



Regulating energy networks for the future: RPI-X@20

Current thinking working paper

Financeability

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Summary

RPI-X@20 is Ofgem's fundamental review of energy network regulation. As emphasised throughout the project, we want the future regulatory framework to encourage decision-making by network companies that achieves value for money for current and future consumers. We set out in our Emerging Thinking consultation (January 2010) a number of reasons why the existing framework needs to change. We also presented ideas on a potential new framework that could encourage a focus on longer-term value for money. These included requirements for companies to submit longer-term business plans as part of the price control process, and a separate innovation fund.

Published in parallel with the main consultation was a separate paper – "Embedding financeability in a new regulatory framework." In that document we suggested a 'straw man' set of principles of how we might embed our 'financing duty' in the new regulatory framework. It focused at a high level on what we mean by financeability, the issues raised by our current assessment of it, and a potential set of principles – presented to spur debate.

This working paper is intended to provide stakeholders with more detail of our current thinking on financeability. We present an 'updated straw man,' which builds on the model published in Emerging Thinking and draws on stakeholder responses to that consultation.

This paper is also intended to stimulate further stakeholder feedback on an important part of the RPI-X@20 review. We welcome views on the issues raised. We are continuing to refine our thinking on financeability and while this paper represents our current views, our ideas may change as we finalise our recommendations for summer 2010.

The paper is not a consultation or decision paper. The thoughts and suggestions have been developed for the RPI-X@20 project alone and do not in any way bind or constrain GEMA's flexibility – both now or in the future – when taking decisions and interpreting its legislative powers and duties.

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1. Introduction

1.1. RPI-X@20 is a comprehensive, two-year review of how we regulate energy network companies. We are looking to the future on behalf of current and future consumers, asking whether the existing 'RPI-X' frameworks remain fit for purpose.

1.2. We published our "Emerging Thinking" consultation in January 2010¹. In this document, we set out our desired outcomes for the regulatory framework: it should encourage energy network companies to play a full role in facilitating delivery of a sustainable energy sector and deliver value for money network services over the long term.

1.3. Alongside our main consultation, we also published a further consultation paper - "Embedding financeability in a new regulatory framework."² It focused at a high level on what we mean by financeability, the issues raised by our current approach, and a 'straw man' set of principles for the future, which was designed to stimulate the debate.

1.4. In this 'straw man,' we discussed the various issues that are usually considered within the context of financeability. In particular,

- The weighted average cost of capital (WACC),
- Capitalisation and depreciation of the regulatory asset value (RAV), and
- The calibration of the regulatory package, assessment of financeability and the role of the credit ratings agencies.

1.5. Since the publication of this consultation, we have further developed our thinking and have also commissioned Cambridge Economic Policy Associates (CEPA) to advise us on the refinement of any new approach to financeability. CEPA's final report has been separately published on our website³.

1.6. This working paper is intended to provide stakeholders with more detail of our current thinking. We present an 'updated straw man', which builds on the model published in Emerging Thinking and draws on stakeholder responses to that consultation. As with the previous paper, this document does not cover wider financial issues such as taxation and pensions.

1.7. The working paper provides a further opportunity for stakeholders to give their views before we finalise and consult on our recommendations to the Gas and Electricity Markets Authority (GEMA) in summer 2010.

1.8. We are also mindful of the need to consider whether there are any implications arising from changes in legislation, in particular the EU Third Package which has yet to be implemented, when looking further at this issue.

1.9. This paper is not a consultation paper or a decision paper - although we welcome feedback to the thinking set out in the following sections. We are continuing to refine the

¹ This document is available at <http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/emerging%20thinking.pdf>

² This document is available at <http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/et%20financeability.pdf>

³ This document is available at <http://www.ofgem.gov.uk/Networks/rpix20/forum/financing/Documents1/Final%20CEPA%20RPI-X@20%20Financeability%20Report%20May%202010.pdf>

straw man and our ideas may change as we finalise our recommendations. The thoughts and ideas have been developed for the RPI-X@20 project alone and do not in any way bind or constrain GEMA's flexibility – now or in the future – when taking decisions and interpreting its legislative powers and duties.

1.10. The structure of the working paper is as follows:

- Section 2 provides an overview of our 'updated straw man,'
- Section 3 sets out more detail on the individual issues associated with 'financeability,' and
- Section 4 describes next steps and provides details of how you can input further thoughts into the debate.

2. Embedding financeability in a new regulatory framework

2.1. Our principal objective is to protect the interests of existing and future consumers. Following on from this is our duty - *"to have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations on them."*

2.2. This means that efficient network companies should be able to secure financing in a timely way and at a reasonable cost in order to facilitate the delivery of their regulatory obligations. It is important that the regulatory framework does not provide excessive returns, reward inefficiency or 'bail-out' a company that has encountered financial distress as a result of its own behaviour.

2.3. Historically, when assessing financeability we have considered evidence from many different sources, one of which involved comparing certain credit metrics - calculated in the financial model – to those published by the credit ratings agencies. If and when financeability 'failures' have been identified during such modelling, we have tended to address them by accelerating depreciation in order to boost near-term cash flows, which improves these ratios in an NPV neutral way. However, these measures arguably mean that current consumers will bear too much of the cost of assets that will likely have useful lives well beyond those assumed.

2.4. In contrast, it may be the case that in some regulated sectors it *is* appropriate to shorten the assumed asset life - when there is uncertainty regarding its long-term use. For example, this may be the case for offshore wind farms where the technical life of the connection may be substantially longer than that of the turbine.

2.5. As we said in the Emerging Thinking paper, we are considering whether there is merit in establishing a set of principles that guide our judgment on financeability and related policy issues for future price controls. We believe that by establishing clear, ex-ante rules and principles, we will provide as much certainty to investors, companies, ratings agencies and consumers as possible while ensuring that our ability to react to future events is not unduly constrained. These principles will be designed to simplify our existing approach to financeability and to increase transparency. We also believe that such policies will provide a clear basis for balancing the interests of current and future consumers.

2.6. This view was typically supported by respondents to the Emerging Thinking consultation, with one company saying that *"one of the most important benefits of a*

predictable regulatory regime is that it reduces financing costs for companies, and hence reduces prices for consumers”.

2.7. The platform for our ‘updated straw man’ is the idea of regulatory commitment. We believe that by providing a strong set of principles on the various components of financeability, we will be making a firm regulatory commitment to companies and their investors – to facilitate longer-term thinking. It is our intention that the “updated straw man” improves and enhances our current approach to financeability and should not be considered a step-change.

2.8. The principles of the ‘updated straw man’ are summarised below with further detail provided in the following section:

- A longer-term view of financeability - reinforced by regulatory commitment,
- Risks to be appropriately allocated between companies and consumers - depending on who is the best placed to manage them,
- A principles-based approach to the calculation of notional gearing. The size of the notional equity wedge would reflect the company’s risk exposure and may vary within and between sectors.
- A real, weighted average cost of capital (WACC) based approach to setting the allowed return,
- The cost of debt assumed in the WACC to be based on a long-term trailing average and updated annually within a price control,
- CAPM, supported by other approaches, to be used to determine the cost of equity,
- A capitalisation policy that equalises incentives but that is also based on companies’ business plans and so is closely aligned with actual opex/capex split.
- Assumed asset lives underpinning the depreciation policy to reflect expected economic life and the potential to weight the depreciation profile to reflect uncertainty in the future consumption of assets,
- Financeability assessment to be informed by a number of sources including ratings agency credit metrics considered over the long term. There would be an onus on companies to manage short-term requirements and to provide equity where necessary,
- Return on regulated equity (RORE) analysis used as a tool to check the package fits together appropriately.

3. The updated straw man

Calibrating the package - risk allocation vs. notional gearing

3.1. In our Emerging Thinking consultation document, we said that we were keen to ensure that the regulatory framework is calibrated in a such a way that those companies that deliver for consumers earn good rates of return, whilst those that demonstrably do not deliver, earn low returns - potentially below the cost of debt.

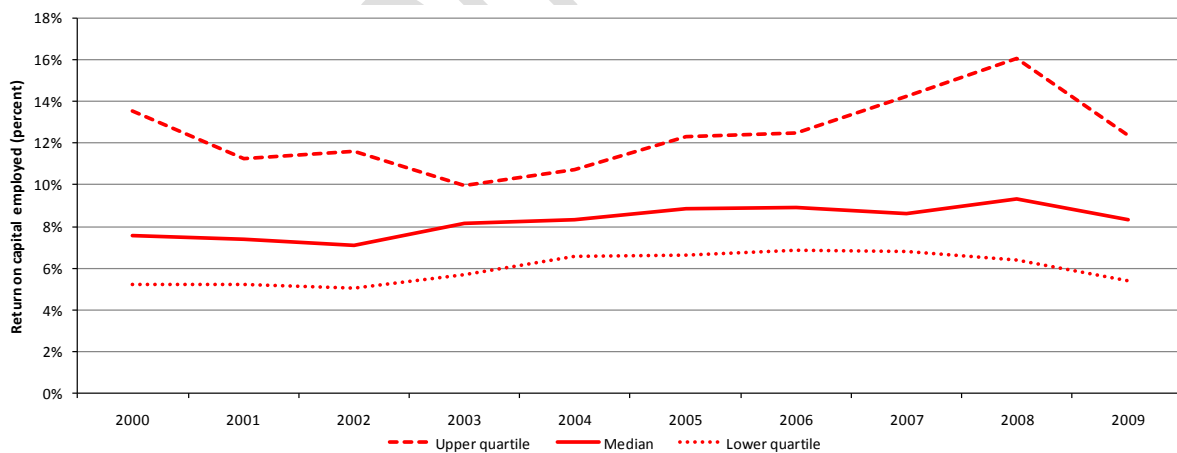
3.2. Under the 'updated straw man' the first step of the financeability assessment would be to determine an appropriate balance of risk sharing between consumers and the regulated companies. In doing so, we would consider which party is best positioned to manage each risk and the financial implications of that decision. In some cases, it may be that the company is able to manage the risk but that the financial consequences (through a higher required cost of capital) are significant and that, therefore, the risk is best borne by consumers.

3.3. Once the risks have been suitably apportioned, we would use this information to derive how much equity would be required in the notional capital structure. In this way, a company's risk exposure would directly relate to their notional gearing and thus the calculation of their allowed return. The greater the cash flow risk that companies bear, the greater would be the potential variance in financial returns and hence the greater the requirement for equity finance within their capital structure. Equity would thus be acting as a buffer to absorb any variance in the baseline allowed return.

3.4. In determining an appropriate allocation of risk, we believe that a bottom-up, a top-down or a hybrid approach could be taken. In the bottom-up approach, individual incentive rates would be derived from first principles, for example, based on the willingness of customers to pay. As an incentive is introduced, companies would be exposed to more cash flow risk (because of the potential for return variance) and would therefore have a greater requirement for equity within their notional capital structure.

3.5. Alternatively, in a top-down approach, we would specify a plausible overall range of returns that can be obtained from the whole package, e.g. to be based on the ranges of returns seen in other capital-intensive industries. In the chart below, we show the distribution of return on capital employed (ROCE) over the past 10 years for a sample of 39 utility and infrastructure companies.

Figure 1: Distribution of RoCE for a sample of 39 utility and infrastructure companies (2000-2009)



Source:CEPA

3.6. To the extent that the risk allocation and regulatory framework are common across a sector, the notional gearing would be the same for all companies within that sector. However, under this approach, there is scope for companies within the same sector to have different levels of notional gearing where there is a significant difference in the risks facing them, for example, as a result of the capital intensity of the business. This may well be the case for the electricity transmission operators in particular.

3.7. We believe that once the "efficient gearing" level has been determined, the methodology for calculating it in future price controls should be retained as far as possible to reinforce the concept of regulatory commitment. We would also seek to avoid significantly changing the risk profile of a particular sector from one price control to the next.

3.8. Regardless of the approach we take to gearing, we believe that we will need to ensure that the package is calibrated appropriately by understanding how the various components of the price control package interact. We believe that RoRE should continue to be used in this regard.

3.9. We welcome views about the appropriateness of these methods of calculating an appropriate level for the equity buffer, and their relevance to each regulated sector

A WACC-based allowed return

3.10. The allowed return has arguably two main roles in the current regulatory framework. Firstly, it is the basis by which previous, efficiently incurred expenditure is remunerated. Secondly, it is the value which incentivises and facilitates investment in new infrastructure.

3.11. Under the updated straw man, we would continue to set an allowed return on the basis of a single weighted average cost of capital (WACC).

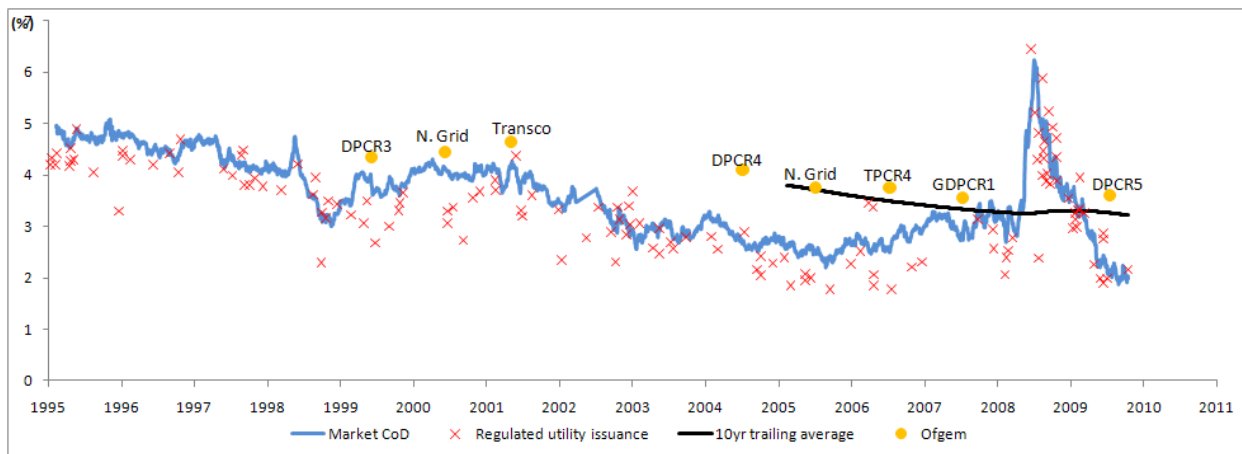
The cost of debt

3.12. Under our updated straw man, our approach is to extend the concept of regulatory commitment to the determination of the cost of debt. We believe that if there is a commitment to remunerating efficiently incurred debt costs, it will facilitate a greater role for equity in the capital structure of regulated companies going forward. We also believe that such an approach will mean a higher likelihood of getting the WACC "right" thus leading to better investment decisions by companies.

3.13. To date we have not laid out - in detail - our approach to determining the cost of debt. This has arguably led some stakeholders to speculate that Ofgem includes arbitrary "headroom" in their determinations for the cost of debt to reflect uncertainty in its assessment. The divergence in recent years between the rates obtained by some companies on their issued bonds and long-term averages has arguably contributed to this belief.

3.14. The chart below shows a 10-year forward cost of debt index (real) and the coupons achieved by regulated utility issuers at issuance compared with the return on debt allowed by Ofgem in price control determinations - since 1995. This analysis, when taken at face value may suggest "headroom" but we believe it does not tell the whole story.

Figure 2: The forward cost of debt (real) vs. regulated utility bond issuance vs. Ofgem’s allowed return on debt



3.15. Regardless of any view about “headroom”, the allowed return on debt in the last five Ofgem price controls has very closely tracked the long-term average rather than current rates, as this chart shows. Furthermore, we believe that a strong emphasis on long-term averages remains an appropriate basis for calculating the cost of debt going forward - irrespective of current (or indeed forecast) market rates. We may also choose to extend this concept such that there is an annual adjustment in the allowed return on debt, based on movements in the trailing average rather than making a step movement at every price control. This could be particularly important in the context of longer-term price controls where interest rates could vary considerably within a period.

3.16. We are therefore suggesting that, in future price controls, the cost of debt embedded in the allowed return is essentially a backwards looking determination, based on a long-term trailing average of forward interest rates - updated annually. Our current view is that the 10-year trailing average of sterling investment grade bond yields provides a close fit to the tenor and price of debt typically achieved by network companies. Calculating the cost of debt on this basis should provide comfort that new debt, financed at efficient rates – even at levels higher than the allowed return - will be fully funded in the future.

The cost of equity

3.17. In determining the cost of equity parameter within the WACC, many regulators – including Ofgem - have relied primarily on the capital asset pricing model (CAPM) but sense check the result with other methods, e.g. dividend growth model (DGM) and market to asset ratios (MAR).

3.18. We believe that our previous approach to calculating an appropriate cost of equity remains valid. While there are many differing approaches, none of the alternatives are without criticism or limitation. Consequently, we cannot see any reason at this stage for changing the existing approach of employing a range of techniques to determine the cost of equity, of which a key approach is CAPM.

Capitalisation and depreciation

3.19. The RAV is a regulatory construct that reflects a company's historical investment, adjusted annually for inflation (currently RPI).

3.20. In price controls before DPCR5, costs which yielded a benefit over a period of more than one year ("capex like") were capitalised into the RAV and returned (through depreciation) over a longer period of time. In contrast, some costs ("opex like") were funded in the year incurred.

3.21. In DPCR5, we modified our approach to capitalisation, with all companies having a fixed percentage of their total network costs treated as "slow money" and capitalised into the RAV with the rest being expensed as "fast money." The overall percentage of capitalised costs was similar to the rate achieved in DPCR4.

3.22. The rationale for this modified approach to capitalisation was to equalise the incentives on capex and opex that previously existed because of the different incentive rates that applied to the two cost categories. In DPCR5, all costs were treated equally with only one incentive rate applying.

3.23. However, this new approach was not without its consequences. Although on average the rate of capitalisation was similar, some companies ended up receiving a greater proportion of costs as "fast money" than under the DPCR4 approach. Furthermore, some opex like costs were indirectly capitalised into the RAV. Hence, the "speed of money" debate in DPCR5 was considered alongside the general discussion of financeability as our decisions made significant differences to a company's cash flow over the price control.

3.24. In contrast, the rate of RAV depreciation has long been considered a financeability issue. In both electricity distribution and electricity transmission, we have previously adopted policies that 'accelerate depreciation' – to improve a company's near-term cash flow ratios and improve their perceived financeability. For these sectors, the assumed regulatory life was reduced to 20 years for assets that are likely to have a useful life of more than 40 years. While in NPV terms the impact on consumers is negligible, our chosen policy has resulted in an inter-generational fairness issue with current consumers paying more for the assets than future consumers.

3.25. In gas distribution and gas transmission, the problem is arguably reversed with the regulatory depreciation period being 45 years for new investment. In contrast to electricity, there is much more uncertainty about the outlook for gas and it is possible that any economic depreciation period could be shorter than Ofgem's current assumption.

3.26. In our January Emerging Thinking consultation, we said that for capitalisation we would consider if the DPCR5 approach remains appropriate. We would also aim to establish a clear set of principles for determining an appropriate rate of capitalisation going forward. For depreciation, we said that the rate should reflect the average expected economic life of the asset base. This means that assumed asset lives could be shorter than their physical lives where there is uncertainty about long-term utilisation.

3.27. Under the updated straw man, we believe that the issues around capitalisation and depreciation are better considered within the context of inter-generational fairness and only affect financeability in so far as they affect our ability to give regulatory commitment.

3.28. We believe that if the regulatory approach to certain expenditure items deviates significantly from the treatment of those same costs by companies, it is likely that perceived regulatory risk would increase. This could occur if the capitalisation percentage of total expenditure was considerably different from a company's methodology. In devising a suitable approach going forward, we believe that there are number of issues to consider:

- How to strike an appropriate balance between current and future consumers,
- The uncertainty in assessing the useful economic life of assets, and
- The equalisation of incentives between opex and capex.

3.29. Going forward we believe that the percentage of total expenditure approach to capitalisation (adopted in DPCR5) is appropriate as a means for the equalisation of incentives. However, under the straw man the way in which the percentage is set would be different. The percentage - which could vary by company - would be determined ex-ante and would be based on the amount of cap-ex like costs submitted in a company's business plan.

3.30. Similarly, we continue to believe that the regulatory depreciation rate should reflect the average expected economic life of the asset base but recognise that assessing the appropriate levels for different assets between regulated sectors is not straightforward. We would also anticipate that this depreciation rate will be reviewed periodically.

3.31. When considering the form of depreciation schedule to adopt there are a number of different approaches possible, including:

- Straight-line,
- Sum of year digits,
- Reducing balance, and
- Per unit.

3.32. These differing approaches are described more fully in CEPA's report.

3.33. While our default approach to depreciation would be a straight-line methodology - as is generally used by Ofgem, we are considering whether there is merit in profiling the return of capital to reflect the likely future demand of these assets or to reflect uncertainty about its assessment. For example, for electricity distribution there is a real possibility of growth as the transition to a low carbon world changes the pattern of demand. Therefore, a depreciation profile that back-end loads the charge could be appropriate. In contrast, in gas distribution, there is a possibility of reducing demand by households. This could warrant a front-end loaded depreciation profile, such as one based on a sum of digits methodology.

3.34. We welcome respondent views on this.

3.35. For some sectors, we are aware that moving to the above methodology may mean a slowing down in the return of capital. While this may not imply a financeability issue, we recognise that "slow money" represents a significant component of allowed revenue for companies and any sudden reduction could increase perceived regulatory risk, which would

be undesirable. Under these circumstances, we would consider whether it is appropriate to have some period of transition.

Assessing financeability

3.36. As set out in our January consultation document, as long as the allowed return, depreciation profile and capitalisation policy are set appropriately and that there is consistency in their respective future determinations, the notional company should be financeable.

3.37. We recognise that the credit ratings agencies - while not infallible - are an important source of information and hence play an important role in the raising of low cost debt finance, which is a benefit to consumers. Under our updated straw man, we would continue to assess financeability in the round, considering evidence from a number of sources. This would include but would not be limited to - consideration of the metrics that the ratings agencies look at in determining a company's credit rating.

3.38. However, we would not advance cash flow in light of apparent short-term dips in cash flow metrics. We would seek to understand the reason behind such failures (e.g. high capital expenditure relative to RAV) but the onus would be on the company to resolve the situation, including by injecting equity and/or reducing dividend payments as they see fit.

3.39. In contrast, when relative expenditure levels decrease, the company may choose to remove equity if it deems appropriate, e.g. through the payment of special dividends.

3.40. By placing a greater onus on companies to take action to maintain their investment grade credit ratings, it reduces the requirement for Ofgem to make adjustments to other areas of the price control.

Financeability ratios

3.41. We believe that of the many ratios calculated by the ratings agencies, some are more relevant for the assessment of regulated networks than others.

3.42. Historically, we have focused mainly on the results of the following ratios:

- Funds from operations/ interest cover,
- Retained cash flow/net debt, and
- Net debt/RAV.

3.43. Going forward, we think that net debt/RAV and the adjusted interest coverage ratio or post maintenance interest cover ratio (PMICR) are the most appropriate ratios to consider. PMICR is a variation on the FFO/interest cover but eliminates the effect of regulatory depreciation's contribution to the calculation of FFO.

3.44. Our thinking is described in greater detail in the Appendix.

4. Next steps

4.1. We believe that the updated straw man, as discussed, could provide an appropriate way of providing regulatory comment, transparency and a longer-term focus that balances the interests of current and future consumers.

4.2. This is an important strand of work within the RPI-X@20 project. We are therefore keen to hear your views on whether the model we have outlined above is an appropriate way of embedding financeability in a future regulatory framework. Comments received, along with our updated thinking and analysis will form the basis of a minded-to paper, to be published alongside the rest of the RPI-X@20 project consultation in summer 2010.

4.3. Responses should ideally be sent to Scott Phillips (scott.phillips@ofgem.gov.uk) by the middle of June 2010.

4.4. We may also publish a short working paper on whether the Retail Price Index (RPI) remains the most appropriate index to be used in network price controls. If so this will likely be issued before the end of May 2010.

Current thinking

Appendix – Post Maintenance Interest Cover Ratio (PMICR)

In Figure 3 below, we show two hypothetical companies – A and B, both geared at 65%, earning an allowed WACC of 4.7% on their RAV of 4000 and having a cost of debt of 3.6%. However, for company A the rate of RAV depreciation is twice that of company B - comparable to the effects of our accelerated depreciation policy. The consequences of this are that the allowed revenue and Funds From Operations (FFO) for company A are significantly higher than for company B - enhancing the standard FFO/interest cover ratio and thus improving their perceived financeability.

However, we believe – in agreement with Moody’s and Fitch – the focus should not be on FFO/interest cover but on the Post Maintenance Interest Cover Ratio (PMICR) or adjusted ICR. Under this methodology the calculation of FFO is adjusted to remove the effects of the contribution of regulatory depreciation to allowed revenue. As the model below shows, the calculated PMICR ratio for company A and B is indifferent to the rate at which the RAV is depreciated. Put another way, there is no obvious financeability issue associated with the timing of the return of capital.

Figure 3: A comparison of FFO/interest cover with PMICR

	Company	
	A	B
RAV	4000	4000
Gearing	65%	65%
-Debt	2600	2600
-Equity	1400	1400
Vanilla WACC	4.7%	4.7%
Actual CoD	3.6%	3.6%
-Interest expense	94	94
Revenue calculation		
Fast money	300	300
Slow money	150	75
Allowed return	187	187
Allowed revenue	637	562
FFO	337	262
FFO/interest	3.6	2.8
PMICR	2.0	2.0