OPEN LETTER CONSULTATION ON THE REGULATORY ASSET LIVES FOR ELECTRICITY DISTRIBUTION ASSETS

THE REPLY FROM CE ELECTRIC UK FUNDING COMPANY, NORTHERN ELECTRIC DISTRIBUTION LTD AND YORKSHIRE ELECTRICITY DISTRIBUTION PLC

25 February 2011

CONTENTS

SUMMARY

- Ofgem's presentation of the regulatory depreciation period as a settled issue is premature until it is reflected in licence changes.

- There are good reasons why regulatory asset lives should be shorter than economic lives.

- Technical asset lives are indubitably longer than economic lives but this is of limited relevance to the determination of the appropriate regulatory depreciation period.

- Setting regulatory depreciation periods by reference to economic lives is particularly problematic for long-lived assets.

- There are also good reasons why statutory accounting lives are longer than the regulatory depreciation period.

- We doubt the relevance of evidence about regulatory depreciation periods drawn from other jurisdictions.

- Ofgem's proposals to lengthen significantly the depreciation lives of electricity distribution assets will raise the cost of capital.

- Ofgem's acknowledgement that extending depreciation lives may require an increment to the cost of capital is welcome but we have seen nothing to suggest that Ofgem is prepared to recognise the magnitude of the required increment.

- Ofgem's proposals cannot be applied to existing assets without undermining confidence in regulatory commitment.

- The experience of the water industry does not suggest that a change to a 45-year depreciation period in electricity distribution can be accommodated without adverse effects.

- The guidance issued by credit ratings agencies suggests that the regulatory environment and key credit metrics are the decisive components in the cost of debt.

- Our own modelling shows that Ofgem's proposals would lead to a downgrade of our credit rating.

- Under Ofgem's proposals electricity distribution companies will see their price/earnings ratios pushed significantly upwards into a range that is clearly inappropriate for a supposedly low risk investment.

- Ofgem is proposing these changes at a time when there is also a wider trend towards upward investment in infrastructure to meet the UK's renewables targets.

- Financial commentators are beginning to note the adverse effects of the Ofgem proposals for assets lives.

- Transitional arrangements are demonstrably necessary if Ofgem is to implement its proposed approach.

- We have considered a range of possible transitional arrangements with reference to a balanced set of criteria.

- Maintaining a 20-year life for existing assets is essential in terms of investor confidence but it does not solve the problem of cash flow reduction. Adding the necessary small increment to the cost of capital is likewise insufficient to address the problems.

- Slowing down the rate of transition during the DPCR6 period is also an inadequate response.

- We therefore need to consider some alternative approaches that blend a number of parameters over two price control periods.

- The proposed solution blends a number of approaches and delivers an acceptable outcome for customers as well as for investors.

INTRODUCTION

1. On 14 January 2011 Ofgem published an *Open letter consultation on the regulatory asset lives for electricity distribution assets* (the *Consultation*). This letter raised with specific reference to electricity distribution assets many of the same issues that were set out in Ofgem's RIIO-GD1 and RIIO-T1 consultation documents to which CE Electric UK Funding Company (CE), Northern Electric Distribution Ltd (NEDL) and Yorkshire Electricity Distribution plc (YEDL) submitted a response on 4 February 2011.

2. In this note we set out the response of CE, NEDL and YEDL to the *Consultation* focussing more specifically on the issues raised with respect to electricity distribution asset lives.

REGULATORY ASSET LIVES AND ECONOMIC ASSET LIVES

Ofgem's presentation of the issue as settled is premature...

3. In the *Consultation* Ofgem states that the RIIO framework decision document:[1]

> 'established the principle that regulatory asset lives should reflect the expected economic life of the related network assets. This principle will apply for the next electricity distribution price control from April 2015.'

…until it is reflected in licence changes.

4. CE respectfully points out that it is rather premature for Ofgem to present this policy intent as something that 'will apply for the next electricity distribution price control from April 2015.' Such a characterisation is premature because this policy has not yet been validated by either of the only two procedures that are capable of turning the policy intent into established practice. These two methods are:

   (i) the acceptance by the electricity distribution licensee of a set of price control proposals that have been formulated in accordance with Ofgem's declared policy intent; or

   (ii) a finding by the Competition Commission (following a reference) that confirms that the Ofgem policy in this respect should be applied.

[1] RIIO decision document.

5. Until either of these has occurred it would be more accurate to say that Ofgem has decided that it intends to formulate its proposals at DPCR6 in such a way as to reflect this policy.

6. We point this out not because we wish to make a procedural point (which Ofgem no doubt already appreciates) but because it is important that Ofgem understands that we continue to dispute the validity of the fundamental premise on which the rest of the *Consultation* is based. We shall not accept that Ofgem's approach will be applied until we can see that it can be applied in such a way as to satisfy our investors.

There are good reasons why regulatory asset lives should be shorter than economic lives.

7. We have set out in previous responses why we do not agree that regulatory asset lives should reflect the expected economic life of the related network assets. We shall not repeat all those arguments in full here but, in summary form, the reasons why we do not accept Ofgem's premise are:

- there are good reasons why statutory accounting lives are longer than the regulatory depreciation period;
- the case for aligning regulatory depreciation with economic life that derives from inter-generational fairness is flawed because it neglects to take account of the benefit being enjoyed by today's customers from the privatisation discount; and
- shorter payback periods (for that is the real function of the regulatory depreciation period) provide greatly improved price signals to users and incentives to operators. The benefits of the sharper signal will be reduced system investment costs which are to the benefit of the generality of users in the long-term.

CURRENT REGULATORY ASSET LIVES

8. We have no comments to make on this section.

TECHNICAL ASSET LIVES

Technical asset lives are longer than economic lives…

9. It is indisputable that electricity distribution assets have technical asset lives that are materially different from that over which they may be considered to be economic, be depreciated or remunerated. We do not think that the technical asset lives are particularly relevant to this consultation.

… but this is of limited relevance to the determination of the appropriate regulatory depreciation period.

10. The most durable class of asset is probably underground cable and the debate about technical asset lives is at its most superfluous in this area. Generally speaking the age of these assets is very difficult to pin down accurately. Lengths of cable get repaired in sections, diverted into new routes and new sections inserted. So an age profile showing lengths installed by year is really only a guide at best. Any given feeder asset will be likely to consist of a variety of sections of different ages. So a given 'asset' is likely to appear in several places on the age profile making an assessment of the existing age of the assets almost purely academic. What we can say is that these assets will often outlive the properties they serve. So it is more often the changing circumstances that determine what use any given asset is put to. We note that the CEPA report bases much of its assessment on projections for growth in electricity demand. Of course demand growth in and of itself may not be strongly correlated to asset lives. Increased use of micro-generation could mean that demand grows and yet demand for distribution assets falls. So the question is not really how long could an asset physically survive (technical asset life), nor even over how long might an asset be of some economic use (economic asset life) but more about what process of remuneration secures the investment needed in an asset base for which the well established commercial use is being systematically overhauled in a world where shifting energy paradigms are of the highest political priority.

11. We agree with CEPA that

> 'Decisions about the way the economy is de-carbonised are likely to lead to shifts in the relative demands placed on different energy networks. It is

impossible ahead of time to be sure of what those decisions, or shifts, might be."

12. Thus we suggest that it is folly to support a policy, which is essentially about financeability and attracting capital, with a consideration of either physical degradation mechanisms or wildly varying and largely academic scenarios about future consumption patterns.

ECONOMIC ASSET LIVES

Setting regulatory depreciation periods by reference to economic lives is particularly problematic for long-lived assets.

13. We appreciate that, in the general case, notwithstanding our previous observations, an economic regulator might wish to adopt a regulatory depreciation profile that would have some regard to the economic life of the asset.

14. However, this becomes very problematic when the assets may be expected, under certain assumptions, to serve customers for a very long time.

15. If we think of the economic depreciation change as being the change in the present value of future earnings from one year to the next, it follows that, since the uncertainties associated with assets whose service life is measured in decades are very considerable in the later years, it is necessary to front-end the regulatory depreciation profile to reflect this.

16. We do this in a rough and ready way at present by recovering investment over 20 years. Although there are considerable uncertainties about how the distribution system will be used and be developed over the next 20 years, this period represents a reasonable balance between what we know and what we do not know. However, moving beyond that period, the uncertainties become too great. An economic life of between 45 and 55 years for electricity distribution assets, as proposed in the open letter, is not supportable in the presence of such uncertainties.

ACCOUNTING ASSET LIVES

There are also good reasons why statutory accounting lives are longer than the regulatory depreciation period.

17. Certainly the published statutory accounts of an entity must give a fair value for the assets concerned and accounting standards require that this value will reflect their remaining earning power. However, the accounting conventions that govern the statutory accounts are markedly different from those that are used to determine the regulatory asset value (RAV) and drive allowed income. There are a number of important differences, chiefly that the regulatory calculation is performed in real terms with an uplift for inflation while the statutory accounts of the licensee are prepared on an historical cost basis.

18. The RAV also contains items which an accountant would not recognize as assets, yet the regulator has chosen to defer recovery of the expenditure as part of the balance of recoveries in the regulatory regime. In return for this deferral, the licensee receives an inflation adjustment to these costs and a return at the cost of capital, ensuring that the licensee is kept whole on the expenditure.

19. These fundamental differences mean that a move to bring regulatory and statutory accounting lives closer together will not result in consistency between the two methods. Neither is there any reason why they should be brought into line. One serves the purpose of reflecting a fair value in an accounting sense whereas the other determines the payment profile being offered and accepted by a service provider and a customer. In any case, if accounting conventions were to be applied, then a material proportion of these costs would be recovered immediately while the remaining cost is spread over a much longer period, destroying the equalisation of incentives that was so helpfully established in DPCR5 and that is being contemplated for these price controls. We recognise that there are some categories of cost where the reverse is true. This reinforces the point that it is confusing to equate the period over which RAV is remunerated with the asset lives in the statutory accounts.

20. Ofgem's presentation of the various asset lives used for different purposes invites the mistaken inference that regulatory depreciation periods must be too short because the companies themselves have adopted longer periods in their statutory accounts. The

different periods allow for very different recovery profiles and the regulatory depreciation period must be seen in the context of recoveries which include speed of money and potential incentives.

OTHER REGULATORY PRACTICES

We doubt the relevance of evidence drawn from other jurisdictions.

21. We note Ofgem's observation that it has considered other regulatory asset lives used for other electricity distribution networks; Ofgem mentions the range used in Australia (35 to 51 years) and the Republic of Ireland (45 years).

22. We do not think that in isolation from other features of the regime (such as the scale of the forthcoming capital investment programme) there is much that can be concluded from the assumed regulatory life. Moreover, the relevance of the asset life used in a state-owned operation in the Republic of Ireland is clearly not relevant to the British circumstances of investor-owned network companies.

OFGEM'S PROPOSALS

23. In the *Consultation* Ofgem states that:

> 'average economic asset lives for electricity should be between 45 and 55 years.'

24. Ofgem also states that it intends to retain the current straight line depreciation.

25. We comment below on Ofgem's views, taking account also of the discussion on transitional arrangements that is set out in the *Consultation*. We do not repeat here the points we made in response to the RIIO-T1 and RIIO-GD1 consultations. For completeness we have updated the part of our response to the RIIO consultations that dealt with the modelling carried out by CEPA and we attach this at Annex 1 to this response. The summary of our assessment is that CEPA appears to have used an implausible capital investment assumption that improves cash flows in the early years and accelerates them significantly in later years. The conclusions that CEPA draw would, we think, not be readily supportable had they assumed a capex profile that is more in line with what companies are investing now and forecasting for the future.

26. We shall focus in the body of this response on:

- the impact on CE and its customers of Ofgem's proposals; and
- the form of transitional arrangements that would be necessary if Ofgem were minded to move towards its preferred approach.

THE IMPACT ON CE AND ITS CUSTOMERS

Ofgem's proposals to lengthen significantly the depreciation lives of electricity distribution assets will raise the cost of capital.

27. Ofgem's position is that its proposals will have little or no impact on the cost of capital and that, provided the cost of capital is set correctly, the changes proposed can be handled by financial markets making available the necessary capital.

28. We believe that neither of these contentions is correct and that the scale of the proposed change is seriously prejudicial to the finances of DNOs.

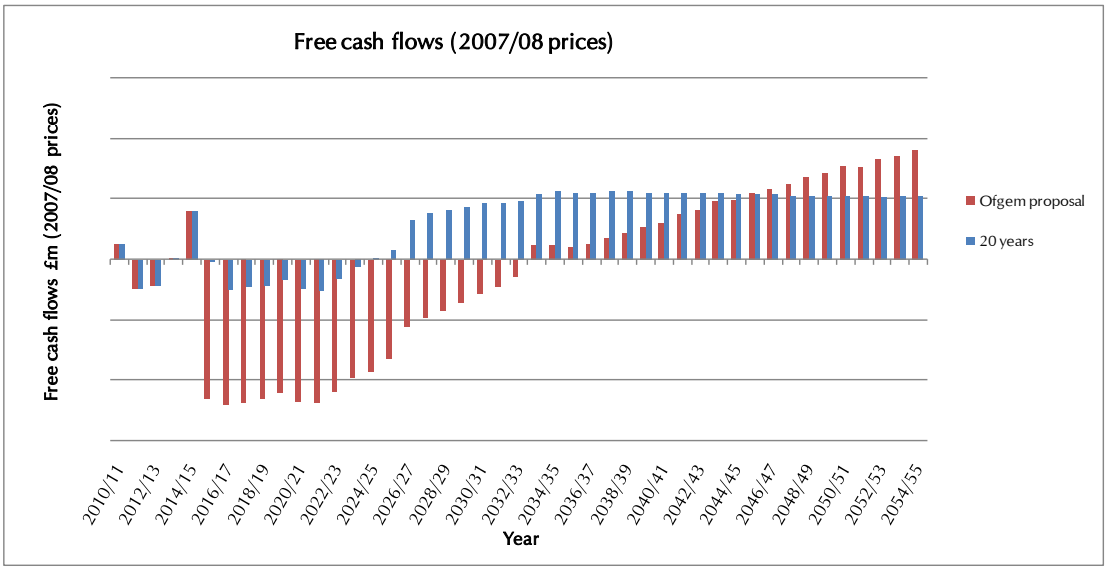
29. Ofgem's proposals will seriously and adversely affect cash flows and amount to a significant change to basis on which investors have committed funds to the RAV.

30. We shall set out below evidence drawn from the water sector and from the credit rating agencies. We shall also take account of commentary from other participants in the financial markets. We shall draw conclusions from measures of the price earnings ratio in the wider economy and the level of infrastructure investment that is required over the coming decade.

The scale of the changes is problematic.

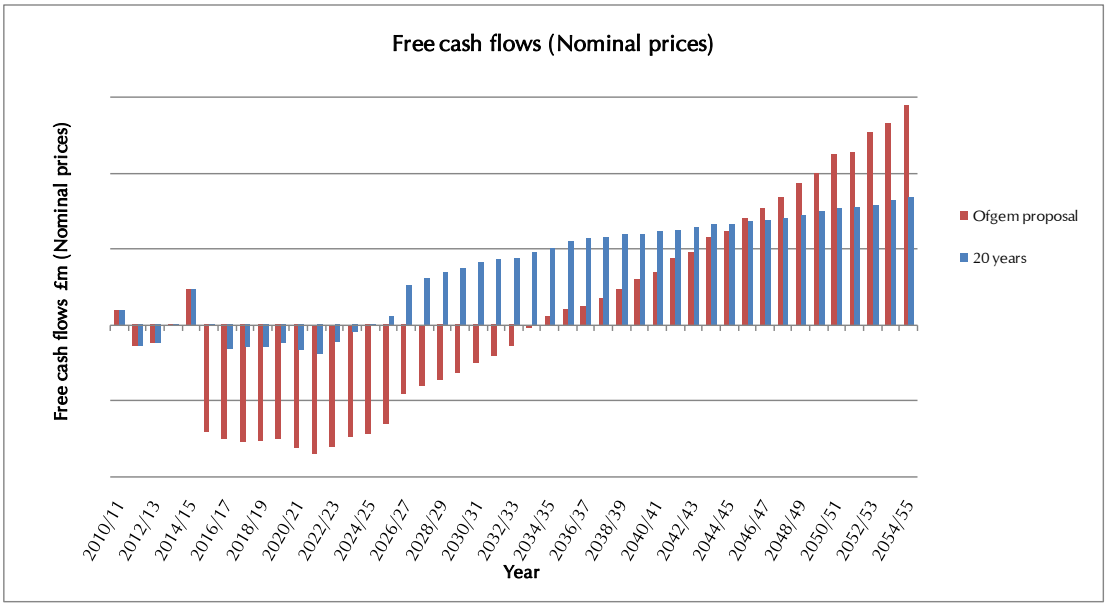
31. Our cash flow modelling of our own business shows the scale of the change that is proposed. Figure 1 below shows the impact on our cash flows of a move from an assumed asset life of 20 years to an assumed asset life of 45 years for both existing and new assets (in 2007/08 prices).

Figure 1



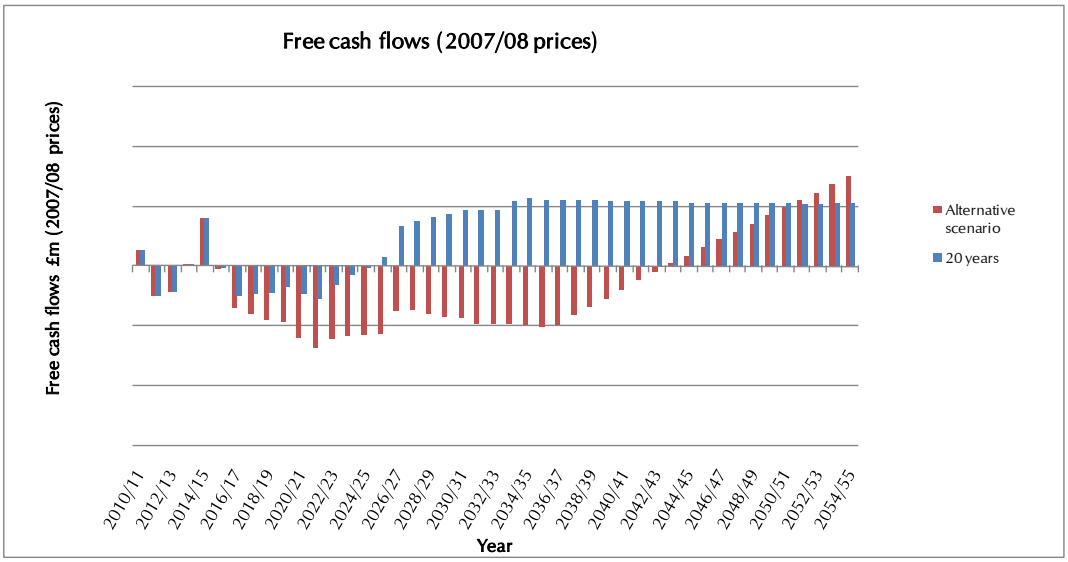
32. The adverse effect is even more marked when the impact is shown in outturn prices, which is more reflective of what the investors and customers will actually experience. This is shown in Figure 2 below.

Figure 2



33. We note that Ofgem is also considering a hybrid approach where new investment would be remunerated on a 45-year life and old investment would continue to be depreciated on the 20-year assumption. We show the effect on cash flows of this approach in Figure 3 below (in 2007/08 prices).

Figure 3



34. It is evident that both proposals would give rise to a major change in the cash flows of CE. The effect of the proposals would shift cash flows out of the next two decades and require a major cash injection in order to finance the business during this period. The cash injection would be returned to investors only through the very healthy cash flows in the distant future. Both of these proposals would increase the cost of capital over the asset lifetime because the risk that the assets will not be remunerated is significantly increased. The only question that Ofgem should ask itself is 'by how much?'

35. However, this is not the only problem. Once Ofgem makes a move of this kind – especially if it is accompanied by the assertion that such a move can be contemplated because it has no effect on the cost of capital and therefore no adverse impact on consumers – investors' confidence in regulatory consistency will be seriously diminished. Investors are being asked to inject large amounts of cash today in return for higher cash flows (and therefore prices for consumers) in the distant future. Despite Ofgem's assertions to the contrary investors *will* apply a higher discount rate to the distant cash flows. This will reflect the uncertainty over future developments in the regulatory system, governmental policy and future network configurations. It is simply unrealistic to suggest that investors will not view the introduction of a delay to the remuneration of an investment as a step-up in risk. That is inherent in the way that markets work. Moreover, in this particular case the proposition is that a regulatory regime can be subject to a very significant *change* to the repayment of an investment

and at the same time reassure investors that there is no risk because the regime will not change in the future. It is implausible to suggest that investors will accept the commitment that there will be no more changes as a way to get comfortable with a change that is happening now.

Ofgem's acknowledgement that extending depreciation lives may require an increment to the cost of capital is welcome…

36. We take only limited comfort from Ofgem's acknowledgement that it recognises that:

> 'there are arguments that lengthening/reducing the time over which capital is remunerated (taken in isolation) could raise/reduce the riskiness of cash flows and therefore cost of capital. Where this is the case, we will reflect this in the allowed return.

… but we have seen nothing to suggest that Ofgem is prepared to recognise the magnitude of this.

37. Unfortunately, the position taken by Ofgem and its consultants so far in the debate does not lead us to suppose that the adjustment to the cost of capital that Ofgem might be minded to allow to compensate for this would be commensurate with the increase in the risk to the licensees' cash flows. To compensate fully for the adverse impact on the cash flows would require an increment to WACC of approximately 300 bps. We do not think that Ofgem has such an increment in mind; nor do we think that such a solution would be in the interests of customers.

Ofgem's proposals cannot be applied to existing assets without undermining confidence in regulatory commitment.

38. The proposals to adopt a 45-year life (or more) for all assets (i.e. including those investments that have already been made) is particularly disturbing because it rewrites the terms under which major investments have already been made. Ofgem recognises this issue in its RIIO handbook but it appears to believe it is free to do this now and that there will be no adverse consequences for customers that arise from a higher perception of risk on the part of investors.

39. The commitment to a 20-year life for existing assets should be regarded by Ofgem as sacrosanct and as a valuable demonstration to investors of regulatory consistency. The

continuation of a 20-year life for existing assets should not be regarded as part of a transitional arrangement – i.e. necessary to fix a financeability problem – but as part of Ofgem's demonstration of its continuing integrity with respect to investors.

40. If Ofgem seriously believes that elongating the regulatory depreciation period by such a significant amount can be done without any increase in investors' perception of risk we find this to be very surprising indeed. Before Ofgem takes this proposal any further we would ask that it considers what steps it could take to reassure investors that the investments made will indeed be remunerated under all plausible scenarios.

41. For example, could the Gas and Electricity Markets Authority give a legally binding commitment that would bind its successors over the duration of the proposed depreciation period that the investments would indeed by remunerated over the newly proposed regulatory asset life? That commitment would have to be plausible in the face of changes in the economic circumstances of the nation, the existing consensus relating to environmental concerns (since the investments we are speaking of may be driven by the need to meet environmental targets) and would have to be resilient to changes in government and changes in the statutory remit of the regulatory body.

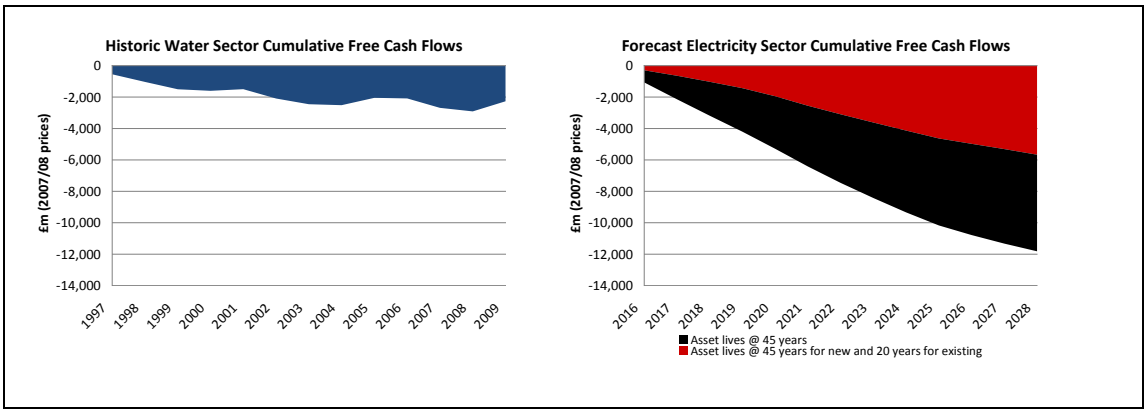
42. We do not think that Ofgem is in any position to give such a binding undertaking. In the absence of such an undertaking, the credibility of the future remuneration must be regarded as very risky indeed and we find it difficult to understand that Ofgem can assert that a change of this kind can be introduced without changing investors' perception of risk.

43. The evidence put forward in the papers prepared by Ofgem's consultants and published along with the RIIO consultation draws on the evidence provided by very different markets and where the changes concerned are not remotely of the scale that it being contemplated here. They tell us very little about how investors will respond to changes to regulatory and political risk when a change of this kind is being contemplated.

The experience of the water industry does not suggest that a change to a 45-year depreciation period can be accommodated without adverse effects.

44. The water sector in England and Wales has historically experienced a large increase in capital expenditure requirements. We note that this led to a long period of negative

cash flows that were financed through a combination of higher levels of debt and equity issuance. However, the scale of this financing requirement was a fraction of that which would be required under Ofgem's proposals.



45. The graphs above have been prepared on an estimated basis to try to look at the scale of what is proposed for electricity by comparison with the history in the water sector between 1995 and 2010. In the first case we have assumed a 44 year depreciation life for electricity assets and in the second case we have assumed the hybrid approach for electricity distribution assets where the 45-year life is applied to new investment only.

46. Our owners have expressed reservations about making investments in the English and Welsh water sector because they perceive that the only way to make investments of this kind attractive is to buy with the intention of selling reasonably soon. Their reservations about the English and Welsh water sector would pale into insignificance compared to the proposals that Ofgem is contemplating with respect to electricity distribution assets.

The guidance issued by credit ratings agencies suggests that the regulatory environment and key credit metrics are the decisive components in the cost of debt.

47. In setting the framework for the PR09 Price Control Review, Ofwat said:

> 'Whilst we acknowledge there has been some criticism of placing undue reliance on credit ratings, it is not our intention to develop alternative

measures of financial capacity because there does not seem to be a sensible alternative.'[2]

48. Ofwat is certainly right about the absence of any sensible alternative. The credit rating agency Moody's gives the highest weighting to 'regulatory environment and ownership model' and the 'key credit metrics'. Together these account for 80% of the weighting in the Moody's assessment. It is clear that the act of changing the depreciation assumption may affect investors' perceptions of risk, especially if changes are applied to the existing RAV. The key credit metrics are also likely to significantly worsen under the Ofgem proposals; this can be shown by modelling future cash flows. We conclude that there is no doubt that the changes to depreciation lives that Ofgem is contemplating can only worsen the sector's performance against the criteria that the rating agencies use to determine credit risk.

Our own modelling shows that Ofgem's proposals would lead to a worsening of our credit metrics.

49. Our own cash flow modelling indicates that with the assumed funding profile, key credit metrics would slip from their current levels and could very easily slip further. In particular:

- FFO to net debt slips from [*] rated [*]; and
- RCF to capex slips from [*] to [*].

50. We note that, so far, the credit rating agencies have not addressed the consequences of the possible change in revenue profiling that would result from Ofgem's proposals. Credit rating agencies typically look three years ahead and the impact on electricity distribution companies' fortunes will not yet be a priority for the credit rating agencies. However, once this proposed change is within the timescale that rating agencies use for their assessments we would expect to see these adverse changes reflected in the credit rating agencies' assessments.

[2] Source: Ofwat 2008 *Setting price limits for 2010-15: Framework and Approach*, p53

Ofgem acknowledges that the requirements of equity investors must also be met.

51. In response to the concerns expressed by investors following its earlier consultation in which Ofgem raised the possibility of an extension to the regulatory depreciation period, Ofgem has sought to clarify its position and to reassure equity investors:

> 'Some stakeholders raised a concern that the wording in the recommendations document may imply a bias in favour of debt over equity. This was not our intention…'

52. Unfortunately, the proposals in the open letter do nothing to address the concerns of equity investors.

Under Ofgem's proposals electricity distribution companies will see their price/earnings ratios pushed significantly upwards.

53. Equity investors routinely examine investments by reference to a price earnings ratio. If we assume that the 'price' of a DNO is based on the regulatory equity component of RAV assuming, say, a 20% premium we can derive an implied P/E ratio for CE. Under current regulatory depreciation assumptions and using current earnings, this is [*] times.

54. Under Ofgem's proposed extended depreciation life, if we assume that this has no impact on the valuation of the business (therefore the 'price' component of the P/E ratio remains the same), the adverse effect on earnings means that CE would move from an implied P/E ratios of [*] to a an implied P/E ratio of over [*]. This would push the P/E ratios beyond the average ratios used for utilities and telecoms firms and towards the level seen in the retailing and chemicals industry. The P/E ratios in that sector are of course accompanied by a higher cost of capital in that sector. We cannot therefore see how Ofgem can assert that the diminution in earnings would not be offset by a higher cost of capital. Indeed, we know that when our owners look at investments this is one of the metrics that they use. Ofgem may wish that investors would perceive that a change in depreciation lives brings no increase in risk but we are under no doubt that this is not the case. If the asset value remains the same, and the earnings diminish, the P/E ratio changes adversely and this is a measure of the change in the investors' perception of risk.

Ofgem is proposing these changes at a time when there is also a wider trend towards upward investment in infrastructure to meet the UK's renewables targets.

55. Electricity distribution companies have to compete with other potential users of capital. Citi have forecast that the EU as a whole will need 1.2 trillion Euros of investment to meet government targets with almost 1 trillion Euros required in the five major European economies. To put this in context Citi estimate that the expenditure in the five major European economies was only 400 billion Euros during the period 1999-2009. This change represents an increase of over one hundred per cent.

56. Ofgem's proposed slowing down of the cash flows for DNOs therefore comes at the same time as increasing financing requirements for infrastructure generally. It is hard to imagine that providers of finance will be attracted by Ofgem's proposed extension of the period over which remuneration will be secured. Back in July 2010 Invesco commented on the relative unattractiveness of the networks sector in the presence of potentially greater returns elsewhere:

> 'The simple laws of economics must also play a hand here. When a world of constrained capital (supply) meets a vastly increased level of demand for that capital, returns (or price) must rise in order to establish a new equilibrium. This is the opposite of recent trends in the utility space. Both Ofwat and Ofgem in recent judgements have reduced regulated returns in the water and energy industries reflecting what we believe to be a fundamental mispricing of the cost of capital, borne of a fundamental lack of understanding of the capital allocation process that takes place in an institution like Invesco Perpetual.'

And:

> 'As investors, we have found it very difficult to make any impression on the regulatory thought process. During the recent Ofwat consultation prior to the final determination we could not get a meeting with the regulator under any circumstances. As far as Ofgem is concerned, where we have been able to submit our views, these appear not to have succeeded in changing policy direction. Witness the recent RPI-X@20 working paper on financeability, which has drawn some alarming theoretical conclusions on equity investor

attitudes to cash flows and dividends with which we fundamentally disagree.'

57. We would urge Ofgem to take more account of intelligent comment of this kind. Investment in the UK remains a voluntary activity. At a time when financing new investment in infrastructure is a national priority, it makes no sense to adopt a position that is so damaging to the interests of both equity and debt holders. To be clear, this risk to cash flows will not only have negative connotations for equity investors – bond holders are not indifferent to the performance of the business in equity terms. In practice, bond holders want to see healthy earnings so that they are provided with correspondingly healthy interest cover ratios to protect their investment.

Financial commentators are beginning to note the adverse effects of the Ofgem proposals for assets lives.

58. Ofgem has asserted that some parts of the financial sector have expressed no serious concerns with the proposal to extend regulatory depreciation periods. It also argues that where equity investors have expressed disquiet this is merely an indication that there is a mismatch between the needs and expectations of those investors and the appropriate investment horizon for network assets. This is not consistent with our experience in the last few months.

59. We believe that this analysis is wrong for the following reasons:

- credit rating agencies typically do not look beyond the next three years and therefore concerns that will arise from these proposals will not yet have impacted the ratings agencies' assessment of risk of default in the short term;

- there are signs that some financial commentators are beginning to see the significantly adverse effect of Ofgem's proposals. We cite examples of this below;

- many commentators have not yet appreciated the significance of the shift that Ofgem is contemplating. Those that have appreciated it are expecting Ofgem to adjust its position;

- we do not believe that there is a class of equity investor that has such a long-term perspective that it is truly indifferent to a change of the scale that Ofgem is contemplating; and

- CE is ultimately majority owned by Berkshire Hathaway Inc. an entity that is famous for its long-term perspective. We are in no doubt that our equity investors are not indifferent to the period over which investment is to be returned.

60. A recent note from Barclays Capital on SSE is reasonably positive about its prospects but comments that:

> 'The UK government de-carbonisation strategy will drive a massive shift in the structure of the UK energy sector
>
> - A key factor in any decision to look seriously at this opportunity would be to recognise that the UK government will drive through these changes and embed the returns necessary to appropriately incentivise the spend required'.

61. A note from the same group about the prospects for National Grid includes comments from three brokers, showing a range of views. Barclays Capital is reasonably optimistic stating that:

> 'We are not overly concerned about regulatory changes in the UK as we believe future requirements for transmission infrastructure will justify a generous incentive system.'

62. However, Morgan Stanley expresses concern:

> 'It now appears clear that if NG's capex remains close to current projected levels (around £5bn per annum) there could be the requirement to strengthen the balance sheet with disposals – although this is not straightforward, and may need a revisit of the dividend – or further equity issuance.'

63. RBS also refer to concerns about the UK business which together with the concerns about New York State 'raises further risks to the company'.

64. Barclays' note concludes that there are medium term pressures on returns as result of, *inter alia*, regulatory pressures in the UK, substantial and unquantified capex requirements to support renewables, smart grids and new nuclear generation and a potential need for new equity.

65. Taken together, these reactions paint a picture of nervous investors, the most bullish of whom are relying on the regulatory regime coming up with some means or other of making sure that cash flows are not badly damaged – either by introducing other revenue earning opportunities (which amounts to charging customers more money on an NPV basis) or by creating some significant transitional arrangement that will offset the damage done by the changes.

TRANSITIONAL ARRANGEMENTS

Ofgem has accepted that transitional arrangements may be necessary.

66. Ofgem has been clear that transitional arrangements may be an essential component of the package:

> 'Where a company does demonstrate that application of the financeability principles in a single step would cause an efficient company financing difficulties, we will implement transition arrangements to ensure financeability.'

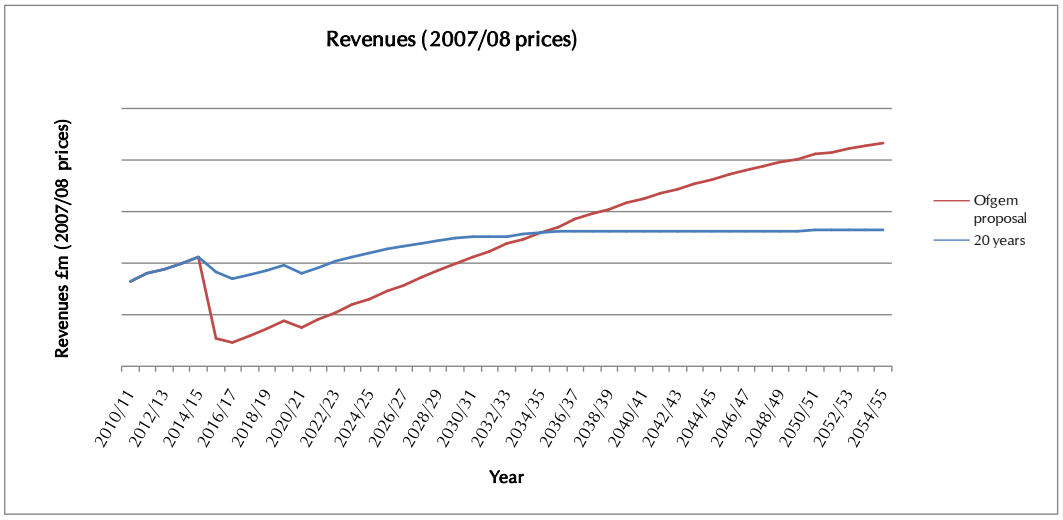
67. This assurance has been welcomed by investors.

Transitional arrangements are demonstrably necessary.

68. It is clear that if Ofgem is minded to move towards an extension of the regulatory depreciation period this would give rise to serious financeability issues.

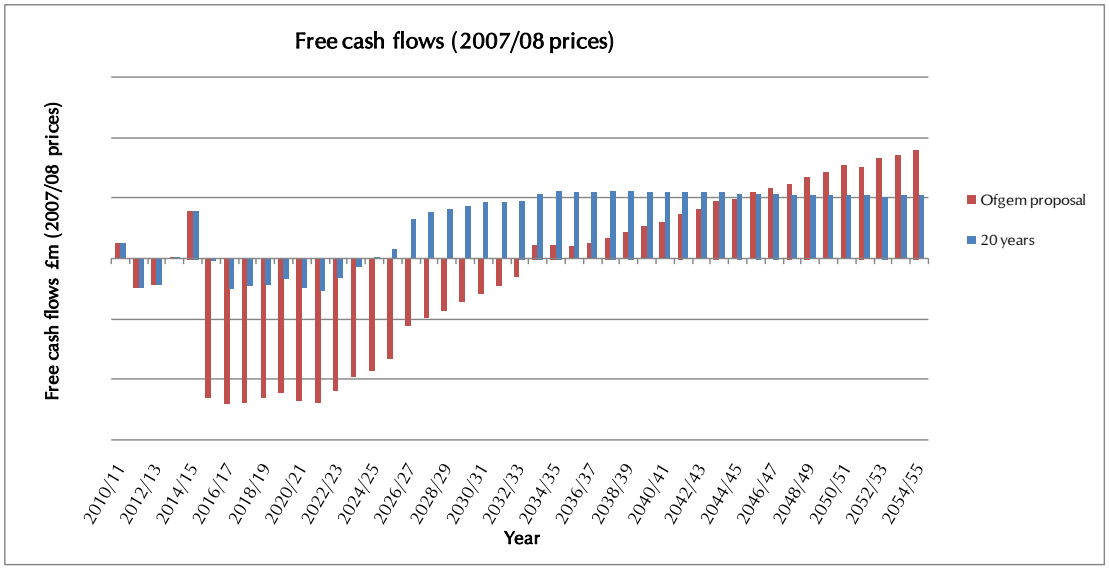
69. The magnitude of the change is shown in Figure 4 below where we show the impact on CE's revenues (in 2007/08 prices) of a move to a 45-year depreciation period for all assets in one step at DPCR6.

Figure 4



70. We have modelled the effect of this on our business and we conclude that it is unsustainable. Cash flows deteriorate as shown in Figure 1 above which we reproduce here for ease of reference.

Figure 1



71. As cash flows deteriorate, so do the metrics used by credit rating agencies. Ofgem has identified two of these metrics which remain stable being gearing and the adjusted interest cover ratio. We have explained in our response to the RIIO consultations how both these metrics are inevitably kept stable by the style of the change applied and so they cannot be used to measure the effect of the change proposed. However, two other vital ratios suffer seriously under Ofgem's proposals.

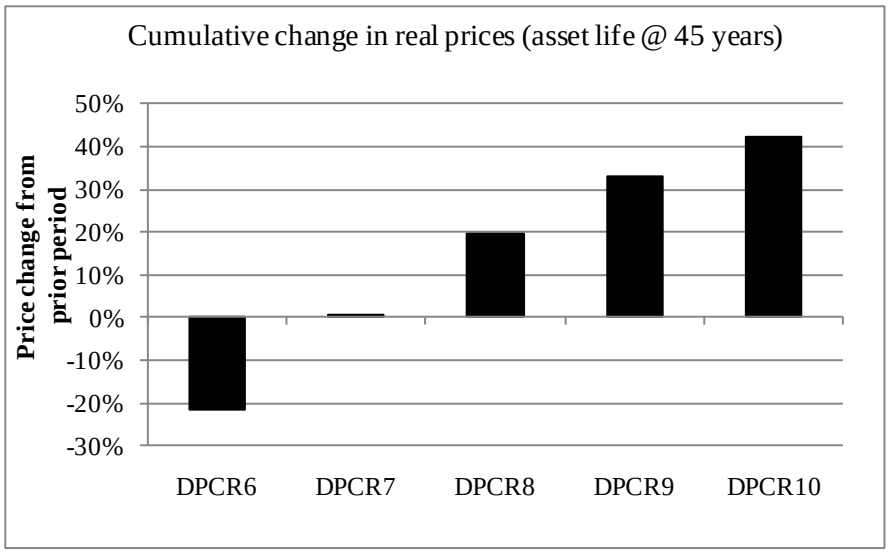
72. The two ratios that we are concerned about are FFO/Net Debt, which measures the relationship between debt and cash flow available to fund the debt (Free Funds from Operations) and RCF/Capex which measures the relationship between capital expenditure and Retained Cash Flow. These two metrics are used by credit rating agencies as key measures of a company's financial strength and ability to fund debt and capital expenditure.

73. Under Ofgem's proposals, the FFO/Net Debt ratio will be the worst affected as debt rises and cash flows fall. Our modelling suggests that under the proposal to move assets to 45-year life our FFO/Net Debt ratio will fall below investment grade within the next price control period. The RCF/Capex ratio is less rapidly impacted but is placed under serious strain by the proposals.

74. We believe that rating agencies will represent investors faithfully on this issue and will rightly mark down licensees when the scale of the cash flow impact is clear. This inevitably increases the cost of borrowing and, therefore, the cost of financing to the end customer. We cannot see what has been accomplished of a positive nature by these changes.

75. The increase in underlying cost of capital is only a small component of what becomes a much larger upward shift in prices in later years, as the investors are compensated for the significant extension to the repayment period. The path of prices that this creates is evidently unsatisfactory as the price increases in the later years are very steep. This is shown (in 2007/08 prices) in Figure 5 below.

Figure 5



76. Expressed in outturn prices, the price rises would appear to be even more severe.

We have considered a range of possible transitional arrangements with reference to a balanced set of criteria.

77. We have therefore considered a range of different transitional arrangements. Our analysis of each of these is set out below.

78. To assess the efficacy of any transitional arrangements we have tested the outcome against the following criteria.

- the path of prices that results must be both plausible and reasonably stable over time; otherwise customers will be harmed and the arrangement is unlikely to hold;

- the credit rating metrics that result must be sufficient to ensure that the licensee is comfortably investment grade; otherwise the cost of capital will increase unnecessarily and investment will be more difficult to attract to the sector;

- the licensee must not suffer from prolonged periods of large negative cash flows as a result of the arrangements; otherwise equity investors will simply not accept the risks and will not come forward in sufficient quantity to support the significant growth in investment that is needed;

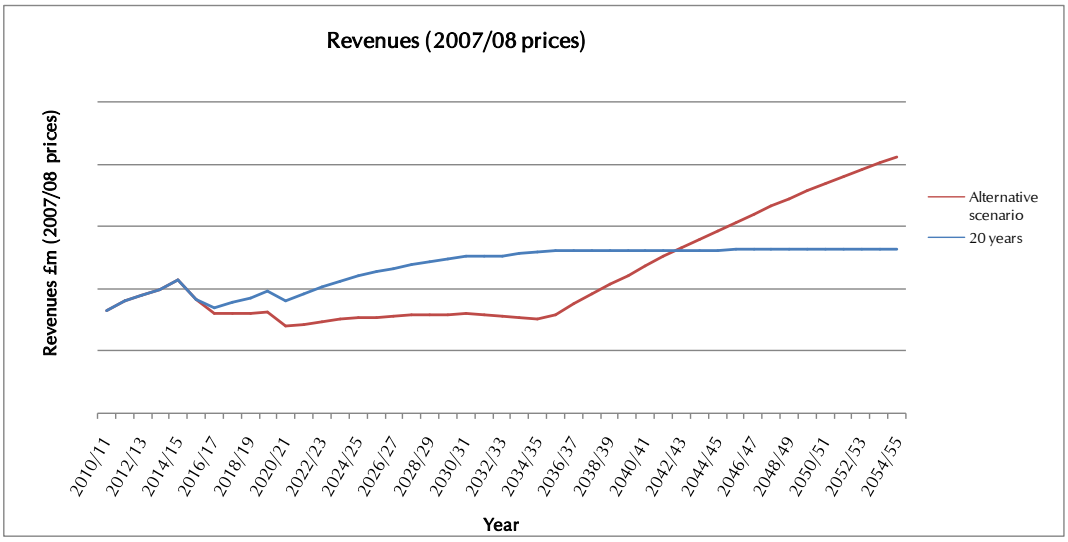
- the licensee must not be dependent upon prolonged periods of highly positive cash flows in the distant future; otherwise the promise of repayment lacks credibility; and

- the transitional arrangements must be clear and readily understood.

Maintaining a 20-year life for existing assets is essential in terms of investor confidence but it does not solve the problem of cash flow reduction…

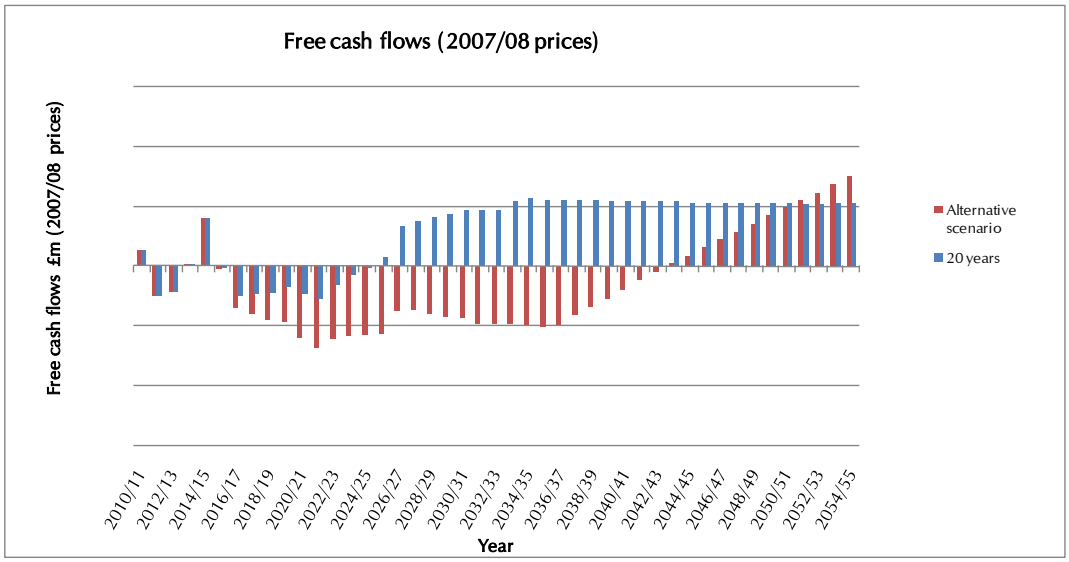
79. We show in Figure 6 below the effect on revenues (in 2007/08 prices) of maintaining a 20-year life for all existing assets (i.e. these constructed before 1 April 2015) until these have been fully recovered whilst introducing a 45-year life for all new assets from 1 April 2015.

Figure 6



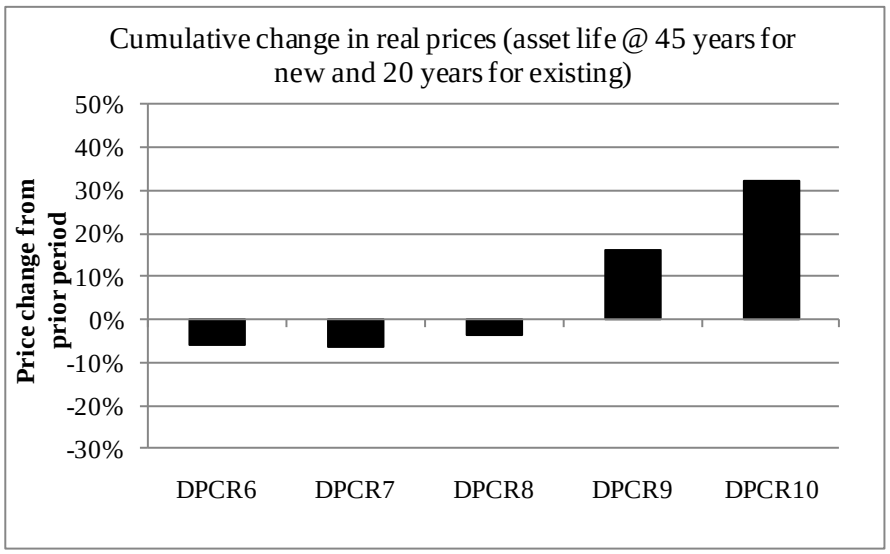
80. As in the previous example we have modelled the effect of this on our business and we conclude that this treatment is still insufficient to meet the concerns set out above. Note that the *extent* to which free cash flows go negative is reduced, but there remains a serious hit. Moreover, the *duration* of negative free cash flows is extended to an unsustainable three decades. This is shown by Figure 3 above which is reproduced here for ease of reference.

Figure 3



81. The path of prices is also impossible to commit to as very significant real terms increases (let alone the actual nominal increases) will be necessary as shown in Figure 7 below.

Figure 7



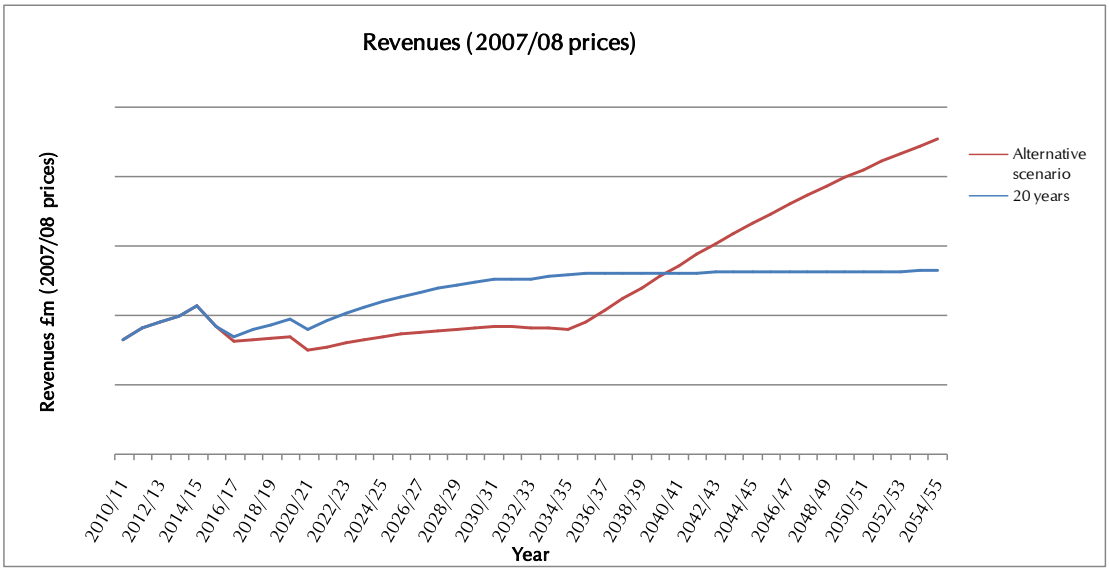
… nor does the small amount that must be added to the cost of capital.

82. We have considered whether the problem can be solved by applying a supplement to the cost of capital in recognition of the longer period of exposure to risk. This supplement is based on a calculation of the increase in the debt premium payable on US BBB+ rated corporate services, adjusted to reflect the equity premium multiple over the

debt premium. Since governments and investment grade rated companies in liquid markets are unable to extend their repayment terms without seeing 1-2 basis points added to the cost of capital for every year that they seek to extend, then it seems reasonable to suggest that there will be a permanent increase in the cost of debt of around 40-50 basis points. Scaling that increase for the ratio of debt premium to equity risk premium would suggest that at least 75 basis points would be the corresponding increase onto the cost of equity. Blending these using typical gearing ratios of around 65% supports a view that a step up in the cost of capital of around 60 bps is what would be expected by the markets.

83. Applying such a supplement to new investment only, whilst maintaining a 20-year life for existing assets and applying a 45-year life to new investments has the impact on revenues that is shown in Figure 8 below.

Figure 8



84. Although this improves matters, Figures 9 and 10 below demonstrate that the cash flows are still unsatisfactory and that the impact on the path of prices is still unacceptable and implausible.

Figure 9

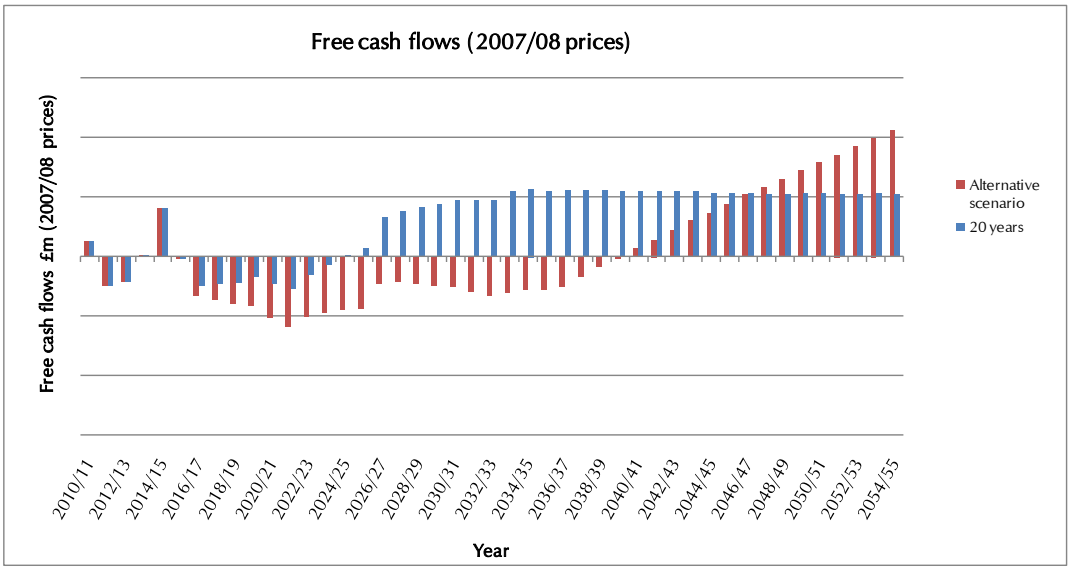
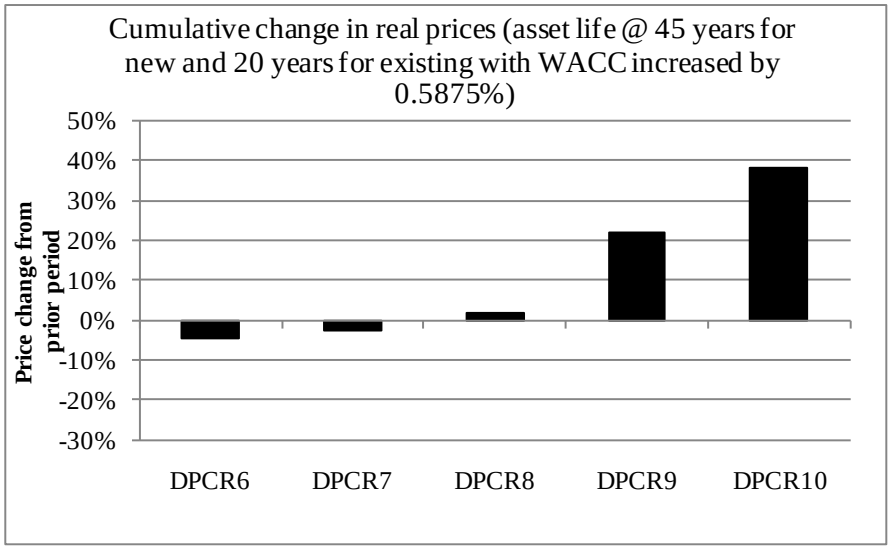


Figure 10

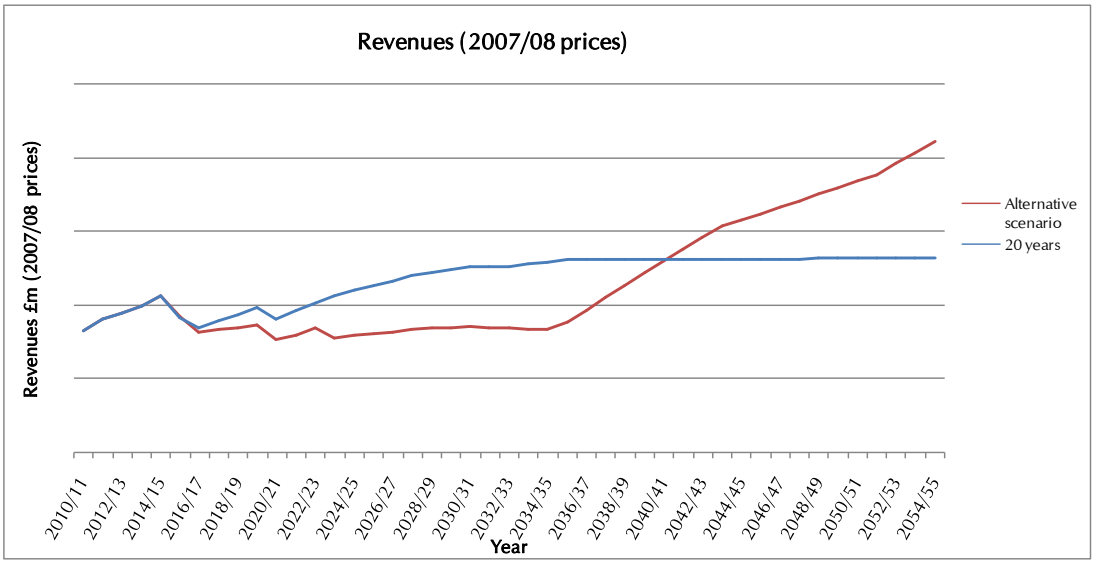


Slowing down the rate of transition during the DPCR6 period is also insufficient.

85. This demonstrates persuasively that Ofgem is faced with some deliberate transitional arrangement if it is to move to much longer depreciation lives. Our position remains that this move is unnecessary and unhelpful but we recognise the need to find a workable solution in the light of Ofgem's determination to pursue this policy. We have therefore looked at the impact of slowing down the rate at which the transition to a 45-year life for assets constructed after 1 April 2015. In addition to maintaining the life on existing assets, and the supplement of 60 bps to the WACC described above, we have

modelled the impact of phasing in the regulatory depreciation period for new assets from the existing 20-year life to a 45-year life. We have applied this phasing in over one regulatory period. We illustrate the impact of this change using a scenario in which existing asset lives remain on a 20-year depreciation schedule and new assets lives are extended to 32.5 years for the price control period beginning in 2015/16, before moving to 45-year depreciation in 2024 and beyond. The impact on revenues is shown in Figure 11 below:

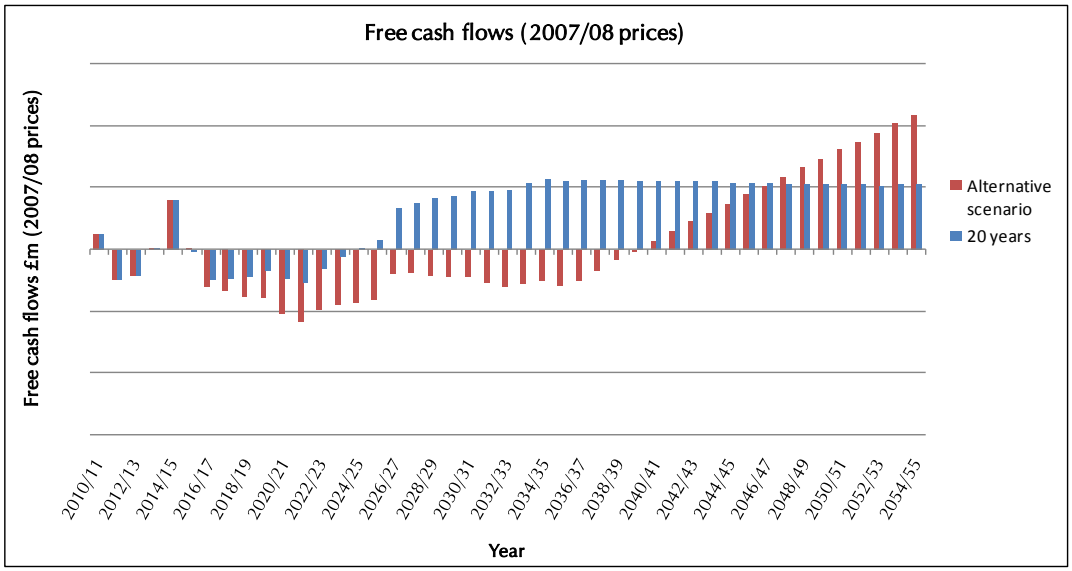
Figure 11



86. Although the position improves, it is still insufficient to deal with the concerns.

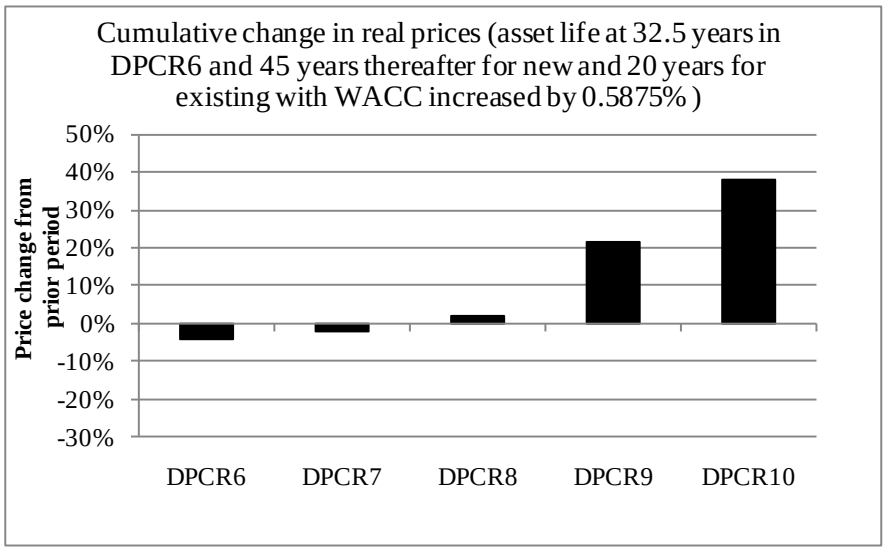
87. The cash flows remain problematic as shown by Figure 12 below:

Figure 12



88. And the path of prices remains unacceptable and implausible as shown in Figure 13 below:

Figure 13



We therefore need to consider some alternative approaches.

89. In the examples used above, the assets remain on the depreciation life that is in force when they are commissioned for the rest of their depreciation life. In other words, this straightforward approach to transition provides more transitional relief than an approach that progressively stretched out asset lives for all assets still being

depreciated, irrespective of how far through the depreciation cycle they are. Since this method does not create a sustainable set of cash flow metrics and prices, it is clear that the extension of asset lives that Ofgem is considering is so profound in its effect that we must consider transitional arrangements that extend for longer than one price control. Therefore, we have examined options that are based on something more than a differentiation between old and new assets, an increment to the cost of capital, and the phasing-in over the DPCR6 period.

90. The mix of our examples has led us to the conviction that the most appropriate way for Ofgem to implement its desired change must be a long-phased approach. This would see a series of declared changes that provided stable and predictable steps over a number of price control periods. This approach offers the stability and predictability that investors require and which they know to expect from a careful economic regulator.

91. Taking as read that Ofgem will honour the existing arrangement in relation to existing assets, we have considered the following further alternatives below:

- Spreading the move to a 45-year life for new assets over two (eight year) price control periods. i.e. extending the lives in each of the next two price control periods, thereby establishing an interim asset life that will apply to all assets added in that period for the rest of their depreciation life;

- and finally, making fine tuning adjustments by changing the speed of money to ensure that the equity and debt metrics are satisfactory in the short-medium term.

92. From this analysis, the modelling of which we are happy to share with Ofgem, we conclude that it may be possible, using the several levers that we have considered above, to arrive at an outcome that meets Ofgem's objective, whilst satisfying the very reasonable criteria we set out in paragraph 78 above.

CONCLUSIONS – A PROPOSED WAY FORWARD

A balanced outcome can be achieved through a blend of a number of parameters.

93. If Ofgem is minded to move towards an extension of the regulatory depreciation period for electricity distribution assets we think that a balanced outcome can be achieved only through a blend of the various factors that we have considered above.

94. We recommend a solution that comprises the following components.

- All investments made prior to the end of the DPCR5 period should retain a 20-year depreciation period; straight line depreciation should be applied until these assets are fully depreciated.
- An increment to the cost of capital (which we estimate to be 2.3 bps per incremental year of depreciation) is added in proportion to the new assets that are added at the longer asset lives.
- Over the DPCR6 and DPCR7 periods there, should be a steady progression towards a 45-year regulatory depreciation period.
- From the commencement of DPCR8 all new assets would be subject to the 45-year depreciation period.
- Residual adjustments can be made through small adjustments to the speed of money parameter that is established through the price control regime at each review.

The proposed solution delivers an acceptable outcome for customers…

95. We have developed scenarios that blend these components that would result in an acceptable (and therefore plausible) path of prices for customers.

…as well as for investors.

96. The proposed solution would enable Ofgem to ensure that credit metrics remain satisfactory and that the cash flows are acceptable to investors. By the end of the transitional arrangements Ofgem would have achieved its objective of aligning regulatory depreciation periods with its view of economic lives, but it would have done

so without causing financeablilty problems or harming customers. It would also have reinforced, rather than diminished, investors' confidence in the regulatory commitment.

97. We would welcome the opportunity to share the results of our modelling with Ofgem.

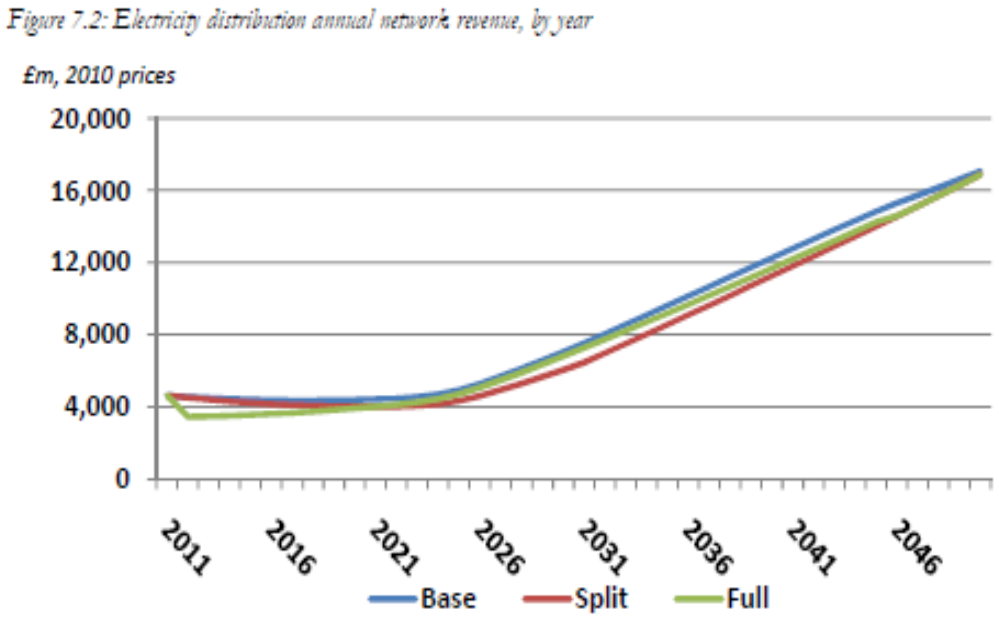
ANNEX 1: Updated extract from CE's response to RIIO-T1 and RIIO-GD1 Consultations.

Critique of CEPA analysis

1. Ofgem's open letter does not reference CEPA's revenue modelling work in justifying the change to asset lives but the Gas and Transmission consultation made a number of assertions about the effect on customer prices. We therefore, believe it is important that we point out that we believe there are number of serious flaws with this work.

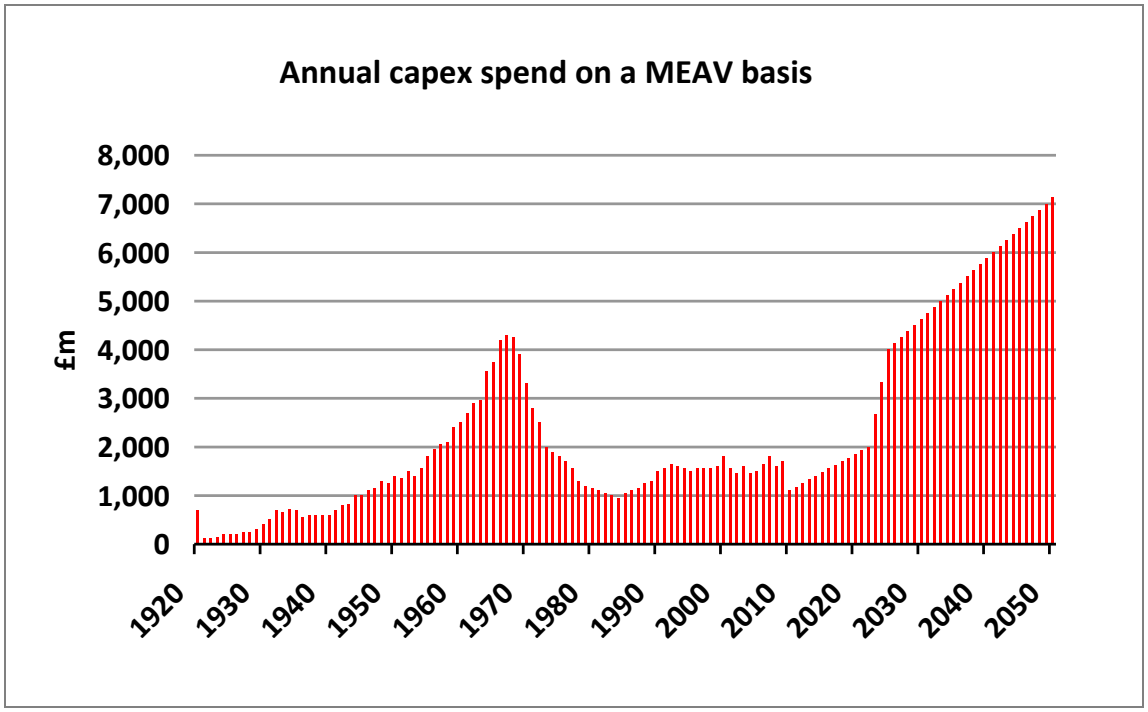
The revenue analysis offered is based on a flawed and adapted assumption that seems designed to give the appearance of a consistent outcome.

2. CEPA's assessment on the effect of changes to depreciation periods on electricity distribution revenues is set out in the graph below:-



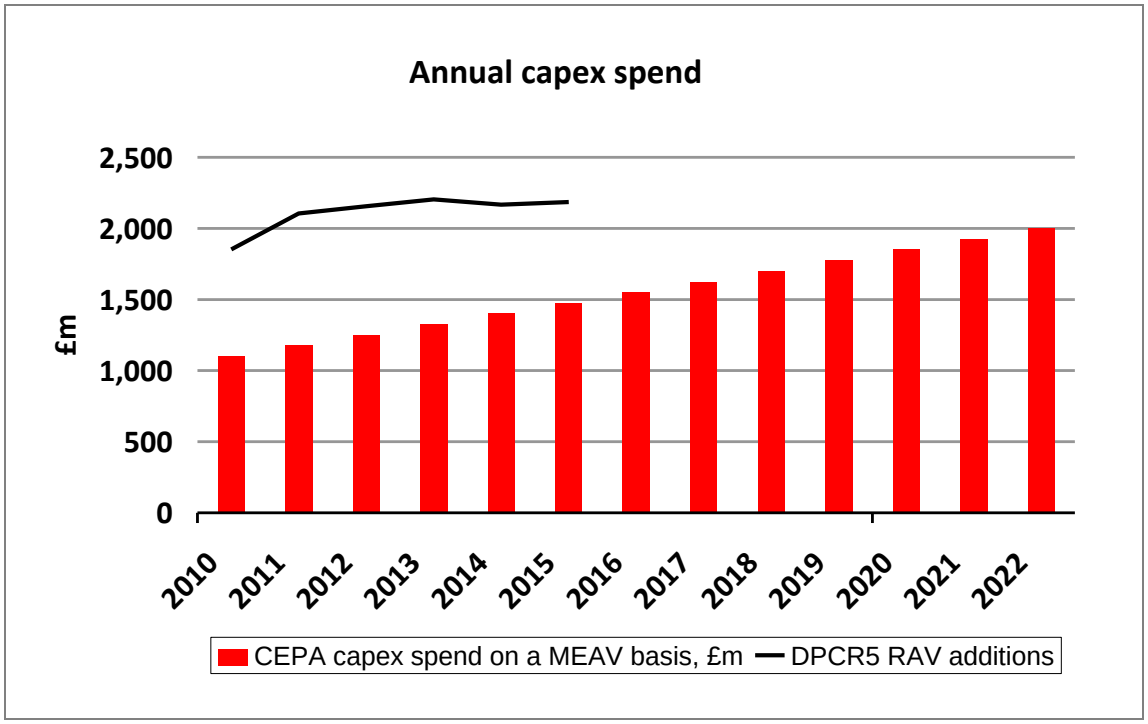
3. This profile appears consistent with the existing asset recovery assumptions, yet it seems to us that CEPA have achieved this by assuming very substantial increases in capital investment over the coming decades, so that under the 'base' scenario of 20 years depreciation lives the revenue is mostly made up of depreciation but, under the 'full' scenario of a 45 year life, revenue is mostly made up of return on an ever increasing RAV. CEPA's forecast for capex requirements under the "green transition"

scenario, along with historic capex figures CEPA compiled on the estimated modern equivalent asset value (MEAV) of installed assets, are shown below.



4. If, as we think is likely, capital investment returns to a steady state (rather than a continuing and steeply rising profile) and these graphs were run further into the future then we would see the 'base' revenues reducing significantly as depreciation in the base scenario declines more rapidly with the lower capital expenditure than in the full scenario. This will then reveal over time the difference in revenue between the two scenarios with the full scenario having a higher RAV value and therefore higher revenues. Alternatively, if the sustained increases in projected capex are not required in the proportions that CEPA suggest, or perhaps if they had shorter peak of activity, then the unwelcome features of the path of prices that are reflected in paragraphs 143 and 144 (of CE's response to RIIO-T1 and RIIO-GD1 Consultations) will be become more evident over the period.

5. Moreover, the chart also reveals that the near term capex profile assumed by CEPA might also give rise to misleading modelling results. The chart below shows how CEPAs capex assumptions until 2022 compare with the anticipated RAV additions which feature in Ofgem's DPCR5 financial model (adjusted to 2009-10 prices). There is a clear inconsistency.



6. It may be the case that CEPA's results on financial ratios are, at least in part, driven by an assumption that immediate cash flow challenges facing the industry, at DPCR5 and DPCR6, are far less pronounced than they actually are. This might substantially mask the actual financial ratios the industry would experience in the next decade, since CEPAs assumption of lower than actual capex might create apparently free cash flows in their model which can be used to "cover" the change to depreciation policy. These free cash flows do not in fact exist.

7. And finally, the results of CEPA's modelling for electricity distribution, shown below, do not in fact present a benign picture. The funds from operations / interest and funds from operations / net debt ratios are significantly worse at the low end of their range under CEPAs "split" or "full" scenarios when compared with the "base". This sort of change could well be consistent with a credit rating downgrade for the sector. And even if large equity injections were made in order to hold gearing constant, the results of our own modelling (presented below) show that these ratios would still be significantly impacted by the change in policy.

Table 7.4: Electricity distribution: financial ratios over the whole modelling period (2011-50)

Financial ratios (2011-50)	Base		Split		Full	
	Average	Range	Average	Range	Average	Range
Funds from operations / interest	5.6	4.6 - 7.1	3.8	2.6 - 6.4	3.2	2.7 - 6.3
Funds from operations / net debt	20%	16% - 25%	13%	9% - 23%	11%	9% - 23%
Gearing (net debt / closing RAV)	68%	57% - 76%	72%	60% - 81%	74%	64% - 80%
Post-maintenance interest cover ratio	2.0	1.7 - 2.3	1.9	1.6 - 2.2	1.8	1.7 - 2.1