring-fenced’ company. In particular, NIE is required at all times to conduct its regulated business as if it were substantially a free-standing business and a separate public limited company. It is also required to take all appropriate steps to obtain and there-after maintain at all times an investment grade credit rating.

13.5 We are therefore concerned with the cost of capital of NIE as a stand-alone ‘ring-fenced’ company.

For the reasons outlined below, and in Annex 4 to this paper, it is clear that there is no evidence of such a ‘contagion effect’.

Consequently, the CC’s theory is not supported by any academic literature or by any suggested combination of factors that would otherwise lend it credibility. It is therefore erroneous for the CC to suggest that its own theory can be regarded as equally plausible as that advanced by NIE and PNGL. The two are simply not equivalent in terms of their explanatory power and acceptance in the wider literature.

But, even if the CC’s alternative theory were correct, that theory would not provide a complete answer to NIE’s case. The CC makes two assumptions in applying its theory: first, that the higher risk borne by bondholders is *perfectly* offset by lower risk borne by equity holders; and second, that the underlying WACC for NIE should be similar, if not identical, to the other GB utility businesses. As we note below, in section 3.5.1, there are good reasons to think that differences in regulatory and macroeconomic risks mean that networks in NI are riskier than those in GB. A more appropriate inference should be that an observed NI debt premium must mean that NI utilities have a higher, not lower, cost of equity than do GB utilities.

In respect of the CC’s second reason for rejecting a NI equity premium, NIE has commented on numerous occasions on the merits of the theory that the NI premium can be explained by NIE’s ownership by ESB. No party has yet brought forward any meaningful analysis to demonstrate that this may be the case. In particular, no party, including UR and the CC, has addressed the four questions that NIE identified in respect of the theory of parent contagion (see paragraph 13.51 of the PD). There is no concrete evidence that the NI premium is explained by its ownership by ESB.

In the absence of any rigorous and robust analysis by another party into this question, Frontier was asked by NIE to undertake an econometric investigation into whether there is any detectable relationship between the yields on NIE’s and

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ESB's bonds. The key findings from that analysis, which are detailed in Annex 4, are the following:

- If there is a relationship between movements in NIE's and ESB's bond yields, it is very weak. In contrast, we identify a strong, positive relationship between movements in NIE's yield and movements in the average yield of comparable GB DNO bonds.
- NIE's bond yield does not adjust over time in response to movements in ESB's bond yields in a material way. However, we do find evidence that the yield on ESB's bond 'error-corrects' in response to changes in NIE's yield.
- We find no evidence that past changes in ESB's yield has caused changes in NIE's yield.

The evidence suggests that ESB's yield has no material effect on NIE's yield. This implies that there is little empirical support for the claim that ESB's credit quality has influenced NIE's cost of borrowing. However, it appears that NIE's yield has influenced ESB's yield.

Our findings further support our view that that the observed premium on NIE's bond, relative to GB peers, is driven by NI-specific factors (such as regulatory and macroeconomic risks) and not linked to ESB's ownership of NIE. Our results are consistent with what one would expect to observe if NIE were ring-fenced financially, through regulatory arrangements, from its parent, ESB.

3.5 Betas

3.5.1 Beta and the NI equity premium

Although the CC has not applied an explicit NI equity premium, it appears to have accepted implicitly our logic that the systematic risk associated with NIE is greater than the systematic risk of GB comparators. For example, it states that:

13.168 The comparators that we have used to estimate beta relate to GB regulated utilities. These are regulated by Ofgem under a regulatory framework that has been established for a long period of time and is well understood by investors. We think the regulatory framework applying to NIE is similar to that of Ofgem in many respects, particularly to that applying pre-RJIO, and we note the findings of First Economics in this respect (see paragraph 13.152). However, we consider that the Northern Ireland regime may be less well understood by investors. For these reasons, investors may perceive the systematic risk of NIE to be towards the upper end of the GB comparator set.

In recognition of this, and evidence from previous inquiries, the CC narrowed its beta range from 0.26 to 0.55 (midpoint of approximately 0.41) to 0.4 to 0.45

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(midpoint of 0.43). This represents only a very modest allowance for differences in systematic risk between NIE and its GB comparators, given the clear evidence that NIE faces significantly more systematic risk than GB comparators.

There could be two main reasons why such differences in systematic risk have arisen (Annex 5 provides a more detailed discussion of these risks and supporting evidence):

- **Regulatory risk.** As the CC has acknowledged, the regulatory regime in NI is significantly less developed than in GB. Investors clearly perceive greater systematic risk in NI than in GB.
- **Macroeconomic factors.** A range of economic indicators (e.g. the change in regional GDP, Gross Disposable Household Income, enterprise births and deaths) suggest strongly that NI has consistently underperformed much of the rest of the UK. This may have created a climate of uncertainty which may have made NI a riskier economy to invest in than GB. Macroeconomic factors of this kind by definition affect all firms in NI, and therefore contribute to systematic rather than non-systematic risk.

Aside from the CC's weak assertion that the theory underpinning our estimates of a NI equity premium may not be reliable, the CC has not provided any convincing analysis that a NI equity premium is unjustified.

In the absence of traded equity, observable data on traded debt is evidence on the relative risk of NI and GB networks. The CC has dismissed this evidence. This seems unreasonable, particularly as there is established finance theory that suggests it is possible to infer the cost of equity from debt spread evidence.

In our view, there is clear evidence that NIE faces greater systematic risk than GB peers. Our empirical analysis suggests that the premium could be between 280 bps and 580 bps. The analysis submitted by PNGL suggests that the premium is at least 186 bps. Given this evidence, we consider that a NI equity premium of 100 bps, as per NIE's Statement of Case, is conservative and reasonable.

3.5.2 Measurement of betas and financial market distortions

We think that the asset beta point estimate proposed by the CC is appropriate. The CC's final point estimate is consistent with taking a long-term view of betas.

As we explained at the first hearing before the CC, recent estimates of beta for regulated network business (of the kind that the CC has used as comparators when estimating NIE's beta) have been biased downwards. This downward bias has arisen because of significant market volatility since the 2008 financial crisis. By comparison, the returns of regulated networks have been significantly more stable. As a result, the measured covariance between regulated network returns

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and overall market returns has been distorted down, even though the true systematic risks associated with regulated networks have not changed fundamentally (i.e. their underlying activities have remained largely unchanged).

The CC appears to accept this point when it states that:

13.167 Historical observations of beta measure companies' historic systematic risk profiles. We considered whether there could be a case for suggesting that NIE's beta will be lower or higher than in the past. We concluded that there was no strong case for thinking beta would be different than in the past and consequently that we could estimate beta from historical data.

As we have submitted previously to the CC, faced with known distortions of the kind discussed above, a reasonable approach to estimating beta is to take a long-term view of betas, and de-emphasise current estimates of beta. Although it is not clear to us that the CC has taken this approach, the asset beta estimate that the CC has proposed is consistent with taking a longer term view of betas.

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4 The CC's overall methodology

In the preceding sections we have set out detailed views on the evidence and method through which the CC has provisionally determined the WACC for NIE. In addition to these specific comments, we have two further, overarching observations on the CC's approach. These are:

- the increased reliance on short-term/short-run evidence; and
- the extent to which the CC has erred or on the side of caution or 'aimed up' when deciding where in its range to locate its point estimate.

In each of these areas we consider the method adopted by the CC to be a significant departure from regulatory precedent, including its own. Notwithstanding the numerical impact of the CC's approach on this present inquiry, this gives rise to a more general concern in respect of the CC's approach and its consequences for the financing of the regulated utility/infrastructure sector. We address each of these two areas in turn.

4.1 Reliance on short-run data

In reaching its provisional view of certain of its parameters, in particular the level of market returns, the ERP and RFR the CC – by its own admission – has given considerable weight to short-run data. This represents a significant break with long established precedent. Given the challenges in estimating these parameters, regulators (including the CC) have traditionally depended far more heavily on long-run evidence in their regulatory determinations. This has typically resulted in stable estimates of the RFR and ERP that evolve only slowly over time as evidence on shifts becomes compelling and well established.

This principle has been recognised by the CC in the past in relation to the cost of capital for airports:²²

4.69. In paragraph 4.61 we indicated the basis of our choice of a range of 2.5 to 4.5 per cent for the level of the ERP. This range is below that used in the two previous regulatory reports of the MMC/CC, reflecting further analysis of historical data and modification of the expectations of investors in present market conditions. The exact extent to which the appropriate level for the ERP has been moving downwards in recent years is uncertain and, if market conditions altered, an increase might occur. In view of this uncertainty we would wish to be cautious over implementing in full the decline represented by our range of 2.5 to 4.5 per cent. We consider that a degree of smoothing of the downward trend in the ERP would be appropriate, an approach

²² Competition Commission, 2002, BAA plc: a report on the economic regulation of the London airports companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd)

which would also help to prevent volatility in the short term. We consider that the most appropriate way of recognizing this factor is not by modifying our judgement of the range for the ERP, but by an increase of 0.25 per cent in the overall level of the WACC for BAA.

There has also been a consensus amongst sector regulators in the UK that this long-run focus represents a sound basis for assessing required returns for capital intensive, critical infrastructure with long asset lifetimes. The use of long-run data ensures that, over these long time horizons, investors receive a stable, well understood and reasonable level of returns. It reduces the volatility of WACC determinations and the knowledge that such an approach will endure into the future has hitherto reduced materially regulatory risk, and hence the costs of financing infrastructure. The consensus amongst regulators, in our view, stems from an understanding that this approach will ultimately reduce materially costs to customers and consequently represents the best approach to protect customers' interests.

Placing greater weight on short-run evidence, as the CC has done here, will inevitably result in WACC determinations becoming more volatile, and in all likelihood more pro-cyclical. Both of these factors will increase betas in the utility sector, increasing the cost of capital, to the ultimate detriment of customers.

Moreover, investors will now be increasingly concerned over the risks of an underlying asymmetry in the CC's approach, and potentially that of sector regulators too. In its deliberations on NIE, the CC presently contemplates setting a low WACC based on its (in our view poorly evidenced) low assessment of future market returns during a period of slower economic activity. Investors will ask whether, if the CC were conducting this inquiry during a period of rapid economic expansion where investors were, in the short term, anticipating unusually high levels of returns, it would place similar weight on short term evidence to determine a WACC at a level significantly above utility sector norms. At the very least, investors would potentially face something of a 'timing lottery' in respect of one of the most important elements of any regulatory review.

Given the CC's role as appeal body for all sectors regulators its new focus on short-run data threatens to undermine the shared understanding amongst UK regulators and investors over the appropriate basis on which to set utility sector returns. For all the reasons set out above, in our view this is likely to increase the cost of capital, not only for NIE, but for the entire utility sector.

We also note that this move seems counter to the widely held view that it is necessary to bring forward very large volumes of infrastructure investment, in a range of sectors, over the coming decades. The risk of creating significant uncertainty over how the UK's 'super regulator' may assess allowed returns could diminish investors' appetite to supply finance to large scale investments in the

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UK. In this respect, the timing of the CC's new emphasis on short-run data seems unhelpful.

In reaching its final view, it is important that the CC consider carefully the impact on regulatory certainty of its proposed approach.

4.2 Choosing a point estimate

In the past the CC has recognised that the consequences of misestimating the WACC are not symmetric. As we set out below, it has therefore typically 'aimed up' when deciding where within its identified range to set the allowed rate of return.

In circumstances where the CC is presently minded to depart materially from the consensus view of the sector regulators and determine a very low WACC, we consider that there is a strong imperative for the CC to err on the side of caution. A very robust evidence base is needed to justify moving away from recent regulatory precedent and long-term market data on the cost of equity and the overall WACC. We have shown that the CC has not provided this. Therefore, to reflect the high risk that the range chosen is too low, a point estimate at the top end of the WACC range should be chosen.

The CC has set the plausible range for NIE's WACC at 3.9%-4.3% and chosen a point estimate of 4.1%. This is the 50th percentile in the plausible range, which is much lower than the average percentile the CC has chosen in its four most recent decisions on the cost of capital.

- In the Bristol Water determination, the WACC range was 3.8-5.0% and the point estimate was 5%, which is the 100th percentile in the range;
- In the Heathrow report (2007), the WACC range was 4.0-5.2% and the point estimate was 5.1%, which is the 92nd percentile in the range;
- In the Gatwick report (2007), the WACC range was 4.1-5.5% and the point estimate was 5.3%, which is the 86th percentile in the range; and
- In the Stansted report, the WACC range was 4.2-6.0% and the point estimate was 5.6%, which is the 78th percentile in the range.

Given this, and the fact that the proposed cost of equity estimates are a major deviation from recent precedent and long-run historical data, we suggest that a point estimate at least above the 80th percentile should be chosen.

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Annex 1: Estimating the average holding period for equity investors

The standard formula for calculating the average holding period is the following:

$$\text{Average holding period (years)} = \frac{1}{\text{Annualised share turnover (\%)}}$$

Data on annualised share turnover for the London Stock Exchange were obtained from the World Federation of Exchanges (WFE) database.²³ The WFE calculates annualised share turnover as the ratio between the Electronic Order Book (EOB) turnover of domestic shares and total market capitalisation. This number represents the percentage of all shares listed on the LSE that were traded over the past year.

Table 4. Calculating the average holding period for shares on the LSE

Month	YTD annualised turnover	Average holding period (years)
November 2012	49%	2.0
December 2012	42%	2.4
January 2013	58%	1.7
February 2013	50%	2.0
March 2013	53%	1.9
April 2013	52%	1.9
May 2013	57%	1.8
June 2013	55%	1.8
July 2013	47%	2.1
August 2013	46%	2.2
September 2013	51%	1.9
October 2013	55%	1.8
Average		1.97

Source: World Federation of Exchanges data, Frontier Economics analysis

²³ WFE refers to these data as annualised 'share turnover velocity'.

The WFE reports year-to-date annualised turnover each month. Using these data an estimate of the average year-to-date holding period was calculated for each of the months November 2012 to October 2013 (see **Table 4**).

An overall estimate of the holding period was obtained by averaging the year-to-date holding periods for the months November 2012 to October 2013. This resulted in an average holding period estimate of approximately two years.

Annex 2: Risk aversion, volatility and the ERP

There is evidence that the 2008 financial crisis has marked a ‘break point’ for investors, following which there has been an upward step-change in the risk faced by investors.

Market volatility is an indicator of total market risk, and investor risk aversion reflects investors’ perceptions about, and willingness to bear, market risk. Equity markets are more volatile when there is more risk in the system. Similarly, risk aversion tends to be higher when there are higher levels of risk present in the market. Dimson, Marsh and Staunton (DMS) have noted that the equity premium should be higher at times when the equity market is riskier and/or when investors are more risk averse.²⁴

An analysis of volatility and risk aversion indicators, outlined below, suggests that both the level of risk in the market as well as investor risk aversion have been higher since the crisis.²⁵

A2.1. Market volatility

In order to measure the change in market volatility, we examined the FTSE 100 Implied Volatility Index Series.²⁶ The indices estimate the volatility that is implied by options for different forward looking periods and therefore are an indicator of the level of market risk perceived by investors at a given point in time. Implied volatility is the level of volatility of an underlying asset of a traded option that is consistent with the current market price of that option. In this case, the underlying asset is the FTSE 100 index.

FTSE 100 Implied Volatility indices are constructed for a range of terms (30, 60, 90, 180 and 360 days), where the term reflects the time left until the options in question expire. Hence, the 30 day implied volatility index, for example, represents market expectations of volatility over the forthcoming 30 days.

Figure 3 shows the FTSE 60 day Implied Volatility Index. Volatility is higher in times of financial stress. The figure below shows that there have been far more ‘spikes’ in the FTSE 60 day Implied Volatility Index after 2008 than in the five

²⁴ Dimson, Marsh and Staunton, 2013, Credit Suisse Global Investment Returns Sourcebook 2013.

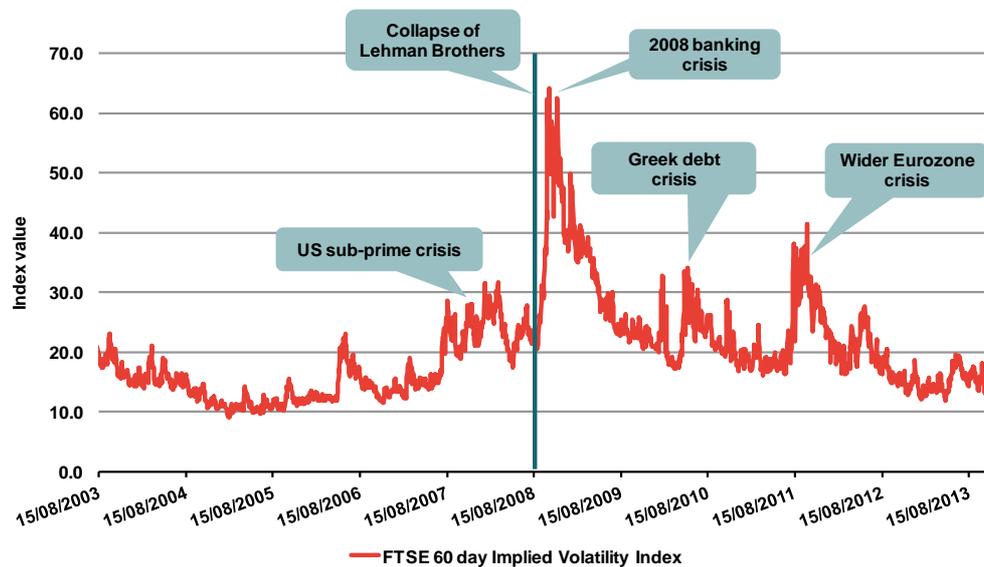
²⁵ As a rough approximation, the ‘start’ of the financial crisis is taken to be the 15 September 2008, the day that Lehman Brothers collapsed.

²⁶ FTSE, 2013, FTSE 100 Implied Volatility Index: FTSE Factsheet, 31 January.

Annex 2: Risk aversion, volatility and the ERP

years prior to it.²⁷ This could be symptomatic of a fundamental upward shift in the level of risk in the market.

Figure 3. FTSE 100 IVI (60 day volatility)



Source: Bloomberg, Frontier Economics analysis

Implied market volatility has been approximately 44% higher on average in the five-year period following the financial crisis than in the five-year period leading up to the crisis. This can be seen in **Table 5** below.

²⁷ Note that the FTSE 100 30, 60, 90, 180 and 360 day Implied Volatility Indices, when plotted, follow a very similar pattern over time.

Annex 2: Risk aversion, volatility and the ERP

Table 5. FTSE Implied Volatility Indices (IVI) before and after the financial crisis

Time period	IVI 30 day index	IVI 60 day index	IVI 90 day index	IVI 180 day index	IVI 360 day index	Average value
Pre-crisis value	16.2	16.3	16.5	17.4	17.7	16.8
Post-crisis value	23.3	23.5	23.4	25.3	26.0	24.3
Percentage difference	44%	44%	42%	45%	46%	44%

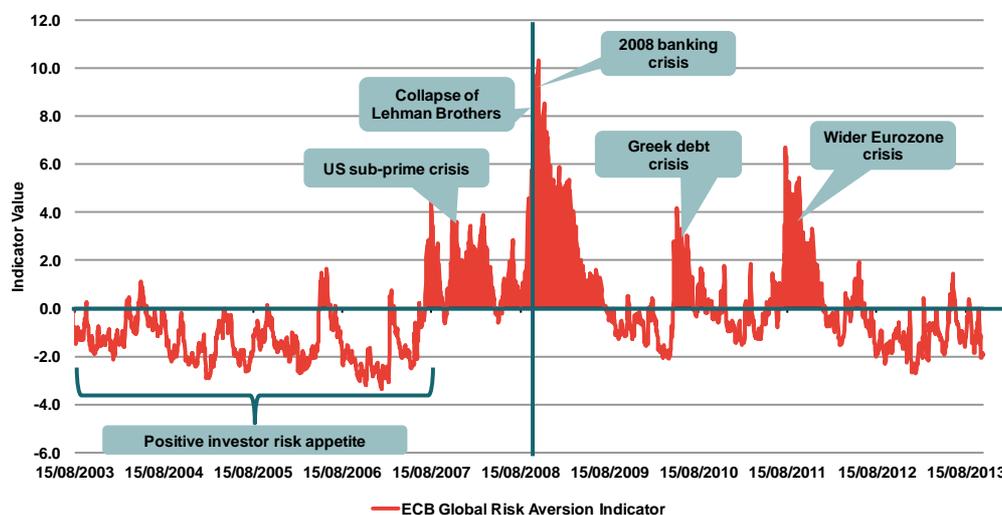
Source: Bloomberg, Frontier Economics analysis

A2.2. Risk aversion

We also considered the European Central Bank's (ECB's) Global Risk Aversion indicator in order to examine if there has been an increase in risk aversion in the market after the financial crisis in 2008. This indicator takes into account five current risk aversion indices, namely Commerzbank Global Risk Perception Index (ARPI), UBS FX Risk Index, Westpac's Risk Appetite Index, BofA ML Risk Aversion Indicator (RAI) and Credit Suisse Global Risk Appetite Index. The indicator is constructed as the first principal component of these indices, and therefore pools together the information from each of the individual indices that contributes the most variation to the data, in order to derive an overall risk aversion index.

Figure 4 below plots the ECB's global risk aversion indicator over the last 10 years. A value of zero for the index would imply a 'neutral' level of risk aversion. A rise in the indicator is suggestive of an increase in risk aversion, while a fall in the indicator suggests an increase in risk appetite. Thus, the indicator would be above zero and rising in periods where risk aversion is high. Such intervals of time have been shaded in red in the figure below.

Annex 2: Risk aversion, volatility and the ERP

Figure 4. ECB Global Risk Aversion Indicator before and after the 2008 crisis

Source: ECB data, Frontier Economics analysis

As is evident from the figure, the time intervals shaded red correspond well with periods of financial crisis, and have been far more and frequent in the five years since September 2008. The index value was below zero, signifying an appetite for risk, for most of 2003-2007. After 2008, however, the indicator has spent more time above zero.

More specifically, as **Table 6** below shows, in the five years since the crisis, the indicator has been above zero 45% of the time. This is in contrast with the five year period leading up to the crisis where it was above zero only 24% of the time.

Table 6. Analysing risk aversion before and after the financial crisis using the ECB's global risk aversion indicator

Time period	Proportion of time the index was above zero	Average index value when above zero
Pre-crisis	24%	1.46
Post-crisis	45%	2.43
Percentage difference	84%	67%

Source: ECB's global risk aversion indicator, Frontier Economics analysis

Additionally, the degree of risk aversion has been more severe since the 2008 crisis. Because risk aversion is implied by positive values of the indicator, the average degree of risk aversion is measured best by looking at the sub-sample of

Annex 2: Risk aversion, volatility and the ERP

positive indicator values before and after the crisis. This provides a clearer picture of the how extreme the level of risk aversion has been since the 2008 crisis, without influence from negative index values, which reflect positive risk appetite rather than risk aversion.

The average value of the indicator when the index was above zero was 2.4 over the last five years. This is 67% higher than the average value of the indicator over the five years leading up to the crisis.

It should be noted though, that the indicator has largely been below zero since July 2007. However, as has been outlined above, market indicators suggest that the level of risk in the market has increased since the crisis. Consequently, it may be too soon to tell if the recent negative values of the indicator are an anomaly in what appears to be the new higher average level of risk in the market or if there is going to be a reversion to the pre-2008 state of the world.

A2.3. Evidence to suggest an upward shift in the level of risk in the market

Given the evidence, it would appear that the level of risk in the system as well as the degree of risk aversion has been higher in the years following the financial crisis than in the five years leading up to it. This would suggest that there has been an upward step-change in the risk faced by investors since the onset of the 2008 financial crisis. In keeping with DMS's observation, it would follow that the equity premium should also be higher post the financial crisis.

Annex 2: Risk aversion, volatility and the ERP

Annex 3: Cost of new debt

This annex sets out the evidence on which we rely in respect of the arguments made in the main response on the cost of new debt.

A3.1. Current and future gilt yields

Table 7 shows the current yields to maturity of gilts with different maturities. We choose a range around a mid-point of 15 years on the basis that this is the most likely minimum maturity for new debt that NIE issues.

Table 7. Current yields on long-dated UK gilts (as of 14 November 2013)

Gilt maturity date	Years to maturity	Yield
03/07/2025	12 years	2.895%
12/07/2027	14 years	3.157%
12/07/2028	15 years	3.166%
12/07/2030	17 years	3.325%
06/07/2032	19 years	3.390%

Source: Bloomberg

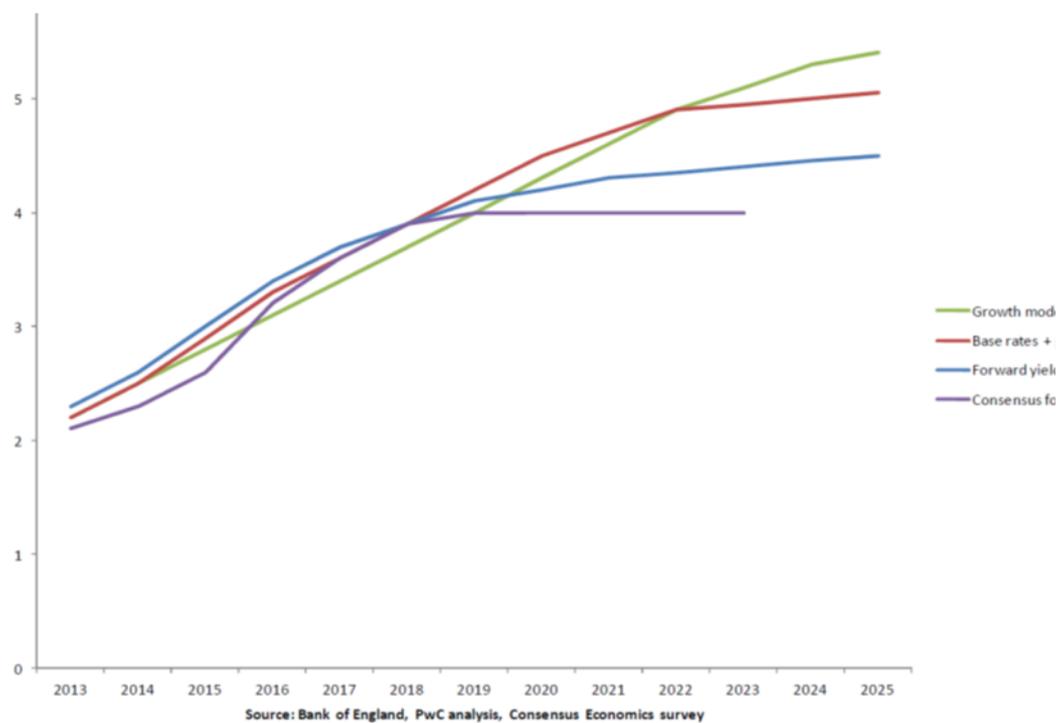
Given that NIE is unlikely to issue new debt in the immediate future, we then need to adjust these current yields to reflect forecast changes in gilt yields. We present forecasts of gilt yields from three different sources:

- **Table 8** shows OBR projections of average gilt rates made in March this year. Note these do not capture rises in gilt rates since March.
- **Figure 5** presents PWC analysis of future 10-year gilt yields which shows a steep rise in expected yields over the course of the remaining price control period (NB. these yields are lower than those we expect for 15-year gilts).
- **Figure 6** shows our latest calculations of 10-year and 15-year gilt rates based on the Bank of England nominal spot yield curve (as of 31 October 2013). This also shows substantial rise in expected gilt yields.

Table 8. OBR forecasts of gilt rates

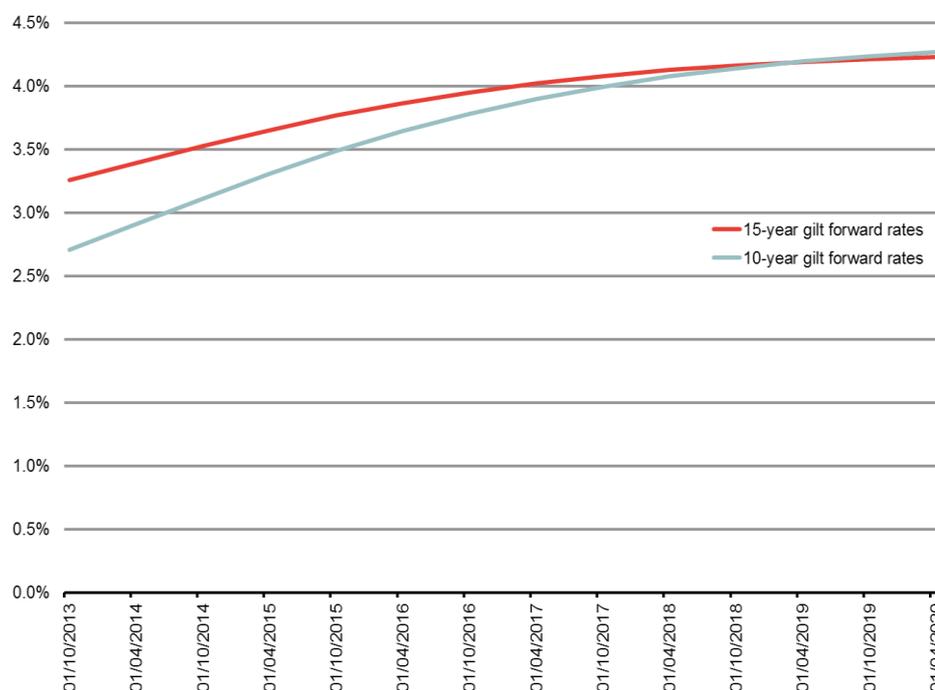
Year	Market gilt rates (%)
2011-12	2.2
2012-13	1.8
2013-14	2.4
2014-15	2.7
2015-16	3.3
2016-17	3.6
2017-18	3.9

Source: OBR, 2013, Economic and fiscal outlook. This is the weighted average interest rate on conventional gilts. The average maturity of UK government debt portfolio is 14.5 years.

Figure 5. PwC projections of 10-year gilt yields

Source: Reproduced from PwC, 2013, The trillion pound question – are gilts the next bubble to burst?

Annex 3: Cost of new debt

Figure 6. Frontier projections of 10- and 15-year gilt yields

Source: Frontier Economics. Calculations based on Bank of England nominal spot yield curve (31st October 2013)

The forward yield projections above were calculated from the Bank of England nominal spot yield curve (as of 31st October 2013). The formula used was as follows:

$$r_{t1,t2} = \left(\frac{(1 + r_2)^{d2}}{(1 + r_1)^{d1}} \right)^{\frac{1}{d2-d1}} - 1$$

Where:

$r_{t1,t2}$ is the forward rate between term $t1$ and term $t2$;

r_1 is the spot yield for the time period $(0, t1)$;

r_2 is the spot yield for the time period $(0, t2)$;

$d1$ is the time length between time 0 and term $t1$ (in years); and

$d2$ is the time length between time 0 and term $t2$ (in years).

Annex 3: Cost of new debt

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

UR has asserted on a number of occasions that NIE's credit quality may have been weakened by its parent, ESB, and that this may have raised NIE's cost of finance. UR has argued that 'contagion' from ESB may explain (at least in part) why, on average, NIE pays more than comparable GB DNOs for debt finance. UR has submitted to the CC that if the premium paid by NIE, over and above the yields paid by peer companies in GB, is due to parent ownership, NIE should not be compensated for this premium through the allowed return.

NIE has argued that the observed premium is not due to parent ownership; that the premium is a genuine, uncontrollable cost faced by the business when raising finance; and, therefore, that it should be compensated for this cost through the allowed return.²⁸

In its PD, the CC stated (at paragraph 13.63) the following:

We do not rule out the possibility that the premium, which was at its greatest in 2011 and 2012, was in part caused by market concern about ESB, which was alleviated following ESB's successful refinancing in the latter part of the calendar year 2012. To the extent that this is the cause, then we would agree with the UR that it should not be reflected in price limits. But we are not certain to what extent the premium can be attributed to ESB ownership.

The analysis presented in this annex is aimed at helping the CC rule out the possibility that the observed NI premium is due to any contagion from ESB.

UR's assertion that ESB's credit quality has influence NIE's cost of borrowing may be formulated as testable hypotheses that may be verified or falsified empirically. In a previous submission to the Competition Commission, we provided evidence that suggested that there is no strong link between the yields on NIE and ESB's bonds.²⁹

It is sensible to study the relationship between NIE's and ESB's yields as a means of testing UR's assertion because these yields are market-determined through a process of price-discovery. Therefore, they should reflect useful information about the issuers of the securities in question. As the CC has recognised previously, a corporate bond yield may be decomposed into a number of parts, including a premium for credit risk, which reflects the credit quality of the

²⁸ NIE, 2013, Supplementary Submission to the Competition Commission, 10 June, Annex 13.

Frontier Economics, 2013, Further evidence on NI-specific premiums on debt and equity returns, 2 August.

underlying firm.³⁰ Hence, when we examine NIE's and ESB's yields for a relationship, we are essentially investigating whether NIE's credit quality has been affected by ESB's. In other words, we are testing UR's assertion directly.

A4.1. Summary of key findings

This annex investigates formally, using a number of econometric techniques, the relationship between NIE's and ESB's bond yields. In particular, we investigated three questions:

1. **Is there any evidence, having controlled appropriately for other factors, that ESB's and NIE's bond yields are correlated?** We regressed NIE's bond yield on ESB's, controlling for other bonds that may be related to NIE's yield (i.e. GB utility and government bonds). The evidence suggests that if there is a relationship between movements in NIE's and ESB's bond yields, it very weak. We also identified a strong, positive relationship between movements in NIE's yield and movements in the average yield GB DNO bonds.
2. **Are ESB's and NIE's bond yields cointegrated?** NIE's and ESB's yields would be cointegrated if each adjusts, in response to changes in the other, towards a common, long-run trend. We used a Vector Error Correction (VEC) model to examine the short-run and long-run dynamics between the NIE and ESB bonds, to understand if they move together towards a common equilibrium. We found that NIE's bond does not adjust over time in response to movements in ESB's bond yields in a material way. However, we did find evidence that the yield on ESB's bond 'error-corrects' in response to changes in NIE's yield.
3. **Do past movements in ESB's bond yield cause movements in NIE's bond yield?** We used the VEC model to test if past changes in ESB's yield cause changes in NIE's yield. We found no evidence that this occurs.

Taken in the round, the quantitative evidence suggests that ESB's yield has no material effect on NIE's yield. This implies that there is little empirical support for the idea that ESB's credit quality has influenced NIE's cost of borrowing. However, it appears that NIE's yield does influence ESB's yield.

Our findings further support our view that that the observed premium on NIE's bond, relative to GB peers, is driven by NI-specific factors (such as regulatory and macroeconomic risks) and not linked to ESB's ownership of NIE. Our

³⁰ Competition Commission, 2008, Stansted Airport Ltd price control review: Final report, October, Appendix L, Annex 3.

results are consistent with what one would expect to observe if NIE were ring-fenced financially, through regulatory arrangements, from its parent, ESB.

The remainder of this annex is organised as follows:

- First we describe the data used in our econometric analysis.
- Second we set out our frameworks for investigating empirically whether there is a relationship between ESB's and NIE's yields. We discuss the various diagnostic tests we performed in order to implement the analysis and check its robustness. We also report our key estimation results.

A4.2. Data

Our analysis focussed on investigating the relationship between NIE's most actively traded bond (due to mature in 2026), and ESB's current outstanding bond (due to mature in 2020).

When estimating the degree of correlation between the NIE and ESB bonds, we employed a number of control bonds, which included:

- Eight bonds issued by GB peers, which might be viewed by investors as close substitutes to bonds issued by NI utilities,³¹ and
- Bonds issued by the UK and Irish governments, which are likely to reflect macroeconomic factors and sovereign risk. In addition, investors may use securities issued by relatively safe sovereigns, such as the UK government, to balance their investment portfolios comprising risky assets. Hence, there might be a degree of substitution between corporate and sovereign securities in response to business cycles, which would be reflected in the movements of corporate bond yields.³²

Table 9 summarises the bonds used in this study. We were careful to ensure that all the control bonds were of a similar tenor to the NIE bond. Furthermore, as shown in the table above, we ensured that all the GB comparators had similar credit ratings (BBB+ or A-) to NIE's bond.

The yield data covered the period 2 June 2011, which is close to the issuance date (27 May 2011) of the NIE bond, to 18 July 2013. All yield data were of daily frequency, and were obtained from Bloomberg.

³¹ The eight GB bonds used in this study were the same bonds we used in Frontier Economics, 2013, Further evidence on NI-specific premiums on debt and equity returns, 2 August.

³² Substitution of this nature (i.e. the 'flight to safety' phenomenon) is discussed in greater detail in Section 3).

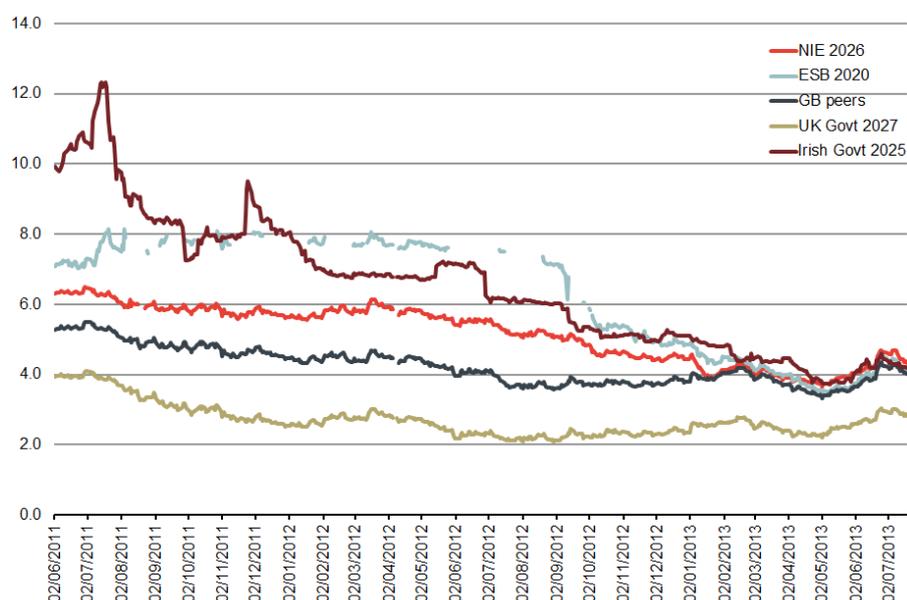
Table 9. Bonds used in this study

Issuer	Issuance year	Maturity date	Rating (S&P)
NIE			
<i>NIE</i>	2011	02/06/2026	BBB+
ESB			
ESB	2010	05/03/2020	BBB
Government bonds			
UK Government	2006	07/12/2027	AA+*
Irish Government	2009	13/03/2025	BBB+
GB Peers			
Eastern Power Networks	1995	31/03/2025	BBB+
London Power Networks	2002	07/06/2027	BBB+
South Eastern Power Networks	2003	05/06/2026	BBB+
Western Power Distribution: South West	2010	09/05/2025	BBB
Western Power Distribution: South West	2003	25/03/2027	BBB+
Scottish and Southern Energy	2008	10/11/2028	A-
Northern Gas Networks	2005	30/06/2027	A-
United Utilities	2002	20/12/2027	BBB+

* Fitch rating used, as a S&P rating was not available

Source: Bloomberg

Figure 7 plots the yields on the NIE, ESB, UK and Irish government bonds, as well as a composite of the yields on the GB comparator bonds, over time.

Figure 7. Raw yield to maturity data used in the analysis

Source: Bloomberg

As **Figure 7** illustrates, there are some gaps in the yield data, particularly for ESB's bond. Some of the time series techniques (i.e. the Newey-West estimator and VEC model) used in this study require the data to be continuous.³³ Therefore, where gaps existed, we interpolated the bond yield data linearly in order to obtain continuous series.

A4.3. Analysis and results

In this section we set out the econometric frameworks used to test empirically if there is any statistical evidence of:

- **correlation** between movements in the yields of ESB's and NIE's bonds;
- **cointegration** between ESB's and NIE's bond yields; and
- **causal relationships** between ESB's and NIE's bond yields.

This section also sets out the results of the robustness and diagnostic tests we performed on the models employed, and reports our key findings.

³³ As described below, the analyses employed lags of dependent and explanatory variables. This necessitated continuous time series data.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

A.4.3.1. Testing for correlation between the yields on NIE's and ESB's bonds

If ESB's credit quality is influencing NIE's cost of finance, we would expect to find evidence of correlation between movements in the yields on NIE's and ESB's bonds. To test this, we fitted a linear relationship between NIE's bond yield and ESB's.

It is possible that the movements in NIE's bonds are influenced by other factors, including macroeconomic conditions, and opportunities for substitution to comparable utility bonds in GB and to government bonds. To control for these factors, we included as explanatory variables in the model fitted:

- A composite yield comparator GB utility bonds, which was calculated, for each day in the sample, as the arithmetic average across the yields of all the peer GB bonds identified in **Table 9**;³⁴
- The yield on the UK government bond maturing in 2027; and
- The yield on the Irish government bond maturing in 2025.

Testing the data for unit roots

Before estimating the correlation between NIE's and ESB's yields, we investigate the data for evidence of non-stationarity. The presence of non-stationary series may result in spurious regression results, and usual inference tests cannot be relied upon (Granger and Newbold, 1974).³⁵ To test for evidence of non-stationarity, we conducted a conventional test for unit roots, the Augmented Dickey-Fuller (ADF) test. The key results are summarised below in **Table 10** below.

³⁴ We modelled the average yield across the sample of peer bonds rather than each of the peer bonds individually in order to avoid the statistical problem of multicollinearity. **Figure 11** in the final section of this Annex presents the pairwise correlation coefficients of all the variables used in this analysis. The matrix indicates that many of the individual GB utility bonds are highly correlated with one another, which is suggestive of multicollinearity. Multicollinearity results in large standard errors of estimated coefficients and reduces the power of statistical tests.

³⁵ Granger, C. W. J., Newbold, P., 1974, 'Spurious regressions in econometrics', *Journal of Econometrics* 2, 111-120.

Table 10. Summary of unit root test – H_0 : unit root is present

Explanatory variable	Data in levels (p-value)	Data first-differenced (p-value)
NIE	0.7188	0.0000
ESB	0.9689	0.0000
GB peer composite	0.2977	0.0000
UK Government	0.1002	0.0000
Irish Government	0.6279	0.0000

Source: Frontier Economics analysis

The second column of the table shows that when the data are in levels, the null hypothesis of a unit root process could not be rejected for any of the series, even at the 10% level of significance. This indicates strongly that the data, in levels, are non-stationary.

The conventional method of treating non-stationary data is to transform them by taking first differences (i.e. by subtracting from each daily observation its one-period lag). The third column of **Table 10** shows that when the data are first-differenced, the ADF's null hypothesis of a unit root is rejected easily for every bond yield series (since the associated p-values are very close to zero). Given these results, we conduct our analysis of bond yield correlations using first-differenced data.

We consider the case of cointegration below.

Estimation of bond yield correlations

We fitted the following model using Ordinary Least Squares (OLS):

$$\Delta NIE_t = \alpha + \beta_1 \Delta ESB_t + \beta_2 \Delta GB_PEERS_t + \beta_3 \Delta UK_GOV_t + \beta_4 \Delta IR_GOV_t + \epsilon_t \quad (1)$$

where ΔNIE_t is the first-differenced yield on the NIE 2026 bond at time t , α is a constant, ΔESB_t is the first-differenced yield on the ESB 2020 bond, ΔGB_PEERS_t is the first-differenced composite yield on the comparator GB utility bonds, ΔUK_GOV_t is the first-differenced yield on the UK gilt maturing in 2027, and ΔIR_GOV_t is the first-differenced yield on the Irish government bond maturing in 2025. β_1, \dots, β_4 are regression coefficients. The estimated coefficients from this model are presented below in **Table 11**.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

Table 11. Results of OLS regression

Explanatory variable	Estimated coefficient	Standard error	t-statistic	p-value	95% confidence interval	
ΔESB	0.038**	0.012	3.050	0.002	0.013	0.062
ΔGB_PEERS	0.973*	0.087	11.150	0.000	0.802	1.145
ΔUK_GOV	-0.029	0.089	-0.320	0.746	-0.203	0.145
ΔIR_GOV	0.006	0.009	0.660	0.511	-0.012	0.024
Constant	-0.001	0.001	-1.120	0.261	-0.003	0.001

Observations = 555; F-stat = 619.28; R^2 = 0.8183

Test of first-order serial correlation: Durbin-Watson = 1.956

Test of higher-order serial correlation: Breusch-Godfrey (p-value) = 0.605; H_0 : no serial correlation

Test for heteroscedasticity: Breusch-Pagan (p-value) = 0.1429; H_0 : no heteroscedasticity

* Significant at the 1% level. ** Significant at the 5% level

Source: Frontier Economics analysis

The OLS results suggest that the movements in NIE's bond yield are positively correlated with movements in ESB's bond yield. However, the estimated relationship is very weak. The estimation results imply that a 100bps change in ESB's bond yield corresponds to only a 4bps change in NIE's yield.

The changes in NIE's yield, holding all else constant, appear very closely correlated with those of the GB peers since the estimated coefficient is very close to one.

Using the OLS estimator, we could detect no statistical relationship between movements in NIE's bond yields and movements in the UK or the Irish government bond rates.

Robustness checks for serial correlation and heteroscedasticity

Having estimated the OLS model, we conducted diagnostic tests for two potential statistical problems: serial correlation; and heteroscedasticity. If present, both these problems would cause the standard errors of the estimated coefficients to be biased, which would, in turn, make statistical inferences about the significance of the coefficient estimates unreliable.

The test statistics presented in **Table 11** suggest that the null hypothesis of no serial correlation could not be rejected (the Durbin Watson test statistic was very close to 2, and the Breusch-Godfrey p-value was very large). Nor could we reject the null hypothesis of no heteroscedasticity (the Breusch-Pagan p-value was also

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

large). This suggests that the hypothesis tests about the statistical significance of the estimated coefficients presented in **Table 11** are likely to be reliable. For completeness, we re-fitted equation (1) using the Newey-West estimator, which produces standard errors that are robust to serial correlation and heteroscedasticity. The results (presented in **Table 17** in the final section of this annex) were very similar to the results in **Table 11**.

A.4.3.2. Testing for evidence of cointegration between NIE's and ESB's yields

The previous section established strong evidence that NIE's and ESB's yields are non-stationary. The effect of random shocks to non-stationary series is permanent in the sense that there is no tendency for the series to revert back towards a long-run trend.

However, it is possible that there exists an underlying, long-run equilibrium relationship between ESB's and NIE's yields, and that there is a process of 'error correction' that prevents the two yields from departing significantly from this long-run equilibrium. If such a relationship exists, and if it is stationary, ESB's and NIE's yields would be said to be **cointegrated**. Evidence of cointegration and, in particular, evidence of error correction by NIE's yield towards ESB's would be at least partial evidence that ESB exerts some influence over NIE's cost of finance.

To test for evidence of cointegration, we estimated a Vector Error Correction (VEC) model. VEC models are used extensively in the economics and finance literature to investigate the long-run relationships between economic variables. In the finance literature error correction models have been used to study interlinkages and contagion between financial markets during economic crises.³⁶ Therefore, this model is particularly appropriate for investigating UR's claim of contagion from ESB to NIE.

The process of estimating a VEC model involves four steps:

³⁶ Cheung, W., Fung, S., T., S-C., 2010, 'Global capital market interdependence and spillover effect of credit risk: evidence from the 2007-2009 global financial crisis', *Applied Financial Economics* 20, 85-103

Hon, M. T., Strauss, J., Yong, S-K., 2004, 'Contagion in financial markets after September 11: Myth or reality?', *Journal of Financial Research* 27(1), 95-114.

Sander, H., Kleimeier, S., 2003, 'Contagion and causality: an empirical investigation of four Asian crisis episodes', *International Financial Markets Institutions & Money* 13, 171-186.

Sheng, H-C, Tu, A. H., 2000, A study of cointegration and variance decomposition among national equity indices before and during the period of the Asian financial crisis, *Journal of Multinational Financial Management* 10, 345-365.

Yang, J., Bessler, D. A., 2008, 'Contagion around the October 1987 stock market crash', *European Journal of Operational Research* 184, 291-310.

Yang, J., Kolari, J. W., Min, I., 2003, Stock market integration and financial crises: the case of Asia, *Applied Financial Economics* 13, 477-486.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

1. Identify an appropriate number of lags to be specified in the model.
2. Test for evidence of cointegrating relationships in the data.
3. Specify and estimate the VEC model based on the results from the previous steps.
4. Test the robustness of the model by checking if the correct number of cointegrating relationships has been specified, and that there is no serial correlation that could cause the VEC model estimates to be biased.

We describe each of these steps in more detail, and present our key findings, below.

Identification of lag structure

In order to identify the appropriate lag structure to implement in the VEC model, we used a number of selection criteria, including the Final Prediction Error (FPE), the Akaike Information Criterion (AIC), the Hannan-Quinn Information Criterion (HQIC) method, the Schwarz Bayesian Information Criterion (SBIC) method, and sequential Likelihood-Ratio (LR). The number of lags identified by each method are summarised below in **Table 12**.

Table 12. Results of lag selection tests

	LR	FPE	AIC	HQIC	SBIC
Number of lags identified	4	4	4	2	2

Source: Frontier Economics analysis

Most of the selection criteria identified four lags as appropriate, so we adopted this lag structure for the VEC model. Adopting four, rather than two, lags is a conservative approach because specifying too few explanatory variables in the model would give rise to an omitted variables problem, which would bias the estimates from the model. Specifying too many (i.e. irrelevant) explanatory variables would result in inefficient, but nevertheless unbiased, estimates. As part of our robustness checks, below, we test if there is evidence of serial correlation in the residuals of the model, which is effectively a test of whether the lag structure has been misspecified in a way that would bias the estimates.

Testing for evidence of cointegrating relationships

Having identified a lag structure for the model, we implemented Johansen's test for cointegrating relationships. Johansen's test procedure involves estimating an unconstrained model (i.e. with no cointegrating relationships imposed) and a constrained model (i.e. with a cointegrating relationship imposed). The log likelihoods of the two models are then compared and, if these are significantly different from one another, the null hypothesis of no cointegration is rejected.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

The detailed statistics from Johansen's test (assuming four lags) are presented in **Figure 12** in the final section of this annex. The figure shows that the null of zero cointegrating relationships was rejected (although not by much). However, the hypothesis of one cointegrating relationship could not be rejected.

Estimating the VEC model

We estimated a VEC model assuming one cointegrating equation and four lagged terms. The VEC model estimated has the following form:

$$\Delta \mathbf{x}_t = \mathbf{v} + \boldsymbol{\delta} \boldsymbol{\gamma}' \mathbf{x}_{t-1} + \sum_{i=1}^3 \boldsymbol{\Gamma}_i \Delta \mathbf{x}_{t-i} + \boldsymbol{\epsilon}_t \quad (2)$$

where \mathbf{x} is a vector containing the variables *NIE* and *ESB* (in levels); \mathbf{v} is a vector of constants; $\boldsymbol{\delta}$ is a vector of error-correcting coefficients; $\boldsymbol{\gamma}$ is a vector of the coefficients of the cointegrating equation; $\boldsymbol{\Gamma}$ is a matrix containing the short-run coefficients of the model; and $\boldsymbol{\epsilon}$ is a vector of random error terms.

The detailed estimation results from the model are presented in **Figure 13** in the final section of this annex. The results most salient to the question of the degree of cointegration between the *NIE* and *ESB* yields, the estimated parameters of the cointegrating equation and the estimated error correction coefficients, are presented below in **Table 13**.

The table indicates that there is only weak statistical evidence that *NIE*'s yield error-corrects in response to movements in *ESB*'s yield (*NIE*'s error correction coefficient was statistically significant only at the 10% level). The negative sign on this coefficient suggests that when *NIE*'s yield is very high (low) relative to *ESB*'s, it falls (rises) towards the *ESB* level. However, the coefficient is small in comparison to the *ESB* error correction coefficient, which indicates that adjustment towards *ESB*'s yield, if it happens at all, occurs slowly.

In contrast, *ESB*'s estimated error correction coefficient is found to be statistically significant even at the 1% level. The positive sign on this coefficient suggests that when *NIE*'s yield is high (low), relative to *ESB*'s, *ESB*'s yield adjusts up (down).

Annex 4: Econometric evidence on the independence of *NIE* and *ESB* bond yields

Table 13. VEC model estimates of error correction and cointegrating equation parameters

Variable	Estimated coefficient	Standard error	p-value
Error correction parameters			
NIE	-0.014**	0.008	0.085
ESB	0.035*	0.013	0.005
Cointegrating equation parameters			
NIE	1	NA	NA
ESB	-0.415*	0.044	0.000

* Significant at the 1% level. ** Significant at the 10% level

Source: Frontier Economics analysis

In summary, the statistical evidence that NIE's bond error-corrects in response to movements in ESB's bond is very weak. However, there is good evidence that ESB's bond does error-correct in response to movements in NIE's yield. This is consistent with the fact that NIE's finances are 'ring-fenced' by means of provisions in its licenses. The regulatory ring-fencing provisions mean that NIE cannot be affected by ESB's ownership. As noted in Section 3.4, the CC recognised this point explicitly in paragraphs 13.4 and 13.5 of the PD. However, there is no similar mechanism to insulate ESB from NIE, which may explain the evidently strong tendency for ESB's yield to error-correct in response to changes in NIE's yield.

Testing the robustness of the model

We performed two robustness checks on the VEC model:

First, we tested the model for serial correlation in the residuals. If serial correlation is detected, that would suggest that we have misspecified the model by including too few lags. The omission of lagged terms would produce biased coefficient estimates. The results of our test are presented in **Figure 14** in the final section of this annex. The results indicate that the null hypothesis of no serial correlation could not be rejected at the 5% level of significance to an order of 10 lags. This gives us confidence that the lag structure in the model has been specified appropriately.

Second, we tested if the correct number of cointegrating equations had been specified in the model. The results of the test, presented in detail in **Figure 15** in the final section of this annex, confirm that the number of cointegrating equations specified in the VEC model was appropriate.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

A.4.3.3. Testing for Granger causality between ESB's and NIE's yields

We have presented statistical evidence for a weak, positive correlation between ESB's and NIE's yields. However, this does not establish the direction of any causality; correlations do not tell us if movements in ESB's yield are responsible for movements in NIE's yield, or vice versa. The previous section identified weak statistical evidence that movements in ESB's bond yield causes small adjustments in NIE's bond towards a long-run equilibrium trend. This evidence is far from supportive of UR's claim that ESB's poor credit quality was responsible for the NIE's high (relative to comparable GB DNOs) cost of debt.

In this section we investigate more closely the question of causality. Specifically, we seek to understand if movements in ESB's bond cause movements in NIE's yield over the short-run. In order to do this we used the estimates from the VEC model from the previous section to perform Granger causality tests on NIE's and ESB's bond yields. Intuitively, ESB's yield could be said to Granger-cause NIE's yield if *lagged* values of ESB's yield can help explain movements in NIE's yield, having controlled for the information contained in lagged values of NIE's yield alone.

Testing for Granger causality of ESB's yield on NIE's yield involves regressing NIE's yield on a series of lagged values of NIE's yield and a series of lagged values of ESB's yield. If the estimated coefficients on the lagged ESB terms are statistically significant, that would indicate that movements in ESB's yield Granger-cause movements in NIE's yield. The matrix $\hat{\Gamma}$ contains estimates of the short-run coefficients of the VEC model represented in equation (2). The estimates (reported fully in **Figure 13** in the final section of this annex) are summarised in **Table 14**.

The top panel of the table shows that, all else being equal, only the third lagged ESB term in the NIE regression was found to be statistically significant (the coefficient was approximately 0.06, with a p-value of 0.05). Hence, there is little to suggest that movements in ESB's yield Granger-cause changes in NIE's yield. By contrast, there appears to be good statistical evidence that movements in NIE's yield Granger-causes movements in ESB's yield. In the ESB regression, the first and third lagged terms were both statistically significant.

To complete the analysis, we performed Wald tests of the hypotheses that the:

- lagged ESB terms in the NIE regression are jointly zero; and
- lagged NIE terms in the ESB regression are jointly zero.

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

Table 14. VEC model estimates of lagged coefficients

Explanatory variable	Estimated coefficient	Standard error	p-value	
Dependent variable: ΔNIE				
ΔNIE	Lag 1	-0.034	0.045	0.445
	Lag 2	0.018	0.045	0.692
	Lag 3	-0.137**	0.045	0.002
ΔESB	Lag 1	0.035	0.030	0.233
	Lag 2	0.042	0.030	0.163
	Lag 3	0.058**	0.030	0.050
Dependent variable: ΔESB				
ΔNIE	Lag 1	0.167**	0.068	0.014
	Lag 2	0.086	0.068	0.206
	Lag 3	-0.163**	0.068	0.016
ΔESB	Lag 1	-0.191*	0.045	0.000
	Lag 2	0.006	0.046	0.900
	Lag 3	0.011	0.045	0.802

* Significant at the 1% level. ** Significant at the 5% level

Source: Frontier Economics analysis

The test results for joint significance are summarised below in **Table 15** (see **Figure 16** for original regression output).

Table 15. Results for test of joint significance of estimated coefficients of lagged terms – H_0 : coefficients are jointly equal to zero

Dependent variable	Test performed	Chi-squared test statistic	p-value
ΔNIE	Joint significance of lagged ESB yields	5.84	0.119
ΔESB	Joint significance of lagged NIE yields	13.41	0.004

Source: Frontier Economics analysis

The test results presented above suggest that the hypothesis that past movements in ESB's yield do not explain current movements in NIE's yield could not be rejected, even at the 10% significance level. However, the results suggest that the null hypothesis that past movements in NIE's yield do not explain current changes in ESB's yield may be rejected easily (i.e. at the 1% significance level).

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

A4.4. Technical modelling outputs

This section presents technical econometric modelling outputs that are referred to in the preceding sections of this annex.

Table 16 summarises the key variables used in our econometric analysis.

Table 16. Glossary of variables used in the analysis

Stata variable	Description
nie_2026	NIE 2026 bond
esb_2020	ESB 2020 bond
uk_2027	UK Government 2027 bond
irish_2025	Irish Government 2025 bond
epn_85	Eastern Power Networks 2025 bond
lpn_6125	London Power Networks 2027 bond
sepn_55	South Eastern Power Networks 2026 bond
wpd_55	Western Power Distribution 2025 bond
wpd_5875	Western Power Distribution 2027 bond
sseln_8375	Scottish and Southern Energy 2028 bond
ngn_4875	Northern Gas Networks 2027 bond
uu_5625	United Utilities 2027 bond
gb_composite	Composite yield of GB comparator bonds

Source: Frontier Economics

Figure 8. Results of unit root tests – Data in levels

		Dickey-Fuller test for unit root			Number of obs	=	555
	Test Statistic	Interpolated Dickey-Fuller					
		1% Critical Value	5% Critical Value	10% Critical Value			
NIE	Z(t)	-1.091	-3.430	-2.860	-2.570		
MacKinnon approximate p-value for Z(t) = 0.7188							
		Dickey-Fuller test for unit root			Number of obs	=	555
	Test Statistic	Interpolated Dickey-Fuller					
		1% Critical Value	5% Critical Value	10% Critical Value			
ESB	Z(t)	0.143	-3.430	-2.860	-2.570		
MacKinnon approximate p-value for Z(t) = 0.9689							
		Dickey-Fuller test for unit root			Number of obs	=	555
	Test Statistic	Interpolated Dickey-Fuller					
		1% Critical Value	5% Critical Value	10% Critical Value			
GB_PEERS	Z(t)	-1.975	-3.430	-2.860	-2.570		
MacKinnon approximate p-value for Z(t) = 0.2977							
		Dickey-Fuller test for unit root			Number of obs	=	555
	Test Statistic	Interpolated Dickey-Fuller					
		1% Critical Value	5% Critical Value	10% Critical Value			
UK_GOV	Z(t)	-2.566	-3.430	-2.860	-2.570		
MacKinnon approximate p-value for Z(t) = 0.1002							
		Dickey-Fuller test for unit root			Number of obs	=	555
	Test Statistic	Interpolated Dickey-Fuller					
		1% Critical Value	5% Critical Value	10% Critical Value			
IR_GOV	Z(t)	-1.303	-3.430	-2.860	-2.570		
MacKinnon approximate p-value for Z(t) = 0.6279							

Source: Frontier Economics analysis

Annex 4: Econometric evidence on the independence of NIE and ESB bond yields

Figure 9. Results of unit root tests – Data first-differenced

		Dickey-Fuller test for unit root			Number of obs =	554
	Test Statistic	Interpolated Dickey-Fuller				
		1% Critical Value	5% Critical Value	10% Critical Value		
NIE	Z(t)	-24.129	-3.430	-2.860	-2.570	
MacKinnon approximate p-value for Z(t) = 0.0000						
		Dickey-Fuller test for unit root			Number of obs =	554
	Test Statistic	Interpolated Dickey-Fuller				
		1% Critical Value	5% Critical Value	10% Critical Value		
ESB	Z(t)	-27.453	-3.430	-2.860	-2.570	
MacKinnon approximate p-value for Z(t) = 0.0000						
		Dickey-Fuller test for unit root			Number of obs =	554
	Test Statistic	Interpolated Dickey-Fuller				
		1% Critical Value	5% Critical Value	10% Critical Value		
GB_PEERS	Z(t)	-22.833	-3.430	-2.860	-2.570	
MacKinnon approximate p-value for Z(t) = 0.0000						
		Dickey-Fuller test for unit root			Number of obs =	554
	Test Statistic	Interpolated Dickey-Fuller				
		1% Critical Value	5% Critical Value	10% Critical Value		
UK_GOV	Z(t)	-23.373	-3.430	-2.860	-2.570	
MacKinnon approximate p-value for Z(t) = 0.0000						
		Dickey-Fuller test for unit root			Number of obs =	554
	Test Statistic	Interpolated Dickey-Fuller				
		1% Critical Value	5% Critical Value	10% Critical Value		
IR_GOV	Z(t)	-17.342	-3.430	-2.860	-2.570	
MacKinnon approximate p-value for Z(t) = 0.0000						

Source: Frontier Economics analysis

Figure 10. Pairwise correlations between all bond yields (dependent and explanatory variables) used in the analysis

	dni~2026	des~2020	duk_2027	dir~2025	depn_85	dlp~6125	dsepn_55	dwpd_55	dwp~5875	dss~8375	dng~4875	duu_5625
dnie_2026	1.0000											
desb_2020	0.3109	1.0000										
duk_2027	0.8750	0.2458	1.0000									
dirish_2025	-0.0074	0.0796	-0.0681	1.0000								
depn_85	0.9012	0.2835	0.9611	-0.0261	1.0000							
dlpn_6125	0.8912	0.2790	0.9707	-0.0305	0.9798	1.0000						
dsepn_55	0.8973	0.2756	0.9619	-0.0298	0.9912	0.9786	1.0000					
dwpd_55	0.1849	0.0605	0.1150	-0.0093	0.1331	0.1152	0.1266	1.0000				
dwpd_5875	0.8926	0.2776	0.9690	-0.0172	0.9726	0.9838	0.9709	0.1393	1.0000			
dsseln_8375	0.8675	0.2681	0.9554	-0.0280	0.9576	0.9719	0.9567	0.1140	0.9697	1.0000		
dngn_4875	0.8805	0.2752	0.9618	-0.0449	0.9631	0.9757	0.9598	0.1132	0.9727	0.9611	1.0000	
duu_5625	0.8892	0.2733	0.9756	-0.0185	0.9738	0.9830	0.9712	0.1209	0.9819	0.9699	0.9685	1.0000

Source: Frontier Economics analysis

Table 17. Results of Newey-West regression

Explanatory variable	Estimated coefficient	Standard error	t-statistic	p-value	95% confidence interval	
<i>ΔESB</i>	0.038**	0.013	2.820	0.005	0.012	0.064
<i>ΔGB_PEERS</i>	0.973*	0.108	8.980	0.000	0.761	1.186
<i>ΔUK_GOV</i>	-0.029	0.110	-0.260	0.795	-0.246	0.188
<i>ΔIR_GOV</i>	0.006	0.008	0.730	0.466	-0.010	0.022
Constant	-0.001	0.001	-1.090	0.278	-0.003	0.001

Observations = 555; F-stat = 380.67

* Significant to the 1% level. ** Significant to the 5% level

A lag structure of a maximum of three lags was identified using the Akaike Information Criterion (AIC) for the purposes of implementing the Newey-West estimator

Source: Frontier Economics analysis

Figure 11. Results of AIC for application of Newey-West estimator

Selection-order criteria
 Sample: 6 - 556
 Number of obs = 551

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	818.848				.003008	-2.96859	-2.96554*	-2.96077*
1	819.009	.32215	1	0.570	.003017	-2.96555	-2.95943	-2.9499
2	819.478	.93821	1	0.333	.003023	-2.96362	-2.95445	-2.94015
3	822.762	6.5688*	1	0.010	.002998*	-2.97191*	-2.95968	-2.94061
4	822.765	.00537	1	0.942	.003009	-2.96829	-2.95301	-2.92917

Endogenous: `dnie_2026`
 Exogenous: `_cons`

Source: Frontier Economics analysis

Figure 12. Results from Johansen's cointegration test

Johansen tests for cointegration					
Trend: constant			Number of obs =		552
Sample: 5 - 556			Lags =		4
maximum				trace	5%
rank	parms	LL	eigenvalue	statistic	critical
0	14	1451.9356	.	16.0037	15.41
1	17	1459.7416	0.02789	0.3917*	3.76
2	18	1459.9374	0.00071		

Source: Frontier Economics analysis

Figure 13. Results from VEC model

Vector error-correction model

Sample: 5 - 556
 No. of obs = 552
 Log likelihood = 1459.742
 AIC = -5.227325
 Det(Sigma_ml) = .0000173
 HQIC = -5.175419
 SBIC = -5.09448

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_nie_2026	8	.054314	0.0334	18.77355	0.0161
D_esb_2020	8	.082196	0.0668	38.97104	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_nie_2026						
_cel						
L1.	-.0143362	.0083177	-1.72	0.085	-.0306385	.0019661
nie_2026						
LD.	-.0342399	.0448037	-0.76	0.445	-.1220536	.0535738
L2D.	.0178523	.0451289	0.40	0.692	-.0705988	.1063034
L3D.	-.1373691	.0449882	-3.05	0.002	-.2255443	-.0491939
esb_2020						
LD.	.0352969	.0295812	1.19	0.233	-.0226811	.093275
L2D.	.0421304	.0302325	1.39	0.163	-.0171241	.1013849
L3D.	.0579288	.0295544	1.96	0.050	3.20e-06	.1158545
_cons	-.0051681	.0025025	-2.07	0.039	-.010073	-.0002632
D_esb_2020						
_cel						
L1.	.0352314	.0125874	2.80	0.005	.0105605	.0599022
nie_2026						
LD.	.1667969	.0678031	2.46	0.014	.0339053	.2996885
L2D.	.0863491	.0682952	1.26	0.206	-.0475071	.2202053
L3D.	-.1632717	.0680822	-2.40	0.016	-.2967104	-.029833
esb_2020						
LD.	-.1911059	.0447662	-4.27	0.000	-.2788461	-.1033656
L2D.	.0057721	.0457518	0.13	0.900	-.0838999	.095444
L3D.	.0111868	.0447258	0.25	0.802	-.0764742	.0988477
_cons	-.002103	.0037872	-0.56	0.579	-.0095257	.0053197

Cointegrating equations

Equation	Parms	chi2	P>chi2
_cel	1	88.63269	0.0000

Identification: beta is exactly identified

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
_cel						
nie_2026	1	.	.	.	.	.
esb_2020	-.4147738	.0440569	-9.41	0.000	-.5011238	-.3284238
_cons	-2.620903	.	.	.	.	.

Source: Frontier Economics analysis

Figure 14. Results from test for serially correlated residuals in the VEC model

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	0.7781	4	0.94136
2	3.8839	4	0.42194
3	2.8530	4	0.58273
4	1.0786	4	0.89765
5	8.0234	4	0.09073
6	5.5181	4	0.23815
7	4.3983	4	0.35478
8	4.5120	4	0.34113
9	7.6362	4	0.10585
10	2.6418	4	0.61944

H0: no autocorrelation at lag order

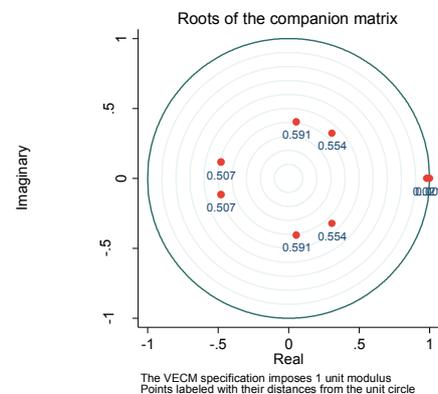
Source: Frontier Economics analysis

Figure 15. Results from test for correct specification of the number of cointegrating equations

Eigenvalue stability condition

Eigenvalue	Modulus
1	1
.9790933	.979093
-.4795894 + .1155817i	.49332
-.4795894 - .1155817i	.49332
.3076366 + .322469i	.445675
.3076366 - .322469i	.445675
.0552586 + .4053626i	.409112
.0552586 - .4053626i	.409112

The VECM specification imposes a unit modulus.



The test for correct specification of the number of cointegrating equations involves examining the moduli of the eigenvalues of the companion matrix to the VEC model. A model with two endogenous variables (in this case NIE's and ESB's bond yields) and one cointegrating equation will have just one eigenvalue with a modulus of unity (see, for example, Lütkepohl, 2005). The moduli of all the remaining eigenvalues must be strictly less than one. This is shown to be so in this case using the table and chart above (all except one of the eigenvalues lie well within the unit circle plotted in the graph). This suggests that a specification of one cointegrating equation is appropriate in this case.

Source: Frontier Economics analysis

Figure 16. Results of Wald test for joint significance of lagged terms in VEC model

```
NIE          . test [D_nie_2026]LD.esb_2020 [D_nie_2026]L2D.esb_2020 [D_nie_2026]L3D.esb_2020
equation
( 1)  [D_nie_2026]LD.esb_2020 = 0
( 2)  [D_nie_2026]L2D.esb_2020 = 0
( 3)  [D_nie_2026]L3D.esb_2020 = 0

          chi2( 3) =    5.84
          Prob > chi2 =    0.1194

ESB          . test [D_esb_2020]LD.nie_2026 [D_esb_2020]L2D.nie_2026 [D_esb_2020]L3D.nie_2026
equation
( 1)  [D_esb_2020]LD.nie_2026 = 0
( 2)  [D_esb_2020]L2D.nie_2026 = 0
( 3)  [D_esb_2020]L3D.nie_2026 = 0

          chi2( 3) =   13.41
          Prob > chi2 =    0.0038
```

Source: Frontier Economics analysis

Annex 5: Possible causes of the NI premium

It is important to recognise that the observed NI premium is not isolated to NIE; a similar premium is also observed in relation to the only other NI utility that currently has traded debt, PNGL. Evidence on the existence and magnitude of this premium has been submitted to the Commission by both PNG and NIE.

The observed premium between NI and GB utilities likely arises from more than one source. The fact that the premium has been observed in relation to two NI-based regulated companies suggests that its sources could be:

- regulatory risks (i.e. the regulatory framework in NI imposes greater risk than the regulatory framework in GB); and/or
- macroeconomic risks (i.e. the NI economy is riskier than the GB economy, and therefore NI-based companies are likely to be riskier than GB companies, all else being equal).

Each of these forms of risk is discussed below.

A5.1. Regulatory risks

In response to the Commission's putback paper, Frontier provided a note on behalf of NIE that identified areas in which the regulatory framework in NI is riskier than the regulatory framework in GB. In summary, the key points were the following:

- UR has suggested that it may place more weight on issues such as fuel poverty, and the cost of energy during periods of weak economic growth, than other regulators. This would make UR's approach to regulation more pro-cyclical than that of other regulators, such as Ofgem.
- Within the last two years, two of UR's regulatory determinations have been referred to the CC. Ofgem has not had a price control referred to the CC since 1996.
- A recent announcement by the rating agency, Moody's, indicates clearly that the financial community views the regulatory regime in NI as riskier than the regulatory regime in GB.³⁷

³⁷ Moody's, 2013, New Competition Commission Referral Suggests Regulatory Uncertainty Remains in Northern Ireland, Sector Comment May 9th 2013

Annex 5: Possible causes of the NI premium

- The shorter regulatory periods in NI compared to GB provide NI impose greater uncertainty on the regulated businesses as revenues remain fixed for a shorter period of time than in GB, and the regulator has more frequent opportunity to review, reopen and exercise its discretion and judgement.
- UR's approach to pension deficits has changed significantly over time, providing NIE with much less certainty than GB DNOs enjoy under Ofgem's rules, although it may be that the treatment of pension costs that results as a consequence of the CC's inquiry could provide comfort to investors in this regard.
- In respect of Fund 1 and Fund 2 capital expenditure, UR appears to contemplate arrangements that would involve a material level of ex ante approval, ex post scrutiny and an as yet unspecified further overarching ex post efficiency test. Consequently UR's capex arrangements would increase materially the regulatory risk to which NIE would be exposed.

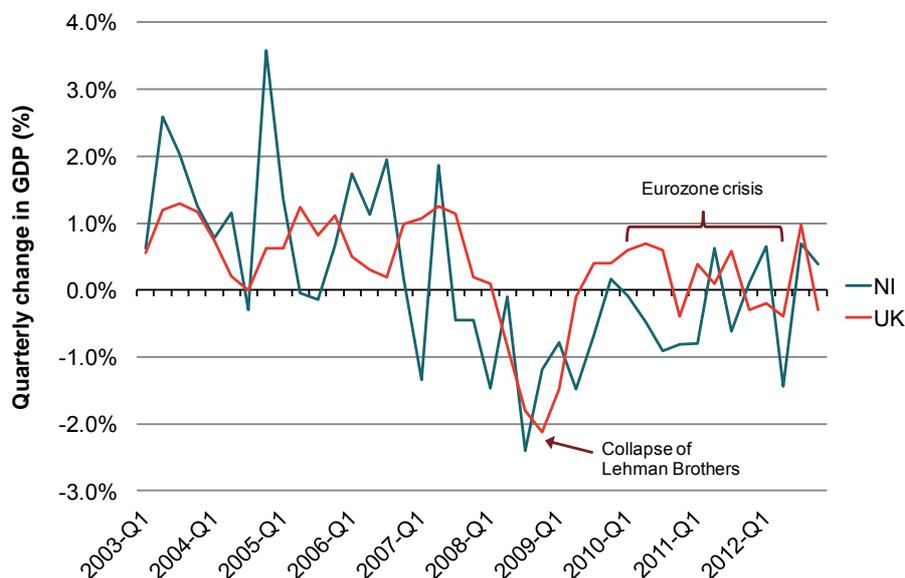
We now provide macroeconomic evidence that suggests NI-based firms generally face greater risk than GB-based companies, which may explain in part the observed debt premium paid by NIE and PNG.

A5.2. Macroeconomic risks

NI is a smaller, less diversified economy than GB. For example, according to the ONS, between 1997 and 2011, NI has consistently contributed just 2.3% of the Gross Value Added (GVA) per annum — the lowest of any region in the UK.³⁸ These characteristics mean that NI tends to be more exposed to wider macroeconomic shocks than GB, which in turn makes NI a riskier place to invest than GB. This is borne out in key economic indicators.

Figure 17 below plots the quarterly change in GDP for NI and GB between 2003 and 2013.

³⁸ ONS, Regional Economic Indicators - March 2013.

Figure 17. Comparison of quarterly change in GDP – NI vs. UK

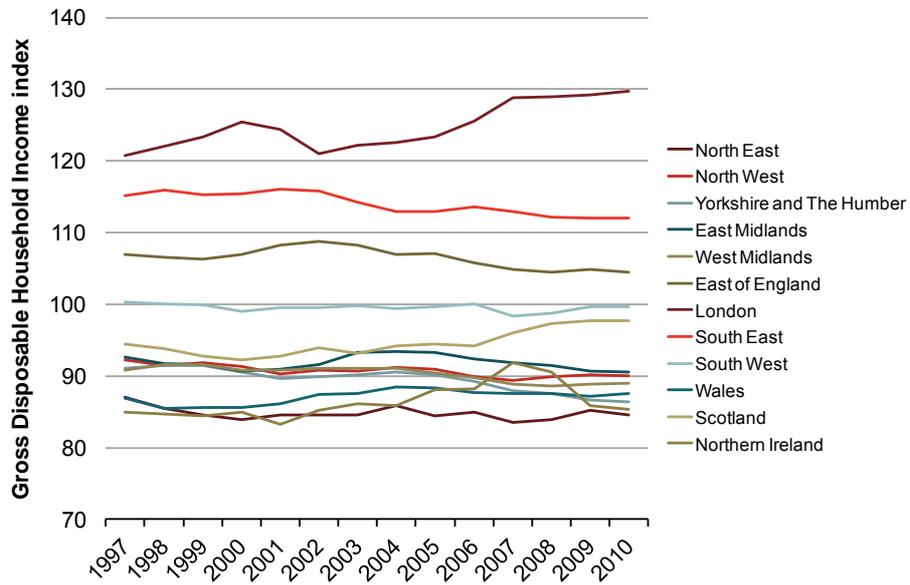
Source: Northern Ireland Statistics and Research Agency

In general, changes in aggregate demand have been more variable in NI than in GB, and the effects of major crises (such as the 2008 banking crisis, and the Eurozone debt crisis that followed) are more pronounced in NI than in GB. We note that the red curve captures movements in GDP for the whole of the UK, including NI. Were NI data to be stripped out of this curve, so that it reflects only variations in GDP for GB, the red curve would be even less volatile than depicted below.

Figure 18 plots Gross Disposable Household Income (GDHI) per head indices by region. These data are compiled and published by the ONS in its March 2013 release of *Regional Economic Indicators*.

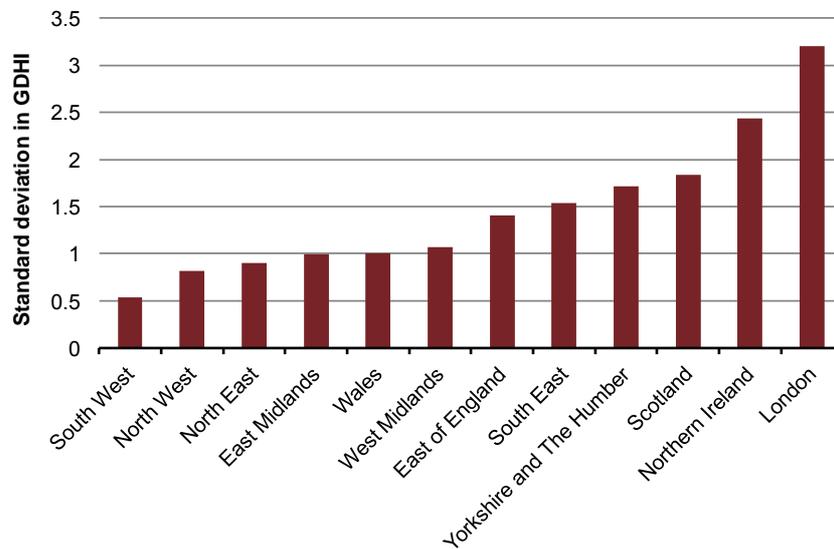
Annex 5: Possible causes of the NI premium

Figure 18. Regional Gross Disposable Household Income



Source: ONS Regional Economic Indicators - March 2013

With the exception of London, NI exhibited the greatest variability in GDHI per capita in the UK over the period 1997 to 2010. This is demonstrated more clearly in **Figure 19**.

Figure 19. Variation in regional GDHI

Source: ONS Regional Economic Indicators - March 2013, Frontier Economics analysis

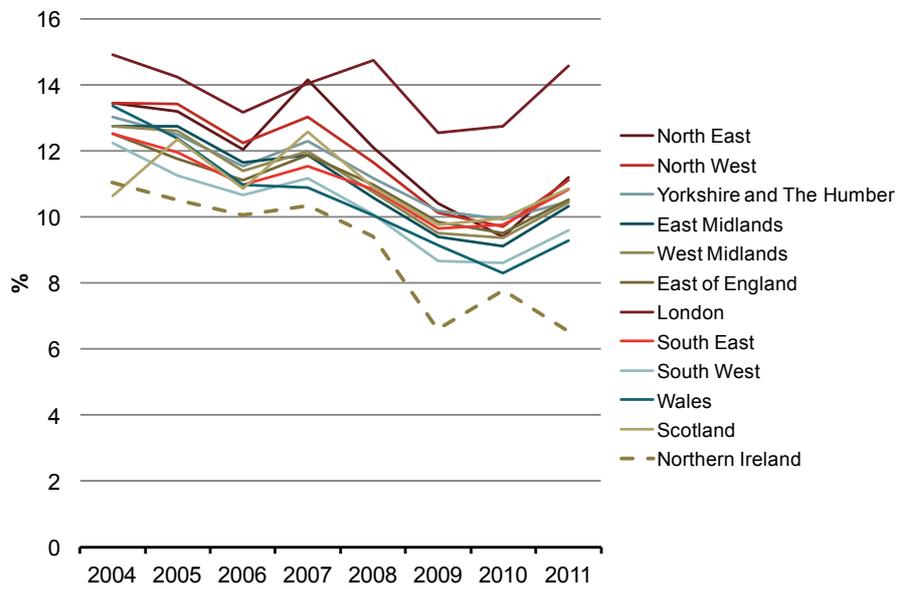
Figure 20 and **Figure 21**, respectively, show that between 2004 and 2011, NI consistently had the lowest proportion of enterprise births and deaths (represented as a percentage of all active enterprises in the region) of all regions in the UK.³⁹ This is an indication of persistently weak economic activity in the region, by comparison to regions in GB. The charts also suggest that the proportion of enterprise births in NI has been following a clear downward trend, whereas the proportion of enterprise deaths has been following an upward trend.

All these economic indicators suggest strongly that NI is a riskier economy to invest in than GB. As such it is not surprising that companies located in NI (including utilities) must pay a premium in order to attract investors who also have the option of investing readily in otherwise comparable utilities in GB.

³⁹ ONS identifies ‘enterprise births’ by “making comparisons of annual active registered enterprise population datasets and identifying those present in the latest dataset, but not the two previous ones”. Similarly, according to ONS an ‘enterprise deaths’ is defined as “a business that was on the active registered enterprise dataset in a reference year, but was no longer present in the dataset in the two following reference years”. See ONS, 2013, Births and Deaths of Enterprises in Local Enterprise Partnerships, 2004–11, 9 August.

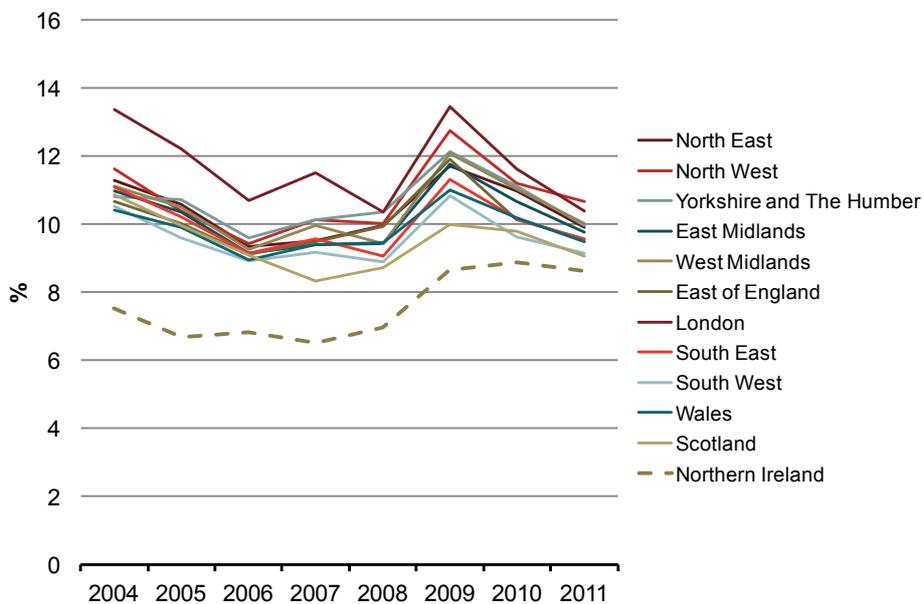
Annex 5: Possible causes of the NI premium

Figure 20. Enterprise births as a percentage of active enterprises, by UK region



Source: ONS Regional Economic Indicators - March 2013, Frontier Economics analysis

Figure 21. Enterprise deaths as a percentage of active enterprises, by UK region



Source: ONS Regional Economic Indicators - March 2013, Frontier Economics analysis

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CHAPTER 6

FINANCEABILITY

Introduction

- 1.1 In this chapter, NIE comments on the financeability of the CC's overall provisional determination.

Basis of NIE's present critique

- 1.2 In other chapters of this response, NIE has argued that the CC has underestimated the revenues which NIE should be allowed in various important respects, relating to NIE's core cost allowances (through errors, among other things, in the CC's benchmarking assessment, and in its RPE and productivity adjustments) and its cost of capital. It is clear that, if NIE's case in respect of these matters is correct, then NIE will be unable to finance its functions on the basis of the CC's proposed revenue allowance, since NIE will need more money than the CC allows to cover the cost of its capex programme and other activities, more work will need to be done on the network than the CC contemplates, and the cost of financing such work will be higher than the CC envisages. In addition, according to the CC's PD, NIE will have to finance part of the pension fund deficit attributable to ERDCs, without looking to its regulated revenues to cover such costs.
- 1.3 NIE acknowledges that, in other elements of its PD, the CC has signalled an improvement to NIE's regulatory risk profile by provisionally deciding not to make any adjustment to NIE's RAB or its RP4 opex allowance in response to the case advanced by the UR. The CC has also provisionally agreed that NIE should be permitted to recover from consumers elements of its historic pension fund deficit which would have been stranded under the UR's RP5 determination.
- 1.4 However, these elements of the PD, whilst welcome, do not detract from the serious deficiencies in other elements of the CC's proposed price control for the period from 1 April 2012 to 30 September 2017. These deficiencies are of grave concern to NIE and its shareholder, ESB.
- 1.5 However, in the present chapter we assume, for the sake of argument, that the CC's provisional assessment is correct in other respects, and we focus on whether the CC has correctly assessed whether NIE will, in practice, be able to finance its activities on the basis of revenues and a cash flow profile such as the CC proposes.

Errors and deficiencies in the CC's financeability assessment

- 1.6 NIE submits that the CC's assessment of the financeability of its proposals is manifestly flawed, for the following reasons.
- 1.7 The CC has used the UR's financeability model to assess whether its own provisional proposals are financeable. In doing so, the CC has effectively ignored NIE's criticisms of the model. It has done nothing to correct the material errors identified in NIE's Statement of Case. Indeed, the CC has not even used the most up to date version of the UR's model, but has used a version which embodies errors which were corrected in a later version.
- 1.8 But, even the most recent version of the UR's model is not fit for the purpose of assessing whether the CC's proposed new price control arrangements are financeable. Since publication of the PD, the UR has taken issue with the accuracy and suitability of the model, in papers UR 146 and 146A. In addition, following a conference call on 22 November of NIE, the UR and the CC staff responsible for this element of the CC's work, the CC has itself asked NIE and the UR how long it would take the UR and NIE to produce a model which would be fit for the purpose of assessing the overall financeability of its proposals, and modelling the revenues which NIE should be allowed to raise via its tariffs in each year of the overall price control period.
- 1.9 The CC's questions make clear that it has made no real effort to evaluate the suitability of the UR's existing model for assessing the financeability of its price control proposals and, in consequence, has no basis for any confidence in its conclusion that its provisional determination is financeable. NIE has, even in the short time available since publication of the PD, identified modelling errors which have resulted in revenue entitlements calculated by the CC being overstated by approximately £20m and funding requirements understated by a further £50m. Those errors are detailed in the attached Annex.
- 1.10 The CC has also failed to take account at all of the implications for NIE's financial position of the significant capital expenditure associated with the connection of renewable generation, the north south interconnector and other D5 projects expected to be incurred during RP5. It has also incorrectly assumed that all windfarm cluster expenditure will be fully funded by Developers.
- 1.11 The CC has also overlooked the impact its provisional assessment of NIE's allowed revenues for the period from 1 April 2012 to 30 September 2014 will have on NIE's allowed revenues for the period from 1 October 2014.

Are the proposals financeable?

- 1.12 Notwithstanding these important omissions from its modelling, the CC nonetheless acknowledges that NIE's finances would be strained as a result of the adoption of the CC's proposals. It acknowledges (PD 16.46) that one of the

key metrics for credit rating - Post Maintenance Interest Cover (PMICR) - is 'a potential source of concern'. As illustrated in Tables 6.1 and 6.2 below, the modelling errors outlined in paragraphs 1.8 and 1.9 above impact in the gearing threshold assumed by the CC and further reduce PMICR.

Table 6.1: Impact of CC modelling errors on gearing

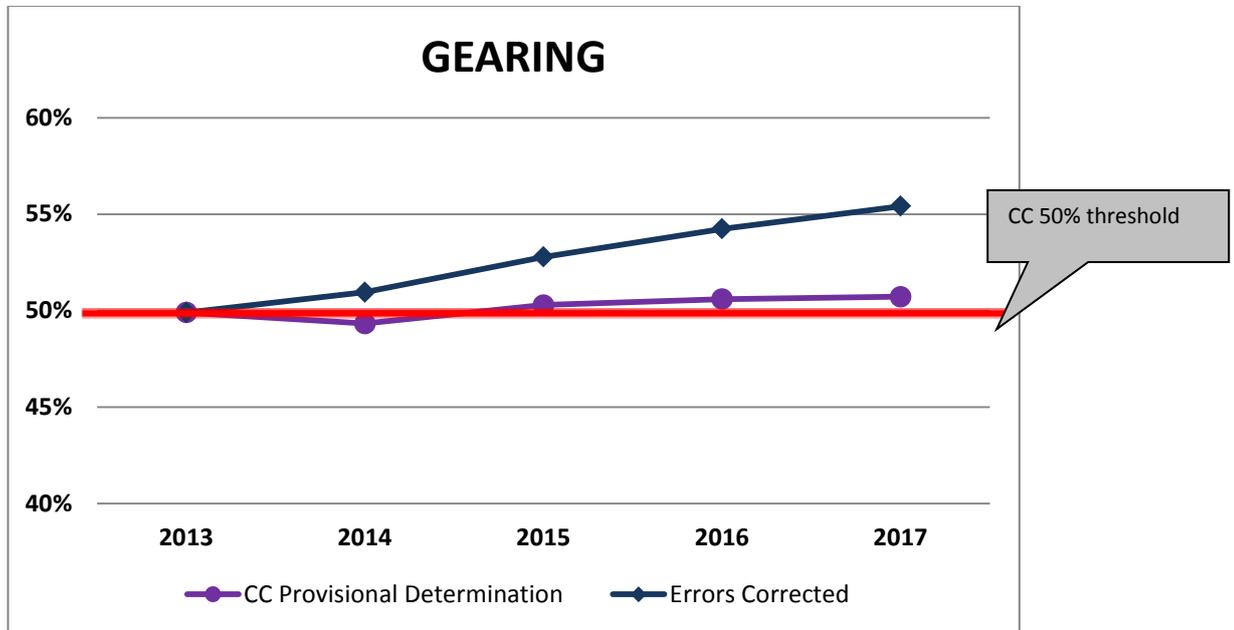
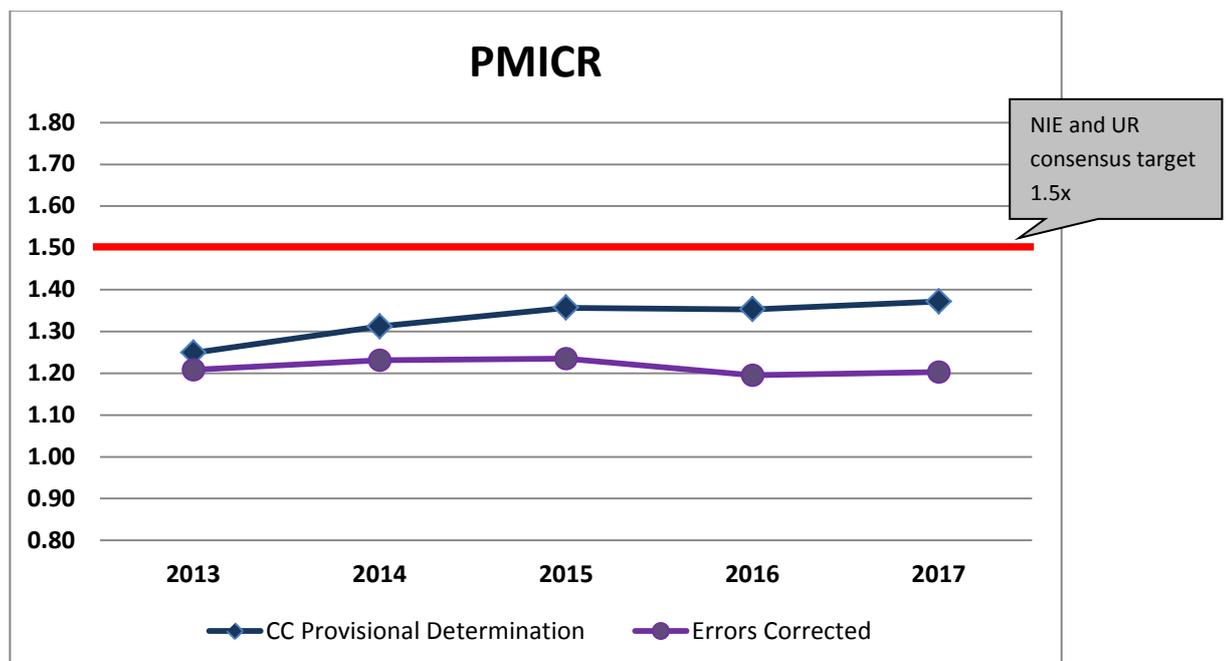


Table 6.2: Impact of CC modelling errors on PMICR



- 1.13 The CC suggests the unacceptable PMICR could be addressed by:
- (i) reducing net debt by limiting dividends;
 - (ii) using cash or loans to other group companies before new debt to fund investment;
 - (iii) issuing index linked debt; or
 - (iv) raising finance in the form of equity or equity-like instruments.
- 1.14 These glib suggestions are not workable or are otherwise inappropriate.
- 1.15 Item (iii) suggests that NIE should raise new index linked debt. But the CC has itself acknowledged that NIE is unlikely to be able to do so. At PD 13.71, the CC states that it 'considered it unlikely that NIE would be able to raise index linked debt'. NIE does not consider that the issuing of index linked debt can provide a solution to the problems posed by the CC's proposals.
- 1.16 Items (i) and (iv) both entail NIE's shareholder having to invest more equity or equity-like capital in NIE, without any prospect of any return on existing or new equity for the foreseeable future. It is true that NIE has no contractual obligation to pay a dividend on its shares (compared with its contractual obligation to service its loans, and the risk of having to prepay the capital advance in the event of default). But any company looking to the public capital markets for equity share capital needs to be able to offer the prospect of a fair return on its equity in order to attract new equity, and that prospect is severely impaired by a price control settlement which (on the CC's own admission) would be likely to entail a curtailment of dividend payments. As detailed in Chapter 5 and the related Frontier report, NIE considers the allowed return on equity proposed by the CC to be inadequate.
- 1.17 The fact that NIE is owned by ESB does not alter the position. If ESB is required to inject more capital into NIE, with no prospect in the foreseeable future of a fair return on its existing equity or any future equity injection, then that will impair the value of its investment in NIE and increase its own cost of raising capital for injection into NIE.
- 1.18 The statutory framework under which the UR and the CC function requires that they have regard to the need to ensure that NIE can finance its regulated functions. Since the privatisation of NIE, it has fallen to the UR and CC to approach this element of their overall regulatory task by ensuring that NIE is able, in principle, to finance its functions by resorting (directly or indirectly) to the public capital markets. This must entail NIE's being able to pay a fair return on its equity from time to time, so as to avoid unfair expropriation of shareholders' investment in NIE.

1.19 NIE does not contend that shareholders in a regulated utility should be guaranteed a return at the company's cost of capital. If shareholders conduct themselves in relation to their investment in a manner which would, in a competitive market, expose them to loss, then the regulator may legitimately take that into account in deciding how the costs of such misjudgements should be borne. But the CC does not (and cannot) offer any good reason to penalise NIE's shareholder as its proposals imply:

- the CC has made no finding that NIE is so inefficient, relative to its peer group DNOs, as to justify the imposition of such a penalty on shareholders as is contemplated by its present proposals. NIE has recently attained PAS 55 certification, confirming that its asset management processes meet objective standards of efficiency and effectiveness. There is therefore no reason to apply such a discount to shareholders' returns on grounds of inefficiency;
- NIE has not paid excessive dividends in the past;
- NIE's shareholders have not done anything else to damage NIE or expose it to additional costs. We have separately rebutted the suggestion that NIE's association with ESB increases its cost of capital, and no other ground is suggested in the PD to reduce returns to shareholders.

1.20 The CC's suggested item (ii) envisages that, before looking to raise additional debt or equity finance, NIE should use its accumulated cash reserves and should call in loans to other group companies.

1.21 But NIE's cash holdings are already taken into account in the CC's assessment of the financeability of its proposals, and there are no outstanding intra-group loans under which other group companies have borrowed monies from NIE. There is therefore no means by which NIE could boost its cash reserves by calling in such loans.

1.22 We would also point out that condition 9 of NIE's licences require NIE to conduct any transactions with other group companies on an arm's length basis and for certain permitted purposes. If the CC were under the impression that NIE may have loaned monies to other group companies on "soft" terms, it would be entirely mistaken, since NIE's licence conditions do not allow such loans.

1.23 In short, the CC has misdirected itself as to the routes legally available to it to justify its proposals as being financeable. It is not entitled simply to assume that ESB (or any other investor) will inject additional equity to make good any hole in NIE's balance sheet resulting from the CC's proposals.

1.24 Moreover, on the CC's present proposals, ESB would be required to provide a very substantial level of funding to address financing shortfalls with little

prospect of a fair return. Those shortfalls would be substantially larger than the CC contemplates, owing to the errors and omissions in its own modelling.

- 1.25 Since the CC may not legitimately expect ESB to invest further funds without any prospect of a fair return, the CC's proposals thus carry the very real risk that they will cause NIE to suffer a deterioration in its stand alone credit rating resulting in higher financing costs for NIE to the ultimate detriment of customers.
- 1.26 It is also to be noted that, since, in many respects, the CC's PD imposes a stringent judgment as to the level of revenues to be allowed to NIE or introduces new methods of setting NIE's allowed revenues (in respect of the WACC, RPEs, productivity, direct capex costs, indirect costs, rates, wayleaves etc.), it would be prudent for the CC to conduct sensitivity analyses to ensure that its proposals will be financeable even if the CC's allowed revenues turn out to have been inadequate to meet NIE's efficiently incurred costs. The CC makes no allowance for such a possibility.

Conclusion

- 1.27 In short, the CC has failed to demonstrate that its proposals are financeable. Indeed, it is clear that they are not.
- 1.28 To address these very serious concerns, NIE urges the CC to reconsider its overall assessment of NIE's revenue needs, and the profile of its cost recovery, with a view to advancing new proposals under which NIE will be able to finance its regulated activities in a manner which is consistent with the overall statutory framework within which the UR and CC are required to operate. The CC's present proposals manifestly fail that test.

ANNEX

MODELLING ERRORS IDENTIFIED TO DATE BY NIE

For the avoidance of doubt, NIE has not carried out a full audit of the model or made any assessment of the appropriateness of methodology used. The errors noted below may not be exhaustive.

Proposed Adjustment	Rationale
<p>Tax Cap All Column T,U,V. Update to reflect actual capital allowances at 31 March 2012 .</p>	<p>To reflect actual opening position at proposed RP5 start date.</p> <p>If it is proposed that “core” and other “non-core” returns on assets should be calculated on a post tax approach. A post tax approach was used in RP4 for core and renewables assets. In order to calculate the correct tax allowance on all assets, values ascribed to non core assets need to be included in the tax allowance computation.</p>
<p>Tax Cap All Line 55 Metering capex has not been separately identified and has been included in the long life pool rather than the general pool.</p>	<p>Update to reflect correct treatment under HMRC guidance.</p>
<p>Tax Cap All Line 71 Correct Deferred Revenue Pool Calculation.</p>	<p>The formula to calculate the deferred revenue pool capital allowances is incorrect. In accordance with HMRC rules this should be calculated on a straight line basis rather than a reducing balance method. In addition the formula does not correctly account for the shortened extension period.</p>
<p>Tax Cap All Line 43 Update to include domestic contributions.</p>	<p>NIE receives capital allowances on domestic contributions which should be reflected in tax entitlement and tax liability.</p>
<p>Interest Cost Analysis Line 10 Interest on Bond should be calculated on £400m value, not the net liability.</p>	<p>Net liability amortises issue costs over the lifetime of the bond.</p>
<p>Interest Cost Analysis Line 19. This value should not fluctuate with reference to cashflows</p>	<p>Bond value is a fixed liability with the exception of the small annual amortisation of issue fees. The current formula allows the bond value to be reduced if NIE has a net cash balance.</p>
<p>Interest Cost Analysis Line 12 Interest charge in a year should be calculated on average net debt over the period rather than opening net debt</p>	<p>Current formula calculates interest for a particular year based on opening net debt balance. As net debt balance increases each year this understates the real charge.</p> <p>Calculating interest charge based on an average of opening and closing net debt is more reflective of actual performance. This formula will need to be tailored to avoid circular references.</p>

<p>Cashflow Line 41 Correct formula to pick up correct period</p>	<p>Interest paid formula picks up charge from wrong period in Interest Cost Analysis sheet. (Note: Due to timing of Bond payments actual cash interest paid in period Jan-Sept 13 with be full annual amount i.e. Do not apportion payment.)</p>
<p>Balance Sheet Line 40 This liability relates to a historic liability.</p>	<p>This figure is picked up in the Net Debt calculation. From April 2012 the balance should be zero.</p>
<p>Financial Ratios Line 25-Net Debt</p>	<p>Net Debt should include Interest Accrual in line with Fitch existing methodology. (see Fitch Publication on NIE May 2013, tables on Page 2).</p>
<p>Balance Sheet Line 42 Adjust Interest accrual to reflect Line 41 Cashflow</p>	<p>Interest accrual is incorrect. Interest accrual should only reflect bond interest accrued at year end and all other interest is assumed paid in the year it is incurred.</p>
<p>Update all RABs values to reflect Actual Position at 31 March 2012.</p>	<p>To reflect actual opening position at proposed RP5 start date going forward.</p>
<p>NI 2007 RAB</p>	<p>The figures in the RAB should only include the amounts which are currently recovered under the PSO tariff and which the Utility Regulator is proposing to transfer to DUoS. Cell P12 in the NI 2007 RAB references the transfer to Supply but this adjustment has not been made</p>
<p>Cashflow Line 30 Pension payment in cashflow statement does not reflect actual payments. Cash payments include deficit repair payments in line with agreed plan and annual payments to Pension Protection Fund.</p>	<p>NIE has provided a schedule of estimated cash payments.</p>
<p>All RAB sheets Average RABs are calculated by taking the average value of the nominal RAB for one year and the closing value of the nominal RAB for the next year. This does not take into account the inflationary uplift on the opening RAB.</p>	<p>As a result return is understated each year.</p>
<p>FEMO RAB and NI2007 RAB Line 14 Accelerated Depreciation is charged in RP4 extension period</p>	<p>Competition Commission to confirm if it is its intention to commence accelerated depreciation in 2012.</p>
<p>NI2007 RAB Cell Z14 Formula allows for depreciation after asset fully depreciated</p>	<p>Depreciation profile needs to be reviewed as depreciation cannot be charged once asset has been fully depreciated</p>
<p>Summaries Sheet Line 97</p>	<p>Income in Summaries sheet is incorrect. It excludes regulated entitlement related to PSO items (FEMO/Enduring Solution and NI 2007).</p>

Revenues U25 & V25	Known DT costs is linked to a external spreadsheet prepared by the Utility Regulator. The Utility Regulator will provide a detailed schedule of what costs are included within this category. The Competition Commission will then need to assess if this is consistent with its methodology for assessing Opex allowance, specifically as to whether some items have been double counted.
Revenues Line 29	Stranded pension costs are not flowing through to face of the P&L. (Note: because of formula in the P&L there is no financial impact, simply presentational).
Revenues Line 23	No adjustment has been made for avoidable pension deficit payments in the extension period. If its is the CC's intention to implement this adjustment from the commencement of RP5 then revenue has been overstated for the 9 month period to 31 December 2013

CHAPTER 7

D3 MECHANISM – CAPEX DEFERRAL

- 1.1 This Chapter 7 sets out NIE's response to the CC's proposed D3 mechanism which is intended to address the risk of inefficient deferral of planned network investment.
- 1.2 Our concern with the CC's proposed D3 mechanism is that it unduly limits NIE's flexibility to manage its network investment in response to unforeseen developments that occur during the price control period. Under the CC's proposals, NIE would recover, at most, 50% of the costs of addressing such developments.
- 1.3 The need for flexibility arises because NIE has responsibilities to manage its network in real time. Investment needs and priorities will change dynamically in response to actual events impacting the network and newly emerging information on asset condition and risk. NIE has statutory obligations in respect of health and safety and the approach to managing risk is kept under review and is informed by new information including actual incidents. Newly emerging asset failures or other operational incidents are not uncommon and may result in the need for new work programmes to be undertaken urgently in RP5 and at significant cost, to effect the replacement of whole groups of assets to address newly identified risks.
- 1.4 The CC acknowledges (in paragraph 5.172 of the PD) the need for flexibility as well as the existence of safety obligations that might drive unplanned investment. But while acknowledging the need for flexibility, its proposed D3 mechanism does not allow flexibility to the extent that the CC claims. The CC's position is therefore inconsistent and irrational.

CC's flexibility claims for its D3 mechanism

- 1.5 In paragraph 5.171 of the PD, the CC considers the potential for NIE to adapt its capex plan so that NIE might carry out more network investment than anticipated in a particular area. It sets out four aspects of its D3 mechanism which it considers provides NIE with flexibility to carry out unanticipated investment without suffering any adverse financial impact. We explain below why the extent of flexibility provided in each case has been overstated by the CC.

(a) Flexibility to reprioritise specific assets within asset categories

- 1.6 The proposed D3 mechanism would enable NIE to decide which specific assets within each category to replace. But this flexibility will cater only for routine changes within currently defined programmes (such as prioritising the replacement of one 4-pole substation over another). NIE's concern is with regard to significant unforeseen developments which cannot be met by simply re-prioritising work within existing programme categories.

1.7 Furthermore, the RP5 asset replacement programme does not cover all asset categories. Therefore if a new requirement to address an additional asset category emerges, it cannot by definition be addressed under (a). For example, during RP4, NIE experienced a catastrophic failure of a voltage transformer at one of our transmission substations which following a reassessment of risk, resulted in the need to replace approximately 120 similar units which had not been allowed for in previous plans. In previous price control periods, NIE had the flexibility to reduce the volume of replacement on other planned work programmes in order to accommodate new and more pressing requirements.

1.8 Where a particular asset category is already included in the RP5 programme, if the need to increase the volume of replacement under an approved RP5 asset replacement programme¹ emerges in order for NIE to meet its statutory obligations (e.g. due a safety incident or other risk emerging during RP5), the lack of flexibility on target volumes would mean that NIE would be expected to bear 50% of the cost of any additional volumes that exceed the target volumes specified by the CC at the start of the price control period.

(b) Allowances for fault and emergency and other reactive works

1.9 The CC notes that the price control includes allowances for capex that falls under fault and emergency work and reactive work, for which the CC will not specify planned deliverables. The CC suggests that these allowances provide a contingency for unanticipated investment.

1.10 The fact that the CC has not specified deliverables to be achieved from those funds does not mean that the money is "free" for other uses. The quantum of these allowances for RP5 is based on the historical and relatively predictable level of expenditure on routine and (individually) small value asset replacement works which (whilst not individually identified ex ante) are likely to occur to a similar extent in RP5 as previously – for example, minor defects prioritised through inspection programmes and customer reports including replacement of defective poles, service cables, substation gates, fences etc. The allowances take no account of historic expenditure on significant unforeseen developments such as those examples set out in (a) above.

1.11 It follows that, contrary to what is implied by the CC, the allowances for fault and emergency and other reactive works make no provision for significant unforeseen developments.

(c) Allowances for distribution load-related expenditure

1.12 The CC refers to further contingency being provided by allowances for distribution load-related expenditure. This is on the basis that these allowances will not be subject to the "no double counting" provision of the price control design (a feature of those allowances which NIE welcomes to the extent that the CC acknowledges the benefits in efficient deferral).

¹ Such as volume of undereave services or LV cut-outs or other assets in close proximity to the public.

- 1.13 But in practice the distribution load-related expenditure allowance will provide little, if any, contingency for asset replacement works. That allowance is required to meet load-related works that have been recognised by the CC as necessary for RP5, with any flexibility afforded by its exclusion from the “no double counting” provision being sufficient only to provide limited contingency for additional load-related works. In this regard, it is worth noting that additional load-related works totalling approximately £2 million have already been confirmed by NIE, representing some 10% of the distribution load-related allowance proposed in the PD.

(d) Other allowances without specified deliverables

- 1.14 The CC also refers to further contingency being provided by allowances for which the CC has not specified deliverables. The CC suggests that NIE will be able to:

"... scale down its planned investment in these areas without any impact on the calculation of pre-funded costs at the next price control review."

- 1.15 But in practice, these allowances will also provide little, if any, contingency for additional asset replacement works. The allowances referred to by the CC are required for:

- work programmes such as tree cutting and inspections that are required by NIE to comply with statutory requirements such as ESQCR. These requirements are not diminished by the absence of specified deliverables within the price control arrangements;
- costs that will of necessity be incurred by NIE in achieving the deliverables that have already been specified by the CC. For example, the projects that the CC has specified cannot be delivered without incurring overhead line fixed costs, project design and consultancy costs and capitalised overheads. Therefore, contrary to the CC’s assertion, these allowances cannot be scaled back without any impact on the calculation of pre-funded costs at the next price control review; and
- other works, the need for which has already been recognised by CC (even in the absence of specified deliverables). Therefore there can be no reasonable expectation that the associated work can be scaled back to any significant degree in practice.

Conclusion

- 1.16 Accordingly, NIE submits that the CC’s proposed D3 mechanism fails to provide the flexibility that the CC itself recognises is necessary to enable NIE to carry out its statutory functions. NIE would bear financial risk in respect of additional costs that, inevitably, will become necessary in complying with its statutory and licence obligations. The CC’s position is inconsistent and irrational.

Options for introducing flexibility

- 1.17 NIE had proposed a variation to the CC's preferred D3 mechanism that would permit deferral up to a 10% threshold. Permitting this marginal variation in target volumes would provide flexibility for NIE while not unduly limiting the effectiveness of the D3 mechanism price control design in safeguarding customers against the risk of inefficient capex deferral.
- 1.18 In RP4, outturn delivery of outputs for high-volume programmes was generally within the range of +15% to -5% of the volumes planned at the start of that period. The definition of deliverables in RP5 is more granular² and would therefore require greater flexibility to allow funds within a particular segregated part of the RP5 allowance to be redeployed on different projects within the same overall category. We therefore proposed scope for deferral of up to 10%.
- 1.19 The CC has raised no concerns with NIE's proposal that would justify its rejection. The CC acknowledges that there is no "perfect" solution to address inefficient deferral risk while providing the requisite flexibility for NIE. The CC's concerns about adding complexity are overstated. NIE has proposed to report throughout RP5 on any changes in planned volumes together with an explanation of the "swings and roundabouts". This reporting would provide the UR with assurance that the overall objectives of the price control are being met despite the changes. The CC has made it clear that it is not about a detailed accounting of the trading of equivalent outputs. NIE's proposal aligns fully with the form of annual assessment envisaged by the CC which would "*not apply mechanistically and instead involves an assessment of pre-funded costs by NIE which would then be reviewed by the UR*". The intent of NIE's proposal is to ensure that there is the opportunity for that qualitative assessment to take account not just of deferral, but also of any additional outputs delivered for the benefit of customers.
- 1.20 NIE continues to commend its proposed variation to the D3 mechanism as a solution to the problem of how to address as far as a possible the risk of inefficient deferral while providing NIE with the flexibility it requires to manage its network and respond to unforeseen developments that will inevitably arise during the RP5 price control. Alternatively, the CC may identify a variant of this solution that also strikes an appropriate balance between the two conflicting objectives.
- 1.21 In any event, the CC's current D3 proposal fails to address the need for flexibility which the CC has itself recognised in the PD. The CC would be acting irrationally if it failed to address this concern in its Final Report.

² For example, where RP4 volumes were defined in terms of 'number of substations' to be replaced, in RP5, target volumes relate to specific components within the substation i.e. individual targets for volumes of circuit breakers, transformers etc.

Interaction between D3 mechanism and 50/50 cost risk sharing mechanism

- 1.22 Since publication of the PD, NIE and the UR have sought to clarify with the CC how the D1 cost-risk sharing mechanism will operate in practice. This includes seeking to better understand how the D1 (cost risk-sharing) mechanism would interact with the D3 (deferral) mechanism.
- 1.23 The CC has helpfully provided a series of clarificatory emails to NIE and the UR. NIE is still considering the CC's detailed response and may wish to make further submissions in respect of them.

CHAPTER 8

D5 MECHANISM – TRANSMISSION SYSTEM CAPACITY

1. SCOPE OF THE D5 MECHANISM

- 1.1 In Chapter 5 of its PD¹, the CC sets out its proposals for the D5 adjustment mechanism (previously referred to as Fund 3) for project-by-project approval of transmission network investments by the UR during the RP5 price control period.
- 1.2 The CC states² its intention that this mechanism covers projects relating to NIE's electricity transmission network that increase its capacity or capability.
- 1.3 Since publishing the PD, the CC has provided further clarification³ which excludes from the scope of this mechanism projects which involve investment to address issues with the expected performance of existing assets that are "due to age, deterioration in condition or faults". This may have consequences for two major projects which are intended to address both capacity and asset replacement issues and which NIE has consistently proposed should be included in the D5/Fund 3 mechanism. These are the Ballylumford switchboard project and the Coolkeeragh – Magherafelt 275kV overhead line project.

Ballylumford and Coolkeeragh – Magherafelt projects

- 1.4 Within the PD, the CC rejects⁴ NIE's proposal that the Ballylumford switchboard project should be included in the D5 mechanism and instead includes provision for this project within the ex ante cost allowances. The reason put forward by the CC is that:

"on its own, uncertainty about cost does not seem sufficient to treat this project outside the main price control and subject it to project-by-project approval."

- 1.5 The CC does include the Coolkeeragh - Magherafelt overhead line project within its assessment of potential projects within the D5 mechanism. However more recent correspondence⁵ from the CC casts doubt on whether this project will be eligible for consideration under the D5 mechanism, although no alternative mechanism to provide for this project is proposed. The explanation put forward by the CC for this apparent change in position is that:

¹ Para 5.250 ff.

² Para 5.262.

³ Email from the CC to NIE and UR dated 26 November 2013.

⁴ Para 5.269.

⁵ Email from the CC to NIE and UR dated 26 November 2013.

“From an initial review of information on this project (appendix 3 to NIE paper D1 “Asset replacement: transmission overhead lines”, 28 January 2011) we did not identify grounds to expect this project to fall under our proposed D5 provision.”

- 1.6 The CC's objection to including these projects within the D5 mechanism stems only from the fact that they involve the replacement of existing assets (in addition to providing additional capacity). However, the alternative to including these major projects within the D5 mechanism is to provide ex ante allowances based only on indicative cost estimates. Such an approach would present NIE with very significant regulatory risk.
- 1.7 The main rationale for the D5 mechanism is to mitigate regulatory risk by providing flexibility in assessing revenue requirements in light of substantial uncertainty about NIE's expenditure requirements. Whether these uncertainties are driven by capacity or asset replacement considerations seem to NIE to be of secondary importance. Indeed, distinguishing between projects in this way appears to be an entirely artificial construct. The CC has provided no reasoning for its decision to exclude asset replacement projects from the scope of the D5 mechanism. Such a decision is incoherent given that the nature and scale of uncertainties for those projects are similar to those for other projects that qualify for inclusion within the D5 mechanism.
- 1.8 NIE submits that the CC should adopt a pragmatic approach to ensuring that NIE is not exposed unduly to regulatory risk. The scope of the D5 mechanism should be enlarged to recognise that some projects are driven jointly by asset replacement and capacity considerations yet present similar regulatory risk as projects that will provide increased capacity only. This can be achieved by redefining the scope of the D5 mechanism specifically to include these two projects.

Risks of ex-ante allowance

- 1.9 NIE's concern is with uncertainty in the scope of both the Ballylumford and Coolkeeragh - Magherafelt projects, which combined with the scale of costs involved (approximately £15 million in each case⁶) would expose NIE to significant forecasting risk. In this regard, these projects are similar to other projects that have rightly been included under the D5 mechanism. In each case, variations from initial cost estimates are largely outside NIE's control with the result that, if those initial estimates formed the basis of an ex ante allowance, NIE would be penalised simply for initially underestimating the cost of the project, even where the investment is ultimately efficiently designed and delivered for the benefit of customers. Such an arrangement would subject NIE to the risk of uncontrollable losses which has poor incentive and regulatory properties.

⁶ The Coolkeeragh – Magherafelt project will traverse RP5 and RP6 which adds further to the need for case by case approval. Indicative estimates are that the overall cost will be c. £25m, with £15m estimated to fall in RP5.

1.10 While generally, the risk of inadequate cost estimates can be diversified across a reasonable number of projects of similar value, both the Ballylumford and Coolkeeragh – Magherafelt projects are virtually unique (when compared with other projects provided with ex ante allowances), both in terms of the scale of costs and the engineering uncertainties associated with the final design:

- Scale of costs (£15 million). The cost estimates were prepared for the purposes of the price control review and were based on a limited desk-top assessment of the scope and cost of the project. These should therefore be considered only as indicative. With the exception of the Kells Main project (at £8 million but which, unlike the Ballylumford and Coolkeeragh – Magherafelt projects, is currently well defined), other major projects for which ex ante allowances are provided do not exceed approximately £3 million.
- Engineering uncertainties: Ballylumford project. NIE has not previously carried out a similar project of this nature. It presents considerable uncertainties because replacement of the switchboard in situ is not feasible, meaning it is not a reasonably predictable ‘like for like’ asset replacement project. The scope for significant variations in cost arise for two reasons:
 - Site unknowns: Because the switchboard cannot be replaced in situ, there is a need to establish a replacement substation on a new site. However, site development costs are uncertain; site surveys have yet to be carried out and the scope to optimise the location to minimise development costs is very limited because of the constrained site within the environs of an existing power station. Potential variables include the design of the new switchboard, the length of underground cable connections required and civil engineering costs.
 - Switchboard specification: In addition, the specification of the new switchboard depends on key load-related considerations (including fault level rating and the number of switchboard panels required) relating to future decisions on the generation portfolio at the nearby Ballylumford Power Station. In this regard, it should be noted that the drivers⁷ for this investment have been assigned as 50% load related (because of increases in demand and fault level requirements) and 50% asset replacement.
- Engineering uncertainties: Coolkeeragh - Magherafelt project. NIE has not previously carried out a similar project of this nature. It will involve replacement of conductor along the entire length of a critical double circuit 275kV tower line. The precise scope of the project has yet to be finalised. It presents considerable uncertainties because of the mountainous terrain over which the line traverses and the design specifications to be applied (taking account of its particular exposure to severe weather). The current indicative

⁷ UR Database, project T26.

cost estimate (£25 million total, £15 million in RP5) makes assumptions as to rating and type of conductor to be used, and the design standards to be applied to the conductor and towers which will impact on the extent of foundation and tower strengthening required. It also makes assumptions in relation to the availability of system outages, work methods that may be necessary in the event of outage restrictions, and availability of physical access to tower locations etc. As a result, this is not a straightforward 'like for like' asset replacement project. The scope for significant variations from the indicative costs estimates currently available arise for the following reasons:

- Site unknowns: The route of this line traverses an area of NI which has historically suffered from the most severe weather conditions, which will impact both on the line design and the system outages required to build it. In recent years these severe weather patterns appear to have become more severe and more frequent than heretofore.
- Line specification: As a consequence of the terrain and the damaging effects of the previously mentioned weather patterns, the specification for this line will need to be more stringent than that for any other 275kV line built in NI to date. Historic evidence⁸ from previous failures will inform the design, which will need to be able to cope with the effects of high winds and various types of ice/snow accretion.
- Outage constraints: The 275kV circuits carried by this tower line are the only two 275kV circuits serving the north-west of NI and are critical to the security of supply to Derry City and major towns in the area, as well as linking the major power station at Coolkeeragh to the east of NI. This will place significant constraints on the availability of planned outages which in turn will constrain productivity in the delivery of this work.
- Circuit capacity: This project has two drivers; both asset condition/performance and circuit capacity. The capacity of these circuits is a key consideration of the Renewable Integration Development Project (RIDP). Consideration of the rating of the replacement conductor will take account of analysis flowing from RIDP and seek to optimise overall investment costs to best meet both asset replacement and capacity requirements. This adds further uncertainty to project design and cost.

1.11 In the case of each of these projects, these uncertainties will only be resolved following the pre-construction stage when the project is designed and subjected to detailed costing. To provide ex-ante allowances for these projects would expose NIE to a level of financial risk that is disproportionate to NIE's ability to influence the

⁸ This tower line has suffered from both the effects of ice accretion at very low temperatures and wet snow accretion at low temperatures. This included a significant incident in November 2011 which caused extensive damage to conductor resulting in circuit outages extending to several days.

outcome. It gives rise to an unnecessary degree of regulatory risk and, as such, is not apt to protect the interests of consumers.

- 1.12 Neither is it in customers' interests that the final design of these critical transmission systems is unduly incentivised by specifying in advance of the full appraisal of design options what may in hindsight be seen as an unsustainable cost allowance - i.e. the efficient solution may involve an initial capital cost well in excess of indicate estimates. For that reason, NIE continues to propose that approval for these projects should be sought following pre-construction assessments (as an application under the D5 mechanism) when meaningful incentives can then be applied for NIE to deliver the project efficiently against a firm design.
- 1.13 There appears to be little regulatory risk were the CC to make provision for these projects under the D5 provision. In case there is any doubt, the elements of asset replacement within scope of both projects can be clearly defined and readily ring-fenced from ex ante allowances for other asset replacement deliverables. In contrast, providing an ex ante allowance for these projects presents significant regulatory risk (as outlined above) which is not in customers' long term interests. Furthermore, the CC is asked to note the load-related uncertainties attached to both projects which is consistent with the stated purpose of the D5 mechanism in dealing with "*substantial uncertainty about NIE's investment requirements to increase the capacity and capabilities of its transmission system*" (see paragraph 5.259 of the PD).
- 1.14 For these reasons, including both the Ballylumford switchboard project and Coolkeeragh – Magherafelt project under the D5 mechanism provides a superior form of price control design and better serves the public interest. NIE requests the CC to make this change in its Final Report.

Cluster substations

- 1.15 As noted by the CC in paragraph 7.45 of the PD, NIE provided the CC with a forecast of potential additional transmission investments for the period to 30 September 2017. Included within NIE's response was a profile of capital expenditure associated with developing cluster substations (that is, 110kV substations used to collect the output from surrounding large wind farm generators). However, this investment has been excluded by the CC from its analysis⁹, seemingly on the assumption that this investment is fully funded by wind farm developer contributions. However this is not the case.
- 1.16 In May 2013, NIE and UR concluded a process of establishing a methodology for cluster substations. Under this methodology it was agreed that where multiple wind farms were seeking connections in close proximity to each other, it was more economic and efficient from a network perspective to construct shared infrastructure (clusters). The alternative would have involved individual connections into existing

⁹ Table 7.5.

infrastructure which may have limited capacity and be located a significant distance from the proposed wind farm sites. A set of principles were jointly developed by NIE and UR to govern the development of cluster substations which informed the content included in NIE's Statement of Charges (as approved by the UR) relating to cluster infrastructure investment.

- 1.17 One key principle underpinning this methodology is that all customers would fund the difference between the cost of constructing a cluster substation and contributions received from developers until such time as the total available capacity at the site had been fully utilised and paid for by wind farm developers. This is done through the establishment of a "cluster RAB" which is adjusted annually (where applicable) to reflect additional contributions received from wind farm developers connecting to cluster substations.
- 1.18 Table 8.1 below sets out an estimated cost for each cluster substation currently planned by NIE, together with the capacity of wind farm generation to be connected at each site categorised according to its stage of development along the consents process. The table also provides an estimate of the potential value¹⁰ of the RAB for each site.

Table 8.1: Estimated Cluster Costs & Capacity Utilised

Cluster Site	Total Cluster Capacity (MW)	Total Cost (£m)	Per MW Charge (£m)	Capacity Utilised (MW)	Contributions Received (£m)	Customer Funded RAB (£m)	Capacity in Planning (MW)
Mid-Antrim	90	7.4	0.1	54.8	4.5	2.9	38.5
Tremoge	90	8.7	0.1	75.6	7.3	1.4	-
Gort	90	7.5	0.1	61.6	5.1	2.4	7.5
Drumquin	180	17.4	0.1	88.6	8.6	8.8	95.1

- 1.19 Table 8.2 below sets out an indicative profile of potential costs and associated contributions to derive a net annual funding requirement for each site to the end of September 2017. These will be refined during the pre-construction phase of each project in advance of NIE seeking construction approval. NIE requests the CC to make provision for these requirements in its Final Report.

¹⁰ 2009/10 prices.

Table 8.2: Profile of capital expenditure & customer contributions

	Prior to Sept 14 £m	Oct 14 - Sept 15 £m	Oct 15 - Sept 16 £m	Oct 16 - Sept 17 £m
<u>Mid-Antrim</u>				
Cost		3.7	3.7	
Contributions		(2.3)	(2.3)	
Net Funding Required	-	1.4	1.4	-
<u>Tremoge</u>				
Cost		4.4	4.4	
Contributions		(3.7)	(3.7)	
Net Funding Required	-	0.7	0.7	-
<u>Gort</u>				
Cost	0.1	3.7	3.7	
Contributions		(2.6)	(2.6)	
Net Funding Required	0.1	1.2	1.2	-
<u>Drumquin</u>				
Cost	0.1	0.2	0.6	1.8
Contributions		(0.9)		(1.7)
Net Funding Required	0.1	(0.7)	0.6	0.1
Total Cluster Funding Required	0.2	2.6	4.0	0.1

2. OPERATION OF THE MECHANISM

2.1 The PD states that:

"We propose that NIE is placed under an obligation to develop and bring to the UR proposals for relevant investment projects that are in consumers' interests, drawing on input from SONI, and to provide the UR with the information necessary to assess NIE's application." (paragraph 5.260)

and

"... we propose that a prerequisite for any project to be within scope of the (D5) provision is that the investment is requested by SONI" (paragraph 5.263)

2.2 NIE requests the CC to review these propositions in the context of the planned transfer of transmission planning functions from NIE to SONI with effect from April 2014. This transfer will result in SONI making planning decisions to increase capacity on the transmission network, with input from NIE. Discussions are ongoing between NIE and SONI with regard to the process for requesting approval from the UR but it is possible that such requests could be presented jointly by NIE and SONI, with SONI presenting the case for investment and NIE seeking approval for the required expenditure. This process would then be agreed with the UR. NIE considers it may

be unnecessary and, indeed unhelpful, to formally prescribe the detail of these arrangements in the CC's Final Report.

- 2.3 Moreover, as regards the first of the CC's proposals set out above, it would be important that any such condition recognises that the primary driver (in NIE or SONI) in bringing forward investment proposals is to ensure compliance with statutory and licence obligations. The drafting outlined above could be interpreted more widely as meaning that NIE has an obligation to proactively seek out proposals for relevant projects that meet some wider definition of consumers' interests – rather than reactively, bring forward those projects that are specifically needed to meet statutory or licence obligations, or other public interest objective (such as may be defined from time to time by government or regulatory authorities).

UR decisions under the provision

- 2.4 The CC sets out in paragraph 5.265 of the PD its views on what it expects the UR will need to consider in making a decision on approvals sought under this provision. Reference is made to NIE "facing financial exposure" and "financial consequences for NIE" in respect of potential incentives for cost allowances and delivery dates. For the avoidance of doubt, it would be preferable if the CC made clear in its Final Report that any such incentives should be symmetrical, and provide opportunities for both upside and downside risk.

CHAPTER 9

D7 – SMART METERING

- 1.1 Both NIE and the UR agree there is insufficient information available now to provide an upfront allowance for smart metering costs in the period to 30 September 2017. The CC proposes¹ not to make any licence modifications for adjustments to NIE's revenue and RAB in relation to smart metering but that the UR and NIE rely subsequently on either:
- the change of law (CoL) provision in the existing licence conditions (to be retained); or
 - an agreement at the time between the UR and NIE on a licence modification.
- 1.2 Prior to publication of the PD, NIE told the CC that its preference was for a licence modification and that it would be important for the CC's report to contain an express acknowledgement that this is the process that the CC expects the UR to follow in order to permit NIE to recover the costs it will incur in relation to smart metering.
- 1.3 The concern underlying NIE's request for an express acknowledgement by the CC is that the UR (or DETI) might seek to impose an obligation on NIE to roll-out smart meters and associated IT and telecommunication systems without the UR providing an allowance to cover the cost of that work. NIE wants to ensure that the UR would have little practical option but to allow NIE to recover its efficiently-incurred costs. NIE submitted that it would help secure such an outcome if the CC were to make clear that any such obligation would need to be matched by a licence modification that would permit NIE to recover its costs.
- 1.4 NIE had expressed a preference for a licence modification because it is not confident that the existing CoL provision, as currently drafted, would be triggered by a decision to commence a smart metering project. However, on further reflection, this concern could be addressed by amending the CoL provision to make clear that any obligation on NIE in relation to a smart metering project would be a "relevant change of law" as defined in that provision. NIE submits that this would be a more straightforward means of addressing its concerns about recovering the cost of smart metering.
- 1.5 Accordingly, NIE requests that the CC amend the CoL provision so that the imposition on NIE of any obligation in relation to a smart metering project is clearly stated to be a relevant change of law.
- 1.6 The term 'any obligation in relation to a smart metering project' should be defined to include obligations on NIE with regard to preparing for a smart metering project. NIE anticipates that the work involved in preparing for a smart metering project – for

¹ Para 5.287.

example, assessing the impact of smart metering on IT systems employed by NIE in delivering market data services² – will be particularly complex, time consuming and expensive.

- 1.7 NIE requests that the CC adopts these provisions in its Final Report. Taking this step would reduce NIE's exposure to undue regulatory risk and therefore operate in the public interest.

² Providing metering data to suppliers and market operator for settlement of retail and wholesale markets.

CHAPTER 10

CONNECTIONS AND NON-RECOVERABLE ALTERATIONS

1. LEGACY CONNECTIONS

- 1.1 As noted in the PD, until 1 October 2012, new domestic and smaller businesses connecting to the network received a subsidy which meant that they were only required to pay for 60% of the cost of their new connection. The remaining 40%, a subsidy, was effectively paid by all of NIE's customers. This subsidy was removed so that for all applications for connection made from 1 October 2012, the full cost of a connection will be paid by the applicant.
- 1.2 The PD proposes a cost pass-through allowance for NIE's net connection costs (i.e. the subsidy costs not payable by the connection applicant) adjusted on an ex-post basis to reflect actual expenditure on connections. NIE accepts this principle for the treatment of net connection costs but is concerned about the proposed exclusion of net connections costs after October 2014.
- 1.3 Paragraph 5.294 of the PD proposes a cut-off date for the cost pass-through arrangement of 1 October 2014. Any costs incurred after this date would not be recoverable by NIE. This decision is described by the CC as being in line with the UR's policy decision in relation to the connection subsidy.
- 1.4 NIE accepts that the UR's policy decision, published in April 2012, stated that customers making applications prior to 1 October 2012 would receive the subsidy only "as long as the connection was completed by 1 October 2014". But neither the UR's policy decision, nor the CC's provisional determination, takes account of cases where the connection application was made before the change in policy took effect but there has been a delay in carrying out the connection works for reasons beyond the control of either NIE or the applicant¹ with the result that connection may not occur until after 1 October 2014. In such cases the applicant will expect NIE to honour the contract price that incorporates the 40% subsidy, even where the connection takes place on or after 1 October 2014.
- 1.5 This risk to NIE is recited in paragraph 10.181 of the PD but the CC provides no reasoning to explain why it is appropriate that NIE should nonetheless be required to bear in full the cost of the subsidy for any connection made after October 2014. Moreover, the CC's decision to impose a cut-off date of 1 October 2014 for the cost pass through arrangements ignores the acceptance by the UR in its Final Determination of a need to deal with legacy connections (see paragraphs 8.15 and 8.16 at page 75 of the Final Determination). The UR proposed that additions to the RAB would still be required in respect of connection offers incorporating the 40%

¹ Often resulting from difficulties in obtaining third party consents, wayleave dispute determinations, planning requirements, etc

subsidy issued prior to 18 April 2012 but not completed until after 1 October 2014. NIE submits that the UR was correct to recognise these legacy issues and the CC's failure to do so is unexplained and unjustified.

- 1.6 If NIE is not permitted to make additions to the RAB after 1 October 2014 as proposed by UR in its Final Determination then in circumstances where the connection applicant has accepted an offer made under the 'old' policy (i.e. incorporating a 40% subsidy) but the connection will not be completed until after 1 October 2014, NIE will be faced with a difficult choice of either:
- honouring the original connection offer and carrying out the connection at the subsidised rate, with NIE bearing 40% of the connection costs. Such an outcome would be entirely unfair to NIE; or
 - seeking to revise the terms of the connection agreement to require the applicant to pay 40% more than was originally quoted. This would be likely to generate disputes that would require to be presented for resolution to a Court of competent jurisdiction or the UR, the outcome of which cannot be predicted with certainty.
- 1.7 NIE therefore requests that the CC should not impose any cut-off date for the cost pass-through arrangement for connection subsidy costs. Any connection costs incurred by NIE during the remainder of RP5 should be allowed in full.

2. HOUSING SITES >12 DWELLINGS

- 2.1 Both the UR's Final Determination (at paragraph 8.18) and NIE's Statement of Case (Annex 5A.5, paragraph 12) note the requirement for a housing site RAB to enable NIE to give effect to the UR's decision to retain standard charging (known as the Standard Connection Charge) in light of lobbying from the Construction Employers Federation (CEF).
- 2.2 This Standard Connection Charge is based upon the average cost of connections aggregated for all completed developments. In practical terms, there can be a considerable time period between incurring the cost of establishing the necessary infrastructure (to supply a housing development) in the first instance and recovering the costs. The Utility Regulator has recognised this issue, and has agreed to provide a 'housing site' RAB to NIE to facilitate this forward investment.
- 2.3 The housing site RAB facilitates the funding of forward investment needed to put in place the entire infrastructure necessary to provide supply to all dwellings within housing sites which have 12 or more domestic dwellings. The Standard Connection Charge is set each year by dividing the total completed infrastructure costs incurred in the previous year by the number of dwellings planned for these sites. The housing site RAB is calculated on an annual ex post basis to reflect the actual expenditure

incurred net of contributions received through Standard Connection Charges within each preceding year.

- 2.4 Without a housing site RAB, NIE will not be in a position to provide forward investment to enable standard connection charging to continue. If the housing site RAB is not reflected in NIE's charge restriction conditions, the UR will need to withdraw its decision to retain standard connection charging as set out within the 2013 Statement of Connection Charges approved by the UR on 1 October 2013. Any existing liabilities in this area would need to be recoverable to reflect the legacy policy. It is unlikely that any decision by the UR to withdraw standard connection charging could be consulted on and implemented in the CC referral timeframe.
- 2.5 Actual expenditure incurred net of contributions received in respect of housing sites is subject to the volume and mix of projects completed and can vary significantly year on year. Net costs in 2011/12 and 2012/13 were £1.2 million and £0.8 million respectively.
- 2.6 The PD makes no provision for – indeed does not mention – the housing site RAB. NIE requests that this oversight is addressed in the CC's Final Report. Given that the net costs can vary significantly year on year, NIE requests that provision be made for the allowance to be calculated on an annual ex post basis to reflect the actual level of net expenditure incurred and that NIE's charge restriction conditions are amended accordingly.

3. NON RECOVERABLE ALTERATIONS

- 3.1 NIE's £19.7 million forecast for non recoverable alterations has been reduced in the PD to a proposed allowance of £16.5 million (i.e. a shortfall of £3.2 million). The CC states that it did not identify any good reason why these costs should be treated as pass through and has decided to treat these costs as core network investment expenditure with an upfront regulatory forecast and subject to the general cost risk-sharing mechanism (see paragraph 9.69 of the PD). While NIE considers that there are reasonable grounds for a pass through allowance in relation to non-recoverable alterations, NIE is prepared to accept an adequate ex-ante allowance.
- 3.2 The CC determined the quantum of the proposed ex ante annual allowance of £3.3 million on the basis of the midpoint between the average annual expenditure for RP4 (£3.7 million) and the outturn expenditure for 2012/13 (£3.0 million).
- 3.3 NIE accepts that it should be incentivised to be efficient but the CC's approach to calculating the average cost to set the ex ante allowance does not fairly reflect overall data. The approach taken by the CC attaches a disproportionate weighting to the 2012/13 outturn figure and, in our submission, is an inappropriate basis for deriving an annual allowance for setting a five year period. The CC has provided no reasoning for attaching 5x greater weight to the 2012/13 outturn than to other outturn years and, in NIE's submission, there can be no good reason to do so.

- 3.4 NIE submits that the CC should use the annual average expenditure of the six year period to calculate a level of allowance (that is the five years of RP4 plus 2012/13). That would equate to £3.6 million per year or £19.8 million over 5.5 years.

CHAPTER 11

RATES

- 1.1 The CC outlines its provisional assessment in respect of rates in paragraphs 5.325 to 5.328 of the PD.
- 1.2 The CC notes that the Northern Ireland Finance Minister has announced that a NI ratings revaluation will take place in April 2015 and that the outcome of this revaluation is unknown. Despite this, the CC states that:
- "We do not consider that uncertainty about the outcome of the potential Northern Ireland ratings revaluation is sufficient to mean that it would be inappropriate for NIE or consumers to face financial risk around a regulatory forecast of NIE's rates liability."*
- 1.3 The CC has provisionally determined that NIE's rates should be subject to an ex ante allowance rather than the cost pass-through mechanism. NIE and its customers will therefore be exposed to the 50/50 cost risk-sharing mechanism to the extent that the ratings revaluation results in a rates bill that exceeds, or is lower than, the ex ante allowance.
- 1.4 NIE accepts that it will have some opportunity to make representations as part of the revaluation process. But that nevertheless leaves a very considerable margin of discretion on the part of those conducting the revaluation to impose a rates bill that is very substantially different (and more likely greater) than the ex ante allowance determined by the CC.
- 1.5 NIE's rating liability is determined by reference to two elements, comprising (a) the net annual valuation (NAV) and (b) the district and regional rates that are applied to the NAV by the rating office. NIE will, if and where possible, endeavour to do everything it can to minimise the NAV, although it is very unclear at present how much influence it can exert. But the district and regional rates applied by the rating office are entirely outside the control of NIE.
- 1.6 NIE's exposure to risk is illustrated by the rates revaluation assessment which took place in 2008/09 and resulted in an increase in the net annual valuation (NAV) from £25 million to £30.5 million – an increase in excess of 20%¹. This is despite the fact that NIE invested very considerable resources in relation to that revaluation assessment, including employing an external ratings consultant to assist NIE with its case.

¹ This increase was due to take effect from 1 April 2010, a date subsequently revised to 1 April 2011 and then further postponed.

- 1.7 The PD reveals a willingness to expose NIE to a level of financial risk that is disproportionate to NIE's ability to influence the outcome. It gives rise to an unnecessary degree of regulatory risk and, as such, is not apt to protect the interests of consumers.
- 1.8 Moreover, the CC's approach is also at odds with that adopted in GB by Ofgem to which the CC refers in paragraph 5.317. Ofgem's position on business rates for RIIO ED1 is set out in its March 2013 strategy decision² as follows:
- "Our decision on business rates is to introduce the same incentivisation approach to business rates as applied to transmission and gas distribution licensees. This effectively retains business rates as a pass through from the next revaluation due in 2017, subject to DNOs demonstrating that they have taken appropriate actions to minimise the valuations. As a result of our decision of October 2012 to introduce measures to mitigate charging volatility, this mechanism will operate with a lag. In practice this will mean that an allowance is provided based on the expected value of the pass through cost for the eight years of the price control. The mechanism will adjust this ex ante allowance to true up for actual costs incurred, but with a two year lag. The true-up will take account of financing costs from the delay in recovery of actual costs incurred."*
- 1.9 NIE submits that Ofgem's proposed treatment of rates for RIIO ED1 is a more proportionate, and fairer, approach to incentivising NIE to keep its rates bill to a minimum in the context of the forthcoming revaluation. It should therefore be adopted by the CC in its Final Report in preference to the flawed approach proposed in the PD.

² See paragraph 4.17 of Ofgem's Uncertainty mechanisms annex: <https://www.ofgem.gov.uk/ofgem-publications/47070/riioed1decuncertaintymechanisms.pdf>

CHAPTER 12

INJURIOUS AFFECTION

- 1.1 Both NIE and the UR agree there is insufficient information available now to provide an upfront allowance for injurious affection costs in the period to 30 September 2017 pending the results of the cases before the Lands Tribunal.
- 1.2 The CC proposes¹ to make no allowance for injurious affection within the price control, but to make provision for the UR to amend the revenue control on NIE to include an upfront allowance once the results from the Lands Tribunal are known. The CC considers that NIE's costs can then be forecast with more confidence. This also reflects the UR's latest position.
- 1.3 The CC accepts² that NIE faces some regulatory risk with this proposal but does not consider it unreasonable. The CC suggests that the scale of regulatory risk is small by reference to NIE's opex forecasts for injurious affection, which the PD reports as £177,000 per year. The PD is however incorrect and appears only to take account of NIE's forecast for controllable opex costs (administrative costs) but not uncontrollable opex costs (i.e. claims settlement payments). In fact, NIE has forecast (albeit tentatively) injurious affection costs of £2.5 million per year. As a result, the CC has underestimated the scale of risk borne by NIE in this regard.
- 1.4 NIE is concerned that the CC's proposal would provide NIE with no effective legal recourse in the event that the UR were to fail to determine an adequate upfront allowance for injurious affection once the results from the Lands Tribunal are known. NIE's only option would be to seek judicial review of the UR's decision on the basis of (initially) a legal error. To limit the UR's discretion in relation to the determination of the future allowance, NIE requests that the CC specifies within its report the parameters and considerations to which the UR is to have regard when determining the allowance. This would serve both to discipline the UR (and increase the prospect of a well-founded decision in due course) and provide NIE with a more robust basis for any judicial review challenge by making clear to the court what criteria the UR should have applied in making its determination.
- 1.5 At a minimum, the provision should oblige the UR to set the allowance equal to a fair and reasonable assessment of the aggregate costs that NIE has incurred and expects to incur in the period 1 April 2012 to 30 September 2017, acting efficiently, in relation to defending and, if appropriate, settling claims relating to injurious affection. This allowance should include provision for:

¹ Para 5.345 of the PD.

² Para 5.346 of the PD.

- payments by NIE to landowners (e.g. in GB, electricity companies seek to convert wayleaves to easements by paying a capitalisation of the wayleave rent plus compensation for injurious affection);
- costs incurred by NIE in establishing IT systems and processes necessary to efficiently administer injurious affection claims in the period to 30 September 2017 and beyond;
- external consultancy costs (including expert valuation support and support from Counsel) incurred by NIE in the period 1 April 2012 to 30 September 2017 in defending and settling claims (including where applicable such costs associated with a Lands Tribunal application);
- internal legal, engineering and administrative costs incurred by NIE in the period 1 April 2012 to 30 September 2017 in defending and settling claims (including where applicable such costs associated with a Lands Tribunal application); and
- any other costs reasonably incurred by NIE in dealing with injurious affection claims.

- 1.6 In making that assessment, the UR should be obliged by the CC to take account of costs already incurred by NIE in the period since 1 April 2012, the specific cases before the Lands Tribunal, other outstanding claims already lodged with NIE, a reasonable estimate of the volume and nature of future claims in the period to 30 September 2017, as well as any relevant experience in England and Wales.
- 1.7 Furthermore, NIE requests the CC to specify a trigger for the obligation on the UR to determine the allowance. NIE considers this should be triggered in the first instance by NIE submitting its assessment of costs for the period 1 April 2012 to 30 September 2017, with an obligation on the UR to determine the allowance within 3 months. In determining such an allowance, provision should also be made for a re-opener, so that the allowance can be reconsidered in the event of any subsequent and significant change in NIE's legal liabilities in this regard (such as any future relevant Lands Tribunal determinations).
- 1.8 NIE requests that the CC adopts these specifications in its Final Report. Taking this step would reduce NIE's exposure to undue regulatory risk and is therefore in the public interest.

CHAPTER 13

D_t COSTS

1.1 The CC proposes to remove the 'catch all' provision (viii) of the D_t term (see paragraph 5.357 of the PD).

1.2 The CC proposes that the licence modifications proposed to remove provision (viii) are accompanied with, among other things:

"a provision to allow NIE recovery of the specific costs approved under previous regulatory decisions by the UR, as specified in [paragraph 5.356(a)]¹."

1.3 Paragraph 5.356(a) specifies the following items:

- (a) SONI deficit repair;
- (b) specific network management system costs in the period to December 2013 that have been approved by the UR;
- (c) costs in relation to the North-South interconnector in the period to December 2013 that have been approved by the UR;
- (d) costs of specific renewable projects approved by the UR for the period to December 2013;
- (e) the residual of the smart grid trial costs approved by the UR; and
- (f) capex efficiency payments.

Value of D_t items

1.4 Paragraph 7.40 of the PD states that expenditure under items (a) to (d)² above totals £8.5 million, a figure that the CC has obtained from Table 16.7 of NIE's Statement of Case (SoC). This sum requires updating, since the SoC assumed a start date for the price control of 1 January 2013, whereas the PD proposes a start date of 1 April 2012.

1.5 We set out below the amount of allowances approved by the UR which were unspent as at 1 April 2012 (and which therefore require to be carried over to the RP5 price control).

¹ The paragraph cited in the CC's PD is 5.357(a). The reference should be to paragraph 5.356(a), and not 5.357(a).

² Item (e) is not mentioned.

Table 13.1: RP4 carry-over items – unspent allowances as at 1 April 2012

Item	Amount unspent at 1 April 2012 £'000	
	Nominal prices	9/10 prices ¹
SONI deficit repair	5,012	4,313
Network management system	3,822	3,318
North-South Interconnector	4,755	4,095
Renewables baseline opex	301	265
Smart grid trial	166	142

Explanatory note:

1. The calculation to rebase the nominal figures in this table to 9/10 prices takes account of the phasing of the approvals / expenditure. We can provide the CC with our calculations, should these be required.

Capex efficiency payments

- 1.6 The CC has stated that it is not going to determine the outstanding amounts allowable under the RP4 capex efficiency incentive mechanism and will leave it to the UR to do so.
- 1.7 NIE requests that the CC's Final Report includes a specific provision for amounts so determined to be added to the RP5 entitlement.

Additional Dt items, already approved

- 1.8 The list of cost items set out at paragraph 5.356(a) is incomplete. There are a number of additional items for which NIE had received an approved allowance from the UR which had not been fully spent by 1 April 2012. Details of the unspent amounts are set out in the table below, and we request that the Final Report provides for these amounts to be added to the RP5 entitlement.

Table 13.2: Additional RP4 carry-over items (9/10 prices)

Item	Amount unspent at 1 April 2012 £'000 ¹
Market opening legacy system costs – pre 21 May 2012 costs ²	471
Enduring Solution – transitional costs ³	727

Explanatory notes:

1. Nominal prices are not presented here as there is no phasing issue, unlike in Table 13.1.
2. This item relates to approvals for costs in respect of the market opening legacy systems in place prior to the go-live date (20 May 2012) of the Enduring Solution system. It covers the period 1 April 2012 to 20 May 2012.

3. This item relates to transitional costs incurred, which the UR approved for the months immediately post go-live of the Enduring Solution system.

1.9 In addition, NIE received approval from the UR on 21 October 2013 for expenditure of up to £2.3 million (£2.1 million in 2009/10 prices) on low cost reinforcement projects on the 33kV network (see Chapter 15, paragraph 1.8.1). We request that the Final Report provides for this expenditure within the RP5 entitlement.

Additional Dt items, not yet approved

1.10 The renewables baseline opex allowance referred to in Table 13.1 above relates to costs NIE has incurred in the period up to 31 December 2012. NIE has continued, and will continue, to incur staff costs associated with renewables development activities³ at a run rate of approximately £30,000 per month (£24,000 in 2009/10 prices) from 1 January 2013 up to the date of the transfer of the transmission investment planning function to SONI.

1.11 We request that the CC's Final Report provides for these costs to be added to the RP5 entitlement. The exact amount will depend on the date of transfer to SONI (currently anticipated in April 2014, which would give an allowance of £0.36m in 2009/10 prices i.e. 15 months * £24,000 per month).

³ These include the continued development of the 110kV Medium Term Plan, and the ongoing development of the Renewable Integration Development Program.

CHAPTER 14

REVENUE PROTECTION INCENTIVE

Scope of the incentive arrangements

- 1.1 NIE's existing revenue protection arrangement permits it to retain 50% of the revenue recovered by NIE as part of its revenue protection activities. However, this arrangement relates only to illegal abstraction from certain non-domestic vacant premises.
- 1.2 The CC proposes (in paragraph 6.20 of the PD) to widen the scope of the existing arrangement to apply not only to revenue from cases of vacant non-domestic premises but also revenue that NIE has collected in other circumstances of illegal abstraction.
- 1.3 The CC is apparently unaware that, as presently proposed, its extension of the current incentive arrangements represents only a very minor change in scope to the existing arrangements. This is because the incentive proposed by the CC is framed in terms of the revenue recovered by NIE.
- 1.4 Under NI retail market procedures (as approved by the UR), NIE cannot recover revenue directly from customers for the majority of revenue protection activities. Rather, NIE instigates recovery on behalf of the relevant electricity supplier, through adjustments to meter readings. This means that, once the need for adjustments is identified by NIE, any revenue due for units of electricity illegally abstracted is administered routinely through wholesale and retail market settlement arrangements (i.e. through adjustments to IT system records to reflect units illegally abstracted). It then falls to electricity suppliers to pursue their customers for previously unbilled units.
- 1.5 The position with respect to de-energised non-domestic premises is different: these are not registered to any electricity supplier and therefore sit outside the normal market arrangements (and therefore cannot be administered routinely through market systems). As a result, this requires NIE to recover any revenues for illegal abstraction directly.
- 1.6 Approximately 95% of all monies recovered directly by NIE from its revenue protection activities relate to vacant non-domestic premises that fall within the scope of the existing revenue protection incentive arrangement. The CC's proposed extension of the scheme is likely to bring less than a further £20,000 per annum within the scope of the incentive.
- 1.7 The intent of the CC's proposal (that NIE and customers should each share 50% of revenue recovered by virtue of NIE's revenue protection activities) would better be achieved if it were based on 50% of the value of the electricity units identified as illegally abstracted by NIE in relation to its revenue protection activities. For simplicity,

the value per unit could be set as 50% of the standard domestic unit rate for regulated supplier¹ tariffs for the relevant year.

- 1.8 Modifying the terms of the proposed revenue protection incentive arrangement in this way would have substantial public interest benefits. It would provide NIE with a strong incentive to detect illegal abstraction of electricity from domestic premises and occupied non-domestic premises. As the general body of customers ultimately bear the cost of illegal abstraction, such a scheme would allow the benefits of detection to be shared between customers and NIE. As well as sharing the benefit of charging for previously unbilled units, customers also benefit in full from the prevention of any further illegal abstraction that would have occurred but for the intervention of NIE's revenue protection service.
- 1.9 NIE requests that the CC adopts this change to the revenue protection incentive arrangements in its Final Report.

Other points

- 1.10 As regards the detail of the CC's proposal, NIE seeks confirmation from the CC that it intends any 50/50 sharing to apply to revenues recovered net of:
- costs incurred by NIE in administering the incentive scheme (currently approximately £55,000 per annum); and
 - revenue recovered directly from third parties to cover the cost of network repairs associated with illegal abstraction.
- 1.11 As a final point, at paragraph 105 of Appendix 6.1 of the CC's PD, NIE believes the second reference to £500,000 is an error. The figure should be £250,000.

¹ Power NI.

CHAPTER 15

33KV REINFORCEMENT FOR SMALL-SCALE RENEWABLE GENERATION

1. INTRODUCTION

- 1.1 As the CC is aware, NIE and the UR have recently been exchanging correspondence relating to the treatment of 33kV reinforcement for small-scale renewable generation. There is an on-going dialogue with regard to:
- whether NIE's connection charging methodology should be modified to provide that applicants seeking LV connection may in certain circumstances be required to contribute to the cost of 33kV reinforcement; and
 - the assessment of whether, in a particular case and in accordance with NIE's licence obligations, it would be manifestly inappropriate for NIE to apply its current connection charging methodology to an application for LV connection.
- 1.2 Whatever the outcome of this dialogue, it is clear that NIE will be subject to significant costs associated with 33kV reinforcement for small-scale renewable generation and that these costs require to be funded in the RP5 price control.
- 1.3 In its PD, the CC invites further submissions from the parties on how the issue of 33kV network reinforcement relating to small-scale renewable generation should be dealt with within the price control design structure that has been provisionally proposed by the CC.
- 1.4 To date, NIE has considered there to be two options for the CC that would provide NIE with a mechanism to ensure the availability of cost allowances to fulfil its obligations in this regard:
- (a) the CC could provide an additional ex ante allowance of approximately £30 million as part of the allowance for distribution load related expenditure. Any later change in connection charging policy required by the UR (or confirmation of any alternative funding arrangement such as EU Funding) could then be reflected via an adjustment to the allowed RP5 revenues; or
 - (b) the CC could determine a suitable flexibility mechanism for distribution load related expenditure. NIE considered that the flexibility mechanism described as option (d) in paragraph 5.233 of the PD (automatic increases for work compliant with approved asset management documentation and specified unit costs) was capable of providing such flexibility to cater for future 33kV reinforcement works.

- 1.5 The CC has now provisionally determined that option (b) above will not form part of the price control design structure for RP5.
- 1.6 NIE submits that option (a) above (an ex ante allowance as part of distribution load related expenditure) is straightforward and logically correct. However, NIE recognises that the CC may have some reservations about making ex-ante provision of some £30 million for requirements that are currently uncertain without at least ring-fencing that allowance for these works. We have therefore sought to identify a workable alternative option that is consistent with the price control design favoured by the CC in its PD.
- 1.7 This had led us to consider some form of case-by-case approval. However, because of the relatively low scale of costs of some of the individual investments involved, the design of such a scheme should be proportionate in terms of limiting as far as possible the extent of regulatory involvement in what otherwise would be considered as investments that are relatively modest in scale.
- 1.8 NIE therefore proposes an approach that distinguishes between low and higher cost reinforcements:

Low cost reinforcements

- 1.8.1 Low cost reinforcement projects relate to changes in transformer control equipment with replacement of tap-change mechanisms and control relays within scope. With reference to the UR's recent approval of these types of 33kV reinforcement works dated 21 October 2013, the unit cost allowances on which this approval is based would be applied for any future similar work (subject to RPI adjustment) with total allowances based on actual volume of works completed. NIE would then automatically¹ secure allowances for such works subject to the investment meeting certain cost-benefit criteria (see below). In delivering the work, NIE would face financial exposure under the cost risk-sharing mechanism.
- 1.8.2 The UR's recent approval of certain 33kV reinforcement projects appears to have been based on its assessment of the benefits of these investments, with these defined at a relatively high level. NIE would propose working with the UR to formalise these criteria for the purposes outlined above.

Higher cost reinforcements

- 1.8.3 In respect of more significant projects, we suggest that the mechanism for case-by-case approval of these costs is modelled on the D5 mechanism (except for the need to involve SONI) but that it is separate from that mechanism. The D5 mechanism will form part of NIE's transmission licence whereas the mechanism for 33kV reinforcement costs will form part of NIE's distribution licence.

¹ Without submission to the UR.

- 1.8.4 However, to streamline the process and provide transparency for all stakeholders, the wider network benefit of such investment should be confirmed by reference to NIE's connection charging policy (amended as outlined below). This should therefore limit any subsequent consideration by the UR of case-by-case approval to:
- confirmation that NIE has adhered to its connection charging policy; and
 - making adequate provision for the recovery of costs.
- 1.8.5 The UR's timetable for providing case-by-case approval would need to be designed to enable NIE to meet its licence obligations with respect to the provision of connections.
- 1.8.6 As with the low cost reinforcements, NIE would face financial exposure under the cost risk-sharing mechanism.
- 1.8.7 We would expect to agree amendments to NIE's current connection charging policy to reflect the outcome of the dialogue with the UR referred to in paragraph 1.1 above. This amended policy would need to be fully in place by 1 October 2014.
- 1.9 For the period prior to 1 October 2014, it is important that, having dealt with the initial tranche of low cost reinforcement projects, NIE and the UR turn their attention to consider approval of higher cost 33kV reinforcements necessary for the connection of further small-scale generation.
- 1.10 In the first instance, NIE would propose to apply its existing connection charging policy and, in consultation with the UR, to decide on a case by case basis whether the application of that policy is manifestly inappropriate. That experience of individual cases would provide the basis for determining what amendments should be made to NIE's connection charging methodology (as referred to above).
- 1.11 It will be important that the RP5 price control makes provision for NIE to be funded for approved 33kV reinforcement work both in the period before and in the period after 1 October 2014.

CHAPTER 16

METERING CAPEX

- 1.1 The CC proposes an ex ante allowance for metering capex based on forecast volumes, with adjustment at the end of RP5 based on the actual volumes of work completed at an ex ante specified unit cost. NIE is content in principle with the application of such a mechanism.
- 1.2 However, structuring the allowance in this way makes it all the more important to ensure the accuracy of the constituent unit cost and fixed cost allowances. NIE has concerns about the adequacy of three of the unit costs specified by the CC in Table 10.10 (page 10-27) of the PD.
- 1.3 Separately, we would like to highlight other fixed costs that, while not included in our original submissions, should now be provided for under the more tightly defined mechanism proposed by the CC.

Certification and Recertification

- 1.4 The PD specifies the following unit costs:
- Certification: £23.72
 - Recertification: £23.72
- 1.5 The unit costs adopted by the CC for Certification and Recertification are based on NIE's early estimates (submitted as part of the BPQ in January 2011) of the time required by an electrician to complete each meter replacement which we now consider is unrealistic.
- 1.6 As advised to the CC on 18 September 2013, NIE's current view is that this time estimate should be increased, which in turn would increase the unit cost allowances to £28.05 for each of the Certification and Recertification work programmes.
- 1.7 These represent new work programmes that will commence in RP5: NIE plans to commence these programmes as soon as practical after the CC's Final Report. Consequently, we have now carried out more detailed assessment of how this work will be delivered than was available at the time the price control BPQ was prepared. Our updated cost estimates have been prepared on this basis.
- 1.8 The CC makes no reference to NIE's updated cost estimates and provides no reasoning for why they have not been accepted.
- 1.9 Furthermore, these new work programmes will require significant deployment of contractor resources. This will incur overhead costs that were not provided for in our

original BPQ submissions or in any other overhead allowance provided by the CC in its PD. These costs total £0.9 million and are made-up as follows:

Table 16.1: Metering capex overhead costs

Mobilisation costs (training, authorisation of contractors etc)	2014/15 only	£0.35 million
Contract Management (including administration costs)	3.5 years	£0.55 million
Total		£0.90 million

- 1.10 NIE requests that the CC makes provision for these additional costs in its Final Report.

Commercial

- 1.11 The PD specifies the unit costs of £205 for Commercial metering work.
- 1.12 The CC has chosen to revise the unit cost submitted by NIE for the completion of commercial metering work in RP5 to take account of latest information. This unit cost (£205) represents a c. 20% discount on NIE's equivalent forecast (£260).
- 1.13 NIE considers it is entirely reasonable that the CC should take account of the latest information available in informing future assumptions: indeed we have proposed that the CC similarly take account of the latest information in respect of the abovementioned programmes.
- 1.14 However, the CC has chosen to base the unit cost allowance for commercial works in RP5 only on the simple average of the outturn unit costs for 2011/12 and 2012/13. NIE is concerned that this may not be adequately representative of future costs.
- 1.15 Commercial metering works is made up of a wide range of activities and costs, with the apparent average 'unit cost' per job reflecting the particular mix of activities in the year in question. Our concern is that the mix of commercial work activities in recent years reflects the economic downturn, with a lower volume of higher cost metering activities than may emerge during RP5 in line with continuing economic recovery.
- 1.16 For example, the more expensive commercial jobs will typically involve installation of a new or upgraded metering system, rather than simply the replacement of ancillary equipment such as current transformers or data communications equipment. The requirement for new or upgraded metering is typically associated with the connection of a new commercial premises or increase in supply capacity for existing premises. Demand for these work types is more likely in times of economic growth.
- 1.17 On that basis, NIE considers that £230 would be a more appropriately balanced unit cost assumption for RP5, based on a simple average of a credible range of annual

costs in the range £200-£260. NIE requests that the CC makes this change to its unit cost assumption in its Final Report.

CHAPTER 17

ENDURING SOLUTION

- 1.1 The PD includes an Enduring Solution operating cost allowance of £23.3 million for the five-year period from April 2012 to March 2017 (see paragraph 10.179). This allowance compares with NIE's submission of £28.9 million and represents a shortfall of £5.6 million over the period.
- 1.2 NIE disagrees with the CC's assessment of NIE's submission in five areas:
- the reduction in allowances due to sharing of costs with ESB Networks;
 - the allowances proposed for NIE manpower costs required to support the retail market processes (and the recovery of associated pension costs);
 - NIE legacy cost reductions;
 - the assumptions made by the CC in relation to offshoring of SAP application support services; and
 - the application of RPEs and productivity improvement adjustments to Enduring Solution costs.

Each of these areas is addressed in turn below.

- 1.3 NIE also comments upon the proposed Licence modifications to remove the D_t term and the need for future adjustments to the price control in respect of market systems and the Enduring Solution (see paragraph 5.357 of the PD).

Support costs paid by ESB Networks

- 1.4 NIE submits that the PD overstates the savings which are being delivered through sharing of the TIBCO market messaging system with ESB Networks. This results in a £1 million shortfall in the NIE allowance.
- 1.5 Table 17.1 below summarises the relevant cost lines from the NIE submission, the Utility Regulator's Final Determination and the PD.

Table 17.1: Enduring Solution – Cost reductions due to sharing system costs with ESBN

£m	NIE Submission July 2012	UR Final Determination	PD
Apps Support – Non SAP	0.8	1.8	0.8
Infrastructure Support	2.4	2.7	2.4
Sharing with ESB Networks	0	(1.0)	(1.0)

- 1.6 The NIE submission on Enduring Solution prepared in July 2012 identified costs of £0.8 million for Non SAP Applications Support and £2.4 million for Infrastructure Support. This submission included all of the projected reductions in NIE operating costs which resulted from the sharing of the TIBCO platform with ESB Networks.
- 1.7 In its Final Determination, the Utility Regulator adopted the approach of maintaining the allowances for Non SAP Applications Support and Infrastructure Support at a higher level than the NIE submission¹ but recognised the cost savings via a separate £1 million reduction.
- 1.8 In the PD, the CC has set the Non SAP Applications Support and the Infrastructure Support allowances to the NIE submission figures, which include the TIBCO savings, but have also retained the £1 million reduction introduced by the UR.
- 1.9 The CC has provided no reasoning to support the retention of the £1m reduction introduced by the UR. NIE submits that this represents a double-count of the reductions and requests that £1 million is reinstated in the Final Report.

Internal costs to support market processes

- 1.10 The NIE submission included £4.4 million for internal resources required to meet its obligations in respect of the retail electricity market in Northern Ireland and the all-island wholesale electricity market in Ireland. The PD provides for an allowance of £3.4 million, creating a £1 million shortfall (or 26%) over the period.²
- 1.11 The PD allowance would fund 18.5 of the 25 FTEs NIE requires to ensure the market processes operate effectively.³
- 1.12 The CC takes the view that NIE should not be the point of contact for customer queries relating to meter reading appointments and has not therefore allowed funding for 1.5 FTE call centre staff required to deal with these queries.⁴ But as explained at

¹ This allowance was based upon their previous review of the NIE November 2011 submission, which did not include TIBCO savings

² PD, paragraphs 10.169 to 10.172 and 10.179

³ See NIE's Statement of Case, paragraphs 5.110 to 5.117

⁴ PD, paragraph 10.170

the Enduring Solution hearing with the CC⁵, suppliers do not have the degree of access to NIE appointment systems which would allow them to deal with same-day metering appointment changes or queries.

- 1.13 If NIE does not respond directly to these customer queries, they will be referred to the supplier, who will then call NIE on the customer's behalf. This will introduce additional complexity into the process and is likely to result in a greater volume of calls to the NIE call centre. NIE submits that a direct engagement with the customer to resolve meter related queries is the most cost efficient approach and will deliver the best service to the NI customer. To facilitate this, the manpower allowance needs to include costs for the 1.5 FTE call centre agents.
- 1.14 NIE submits that the CC has misdirected itself as to the scope of NIE's obligations and has, as a direct consequence, proposed an allowance that is inadequate to enable NIE to carry out its functions. NIE is required to provide the services for which it is seeking funding and the CC has identified no valid basis for withholding that funding.
- 1.15 The PD also makes no allowance for 1.5 FTEs in meter works administration and 1.5 FTEs in market facing functions. A reduction in resources involved in meter works administration will adversely affect the resolution of inconsistencies in the meter point data required for the successful operation of the electricity markets, leading to, for example, billing issues for suppliers and their customers. A reduction in staff involved in market facing functions will impact NIE's ability to support various market forums. This will lead to delays in decision-making processes and increase the time taken to resolve market impacting issues, resulting in a reduced level of service to suppliers and their customers.

Pension costs for internal resources

- 1.16 As discussed above, NIE's submission on Enduring Solution includes £4.4 million of costs for internal staff to operate the retail market processes. As highlighted in paragraph 10.115 of the PD, this £4.4 million did not include £0.5m of pension costs associated with these staff. This was to avoid double counting with the separate pensions allowance for NIE staff that was sought by NIE.
- 1.17 In the PD there is no separate allowance for current service pensions costs, which are deemed to be included in the indirect cost allowance.⁶ However, the indirect cost allowance relates to the core business only and excludes Enduring Solution.
- 1.18 Therefore, the recovery of relevant pension costs must be funded through the Enduring Solution allowance. However, because the CC's Enduring Solution allowance is based on NIE's submission (from which pension costs were removed) that allowance includes no amount in respect of pension costs.

⁵ Enduring Solution hearing held on 7 October 2013

⁶ PD, paragraphs 12.54 and 12.55(h) and Appendix 8.3 paragraph 4

- 1.19 This is a straightforward error that requires to be corrected in its Final Report. The Enduring Solution allowance should be increased by £0.5 million to reflect this omission of pensions costs from the PD.

NIE legacy reductions

- 1.20 NIE's Statement of Case included £1.4 million of savings in legacy IT support costs following Enduring Solution implementation. This updated a higher provisional estimate of £2 million, provided to the UR in November 2011. The UR adopted the earlier £2 million figure in its Final Determination, resulting in a shortfall of £0.6 million⁷. The CC has adopted the UR's Final Determination approach in the PD.
- 1.21 NIE has provided the CC with an analysis of actual Enduring Solution costs up to the end of October 2013. This data is presented in Table 10.13 of the PD. This analysis confirms that the legacy reductions are in line with the £1.4 million projection.
- 1.22 The CC has not provided any reason why it has adopted an early estimate of legacy IT support cost savings rather than the actual savings which emerged following detailed analysis and decommissioning of the legacy applications.
- 1.23 NIE therefore submits that the actual legacy reduction amount of £1.4 million should be used for the purposes of the Final Report.

Offshoring of SAP Support services

- 1.24 The SAP Applications Support Allowance included in the PD is based upon a much more significant degree of offshoring than is assumed in the NIE submission.
- 1.25 NIE submits that offshoring to this extent will give rise to a very high level of risk to the operation of the retail market and is not therefore in the public interest. NIE further submits that even aggressive offshoring is unlikely to deliver the cost reductions anticipated by the CC.
- 1.26 The table below summarises NIE's submission and the PD allowance with respect to core SAP Applications Support⁸.

Table 17.2: SAP Applications Support – NIE submission and PD allowance

£m	2012/13	2013/14	2014/15	2015/16	2016/17	Total
NIE submission	2.69	2.49	2.24	2.02	2.02	11.46
PD allowance	2.56	2.12	1.68	1.27	1.06	8.68
Shortfall	0.14	0.37	0.56	0.75	0.96	2.77

⁷ NIE SOC, paragraphs 5.120 and 5.122, page145.

⁸ The analysis does not include £1m allowed for new developments to facilitate the calculation of daily rates for core support staff

- 1.27 The annual allowance drops from £2.56 million in 2012/13 to £1.06 million in 2016/17, a reduction of £1.5 million (59%). NIE consider this to be an unachievable reduction in support costs, particularly in light of the criticality of the Enduring Systems in supporting the NI retail market. This must also be considered in the context of an NIE submission which includes SAP support costs well below Gartner expectations⁹, as noted in the PD.¹⁰
- 1.28 [REDACTED]
- 1.29 As discussed with the CC at the Enduring Solution hearing¹¹, NIE has a very lean contract management organisation and is not resourced, or funded, to undertake the additional management activities required for a mainly off-shored service delivery model. NIE took advice from external sources in advance of the managed service procurement undertaken in 2009¹². Expert opinion confirmed that significantly more effort is required to effectively manage the increased risks of an offshore operation.
- 1.30 The replacement of locally based, highly skilled jobs with offshore service provision is complicated by the TUPE legislation protecting existing staff. In addition, the risks associated with transferring services in the event of non-performance by the managed service provider (to another provider or the exercise of step-in rights) is significantly increased when service is being delivered from an offshore location.
- 1.31 [REDACTED].¹³
- 1.32 The PD adopts the position that most of the resources providing the SAP support service could be moved offshore and that this would inevitably result in a significant cost reduction¹⁴. On the basis of our experience during the previous tender process, NIE does not believe this to be a valid assumption.

⁹ Gartner Research Note: The Four Laws of Application Total Cost of Ownership

¹⁰ Appendix 10.1, paragraph 31

¹¹ Enduring Solution hearing held on 7 October 2013

¹² Gartner and Grant Thornton

¹³ [REDACTED]

¹⁴ PD paragraph 10.159

- 1.33 Successful operation of the SAP system is central to the operation of the retail market. The implications for customers of a major system failure or a degradation in performance would be significant. If the system became unavailable, customers would be unable to switch supplier, suppliers would not receive meter readings and would be unable to bill customers accurately, customers would be unable to request meter works and loss of data aggregation facilities would stop operation of the all-island wholesale market.
- 1.34 NIE's Enduring Solution assumed an appropriate degree of offshoring in technical support areas which are generally accepted as being appropriate for offshore delivery. The level of offshoring envisaged in the PD would increase the risks to successful operation and NIE believes that it is not in the interests of consumers and the wider NI economy to be exposed to this level of risk.
- 1.35 NIE submits that the CC has failed to have regard to the risks associated with offshoring to the very significant degree implied by its proposed allowance. The CC should reconsider whether it is in the public interest to promote such a significant degree of offshoring of the Enduring Solution SAP Application support services and, if so, should explain its reasoning in support of such a conclusion.

Application of Real Price Effects and productivity improvement adjustments to the Enduring Solution allowance.

- 1.36 The PD adjusts a number of NIE's cost allowances to take account of RPEs and productivity improvements and it includes Enduring Solution as a category of cost which should be subject to these adjustments.
- 1.37 Table 17.3 below summarises the provisional allowance for Enduring Solution before and after the application of RPE and productivity adjustments. The adjustments reduce the allowance to £21.9 million for a 5-year period, which results in a shortfall of £7 million when compared to the NIE submission figure of £28.9 million.

Table 17.3: SAP Impact of RPE adjustment on Enduring Solution allowance

£m	2012/13	2013/14	2014/15	2015/16	2016/17	Total
ES allowance	5.2	5.0	4.7	4.3	4.1	23.3
Adjusted for RPEs	4.9	4.7	4.4	4.1	3.8	21.9

- 1.38 The Enduring Solution operating costs are new costs which only began to be incurred in 2012/13. The NIE submission was prepared using actual costs incurred in 2012/13 prices, converted to the 2009/10 price base. Therefore it is not appropriate to adjust the allowance to recognise notional differences between NIE's costs and RPI in the period from 2009/10 to 2012/13. Nor is it appropriate to apply productivity adjustments during a period prior to the service commencing.

- 1.39 NIE requests that the CC reconsiders the application of RPE and productivity adjustments to the Enduring Solution allowance within the Final Report.

Licence modifications to remove the D_t term

- 1.40 The PD proposes that the removal of the D_t term will be accompanied by the introduction of a new provision to allow the UR to make adjustments to the price control in the event of significant changes to the market systems service that NIE is required to provide.¹⁵ NIE welcomes this proposal as an important component of the price control arrangements. However, to avoid any ambiguity, NIE would like to clarify the circumstances under which such a provision would apply.
- 1.41 Additional costs relating to the Enduring Solution will emerge during RP5 which are currently unquantifiable but which are not directly driven by changes to the service NIE is required to provide. NIE has previously advised the CC that the costs of major system upgrades were not included in the Enduring Solution submission and expects that such costs would be separately recoverable during RP5.¹⁶
- 1.42 For example, in considering NIE's Non Network capex submission, the CC removed NIE's estimate for a SAP IS-U upgrade because the costs were still uncertain and the business case had not yet been finalised.¹⁷ NIE is content with this approach provided that the new provision will facilitate a future approval request to the Utility Regulator for any such significant vendor driven upgrade projects.
- 1.43 NIE requests that the CC reflects this wider definition of changes which could result in an adjustment to NIE's price control in the Final Report.

¹⁵ PD, paragraph 5.357

¹⁶ NIE Supplementary Submission Annex 3 paragraphs 3.13 to 3.15

¹⁷ PD paragraph 10.54

CHAPTER 18

FUNDING INNOVATION

- 1.1 The CC has provisionally decided that the public interest is best served by making no specific additional allowance for NIE to undertake R&D into the application of 'smart' network technologies.
- 1.2 NIE submits that this aspect of the PD places NIE at a considerable disadvantage relative to the GB DNOs which receive additional revenue for R&D funding and against whom NIE is benchmarked.
- 1.3 In any event, there is no detriment to customers overall in providing an R&D allowance as there can be no doubt that R&D is a benefit to customers in the shorter and longer term.

Impact on benchmarking

- 1.4 The PD places considerable emphasis on the benefits of benchmarking NIE against the GB DNOs. The CC has relied upon comparisons of costs between NIE and the GB DNOs for the purpose of its cost assessment, in particular for indirect costs and IMF&T costs. Moreover, it proposes increased regulatory reporting based on Ofgem's RIGs in order to facilitate future benchmarking of NIE's performance against that of the GB DNOs.
- 1.5 In the context of its discussion of R&D funding, the CC notes (at paragraph 10.217 of the PD) that the use of benchmarking analysis in price control reviews provides some incentives for improvements that can help reduce costs.
- 1.6 NIE accepts that – all else being equal – it needs no special incentive to innovate in line with the GB DNOs. It will be benchmarked against them and will be disadvantaged if it has fallen behind.
- 1.7 But the position is not equal. The GB DNOs are given a substantial extra allowance for R&D and other innovative activities. Moreover, Ofgem has recognised that conventional price control arrangements based solely on cost incentives do not deliver technical innovation and has put in place separate funding arrangements for GB DNOs in both DPCR4 and DPCR5¹ to prepare for changes to facilitate growth of renewable and distributed generation. Ofgem continues to see innovation as central to RIIO-ED1.
- 1.8 As noted in paragraph 10.215 of the PD, these schemes are not included in the GB DNOs core regulated costs and therefore the CC's benchmarking analysis of indirect costs and IMF&T costs do not provide equivalent funding for NIE.

¹ Innovation Funding Incentive (IFI) in DPCR4 and Low Carbon Networks Fund (LCNF) in DPCR5.

- 1.9 It follows that the CC needs to adopt one of two approaches. Either:
- the CC should provide an extra revenue allowance for R&D equivalent to that provided by Ofgem for the GB DNOs; or
 - the benchmarking data from the GB DNOs needs to be adjusted to take account of the difference between NIE and GB DNOs in terms of the opportunity for the GB DNOs to conduct R&D and other innovation activities.
- 1.10 The CC's provisional decision in relation to the funding of R&D adopts neither approach. The decision is therefore incoherent and requires to be corrected in the CC's Final Report.
- 1.11 For the reasons set out below, NIE submits that the first approach – providing an extra revenue allowance for R&D – is the approach that aligns more closely with the public interest.
- 1.12 In this regard, we note that the PD contemplates (but provisionally rejects) an option which would involve:
- "A special allowance for R&D of £0.5 million per year on a 'use it or lose it' basis (i.e. an allowance of £0.5 million per year, but with a provision for a future revenue adjustment to claw back any amount of this allowance that is not spent on R&D). Under this approach NIE would report to stakeholders annually, through a publication on what it has done with the R&D allowance."*
- 1.13 While this would represent only some 50%² of the funding available to an equivalent GB DNO, NIE confirms that this option would be acceptable to NIE for RP5, as a necessary first step in addressing the deficit in funding of such R&D activities in NI compared to that available to equivalent GB DNOs. We request the CC to make this change in its Final Report.

Public interest – the need for R&D

- 1.14 In the light of criticism (in paragraph 10.216 of the PD) that NIE did not provide detailed information on how it proposed to spend an R&D allowance and why this expenditure was likely to be in consumers' interests, we set out in this section why NIE considers the public interest is best served by making provision for R&D activities. The following section sets out the immediate priorities identified by NIE for R&D in RP5.
- 1.15 Contrary to the view expressed in the PD, NIE submits that it is in the public interest for the RP5 price control to provide a better balance between the short term benefits of reducing costs to customers during RP5 (by providing no funding for R&D) and

² GB DNOs are eligible to spend up to 0.5% of revenue on IFI projects which would equate to approximately £1 million per year if applied to NIE.

medium to long-term considerations that are necessary enablers of government energy policy.

- 1.16 In this regard, the CC's apparent³ reliance on cost benchmarking to incentivise NIE to undertake R&D, even with no specific allowance for it, appears to miss the point that such incentives do not extend to delivering important aspects of government energy policy, such as actively facilitating the connection of renewable generation and wider environmental and economic public interest benefits. As referred to above, it was for that reason that Ofgem has recognised that conventional price control arrangements are insufficient to promote necessary changes in the electricity network, which has resulted in separate arrangements being established for GB DNOs to promote R&D and other innovative activities.
- 1.17 The achievement of government targets for sustainability depends on radical changes in the design and operation of existing distribution networks. In NIE's view, such change can only be delivered in practice through regulatory arrangements that are fully focused and aligned with government energy policy.
- 1.18 Unless NIE conducts R&D during RP5, electricity customers in NI bear the risk that the design, operation and commercial arrangements governing the distribution network will present a barrier to the pace of change in emerging technologies that are actively encouraged by government initiatives and incentives. These include facilitating consumer-led demands such as electric vehicles (including their potential role in energy storage), micro and small scale generation etc, as well as the potential benefits offered by smart metering to the distribution network.
- 1.19 More generally, electricity customers in NI run the risk of reduced quality of supply, higher connection charges (e.g. for customers with renewable generators) and higher capital investment in the medium to longer term than might have been the case if sufficient R&D to assess emerging technologies had been invested upfront.
- 1.20 Apart from the medium to long term risks outlined above, NIE is already witnessing the impacts of changing demands on the distribution network driven by government incentives for small scale generation. In addition, third parties continue to seek to collaborate with NIE to research and develop other emerging technologies, such as energy storage developments, which could offer mutual benefits in the long run for electricity customers in NI and third-party developers, as well as societal benefits for job creation and the wider NI economy.

R&D – immediate priorities for RP5

- 1.21 We outline in this section NIE's immediate R&D priorities for RP5.

³ Para 10.217.

Identify and investigate developing active network control technologies

- 1.22 To facilitate maximum penetration of small scale generation on the 11kV network requires the development of advanced active network control and voltage control systems that can re-configure the state of the network, and the connected generation, in response to varying network demands and generator output conditions.

Investigate technical challenges and the potential benefits of Energy Storage

- 1.23 To investigate the feasibility of connecting energy storage devices on the distribution network to manage the output of variable generation (such as wind turbines) and improve the contribution of embedded generation to security of supply on the distribution network.

Development of commercial arrangements.

- 1.24 To consider potential commercial models to allow NIE to contract with specific embedded generators, energy service providers and demand customers in areas with limited network capacity to enable NIE to better manage energy flows (e.g. demand side management) in response to network issues. Such commercial arrangements are essential to ensuring that the benefits of technical innovations can be utilised in practice by NIE as alternatives to conventional expansion of the distribution network

Assimilate and collaborate with learning from other DNOs

- 1.25 To consider relevant learning emerging from the LCNF-funded R&D being undertaken by GB DNOs and consider opportunities for this to be applied by NIE. Continue to work in collaborative research with industry, academia and other DNOs on other areas of common interest.
- 1.26 The public interest benefits that arise from undertaking this work in RP5 include:
- lower DUoS charges for all electricity customers (because of lower network investment costs);
 - environmental benefits (because of the reduced need for network expansion as well as increased contribution of renewable generation to meeting government targets to reduce emissions);
 - lower connection costs for customers with small scale generators and other new technologies;
 - connection of new technologies to the network managed without compromising quality or security of supply experienced by electricity customers; and

- other societal benefits for job creation and the wider NI economy.

1.27 With specific funding, some of these benefits are likely to begin to materialise during RP5 with consequential benefits to customers.

CHAPTER 19

CAPITAL ALLOWANCES – CA_t TERM

- 1.1 We note that, at paragraphs 14.26 to 14.27 of the PD, the CC provisionally concludes that:
- NIE has not shown that the UR has, in the past, acted incorrectly or inconsistently in the application of the CA_t term with a sufficiently material impact to justify an adverse public interest finding; but
 - It is important to clarify the meaning and effect of the CA_t term for the future.
- 1.2 NIE makes the following submissions as to how the CA_t term should be clarified, so far as relates to its future application:
- 1.3 The UR has, to date, argued that the CA_t term should be applied so as to assume that NIE has utilised all available capital allowances in the year in which they first become available. This assumption is generally favourable to consumers, since it leads to the maximum possible reduction in NIE's taxable profits in the year in which capital allowances first become available.
- 1.4 NIE proposes that, in future, the CA_t term should be applied on the assumption proposed by the UR, so as to maximise immediate benefits to consumers in the manner outlined above.
- 1.5 But if, in practice, NIE does not utilise all its capital allowances in the year in which they first become available (e.g. because deferral is more favourable to the corporate group of which NIE forms part), then, in applying the CA_t term in future years, any capital allowances which were assumed, for the purpose of applying the CA_t term in previous years, already to have been used in a previous year, should be assumed no longer to be available to NIE, so as to avoid any "double counting" of such capital allowances.
- 1.6 NIE submits that this solution would maximise benefits to consumers (by allowing them to take advantage of all available capital allowances as soon as they are available to NIE) whilst leaving NIE free to plan its tax affairs to the overall benefit of the corporate group of which it is a member, and protecting NIE from any risk of double counting of its capital allowances. NIE would be content to provide an appropriate reconciliation as between available tax allowances, and the allowances utilised in its tax assessment, as part of its annual tax reporting obligations to the UR.
- 1.7 This proposal could be achieved by modifications to the definition of the CA_t term in the Annex 2 licence conditions (e.g. by defining the term to cover all capital allowances available to NIE to be offset against any taxable profits in year n, less any

such allowances as were available in any previous year, but were not utilised to reduce NIE's taxable profits in any previous year).

1.8 In summary, therefore, NIE submits that the CC should:

- Find that the CA_t term of the Annex 2 conditions of NIE's licences may be expected in future to operate against the public interest by creating uncertainty, thereby contributing to a loss of confidence among investors in the clarity of the regulatory regime, and potentially operating to the detriment of consumers or of NIE's investors, in the terms contemplated in paragraphs 1.4 to 1.6 above; and
- Find that these adverse effects could be remedied by modifications to the CA_t term and by the adoption of related reporting obligations; and
- Propose modifications to give effect to NIE's proposals as outlined above.

1.9 Finally, we would point out that any licence modifications would need to be adopted in respect of both the transmission and distribution licences, with appropriate provision for the appropriate attribution of capital allowances to the transmission or, as the case may be, the distribution activity to which they are deemed to relate.

CHAPTER 20

INFORMATION TRANSPARENCY – RIGs

- 1.1 NIE submitted a paper¹ to the CC detailing those areas of the Ofgem RIGs that require tailoring to suit the NI context. We would welcome the opportunity to compare our views with those of the UR and agree on the RIGs exemptions as early as possible. We would also welcome early engagement on the ‘non RIGs’ areas of reporting².
- 1.2 NIE highlighted the need to give careful consideration to the development of the necessary business processes and IT systems to support the RIGs and the costs and resources required to do this. We have considered the stages required to adopt the Ofgem RIGs and we address each stage below:
- Approach to reporting for 2014/15;
 - Timeframe and costs for the adoption of full Ofgem RIGs;
 - Data assurance and Director sign off; and
 - Other concerns.

Approach to Reporting for 2014/15

- 1.3 NIE regards full reporting based on the Ofgem RIGs for 2014/15 as a completely impractical target. Based on the CC’s timetable the RP5 licence modifications are unlikely to be implemented in full before April 2014. Therefore the scope of the reporting requirements will not have been defined at the start of the reporting period. Notwithstanding this point, even if the ultimate scope of the RIGs were known already, it would clearly not be possible to put in place the necessary processes and IT systems in time for April 2014 (only 4 months away).
- 1.4 Indeed, the CC has acknowledged that deployment of the RIGs is a ‘step change’ in reporting. In addition, the UR has commented on the burden the Ofgem RIGs will put on NIE due to their extensive nature.
- 1.5 The scope of reporting requirements on NIE appears to be wider than the DNOs’ obligations and the reporting requirements for the ‘Non RIGs’ areas will need to be defined by the UR in cooperation with NIE. We consider it imperative that the

¹ Paper submitted on 14 November 2013

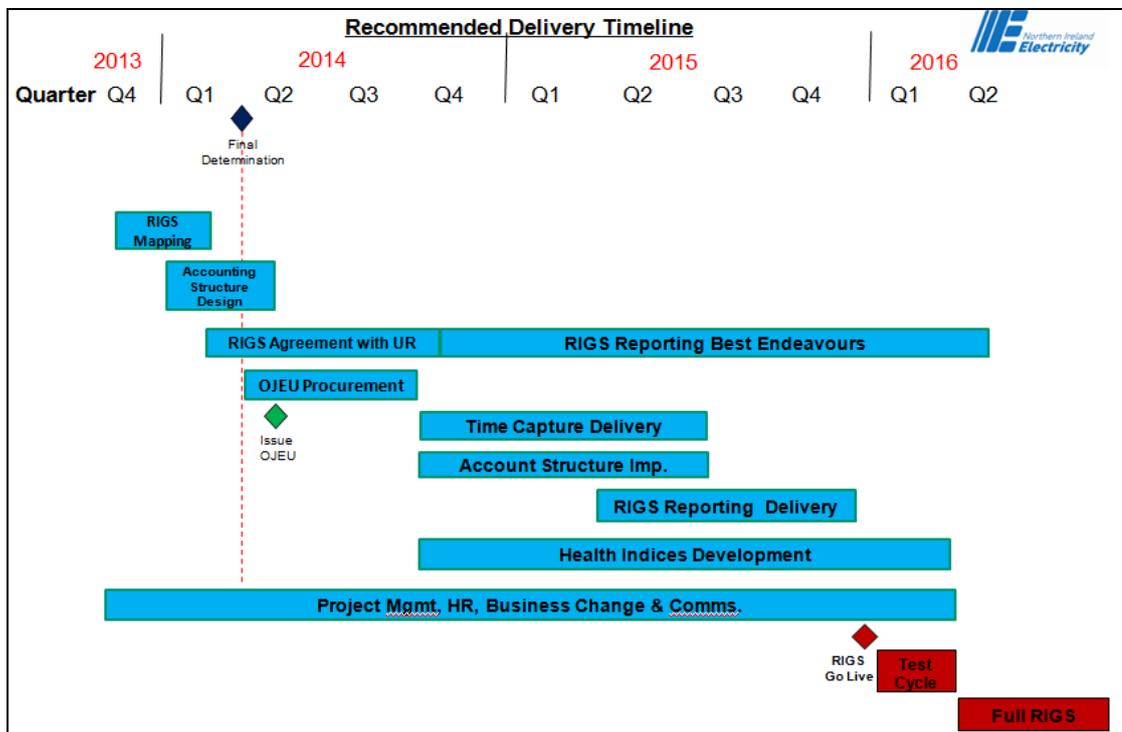
² In addition to the Ofgem RIGs, NIE will be required to deliver reporting for Transmission, Metering, Market Systems, NIE specific connections arrangements and investments to support the connection of renewable generation.

definitions and templates are agreed and fully consulted on prior to the start of a reporting period. This is in line with the approach followed by Ofgem.

- 1.6 We therefore propose that reporting for 2014/15 should be based on the existing reporting requirements defined in the NIE licences. NIE will engage with the UR to agree the reporting requirements and templates to allow new reporting to start taking place from 2015/16 on a best endeavours basis.
- 1.7 On this basis, a new licence condition with respect to the Ofgem RIGs should not apply for the reporting period 2014/15.

Timeframe for the adoption of full Ofgem RIGs

- 1.8 NIE has considered the impact on IT systems and business processes to facilitate the delivery of full RIGs. We consider that delivery of the RIGs will be the most significant 'business transformation' program NIE will have undertaken in years. We understand that the DNOs had 5 years to deal with similar complexity and achieve the same outcome.
- 1.9 NIE has considered the practical issues for such a delivery and has detailed the key stages in the timeline below. This program of work will require an extensive procurement process as well as significant changes to the NIE accounting structure. We consider the shortest practical delivery of such a program of work to be 2 years.



- 1.10 NIE recognises that the reporting year 2015/16 is a key year for the RP6 price review. However the full RIGs capability is not achievable within this timeframe. We therefore consider that the practical solution is to report using the RIGs structure on a

best endeavours basis for 2015/16. We will work closely with the UR to determine which aspects of the RIGs will be required to facilitate benchmarking for RP6 and we will endeavour to provide the equivalent information from the systems available.

- 1.11 NIE recommends that any licence condition specifies that the first reporting year based on full RIGS is 2016/17.

Costs for the adoption of full Ofgem RIGs

- 1.12 In scoping this program, NIE has also assessed the cost of delivery. Whilst NIE has scoped out the activities at a high level, it is difficult to determine an accurate cost of the program without knowing definitively the full scope of reporting, and in the absence of robust costs clarified through procurement processes. It is likely however that costs will be in the order of £10 million or more.
- 1.13 It is assumed that performance reporting and QoS reporting are as per the existing legal and licence requirements. Should this not be the case, relevant costs for these elements of the RIGS would additionally need to be factored in.
- 1.14 Due to the high level nature of the NIE cost estimate and the fact that the full scope of reporting requirements is undefined at this point, NIE does not consider that an ex ante allowance is appropriate or in the interests of the customer. NIE proposes instead a mechanism whereby:
- NIE is provided with funding to initially procure the services of a client side advisor to assist with scoping and procurement.
 - Delivery / outturn costs are then approved on the basis of robust competitive procurement.
 - Annual operating costs to support reporting requirements are approved based on efficiently incurred costs.
 - NIE updates UR regularly on progress and cost throughout the programme.

We consider this to be the least risk option for both NIE and customers.

- 1.15 NIE considers that this programme must be fully funded in order to achieve the CC's desired output of data transparency.

Data assurance and Director sign off

- 1.16 The CC proposes that Director sign off is required on the RIGs. Clearly any Director sign-off in advance of full RIGs implementation will require to be appropriately caveated.
- 1.17 NIE understands that in GB the data assurance aspect of the RIGs is undertaken by Ofgem (using an Examiner). NIE considers that in order to provide Director sign off, a

data assurance audit will be required on an annual basis. This cost would not have been captured in the benchmarking completed by the CC. Therefore we consider that an annual allowance is required for this activity. Based on previous audits completed, we estimate the annual cost of a data assurance audit would be £100,000.

Other concerns

- 1.18 As the reporting requirements on NIE appear to be wider than the DNOs' obligations, it is appropriate that an additional allowance should be provided for the 'non RIGs' reporting requirements as these activities are not included in the DNO benchmarking completed by the CC. These costs will be identified once the full scope of reporting is understood and can be recovered via the mechanism described at 1.14.
- 1.19 The CC has proposed a reporting year of April to March in line with the Ofgem RIGs. NIE has some practical concerns since this reporting period aligns neither with the tariff year in NI (October to September) nor with the NIE statutory accounting year. This is a cause of concern as it increases the level of reconciliation work required across the different reporting periods. We consider that this can be discussed as part of the engagement with the UR on the scope of RIGs.

CHAPTER 21

STRUCTURE OF CC'S FINAL REPORT

Introduction

- 1.1 The CC claims, at PD 1.4, that "the decisions of the CC made on the reference are binding on both NIE and the UR", citing Article 17 of the Electricity Order in support of this proposition. The context within which the CC makes this claim suggests that the "decisions" to which the CC is here referring are its decisions as to whether matters specified in the UR's reference operate against the public interest, and as to whether any identified adverse effect of such matters could be remedied by licence modifications. However, much of the CC's PD is expressed in terms which suggest that the CC also expects the UR to give effect precisely to its proposed modifications to the existing price control conditions of NIE's licences¹.
- 1.2 NIE is concerned that there is a risk that, if the CC were to adopt a similar analytical structure and presentation in its Final Report to that adopted in its PD, then it would remain unclear whether significant elements of its conclusions would be binding on the UR, and the UR might consider itself free to adopt licence modifications which giving effect to different substantive conclusions on many of the issues decided by the CC, provided only that the UR had had regard to the CC's report.
- 1.3 NIE considers that such an outcome would be very undesirable. NIE has looked to the CC to settle the substance of a new price control and thereby to resolve important areas of disagreement between the UR and NIE. Whilst NIE does not agree with the totality of the CC's PD², it is content to be bound by the CC's final determination as to the substance of how NIE's T&D prices should be regulated for the period addressed by the CC³. The CC already envisages that any new price control should take effect only in October 2014. If the UR declined to adopt the CC's conclusions, then that could well generate further disputes and delay.

¹ Indeed, the CC describes its document as a provisional "determination" (though this word is not used in the Electricity Order) and, in places, assumes that its proposals will (if adopted in its Final Report) be adopted into NIE's licences. See, e.g., PD Summary 15 ("...significant changes to the design of the price control will address the effects adverse to the public interest..."); PD Summary 43 (".. Our determination will set NIE's maximum allowed revenues..."); PD 5.124 ("...This clause will apply across all areas of NIE's expenditure..") . It is not clear to us whether the CC's references to its "proposed" modifications are designed to make clear that this is the CC's *provisional* determination, or whether the CC envisages that it would, in its Final Report, also refer to its specified modifications as "proposed" modifications; nor is it clear whether the term "proposed" is intended to imply a recognition that the CC's proposals may not be binding on the UR.

² NIE makes submissions as to how the CC should revise its provisional conclusions in the preceding chapters of the present submission.

³ Though nothing in the present submission is intended to give up any right which NIE might have to apply for judicial review of the CC's Final Report.

- 1.4 NIE submits that to create the risk of such an outcome is not only undesirable, but also unnecessary. It is open to the CC to frame its analysis and report in a different way, which would achieve the effect of more clearly binding the UR and NIE to its substantive conclusions. Indeed, NIE submits that it would be preferable for the CC to do so, since a differently framed report would better fit the overall scheme of Articles 15 to 17A of the Electricity Order.

The legislative provisions

- 1.5 NIE would refer the CC to the text of Articles 16 to 17A of the Electricity Order.
- 1.6 NIE submits that, taken together, the UR's reference and these statutory provisions require the CC:
- to decide whether any of the matters referred to the CC operates or may be expected to operate against the public interest⁴; and
 - if so:
 - to specify the adverse effects which those matters have or may be expected to have;
 - to decide whether those adverse effects could be remedied or prevented by licence modifications; and
 - if so, to specify modifications by which those adverse effects could be remedied or prevented.

The approach taken in the PD

- 1.7 In the present case, the CC has provisionally decided that certain identified features of Annex 2 to NIE's licences operate against the public interest or may be expected to do so (PD 3.52 to 3.76); it has specified its provisionally identified adverse effects (also PD 3.52 to 3.76, and summarised at PD 18.4); it has provisionally concluded that the adverse effects identified can be remedied by significant modifications to the existing Annex 2 conditions (PD 18.7) and it describes those proposed modifications in some detail and the reasons for them (PD Sections 5 to 13, and summarised at PD 18.7 to 18.43).
- 1.8 It is notable that, for the most part, the CC's formulation of the adverse public interest effects produced by the existing Annex 2 conditions is framed in broad qualitative terms (e.g. the price control conditions generate uncertainty, aspects of them are insufficient to protect the interest of consumers, they provide for an excessive cost of capital, and the duration of the RAB for short-lived assets operates

⁴ Please note that, for present purposes, NIE's submissions are confined to the parts of the UR's reference dealing with condition 42 and Annex 2 to NIE's licences. But similar issues arise in respect of the CC's task in dealing with the matters referred in respect of NIE's regulatory reporting obligations.

against the interests of future consumers) (PD 3.58 to 3.76). In contrast, the CC reserves its substantive assessment of how the new price control should be structured and the level at which it should be set to the sections of its report dealing with its proposed licence modifications (PD Sections 4 to 13).

The legal effect of this approach

- 1.9 We now turn to examine the effect which would ensue if the CC were to issue its Final Report in similar terms.
- 1.10 It is clear from Article 17(1) of the Electricity Order that, where the CC reports in the terms described in paragraph 17(1), the UR is required (subject to the provisions of Article 17) "to make such modifications of the conditions of [NIE's licences] as appear to [it] requisite for the purpose of remedying or preventing the adverse effects specified in the report". The UR is further required, before making such modifications, to "have regard to the modifications specified in the report."
- 1.11 Thus, Article 17 draws a clear distinction between the CC's findings of adverse effect, which are binding on the UR (since the UR is bound to make modifications directed at remedying or preventing those adverse effects), and the CC's findings as to what modifications should be adopted to address such adverse effects, where it is, at least initially, left to the UR to adopt such modifications as appear to it requisite for that purpose, provided only that it must have regard to the CC's recommended modifications. Thus, the UR may exercise its own judgment and discretion in choosing appropriate licence modifications, and the chief limitation on the UR is that its chosen modifications should appear to it to be requisite - i.e. effective and reasonably necessary - to remedy the adverse effects identified by the CC. Thus (in simple terms) the UR is not strictly bound to adopt the modifications specified by the CC if it judges other modifications to be preferable for the purpose of remedying any adverse effects identified by the CC.
- 1.12 The distinction between findings of adverse effect and specified modifications assumed importance after publication of the MMC's report on NIE's price controls at the end of RP1. On that occasion, a dispute arose which turned precisely on this distinction. The MMC had found that the matter referred to them (the continuation without modification of NIE's RP1 price control conditions) would operate against the public interest by enabling NIE to generate excess revenues from its T&D Business, relative to the £575 million of revenues which the MMC found, after investigation, to be apt to serve the public interest over the RP2 period. The MMC concluded that the adverse effect could be prevented by licence modifications, and proposed modifications designed to reduce the allowable revenues for RP2 to £575 million. The UR's predecessor, the Director General of Electricity Supply for NI, accepted that he was bound to remedy the adverse effect identified by the MMC. But he considered that the MMC's proposed allowance of £575 million for RP2 was too generous and decided to adopt a price control which provided only lesser revenues which he judged to be appropriate, after paying regard to the MMC's report. The Director General sought to justify this approach on the basis that the only adverse

effect identified by the MMC was that the unmodified price control could be expected to produce excessive revenues, and that the MMC had merely specified (i.e. recommended) that the new price control should be set so as to generate revenues of £575 million. According to the Director General, the CC's substantive assessment of NIE's revenue needs was to be understood as reasoning which supported its recommendation as to the specification of new price controls, but was not part of its findings of adverse effect. The Director General argued that his own proposed modifications were apt to prevent or remedy the adverse effect found by the MMC (excessive charges), but that he was not bound to follow their reasoning or recommendation as to the appropriate level at which a new price control should be set to remedy that adverse effect.

- 1.13 Faced with this response to the MMC report, NIE sought judicial review of the Director General's proposed licence modifications. NIE accepted that the Director General was bound only by the MMC's findings of adverse effect (and was obliged to have regard to, but not necessarily to adopt, the MMC's specified modifications). But NIE argued that, on its correct construction, the MMC's report found that the continuation without modification of NIE's RP1 price control could be expected to operate against the public interest by generating revenues in excess of the £575 million which NIE required to finance its activities, thereby exposing customers to excessive charges. Moreover, the MMC's reasoning as to why the existing T&D price control would operate against the public interest was based on a comparison of that price control with what the MMC judged to be an appropriate level of allowable revenue for NIE. Thus, the MMC's assessment of the quantum of the excess was part and parcel of the MMC's finding of adverse effect (and formed part of the reasoning in support of that finding); accordingly, licence modifications could not properly be said to be directed at remedying (or effective to remedy) that adverse effect unless they were designed to allow NIE to generate revenues of £575 million over the 5 years of RP2.
- 1.14 NIE's application for judicial review failed at first instance, but, on appeal, the NI Court of Appeal unanimously found in NIE's favour.
- 1.15 This precedent is of importance in the present case: if the CC were to frame its Final Report in the same way that it has framed its PD, the UR might well argue that it was bound, under Article 17, only to remedy the qualitatively framed adverse effects identified by the CC, but that it was free to do so in a substantively different manner from that proposed by the CC.
- 1.16 It is not clear whether the new Article 17A (introduced after the RP1/RP2 litigation described above) would assist the CC in preventing such an outcome, since Article 17A allows the CC to take the matter back from the UR, and make its own modifications, only in respect of such of the UR's proposed modifications "as appear to the Commission not to be the modifications which are requisite for the purpose of remedying or preventing all or any of the adverse effects specified in the report as effects which could be remedied or prevented by modifications." Thus, on the one

hand, the CC's power of intervention is itself constrained by the limits of the adverse effects identified by the CC⁵. On the other hand, the CC's power of intervention arises if the UR's proposed modifications appear to the CC "not to be the modifications which are requisite" (emphasis added) to remedy the relevant adverse effects. The inclusion of "the" in the wording of Article 17A suggests that the CC may legitimately intervene if the CC judges the UR's modifications to fall short of the best available modifications to achieve the relevant purpose, and this may provide the CC with grounds for intervention if the UR's proposed modifications were, in the CC's judgment, less appropriate than its own proposals. But, at the least, there is, as things presently stand, a risk that it will be unclear whether the UR is obliged to give effect to the CC's proposed modifications or not.

NIE's suggested approach as to how the CC should approach its statutory task

- 1.17 In these circumstances, NIE invites (indeed urges) the CC to reconsider its approach to its overall statutory task.
- 1.18 At PD 3.53 to 3.54, the CC rejected NIE's suggestion that it should approach its task by comparing the existing Annex 2 conditions with "the best possible" price control for the forthcoming period. The CC explains that it rejected that suggestion because:
- the CC cannot identify the best possible price control, because it does not have the resources to reach a theoretically perfect price control, and ideas as to what is the best form of regulation develop over time with experience and changing notions of best practice; and
 - the CC does not wish to intervene to alter the existing Annex 2 conditions where it does not have evidence that they operate against the public interest.
- 1.19 NIE is concerned that the CC may have misinterpreted NIE's suggestion. For the avoidance of doubt:
- NIE does not consider that it is necessary for the UR to devise a theoretically optimal form of price control. All that the CC needs to do (or can do) is to decide what form and level of price control it judges, on the available evidence, and in light of existing regulatory experience and expertise, to provide the best available means of balancing and attaining the UR's statutory objectives. Indeed, this is what the CC appears to have done in its PD. (See, for example, PD Summary 9, PD 1.14, and PD

⁵ It is also to be noted that the CC's power to intervene under Article 17A arises only at a very late stage in the licence modification process (after the UR has conducted a public consultation on its proposed modifications and just before they are adopted). Thus the invoking of the Article 17A process (e.g. to address a dispute as to the true construction of the CC report, so far as relates to the scope of the findings of adverse effect) would itself entail delays in the overall licence modification process. It is to be noted that, in the event, the RP2 price controls were not finally settled till several years into the RP2 period (PD 2.55).

5.145 to 5.223. In Section 5, the CC expressly accepts that it has sought to do what it judges best out of available options, albeit that none of those options is perfect.)

- NIE does not suggest that the CC should be looking to alter any part of the existing Annex 2 conditions which it does not find, on evidence, to operate against the public interest.
- NIE does not suggest that the pursuit of the UR's statutory objectives requires the CC to deal with matters which are of *de minimis* significance and which, even if they operate against the public interest, do not justify regulatory intervention to remedy them⁶.

1.20 In light of these considerations, NIE submits that it is open to the CC to approach its overall statutory task by:

- ignoring matters on which there is no evidence or which are of no more than *de minimis* significance;
- in other respects, framing its public interest findings (i.e. which elements of the Annex 2 conditions operate against the public interest and with what adverse public interest effects) by reference to the way in which the existing Annex 2 conditions fall short of what is required to achieve the best available price control for the post-RP4 period (so that the CC's assessment of what is the best available price control will inform its assessment of which elements of the existing Annex 2 conditions operate against the public interest, and what adverse effects ensue);
- deciding that such a "best available" price control can be achieved by licence modifications, and that the adverse effects can therefore be remedied by licence modifications; and
- specifying the particular form of modifications which it judges best (e.g. by drafting such modifications or describing as fully as possible what they should prescribe).

Questions arising from NIE's proposed approach

1.21 NIE's suggestion may prompt a number of questions. But examination of such questions shows that the approach advocated by NIE is legally and practically appropriate in the present case:

- The CC may ask whether this approach effectively renders redundant the question whether the identified adverse effects can be remedied by licence modifications, since, in deciding what would be the best available

⁶ And, indeed, a court would be unlikely to award any remedy in judicial review proceedings if the CC had omitted to deal with a matter which was of *de minimis* significance.

form of price control, the CC will, in practice, have limited itself, in answering the logically prior question (as to whether the existing price control produces adverse effects), to considering whether the existing price control conditions fall short of attaining the public interest benefits available from new price controls which could effectively be imposed via licence modifications. NIE accepts that its approach does encourage the CC to focus, from the outset, on how to achieve the best available public interest outcome which can be achieved via licence modifications. But, in NIE's submission, this is simply a reflection of the fact that, in a price control reference, the question whether adverse effects can be addressed via licence modifications is itself likely to be uncontroversial, and the bulk of the CC's effort will be directed at deciding what are the best available modifications. Indeed, the CC's present approach essentially combines two elements of the CC's task, in that the CC moves straight from its public interest/adverse effect findings in PD Section 3 to a consideration of what kind of new price control, and price control conditions, should be adopted instead, without separately assessing whether the identified adverse effects can, in principle, be cured by licence modifications (PD 4.1; PD 18.6).

- The CC may ask whether NIE's proposed approach represents an illicit attempt to tie the UR's hands beyond the extent envisaged by the Electricity Order, by wrapping up the solution to any public interest problem in the definition of the problem, so as to deprive the UR of any discretion as to how to remedy the identified adverse effects. NIE submits that this concern is misconceived. The structure of Articles 15 to 17 is designed to address a wide range of potential regulatory problems, not just price controls. There will, in other cases, be public interest problems which genuinely admit of a multiplicity of different potential solutions, however tightly the public interest problem is defined, and, in such cases, the UR may, at least initially, enjoy a wide discretion as to what remedial licence modifications to propose and, potentially, adopt. But that is not the case here.

Indeed the CC's PD reveals the deficiency of its own approach. The point is well illustrated in the CC's provisional assessment that the calculation of the RP4 allowed revenues by reference to NIE's actual capex may operate against the public interest by encouraging NIE to undertake inefficient or unnecessary expenditure and by exposing consumers to excessively high charges (PD 3.65 to 3.66). This is the CC's provisional finding of adverse effect.

When the CC goes on to decide how this adverse effect could be remedied, it finds that some of its possible remedies (e.g. a fixed capex allowance) could lead to different public interest problems (e.g. by

allowing NIE to benefit unduly from deferring capex expenditure) (PD 5.10(a) cf. PD 5.48 to 5.49 and PD 5.133 to 5.223).

If the CC were to persist with its present definition of the relevant adverse public interest effect, that would open up the possibility that the UR might seek to remedy that adverse effect in a way which, whilst effective to constrain NIE from incurring inefficient/unnecessary expenditure, might create what the CC would regard as other (potentially worse) public interest problems (by allowing NIE to benefit unduly from deferring capex). But this risk is avoided if the CC refines its finding of adverse effect to incorporate the benefit of the analysis set out in Section 5 of the PD, so as to conclude that the RP4 capex arrangements operate against the public interest by failing to strike what the CC judges to be, among all available options, the most appropriate balance between (i) the need to avoid remunerating NIE for expenditure which was planned but then deferred; and (ii) the need to avoid remunerating NIE for inefficiently incurred expenditure. The adverse effect would then consist in the failure of the existing Annex 2 conditions to achieve these objectives to the greatest achievable extent. This would fairly reflect the substance of the CC's analysis, taken as a whole, but would potentially have a different legal effect, under Article 17, from the CC's existing formulation.

Indeed, NIE submits that the CC's PD would hang together better if the CC were to have adopted NIE's proposed approach: having identified the capex pass through arrangements as giving rise to an adverse public interest effect (PD 3.65 to 3.66), the CC goes on to consider available remedial options (PD 5.145 to 5.223); at that stage, it discusses whether a "do nothing option" (i.e. leaving the capex pass through arrangements in place) is the best available option; if, at that stage, the CC had concluded that "do nothing" was the best available regulatory option, it would not, in NIE's submission, have been open to the CC, nor sensible for it, to persist in a finding that the capex pass through arrangements operate against the public interest at all (since they would represent the best means available of regulating NIE's capex in pursuit of the UR's overall public interest objectives, and no remedy would be needed to deal with them). Thus, the CC's own analysis reveals that the CC's assessment of the public interest/adverse effect questions is logically dependent on its subsequent assessment of what is the best available regulatory alternative, albeit that the presentation of the PD disguises this dependency.

In short, NIE submits that, if the CC were to adopt NIE's proposed approach, that would better serve the overall scheme of the licence modification provisions of the Electricity Order: by adopting such an approach, the CC would make clear that its assessment of whether the present Annex 2 conditions operate against the public interest can best be assessed by reference to other available options, and it would obviate the

risk that the UR might attempt, at least initially, to exercise its discretion to remedy a poorly defined adverse effect in a manner which merely introduces a worse public interest problem. Such a "solution" could, at worst, render nugatory the careful balance which the CC has sought to create among the various different incentive properties of different mechanisms for the regulation of NIE's capex spend; and, at the least, it could introduce substantial delay into the licence modification process, by requiring the CC to invoke the Article 17A procedures to prevent the adoption of modifications which did not appear to it to be the requisite modifications..

We would also point out that, in addressing the opex elements of the RP4 price control, the CC has already approached the public interest question in a manner which more closely resembles that advocated by NIE: at PD 3.69, the CC concludes that the RP4 opex arrangements operate against the public interest because they are less effective to promote efficiency on the part of NIE than a benchmarking approach to setting NIE's opex allowance would be. In other words "the current arrangements are against the public interest when this superior alternative is available" (PD 3.69). Thus, in this respect, the CC has effectively formulated its public interest finding (and by implication the resulting adverse effects) by reference to the RP4 price control's failure to give effect to the best available means of regulating NIE's opex. However, even this formulation fails to home in with the fullest possible precision on the relevant adverse effect, namely that the RP4 opex arrangements operate against the public interest by failing to specify what the CC judges to be the best available forecast of NIE's opex, which it has itself derived from what it judges to be the best available benchmarking analysis. Thus, NIE submits that the CC should elaborate on its reasoning and explanation in PD 3.69, to specify the adverse effect more precisely by reference to the failure of the existing Annex 2 conditions to set an opex allowance using what the CC judges to be the most appropriate methodology, and, hence, at the most appropriate level.

- The CC may ask whether NIE's analysis disregards the constraints on the UR's freedom to choose remedial licence modifications and thereby exaggerates the risk that the UR will seek to deviate from the CC's proposed new price control.

NIE accepts that the UR is constrained as to what modifications it may make in reliance on the CC's report:

- First, it may do only what appears to it requisite to remedy the adverse effects identified by the CC. Since the CC's report will fall to be construed generously, any court seised of the matter would no doubt interpret the CC's findings of adverse effect in a manner which took

account of the CC's reasoning in reaching its identification of adverse effects.

But, since, in the present case, much of the CC's reasoning as to what is a more (or the most) appropriate form of price control is confined to parts of the report which follow the CC's findings of adverse effect, a court might struggle to rely on them further to particularise the CC's formulation of the adverse effects; and

- Second, the UR is obliged to have regard to the CC's own choice of preferred licence modifications (its specified modifications). It cannot simply ignore the CC's work. Moreover, the UR is itself obliged to act in pursuit of the same statutory objectives and duties by reference to which the CC has made its assessment.

But, in the present case, such constraints may not prove very strong. The CC's PD makes clear that, in some cases, its own preference for one solution over another is, at most, marginal. See, for example, PD 5.208 to 5.223. NIE submits that there is a real risk that, unless the CC ensures that its findings of adverse effect are appropriately particularised, the UR might well conclude that it is not persuaded by the CC's choice of proposed modifications, and choose to adopt a different approach. The UR would, no doubt, say that it has been assisted by reading the CC's assessment, but could then choose to reject it.

NIE submits that such an outcome would deprive the CC's report of the effect which, under the Electricity Order, its reasoning justifies: the CC has, in substance, concluded that the present Annex 2 conditions operate against the public interest by failing to strike what the CC judges to be the best available balance between incentivising NIE to defer network investment where that is efficient, and deterring it from deferring network investment in order to secure additional profits through the operation of its price control. The CC's assessment of what is the best balance should therefore be binding on the UR.

- The CC may ask whether NIE's assessment fails to recognise the full significance of Article 17A, which was introduced to address precisely the kind of problem arising after publication of the MMC's report on NIE's RP1/2 price controls.

NIE recognises that Article 17A may provide an effective means for the CC to ensure that its own proposed licence modifications are ultimately adopted. But it would be imprudent to rely on that alone at this stage, when it is open to the CC in its Final Report to express its findings of adverse effect in a way that more clearly reflects the totality of its reasoning. If the CC's findings are not fully particularised, there may be

genuine scope for doubt on the part of the UR as to what is the scope of its discretion in formulating remedial modifications.

Furthermore, resort to Article 17A must be regarded as a last resort since, quite apart from potential uncertainty as to its effect, it would introduce an undesirable further delay in the final determination of the RP5 price control conditions.

Conclusion

- 1.22 In conclusion, NIE submits that, in order to ensure that the CC's report achieves the full effect envisaged for it under the scheme of the Electricity Order, and that appropriate remedial modifications can be adopted without delay, the CC should frame its Final Report so as to particularise more fully its reasons for finding that particular features of the existing Annex 2 conditions operate against the public interest, and so as to provide full particulars of the resulting adverse public interest effects. Its Final Report should therefore identify the shortcomings in the existing Annex 2 conditions by reference to the better public interest outcome which could be secured by a price control of the kind proposed by the CC, so as to make clear that the adverse effects identified by the CC are to be remedied by giving effect to the substance of the CC's proposals for a new price control.
- 1.23 Whilst this submission has focused on the price control elements of the UR's reference to the CC, the same reasoning applies to the elements of the reference dealing with the absence of further conditions of NIE's licences dealing with the recording, reporting, monitoring and verification of information.
- 1.24 In essence, the CC has provisionally concluded that the absence of further reporting obligations in respect of NIE's T&D Business⁷ may operate against the public interest, by denying the UR (and possibly the public) access to important and useful data. But the CC has provisionally concluded that, to the extent that NIE is or may be required to report relevant data, no separate public interest detriment (i.e. no adverse effect) arises or may be expected to arise from the absence of any third party verification of such data by a reporter. Accordingly, the CC has provisionally decided to propose modifications designed to impose additional reporting obligations on NIE, but not to require the appointment of a reporter.
- 1.25 NIE would urge the CC to ensure that it gives due attention to the appropriate formulation of all its public interest/adverse effect findings, and to the specification of appropriate licence modifications in its Final Report.
- 1.26 Finally, we note from the CC's email of 13 November (Jackson/Hashim) that the CC may choose to include the text of its proposed licence modifications as part of its Final Report. We would point out that, since such modifications would constitute the CC's answer to one of the statutory questions posed in the present investigation, we

⁷ Modelled on the GB DNO's RIGS, but also extending to NIE's transmission activities (PD 17.36; PD 17.56).

would expect the CC to consult NIE on the text of such proposed modifications before the CC's report is finalised, since the drafting of the modifications may serve to clarify and, potentially, to alter the effect of the proposed modifications as described in the PD.